Economics Bulletin

Volume 34, Issue 3

Recipients aid absorption in the new development cooperation landscape

Eric Gabin Kilama
Université d''Auvergne

Abstract

From the perspective of recipients, the presence of emerging donors in the aid landscape represents an opportunity to attract additional resources to finance development. This paper investigates how low income countries deal with this complex and changing aid landscape and explore how this situation influences their macroeconomic management of aid flows. Our findings suggest that countries receiving additional aid flows from emerging donors enhance their fiscal response to aid through an increase in their aid absorption rate.

The author is Junior Lecturer/ Researcher at the School of Economics, Université d'Auvergne. kilamaericgabin@yahoo.fr/ eric.kilama@udamail.fr
Citation: Eric Gabin Kilama, (2014) "Recipients aid absorption in the new development cooperation landscape", *Economics Bulletin*, Vol. 34 No. 3 pp. 1929-1944.
Contact: Eric Gabin Kilama - kilamaericgabin@yahoo.fr.
Submitted: April 07, 2014. **Published:** August 27, 2014.

1. Introduction

Ownership, alignment, and speed are emerging donor aid allocation characteristics truly appreciated by recipients in combination with the non-interference of donors in local policy. Moreover, recent country case studies (Greenhill *et al.* 2013; Sato *et al.* 2011; Roussel, 2013) argue that the presence of emerging donors in the aid landscape can increase the bargaining power of aid recipients vis-à-vis traditional donors and enhance local *ownership* of their development agenda. With an increasing number of governments welcoming aid from emerging donors due to these expected gains, two important questions are first, how well recipient countries use the competition between new donors and traditional donors, and second, how this evolution of the aid landscape could affect the macroeconomic management of aid in low-income countries (LICs). This paper aims to explore this issue.

Standard donor behavior reflects the concerns of donors about how their aid is used, especially how it affects the fiscal variables of recipient governments. The pressures to spend aid money as soon as it arrives are very strong because donors are also highly averse to fiscal prudence. Donors want to see their money spent doing good, not piling up as reserves in central bank vaults (Buffie *et al.* 2010). This view contrasts with recipient fiscal authorities, who need more room to maneuver to provide the appropriate fiscal response to aid. Evaluating the absorption of aid flows, Berg *et al.* (2007) and Foster & Killick (2006) found that current account deficits typically increase by less than half of the rise in aid flows, and that aid surges often coincide with large capital outflows. In other words, most aid appears to finance capital flight, rather than an increase in net imports. Despite the problem of coordination between fiscal authorities and the central banks in LICs, this low level of aid absorption is explained by private sector expectations about the fiscal response to aid flows. Buffie *et al.* (2010) demonstrated that if private agents have ample grounds to fear that actual aid surge could threaten future fiscal stability, they would react accordingly. We consider in this paper that welcoming emerging donors could help in the management of private sector expectations because the presence of donors outside the Development Assistance Committee (non-DAC donors) can strengthen the recipients through technical assistance, transfer of ideas and technology, and investment that will all work to enhance public-sector capacity, reducing capital constraints (both human and physical).

This paper investigates the absorption rate of aid during the period 1980-2010 on a sample of low-income countries receiving aid flows from DAC donors and emerging donors. We address the question about how this empowerment of recipients with the competition between donors is being put to use through an analysis of the absorption rate of aid flows.

Our analysis gives rise to interesting findings. Our results indicate that during the last two decades, countries receiving an increasing amount of emerging donor aid have better aid absorption rates. Some countries succeed in translating the presence of emerging donors into a strategic policy to improve their macroeconomic management of aid flows and control over the development agenda. Moreover, we find that African countries do benefit from the competition between traditional donors and China, at least in terms of better aid absorption rate.

The paper proceeds as follows. In Section 2, we discuss the theoretical background linking the presence of emerging donors to the fiscal response of LICs to aid flows. Section 3 presents the details of our empirical analysis, the data and methodological issues surrounding our subject and discusses the results. Section 4 concludes the paper.

2. Theoretical Background

Our discussion in this paper derives from the conceptual framework in Buffie *et al.* (2010) and Berg *et al.* (2007)[1], which describes the analysis of fiscal response to aid flows. Berg *et al.* (2007) distinguish between spending the aid, which is under the control of the fiscal authorities, and absorbing the aid (i.e., using the aid to finance a higher current account deficit), which is influenced by the central bank's reserves policy when access to international capital markets is limited. The authors demonstrate that the success of aid surge management depends on the coordination between fiscal authorities and the central bank: the government spends the extra aid inflow, and the central bank sells the foreign exchange in the currency market.

However, this conceptual framework is not confirmed by data, and recent country case studies found low absorption of aid because the current account deficit typically increases by less than half of the rise in aid flows and these aid surges often coincide with large capital outflows[2] (Berg et al., 2007; Foster & Killick, 2006). These low records of aid absorption can be explained by the reluctance of central banks to sell aid dollars and allow the exchange rate to appreciate. The lack of coordination between the government and the central bank undermines the effective use of foreign aid resources. Moreover, some authors like Martins (2011) argue that the use of OECD-DAC data on aid is not appropriate because donors often report statistics overestimating the amount of aid flows. This could also be explained the observed low absorption rate of aid.

Buffie *et al.* (2010) propose another view explaining the stylized facts about foreign aid absorption rate. They explicitly include private sector expectations into the fiscal management policy of aid flows. According to Buffie *et al*. (2010), even in the best-case scenario, the success of aid surge management depends on private agent expectations about government capability to struggle with periods of large fiscal deficits and high inflation after the end of the aid surge. Therefore, in a low credibility period, private agents believe that the aid surge is temporary and have concerns about the government's capacity for expeditious fiscal retrenchment. They move their wealth allocation towards foreign currency and money instead of government bonds, generating capital flight and high inflation[3].
The intuition here is that the current account deficit (CAD) will increase less in the low credibility (LC) scenario: $CAD > CAD_{LC}$ (see details in the model in the Appendix). The policy implication of this finding is that the success of the fiscal response to aid flows requires not only a good fiscal plan for coping with a possible aid collapse, but also a strategy for managing private sector expectations.

In this paper, we want to investigate how the presence of emerging donors in the aid landscape could influence the perceptions and anticipations of private sector agents about the evolution of aid flows, as well as government control over the development agenda. Thus, we analyze the effect of emerging donor aid on recipient absorption rate. Hussain *et al*. (2009) define the rate of absorption of an increase in aid as the change (variation) in the current account (excluding aid) deficit as a share of the change in aid inflows:

$$Absorption\ of\ aid = \Delta(Non\text{-}aid\ current\ account\ deficit)/\Delta Aid.$$

[1] A detailed model can be found in the Appendix.
[2] The current account deficit has to increase by the same amount as the aid to effect a complete transfer of resources.
[3] Country studies recently completed by Berg *et al.* (2007) and Foster & Killick (2006) found that the current account deficit typically increases by less than half of the rise in aid flows and that aid surges often coincide with large capital outflows. Most aid appeared to finance capital flight rather than an increase in net imports.

3. Empirical Analysis

3.1 Econometric Specification

We performed a panel data analysis using the specification below:

$$Y_{it} = a_i + \beta \cdot NDAC_{it} + \gamma Z_{it} + \eta_i + e_{it} \quad (1)$$

This paper estimates a dynamic panel equation linking the aid absorption rate with the increasing influence of emerging donors in development assistance while controlling for standard determinants.

Equation [2] is a dynamic specification and is used given the potential inertia characterizing the absorption variable. Government administrations are constrained by budgets, and the current budget largely determines the next period's appropriations. Although such inertia has been argued to provide some stability and predetermine fiscal spending (Schuknecht, 2000), the presence of lagged dependent variables and country-specific effects renders the OLS estimator biased since the lagged dependent variable is correlated with the error term:

$$Y_{it} = a_i + \theta Y_{it-1} + \beta \cdot NDAC_{it} + \gamma Z_{it} + \eta_t + e_{it} \quad (2)$$

In order to deal with this issue, we could remove the fixed effect by differencing

$$\Delta Y_{it} = \theta \Delta Y_{it-1} + \beta \cdot \Delta NDAC_{it} + \gamma \Delta Z_{it} + \Delta \eta_t + \Delta e_{it} \quad (3)$$

The problem here is that the differenced residual, Δe_{it}, is correlated with the lagged dependent variable, ΔY_{it-1}, leading to non-consistent OLS estimates. Angrist and Pischke (2008) suggested that one solution is to use Y_{it-2} as an instrument for ΔY_{it-1} in [3]. When the sample is small, another strategy is to check the robustness of our findings using alternative identifying assumptions. Furthermore, we also need to consider two other issues: the non-stationarity of macroeconomic variables (Martins, 2011) and potential cross-section dependence (Eberhardt & Teal, 2011)[4]. Thus, this paper applies the Driscoll and Kraay (1998) standard error correction for cross-sectional dependence on equation estimation [3].

The paper also presents results of the System-GMM estimator with Windmeijer's (2005) correction of standard errors for finite sample bias because of his popularity in empirical analysis despite recent research (see Bun and Windmeijer (2010) and Hayakawa (2007)) suggesting that "system" GMM estimators can be seriously biased.

3.2 Data

The data on control variables used in this article were mainly collected from the IMF's World Economic Outlook (WEO) and the World Bank's World Development Indicators (WDI). Our data cover 82 LICs over the period 1980–2010.

[4] Unit root, panel co-integration and cross-section dependence tests are presented in the Appendix.

The first part of data on foreign aid of non-DAC donors come from the OECD online statistics database. At present, 20 countries beyond the DAC membership report their aid flows to the DAC: Republic of China (Taiwan), Cyprus, Czech Republic, Estonia, Hungary, Iceland, Israel, Kuwait, Latvia, Liechtenstein, Lithuania, Malta, Poland, Romania, Saudi Arabia, Slovak Republic, Slovenia, Thailand, Turkey and the United Arab Emirates. The overall non-DAC aid data are estimated by the OECD based on various sources, notably data published by major non-DAC donors: China, India, Brazil, the Russian Federation and South Africa.

In 2010, the PLAID (Project-level Aid) and Development Gateway compiled "AidData," which is designed to address some of the limitations of the OECD-CRS dataset. A major advantage of AidData is that it includes more data from non-DAC donors. Data were collected from various sources, such as annual reports, media reports, public websites, and the statistical agencies of the donors. The last AidData project "*China-Africa aid database*" (released in April 2013) compiled all Chinese development finance to Africa from 2001 to 2011 using a media-based data collection methodology. Given that much of the discussion about new donors has centered on China's role in development cooperation, and the differences between its approach to development cooperation and the DAC principles, we performed robustness analyses using the data on China Aid to Africa.

Even if OECD-CRS data and AidData on China aid to Africa do not give the full picture of the development of finance activities of emerging donors, we believe that in using both datasets, we can build a representative view of recipient country perceptions of the new balance in the aid landscape.

For the measure of absorption rate of aid flows we used the Net Aid Transfers (NAT) data collected from the Center for Global Development (CGD). Arguing that OECD-CRS data are not appropriate to estimate the 'true' amount of aid, Martins (2011) collected data from central banks for his analysis on aid absorption and spending in African countries. The NAT dataset also tries to overcome this aid measurement issue with broader coverage.

Variables

Our key independent variables are measures of emerging donor influence in development assistance proxied by emerging donor total ODA and China specific ODA. We control for DAC aid fragmentation. The purpose is to separate the effect of increasing aid fragmentation from the changes related to non-DAC aid allocation. We follow Kimura et al (2012) and calculate the Herfindhal-Hirschman index (HHI) of aid shares. The HHI is calculated by taking the sum of squared aid shares of all donors:

$HHI = \sum_{i=1}^{N} s_i^2$, where donor i's aid share in total aid received is defined as $s_i \equiv aid_i / total.aid$.

The donor fragmentation variable is obtained by subtracting the HHI from 1.

Increased aid can serve three purposes: an increase in reserve accumulation, an increase in capital outflows, and an increase in the non-aid current account deficit (Hussain *et al*. 2009). To obtain estimates for absorption response to changes in aid, we need to control for factors that may move the current account balance. These other variables include lagged dependent variable, the level of economic development, the existing debt burden, the level of inflation, the level of public investment and economic structure (agriculture versus industry).

3.3 Results

Table 1 presents the results for the System-GMM, First difference, and Fixed Effects estimators of the aid absorption rate equation. The coefficient on the *NDAC* variable is positive and statistically significant, suggesting that countries welcoming emerging donor aid increase their aid absorption rate. These findings sustain the hypothesis that the presence of emerging donors in development cooperation would strengthen the ability of recipients to engage with donors on their own terms and finally use their overall funds more effectively. Our results are robust to the Driscoll-Kraay standard error correction.

Although the results seem appealing, they should be interpreted with caution since we faced some data limitations with the evaluation of emerging donor activity, as discussed in section 3.2. To check the robustness of our findings, we also present results of aid absorption analysis in African countries (given the presence of China as a strong economic partner) and proxy emerging donor influence in development cooperation[5] using the data on China Project-level aid to African countries over the period 2000-2011 published by AidData (Table 2).

The coefficient on the *China Aid* variable is statistically significant. Our results indicate that during the last decade, African countries succeeded in translating the presence of emerging donors into a strategic policy to improve their macroeconomic management of aid flows and control over the development agenda. Moreover, in comparison to the China influence variable, the emerging donor influence variable has a lower significativity, demonstrating that more than the presence of new donors outside of the DAC, the emerging influence of donors with policies not related to the DAC increases the bargaining power of recipients over the development agenda. This finding could be related to Greenhill *et al*. (2013), Sato *et al*. (2011) and Roussel (2013), who all found that fiscal authorities of some recipients do not want new donors to cooperate with traditional donors, preferring to deal with these donors separately to control the concurrence among them and to increase their empowerment over the development agenda.

Our analysis also indicates other interesting findings about aid absorption. The first one concerns public investment level. The coefficient on the *Public Investment* variable is negative and statistically significant, describing a negative effect of public investment on the absorption rate. In fact, a substantial percentage of aid inflows went to finance public investment expenditures, leading to a crowding out effect of the private sector that reduces the absorption rate of aid. Furthermore, as suggested by the negative and statistically significant coefficient of *Agriculture Value Added*, the less the economy structure is oriented towards manufacturing and industry, the less the domestic economy would be able to absorb aid flows. Finally, the coefficients on *Inflation rate* and *Debt Service* show that macroeconomic instability and debt burden are important issues to deal with when exploring the question of the absorption of aid flows by recipient countries[6].

[5] As explained in section 2 given the small sample the only empirical strategy consists the check the robustness of our findings using alternative identifying assumptions. Fixed effect and First difference estimators providing boundaries values of the estimate effect.

[6] About the macroeconomic instability (proxied by the inflation rate) two challenging hypotheses could be consider: The stabilizing hypothesis expressing the fact that aid is more effective (thus more absorbed) in period of instability (Table 1) and a more classic hypothesis explaining that macroeconomic instability would reduce the capacity of domestic economy to absorb aid flows (Table 2).

4. Conclusion

The aid landscape is changing, with emerging donors increasing their influence in development cooperation. Even though recent country case studies show that some countries adopted active strategies to welcome emerging donors and deal with the additional transaction cost pressures, we do not clearly understand the macroeconomic impact of such policy given the specificities of emerging donor aid allocation. By spurring competitive pressures in aid architecture, they are introducing flexibility into what was formerly a traditional donor-driven space, enhancing local ownership of the development agenda. This article informs our understanding of how emerging donors can influence development cooperation relationships and fiscal policies in developing countries.

Our empirical results indicate that during the last two decades, countries receiving an increasing amount of emerging donor aid have better aid absorption rate. Some countries succeed in translating the presence of emerging donors into a successful strategic policy to improve their macroeconomic management of aid flows and control over the development agenda. Moreover, we found that African countries benefit from the competition between traditional donors and China, at least in terms of better aid absorption rate.

However, these results should be interpreted with caution. Firstly, there are important caveats to drawing a final conclusion about the net gain for recipient countries because our framework does not address the transaction costs related to the cooperation with emerging donors. Given also the problem of data availability about emerging donor action, additional empirical analysis and country case studies are necessary to fully understand the recipient perspective about the increasing influence of emerging donors in aid architecture.

References:

Adam, C., S. O'Connell, E. Buffie, and C. Pattillo (2009) Monetary Policy Rules for Managing Aid Surges in Africa. *Review of Development Economics* 13(3), pp. 464–490.

Aiyar, S. and U. Ruthbah (2008) Where did all the aid go? An empirical analysis of absorption and spending. *Working Paper 08/34, International Monetary Fund*, Washington, DC.

Angrist, J. D., and J. S. Pischke (2008). *Mostly harmless econometrics: An empiricist's companion*. Princeton university press.

Arellano, M., and S. Bond (1991) Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. *Review of Economic Studies* 58, 277–297.

Arellano, M. and O. Bover (1995) Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics* 68, 29–51.

Arellano, C., Bulir, A., Lane, T. and L. Lipschitz (2009) The dynamic implications of foreign aid and its variability. *Journal of Development Economics* 88, 87–102.

Berg, A., Aiyar, S., Hussain, M., Roache, S., Mirzoev, T. and A. Mahone (2007) The macroeconomics of scaling up aid: lessons from recent experience. *Occasional Paper 253, International Monetary Fund*, Washington, DC.

Berg, A., T. Mirzoev, Portillo, R. and L.F. Zanna (2010) The Short-Run Macroeconomics of Aid Inflows: Understanding the Interaction of Fiscal and Reserve Policy. *Working Paper 10/65, International Monetary Fund*, Washington, DC

Buffie, E., O'Connell, S. and C. Adam (2009) Fiscal inertia, donor credibility, and the monetary management of aid surges. *Journal of Development Economics* 93, pp. 287-298

Djankov, S., Montalvo, J. G. and M. Reynal-Querol (2009) Aid with Multiple Personalities. *Journal of Comparative Economics* 37, pp. 217–229.

Dreher, A., Nunnenkamp, P. and R. Thiele (2011) Are 'New' Donors Different? Comparing the Allocation of Bilateral Aid Between non-DAC and DAC Donor Countries. *World Development* 39 (11), pp. 1950-1968.

Driscoll, J. C. and A. C. Kraay (1998) Consistent Covariance Matrix Estimation with Spatially Dependent Panel Data. *Review of Economics and Statistics* 80, 549-560.

Easterly, William (2007) Are Aid Agencies Improving? *Economic Policy* 22:633–678.

Eberhardt, M. and F. Teal (2011) Econometrics for Grumblers: A New Look at the Literature on Cross-Country Growth Empirics. *Journal of Economic Surveys* 25(1), pp.109-155.

Foster, M. and T. Killick (2006) What Would Doubling Aid Do for Macroeconomic Management in Africa? *Mimeo* (London; Overseas Development Institute).

Greenhill, R., Prizzon, A. and A. Rogerson (2013) How are developing countries managing the new aid landscape? *Overseas Development Institute Report*

Harrison, G (2004) The World Bank and Africa. The Construction of Governance States. *Routledge: London and New York.*

Heller, P (2005) Pity the finance minister: issues in managing a substantial scaling up of aid flows. *Working Paper 05/180, International Monetary Fund*, Washington, DC.

Hudson, J. and P. Mosley (2008) Aid Volatility, Policy and Development. *World Development* 36, pp. 2082–2102.

Hussain, M., Berg, A. and S. Aiyar (2009) The macroeconomic management of increased aid: policy lessons from recent experience. *Review of Development Economics*, 13(3), pp. 491–509.

Kimura, H., Mori, Y. and Y. Sawada (2012) Aid Proliferation and Economic Growth: A Cross-Country Analysis. *World Development* 40 (1), pp. 1-10.

Knack, S. and A. Rahman (2007) Donor fragmentation and bureaucratic quality in aid recipients. *Journal of Development Economics* 83, pp. 176-197

Kragelund, P (2008) The Return of Non-DAC Donors to Africa: New Prospects for African Development? *Development Policy Review* 26 (5), pp. 555-584

Manning, R. (2006) Will 'Emerging Donors' Change the Face of International Co-Operation? *Development Policy Review*, 24(4), pp. 371-385.

Martins, P.G. (2011) Aid Absorption and Spending in Africa: A Panel Cointegration Approach. *Journal of Development Studies* 47(12), pp. 1925-1953.

Morrissey, O. (2012) Aid and Government Fiscal Behaviour: What Does the Evidence Say? *UNU-wider Working paper* No. 2012/01.

Naim, M. (2007) Rogue aid. *Foreign Policy* 159, pp. 95-96.

Osei, R., Morrissey, O. and T. Lloyd (2005) The Fiscal Effects of Aid in Ghana. *Journal of International Development* 17, pp. 1037-1053.

Otim, S. (1996) Foreign Aid and Government Fiscal Behaviour in Low-income South Asian Countries. *Applied Economics* 28, pp. 927-933.

Ouattara, B. (2006) Foreign aid and government fiscal behaviour in developing countries: Panel data evidence. *Economic Modelling* 23, pp. 506– 514.

Pesaran, H., Shin, Y. and R. Smith (1999) Pooled mean group estimation of dynamic heterogeneous panels. *Journal of the American Statistical Association* 94(446), pp. 621–634.

Roussel, L.W. (2013) The changing donor landscape in Nicaragua: rising competition Enhances ownership and fosters Cooperation. *Journal of International Development* 25, pp. 802-818.

Sato, J., H. Shiga, Kobayashi, T. and H. Kondoh. (2011) Emerging Donors from a Recipient Perspective: An Institutional Analysis of Foreign Aid in Cambodia. *World Development* 39 (12), pp. 2091-2104.

Walz, J. and V. Ramachandran (2011) Brave New World: A Literature Review of Emerging Donors and the Changing Nature of Foreign Assistance. *CGDEV Working Paper*

Whitfield, L. (Eds). (2008) The Politics of Aid. African Strategies for Dealing with Donors. *Oxford University Press*: Oxford.

Windmeijer, F. (2005) A finite sample correction for the variance of linear efficient two-step GMM estimators. *Journal of Econometrics* 126, 25–51.

Woods, N. (2008) Whose aid? Whose influence? China, Emerging Donors and the Silent Revolution in Development Assistance. *International Affairs*, 84(6), pp. 1205-1221.

Regressions Results

Table 1: Estimates of the effects of emerging donors presence on aid absorption rate in LICs

[1980-2010]	(1)	(2)	(3)	(4)
	Annual		3-Year average	
	S-GMM	IV-FD-DK	S-GMM	FE-DK
NDAC Influence	0.031** [0.01]	0.002** [0.0007]	0.02** [0.008]	0.23*
Trade intensity with NDAC	0.0007 [0.0005]	-0.0004 [0.0003]	0.000 [0.0001]	-0.0005** [0.0002]
Inflation rate	-0.002 [0.058]	0.024** [0.01]	0.005 [0.009]	0.002 [0.003]
Aid Fragmentation	6.63 [26.8]	-3.92 [4.36]	23.4 [21.1]	49.3 [40.79]
Debt Service	-0.056 [0.39]	-0.16*** [0.01]	0.05 [0.24]	-0.69** [0.21]
Public Investment	-2.80* [4.04]	-1.34*** [0.18]	-0.86 [0.63]	-3.02*** [0.82]
Financial Openness	4.42 [3.97]	0.81 [0.54]		
Agriculture Value Added	1.75 [1.25]	-1.49*** [0.109]		
Intercept	14.6 [18.2]		-13.2 [12.11]	-41.9 [22.2]
Observations	821	572	350	350
R2		0.80		0.15
AR(2)	0.34		0.70	
Hansen OID	0.74		0.54	
Instruments	48		18	
N° of countries	55	56	58	58

Note: Standard errors in brackets. Dependent variable is the absorption rate of aid. Lagged Dependent variable and Time dummies included but not reported.Equations (1) and (3) are estimated using the two-step System-GMM with Windmeijer (2005) correction of standard errors. Equations (4) = Fixed effect regression with Driscoll-Kraay standard errors correction.

IV-FD-DK = Instrumented First Difference as specified in Equation [4] with time dummies included but not reported, with Driscoll Kraay (1998) correction for potential cross-sectional dependence. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 2: Estimates of the effects of emerging donors presence on aid absorption rate in Africa

		(1)	(2)	(3)	(4)
		FD-DK	FD-DK	FE-DK	FE-DK
China Influence		0.55* [0.29]			1.00** [0.42]
NDAC Influence			0.028* [0.012]	0.24*** [0.06]	
Inflation rate		0.04 [0.06]	0.059 [0.05]	-0.035* [0.01]	-0.086** [0.04]
Fragmentation		-0.92 [5.83]	-0.94 [3.07]	0.019 [4.60]	-6.64 [8.25]
Debt Service		-0.17*** [0.04]	-0.15*** [0.03]	-0.17* [0.08]	0.013 [0.08]
Public Investment		-3.00*** [0.44]	-3.06*** [0.51]	0.15 [0.24]	-0.79 [0.67]
Agriculture Value Added		-0.58* [0.26]	-0.32* [0.15]	0.022 [0.43]	-0.34* [0.31]
Financial Openness		-5.02 [5.60]	-4.82 [6.24]	1.70 [4.13]	1.12 [4.64]
Intercept				-5.32 [12.7]	4.48 [7.98]
Observations		98	101	117	118
R2		0.23	0.24	0.13	0.14
N° of countries		31	31	32	31

Note: Standard errors in brackets. Dependent variable is the absorption rate of aid. Lagged Dependent variable and Time dummies included but not reported. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
FD-DK= First Difference regression with Driscoll-Kraay standard errors correction.
FE-DK= Fixed Effects regression with Driscoll-Kraay standard errors correction

Appendix

Summary Statistics of Aid and Fiscal Variables:

Variable	Mean	SD	Min	Max
Current Account Balance to GDP	-6.18	10.80	-124.56	34.84
NDAC share in total ODA	0.073	0.56	0	10.46
Aid Fragmentation index	0.68	0.18	0	1
Net Aid ratio	13.22	11.74	-2.56	146.6
Government consumption ratio	15.20	7.52	1.56	61.4

Panel Unit Root Tests

Levin, Lin & Chu t-stat

Lag	Absorb	Inv.P	ODA	Inflation	Debt S.	Gov. Exp
1	-17.10***	-6.43***	-16.08***	-9.93***	-8.80***	-2.45***
2	92.03	-1.76**	0.47	6.32	-2.46***	1.82

Breitung t-stat

Lag						
1	-1.91***	-1.21	-3.01***	-7.85***	-3.88***	-2.66***
2	0.15	-0.32	-1.41*	-0.77	-2.79***	-0.52

Im, Pesaran and Shin W-stat

Lag						
1	-10.01***	-3.09***	-7.97***	-9.82***	-6.63***	-1.90**
2	-1.62*	-2.34***	-6.01***	-3.28***	-3.94***	-0.59

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.
Notes: Test results generated by Eviews. The asterisks represent significance at the 10 per cent (*), 5 per cent (**), and 1 per cent (***) confidence levels.

Panel Cointegration Test

Series: Absorb Inv.P ODA Inflation Debt S. Gov. Exp Trade_NDAC

Pedroni Residual Cointegration test

	Statistic	Prob.
Panel v-Statistic	-2.835	0.997
Panel rho-Statistic	1.050	0.853
Panel PP-Statistic	-91.11	0.001
Panel ADF-Statistic	1.003	0.842

List of Countries:

Afghanistan, Angola, Burundi, Benin, Burkina Faso, Bangladesh, Belize, Bolivia, Bhutan, Central African Republic, Côte d'Ivoire, Cameroon , Republic of Congo, Republic Democratic of Congo, Comoros, Cape Verde, Djibouti, Egypt, Eritrea, Ethiopia, Fiji, Ghana, Guinea, Gambia, Guinea-Bissau, Equatorial Guinea, Guatemala, Guyana, Honduras, Haiti, Indonesia, India, Iraq, Kenya, Cambodia, Kiribati, Lao People's Democratic Rep, Liberia, Sri Lanka, Lesotho, Morocco, Moldova, Madagascar, Marshall Islands, Mali, Myanmar, Mongolia, Mozambique, Mauritania, Malawi, Niger, Nigeria, Nicaragua, Nepal, Pakistan, Philippines, Papua New Guinea, Korea Democratic Rep, Paraguay, Rwanda, Sudan, Senegal, Solomon Islands, Sierra Leone, El Salvador, Somalia, São Tomé and Principe, Swaziland, Syrian Arab Republic, Chad, Togo, Timor-Leste, Tonga, Tuvalu, Tanzania, Uganda, Vietnam, Vanuatu, Samoa, Yemen, Zambia, Zimbabwe.

Data description:

Variable	**Definition**	**Source**
Net ODA NAT	The Net Aid Transfers (NAT)	CGD data
Non-Dac Influence	ODA received from emerging donors	OECD-CRS
China influence	Project-level aid to African countries / number of projects implemented	AidData
CAB	Current account balance (% GDP)	WEO
Fragmentation	Aid fragmentation index	Authors
Trade intensity with NDAC	Bilateral trade with emerging donors	IMF-DOTS
Inflation	Inflation rate (CPI, percentage change)	WDI
Government size	General government final consumption expenditure (% of GDP)	WDI
GDP per capita	Gross domestic product per capita	WDI
Agri value added	Agriculture, value added (% of GDP)	WDI
Debt service	Debt service (% GDP)	WDI

A theoretical framework

The purpose of this section is to propose explore the idea of welcoming emerging donors as a credibility signal to the private sector and explain how the emergence of non-DAC donors could be used by recipients as a strategic move to improve the impact of their fiscal response to aid flows.

Our model derives from the conceptual framework in Buffie *et al.* (2010) and Berg *et al.* (2007):

Let suppose that all economic decisions in the private sector are assumed to be controlled by a representative agent who maximizes his expected lifetime utility and has preferences over a composite bundle of tradable and non-tradable goods, thus :

$$U = E_0 \sum_{t=0}^{\infty} \beta^t \frac{C_t^{1-\sigma}}{1-\sigma}$$

where $C_t = \left[\omega(C_t^T)^{-\mu} + (1-\omega)(C_t^N)^{-\mu}\right]^{-1/\mu}$ is a constant elasticity of substitution (CES) aggregator function, and ω is the weight households place on tradable consumption. The elasticity of substitution of consumption between tradables and non-tradables is 1/(1+μ).

The private agent receives labor income, rents capital to firms, and makes investment decisions. In addition, the private sector receives lump-sum transfers from the government. Thus, the private agent chooses asset holdings and expenditure that maximize his utility with the following wealth and budget constraints (WC and BC respectively):

WC : $W = m + \left(p/e\right) * b + F$

BC : $\dot{W} = pC + g + r * \left(p/e\right) * b - \chi m$

where $\chi = \dot{e}/e$ is the rate of currency depreciation, $m \equiv M/e$, M is domestic currency, r is the real interest rate, g is real lump-sum transfers received from government, foreign currency is F, and government bonds is B. Bonds are indexed to the price level P, so B=Pb, where $b \equiv B/P$.

- *Aid, public sector, and reserve accumulation*

When aid flows increase from X_0 to X_1 at t=0, the government and the private sector make expectations about the end of the aid surge with probabilities p_g and p_p. These probabilities determine the proportion of the increased aid spend by the government, or used as buffer stocks in central bank reserves, but also the success of the fiscal management policy of government due to the credibility level accorded by the private sector. Thus we have,

Public transfer: $g_1 = g_0 + \psi\left(X_1 - X_0\right)$ $\psi <= 1$

Reserves: $\dot{Z} = (1-\psi)(X_1 - X_0)$

ψ determines the fiscal management scenario chosen by the government, and according to Buffie *et al.* (2010) even in the best-case scenario the success of aid surge management depends on private agent expectations about government capability, and fears about a future period of

large fiscal deficits and high inflation, while the government is struggling to curtail expenditure after the end of the aid surge.

Following the "*absorb and spend*" scenario of Hussain *et al.* (2009) the government spends the extra aid inflow, and the central bank sells the foreign exchange in the currency market - corresponding to $\dot{Z} = 0$ and ψ=1:

(1) In the full credibility case, the public sector budget constraint is thus

$\dot{m} + \frac{p}{e}\dot{b} - \dot{Z} = g_1 + \frac{p}{e}rb - X_1 - \chi m$ with $\dot{b} = \dot{Z} = 0$

$\dot{m} = g_1 + \frac{p}{e}rb - X_1 - \chi m$

(2) low credibility case:

As shown by the wealth constraint, the private sector divides its wealth between domestic currency M, foreign currency F, and government bonds B. Therefore, in a low credibility period, private agents believe that the aid surge is temporary, and have concerns about the government's capacity for expeditious fiscal retrenchment (Buffie *et al*. 2010).
They move their wealth allocation towards F and M, generating capital flight and high inflation. Thus, the public sector budget constraint becomes:

$\dot{m} = g_1 + \frac{p}{e}rb - X_1 - \frac{p}{e}\dot{b} - \chi m$

A part of the fiscal deficit is now financed by issuing debt. The intuition here is that the increase in current account deficit (CAD) will be higher in the full credibility scenario: $CAD_{FC} > CAD_{LC}$,

where $CAD = C+g - Investment - (Transfert+Income) - (r_{t-1}-1)b_{t-1}/\pi$;

If the private sector fears that after the aid surge there might be a period of large fiscal deficits and high inflation, their expectations could lead to capital outflows.

Given that the effectiveness of aid flow macroeconomic management depends also on private sector expectations, we want to investigate if welcoming emerging donors could be used by recipient countries as a strategy to influence private sector anticipation - by sending a signal that there would not be a collapse in aid flows and that they control the development agenda - and so achieve better aid management.

Increased aid can serve some combination of three purposes: an increase in reserve accumulation, an increase in capital outflows, and an increase in the non-aid current account deficit (Hussain *et al*. 2009). The rate of absorption of an increase in aid is then defined as the change (variation) in the current account (excluding aid) deficit as a share of the change in aid inflows:

$$Absorption\ of\ aid = \Delta(Non\text{-}aid\ current\ account\ deficit)/\Delta Aid.$$