Following public finances: the mirage of MDBs countercyclicality

Leopoldo Avellán
Arturo J. Galindo
Giulia Lotti

Following public finances: the mirage of MDBs countercyclicality

Leopoldo Avellán
Arturo J. Galindo
Giulia Lotti

January 2020

Following public finances:
the mirage of MDBs countercyclicality

Leopoldo Avellán,[1] Arturo J. Galindo,[2] and Giulia Lotti[3]

January, 2020

Abstract

Fiscal policy and net capital inflows in developing countries are procyclical. A large amount of literature has examined this phenomenon and explored its consequences for aggregate fluctuations. Multilateral development banks (MDBs) are an important source of external finance for governments and hence play a key role in financing the execution of fiscal policy. Hence, understanding the behavior of MDB flows is key to gauge their contribution to macroeconomic volatility. This paper investigates the co-movement of sovereign lending from MDBs and private creditors with government expenditure, and finds that multilateral sovereign lending follows government expenditure, and that this correlation does not change if the government is running a surplus or a deficit. This finding raises doubts on the feasibility of MDBs to be counter-cyclical, unless the governments themselves implement counter-cyclical fiscal policies.

---

[1] leopoldoa@iadb.org; Inter-American Development Bank
[2] arturog@iadb.org; Inter-American Development Bank
[3] glotti@iadb.org; Inter-American Development Bank; and the Centre for Competitive Advantage in the Global Economy at the University of Warwick.

1

1. Introduction

The literature on the dynamics of international capital flows, spurred by the interest in financial crises over the last three decades, finds that net capital inflows are procyclical (Broner et al. 2013; Kaminsky et al. 2005). Procyclicality in capital flows can pose threats to the financial and macroeconomic stability by amplifying business cycle volatility, increasing consumption and spending in economic booms and imposing substantial cuts when the country experiences downturns (Araujo et al. 2017; Levy Yeyati and Zuñiga 2015; De la Torre et al. 2015). But when differentiating by lender, capital flows exhibit different cyclical properties. While private net lending to developing and emerging countries is procyclical (Galindo and Panizza 2018; Araujo et al. 2017; Levy Yeyati 2009; Dasgupta and Ratha 2000), the literature focusing on the cyclicality of multilateral institutions has found their lending to be countercyclical or at least acyclical (Galindo and Panizza 2018; Humphrey and Michaelowa 2011; Dasgupta and Ratha 2000).

The literature on the cyclicality of fiscal policy has found that fiscal policy is procyclical for developing and middle-to-high-income countries, amplifying business cycles further, and hence putting a drag on the economy when conditions are already critical (Végh et al. 2017; Gerling et al. 2017; Bova et al. 2014; Frankel et al. 2013; Reinhart and Reinhart 2008; Ilzetski and Végh 2008; Alesina et al. 2008; Talvi and Végh 2005; Kaminsky et al. 2005; Tornell and Lane 1999; Gavin and Perotti 1997; Cuddington 1989). Multiple factors can explain this behavior, including political economy distortions and the quality of institutions (Avellán and Vuletin 2015; Ilzetski and Végh 2008; Talvi and Végh 2005; Tornell and Lane 1999).[4] Another explanation is that in bad times, when countries lack access to capital markets, those countries are unable to adopt countercyclical fiscal policies. On the other hand, when external credit is plentiful, government spending increases excessively (Végh, Lederman, and Bennett 2017; Levy Yeyati and Zuñiga 2015; Frankel, Végh and Vuletin 2013; Kaminsky et al. 2005; Reinhart and Reinhart 2008).

This paper lies at the intersection of these two strands of the literature. It studies the demand for MDB sovereign lending by empirically exploring the relationship between MDB sovereign lending and public expenditure, distinguishing between different fiscal policy stances. So far, most of the literature on MDB flows has focused on the supply side (Humphrey 2014; Dreher et al. 2009a, 2009b, 2013; Kilby 2006, 2011, among many others).[5] However, as Humphrey and Michaelowa (2013) point out, in recent decades developing countries have gained stronger financial and fiscal positions, some improving their sovereign credit ratings and increasing their access to international capital markets. Hence demand side considerations in sovereign borrowing from MDBs have become particularly important but, to the best of our knowledge, have not been studied yet.

---

[4] Political economy distortions include political pressures or rent-seeking activities that call for expansionary fiscal policy in good times (Avellán and Vuletin 2015; Ilzetski and Végh 2008; Talvi and Vegh 2005; Tornell and Lane 1999). The quality of governments is captured by regulatory quality, government effectiveness, control of corruption and rule of law in Avellán and Vuletin (2015), by the legal-political institutional infrastructure and fractionalization of power in Tornell and Lane (1999).

[5] See Humphrey and Michaelowa (2013) for a more complete list of papers.

We fill this gap by studying how MDB flows to the sovereign co-move with the execution of fiscal policy. Understanding this co-movement is important to assess whether MDBs exacerbate or dampen capital flow cycles, as in times of crises, they are expected to be counter-cyclical (Munir and Gallagher 2018).

This paper begins with a discussion of the evolution of net flows to the sovereign from MDBs and private creditors since the 1980s. For most countries, net flows from MDBs are larger and less volatile than net flows from the private sector, but there is some heterogeneity depending on the country's income level.

To measure how MDB sovereign lending[6] is systematically related to the demand in borrowing countries, we estimate how multilateral lending responds to government expenditure and find that when countries' government expenditure increases, net borrowing from foreign creditors increases as well, and this is true for most creditors regardless of the fiscal policy stance and regardless of the availability of other flows, confirming the correlation between fiscal policy and capital inflows found in the literature.

But fiscal policy, as captured by government expenditures, could be endogenous to MDB capital flows, given that usually governments co-finance projects, which means that expenditure could increase mechanically when, for example, MDBs are financing an infrastructure project. In general, government expenditure increases might be driven by the availability of external financing, raising further doubts on reverse causality. To address this potential problem, we re-estimate the relationship between net flows and fiscal policy using GMM techniques to mitigate these concerns and find that increases in government expenditure boost MDB net flows, while there is no causal relationship with private net flows. Results capture the demand driven nature of the MDBs' business model. They also question the countercyclicality of MDB lending as this could only happen when the government is already following a counter-cyclical fiscal policy.

The remainder of the paper is organized as follows. We provide a description of the data in Section 2. We discuss the empirical strategy in Section 3 and present the results in Section 4. We perform robustness checks in Section 5 and give some final conclusions in Section 6.

2. Data

To estimate the association between international sovereign lending and fiscal policy, we require information on the external financial flows received by the government during the year. Specifically, we focus on net flows, that is, gross flows minus principal repayments. For robustness we explore gross flows themselves.

---

[6] Throughout the paper we define lending as net flows and not only approvals.

We use data on government's debt flows (public or publicly guaranteed) in 108 developing countries[7] for the period 1980-2015 from MDBs,[8] RDBs,[9] the World Bank,[10] and private creditors. Our source is the World Bank's International Debt Statistics.[11] RDBs and the World Bank are both within the MDBs category, but they are also analyzed separately to explore potential differences in sovereign lending. The countries in the sample are depicted in Figure 1. As explanatory variables we use general government total expenditure[12] and primary fiscal balance[13] from the IMF's World Economic Outlook (WEO). The sample totals 2,410 observations with non-missing net flows and non-missing government expenditure. Debt flows are in current U.S. dollars. From the World Bank World Development Indicators (WDI) we take nominal GDP (in local currency units [LCUs] or in U.S. dollars).

Figure 1. Countries in the Dataset, by Income Group

---
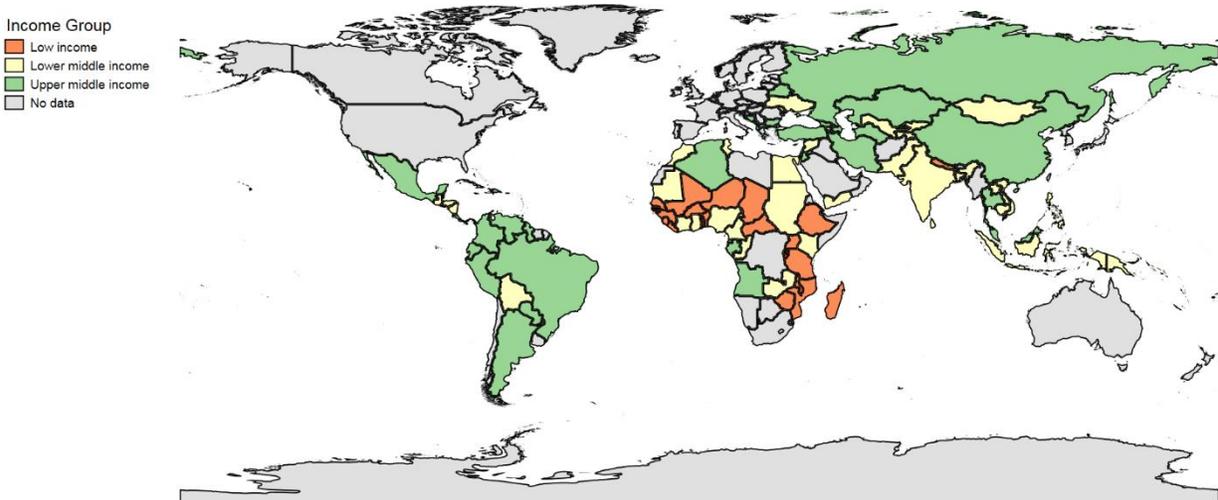
[7] High-income countries and countries that have fewer than 20 observations for GDP are excluded from the analysis They are excluded because the analysis will later calculate the trend of GDP, and it is important not to base the calculations on too few observations. Countries with fewer than 20 observations are Aruba, Afghanistan, Faeroe Islands, Iraq, Myanmar, Montenegro, Somalia, Serbia, São Tomé and Principe, and South Africa.

[8] Public and publicly guaranteed multilateral loans include loans and credits from the World Bank, RDBs, and other multilateral and intergovernmental agencies. Excluded are loans from funds administered by an international organization on behalf of a single donor government. These are classified as loans from governments.

[9] Net flows from RDBs include concessional and non-concessional financial flows. Concessional flows cover gross flows made through concessional lending facilities, and non-concessional financial flows cover the remaining flows. RDBs include the African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, and Inter-American Development Bank.

[10] Net flows from the World Bank are the sum of net flows from the International Bank for Reconstruction and Development, the founding and largest member of the World Bank Group, and the International Development Association, the concessional loan window of the World Bank Group.

[11] Public and publicly guaranteed debt from private creditors includes bonds that are either publicly issued or privately placed; commercial bank loans from private banks and other private financial institutions; and other private credits from manufacturers, exporters, and other suppliers of goods, as well as bank credits covered by a guarantee of an export credit agency.

[12] Defined as total expense and the net acquisition of nonfinancial assets (in LCUs).

[13] Defined as net lending/borrowing plus net interest payable/paid (interest expense minus interest revenue, also in LCUs).

We begin by establishing that the magnitude of net flows differs by income groups (Figure 2). Debt flows are scaled by GDP to prevent larger countries from driving the results and to gain a better understanding of the relative magnitude of capital flows with respect to the country's economy[14]. Both net flows and gross flows from MDBs decrease over time for all income levels. Flows from private creditors decrease over time as well but experience a small recovery in the 2010s. It is also interesting to note that the relative importance of MDB debt flows increases the lower the income group, reflecting the critical role of MDBs in providing access to external financing to sovereigns in countries with lower income that cannot tap private markets.

To dig further into how these capital flows behave over time, we follow Broner et al. (2013) and scale them using trend GDP, rather than GDP only, to use a predetermined scaling factor and avoid potential endogeneity in the denominator.[15] We then compute averages and standard deviations per country for each income group.

As seen in Table 1, debt flows from MDBs tend to be larger than debt flows from the private sector; this is true for both net and gross flows: multilateral net flows (gross flows) are 0.94 (2.77) percent of trend GDP, and private net flows (gross flows) are 0.44 (1.22) percent. Moreover, net flows from MDBs are more stable, as shown by a median standard deviation of 0.92 of trend GDP compared to 1.30 for private creditors. Multilateral and private gross flows show similar volatilities.

---

[14] Since some outliers appear, we trim the 1% tails of the distribution of net flows scaled by GDP.

[15] Trend GDP is calculated by applying the Hodrick-Prescott filter. Given that the data are yearly, a smoothing parameter of 100 to the series of nominal GDP in U.S. dollars is used. Nominal GDP is obtained from the World Bank's World Development Indicators.

Figure 2. Dynamics of Net and Gross flows to the Government by Income Groups
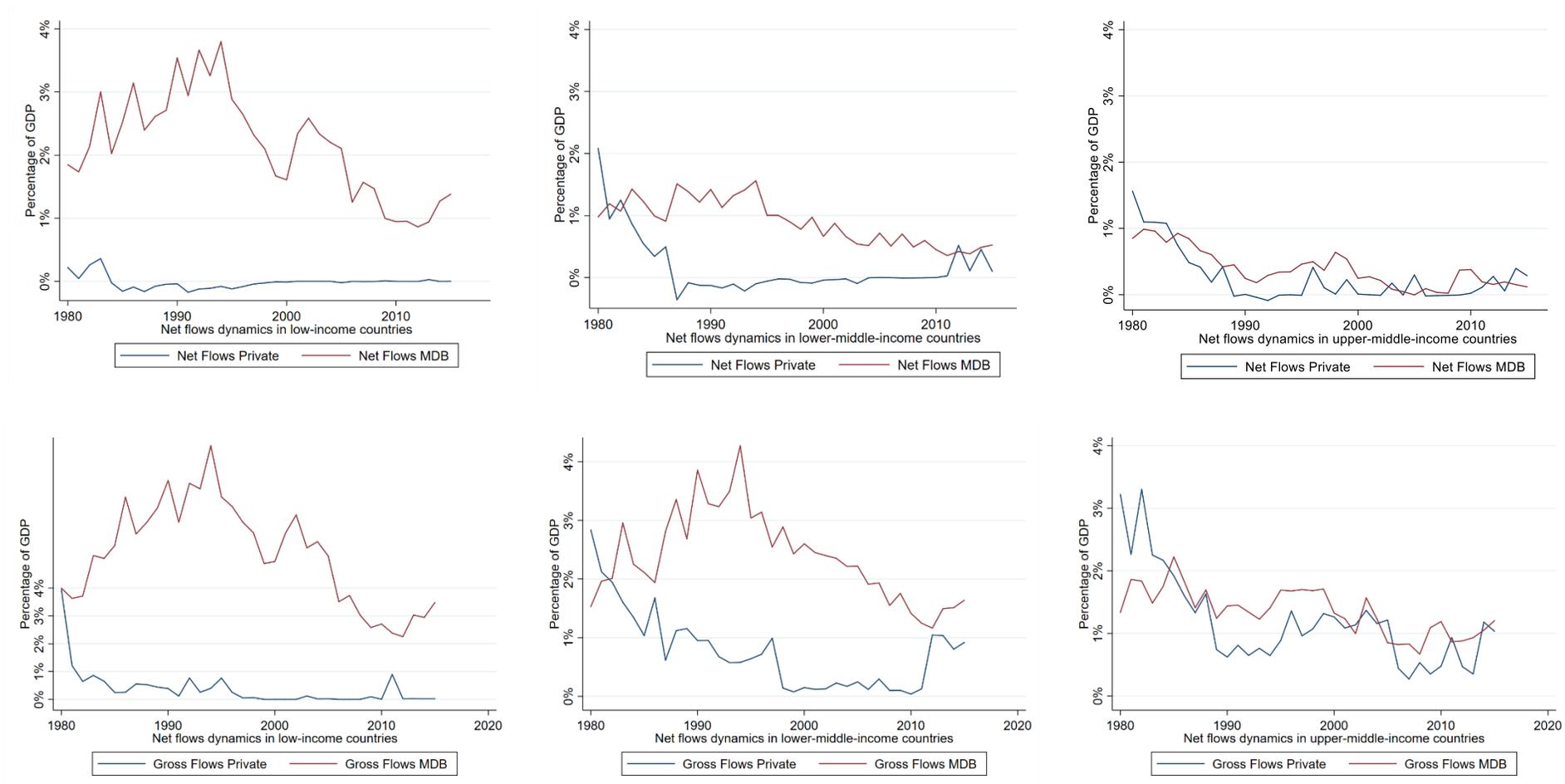
Source: Authors' calculations.
Note: The figure shows the trends of median net flows and gross flows scaled by GDP for upper-middle-income, lower-middle-income, and lower-income countries. The sample period is from 1980 to 2015. MDB: multilateral development banks.

The aggregate results hide some heterogeneity across income groups: as the income level increases, net flows (gross flows) from MDBs decrease, going from 2.27 (5.15) percent of trend GDP in the median low-income country to 0.48 (1.63) in the median upper-middle-income country, but become more stable, with the standard deviation decreasing from 1.9 (3.0) percent of trend GDP to 0.69 (0.97) percent. This is true both for the MDBs altogether and for each type of MDB. The opposite occurs for debt flows from private creditors, which increase by income level while becoming more volatile. It is also interesting to note that even in upper-middle-income countries, which capture most of the private flows, MDBs are an important source of external finance, reaching almost 90 percent of private median average net flows.

Table 1. Trends of Net and Gross flows to the Government by Income Group

	All Countries		Low-income		Lower-middle-income		Upper-middle-income	
	Median Average	Median Std Dev	Median Average	Median Std Dev	Median Average	Median Std Dev	Median Average	Median Std Dev
MDB								
Net Flows	0.94	0.92	2.27	1.90	1.20	0.91	0.48	0.69
Gross Flows	2.77	1.55	5.15	3.00	2.88	1.72	1.63	0.97
RDB								
Net Flows	0.33	0.37	0.57	0.61	0.31	0.36	0.16	0.29
Gross Flows	1.95	1.08	3.84	2.42	1.88	1.08	1.34	0.66
WB								
Net Flows	0.52	0.54	1.30	1.09	0.61	0.54	0.20	0.42
Gross Flows	0.73	0.56	1.45	1.11	0.82	0.60	0.43	0.41
Private								
Net Flows	0.44	1.30	0.06	0.88	0.45	1.32	0.54	1.46
Gross Flows	1.22	1.46	0.52	1.04	1.21	1.43	1.52	1.82

Source: Authors' calculations.
Notes: This table presents the summary statistics of net and gross flows scaled by trend GDP. The median value of country averages and of country standard deviations of net and gross flows are reported separately for low-, lower-middle- and upper-middle-income countries, as well as for all countries together. The sample period is from 1980 to 2015. MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

3. Empirical Strategy

The analysis of the relationship between net flows and fiscal policy begins with a look at co-movements between government expenditure and debt flows. Expenditure rather than the fiscal balance is used because the former is a tool for fiscal policy, while the latter is an outcome of the execution of the fiscal policy (Végh et al. 2017; Kaminsky et al. 2005). Expenditure is also used

instead of tax revenue because the latter can be endogenous to the business cycle (Frankel et al. 2013).

The estimated model is:

$$y_{i,t} = \alpha_i + \gamma_t + \beta G_{i,t} + X_{i,t} + \varepsilon_{i,t}, \tag{1}$$

where $y_{i,t}$ are debt flows scaled by trend GDP, $G_{i,t}$ is government expenditure scaled by trend GDP. The analysis includes country fixed effects α_i and year fixed effects γ_t in order to consider country-specific differences and aggregate changes over time. To control for within-country error correlation, standard errors are clustered at the country level. β is our primary parameter of interest.

$X_{i,t}$ is a matrix of control variables. In a first exercise, it includes flows from other creditors. In a second specification, it includes global "push" factors and domestic "pull" factors that the literature has recognized as possibly relevant determinants of capital flows[16]. Among the common push factors, we consider a standardized version of the US VIX as a proxy for global risk aversion[17], as changes in the appetite for risk might affect flows towards sovereigns in developing countries. We also include the difference in yields between 10-year and 2-year US Treasury bonds: small or negative values of this term are considered as a predictor of a recession in the US, pushing capitals towards emerging markets, all else equal. Finally, we include indexes for global commodity prices of fuel and copper. High commodity prices are likely to be positively correlated with capital inflows in commodity exporting countries because income effects increase the consumption of imports.

The neoclassical theory predicts that capital flows should respond to interest rates differentials between countries, moving from countries with low returns (typically advanced economies) to those with high returns (Ghosh et al. 2014). As alternative push factors, we use the real 10-year US government bond yield by itself rather than the difference in yields between 10-year and 2-year US Treasury bonds, and the price of crude oil (petroleum) rather than energy to test the sensitivity of our results.

As anticipated above, $X_{i,t}$ also includes recipient country pull factors. Financial sector development or trade openness[18] might influence capital inflows. As a measure of financial development of the country, we include domestic credit to the private sector (% of GDP), while for trade openness we sum imports and exports (% of GDP). These variables are extracted from the WDI. Fast growing economies might attract capital flows due to the potential returns that

---

[16] Since push factors are global factors that are common to all countries, they are included in equation (1) as a substitute to time fixed effects.

[17] The Chicago Board Options Exchange (CBOE) Volatility Index, VIX, measures the market expectation of near-term volatility conveyed by stock index option prices. It is retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/VIXCLS.

[18] Financial sector development might make the country more attractive to capital inflows (Gosh et al, 2014). As for trade openness, some authors have found it to be positively related with foreign direct investment (FDI) (Aizenman and Noy 2006, Sazali et al. 2018) or other measures of financial integration (Alotaibi and Mishra 2014), while others have found that trade with developed countries and FDI inflows are substitute in developing countries (Butkiewicz and Yanikkaya 2008).

investors could expect, while weaker fundamentals might induce capital flow reversals during crises instead. To capture these, we also include real GDP growth and public debt (% of GDP) from the WDI.

From Ilzetzki, Reinhart and Rogoff (2019) we take information on the exchange rate regime. The authors provide a classification of exchange rate flexibility that can be roughly defined as pegs, crawling pegs, managed floating, freely floating and freely falling. We simplify the regime classification and include a dummy equal to one when there is a fixed exchange rate regime (when the currency is de facto pegged or has a crawling peg). We include this information as guarantees of a fixed exchange rate regime might signal stability and attract more cross-border lending.

Even if a country needs external financing, its capital account might be closed. To capture this, we include the (de jure) financial openness index from Chinn and Ito (2008). Besides, countries with better institutions might attract larger flows. We follow Cerutti et al. (2019) and proxy institutional quality with the International Country Risk Guide (ICRG) Rule of Law and Investor Protection indices[19].

Furthermore, we explore whether the relationship between international debt flows and government expenditure affects the cyclical behavior of the former. If MDBs aim at adopting a counter-cyclical behavior, but their clients implement a procyclical fiscal policy, can MDBs be truly counter-cyclical? To test whether the counter- or pro- cyclical behavior of international debt flows is affected by considering government expenditure, we estimate:

$$y_{i,t} = \alpha_i + \gamma_t + \delta gap_{i,t} + \beta G_{i,t} + \varepsilon_{i,t}, \tag{2}$$

where $gap_{i,t}$ is the output gap in country i at time t, computed as the percent deviation between the natural logarithm of real GDP in USD and trend GDP. A positive (negative) value of δ will indicate that international debt flows are procyclical (counter-cyclical) when controlling for government expenditure.

Finally, to understand whether international borrowing follows government expenditure beyond correlations, we re-estimate equation (1) through the two-step panel data approach suggested by Arellano and Bover (1995) and Blundell and Bond (2000) and use a system GMM technique to address potential endogeneity. Specifically, we use a set of moment conditions where lagged levels are used as instruments for government expenditure in the difference equations and lag differences in the level equation. We employ Windmeijer's (2005) finite sample correction to report standard errors[20].The next section presents the main empirical results.

---

[19] Both indices go from 1 to 10, with a higher score signaling better quality institutions.

[20] Two-step GMM with the finite-sample correction derived by Windmeijer (2005) makes two-step robust estimations more efficient than one-step robust, especially for system GMM.

4. Results

4.1. Net Flows and Government Expenditure

The analysis begins by showing the relationship between debt flows from different creditors and fiscal policy, specifically government expenditure, and by estimating equation (1). As can be seen from Table 2, net flows and gross flows from private creditors, MDBs, the World Bank and private creditors all co-move with government expenditure: the more a country spends, the larger net flows it receives from external borrowers[21]. Gross flows from RDBs also co-move with government expenditure, but once we exclude principal repayment and focus on RDB net flows only, we no longer observe a positive and significant co-movement with expenditure.

Table 2. Net and Gross Flows to the Government and Government Expenditure

	NET FLOWS				GROSS FLOWS			
	MDB (1)	**RDB** (2)	**WB** (3)	**Private** (4)	**MDB** (5)	**RDB** (6)	**WB** (7)	**Private** (8)
G_{it}	0.0222*	0.0071	0.0120*	0.0250***	0.0636**	0.0490**	0.0147**	0.0255*
	(0.012)	(0.006)	(0.006)	(0.008)	(0.030)	(0.022)	(0.007)	(0.015)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Average Flows	1.087	0.361	0.567	0.384	2.999	2.207	0.773	1.263
Average G	26.16	25.78	26.21	26.31	25.94	25.88	26.17	26.36
Number of countries	108	99	108	106	106	105	107	100
Observations	2,410	2,086	2,368	2,029	2,292	2,235	2,356	1,661
R-squared	0.129	0.120	0.140	0.064	0.198	0.171	0.211	0.048

Source: Authors' calculations.
Note: This table reports the correlations between net and gross flows to the sovereign from different creditors and government expenditure (*G*). Both flows and government expenditure are scaled by trend GDP. The sample period is from 1980 to 2015. Standard errors in parentheses are clustered at the country level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

But other factors may be driving the dynamics of debt flows, besides governments expenditure. To control for macroeconomic variables that might affect the link between MDB sovereign lending and government expenditure beyond country and year fixed effects, we then include additional variables in the estimation.

We start by controlling for other types of capital flows. Table 3 confirms the results: MDB and WB flows continue to follow government expenditure when controlling for private flows, and private flows continue to follow government expenditure when controlling for multilateral flows.

---

[21] The positive co-movement between capital flows to the sovereign and government expenditure does not depend on the primary fiscal balance (see the Appendix for more details).

Table 3. Net and Gross Flows to the Government and Government Expenditure, controlling for other Flows

	NET FLOWS				GROSS FLOWS			
	MDB	RDB	WB	Private	MDB	RDB	WB	Private
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
G_{it}	0.0238**	0.0048	0.0128**	0.0223***	0.0597**	0.0386**	0.0122*	0.0322**
	(0.012)	(0.005)	(0.005)	(0.008)	(0.029)	(0.018)	(0.006)	(0.015)
$Private_{it}$	0.0141	0.0144	-0.0002		-0.0136	-0.0121	-0.0071	
	(0.019)	(0.011)	(0.011)		(0.040)	(0.032)	(0.009)	
$Bilateral_{it}$	-0.0176	0.0194	-0.0004	0.0556	-0.0796	-0.0361	0.0024	0.1961**
	(0.048)	(0.017)	(0.021)	(0.046)	(0.110)	(0.079)	(0.029)	(0.075)
MDB_{it}				0.0242				-0.0152
				(0.033)				(0.044)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Average Dep. Var.	1.056	0.341	0.547	0.386	2.629	1.890	0.711	1.268
Average G	26.25	25.87	26.28	26.25	25.98	25.90	26.18	25.98
Average Bilateral	0.343	0.347	0.351	0.343	0.866	0.874	0.858	0.866
No. of countries	105	97	106	105	99	98	100	99
No. of observations	1,965	1,723	1,935	1,965	1,551	1,527	1,595	1,551
R-squared	0.119	0.130	0.116	0.064	0.165	0.131	0.178	0.063

Source: Authors' calculations.

Note: The table reports the correlations between net and gross flows to the sovereign from different agents and government expenditure (G), controlling for other capital flows. Both flows and government expenditure are scaled by trend GDP. The sample period is from 1980 to 2015. Standard errors in parentheses are clustered at the country-level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

We know from the literature on cross-border capital flows that global "push" and domestic "pull" factors can affect the flow of capital towards countries, beyond other types of flows. Hence, in Table 4 we show what happens with the introduction of push and pull factors when considering the relationship between government expenditure and net flows. In columns 1, 4, 7 and 10, we replicate our baseline estimate of the relationship between different types of net flows and government expenditure, controlling for country and year fixed effects. In columns 2, 5, 8 and 11, we still control for country fixed effects, but rather than year effects we include push factors.

Push factors reflect external conditions, they are supply-side factors. Among them, we use the VIX (proxy for global risk aversion), and the term spread, defined as the difference in yields between 10-year and 2-year US Treasury bonds, and the commodity prices of copper and fuel.

Pull factors instead reflect domestic characteristics such as macroeconomic fundamentals or market imperfections, and they are demand-side factors. To capture them, we include the country GDP growth, its level of debt (% of GDP), its financial development (credit to private sector as % of GDP), its trade openness (% of GDP), its capital account openness and the exchange rate regime.

The association between MDB, WB or private net flows and government expenditure remains positive and significantly different from zero even when controlling for push and pull factors. The estimated coefficients of push factors have the expected signs: an increase in global risk aversion (VIX) is negatively associated with private net flows. It is interesting to note that multilateral flows are instead not associated with global risk aversion, meaning that borrowing from these institutions continue independently of it. A decrease in the term spread is often taken as a predictor of a recession in the US, hence pushing private flows from the US towards emerging markets. Instead, we do not find any significant association between private flows to governments in developing countries and movements in the US yield spread. It is also worth noting that crude oil price booms are positively associated with private flows to governments in developing countries, but negatively with multilateral development flows.

As for pull factors, Table 4 shows that countries with increases in their debt levels experience private capital outflows, but larger multilateral inflows. Moreover, higher financial development (as proxied by credit to the private sector, % of GDP) is positively and significantly associated with larger private capital inflows, while we find a negative relationship between trade openness and MDB/WB net flows; a decrease in trade openness might be hiding that the country is experiencing new difficulties and needs larger flows from development banks.

In columns 3, 6, 9 and 12, we also control for measures of institutional quality (Rule of Law and Investor Protection). We control for institutional variables separately because of missing values that reduce the sample size. The positive relationship between MDB, WB or private flows and government expenditure is maintained also when controlling for institutional quality.[22]

---

[22] Moreover, the relationship between RDB net flows and government expenditure becomes positive. This result is driven by the different sample and not by the institutional controls, that is, even when we do not control for institutional quality, we find a positive and significant relationship between RDB flows and government expenditure in the sample presented in column (6). Given the sensitivity of the relationship between RDB flows and government expenditure to the sample considered, we do not generalize this finding.

Table 4. Net Flows to the Government and Government Expenditure, controlling for Push and Pull factors

	NET FLOWS											
	MDB (1)	MDB (2)	MDB (3)	RDB (4)	RDB (5)	RDB (6)	WB (7)	WB (8)	WB (9)	Private (10)	Private (11)	Private (12)
G_{it}	0.0222*	0.0280**	0.0347***	0.0071	0.0071	0.0115**	0.0120*	0.0118*	0.0162**	0.0250***	0.0285***	0.0343***
	(0.012)	(0.012)	(0.013)	(0.006)	(0.005)	(0.005)	(0.006)	(0.006)	(0.007)	(0.008)	(0.010)	(0.009)
Push factors												
Vix_{it}		-0.0069	-0.0105		-0.0059	-0.0074		-0.0207	-0.0207		-0.1762***	-0.1920***
		(0.026)	(0.029)		(0.013)	(0.013)		(0.016)	(0.018)		(0.037)	(0.041)
US yield difference$_{it}$		-0.0099	0.0162		0.0107	0.0300*		-0.0145	-0.0035		0.0252	0.0202
		(0.035)	(0.035)		(0.019)	(0.017)		(0.019)	(0.020)		(0.051)	(0.065)
Copper Price$_{it}$		0.0000	0.0001**		0.0000	0.0000***		-0.0000	0.0000		-0.0002***	-0.0001***
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Fuel Price$_{it}$		-0.0039***	-0.0041***		-0.0019***	-0.0021***		-0.0018***	-0.0015**		0.0045***	0.0045***
		(0.001)	(0.001)		(0.001)	(0.001)		(0.001)	(0.001)		(0.002)	(0.001)
Pull factors												
GDP growth$_{it}$		-0.0050	-0.0129		-0.0043	-0.0054		0.0013	-0.0008		0.0011	0.0076
		(0.009)	(0.013)		(0.005)	(0.005)		(0.005)	(0.008)		(0.013)	(0.013)
Debt (% GDP)$_{it}$		0.0070***	0.0062**		0.0003	-0.0005		0.0046***	0.0044***		-0.0076***	-0.0050**
		(0.002)	(0.002)		(0.001)	(0.001)		(0.001)	(0.001)		(0.002)	(0.002)
Credit (% GDP)$_{it}$		0.0012	-0.0014		0.0007	-0.0020		-0.0012	-0.0029		0.0184***	0.0168***
		(0.004)	(0.005)		(0.002)	(0.002)		(0.002)	(0.002)		(0.006)	(0.005)
Trade openness (% GDP)$_{it}$		-0.0074*	-0.0070*		-0.0021	-0.0012		-0.0046*	-0.0058***		-0.0042	-0.0080*
		(0.004)	(0.004)		(0.002)	(0.002)		(0.002)	(0.002)		(0.004)	(0.005)
Financial Openness$_{it}$		0.0500	0.0342		0.0035	-0.0082		0.2894**	0.2317		-0.0434	0.3219
		(0.249)	(0.202)		(0.110)	(0.105)		(0.142)	(0.142)		(0.414)	(0.401)
Fixed Exchange Regime$_{it}$		-0.1840	-0.0759		0.0006	0.0087		-0.1682	-0.1035		0.0121	0.0411
		(0.157)	(0.140)		(0.065)	(0.054)		(0.103)	(0.104)		(0.120)	(0.122)
Law and Order$_{it}$			-0.0153			-0.0015			-0.0235			0.0127
			(0.073)			(0.036)			(0.041)			(0.085)
Investment Protection$_{it}$			-0.0121			-0.0219*			0.0362*			0.0531
			(0.036)			(0.013)			(0.020)			(0.039)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No
Average NFL	1.087	1.044	0.939	0.361	0.334	0.303	0.567	0.539	0.477	0.384	0.387	0.398
Average G	26.16	26.05	25.60	25.78	25.61	25.10	26.21	26.04	25.58	26.31	26.29	25.86
Number of countries	108	100	71	99	93	68	108	100	71	106	96	69
Observations	2,410	1,842	1,318	2,086	1,632	1,216	2,368	1,822	1,298	2,029	1,553	1,207
R-squared	0.129	0.133	0.130	0.120	0.051	0.070	0.140	0.166	0.151	0.064	0.064	0.096

Source: Authors' calculations.

Note: The table reports the correlations between net flows to the sovereign from different agents and government expenditure (*G*), controlling for push and pull factors. Both net flows and government expenditure are scaled by trend GDP. The sample period is from 1980 to 2015. Standard errors in parentheses are clustered at the country-level; *** p<0.01, ** p<0.05, * p<0.1. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

Table 5. Gross flows to the Government and Government Expenditure, controlling for Push and Pull factors

GROSS FLOWS

	MDB (1)	MDB (2)	MDB (3)	RDB (4)	RDB (5)	RDB (6)	WB (7)	WB (8)	WB (9)	Private (10)	Private (11)	Private (12)
G_{it}	0.0636**	0.0665***	0.0768***	0.0490**	0.0488***	0.0559***	0.0147**	0.0138**	0.0174**	0.0255*	0.0228	0.0216
	(0.030)	(0.024)	(0.028)	(0.022)	(0.018)	(0.020)	(0.007)	(0.006)	(0.007)	(0.015)	(0.014)	(0.014)
Push factors												
Vix_{it}		-0.0217	-0.0402		-0.0156	-0.0389		-0.0280*	-0.0296*		-0.1676***	-0.2069***
		(0.048)	(0.054)		(0.036)	(0.036)		(0.015)	(0.017)		(0.055)	(0.053)
US yield difference$_{it}$		-0.1033	-0.0481		-0.0520	-0.0069		-0.0249	-0.0109		-0.0497	0.0093
		(0.062)	(0.059)		(0.049)	(0.045)		(0.019)	(0.020)		(0.073)	(0.078)
Copper Price$_{it}$		0.0000	0.0001*		0.0000	0.0001**		-0.0000	0.0000		-0.0001*	-0.0000
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Fuel Price$_{it}$		-0.0085***	-0.0081***		-0.0062***	-0.0061***		-0.0026***	-0.0024***		0.0024	0.0017
		(0.002)	(0.002)		(0.002)	(0.002)		(0.001)	(0.001)		(0.002)	(0.002)
Pull factors												
GDP growth$_{it}$		-0.0013	-0.0065		-0.0028	-0.0056		0.0005	-0.0018		-0.0099	-0.0086
		(0.017)	(0.024)		(0.013)	(0.018)		(0.005)	(0.008)		(0.014)	(0.015)
Debt (% GDP)$_{it}$		0.0224***	0.0214***		0.0138***	0.0131***		0.0072***	0.0067***		-0.0028	0.0026
		(0.004)	(0.005)		(0.003)	(0.004)		(0.001)	(0.001)		(0.004)	(0.004)
Credit (% GDP)$_{it}$		-0.0077	-0.0127		-0.0069	-0.0109		-0.0014	-0.0029		0.0119	0.0111*
		(0.009)	(0.011)		(0.007)	(0.009)		(0.002)	(0.002)		(0.008)	(0.006)
Trade openness (% GDP)$_{it}$		-0.0061	-0.0026		-0.0041	0.0002		-0.0038	-0.0047**		-0.0017	-0.0107*
		(0.009)	(0.010)		(0.008)	(0.008)		(0.002)	(0.002)		(0.006)	(0.006)
Financial Openness$_{it}$		0.3290	0.2760		0.2851	0.3149		0.2479*	0.1941		-0.1256	0.1925
		(0.457)	(0.433)		(0.363)	(0.297)		(0.134)	(0.141)		(0.565)	(0.537)
Fixed Exchange Regime$_{it}$		-0.4559	-0.3413		-0.2067	-0.1548		-0.2194**	-0.1582		-0.1097	-0.0844
		(0.320)	(0.299)		(0.230)	(0.200)		(0.098)	(0.100)		(0.221)	(0.222)
Law and Order$_{it}$			0.3013			0.2535			0.0432			0.0757
			(0.228)			(0.173)			(0.040)			(0.107)
Investment Protection$_{it}$			0.0345			0.0337			0.0217			0.0620
			(0.075)			(0.051)			(0.020)			(0.072)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No
Average Disb	1.668	1.624	1.496	0.461	0.448	0.477	1.256	1.211	1.046	1.263	1.164	1.166
Average G	26.18	26.03	25.58	26.17	26.02	25.55	25.94	25.76	25.25	26.36	26.42	25.79
Number of countries	107	100	71	107	100	71	106	100	71	100	92	66
Observations	2,422	1,865	1,331	2,413	1,858	1,324	2,294	1,775	1,263	1,661	1,279	1,038
R-squared	0.195	0.242	0.257	0.105	0.072	0.123	0.173	0.239	0.268	0.048	0.020	0.041

Source: Authors' calculations.

Note: The table reports the correlations between gross flows to the sovereign from different agents and government expenditure (*G*), controlling for push and pull factors. Both gross flows and government expenditure are scaled by trend GDP. The sample period is from 1980 to 2015. Standard errors in parentheses are clustered at the country-level; *** p<0.01, ** p<0.05, * p<0.1. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

When we examine the relationship between gross flows and expenditure while controlling for push and pull factors, we see broadly a similar picture, even though, differently from net flows, private gross flows are no longer correlated with government expenditure.

In sum, even when controlling for other types of flows, for global push and domestic pull factors, we find evidence of a positive association between multilateral or private net flows and government expenditure. As for gross flows instead, it is only multilateral gross flows (including World Bank and RDBs) that seem positively correlated with expenditure.

Understanding whether multilateral development flows tend to follow government expenditure is important in the discussion of whether MDBs can be counter-cyclical in countries that follow a pro-cyclical fiscal policy. We then explore the relationship between international debt flows and the output gap by estimating equation (2): results are reported in Table 6. As we can see from column (1), when we do not control for government expenditure MDBs are counter-cyclical. Since the standard deviation of the output gap is 0.31, the point estimate implies that when the GDP of a country is one standard deviation below trend, we observe an increase in net flows from MDBs by 0.046 points of trend GDP. However, once we control for government expenditure (column 2), the negative correlation with the output gap vanishes, and only the positive relationship with government expenditure remains. That is, while MDBs seem to be counter-cyclical, government expenditure is an omitted confounding factor and once we control for it, MDB flows turn acyclical. The same is true for the World Bank, while net flows from RDBs seem to be acyclical whether we control for government expenditure or not[23]. Interestingly, the relationship between private net flows and output gap is strong, positive and significant, even when controlling for government expenditure.

The same conclusions can be drawn from the analysis of gross flows, as reported in Table 7, where the only difference is that, unlike net flows, gross flows from RDBs follow the same pattern as gross flows from MDBs and the WB: they are negatively correlated with the output gap, but once we control for government expenditure, the relationship is no longer significant[24].

---

[23] This is not driven by the different subsamples used for RDB and WB lending, since this is true even when we re-assess the cyclical properties of RDB and WB net flows in the same subsample where neither of the flows is missing (Appendix Table 1, columns 1-4).

[24] However, when we evaluate the cyclical properties of RDB and WB gross flows in the same subsample, we find that both show a countercyclical behavior even when controlling for government expenditure (Appendix Table 1, columns 5-8).

Table 6. Net flows to the Government, Output Gap and Government Expenditure
NET FLOWS

	MDB		RDB		WB		Private	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Output Gap$_{it}$	-0.1499**	-0.1821	-0.0345	-0.0768	-0.1080*	-0.1033	0.2954***	0.6969***
	(0.069)	(0.172)	(0.052)	(0.096)	(0.055)	(0.111)	(0.112)	(0.193)
G_{it}		0.0230*		0.0076		0.0120*		0.0250***
		(0.012)		(0.005)		(0.006)		(0.008)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Countries	108	108	99	99	108	108	106	106
Average Flows	1.255	1.085	0.427	0.360	0.656	0.567	0.398	0.382
Average Output Gap	-0.004	-0.009	-0.008	-0.008	-0.007	-0.009	-0.004	-0.010
Number of countries	108	108	99	99	108	108	106	106
Observations	3,282	2,403	2,846	2,080	3,198	2,363	2,824	2,023
R-squared	0.130	0.131	0.119	0.122	0.135	0.141	0.076	0.073

Source: Authors' calculations.
Note: The table reports the correlations between net flows to the sovereign from different agents, output gap and government expenditure (*G*). Net flows and government expenditure are scaled by trend GDP. Output gap is calculated as the deviation between the natural logarithm of real GDP and its trend computed with the Hodrick-Prescott filter. The sample period is from 1980 to 2015. Standard errors in parentheses are clustered at the country-level; *** p<0.01, ** p<0.05, * p<0.1. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

Table 7. Gross flows to the Government, Output Gap and Government Expenditure
GROSS FLOWS

	MDB		RDB		WB		Private	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Output Gap$_{it}$	-0.5639**	-0.6523	-0.3548*	-0.4330	-0.1584**	-0.1305	0.4822***	1.2526***
	(0.243)	(0.426)	(0.180)	(0.285)	(0.069)	(0.115)	(0.171)	(0.353)
G_{it}		0.0661**		0.0497**		0.0147**		0.0264*
		(0.030)		(0.022)		(0.007)		(0.015)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Countries	106	106	105	105	107	107	103	100
Average Flows	3.316	2.997	2.421	2.207	0.880	0.773	1.362	1.261
Average Output Gap	-0.005	-0.005	-0.004	-0.005	-0.005	-0.009	-0.005	-0.007
Number of countries	106	106	105	105	107	107	103	100
Observations	3,096	2,285	3,002	2,230	3,156	2,351	2,317	1,657
R-squared	0.178	0.202	0.145	0.173	0.202	0.213	0.084	0.063

Source: Authors' calculations.

Note: The table reports the correlations between gross flows to the sovereign from different agents, output gap and government expenditure (*G*). Gross flows and government expenditure are scaled by trend GDP. Output gap is calculated as the deviation between the natural logarithm of real GDP and its trend computed with the Hodrick-Prescott filter. The sample period is from 1980 to 2015. Standard errors in parentheses are clustered at the country-level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

In sum, counter cyclicality of MDBs is a spurious correlation hiding the correlation of MDB lending with government expenditure.

We take a step further into understanding whether international sovereign borrowing is driven by government expenditure or simply correlated. So far, to address concerns of reverse causality, that is, that expenditure increases might be driven by availability of external financing, we have controlled for other types of flows and for a series of push and pull factors. As an alternative, we now present specifications that use internal instruments (GMM estimation) to mitigate this problem further.

In Table 8 we show the results of implementing a system-GMM, where we instrument for government expenditure and output gap with their lags.

Table 8. Net Flows to the Government and Government Expenditure, system-GMM

	NET FLOWS			
	MDB	**RDB**	**WB**	**Private**
	(1)	**(2)**	**(3)**	**(4)**
G_{it}	0.0350	0.0073	0.0235*	0.0275
	(0.021)	(0.014)	(0.012)	(0.018)
Output Gap$_{it}$	-0.0745	0.2023	0.0855	0.4815
	(0.206)	(0.193)	(0.128)	(0.291)
Observations	2403	2080	2363	2023
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Lag limit	1-2	1-2	1-2	1-2
Collapse	Yes	Yes	Yes	Yes
Instruments	41	41	41	41
Countries	108	99	108	106
AR(2)	0.515	0.0871	0.395	0.546
Hansen	0.495	0.179	0.612	0.817

Source: Authors' calculations.

Note: All regressions are two-step system GMM. Year FE are not reported. Both net flows and government expenditure are scaled by trend GDP. The sample period is from 1980 to 2015. Windmeijer's finite-sample correction for the two-step covariance matrix, corrected standard errors clustered at the country-level in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. The bottom rows report *p*-values for the Arellano-Bond test for AR(2) in differences and the Hansen test of joint validity of instruments. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

As the number of time periods available is large (35 years), an unrestricted set of lags might lead to a large number of instruments with potential loss of efficiency. As explained in Roodman (2009), a large instrument collection overfits endogenous variables, as it fails at expunging the endogenous components of the instrumented variables and biases coefficient estimates towards those from non-instrumenting estimators. Moreover, it weakens the Hansen test of the instruments' joint validity. To avoid instrument proliferation, instruments can be collapsed, and this is what we do when performing GMM estimations. This way, one instrument for each variable and lag distance is created, rather than for each time period, variable and lag distance. We restrict the number of lags to a maximum of 2. The number of total collapsed instruments is 41. Net flows from the WB maintain a positive and significant relationship with government expenditure, while all other net flows lose significance.

Both the validity of the instruments and the presence of serial correlation in the residuals can be tested. The results of the Hansen test suggest that overidentifying restrictions are valid for all specifications.

The Arellano-Bond test for autocorrelation of residuals in differences confirms that differenced residuals do not exhibit significant AR(2) behavior, that is, first lags of endogenous variables are appropriate instruments for their current values, except for column (2)[25].

Estimating the relationship between gross flows and expenditure through a system-GMM while also controlling for lagged GDP growth, we find a more interesting picture: MDB and WB gross flows seem to follow expenditure in almost all specifications, while private gross flows do not (Table 9).

---

[25] When using instead lags 2-3 the differenced residuals do not exhibit significant AR(3) behavior and results are in line.

Table 9. Gross flows to the Government and Government Expenditure, system-GMM

	GROSS FLOWS			
	MDB	RDB	WB	Private
	(1)	(2)	(3)	(4)
G_{it}	0.0888*	0.0526	0.0219*	0.0260
	(0.052)	(0.038)	(0.013)	(0.026)
Output Gap$_{it}$	0.0864	0.3030	0.0481	0.2655
	(0.583)	(0.503)	(0.134)	(0.359)
Observations	2285	2230	2351	1657
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Lag limit	1-2	1-2	1-2	1-2
Collapse	Yes	Yes	Yes	Yes
Instruments	41	41	41	41
Countries	106	105	107	100
AR(2)	0.885	0.556	0.712	0.243
Hansen	0.260	0.200	0.658	0.828

Source: Authors' calculations.

Note: All regressions are two-step system GMM. Year FE are not reported. Both gross flows and government expenditure are scaled by trend GDP. The sample period is from 1980 to 2015. Windmeijer's finite-sample correction for the two-step covariance matrix, corrected standard errors clustered at the country-level in parentheses; *** p<0.01, ** p<0.05, * p<0.1. The bottom rows report *p*-values for the Arellano-Bond test for AR(2) in differences and the Hansen test of joint validity of instruments. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

The evidence presented so far suggests that MDB gross flows follow government expenditure, shedding light on the nature of the MDB business model, that responds to their clients' demands and accompanies government expenditure. This, however, raises concerns on the real possibility of MDBs to be counter-cyclical when a country runs procyclical fiscal policies.

5. Robustness Checks

Fiscal stance --- One might argue that the increase in sovereign debt flows is a mathematical consequence of a larger primary fiscal deficit: a country whose spending exceeds revenues goes into debt by borrowing from foreign creditors to finance its expenses. But a priori we do not know which creditor they will turn to when they run a fiscal deficit, whether MDBs or private creditors, this is an empirical question we can answer. Second, when we assess whether the relationship between MDB debt flows and government expenditure is driven by primary fiscal deficits, we find instead that the co-movement between these two flows is positive and significant regardless of the fiscal stance.

Potential asymmetries in the association between capital flows to the sovereign and government expenditure are evaluated depending on the primary fiscal balance through the following model:

$$y_{i,t} = \alpha_i + \gamma_t + \beta_1 G_{i,t} + \beta_2 dum\left(1\middle|pri\_fb_{i,t} < 0\right) + \beta_3\, dum\left(1\middle|pri\_fb_{i,t} < 0\right) * G_{i,t} + \varepsilon_{i,t}, \qquad (3)$$

where $dum\left(1\middle|pri\_fb_{i,t} < 0\right)$ is an indicator variable equal to 1 when there is a primary fiscal deficit. Therefore, *β₂* captures the association between capital flows and the fiscal deficit, while *β₁* captures the relationship with government expenditure when the country has a primary surplus. The sum of *β₁* + *β₃* represents the association between capital flows and government expenditure when the government is running a primary deficit; *β₃* measures the difference in the relationship between flows and government expenditure if the primary fiscal balance is positive or negative.

The results of estimating equation (3) are reported in Table 10. *β₁* is found to be significantly positive for most of the flows, indicating that when a government is in fiscal surplus and increases its government expenditure, flows from every creditor (but RDB net flows and private gross flows) increase (Table 10).

β₃ is almost never significantly different from zero, which implies that the behavior of foreign creditors does not change when the country is in deficit. The only exception is given by the World Bank flows, for which the relationship with government expenditure becomes not significantly different from zero if the country experiences a fiscal deficit.

Hence, Table 10 suggests that when a country increases its total expenditure, capital flows from international creditors increase, irrespective of whether the country is in fiscal primary deficit or surplus, apart from World Bank flows, that does not co-move with government expenditure as much if the country is running a fiscal primary deficit. Overall, the co-movement between sovereign debt flows and expenditure is not driven by the government's fiscal stance.

Table 10. Net Flows to the Government and Government Expenditure, Asymmetries

	NET FLOWS				GROSS FLOWS			
	MDB (1)	**RDB** (2)	**WB** (3)	**Private** (4)	**MDB** (5)	**RDB** (6)	**WB** (7)	**Private** (8)
G_{it} (β_1)	0.0234**	0.0027	0.0170***	0.0128*	0.0744**	0.0447**	0.0225***	0.0230
	(0.011)	(0.005)	(0.006)	(0.007)	(0.033)	(0.022)	(0.006)	(0.014)
Fiscal Deficit$_{it}$ (β_2)	0.4373	-0.0360	0.4442***	-0.0713	0.8304	0.1918	0.4244***	0.1635
	(0.272)	(0.113)	(0.143)	(0.243)	(0.600)	(0.402)	(0.146)	(0.344)
Fiscal Deficit$_{it}$ # G_{it} (β_3)	-0.0057	0.0057	-0.0111**	0.0142	-0.0204	0.0013	-0.0135***	-0.0000
	(0.009)	(0.004)	(0.005)	(0.010)	(0.023)	(0.015)	(0.005)	(0.015)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Average Flows	1.092	0.361	0.572	0.375	2.996	2.214	0.779	1.250
Average G	26.23	25.78	26.27	26.45	25.94	25.87	26.23	26.48
No. of countries	106	97	106	104	105	104	105	100
Observations	2,283	1,988	2,247	1,938	2,189	2,139	2,238	1,590
R-squared	0.143	0.137	0.157	0.085	0.216	0.180	0.226	0.053

Source: Authors' calculations.

Note: The table reports the correlations between net and gross flows to the sovereign from different agents and government expenditure (*G*), exploring different behaviors to positive/negative primary fiscal balances. Both flows and government expenditure are scaled by trend GDP. The sample period is from 1980 to 2015. Standard errors in parentheses are clustered at the country-level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

Lagged pull factors --- To mitigate potential endogeneity concerns, we test whether the co-movement between capital flows and government expenditure survives the adoption of one-year lagged values for domestic pull factors, following Forbes and Warnock (2012) and Ghosh et al. (2014). Reassuringly, the co-movement between multilateral or World Bank capital flows and government expenditure remains unaltered, as for private net flows and RDB gross flows. Overall, controlling for contemporaneous pull factors does not give different estimates compared to controlling for lagged pull factors (Appendix Tables 2-3).

Alternative push factors --- We also explore whether results are sensitive to the choice of push factors. For this, we use the price of crude oil (petroleum) instead of fuel, and the 10-year US government bond yield rather than the difference between the 10- and the 2-year US Treasury yield (as in Gosh et al. 2014). Results are robust to these changes. As could be expected, the price of crude oil exhibits the same relationship with capital flows as the price of fuel[26]: positive and significant with private capital flows, negative and significant with multilateral flows (Appendix Tables 4-5).

6. Conclusion

The literature on fiscal policy and international private capital flows has found evidence of procyclicality. This paper has explored whether multilateral sovereign and private lending move together with fiscal policy and the business cycle, amplifying economic fluctuations.

Private lending is found procyclical, as previously reported in the literature. Moreover, the analysis finds that multilateral sovereign borrowing tracks government expenditure, and this co-movement holds regardless of the stance of fiscal policy and to a series of robustness checks. These findings reveal the existence of structural constraints for MDBs to lend countercyclically. If fiscal policy is pro-cyclical and multilateral lending follows government expenditure, there is little space for MDBs to be counter-cyclical. Indeed, once we control for government expenditure, we find that MDB lending is no longer counter-cyclical. This finding raises doubts on the feasibility of MDBs to lend countercyclically, unless fiscal policy in borrowing countries becomes countercyclical.

At the end it takes two to tango. Sovereign lending is an equilibrium outcome and its cyclical properties depend on the nature of fiscal policy that shapes the demand for sovereign financing. Then the path towards MDBs countercyclicality must be first paved with reforms that help fiscal policy to behave countercyclically.

References

Aizenman, J. and Noy, I. 2006. FDI and trade—Two-way linkages?. *The Quarterly Review of Economics and Finance*: 46(3), 317-337.

Alesina, A., F.R. Campante, and G. Tabellini. 2008. Why Is Fiscal Policy Often Procyclical. *Journal of the European Economic Association* 6: 1006–036.

Alotaibi, A. and Mishra, A.V. 2014. Chapter 31, Determinants of international financial integration of GCC markets. Emerging Markets and the Global Economy, Academic Press, pp.749-771.

Araujo, J.D., A.C. David, C. van Hombeeck, and C. Papageorgiou. 2017. Joining the Club? Procyclicality of Private Capital Inflows in Lower Income Developing Economies. *Journal of International Money and Finance* 70: 157–82.

Arellano, M. and Bover, O., 1995. Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68(1): 29-51.

Avellán, L., and G. Vuletin. 2015. Fiscal Procyclicality and Output Forecast Errors. *Journal of International Money and Finance* 55: 193–204.

Blundell, R. and Bond, S. 2000. GMM estimation with persistent panel data: an application to production functions. *Econometric Reviews*, 19(3): 321-340.

Bova, M.E., N. Carcenac, and M.M. Guerguil. 2014. Fiscal Rules and the Procyclicality of Fiscal Policy in the Developing World. IMF Working Paper No. 14/122. International Monetary Fund, Washington, DC.

Broccolini, C., Lotti, G., Maffioli, A., Presbitero, A., Stucchi, R. 2019. Mobilization of Multilateral Development Banks, IMF Working Paper No. 19/28. International Monetary Fund, Washington, DC.

Broner, F., T. Didier, A. Erce, and S.L. Schmukler. 2013. Gross Capital Flows: Dynamics and Crises. *Journal of Monetary Economics* 60(1): 113–33.

Butkiewicz, J.L. and Yanikkaya, H. 2008. Capital account openness, international trade, and economic growth: A cross-country empirical investigation. *Emerging Markets Finance and Trade* 44(2): pp.15-38.

Cerutti, E., S. Claessens, and D. Puy. 2019. Push factors and capital flows to emerging markets: why knowing your lender matters more than fundamentals. *Journal of International economics,* 119: 133-149.

Chinn, M.D., and Ito, H. 2008. A new measure of financial openness. *Journal of Comparative Policy Analysis*, 10(3): 309-322.

Cuddington, J. 1989. Commodity Export Booms in Developing Countries. *World Bank Research Observer* 4: 143–65.

Dasgupta, D., and D. Ratha. 2000. What Factors Appear to Drive Private Capital Flows to Developing Countries? And How Does Official Lending Respond? Policy Research Working Paper 2392. World Bank, Washington, DC.

De la Torre, A., T. Didier, and S. Pienknagura. 2012. Latin America Copes with Volatility: The Dark Side of Globalization. World Bank, Washington, DC.

Dreher, A., Klasen, S., Vreeland, J., & Werker, E. 2013. The Costs of Favoritism: Is Politically Driven Aid Less Effective? *Economic Development and Cultural Change,* 62(1): 157-191.

Dreher, A., Sturm, J., & Vreeland, J. 2009a. Development aid and international politics: Does membership on the UN Security Council influence World Bank decisions?. *e* 88: 1–18.

Dreher, A., Sturm, J., & Vreeland, J. 2009b. Global horse trading: IMF loans for votes in the United Nations Security Council. *European Economic Review* 53: 742–757.

Forbes, K.J. and Warnock, F.E. 2012. Capital flow waves: Surges, stops, flight, and retrenchment. *Journal of International Economics* 88(2): 235-251.

Frankel, J.A., C.A. Végh, and G. Vuletin. 2013. On Graduation from Fiscal Procyclicality. *Journal of Development Economics* 100(1): 32–47.

Galindo, A.J., and U. Panizza. 2018. The Cyclicality of International Public Sector Borrowing in Developing Countries: Does the Lender Matter? W*orld Development* 112: 119-135.

Gavin, M., and R. Perotti. 1997. Fiscal Policy in Latin America. *NBER Macroeconomics Annual* 12: 11–61.

Gerling, M.K., M.P.A. Medas, M.T. Poghosyan, J. Farah-Yacoub, and Y. Xu. 2017. Fiscal Crises. IMF Working Paper No. 17/86. International Monetary Fund, Washington, DC.

Ghosh, A.R., Qureshi, M.S., Kim, J.I. and Zalduendo, J. 2014. Surges. *Journal of International Economics* 92(2): 266-285.

Humphrey, C., and K. Michaelowa. 2011. The Business of Development: Trends in Lending by Multilateral Development Banks to Latin America, 1980-2009. Proceedings of the German Development Economics Conference, Verein für Socialpolitik, Research Committee Development Economics.

Humphrey, C. and Michaelowa, K., 2013. Shopping for development: Multilateral lending, shareholder composition and borrower preferences. *World Development* 44:142-155.

Humphrey, C. 2014. The politics of loan pricing in multilateral development banks. *Review of International Political Economy* 21:3, 611-639.

Humphrey, C., 2017. He who pays the piper calls the tune: Credit rating agencies and multilateral development banks. *The Review of International Organizations* 12:2, 281-306.

Ilzetzki, E., and C.A. Végh. 2008. Procyclical Fiscal Policy in Developing Countries: Truth or Fiction? NBER Working Paper No. 14191. National Bureau of Economic Research, Cambridge, MA.

Kaminsky, G.L., C.M. Reinhart, and C.A. Végh. 2005. When It Rains, It Pours: Procyclical Capital Flows and Macroeconomic Policies. NBER Macroeconomics Annual 2004, Volume 19. National Bureau of Economic Research, Cambridge, MA.

Kilby, C. 2006. Donor influence in multilateral development banks: The case of the Asian development bank. *Review of International Organizations* 1(2): 173–195.

Kilby, C. 2011. Informal influence in the Asian development bank. *Review of International Organizations* 6(3–4): 223–257.

Ilzetzki, E., C. M. Reinhart, and K. S. Rogoff. 2019. Exchange Arrangements Entering the 21st Century: Which Anchor Will Hold? *Quarterly Journal of Economics* 134 (2): 599-646.

Levy Yeyati, E., 2009. Optimal Debt? On the Insurance Value of International Debt Flows to Developing Countries. *Open Economies Review* 20(4): 489–507.

Levy Yeyati, E., and J. Zúñiga. 2015. Varieties of Capital Flows: What Do We Know?. CID Working Paper 296. Center for International Development at Harvard University.

Munir, W., and Gallagerh, K.P. 2018. Scaling up Lending at the Multi-Lateral Development Banks: Benefts and Costs of Expanding and Optimizing MDB Balance Sheets. GEGI Working Paper 13 (4).

Ratha, D. 2005. Demand for World Bank lending. *Economic Systems.* 29, 408–421.

Reinhart, C.M., and V.R. Reinhart. 2008. Capital Flow Bonanzas: An Encompassing View of the Past and Present. NBER Working Paper No. 14321 National Bureau of Economic Research, Cambridge, MA.

Roodman, D. 2009. A note on the theme of too many instruments. *Oxford Bulletin of Economics and Statistics* 71(1):135-158.

Sazali, S. B. M., Bakar, M. A. B. A., Huey, A. Y., & Ghazali, M. S. Bin. 2018. Causal Links between Trade Openness and Foreign Direct Investment in Malaysia. *International Journal of Academic Research in Business and Social Sciences* 8(1): 932–939.

Talvi, E., and C.A. Végh. 2005. Tax Base Variability and Procyclical Fiscal Policy in Developing Countries. *Journal of Development Economics* 78(1): 156–90.

Tornell, A., and P.R. Lane. 1999. The Voracity Effect. *American Economic Review* 89(1): 22–46.

Végh, C.A., D. Lederman, and F. Bennett. 2017. Leaning Against the Wind: Fiscal Policy in Latin America and the Caribbean in a Historical Perspective. LAC Semiannual Report (April). World Bank, Washington, DC.

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

Appendix

Appendix Table 1. RDB and WB Net flows to the Government, Output Gap and Government Expenditure Evaluated in the Same Sample

| | NET FLOWS | | | | GROSS FLOWS | | | |
| | RDB | | WB | | RDB | | WB | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Output Gap$_{it}$	-0.0454	-0.0929	-0.1188*	-0.1049	-0.6398***	-0.9820***	-0.3813***	-0.4666***
	(0.052)	(0.093)	(0.063)	(0.126)	(0.192)	(0.306)	(0.121)	(0.177)
G$_{it}$		0.0053		0.0118*		0.0450**		0.0162**
		(0.005)		(0.007)		(0.019)		(0.007)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Average Flows	0.419	0.359	0.693	0.604	2.406	2.215	0.927	0.816
Average Output Gap	-0.006	-0.008	-0.006	-0.008	-0.001	-0.004	-0.001	-0.004
No. Countries	99	99	99	99	105	105	105	105
Observations	2,756	2,029	2,756	2,029	2,970	2,217	2,970	2,217
R-squared	0.118	0.119	0.143	0.153	0.142	0.180	0.211	0.227

Source: Authors' calculations.

Note: The table reports the correlations between net flows to the sovereign from Regional Development Banks (RDBs) and from the World Bank (WB), output gap and government expenditure (*G*), evaluated in the same subsample. Net flows and government expenditure are scaled by trend GDP. Output gap is calculated as the deviation between the natural logarithm of real GDP and its trend computed with the Hodrick-Prescott filter. The sample period is from 1980 to 2015. Standard errors in parentheses are clustered at the country-level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. FE: fixed effects.

Appendix Table 2. Net Flows to the Government and Government Expenditure, controlling for Push and Lagged Pull factors

	NET FLOWS											
	MDB (1)	MDB (2)	MDB (3)	RDB (4)	RDB (5)	RDB (6)	WB (7)	WB (8)	WB (9)	Private (10)	Private (11)	Private (12)
G_{it}	0.0222*	0.0282**	0.0352**	0.0071	0.0059	0.0095**	0.0120*	0.0128*	0.0168**	0.0250***	0.0224***	0.0275***
	(0.012)	(0.012)	(0.014)	(0.006)	(0.005)	(0.004)	(0.006)	(0.007)	(0.008)	(0.008)	(0.008)	(0.008)
Push factors												
Vix_{it}		0.0228	0.0296		0.0115	0.0112		-0.0109	-0.0027		-0.2041***	-0.2139***
		(0.025)	(0.026)		(0.011)	(0.011)		(0.015)	(0.015)		(0.038)	(0.040)
US yield difference$_{it}$		-0.0290	-0.0115		-0.0072	0.0096		-0.0158	-0.0151		0.0139	-0.0050
		(0.036)	(0.037)		(0.019)	(0.018)		(0.019)	(0.022)		(0.054)	(0.069)
Copper Price$_{it}$		-0.0000	0.0000		0.0000	0.0000*		-0.0000	-0.0000		-0.0002***	-0.0001***
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Fuel Price$_{it}$		-0.0034***	-0.0036***		-0.0014***	-0.0017***		-0.0017***	-0.0015***		0.0046***	0.0045***
		(0.001)	(0.001)		(0.000)	(0.000)		(0.001)	(0.001)		(0.001)	(0.001)
Pull factors												
GDP growth$_{it-1}$		-0.0126	-0.0172		-0.0065*	-0.0071		-0.0023	-0.0022		-0.0056	-0.0107
		(0.009)	(0.011)		(0.003)	(0.005)		(0.005)	(0.006)		(0.010)	(0.010)
Debt (% GDP)$_{it-1}$		0.0051**	0.0050**		0.0002	-0.0002		0.0031**	0.0029**		-0.0115***	-0.0095***
		(0.002)	(0.002)		(0.001)	(0.001)		(0.001)	(0.001)		(0.002)	(0.002)
Credit (% GDP)$_{it-1}$		0.0056	0.0035		0.0013	-0.0012		0.0012	0.0004		0.0202***	0.0189***
		(0.004)	(0.005)		(0.002)	(0.002)		(0.002)	(0.002)		(0.006)	(0.005)
Trade openness (% GDP)$_{it-1}$		-0.0077*	-0.0075*		-0.0006	0.0008		-0.0059***	-0.0071***		-0.0009	-0.0033
		(0.004)	(0.004)		(0.002)	(0.002)		(0.002)	(0.002)		(0.004)	(0.004)
Financial Openness$_{it-1}$		0.0444	-0.1087		-0.0416	-0.1068		0.2487*	0.0804		0.0240	0.2779
		(0.233)	(0.206)		(0.101)	(0.105)		(0.144)	(0.144)		(0.412)	(0.416)
Fixed Exchange Regime$_{it-1}$		-0.1077	-0.0079		0.0382	0.0687		-0.1738*	-0.1256		-0.0466	-0.0253
		(0.168)	(0.153)		(0.065)	(0.063)		(0.096)	(0.098)		(0.149)	(0.170)
Law and Order$_{it-1}$			-0.0490			-0.0129			-0.0494			-0.0303
			(0.083)			(0.033)			(0.049)			(0.091)
Investment Protection$_{it-1}$			-0.0207			-0.0164			0.0355*			0.0204
			(0.039)			(0.011)			(0.020)			(0.031)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No
Average NFL	1.087	1.019	0.919	0.361	0.323	0.291	0.567	0.523	0.464	0.384	0.395	0.409
Average G	26.16	26.05	25.60	25.78	25.60	25.10	26.21	26.06	25.58	26.31	26.28	25.86
Number of countries	108	99	71	99	92	68	108	99	71	106	94	68
Observations	2,410	1,788	1,282	2,086	1,585	1,183	2,368	1,770	1,262	2,029	1,507	1,175
R-squared	0.129	0.122	0.120	0.120	0.045	0.058	0.140	0.154	0.137	0.064	0.088	0.111

Source: Authors' calculations.

Note: The table reports the correlations between net flows to the sovereign from different agents and government expenditure (*G*), controlling for push and pull factors. Both net flows and government expenditure are scaled by trend GDP. The sample period is from 1980 to 2015. Standard errors in parentheses are clustered at the country-level; *** p<0.01, ** p<0.05, * p<0.1. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

	GROSS FLOWS											
	MDB (1)	MDB (2)	MDB (3)	RDB (4)	RDB (5)	RDB (6)	WB (7)	WB (8)	WB (9)	Private (10)	Private (11)	Private (12)
G$_{it}$	0.0636**	0.0734***	0.0841**	0.0490**	0.0522***	0.0588***	0.0147**	0.0153**	0.0187**	0.0255*	0.0125	0.0106
	(0.030)	(0.026)	(0.032)	(0.022)	(0.019)	(0.022)	(0.007)	(0.006)	(0.008)	(0.015)	(0.014)	(0.013)
Push factors												
Vix$_{it}$		0.0306	0.0202		0.0259	0.0045		-0.0137	-0.0088		-0.1779***	-0.2072***
		(0.048)	(0.050)		(0.034)	(0.032)		(0.015)	(0.015)		(0.050)	(0.048)
US yield difference$_{it}$		-0.1156*	-0.0769		-0.0717	-0.0304		-0.0264	-0.0235		-0.0605	-0.0049
		(0.062)	(0.064)		(0.048)	(0.047)		(0.019)	(0.021)		(0.063)	(0.069)
Copper Price$_{it}$		0.0000	0.0001		0.0000	0.0001*		-0.0000	0.0000		-0.0001**	-0.0001
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Fuel Price$_{it}$		-0.0079***	-0.0076***		-0.0056***	-0.0056***		-0.0025***	-0.0024***		0.0021	0.0012
		(0.002)	(0.002)		(0.001)	(0.001)		(0.001)	(0.001)		(0.002)	(0.002)
Pull factors												
GDP growth$_{it-1}$		-0.0129	-0.0143		-0.0093	-0.0085		-0.0014	-0.0009		-0.0093	-0.0264*
		(0.015)	(0.019)		(0.011)	(0.014)		(0.005)	(0.006)		(0.015)	(0.015)
Debt (% GDP)$_{it-1}$		0.0199***	0.0198***		0.0119***	0.0121***		0.0055***	0.0051***		-0.0089***	-0.0037
		(0.005)	(0.005)		(0.003)	(0.004)		(0.001)	(0.001)		(0.003)	(0.003)
Credit (% GDP)$_{it-1}$		0.0004	-0.0041		-0.0011	-0.0057		0.0014	0.0008		0.0164**	0.0156**
		(0.008)	(0.011)		(0.007)	(0.009)		(0.002)	(0.002)		(0.007)	(0.006)
Trade openness (% GDP)$_{it-1}$		-0.0116	-0.0092		-0.0061	-0.0025		-0.0060***	-0.0071***		0.0032	-0.0038
		(0.010)	(0.012)		(0.008)	(0.010)		(0.002)	(0.002)		(0.006)	(0.006)
Financial Openness$_{it-1}$		0.2319	-0.0578		0.2070	0.0774		0.2383*	0.0862		-0.0966	0.0982
		(0.408)	(0.364)		(0.311)	(0.253)		(0.139)	(0.146)		(0.510)	(0.493)
Fixed Exchange Regime$_{it-1}$		-0.4807	-0.3368		-0.2033	-0.1056		-0.2375**	-0.1878*		-0.1423	-0.0946
		(0.353)	(0.339)		(0.250)	(0.223)		(0.103)	(0.105)		(0.206)	(0.215)
Law and Order$_{it-1}$			0.1688			0.1599			0.0047			0.0231
			(0.234)			(0.172)			(0.050)			(0.121)
Investment Protection$_{it-1}$			-0.0108			0.0011			0.0153			0.0207
			(0.076)			(0.049)			(0.021)			(0.057)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No
Average Gross Flows	2.999	2.861	2.584	2.207	2.117	1.880	0.773	0.709	0.659	1.263	1.152	1.155
Average G	25.94	25.79	25.28	25.88	25.72	25.18	26.17	26	25.54	26.36	26.43	25.79
Number of countries	106	98	70	105	98	70	107	99	71	100	92	66
Observations	2,292	1,725	1,230	2,235	1,703	1,211	2,356	1,781	1,274	1,661	1,244	1,010
R-squared	0.198	0.251	0.278	0.171	0.181	0.215	0.211	0.255	0.256	0.048	0.034	0.041

Source: Authors' calculations.

Note: The table reports the correlations between gross flows to the sovereign from different agents and government expenditure (*G*), controlling for push and pull factors. Both gross flows and government expenditure are scaled by trend GDP. The sample period is from 1980 to 2015. Standard errors in parentheses are clustered at the country-level; *** p<0.01, ** p<0.05, * p<0.1. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

Appendix Table 4. Net Flows to the Government and Government Expenditure, controlling for alternative Push Factors

	NET FLOWS											
	MDB (1)	MDB (2)	MDB (3)	RDB (4)	RDB (5)	RDB (6)	WB (7)	WB (8)	WB (9)	Private (10)	Private (11)	Private (12)
G_{it}	0.0222*	0.0291**	0.0353***	0.0071	0.0078	0.0117**	0.0120*	0.0123*	0.0164**	0.0250***	0.0276***	0.0324***
	(0.012)	(0.012)	(0.013)	(0.006)	(0.005)	(0.005)	(0.006)	(0.006)	(0.007)	(0.008)	(0.010)	(0.009)
Push factors												
Vix_{it}		-0.0101	-0.0106		-0.0050	-0.0034		-0.0236	-0.0225		-0.1738***	-0.1898***
		(0.024)	(0.027)		(0.012)	(0.012)		(0.014)	(0.016)		(0.035)	(0.039)
US Treasury 10-year yield$_{it}$		0.1037***	0.0844**		0.0483***	0.0215		0.0565***	0.0474**		-0.0522	-0.1280**
		(0.036)	(0.041)		(0.017)	(0.019)		(0.021)	(0.024)		(0.046)	(0.054)
Copper Price$_{it}$		0.0000	0.0000		0.0000	0.0000*		-0.0000	-0.0000		-0.0002***	-0.0001***
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Crude Oil Price$_{it}$		-0.0039*	-0.0054**		-0.0016	-0.0033***		-0.0016	-0.0013		0.0107***	0.0086***
		(0.002)	(0.002)		(0.001)	(0.001)		(0.001)	(0.001)		(0.003)	(0.003)
Pull factors												
GDP growth$_{it}$		-0.0071	-0.0153		-0.0055	-0.0063		0.0002	-0.0020		0.0030	0.0109
		(0.009)	(0.013)		(0.005)	(0.005)		(0.005)	(0.008)		(0.013)	(0.013)
Debt (% GDP)$_{it}$		0.0065***	0.0057**		-0.0000	-0.0007		0.0044***	0.0042***		-0.0074***	-0.0045**
		(0.002)	(0.002)		(0.001)	(0.001)		(0.001)	(0.001)		(0.002)	(0.002)
Credit (% GDP)$_{it}$		-0.0079*	-0.0076*		-0.0024	-0.0015		-0.0048**	-0.0060***		-0.0040	-0.0073*
		(0.004)	(0.004)		(0.002)	(0.002)		(0.002)	(0.002)		(0.004)	(0.004)
Trade openness (% GDP)$_{it}$		0.0041	0.0013		0.0022	-0.0009		0.0002	-0.0016		0.0167***	0.0134**
		(0.004)	(0.005)		(0.002)	(0.002)		(0.002)	(0.002)		(0.006)	(0.005)
Financial Openness$_{it}$		0.0009	-0.0305		-0.0252	-0.0410		0.2660*	0.2010		-0.0017	0.4018
		(0.244)	(0.200)		(0.110)	(0.109)		(0.140)	(0.138)		(0.420)	(0.410)
Fixed Exchange Regime$_{it}$		-0.1994	-0.0889		-0.0089	0.0014		-0.1753*	-0.1098		0.0165	0.0508
		(0.158)	(0.142)		(0.064)	(0.054)		(0.104)	(0.105)		(0.120)	(0.123)
Law and Order$_{it}$			-0.0664			-0.0245			-0.0471			0.0908
			(0.071)			(0.037)			(0.041)			(0.082)
Investment Protection$_{it}$			-0.0053			-0.0214			0.0404*			0.0368
			(0.036)			(0.014)			(0.021)			(0.040)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No
Average NFL	1.087	1.044	0.939	0.361	0.334	0.303	0.567	0.539	0.477	0.384	0.387	0.398
Average G	26.16	26.05	25.60	25.78	25.61	25.10	26.21	26.04	25.58	26.31	26.29	25.86
Number of countries	108	100	71	99	93	68	108	100	71	106	96	69
Observations	2,410	1,842	1,318	2,086	1,632	1,216	2,368	1,822	1,298	2,029	1,553	1,207
R-squared	0.129	0.138	0.134	0.120	0.057	0.069	0.140	0.171	0.154	0.064	0.069	0.106

Source: Authors' calculations.

Note: The table reports the correlations between net flows to the sovereign from different agents and government expenditure (*G*), controlling for push and pull factors. Both net flows and government expenditure are scaled by trend GDP. The sample period is from 1980 to 2015. Standard errors in parentheses are clustered at the country-level; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.

Appendix Table 5. Net Flows to the Government and Government Expenditure, controlling for alternative Push Factors

	MDB (1)	MDB (2)	MDB (3)	RDB (4)	RDB (5)	RDB (6)	WB (7)	WB (8)	WB (9)	Private (10)	Private (11)	Private (12)
G$_{it}$	0.0636**	0.0690***	0.0790***	0.0490**	0.0507***	0.0572***	0.0147**	0.0146**	0.0179**	0.0255*	0.0217	0.0187
	(0.030)	(0.023)	(0.028)	(0.022)	(0.018)	(0.020)	(0.007)	(0.006)	(0.007)	(0.015)	(0.014)	(0.013)
Push factors												
Vix$_{it}$		-0.0413	-0.0552		-0.0268	-0.0442		-0.0331**	-0.0340**		-0.1792***	-0.2085***
		(0.043)	(0.049)		(0.032)	(0.033)		(0.013)	(0.016)		(0.048)	(0.046)
US Treasury 10-year yield$_{it}$		0.3116***	0.2795***		0.1996***	0.1612***		0.0942***	0.0927***		-0.0078	-0.1347*
		(0.066)	(0.075)		(0.049)	(0.058)		(0.019)	(0.021)		(0.073)	(0.076)
Copper Price$_{it}$		-0.0000	0.0001		0.0000	0.0001*		-0.0000	-0.0000		-0.0001**	-0.0000
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Crude Oil Price$_{it}$		-0.0074**	-0.0086**		-0.0061*	-0.0077**		-0.0019*	-0.0016		0.0067	0.0017
		(0.004)	(0.004)		(0.003)	(0.003)		(0.001)	(0.001)		(0.004)	(0.004)
Pull factors												
GDP growth$_{it}$		-0.0068	-0.0130		-0.0067	-0.0097		-0.0013	-0.0040		-0.0084	-0.0059
		(0.017)	(0.024)		(0.013)	(0.018)		(0.005)	(0.008)		(0.014)	(0.014)
Debt (% GDP)$_{it}$		0.0210***	0.0202***		0.0128***	0.0124***		0.0068***	0.0063***		-0.0027	0.0031
		(0.004)	(0.005)		(0.003)	(0.004)		(0.001)	(0.001)		(0.004)	(0.003)
Credit (% GDP)$_{it}$		-0.0076	-0.0044		-0.0051	-0.0011		-0.0042**	-0.0051***		-0.0012	-0.0095
		(0.009)	(0.010)		(0.007)	(0.008)		(0.002)	(0.002)		(0.006)	(0.006)
Trade openness (% GDP)$_{it}$		0.0013	-0.0048		-0.0010	-0.0059		0.0010	-0.0006		0.0109	0.0076
		(0.009)	(0.011)		(0.007)	(0.009)		(0.002)	(0.002)		(0.008)	(0.006)
Financial Openness$_{it}$		0.1964	0.1092		0.1962	0.1918		0.2116	0.1392		-0.0927	0.2719
		(0.442)	(0.417)		(0.356)	(0.296)		(0.129)	(0.137)		(0.565)	(0.527)
Fixed Exchange Regime$_{it}$		-0.4925	-0.3734		-0.2316	-0.1747		-0.2310**	-0.1698*		-0.1112	-0.0794
		(0.317)	(0.304)		(0.228)	(0.203)		(0.098)	(0.102)		(0.221)	(0.226)
Law and Order$_{it}$			0.1727			0.1701			-0.0023			0.1577
			(0.225)			(0.171)			(0.039)			(0.122)
Investment Protection$_{it}$			0.0668			0.0505			0.0312			0.0426
			(0.075)			(0.052)			(0.021)			(0.071)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No
Average Disb	2.999	2.911	2.624	2.207	2.150	1.905	0.773	0.730	0.678	1.263	1.164	1.166
Average G	25.94	25.77	25.27	25.88	25.71	25.17	26.17	26	25.55	26.36	26.42	25.79
Number of countries	106	100	71	105	99	70	107	100	71	100	92	66
Observations	2,292	1,776	1,264	2,235	1,750	1,242	2,356	1,832	1,308	1,661	1,279	1,038
R-squared	0.198	0.269	0.299	0.171	0.199	0.236	0.211	0.284	0.292	0.048	0.021	0.046

Source: Authors' calculations.

Note: The table reports the correlations between gross flows to the sovereign from different agents and government expenditure (*G*), controlling for push and pull factors. Both net flows and government expenditure are scaled by trend GDP. The sample period is from 1980 to 2015. Standard errors in parentheses are clustered at the country-level; *** p<0.01, ** p<0.05, * p<0.1. FE: fixed effects; MDB: multilateral development banks; RDB: regional development banks; WB: World Bank.