When is aid destabilizing?
Analysing profiles of aid flows in four low income countries,

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Abstract:

The paper, building on the Chauvet and Guillaumont (2009) analysis of aid volatility, examines through country-case studies the cyclicality and stabilizing profiles of aid inflows. Chauvet and Guillaumont (2009) identified four different profiles of aid: Procyclical - Stabilizing, Procyclical - Destabilizing, Contracyclical – Stabilizing, and Contracyclical- Destabilizing. We analyze external and domestic factors explaining how these profiles occurred and what are their macroeconomics consequences and implications for aid management.

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-http://www.socialsciences.manchester.ac.uk/subjects/economics/ourresearch/cgbcr/esrc-dfid-project/
- http://www.ferdi.fr/en/programme-project/ financial-volatility

Introduction:

In many developing countries, the volatility of aid can be an important problem of macroeconomic management. Recent empirical studies have argued that large fluctuations in aid inflows can result in instability of employment, changes in government budgets and uncertainty about the degree to which resources will be utilized in the future (Lensink & Morrisey, 2000; Pallage & Robe, 2003; Arellano et al., 2005; Arellano, Bulir, Lane, & Lipschitz, 2008; Bulir and Haman, 2008; Hudson & Mosley, 2008). Prati and Tressel (2006) estimated that average annual absolute changes in aid inflows can easily exceed 10 per cent of GDP Thus, it becomes critical to understand how countries deal with aid volatility.

Table A. Aid and other flows volatilities in LICs and SSA (2000-2010)

	Aid	CPA[a]	Exports	Output	Remittances	Gov. Revenue
LICs	0.32	0.28	0.14	0.14	0.29	0.16
SSA	0.34	0.30	0.16	0.15	0.35	0.25

Source : Author's calculation using OECD-CRS and WDI data. Aid inflows (Net aid disbursement) are measured in absolute terms, in constant dollars (100 = 2000) by deflating them using GDP deflator of the US. Volatilities are obtained by taking standard deviations of the series cycles[1] (obtained using a H-P filter with λ=7) over the period 2000-2010. a: country programmable aid.

Volatilities of main macroeconomic flows in developing countries. Figure A (p.2) shows over three decades (from 1980) the evolution of the volatility of government expenditure, government revenue and aid across regions. No clear picture emerges. Indeed the volatility of aid is much higher than that of government revenue, it has increased only compared to the 1980s and in those regions where the aid inflows are low (Latin America) or recent (Eastern Europe). Aid is more likely volatile when its level is low. Given that aid finances a large fraction of infrastructure investment in LICs, an aid shortfall could bring the process to a halt if no alternative sources of financing are available. In addition, in response to high volatility, countries may opt to reduce the desired level of investment. Figure B (p.2) shows that it is a common feature for all aid recipients.

[1] Following Pallage and Robe (2001) and Rand and Tarp (2002), an H-P filter (Hodrick and Prescott, 1997) can be used to extract the trend and cycle components of aid and of the reference flow, here exports. The H-P filter decomposes a series, x_t, (where x_t is the logarithm of the observed series Xt) in a cycle, x_t^c , and a trend, x_t^g, by minimizing the following function:

$$\sum_t \left(x_t - x_t^g\right)^2 + \lambda \sum_t \left[\left(x_{t+1}^g - x_t^g\right) - \left(x_t^g - x_{t-1}^g\right)\right]^2$$

where λ is the smoothing parameter of x_t^g. The volatilities of aid and exports are measured by the respective standard errors of their cycles.

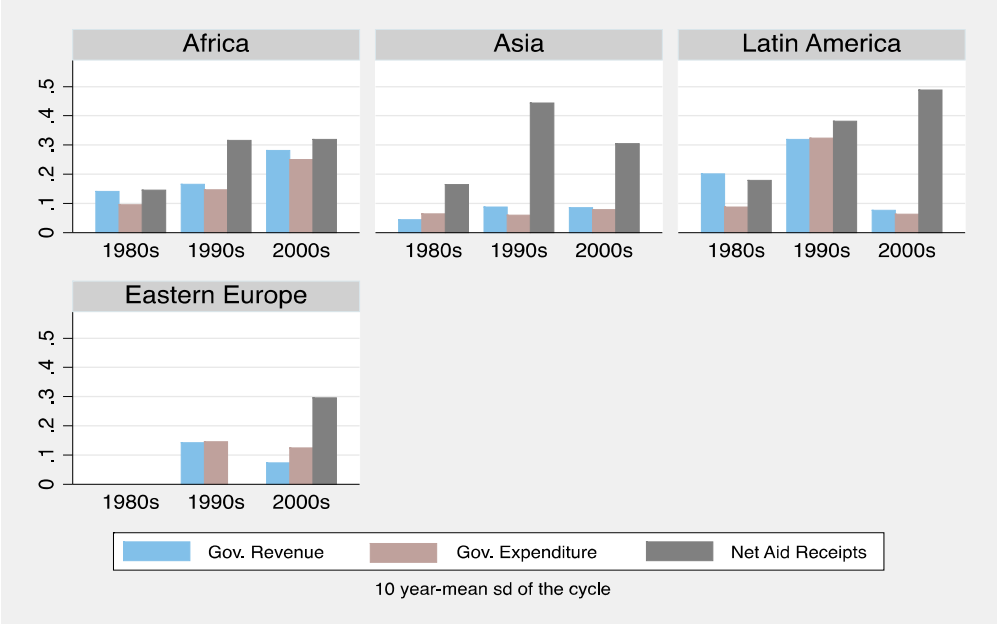


Figure A: Aid is more volatile than government revenue and expenditure.
Source : Authors calculation using OECD-CRS and WDI data.

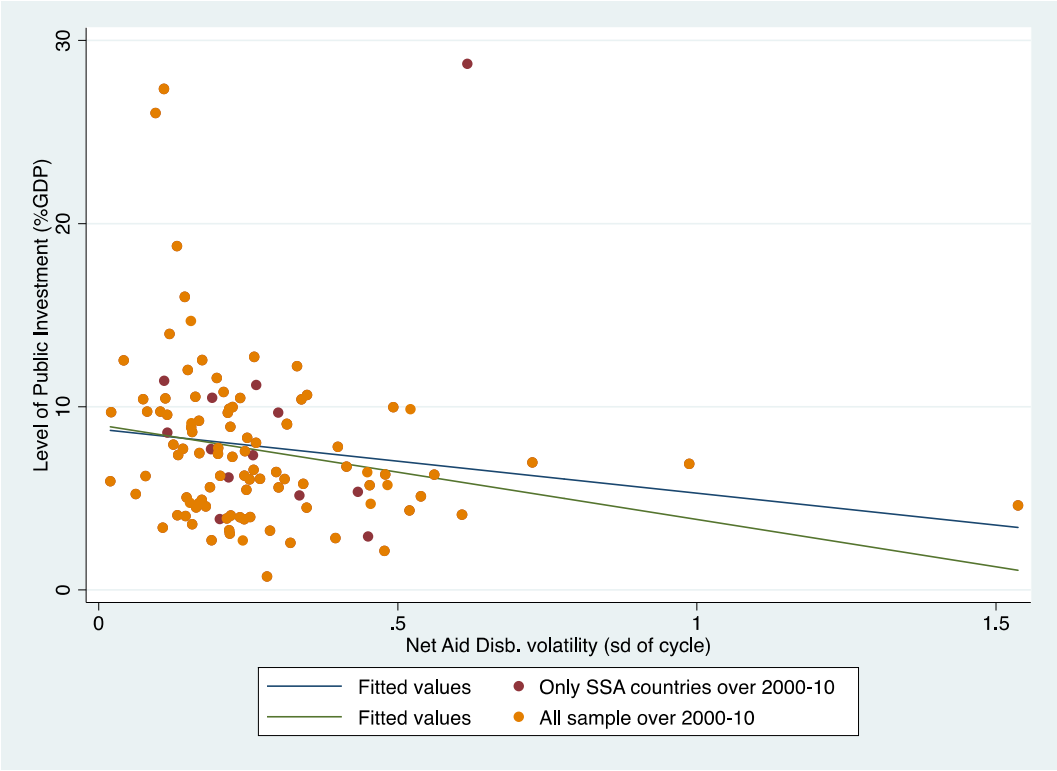


Figure B : No simple relationship between aid volatility and the level of public investment
Source : Authors calculation using OECD-CRS and WDI data.

It is often argued that aid volatility reduces investment and government expenditure shares. Some authors like Kathavate & Mallik (2012) or Hudson & Mosley (2008) draw a connection between higher aid volatility, consumption volatility, and investment. However there does not seem to be a clear relationship between aid volatility and the investment to GDP ratio, as shown in Figure 2.

Of course these two previous figures only give a broad picture and by no way represent the impact of aid volatility, but they invite to consider aid volatility in its context, A major factor conditioning the impact is of course the average level of the aid to GDP ratio.

If recently more studies have shed light on the negative macroeconomic impact of aid volatility, as aid volatility may potentially exacerbate the impact of macro- economic shocks on manufactured exports (Arellano et al; 2005) or on final output (Agénor & Aizenman ; 2010; Celasun and Walliser ; 2005), another strand of research has focused on the causes of aid volatility to evaluate his macroeconomic impact. Aid volatility may depend on its chief purpose : it might be to mitigate the negative effects of external shocks on economic growth (Guillaumont and Chauvet, 2001; Chauvet and Guillaumont, 2004). When aid cushions the negative effects of external shocks on economic growth, aid volatility, rather than being a problem, is a solution. Countries facing exogenous shocks need to receive counter-cyclical aid flows.

Is Aid pro-cyclical or counter-cyclical? Thus, to assess the consequences of aid volatility, a first issue to be addressed is whether the aid flows are pro-cyclical or counter-cyclical. The pro-cyclical or counter-cyclical character of aid flows can be estimated through the correlation between their own cycle (measured by the deviation to the trend) and the cycle of exports of goods and services[2], that are the main exogenous flow to which aid flows can be compared. A positive contemporaneous correlation means that aid receipts are procyclical with regard to exports, whereas a negative one indicates that aid flows are countercyclical with regard to exports[3]. Referring to exports, Table B, using the global adjustment method of cycle estimation, suggests that for the sample of sub-saharan countries, during the 2000s, aid was more pro-cyclical than contra-cyclical with respect to exports (28 positive correlations

[2] The cyclicality is analyzed with respect to exports, because exports volatility, which results to a large extent from commodity price shocks, is more likely to be exogenous than national income or fiscal revenue volatility (Chauvet and Guillaumont; 2009).

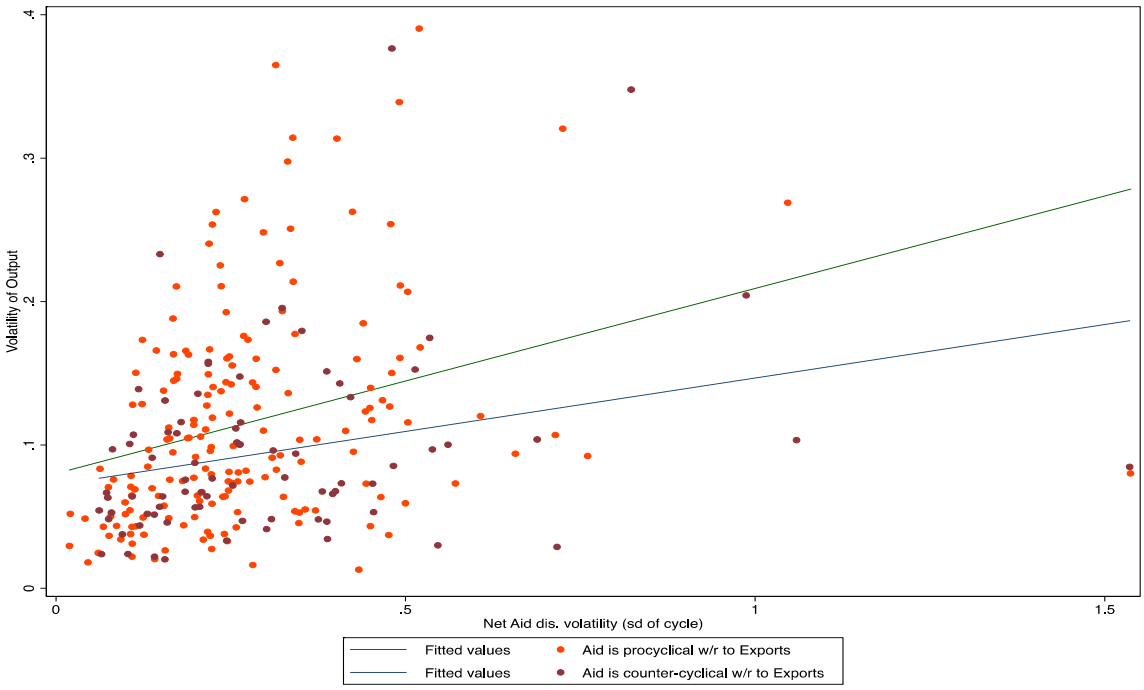
[3] Previous studies on aid volatility conclude that aid is mostly pro-cyclical (Bulír˘ and Hamann, 2008; Pallage and Robe, 2001).

and 17 negative correlations). Moreover Figure C suggests that over the period 2000-2010,

Table B. Volatilities across Sub-sahara African countries, 2000-2010

procyclical aid seems more associated to output fluctuations than counter cyclical aid. When volatile and procyclical aid flows will fail to assist in, or even work against, consumption smoothing (Bulir and Hamann, 2008).

Figure C: Macroeconomic Fluctuations and Aid Volatility: Does Cyclicality Matters?



Source : Author's calculation using OECD-CRS and WDI data. Note: Volatility is measured with10-years standard deviation of series cycle

Country	Aid	Exports	Gdp_pc	Govt Revenue	Aid cyclicality	LIC
Cote d'Ivoire	1.54	0.11	0.02	0.03	0.77	0
Sierra Leone	0.99	0.28	0.05	0.41	-0.94	1
Seychelles	0.78	0.42	0.04	0.09	0.51	0
Equatorial Guinea	0.62	0.38	0.11	0.29	0.44	0
Cameroon	0.61	0.12	0.01	0.16	0.33	0
Swaziland	0.54	0.08	0.01	0.08	-0.16	0
Liberia	0.52	0.41	0.14	0.22	0.05	1
Congo. Dem. Rep.	0.48	0.32	0.03		-0.32	1
Nigeria	0.42	0.30	0.06	0.84	0.34	0
Togo	0.40	0.06	0.02	0.09	-0.16	1
Burkina Faso	0.35	0.12	0.01	0.22	0.26	1
Eritrea	0.34	0.14	0.03	0.16	-0.03	1
Mauritania	0.34	0.27	0.04	0.13	0.23	0
Madagascar	0.34	0.08	0.04	0.20	0.02	1
Sao Tome and Principe	0.33	0.11	0.33	0.36	0.31	0
Gambia. The	0.31	0.23	0.02	1.78	0.47	1
Chad	0.31	0.50	0.08	0.17	0.75	1
Central African Republic	0.31	0.12	0.02	0.22	-0.58	1
Zimbabwe	0.30	0.11	0.06		-0.53	1
Angola	0.30	0.22	0.05	0.20	-0.20	0
Zambia	0.29	0.16	0.01	0.15	0.47	0
Burundi	0.26	0.18	0.02	0.09	-0.30	1
Lesotho	0.26	0.17	0.01	0.06	0.55	0
Namibia	0.26	0.08	0.03	0.05	-0.39	0
Comoros	0.26	0.17	0.03	0.10	-0.12	1
Guinea	0.25	0.08	0.01	0.11	0.27	1
Tanzania	0.25	0.09	0.01	0.04	0.45	1
Niger	0.25	0.07	0.02	0.26	0.38	1
Ghana	0.24	0.14	0.01	0.16	0.62	0
Sudan	0.24	0.30	0.02	0.16	0.45	0
Guinea-Bissau	0.23		0.03	0.21		1
Benin	0.22	0.15	0.01	0.08	0.56	1
Somalia	0.22					1
Mali	0.22	0.13	0.03	1.30	0.47	1
Senegal	0.21	0.06	0.01	0.04	0.58	0
Kenya	0.21	0.04	0.02	0.07	-0.11	1
Rwanda	0.20	0.20	0.03	0.12	0.13	1
South Africa	0.19	0.06	0.02	0.03	0.17	0
Uganda	0.19	0.12	0.02	0.03	0.31	1
Ethiopia	0.14	0.12	0.04	0.09	0.11	1
Cape Verde	0.13	0.16	0.04	0.05	-0.09	0
Mozambique	0.12	0.11	0.02	0.09	-0.05	1
Malawi	0.11	0.13	0.04		0.61	1

Source : Authors calculation using OECD-CRS and WDI data.
Notes:Volatilities are obtained by taking standard deviations of the series cycles (obtained using a H-P filter with λ=7) over the period 2000-2010. Cyclicality is the correlation between their aid cycle and the cycle of exports . A positive contemporaneous correlation means that aid receipts are procyclical with regard to exports, whereas a negative one indicates that aid flows are countercyclical with regard to exports.

Stabilizing or destabilizing character of aid with respect to exports. The previous remarks are focused on the character pro cyclical or countercyclical of aid (with respect to exports). But this feature of aid does not necessarily correspond to a de-stabilising or stabilising character of aid (still with respect to exports). In order to measure the stabilizing character, we rely on Guillaumont (2005) and Chauvet and Guillaumont (2009) who measure the stabilizing character of aid with regard to exports by taking the difference between the volatility of exports and the aggregate flow (exports+aid). The stabilizing mechanism is expressed as follows:

Stabilization index of Aid = volatility of Exports - volatility of (Exports + Aid).

If this difference is positive (negative), foreign aid has a stabilizing (destabilizing) character with respect to exports. In this paper we estimate the stabilizing profile of aid inflows over the period 2000-10. As above, volatilities are obtained by taking standard deviations of the cyclical component of our aid and exports series over a given time period[4].

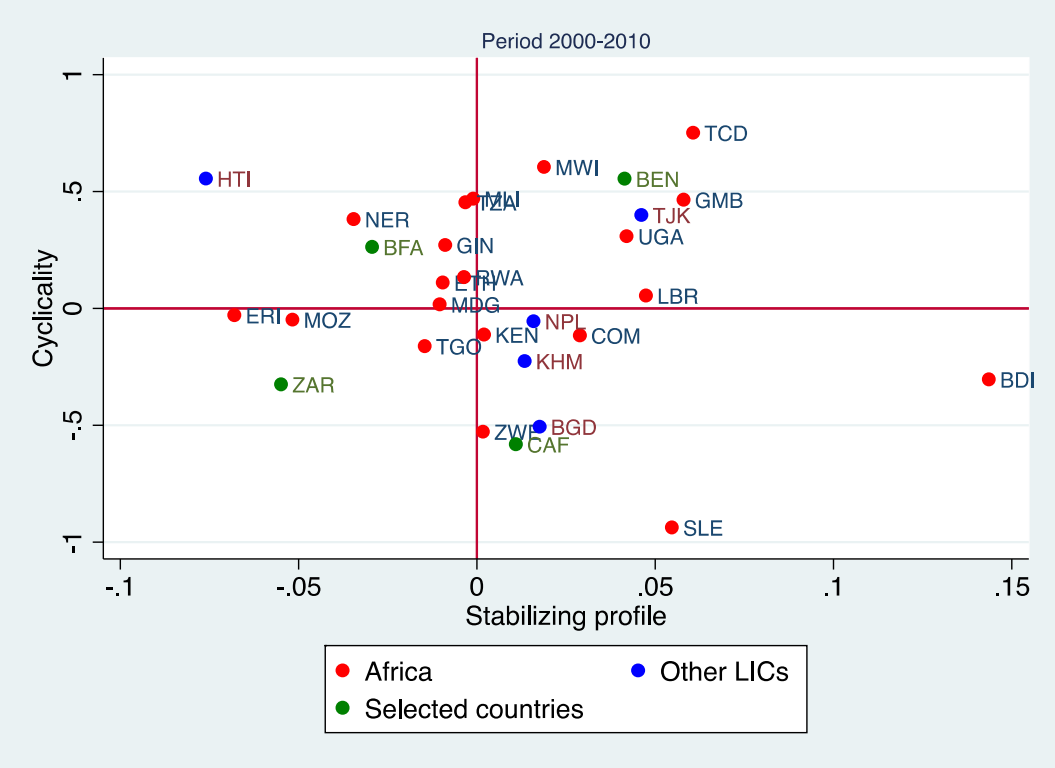
Identification of country case studies

Our analytical work is based on a country-case study approach, exploring the implications of volatile global development assistance under different scenario and provides policy recommendations for developing country governments and development partners to deal with macroeconomic fluctuations. Thus we identified four French speaking low-income countries in sub-Saharan Africa which received volatile aid flows; each of them corresponding specifically to one of the different aid profiles identified by Chauvet and Guillaumont (2009):

- Procyclical and Stabilizing
- Procyclical and Destabilizing
- Contracyclical and Stabilizing
- Contracyclical and Destabilizing.

[4] The potential stabilization of output shocks through official assistance flows has been investigated through cross-countries analysis. Several papers argued that aid works better in an unstable environment because of its dampening effect (e.g. Guillaumont and Chauvet, 2001; Chauvet and Guillaumont, 2009).

Figure 1. Cyclicality and Stabilizing Profile of Aid Inflows in LICs over 2000-2010



Source : Author's calculation using OECD-CRS and WDI data.

We selected Benin (Procyclical and Stabilizing), Burkina Faso (Procyclical and Destabilizing), Central African Republic (Contracyclical and Stabilizing) and the Democratic Republic of Congo (Contracyclical and Destabilizing), and we try to explain how these profiles occurred and what are their macroeconomics consequences and implications for aid management[5].

Figure 2a: Evolution of aid and the aggregate flow "Aid + Export"

[5] Over the period covering the years 2000 to 2010, we have identified 13 aid recipient countries with pro-cyclical and stabilizing aid, 18 cases where aid flows have a pro-cyclical and destabilizing character, 10 countries with contra-cyclical and stabilizing aid, and 7 countries with contra-cyclical and destabilizing aid.

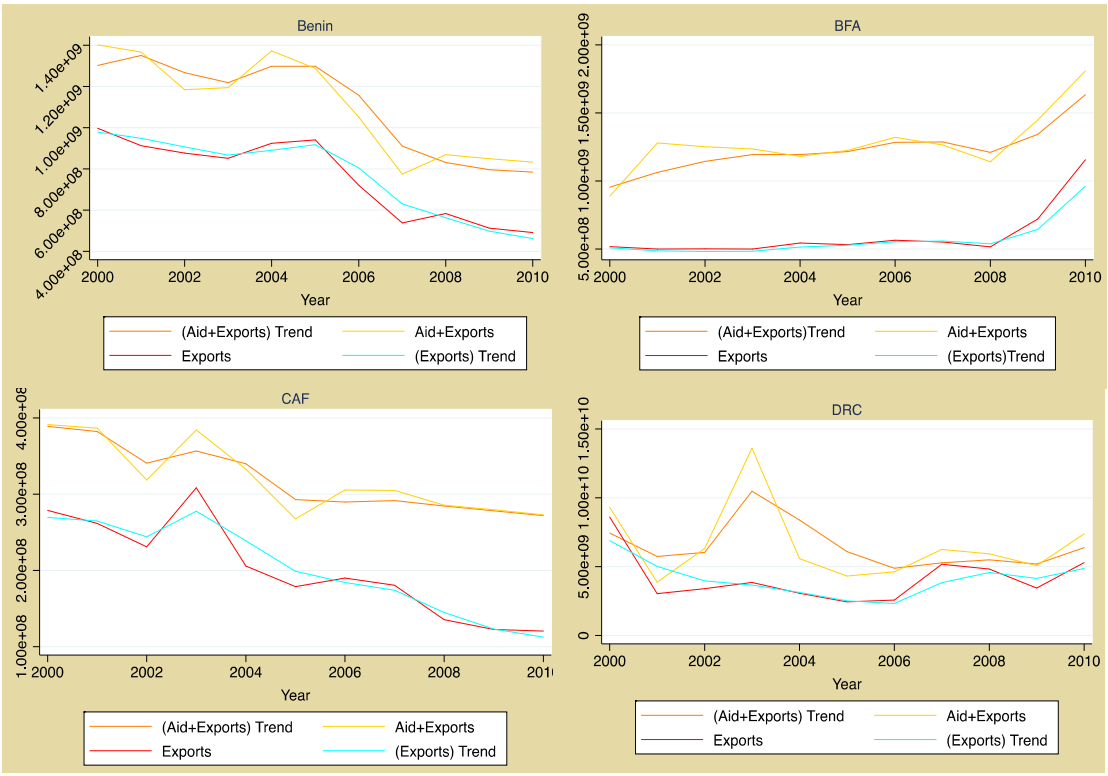
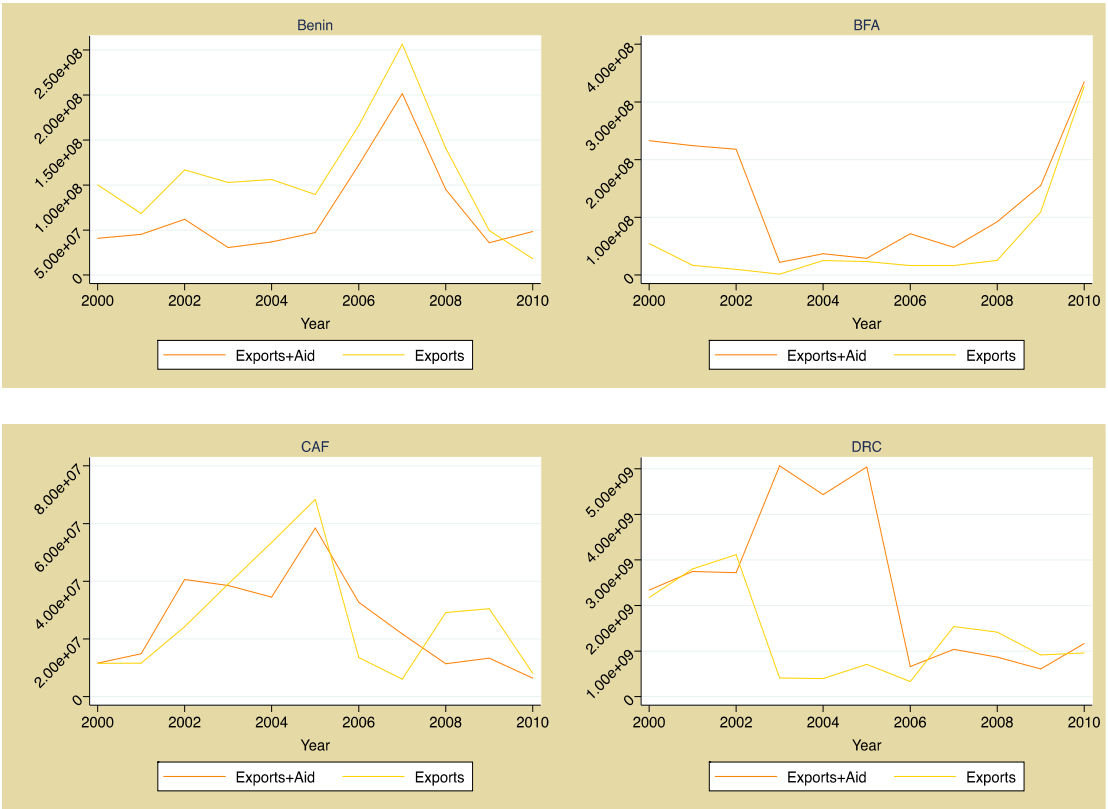


Figure 2b: Gap between Export and its trend, and between "Aid + exports" and its trend



Putting previous findings, discussed above, together, we can identify three policy questions of direct relevance through which we will appreciate the aid volatility:

- Does the composition of aid flows affect the cyclicality and the stabilizing effect aid?
- How governments' responses (in terms of expenditures and investment) to aid volatility influence the stabilizing profile of aid flows?
- Do administrative capacity constraints undermine the stabilizing function of aid?

The remainder of the paper is structured as follows. The first part describes the composition of the aid flows received by each country to explain their aid profile. In part 2 we present statistical evidences to illustrate the transmission of aid volatility to government revenue, and the composition of government expenditures. We have also established links between monetary and fiscal responses to aid flows and their stabilizing character. Finally, in part 3 we address the issue of administrative constraints to understand the different experiences of these four countries in the effective use of aid.

Part 1: The four cases in their context

In order to understand the different cyclical and stabilizing profiles observed in this analysis, a first step would consist in describing the domestic environments and the specific aid landscape faced by each country. This section will provide a first insight about how the economic, political, governance and aid landscape contexts are related to aid effectiveness.

A. Local Context and Composition of Aid inflows

The four countries on which this analysis is based - Benin, Burkina Faso (BFA), Central African Republic (CAR) and the Democratic Republic of Congo (DRC) - exhibit high foreign aid to GDP (aid/GDP) ratios and volatile foreign aid inflows. The average foreign aid/GDP ratios of the Benin and CAR is less than 10 percent for the period 2000-2010, while the average aid/GDP ratio for BFA over the period is 12.64 percent and 25.75 percent in DRC. These countries benefited from the general rise in aid over the past decade and in particular from the Heavily Indebted Poor Countries Initiative, which reduced debt-servicing costs and freed up resources for public spending (see Appendix A for additional statistics).
All four countries have experienced different environments; some enjoy relatively strong institutions, while in others policymaking is dominated by macroeconomic disarray, misgovernance, or postconflict reconstruction. Therefore, their experiences offer useful lessons in about the conditions affecting the cyclicality and stabilizing profile of aid flows.

Benin and BFA share a similar economic structure; a workforce that is primarily engaged in subsistence agriculture (60-80 percent). Both have poor infrastructure and all have poor natural resource endowments. They are relatively small countries, with high trade/GDP ratios, and dependent for their export earnings on a very narrow range of commodities. They have thus always been vulnerable to the terms-of-trade shocks that all of them have suffered. On the other side, CAR and DRC are resource rich and post-conflict states. Their fiscal resources have been affected by political instability and the quality of relationships with external donors.

Figure 1 (p.9) shows that over the period 2000-10, foreign aid is stabilizing in Benin and CAR while is destabilizing in BFA and DRC. To explain these different experiences, we document key properties of external aid flows from the point of view of the recipient country: their degree of volatility, and the way in which they covary with domestic

economic activity. Table 1.1 (p.12) describes the pattern of aid inflows for the four countries included in this study.

Table 1.1 : Foreign Aid Composition and Private Flows (average over 2000-2010)

		Benin	Burkina Faso	Central African Rep	Congo Dem Rep
Net Total ODA (%GDP)		9.46	12.65	9.01	25.76
Grants (%GDP)		10.41	12.60	12.08	24.44
ODA Multi (%GDP)		4.08	6.00	4.05	8.19
Budget Support (%ODA)		11.7	21.84	22.5	11.73
Project Aid (%ODA)		38 .37	36.67	48.4	36.1
Net Debt Forgiveness (%ODA)		0.397	0.31	0.502	7.82
Technical Cooperation (%ODA)		2.04	2.03	1.95	1.00
Emergency Response Aid (%ODA)		0.14	6.03	56.9	21.8
Number of Aid Relations[a]		23	29	17	29
Net Private Capital Flows (%GDP)		2.84	1.44	2.33	2.90

Source: OECD-DAC Statistics. a: Aggregate and sectoral aid fragmentation statistics detailed in Appendix

Benin (Procyclical and Stabilizing aid): A dynamic economic context and stable relationship with international partners

About 60% of total aid to Benin consists of bilateral aid. In pursuit of their growth and development strategy, the Beninese authorities aim to step up public investment in infrastructure and human capital over the medium term (IMF CR 08/169, 2008). Recent debt relief and continued prudent macroeconomic policies have widened the fiscal space in Benin.

The ratio of public debt service to fiscal revenue declined from 10.4 percent in 2002 to 3.5 percent in 2007. This has created a large fiscal space for the authorities to start implementing urgent infrastructure projects to reduce key growth bottlenecks that affect Benin's absorptive capacity, including the modernization of the Port of Cotonou, the improvement of electricity supply, and road rehabilitation. At the same time, prudent macroeconomic policies have been reflected in macroeconomic stability, higher growth, and strong revenue performance.

Burkina Faso (Procyclical and Destabilizing aid): Increasing Budget Support and Declining technical cooperation

Like Benin, Burkina Faso benefits from a stable aid relationship with donors. They received an increasing share of ODA in form of Budget Support. As shown by data in Table 1.1, since 2000 budget support represents now more than a third of ODA accounted for by the government of BFA[6,7].

However, in early 2000s, all forms of technical cooperation as well as investment projects declined substantially due to policy disagreements between the government and the international partners. Between 2002 and 2003 there was an overall drop of 15% while technical cooperation linked to investment projects decreased by more than 40%. France is traditionally the largest donor in SSA, followed by the Netherlands, Germany and Denmark, although French aid, unlike the others, is mainly debt relief instead of cash. These four countries have provided almost two-thirds of Burkina Faso's bilateral aid over the last ten years. Moreover, Burkina Faso has systematically received aid from multilateral agencies and they are relatively more important donors than in most countries in this case study. After broadly satisfactory results of three medium-term Poverty Reduction and Growth Facility

[6] Since the Paris Declaration on Aid Effectiveness, countries like Burkina Faso explicitly call for more budget support to increase their ownership over the development agenda (F&D IMF, 2005). Koeberle and Stavreski (2006) explain the emergence of, and increased emphasis on, budget support over the last decade by greater emphasis on country ownership, systems and absorption capacity and the recognition of the disruptive role of volatile and unpredictable aid. The transaction costs of delivering aid through projects became unacceptably high for countries with large numbers of aid projects and a multitude of donors, each with its own reporting schedules and accounting requirements. Furthermore, donors could force their priorities on governments and tie procurement to their own country contractors, leading to inefficient spending.

[7] However, Mavrotas and Ouattara (2007) found that both project aid and financial program aid exert a positive, significant effect on total expenditure, but that project aid also appears to increase capital expenditure, while financial program aid is associated with an increase in government consumption. This suggests that project financing is more likely to be stabilizing than budget support given the relative low absorption capacity. Our statistical evidences also suggest that the stabilizing profile of aid is related to the level of project aid (Table 1.1). In Benin and Central African Republic, project level aid represents 38.37 per cent and 48.4 per cent of ODA, while it represents about 36 per cent of ODA in Burkina Faso and Democratic Republic of Congo.

(PRGF)- supported programs in 1993-2003 and faithfully followed policy agenda adopted in 2000, the IMF approved in 2003 another three-year economic program supported by PRGF providing approximately US$ 35.5 mil, and US$ 22.4 mil in 2007. (IMF CR 08/230, 2008).

Central African Republic (Contracyclical and Stabilizing aid): Aid composition and political instability

CAR and DRC exhibit a more contracyclical aid with emergency assistance ranging from 21.8 per cent of ODA in DRC to 56.9 per cent in CAR over the period 2000-10 (see Table 1.1, p.12). Political Instability in both countries affected their relationship with international partners. In the case of Central African Republic, on 15 March 2003 President Ange-Félix Patassé's democratically elected government was overthrown by rebel forces headed by François Bozizé, former chief of staff of the Central African Republic's armed forces. In a statement of 21 March the European Union firmly condemned this military coup and reiterated its attachment to respect for democratic principles, which was a condition for its cooperation with the CAR. As such any new commitments with the CAR were confined to possible humanitarian projects or direct aid to the population.

Democratic Republic of Congo (contracyclical and destabilizing aid): Donors' return and aid fragmentation

During the 1990s in DRC, structural aid was suspended and only humanitarian assistance remained. But since 2002, structural and development aid resumed even if humanitarian programmes remained, although to a lower extent, mainly in conflict-affected parts of the country (IMF, CR 08/230, 2008). It is important to note that, for decades, there was very little aid and as a result extremely limited aid dialogue between the government and external partners. Since then, the number of donors increased with the three major external partners being the World Bank, the US and Belgium, which accounted for around 50% of gross disbursements over the period 2000-10. EU institutions, France and the UK are also key partners. Altogether, these major partners accounted for three-quarters of total official development assistance (ODA) disbursements.

A greater number of donors active in a country may, for instance, bring up more innovative ideas. Access to several donors thus provides recipient counties with diversification and some assurance of a steady flow of resources (McCormick et al., 2007). However, the proliferation of donors and projects may undermine the effectiveness of aid and waste human and financial resources in the recipient countries by creating overlap, duplication, and

inconsistency across aid projects and programmes. According to OECD-DAC statistics (see appendix), high level of aid fragmentation is associated with ineffectiveness to stabilize the economy.

B. Aid dependence and exposition to shocks

As noted in introduction, developing countries are particularly exposed to a variety of external shocks which hinder economic growth and magnify the volatility of real per capita GDP. The vulnerability of a country stems from three factors: 1) the size and frequency of exogenous shock, 2) the exposure to shocks, and 3) the capacity to react to shocks (Guillaumont, 2011). Table 1.2 shows different aspects of shocks faced by these countries.

Table 1.2. Exposition to shocks

Sample period 2000-10	Benin	Burkina Faso	Central African Republic	Democratic Republic of Congo
Average GDP growth (%)	4.00	5.56	3.84	3.65
Volatility of Terms of trade (%)	5.23	8.83	4.83	
External Demand Volatility (%)	0.843	0.85	0.69	0.844
Volatility of Private Capital (%)	3.23	1.54	1.07	1.72
Economic Vulnerability index	38.62	41.01	31 .95	39 .42
Major Episode of Political Violence (MEPV) *(number of episodes over the period)*	0	0	2	5
MEPV in neighboring states *(number of episodes over the period)*	4	2	13	24

Source: Authors calculation. Monty G. Marshall, Center for Systemic Peace (2010). IMF WEO (2010). WDI (2010). FERDI.
Volatility is measured by the standard deviation of the cycle.

Guillaumont Jeanneney and Tapsoba (2009) found that aid dependency and vulnerability to output shocks positively affect the stabilization property of aid. The stabilizing profile of aid would be more effective in countries subject to frequent output fluctuations and countries highly dependent on aid. However, our data show that aid is stabilizing in Benin and CAR which are the less aid dependent and less exposed to shocks recipients in both groups (stable vs. fragile states or procyclical vs. contracyclical).

All four countries are dependent on aid. Aid represents on average about 9% of GDP in Benin and CAR, 13 % in BFA and 26% in DRC. In comparison to DRC and CAR, Benin and BFA have few natural resources, although recently three mining companies invested in gold mining in BFA. Agriculture accounts for about a third of GDP. The principal export product is cotton, which make these economies very vulnerable to external shocks.

Table 1.3. Indicators of Commodity Dependence

Sample Period 2000-10	Benin	Burkina Faso	Central African Republic	Democratic Republic of Congo
Commodity Exports (% Exports)	91	94	90	99
Export Concentration Index	0.355	0.63	0.38	0.43
Leading Exports Commodities	Cotton 38% Petrol Oils 17% Fruits 8%	Cotton 44% Gold 35% Oil seeds 9%	Forestry 41% Prec. Stones 27% Nat. Abrasiv. 15%	Petroleum 79% Petr. Oils 5% Forestry 4%

Source: UN Comtrade

Around 80 percent of the population remains dependent on agriculture in BFA, and 60 percent of the Beninese population lives in rural areas, which are affected by poor rainfall and desertification. The terms of trade are relatively more volatile in Burkina Faso than in Benin (Table 1.2, p.16). Burkina Faso and Benin are the only countries in the comparison that depend on a single product for more than 50 percent of export revenues, and Burkina Faso seems to be unique in that its main crop explains nearly all the movements in export prices (IMF CR, 2008). If DRC and CAR are relatively less exposed to structural (economic) vulnerability, the persistence of major episodes of political violence in both countries explains the high volatility of output and exports.

In summary, if the political instability in recipient countries explains the cyclicality of aid flows (CAR and DRC, post-conflict states, receiving more contracyclical aid; while aid flows to Benin and BFA are procy-clical), the composition of aid inflows is particularly

relevant in understanding the divergence in stabilizing effect. The four countries, in this report, have remarkably different patterns of aid delivery over time. Over the period of study, on average BFA and DRC received more multilateral aid (6 to 8% GDP) than Benin and CAR (4% GDP).

Furthermore, statistical comparison between countries recall findings of Mavrotas and Ouattara (2007) which suggest that project aid financing is more likely to be stabilizing than budget support. In Benin and Central African Republic, project level aid represents 38.4 per cent and 48.4 per cent of ODA, while it represents about 36 per cent of ODA in Burkina Faso and Democratic Republic of Congo. Over the same period, budget aid increase in Burkina Faso and DRC and his importance decline in Benin. We also found that high level of aid fragmentation is associated with ineffectiveness to stabilize the economy. In fact, aggregate and sectoral aid fragmentation are more important in BFA and DRC than in Benin and CAR.

Part 2: Transmission of aid volatility to macroeconomic variables: aid may be stabilizing or destabilizing

This section aims to understand how the four countries of this analysis managed aid volatility over the period 2000-2010, by describing the coevolution of volatilities in aid inflows and fiscal variables in each case. Then we identified recipient governments' decisions in terms of fiscal and monetary policies that could explain the different outcomes in terms of stabilizing effect of aid.

A. Aid volatility, government revenue and expenditures

Aid volatility can deteriorate the composition of government expenditures and investment. Government allocates part of its revenue to the financing of current operations (transfers to hand-to-mouth consumers and current consumption spending), and devotes another part to building public physical capital. Because much aid is disbursed only after budget expenditures have actually been made, volatility in aid is also linked with volatility in fiscal spending.

Figure 2 shows that it is even more the case for SSA countries, receiving large aid inflows and usually enjoying limited international capital mobility. In the absence of such imperfections, the recipient country could fully smooth the shocks in foreign aid by borrowing/lending on the international capital market.

To analyze the transmission of aid volatility to the composition of government revenue and expenditures, we realize pair-wise correlations between aid volatility and volatility of revenue and expenditures (Table 2.1).

Table 2.1 Transmission of Aid Volatility to Government Revenue and Expenditures

Correlation Coefficients with Aid Volatility	Benin	Burkina Faso	Central African Republic	Democratic Republic of Congo
Volatility of Governments Indicators				
Revenue	-0.21	-0.01	0.88*	0.24
Government Expenditure	-0.29	-0.21	0.11	0.58*
Capital Expenditure	-0.54	-0.59*	-0.09	-0.01

Public Investment	-0.57*	0.058	-0.06	0.05
Direct Taxe	-0.73*	-0.32	-0.06	-0.55*
Private Capital Flows (Volatility)	-0.10	0.68*	-0.78*	0.14
Real Exchange Rate (Volatility)	-0.54	-0.79*	-0.10	0.343
Gov Indicators (in percent of GDP)				
Government Expenditure	-0.475	-0.75*	0.18	-0.62*
Public Investment	-0.179	-0.69*	0.19	-0.53*
Direct Taxe *(in percent of GDP)*	-0.24	-0.78*	0.49	-0.36

Source: Author's calculation using WDI data. Note: (*) corresponds to significant correlation at 1%

Negative correlation coefficients between aid volatility and fiscal variables suggest that for Benin, on average, the volatility of aid helps to stabilize government revenue and public investment. By contrast, aid volatility in BFA tends to be associated with tax shortfalls and reduction of government expenditure and public investment. The correlation coefficient between aid volatility and the level of government expenditure and public investment is also negative for DRC. These results suggest that a limited ability of governments to rearrange revenue flows and to reduce the impact of volatility upon their expenditure priorities, seems to undermine the stabilizing impact of aid flows.

The correlation coefficient between aid and revenue is positive and significant for CAR, meaning that the volatility of aid is transmitted to government revenue. CAR and DRC are post-conflict states, where governments cannot rapidly adjust their investment spending upwards in response to aid windfalls, whereas they might have severe difficulties in cutting government consumption (given that it is mainly composed of salaries of the public sector employees) in response to aid shortfalls. Therefore, higher aid volatility leads to higher government consumption at the expense of government investment.

Our statistics evidences reveal that in countries where aid is destabilizing, aid volatility is associated to volatility of private capital. In fact, the resulting unstable expenditure disbursements from volatile aid inflows create an unpredictable policy environment, which deters both domestic and foreign investment (Rodrik, 1990) and, more than this, makes macroeconomic management of any sort difficult (Heller et al., 2006): neither the level of expenditure nor the budget deficit, which are fundamental elements in macro-policy, can be predicted.

B. How do governments adjust to volatile aid?

As demonstrated above, aid volatility did not induce the same consequences for all countries. The potential stabilizing effect of aid flows depends on policy decisions into the fiscal sphere, which is influenced by recipient governments, and the monetary and exchange rate sphere, which is usually under the responsibility of central banks (Martins, 2011).

The composition of expenditure financed with the additional aid is one of the key determinants of the stabilizing effect of aid. The allocation of aid between capital and current expenditure highlights the trade-off between the short-term gains of current spending—demand effects—and the long-term gains of capital expenditure—supply effects. The latter, by raising the stock of public capital, increases the marginal productivity of private capital and crowds-in private investment.

In order to assess the degree to which aid shortfalls or excess aid are absorbed by recipient countries, we estimate pair-wise correlations between aid and fiscal dimensions[8] (Table 2.2, p. 22). We also decompose the adjustment to aid variation into changes in government consumption, revenue, current spending, domestically financed investment spending, and private investment (Table 2.3, p. 22).

Table 2.2 Spending and Foreign Aid

	Benin	BFA	CAR	DRC
2000–2010	AIDY	AIDY	AIDY	AIDY
NAGOBY	0.41	0.30	0.40	
INF	0.04	- 0.09	0.12	-0.42
BORY	-0.18	0.02	0.22	-0.43
INGY	-0.02	-0.15	0.29	0.40

Note: NAGOBY Non-aid government overall balance (% GDP);AIDY Aid grants (% GDP); INF Inflation rate (CPI, percentage change); INVGY Gross public fixed capital formation (% GDP); BORY Domestic financing (% GDP). Values in table correspond to pair-wise correlation. Data from Martins (2011).

Table 2.3 Fiscal Response to Aid Flows

[8] In national accounts, foreign grants are recorded as current transfers (i.e. financial flows without counterparts) and foreign loans are recorded as foreign savings. The ODA grants are added to national income and other transfers (migrants' remittances and private grants) to obtain disposable national income, whereas foreign loans increase the available resources for national spending beyond the national income of the recipient. (Guillaumont-Jeanneney and Tapsoba; 2009). Thus we investigate the stabilizing effect of aid from the resources available for national spending, but in practice given that the countries in our sample receive more than 90% of ODA in form of grants, the disaggregation between loans and grants here do not help much in the analysis.

Correlation Coefficients with Aid changes	Benin	Burkina Faso	Central African Republic	Democratic Republic of Congo
Variation of Fiscal Indicators				
Government Revenue	0.30	0.15	0.29	-0.09
Government Consumption	0.01	0.79*	0.01	0.55*
Capital Expenditure	0.18	0.05	0.05	-0.19
Public Investment	0.36	0.36	0.10	0.16
Private Investment	0.37	-0.84*		

Source: Author's calculation using WDI data. Empty cells correspond to missing data.

Fiscal performance and public investment

Our data suggest that the Beninese authorities accessed additional Bank financing and cut domestically financed investment spending to cope with budget aid shortfalls. The positive correlation between aid and current account balance suggests that aid inflows were not used to widen the current account deficit. In fact, Benin experienced an improvement in the non-aid current account balance. Moreover, there was an improvement of the non-aid government deficit, since revenue collection increased by more than the increase in government expenditures. The overall budget deficit decreased from an average of 8.9% of GDP over the period 1990-2000 to 3.8% between 2001 and 2010. Over the past decade, the government deficit has fallen below the average recorded in the West African Economic and Monetary Union (WAEMU). Table 2.2 also presents correlation between foreign aid and domestic financing. The negative correlation indicates that a share of aid inflows may be used to reduce domestic public debt. This strategy could help to mitigate the impact of unpredictable aid inflows: when aid flows fall, governments borrow to finance planned expenditures; when aid flows are above the average, governments repay the loans.

The fiscal context in Benin contrasts with the strong negative correlation between foreign aid and the macroeconomic and fiscal balances in the case of Burkina Faso, suggesting that aid inflows are used, at least to a certain extent, to increase the (non- aid) current account and budget deficits. Revenue collection improved significantly in the past 10 years in BFA, with tax revenue rising from 10 percent of GDP in 2000 to 16.7 percent in 2010, thanks to continued administrative efficiency gains and tax reform measures. However, external resources still make up a large part of the country's budget, with grants and external loans financing an average of 40 percent of public spending during 2000–10 (excluding debt relief

in 2006). Unfortunately, aid shortfalls are associated with tax revenue shortfalls. One medium-term fiscal policy challenge for the government of BFA is to sustain fiscal consolidation efforts to reduce the budget's vulnerability, to aid swings and scale up public investment to support private sector–led growth (IMF CR 2010).

Investment climate matters

Table 2.3 (p.22) presents interesting results regarding private investment. The results in table 2.3 indicate that additional aid seems to finance more consumption than investment in countries with aid destabilizing profile. In the case of Burkina Faso, the negative and significant coefficient between aid and private investment describes a crowding out effect on private investment. On contrary in Benin, support to the private sector is effective. IMF report on the Poverty Reduction Strategy Paper (PRSP) in 2007 confirms that the State of Benin seems to be well aware of the stakes, since 1990 the evolution of investments has been characterized by a greater development of private investment. In fact, Benin has adopted two PRSP during our period of analysis, the first in 2003 and the second in 2007. One of the clear objective was to help create private sector-led economic growth by supporting the government's macroeconomic program and improving the investment climate. Data show that net bank credit to the government contracted, permitting a 26 percent expansion of credit to the private sector, mostly for commerce, transportation, and telecommunications activities (IMF CR, 2012).

It appears clearly that Burkina Faso's potential to attract FDI is restricted by the small size of its domestic market and its landlocked position. A World Bank survey of enterprises in 2010 shows that from an international perspective the investment climate in Burkina is not favorable to the private sector, which is subject to many constraints. The most striking are linked to corruption (perceived as high), inconsistency in the application of regulations; an inefficient judiciary, poor infrastructure[9], a relatively heavy tax burden, and problems with access to and the costs of finance. BFA need an efficient and attractive tax and customs framework to attract private investment The corporate tax regime and the implementation of customs regulations are important impediments to Burkina Faso attractiveness as an

[9] Deficiencies in infrastructure are a significant burden on the private sector. Problems linked to the supply of electricity and to transportation are major issues for 62 percent of firms surveyed. They have a heavy impact on firm performance.

investment destination [10] (UNCTAD, 2009). Moreover, the banking sector is weakly developed (total banking assets accounted for 30% of GDP in 2010), while credit to the private sector has stagnated since 2006 to close to 18% of GDP. Over the decade 2000-2010, credit to the private sector and money supply progressed more slowly in Burkina Faso than in Benin.

Post-conflict context

Despite a difficult post-conflict environment, the C.A.R. has established a consistent record of satisfactory performance under IMF-supported programs after the end of conflict in 2003. As suggested by positive correlation between aid and non-aid government deficit, since revenue collection increased and public debt decreased. In fact, domestic revenue mobilization increased from 9.5 percent in 2006 to 10.7 percent in 2010, thanks to improved tax collection and the petroleum price adjustment mechanism[11] while the public sector debt decreased from 94 percent of GDP in 2006 to 28 percent in 2010. Data also show that besides domestic revenue rise, the share of capital expenditure grows from 12 per cent GDP in 2006 to 18 percent in 2010 (IMF CR, 2010).

Given the huge infrastructure development needs for reconstruction, the positive correlations of the public investment with foreign aid inflows are significantly stronger for our two post-conflict states (CAR and DRC). But with limited concessional resources available from traditional development partners, the authorities are pursuing nontraditional modes of financing to fill the gap, including resource-backed infrastructure development financing. In April 2008, the DRC signed a cooperation agreement with a consortium of Chinese enterprises involving a US$3.2 billion mining project and a set of US$6 billion public infrastructure projects. Operating profits from the mining project will be used to repay the mining and public infrastructure financing. This financing helps to compensate cuts in

[10] There are two prominent issues in terms of corporate taxation. On the one hand, the tax regime does not yield a satisfactory level of income for the Government. On the other hand, it is also insufficiently attractive for investors, partly as a result of its complexity, its administrative burden and the poor design of the fiscal incentives.

[11] The automatic price adjustment formula for petroleum product prices was a key reform measure under the past Extended Credit Facility (ECF) arrangement. Faced with rising subsidies on fuel consumption, the government implemented in June 2008, as prior action under the second review of the ECF arrangement (2006–10), an automatic quarterly petroleum pricing formula that ensures full pass- through to the consumer of world oil prices and taxes. The measure then became a continuous structural benchmark under the program and contributed to significant increases in domestic revenue in 2008–09.

domestically financed investment (Table 2.2, p.22).

What emerges as a first clear message from comparing these countries is that the bulk of adjustments takes place in domestic bank financing, taxation and domestically financed investment expenditure. Stronger reliance on domestic bank financing, instable income taxes and lower investment rates would therefore be the most likely costs associated with aid shortfalls.

C. Monetary responses to aid inflows

Alongside fiscal responses, effective monetary policy should help aid recipients to protect themselves from aid volatility by developing a repertoire of "cushioning" devices such as reserves, stabilization funds or other adjustments to central bank assets (Prati and Tressel 2006).

We have computed country-specific correlation coefficients between aid and non-aid current account balance, international reserves and terms of trade in Table 2.4 (p.25), while in Table 2.5 (p.25) we have country-specific correlation coefficients between changes in foreign aid and changes in the net foreign assets, international reserves, non-Aid current account balance, base money, terms-of-trade, real exchange rate and real interest rate. Because Benin, Burkina Faso and CAR are part of a monetary union, we assume that the entire amount of aid inflows will be transformed into domestic currency by the regional central bank (the BCEAO and BEAC) and passed on to the government.

Aid inflows tend to be associated with money supply expansions irrespective of the exchange-rate regime. Spending foreign aid requires donors or recipient governments to exchange foreign-currency-denominated aid into the domestic currency of the recipient. In fixed exchange-rate regimes, international reserves and base money would then increase at impact. This finding is confirmed by the positive correlations of changes in broad money in circulation with foreign aid inflows in Benin, CAR and DRC (Table 2.5). Moreover, the correlation coefficients between aid and international reserves are also positive. The correlation coefficients between aid and the level of reserves are of the order of 0.39 in Benin, 0.67 in Central African Republic and much lower in Burkina Faso and DRC (respectively 0.10 and 0.07 in Table 2.4).

Table 2.4 Absorption and foreign aid

	Benin	BFA	CAR	DRC
2000–2010	AIDY	AIDY	AIDY	AIDY
NACABY	0.64	-0.15	-	-
DRY	0.39	0.10	0.67*	0.07
LTOT	-0.48	-0.56	-0.17	-0.15

NACABY Non-aid current account balance (% GDP) ; AIDY Aid grants (% GDP) ; LTOT Logarithm of the terms of trade ; DRY Change in international reserves (% GDP) . Empty cells correspond to missing data.. Values in table correspond to pair-wise correlation. Source : Author's calculation using OECD-CRS and WDI data.

Table 2.5 Monetary Response to Aid Flows

Correlation Coefficients with Aid changes	Benin	Burkina Faso	Central African Republic	Democratic Republic of Congo
Variation of Monetary Indicators				
Real Exchange Rate	0.02	0.06	0.10	-0.23
Inflation	-0.02	0.23	0.10	-0.03
Broad Money (M2)	0.25	-0.17	0.13	0.19
Int. Reserves	0.17	0.08	-0.01	0.18
Net Foreign Assets	0.03	-0.74*	-0.07	-0.12
Real Interest rate			0.25	-0.77

Source: Author's calculation using WDI data. Empty cells correspond to missing data.

In all cases aid inflows lead to an increase in the accumulation of international reserves, aid is used to build up international reserves. Central banks adopt this strategy to protect their economies from future external shocks or even to smooth the availability of foreign exchange in an environment of volatile and unpredictable aid inflows.

Membership in the monetary union has helped to cushion the impact of external shocks and aid volatility on C.A.R. The monetary policy in the CEMAC region is conducted by the supranational central bank for CEMAC, the Banque des Etats d'Afrique Centrale (BEAC)[12]. The BEAC is designed to keep gross foreign reserves for each central bank above 20 percent

[12] Main objectives of BEAC's monetary policy are to maintain price stability and an appropriate level of foreign reserves in the pooled foreign exchange reserves of the members. As a supranational institution, the BEAC could be considered more independent and able to limit the net credit to government compared with the situation where each CEMAC country would have pursued an independent monetary policy.

of sight liabilities. In addition to those rules, the BEAC has made use of quantitative limits on credit to governments and private sector to limit monetization of their deficits. Overall, money supply remained under control, with velocity of broad money relatively stable, and net domestic assets increasing in line with stepped up credit to the private sectors, while in DRC both Government deficit and broad money increased rapidly over the same period.

To preview our main findings, we find that there is a strong correlation between the volatility of foreign aid and government revenue and expenditures. Furthermore, the volatility of aid inflows seems to be associated with lower investment rates. Looking at monetary responses to aid volatility, our results also show that international reserves seem to act as a stabilization fund, increasing with aid in order to smooth output fluctuations. Finally, our analysis established that administrative capacity constraints seem to hamper the effectiveness of foreign aid to stabilize the economy.

Part 3: Administrative capacity constraints and aid stabilizing profile

As shown in the previous section, the four countries have made different choices regarding the volatility of aid, highlighting various government capacity constraints in the management of aid inflows. Those government capacity constraints are related to aid planning, budgeting, and service delivery to achieve the economic and social goals of development aid (Feeny and De Silva, 2012). In this section, we try to establish a relationship between the administrative capacities of countries and the stabilizing effect of aid inflows.

To appreciate the administrative capacity constraints we rely on three indicators: fiscal performance, the percentage of ODA for public sector going through governments' public financial management (PFM) systems and the fragmentation of the aid landscape. In fact, to evaluate fiscal effort, we disaggregate taxation between fiscal potential and real fiscal effort as explained in Brun, Chambas, and Guérineau (2009)[13]. Indeed, those government capacity

[13] We build an indicator of the "revealed" policy by computing the difference between the observed flows and the "structural" flows that result from the non-political or structural determinants of these flows. These "structural" flows are

constraints are related to the abilities to exercise leadership over their development policies and strategies (measured by the level ODA through the PFM system) and coordinate development actions (proxied by fiscal effort). Experience shows that implementing projects that do not reflect country needs and priorities leads to high transaction costs and administrative capacities can be overburdened by high level of aid fragmentation. This can ultimately undermine the stabilizing effect aid is intended to achieve.

Table 3 Pressure on Administrative Capacity

	Benin	Burkina Faso	Central African Rep	Congo Dem Rep
Administrative Capacity				
Fiscal Effort[a]	0.697	0.278	-0.710	-1.20
% of ODA for the gov. sector using country PFM systems	49.5	45	26.5	9
Number of donors missions	185	261	108	579

Source: OECD. 2011. Report on Better Aid. a: Author's calculation based on African Economic Outlook data (2010) following Brun , Chambas, & Guérineau (2009) methodology. A negative value corresponds to a taxation below the structural capacity, consequence here of conflicts in CAR and DRC.

The effective management of aid depends on the leadership exercised by the governments and the relative strength of 'systems'. The percentage of aid using governments' public financial management (PFM) systems varied from to 45 % in Burkina Faso and almost 50% in Benin (see Table 3).

As noted in the previous section, Benin has made significant progress in public finance management over the last decade in relation to the implementation of poverty reduction strategies. Beninese authorities and international partners concerted their efforts to begin addressing problems in infrastructure and project management, including accelerated procurement and compression of time for contract preparation.

The rate of execution of domestically funded investment outlays inched up to 68 percent in 2007 from 57 percent in 2006 (IMF CR, 2009).

the fitted values derived from a regression of observed flows on economic determinants. The residuals of this regression, the flows that remain unexplained by the regression, represent the impact of the policy and can then be used to build an indicator of this policy. This methodology was also used by Combes and Saadi-Sedik (2006), and Combes, Pirard, and Combes (2009) to build policy indicators on commercial and financial openness and domestic policies on deforestation.

Despite an improvement in public financial management in BFA, as suggested by successive IMF reports, administrative constraints remain important given the pressure imposed by an increasing number of donors missions in BFA and highly fragmented aid landscape (Appendix B). The execution of government's budget in BFA is improving, the authorities have managed to implement an average 85 percent of their annual public investment program in 2009, however significant inefficiencies remain in (i) fiscal reporting, budget preparation, and execution; (ii) procurement and purchasing, including debt management, commitment of funds and payments management; and (iii) the extent of political support for the public procurement process and the authorities' public investment program (IMF CR (2009). The effectiveness of aid inflows to Burkina Faso would depend heavily on the efficiency of public investment and the extent of capacity constraints facing the country.

Administrative capacities are worse in CAR and in DRC. The institutional weaknesses in fragile states, affected by conflict, limit their ability to manage aid flows. But table 3 (p.29) shows that CAR authorities operate in a more favorable environment with 26.5% of aid using governments' PFM systems and less pressure on administrative capacities with only 108 donor missions against more than 500 in DRC.

In DRC the execution rates of total budgeted resources have fluctuated between 48.6 and 71.9 percent, driven mostly by external financing. Moreover the budget execution for investment, both foreign and domestically-financed was lower than that of current spending (IMF CR 2012). For instance, in 2010 the execution rate of foreign-financed investment was only 35.3 percent. Looking at domestically-financed spending only, the most important execution gap comes from transfer-based provincial investments (IMF CR 2012). These poor performances are related to recent internal conflict.

In fact, during the conflict, public agents fled to more secure areas; rebel groups created new units, with sympathisers at key posts. As a result, at the end of the conflict, the government was left with a public administration that had functioned poorly and recruited autonomously at the local level without any sort of control from the centre. The government had no control over large parts of the country. In 2005 the constitution establishes a decentralization agenda with pressure from local authorities. A recent IMF report expressed the concern that there is risk that the fiscal aspect of the reform was decided with a view to appeasing provincial governments and holding together the fragile government coalition rather than ensuring fiscal sustainability over the medium term.

Major efforts are needed to strengthen the government and the administration's capacity to manage external assistance. Today, there are a relatively large number of donors operating in DRC. The administrative weaknesses cause flaws in the process of gathering data from donors, as well in the administrative capacity to mobilize aid.

Administrative capacities described above provide a good understanding of constraints faced by governments in the management of aid inflows. Therefore, the economy's ability to absorb the aid flows and implement structural reforms to address any significant bottlenecks in the economy could determine the stabilizing effect of aid.

DRC and Burkina Faso, which have highly fragmented aid, do not have the capacities to manage their aid inflows. On contrary in Benin and CAR, where aid is stabilizing, benefited from less sectoral aid fragmentation. The fragmentation of aid landscape seems to hamper the effectiveness of foreign aid to stabilize the economy. The purpose of identifying these differences is not to recommend a reduction of aid to BFA or DRC, but to pinpoint a particular stressing issue for the stabilizing impact of development aid and urge authorities to identify capacity constraints to be addressed if additional aid is to be spent effectively. Indeed, Burkinabese authorities recognized that capacity constraints needed to be addressed. They engaged discussions with donors to identified sectors offering opportunities for increasing priority expenditures without increasing pressure on administrative capacities (IMF CR, 2007). OECD data on sectoral aid activities in BFA show a highly fragmented environment with different absorptive capacity by sector (See Appendix 1). Education, for example, which has benefited from substantial donor support, is likely to be close to capacity.

Administrative capacities determine the ability of governments to manage aid flows and deal with the increasing volatility associated to such flows. The institutional weaknesses in fragile states, limit their ability to manage aid flows. The main finding of this section is that aid is less stabilizing in countries with high level of administrative capacity constraints.

Conclusion:

The cyclicality and the stabilizing profile of aid inflows are debated in this analysis to assess the consequences of aid volatility. After providing a review of the economic, political, governance and context of aid volatility, it draws on four country case studies to explore the government priorities when it comes to deal with aid volatility and tries to asses whether countries capacities to deal with an increasing volatility of aid inflows are effective.

The four countries in the analysis have experienced different aid shocks. As post-conflict states, CAR and DRC received more contracyclical aid; while aid flows to Benin and BFA were procyclical. However, the capacity of aid inflows to stabilize the economy does not structurally depend on the cyclicality of aid inflows. This capacity appears to be more influenced by government capacities constraints and policies choices.

Like the other countries in this study, aid inflows to Benin are volatile. The average foreign aid/GDP ratios of the Benin is less than 10 percent for the period 2000-2010, with about 60% of bilateral aid. Benin benefited of a more stable relationship with the donors, a reward for reforms implemented under successive *Poverty Reduction Strategy Paper* (PSRP) which have created a large fiscal space for the authorities.. With an increased revenue collection and ownership exercised by the government on aid public sector, the consequences of aid volatility where limited as Beninese authorities succeed to stabilize government revenue and public investment. In fact Benin experienced an improvement in the non-aid current account balance and the overall budget deficit decreased from an average of 8.9% of GDP over the period 1990-2000 to 3.8% between 2001 and 2010, below the average deficit recorded in the West African Economic and Monetary Union (WAEMU). As a result, although procyclical, aid to Benin does not appear to have been destabilizing.

Burkina Faso shares a similar economic structure with Benin: a workforce that is primarily engaged in subsistence agriculture (almost 80 percent), and dependent on their exports of few commodities. Both have been severely hit by external shocks in the early 2000s on the price of cotton. However, a second external shock related to the civil war in Côte d'Ivoire, made things more difficult for Burkina Faso. Over the period 2000-2010, the average aid/GDP ratio for Burkina Faso represented 12.64 percent, but aid inflows did not succeed to stabilize the economy.

After the 2005 Paris Declaration, Burkina Faso explicitly calls for more budget support to increase its ownership over the development agenda. The available data show that in BFA since 2000 budget support represents now more than a third of ODA accounted for by the government. Unfortunately, the additional aid seems to finance more consumption than investment, despite an improvement in public financial management in BFA. Our analysis also show that aid volatility in Burkina Faso was associated with tax shortfalls and reduction of government expenditure and public investment. Consequences of aid volatility meeting limited administrative capacities, put under pressure by an increasing number of donors missions in BFA in a highly fragmented aid landscape.

As post-conflict states, the Central African Republic and the Democratic Republic of Congo are engaged in a more instable relationship with external partners.

Since the end of conflicts in early 2000s, foreign aid to DRC represented annually on average 25.75 percent of GDP. A greater number of donors became active while the institutional capacities were weakened by conflicts, making macroeconomic management of any sort difficult. In such a context, governments cannot adjust to aid volatility. Data showed that the Congolese authorities operated in a worst environment than other countries in this study, with a highly fragmented aid landscape and little ownership over aid activities. The pressure put by international partners actions in DRC were well above their administrative and absorptive capacities. The execution rates of total budgeted resources ranged between 48.6 and 71.9 percent, while in 2010 the execution rate of foreign-financed investment was only 35.3 percent. Given the high dependence of DRC to foreign aid, the increased aid volatility led to higher level of government deficit and broad money. The monetary authorities did not succeed to cushion the impact of aid volatility. As a result, although aid was contracyclical, it appeared to have been destabilizing.

Like DRC, the Central African Republic received contracyclical aid with emergency assistance representing 56.9 per cent of the total ODA over the period 2000-10. According to OECD-DAC statistics the proliferation of donors and projects was less important than in DRC, with annual ODA to CAR representing less than 10 percent of GDP and only 108 donor missions. Thus, CAR authorities operated in an environment corresponding to their actual administrative capacities.

Furthermore, since the end of the conflict revenue collection increased and public debt decreased, contributing to the stabilizing effect of aid inflows.

Given the limited sample size for the case studies, the conclusions and policy recommendations presented here should be treated with some caution. Further case studies would help confirm the replicability of the findings across a wider group of countries. Despite these caveats, we can reach some conclusions on the key questions addressed. Here, we present the key findings in response to each of the guiding questions.

- Internal political environment and the relationship with international partners affect the composition and cyclicality of aid inflows;

- Aid volatility affects government revenue and expenditures. Stronger reliance on domestic bank financing, lower investment rates and instable taxes are the most likely costs associated with volatile aid inflows;

- By increasing the absorptive capacity of the economy, private sector investment is associated with a more stabilizing effect;

- The level of international reserves accumulation seems to be associated with the stabilizing effect. All four countries central banks protect themselves from aid volatility by adapting the level of international reserves;

- Administrative and absorptive capacity constraints need to be addressed to increase the stabilizing effect of foreign aid inflows.

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Abbreviations :

BCEAO Banque centrale des États de l'Afrique de l'Ouest

BEAC Banque des États de l'Afrique centrale

BEN Benin

BFA Burkina Faso

CAB Current Account Balance

CAR Central African Republic

CPA Country Programmable Aid

DAC Development Assistance Committee

DRC Democratic Republic of Congo

GDP Gross Domestic Product

LDCs Least Developed Countries

IMF International Monetary Fund

HIPC Heavily Indebted Poor Country Initiative

ODA Official Development Assistance

OECD Organization for Economic Co-operation and Development

PRSP Poverty Reduction Strategy Paper

SSA Sub-Saharan African

UK United Kingdom

US United States of America

WAEMU West African Economic and Monetary Union

WDI World Development Indicators

Appendices: A. Descriptive Statistics

Average 2000-2010	Benin	Burkina Faso	Central African Republic	Congo, Dem. Rep.
Agriculture, value added (% of GDP)	26.79	36.35	54.61	25.95
Broad Money (%GDP)	39.8	27.2	17	14.6
Credit to Private Sector (% of GDP)				
External debt stocks (% of GNI)	34.24	34.79	72.16	93.17
GDP per capita (constant 2010 US$)	716.47	494.87	431.64	280.97
General government final consumption expenditure (% of GDP)	13.91	21.56	10.12	6.90
Government Debt (% of GDP)	28.1	28.8	54	115
Overall Fiscal Balance (excl. Grants, %GDP)	-3.8	-10.2	-5.9	-9.1
Total Investment (% of GDP)	19	18	12.5	19.2
Industry, value added (% of GDP)	29.40	19.45	14.05	31.92
Manufacturing, value added (% of GDP)	20.47	11.44	6.40	19.67
Population, total	8198683	13504487	4069399	56439135
Rural population (% of total population)	59.97	78.37	61.86	62.50
Short-term debt (% of total external debt)	6.87	2.99	8.82	9.51
Short-term debt (% of exports of goods. services and primary income)	8.73	6.02	..	11.06
Trade (% of GDP)	52.77	36.27	36.94	54.78

Appendices: B. Additional Evidences (Source: OECD Report on Better Aid (2011))

Aid Fragmentation: Fragmentation on the basis of sectoral allocable CPA data: disbursements in 2010, in current USD million.

CONGO, Rep. Dem. Sector	Number of donors	Donors in Cat. A (both B & C)	Donors in only Cat. B (above share)	Donors in only Cat. C (top 90%)	Donors in Cat. D (non-significant)	*Fragmentation Ratio (Cat. D / No. of Donors; in %)*	CPA (USD million)
Education	19	7	5	2	5	*26*	80
Health	22	6	6	4	6	*27*	367
Population Policies and Reproductive Health	14	3	3	1	7	*50*	97
Water Supply and Sanitation	14	6	3	3	2	*14*	69
Other Social Infrastructure	18	6	4	1	7	*39*	42
Economic Infrastructure	17	2	1	2	12	*71*	255
Agriculture	13	4	6	1	2	*15*	58
Other Production Sectors (Forestry, Fishing, Industry, Mining, Construction, Trade Policy and Tourism)	13	1	1	2	9	*69*	52
Environment	14	5	1	1	7	*50*	35
General Budget Support	2	1	0	1	0	*0*	176
Government and Civil Society	24	7	7	2	8	*33*	420
Multi sector	22	4	9	4	5	*23*	77

Central African Rep. Sector	Number of donors	Donors in Cat. A (both B & C)	Donors in only Cat. B (above share)	Donors in only Cat. C (top 90%)	Donors in Cat. D (non-significant)	*Fragmentation Ratio (Cat. D / No. of Donors; in %)*	CPA (USD million)
Education	6	2	3	0	1	*17*	14
Health	9	4	2	2	1	*11*	14
Population Policies and Reproductive Health	8	4	1	1	2	*25*	12
Water Supply and Sanitation	5	3	1	0	1	*20*	8
Other Social Infrastructure	7	3	2	1	1	*14*	3
Economic Infrastructure	8	2	1	0	5	*63*	82
Agriculture	7	2	2	0	3	*43*	4
Other Production Sectors (Forestry, Fishing, Industry, Mining, Construction, Trade Policy and Tourism)	4	2	0	0	2	*50*	7
Environment	3	3	0	0	0	*0*	0
General Budget Support	1	1	0	0	0	*0*	0
Government and Civil Society	11	4	3	3	1	*9*	22
Multi sector	11	3	2	2	4	*36*	19

Burkina Faso Sector	Number of donors	Donors in Cat. A (both B & C)	Donors in only Cat. B (above share)	Donors in only Cat. C (top 90%)	Donors in Cat. D (non-significant)	*Fragmentation Ratio (Cat. D / No. of Donors; in %)*	CPA (USD million)
Education	19	7	3	3	6	*32*	91
Health	17	9	2	0	6	*35*	68
Population Policies and Reproductive Health	16	7	3	2	4	*25*	23
Water Supply and Sanitation	16	5	3	2	6	*38*	105
Other Social Infrastructure	17	8	3	1	5	*29*	9
Economic Infrastructure	19	4	3	2	10	*53*	66
Agriculture	18	5	4	4	5	*28*	113
Other Production Sectors (Forestry, Fishing, Industry, Mining, Construction, Trade Policy and Tourism)	9	2	1	0	6	*67*	59
Environment	12	5	1	2	4	*33*	9
General Budget Support	8	6	1	0	1	*13*	208
Government and Civil Society	18	5	3	2	8	*44*	96
Multi sector	21	6	5	2	8	*38*	56

Benin Sector	Number of donors	Donors in Cat. A (both B & C)	Donors in only Cat. B (above share)	Donors in only Cat. C (top 90%)	Donors in Cat. D (non-significant)	*Fragmentation Ratio (Cat. D Nb. of Donors; in %)*	CPA (USD million)
Education	13	5	4	1	3	*23*	58
Health	20	6	6	2	6	*30*	74
Population Policies and Reproductive Health	14	3	4	2	5	*36*	40
Water Supply and Sanitation	13	6	1	1	5	*38*	50
Other Social Infrastructure	11	3	1	2	5	*45*	16
Economic Infrastructure	12	2	1	2	7	*58*	213
Agriculture	13	5	1	3	4	*31*	54
Other Production Sectors (Forestry, Fishing, Industry, Mining, Construction, Trade Policy and Tourism)	11	4	2	1	4	*36*	5
Environment	8	4	1	0	3	*38*	5
General Budget Support	3	1	0	0	2	*67*	35
Government and Civil Society	17	6	1	2	8	*47*	65
Multi sector	15	5	6	1	3	*20*	29