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## Capital Flows and Financial Stability in Emerging Economies

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## I. INTRODUCTION

Capital flows are thought of as a mixed blessing





countries included in the analysis are Argentina, Brazil, Colombia, Czech Republic, Greece, Hungary, India, Indonesia, the Republic of Korea, Malaysia, Mexico, the Philippines, Poland, South Africa,

- (iii) PortInvA: Flows of portfolio investments by country i
- (iv) PortInvL: Flows of portfolio liabilities of country i
- (v) OtherInvA: Flows of other investments by country i, and
- (vi) OtherInvL: Flows of other liabilities of country i.

Other investment assets and other liabilities include trade credit and advances, loans, currency and deposits, and insurance and pensions etc. The financial account for country i is defined by the net of these six measures plus the change in official reserve assets, which are not considered in this analysis, as they will reflect policy measures. In the empirical analysis, these six measures are expressed as percentages of nominal GDP.

To control for country specific macroeconomic factors, the following macroeconomic variables are used in once-lagged form.<sup>1</sup>

- (i) Real GDP (deviations from stochastic trend via Christiano–Fitzgerald filter),
- (ii) Exchange rate versus US dollars, end of period,
- (iii) Net exports as a ratio to nominal GDP, and
- (iv) Inflation rate, percent per annum.

The resulting panel is unbalanced quarterly data from the first quarter of 1970 to 2019. The variables are expressed as percentages of nominal GDP, and

while assuming zero covariance between  $\epsilon_{it}$ 's

$$\% \Delta R_{it} = \alpha + \beta_1 \Delta R_{it} + \beta_2 \Delta R_{it} + \beta_3 \Delta R_{it} + \beta_4 \Delta R_{it} + \beta_5 \Delta R_{it} + \beta_6 \Delta R_{it} + \beta_7 \Delta R_{it} + \beta_8 \Delta R_{it} + \beta_9 \Delta R_{it} + \beta_{10} \Delta R_{it} + \beta_{11} \Delta R_{it} + \beta_{12} \Delta R_{it} + \beta_{13} \Delta R_{it} + \beta_{14} \Delta R_{it} + \beta_{15} \Delta R_{it} + \beta_{16} \Delta R_{it} + \beta_{17} \Delta R_{it} + \beta_{18} \Delta R_{it} + \beta_{19} \Delta R_{it} + \beta_{20} \Delta R_{it} + \beta_{21} \Delta R_{it} + \beta_{22} \Delta R_{it} + \beta_{23} \Delta R_{it} + \beta_{24} \Delta R_{it} + \beta_{25} \Delta R_{it} + \beta_{26} \Delta R_{it} + \beta_{27} \Delta R_{it} + \beta_{28} \Delta R_{it} + \beta_{29} \Delta R_{it} + \beta_{30} \Delta R_{it} + \beta_{31} \Delta R_{it} + \beta_{32} \Delta R_{it} + \beta_{33} \Delta R_{it} + \beta_{34} \Delta R_{it} + \beta_{35} \Delta R_{it} + \beta_{36} \Delta R_{it} + \beta_{37} \Delta R_{it} + \beta_{38} \Delta R_{it} + \beta_{39} \Delta R_{it} + \beta_{40} \Delta R_{it} + \beta_{41} \Delta R_{it} + \beta_{42} \Delta R_{it} + \beta_{43} \Delta R_{it} + \beta_{44} \Delta R_{it} + \beta_{45} \Delta R_{it} + \beta_{46} \Delta R_{it} + \beta_{47} \Delta R_{it} + \beta_{48} \Delta R_{it} + \beta_{49} \Delta R_{it} + \beta_{50} \Delta R_{it} + \beta_{51} \Delta R_{it} + \beta_{52} \Delta R_{it} + \beta_{53} \Delta R_{it} + \beta_{54} \Delta R_{it} + \beta_{55} \Delta R_{it} + \beta_{56} \Delta R_{it} + \beta_{57} \Delta R_{it} + \beta_{58} \Delta R_{it} + \beta_{59} \Delta R_{it} + \beta_{60} \Delta R_{it} + \beta_{61} \Delta R_{it} + \beta_{62} \Delta R_{it} + \beta_{63} \Delta R_{it} + \beta_{64} \Delta R_{it} + \beta_{65} \Delta R_{it} + \beta_{66} \Delta R_{it} + \beta_{67} \Delta R_{it} + \beta_{68} \Delta R_{it} + \beta_{69} \Delta R_{it} + \beta_{70} \Delta R_{it} + \beta_{71} \Delta R_{it} + \beta_{72} \Delta R_{it} + \beta_{73} \Delta R_{it} + \beta_{74} \Delta R_{it} + \beta_{75} \Delta R_{it} + \beta_{76} \Delta R_{it} + \beta_{77} \Delta R_{it} + \beta_{78} \Delta R_{it} + \beta_{79} \Delta R_{it} + \beta_{80} \Delta R_{it} + \beta_{81} \Delta R_{it} + \beta_{82} \Delta R_{it} + \beta_{83} \Delta R_{it} + \beta_{84} \Delta R_{it} + \beta_{85} \Delta R_{it} + \beta_{86} \Delta R_{it} + \beta_{87} \Delta R_{it} + \beta_{88} \Delta R_{it} + \beta_{89} \Delta R_{it} + \beta_{90} \Delta R_{it} + \beta_{91} \Delta R_{it} + \beta_{92} \Delta R_{it} + \beta_{93} \Delta R_{it} + \beta_{94} \Delta R_{it} + \beta_{95} \Delta R_{it} + \beta_{96} \Delta R_{it} + \beta_{97} \Delta R_{it} + \beta_{98} \Delta R_{it} + \beta_{99} \Delta R_{it} + \beta_{100} \Delta R_{it} + \epsilon_{it} \quad (1)$$

if  $E(\epsilon_{it}) = 0$

Estimation of a system of country-level equations provides for a gain in the efficiency of the estimates by taking the contemporaneous correlation of cross-country shocks into account. As the literature remains inconclusive about the nature of relationship between financial stability and capital flows, we refrain from attaching a prior regarding the signs of our estimated coefficients,  $\beta_j$

indicators, whereas the effects are more negative for other investment liabilities, particularly for NPLs. We may conclude that both these categories of gross capital flows have meaningful effects on most countries financial indicators.

**Table : Levels of Financial Stability Proxies versus Levels of Capital Flows:  
Percentage of Significant Coefficients**  
(up to countries)

	FDIAbroad	FDIReportCty	PortInvA	PortInvL	OtherInvA	OtherInvL
Deposits						
DomCredit						
NetIntMargin						
NonperfLoan						
LiqAssets						

Source: Authors' computation.

**Table : Levels of Financial Stability Proxies versus Levels of Capital Flows:  
Significant Positive Coefficients**  
(up to countries)

	FDIAbroad	FDIReportCty	PortInvA	PortInvL	OtherInvA	OtherInvL
Deposits						
DomCredit						
NetIntMargin						
NonperfLoan						
LiqAssets						

Source: Authors' computation.

**Table : Levels of Financial Stability Proxies versus Levels of Capital Flows:  
Significant Negative Coefficients**  
(up to countries)

	FDIAbroad	FDIReportCty	PortInvA	PortInvL	OtherInvA	OtherInvL
Deposits						
DomCredit						
NetIntMargin						
NonperfLoan						
LiqAssets						

Source: Authors' computation.

**Table : Levels of Financial Stability Proxies versus Levels of Capital Flows:  
Net Significant Coefficients**  
(up to countries)

	FDIAbroad	FDIReportCty	PortInvA	PortInvL	OtherInvA	OtherInvL
Deposits		-		-		-
DomCredit	-		-			
NetIntMargin	-	-	-	-		-
NonperfLoan				-		-
LiqAssets	-					

Source: Authors' computation.

## **B. A Robustness Check with Annual Data**

When interpolation procedures are used, there is naturally a concern that they may have qualitative effects on the empirical findings. To investigate this issue, the first set of SUR models (on the levels of the financial indicators) have been reestimated on the original annual GFDD data, with the gross portfolio flows data aggregated to annual frequency. This necessarily reduces the variability of the gross flows data and their explanatory power, and reduces the sample size in the SUR models by a factor of four. On the other hand, employing the response variable in its original form reduces the variation to be explained.

Tables – may be compared with

**Table : Levels of Capital Flows: Significant Negative Coefficients**  
(up to countries)

	FDIAbroad	FDIReportCty	PortInvA	PortInvL	OtherInvA	OtherInvL
Deposits						
DomCredit						
NetIntMargin						
NonperfLoan						
LiqAssets						

Source: Authors' computation.

**Table : Levels of Capital Flows: Net Significant Coefficients**  
(up to countries)

	FDIAbroad	FDIReportCty	PortInvA	PortInvL	OtherInvA	OtherInvL
Deposits	-		-	-		
DomCredit		-				
NetIntMargin	-					-
NonperfLoan		-	-	-	-	-
LiqAssets	-					-

**Table : Volatility of Financial Stability Proxies versus Levels of Capital Flows:  
Percentage of Significant Coefficients  
(up to countries)**

	FDIAbroad	FDIReportCty	PortInvA	PortInvL	OtherInvA	OtherInvL
Deposits						
DomCredit						
NetIntMargin						
NonperfLoan						
LiqAssets						

Source: Authors' computation.

**Table : Volatility of Financial Stability Proxies versus Levels of Capital Flows:  
Significant Positive Coefficients  
(up to countries)**

	FDIAbroad	FDIReportCty	PortInvA	PortInvL	OtherInvA	OtherInvL
Deposits						
DomCredit						
NetIntMargin						
NonperfLoan						
LiqAssets						

Source: Authors' computation.

**Table : Volatility of Financial Stability Proxies versus Levels of Capital Flows:**





The effect of portfolio inflows on financial stability reverses when evaluated at different levels of the ratio of liquid assets to deposits and short-term funding. Larger portfolio inflows tend to be associated with greater financial volatility in countries with larger liquid assets. This also holds for outflows of FDI and other investments. Other investment inflows and FDI inflows, on the contrary, tend to have a smaller effect on volatility in countries with larger liquid assets.

The effects of other types of flows are not as cl

Table : Relation between Macroeconomic Aggregates and Estimated Coefficients between Flows and Financial Indicators

Financial Volatility	Real Gross Domestic Product Per Capita		Trade Openness		Inflation		Exchange Rate		
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	
Deposits	FDI inflow	Portfolio outflow	Other inv inflow	FDI outflow	FDI outflow	Other inv outflow	FDI outflow	Other inv outflow	
	Other inv outflow			FDI inflow	Portfolio inflow	FDI inflow	Portfolio inflow	Other inv inflow	
	Other inv inflow			Portfolio outflow	Other inv inflow	Other inv inflow	Portfolio outflow	Portfolio outflow	
Domestic credit	FDI outflow	Portfolio outflow	FDI outflow	Other inv inflow	Other inv inflow	FDI outflow	FDI outflow	FDI inflow	
	Other inv outflow		FDI inflow		FDI inflow		Other inv outflow	Other inv inflow	
	Other inv inflow		Portfolio inflow		Other inv outflow		Portfolio inflow	Portfolio outflow	
Net interest margin	Other inv outflow	FDI inflow	FDI inflow	Portfolio outflow		Other inv outflow	Other inv outflow	FDI outflow	
		Portfolio outflow	Other inv outflow				Portfolio inflow	Portfolio outflow	FDI inflow
		Portfolio inflow						Portfolio inflow	

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## V. CONCLUDING REMARKS

In conclusion, this investigation of the relationship between quarterly gross capital flows and proxies for financial stability in a cross-country setting reveals that there are significant effects of gross flows' levels on both the level and volatility of the financial indicators after controlling for a number of macroeconomic factors. Robustness checks on the level series conducted at the annual frequency indicate that the results are not sensitive to the interpolation procedure applied to the financial stability proxies.

The results of this study are consistent with the seemingly divergent evidence in the literature on the relationship between capital flows and financial stability. In much of this research, EMEs are treated as a group due to their similar experiences with regard to movement of flows or are sometimes pooled into a larger panel with advanced economies to take advantage of cross-country variation in their experience. As this approach imposes restrictions on the relationship, we use the SUR approach to enable greater flexibility. Our investigation reveals that the effects of capital flows on financial stability vary quite substantially across coun

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