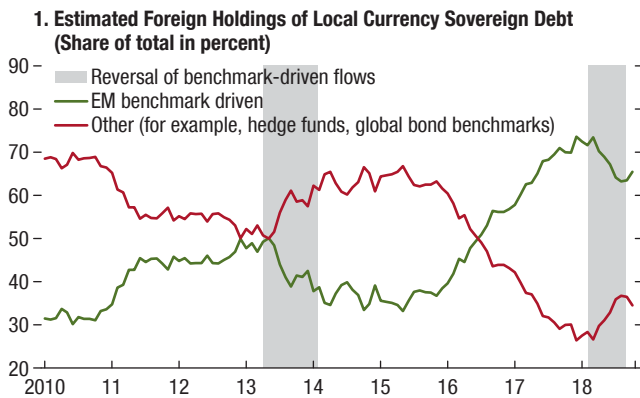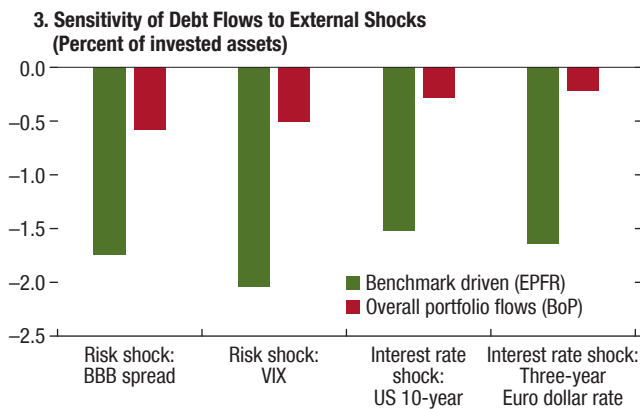# Figure 1.23. Benchmark-Driven Portfolio Flows to Emerging Markets
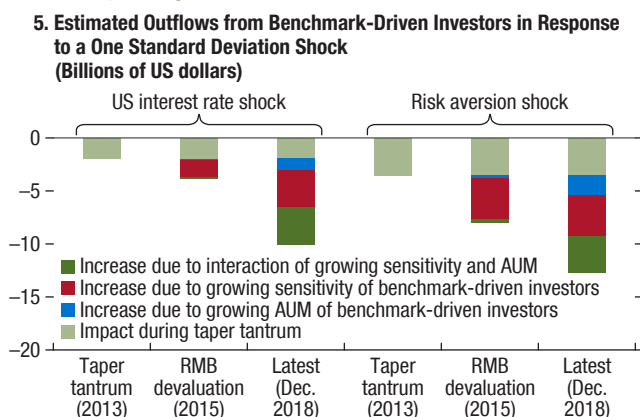
In recent outflow episodes, EM benchmark-driven investors have reduced their holdings rapidly.
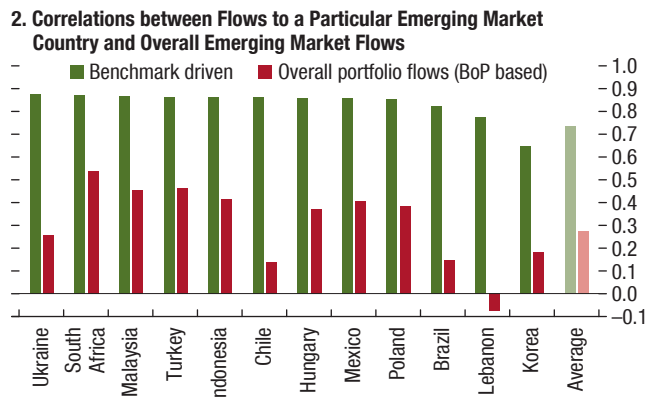
1. Estimated Foreign Holdings of Local Currency Sovereign Debt
(Share of total in percent)

- Reversal of benchmark-driven flows
- EM benchmark driven
- Other (for example, hedge funds, global bond benchmarks)

Benchmark-driven flows are highly correlated across countries.

2. Correlations between Flows to a Particular Emerging Market Country and Overall Emerging Market Flows

- Benchmark driven
- Overall portfolio flows (BoP based)

Ukraine, South Africa, Malaysia, Turkey, Indonesia, Chile, Hungary, Mexico, Poland, Brazil, Lebanon, Korea, Average

Benchmark-driven flows are highly sensitive to external factors, such as risk appetite and US rates.

3. Sensitivity of Debt Flows to External Shocks
(Percent of invested assets)

- Benchmark driven (EPFR)
- Overall portfolio flows (BoP)

Risk shock: BBB spread; Risk shock: VIX; Interest rate shock: US 10-year; Interest rate shock: Three-year Euro dollar rate

This sensitivity to external factors has increased in recent years.

4. Sensitivity of Benchmark-Driven Debt Flows to External Factors
(Percent of invested assets)

- US interest rates (10-year Treasury)
- Risk aversion (BBB spread)

Jan. 2013, Jan. 14, Jan. 15, Jan. 16, Jan. 17, Jan. 18, Jan. 19

An adverse external shock would result in much larger outflows today than a few years ago.

5. Estimated Outflows from Benchmark-Driven Investors in Response to a One Standard Deviation Shock
(Billions of US dollars)

US interest rate shock; Risk aversion shock

- Increase due to interaction of growing sensitivity and AUM
- Increase due to growing sensitivity of benchmark-driven investors
- Increase due to growing AUM of benchmark-driven investors
- Impact during taper tantrum

Taper tantrum (2013), RMB devaluation (2015), Latest (Dec. 2018), Taper tantrum (2013), RMB devaluation (2015), Latest (Dec. 2018)

Benchmark-driven investors play a major role in some emerging market sovereign debt markets.

6. Local Currency Government Bonds Held by Nonresident Investors
(Percent of GDP)

South Africa, Malaysia, Poland, Mexico, Hungary, Colombia, Brazil, Indonesia, Peru, Thailand, Turkey, Chile, Russia, China

- EM benchmark driven
- Global benchmark driven
- Other investor
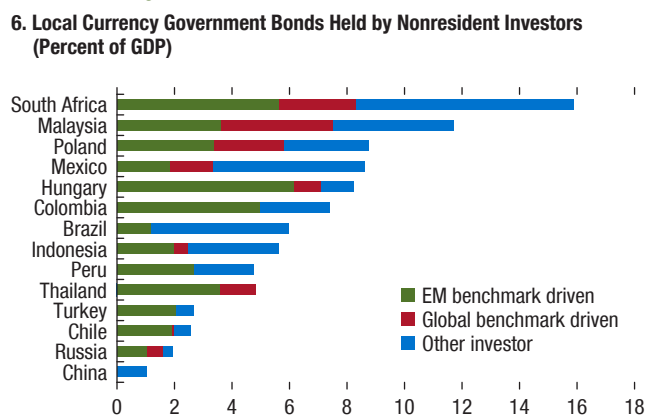
Sources: Bloomberg Finance L.P.; EPFR Global; JPMorgan Chase & Co; Arslanalp and Tsuda (2014); and IMF staff estimates.
Note: In panel 2, correlations are based on EPFR Global's data on country-level flows via investment funds. These data are subject to various measurement and sampling issues. In particular, EPFR estimates country-level flows based on certain assumptions about country portfolio weights because actual data on country-level fund flows are not reported to EPFR. This will tend to inflate estimated correlation coefficients. In addition, India and Thailand were excluded from the analysis because inflows are dominated by domestic funds investing in their own country. Separately, it is worth noting that correlation coefficients for overall portfolio flows are boosted by the fact that overall flows include benchmark-driven flows. In panels 3 and 4, coefficient estimates are calculated for a one standard deviation shock. In panels 4 and 5, coefficients are from a 36-month rolling regression. In panel 6, estimates assume that benchmark-driven investors and foreign investors follow closely the index weights. In reality, deviations for some countries can be substantial. In panel 6, the data are as of 2018:Q2. AUM = assets under management; BoP = balance of payments; EM = emerging market; EPFR = Emerging Portfolio Fund Research, Inc.; RMB = renminbi; VIX = Chicago Board Options Exchange Volatility Index.