

**Table 3.2. Mutual Fund Flows and Asset Returns**

	Emerging Markets		United States			
	Equity	Bond	Equity	All Bond	High-Yield Bond	Municipal Bond
Estimation Periods	2004–14	2004–14	2007–14	2007–14	2007–14	2007–14
<b>Single Equation Model with Excess Asset Return as Dependent Variable</b>						
Surprise flows have significant impact on returns	Yes	Yes	Yes in 2012–14	Yes in 2008–10	Yes*	Yes
Asymmetry: Impact of surprise inflows is different from impact of surprise outflows	Outflows have larger impact than inflows	Outflows have larger impact than inflows	Limited**	Inflows have larger impact than outflows	No	Outflows have larger impact than inflows
VIX sensitivity: Surprise flows have higher impact on returns when the VIX is high	Yes	Yes	Limited**	Limited**	Yes	Yes
<b>Vector Autoregression with Unadjusted Flows and Returns</b>						
Flows help predict returns	No	Yes	No	Yes***	No	Yes***

Sources: Bank of America Merrill Lynch; Morgan Stanley; Bloomberg, L.P.; EPFR Global; ICI; and IMF staff estimates.

Note: VIX = Chicago Board Options Exchange Market Volatility Index. Surprise flows are residuals from a vector autoregression model, VAR, with two endogenous variables (mutual fund flows into each asset class and representative benchmark asset returns for the respective market over the one-month Eurodollar deposit rate) and the VIX (contemporaneous and lagged) as an exogenous variable. Mutual fund flows to emerging markets are investment flows into each country from all mutual funds from various jurisdictions covered by EPFR Global. U.S. fund flows data are investors' flows into mutual funds with a stated investment focus, covering funds domiciled in the United States. U.S. data are from Investment Company Institute, except for U.S. high-yield bond funds, which come from EPFR Global. Explanatory variables in the base single equation model include contemporaneous and lagged surprise flow, lagged excess return, the VIX, and the volatility of excess return (estimated with a generalized autoregressive conditional heteroskedasticity, GARCH, model). The model is estimated for the whole indicated period as well as rolling three-year periods in between. The results in the bottom line are based on generalized impulse responses.

\*For the entire sample period, the results are not significant. However, three-year subperiod estimates show that the coefficient on contemporary surprise flows is always statistically significant and positive, but declines steadily over time. Limited \*\* indicates significance between the 5 percent and 10 percent significance levels. \*\*\*Indicates not robust to all specifications.