

# The Effect of Fed's Future Policy Expectations on Country Shares in Emerging Market Portfolio Flows

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# Introduction

- Monetary policies of advanced economies is an important determinant of capital flows to emerging markets.
  - Expansionary monetary policies of advanced economies push capital flows towards emerging economies, while contractionary monetary policies retrench them.
- Unconventional monetary policy framework implemented by the advanced country central banks after the 2009 global financial crisis, necessitates the increasing role of the **expectation channel** to be brought into perspective while explaining emerging market capital flows.

## Our question

- “When the Fed is expected to tighten its monetary policy, does an emerging country with stronger financial conditions and/or safer business environment for international investors counterbalance the negative effect of Fed’s policy tightening on its share in total portfolio flows?”

## What we do? & How we do it?

- We analyze how changes in market expectations about the Fed's future monetary policy stance affect an emerging country's share in total EM portfolio flows.
- We estimate a seemingly unrelated regression model for a panel of 19 emerging countries, using monthly data from January 2010 to October 2017.

## Our contribution

- We focus on country shares in EM portfolio flows, rather than the level of country flows. This measure gives a better sense for the attractiveness of a country in international investors' eyes.
- We incorporate a monthly indicator for institutional quality and governance, while similar type of data is usually less broadly defined and on an annual basis.

## A historical perspective on EM capital flows

- 2009 global financial crisis marked the beginning of an unconventional monetary policy environment:
  - Advanced country central banks pursued aggressive expansionary monetary policies, reducing the policy interest rates to the lowest level possible, and injecting massive amounts of liquidity into the financial system by introducing quantitative easing programs.
- The uncertainty about the speed of recovery in the advanced countries and the loss of confidence in these country assets, increased the demand for EM assets.
  - Globally abundant liquidity conditions and extremely low interest rates in advanced economies; coupled with improved growth outlook and higher interest rates in EMs attracted substantial capital inflows.

## A historical perspective on EM capital flows

- The room for any conventional policy maneuver kept on shrinking
  - keeping the policy rates at the zero-lower-bound for an extensive period
  - resorting heavily on forward guidance to manage future policy expectations

*The practice of managing future expectations of monetary policy was not new; but neither was it this aggressively utilized, nor was its influence this strong in the past.*
- The taper talk sharply put forth the role of the expectation channel
  - The Fed signaled that it will gradually wind down its quantitative easing program in May 2013. ➡ a move towards tighter monetary policy.
  - Notably, the financial markets reactions were spurred by *what the Fed said, rather than what it did.*

## A historical perspective on EM capital flows

- Despite tighter monetary policy prospects, a rate hike did not come until the end of 2015.
  - With the start of Fed's first rate hike along the movement towards monetary policy normalization, the world entered a new phase in which extracting more precise and quantitative information about future monetary policy became more important.
- With all this at hand, the big question for emerging markets, is
  - *How will they be affected?*

## Literature review

- The vast literature on capital flows, puts forward expansionary monetary policies of advanced economies (especially the Fed's policies) as a major driver of capital flows to emerging markets.
  - Calvo, Leiderman and Reinhart (1993), Fernandez-Arias (1996), Taylor and Sarno (1997) and Montiel and Reinhart (1999)
- The focus of the literature shifts towards the unconventional monetary policies of advanced economies; particularly to the effect of Fed's quantitative easing programs on capital flows after the global financial crisis.
  - Significant effect of such policies on EM flows (Fratzcher, 2011)
  - US unconventional monetary policy affects the composition of capital inflows to emerging markets and leaves the volume unchanged (Ahmed & Zlate, 2013)

## Literature review

- On the effect of unconventional monetary policies.. (continued)
  - Significant impact, but diminishes over time (World Bank, 2014)
  - QE programs mattered the most, when they were first announced and that their importance decreased over time, starting with the Eurozone crisis, and diminishing with the tapering talk (Erduman & Kaya, 2014)
- Yet a number of recent studies take a different perspective on the subject, asserting that the spillover effects depend on country specific factors.
  - Hausman & Wongswan (2011), Bowman et al. (2014), Fratzscher et al. (2013).
  - The extent to which EMs are affected from the spillover effects of Fed's monetary policy relies on the pull factors and varies across countries for that matter.

## The role of expectations channel

- Due to the increasing role of expectation management in design of monetary policy, some recent studies bring the expectations channel into perspective while explaining EM capital flows. (Koepke, 2013, 2016; Dahlhaus & Vasishtha, 2014).
  - This idea is mainly built on the literature that argues monetary policy works through expectations channel.
  - Kuttner, (2001); Gürkaynak, (2005); Gürkaynak et. al., (2006); Bernanke and Kuttner, (2005); Hamilton (2008).
  - A change in the policy rate would affect financial market rates to the extent that the policy change was unanticipated.
  - This framework makes use of the Fed funds future contracts in order to extract the market expectations of Fed policy actions.

## The role of expectations channel

- Koepke (2013, 2016) suggests that, using Fed futures contracts is a more targeted approach in capturing the impact of Fed policy actions on EM portfolio flows.
  - The change in market expectations for future Fed policies is a major push factor for portfolio flows, especially bond flows.
  - The effect is asymmetric; i.e. the adverse impact of expectations for a tighter monetary policy on portfolio flows is significantly stronger than the boosting effect of expectations for a looser policy.
- Dahlhaus & Vasishtha (2014), conducting a cross-country analysis using a VAR model, similarly find Fed expectations to be a major determinant of portfolio flows in recent years; especially during taper tantrum.

## On country specific factors...

- While the role of Fed policies as a major push factor is eminent in the literature, there is no consensus over how strong the impact of country specific factors is on capital flows.
  - Mainly due to covering different country specific indicators and analyzing different time periods.
- In theory, investors are “pulled” by attractive domestic conditions which offer profitable investment opportunities in a country with strong economic and financial fundamentals, under a safe institutional environment.
- Countries with stronger fundamentals would better cope with the spillover effects of Fed’s monetary policy and mitigate financial and economic stability risks associated with large and volatile capital flows.
  - Mishra et al. (2014) & Ahmed et al. (2015) provide empirical evidence that EMs with relatively stronger macroeconomic fundamentals, deeper financial markets, and tighter macroprudential policy stance suffered less during the taper tantrum.

# Data

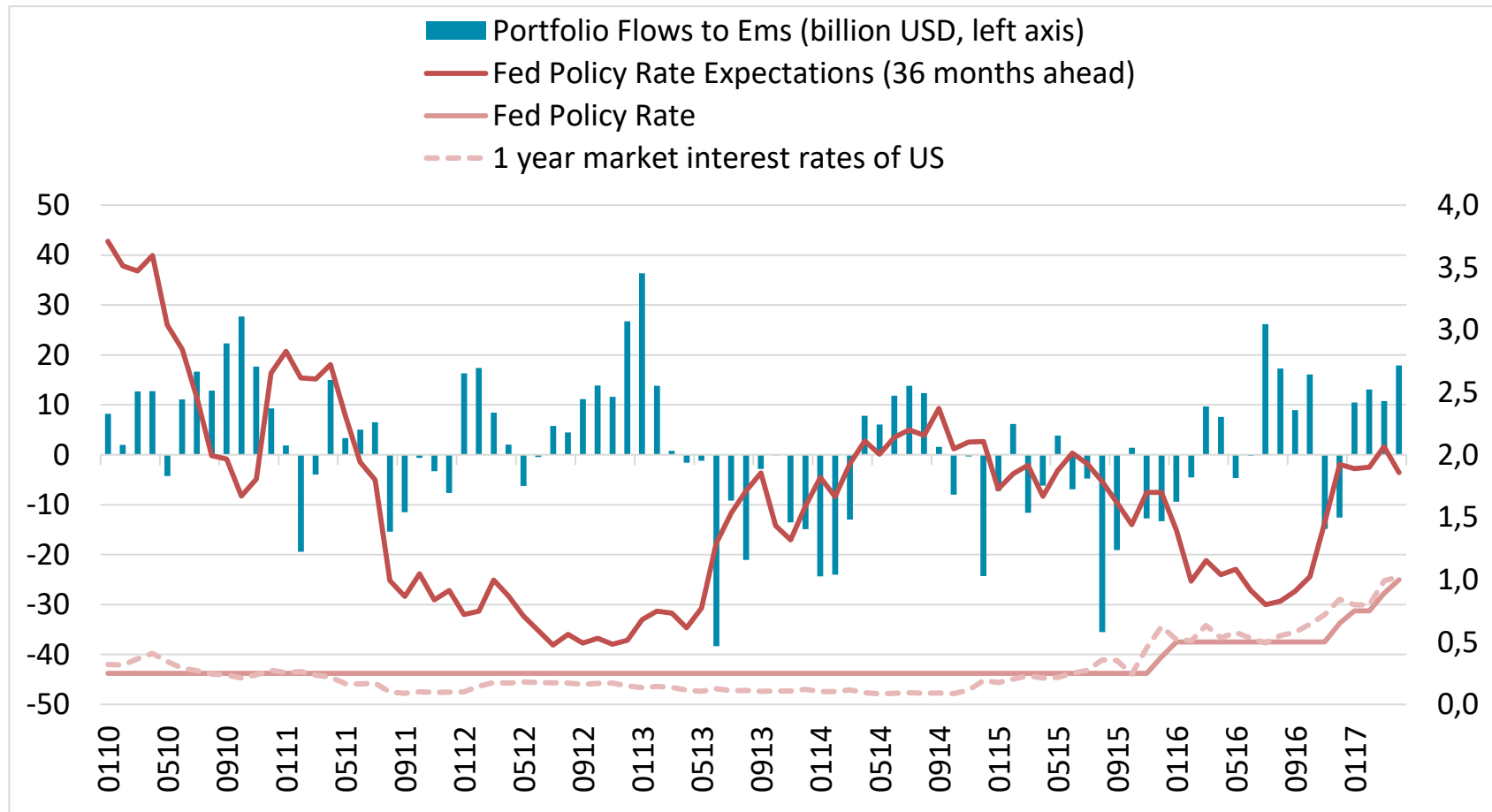
- Monthly data on 19 EM countries between January 2010 and October 2017.
  - Brazil, China, Chile, Colombia, Hungary, India, Indonesia, South Korea, Malaysia, Mexico, Peru, Philippines, Poland, Romania, Russian Federation, South Africa, Thailand, Turkey and Ukraine.
  - These countries receive more than 80 % of EM portfolio flows.
- Instead of actual country flows, we use country shares in total emerging market portfolio flows based on EPFR data.
  - We calculate country shares as a weighted average of each country's share in bond funds and equity funds, where weights are determined by the ratio of each fund type in total funds of the recipient country.
- The data set includes only those countries with an average share above 1 %.

# The expectations of the Fed's future monetary policy

- We use Fed funds futures contracts to proxy Fed's future policy expectations.
  - For example, if the contract price is 97.7 for a particular date, the implied Fed funds futures rate is 2.3 %.
- The most distant future horizon possible, contracts with 36 months maturity.
  - A policy announcement can often comprise different policy signals for different time horizons.
- If the change in the future Fed Funds rate is zero following an announcement, it means the news was already anticipated by the market. If the change is different than zero, then the news was **unanticipated** or “**surprise**” to the market.

\* Prior to February 2011 during when Fed funds futures data is not available, the eurodollar futures contracts are used as in Koepke (2016).

# Portfolio Flows to EMs and Interest Rates



## Country risk ratings

- PRS Group's International Country Risk Guide
- Monthly frequency
- Political risk rating has 12 components which cover both political and social attributes of the country, reflecting the potential risks to business environment
  - more broadly defined than indicators such as governance and institutional quality
- Financial risk rating is derived from 5 different indicators, providing an indication for country's external financial resilience.
- Ratings range between 0-100, the lower the total risk point the higher the risk.

\* Government Stability, Socioeconomic Conditions, Investment Profile, Internal Conflict, External Conflict, Corruption, Military in Politics, Religious Tensions, Law and Order, Ethnic Tensions, Democratic Accountability, Bureaucracy Quality.

\*\* Foreign Debt as a Percentage of GDP, Foreign Debt Service as a Percentage of Exports of Goods and Services, Current Account as a Percentage of Exports of Goods and Services, Net International Liquidity as Months of Import Cover, Exchange Rate Stability.

# Methodology

- For a balanced panel of 19 emerging countries, we estimate a seemingly unrelated regression (SUR) model.
  - possibility of cross sectional dependence between the countries
  - whenever a country is to increase its share, at least one of the other countries' share is likely to get smaller
- The SUR model assumes that the error terms are independent over time, but correlated across cross sectional units
  - addresses the possible interdependency between the country shares

# Specifications

## ■ Model 1

$$Share_{it} = \beta_0 + \beta_1 \Delta Fed\_exp_t + \beta_2 Fin\_rating_{it} + \beta_3 Pol\_rating_{it} + \beta_4 year * id_i + c_i + \varepsilon_{it}$$

## ■ Model 2

$$Share_{it} = \beta_0 + \beta_1 (D_1 * \Delta Fed\_exp_t) + \beta_2 (D_2 * \Delta Fed\_exp_t) + \beta_3 Fin\_rating_{it} + \beta_4 Pol\_rating_{it} + \beta_5 year * id_i + c_i + \varepsilon_{it}$$

$$D_1 = \begin{cases} 1 & \text{when } \Delta Fed\_exp_t > 0 \\ 0 & \text{when } \Delta Fed\_exp_t < 0 \end{cases} \quad D_2 = \begin{cases} 1 & \text{when } \Delta Fed\_exp_t < 0 \\ 0 & \text{when } \Delta Fed\_exp_t > 0 \end{cases}$$

## ■ Model 3

$$Share_{it} = \beta_0 + \beta_1 (D_1 * \Delta Fed\_exp_t) + \beta_2 (D_1 * \Delta Fed\_exp_t) * Fin\_rating_{it} + \beta_3 (D_1 * \Delta Fed\_exp_t) * Pol\_rating_{it} + \beta_4 year * id_i + c_i + \varepsilon_{it}$$

# Results

	Model 1	Model 2
	Country share	Country share
Constant	-70.201	26.834
	(-21.049)**	(6.299)**
$\Delta Fed\_expectations$	-0.044	
	(-2.092)**	
$D_1 * \Delta Fed\_expectations$		-0.061
		(-1.807)*
$D_2 * \Delta Fed\_expectations$		0.012
		(0.382)
Financial_risk_rating	0.077	0.064
	(36.880)**	(35.523)**
Political_risk_rating	0.075	0.053
	(41.687)**	(33.998)**
year		-0.167
		(-36.955)**
year*id	0.003	0.015
	(20.089)**	(42.678)**
Observations	1748	1748
R <sup>2</sup>	0.930	0.932
Hausman test for model specification		
	Chi-Square Stat	Probability
Cross-section random	15.572**	0.004

t-statistics are in parentheses. \* and \*\* denote statistical significance at 10 and 5 % respectively.

# Results

	Model 3
	Country share
Constant	-21.026
	(-14.363)**
D1* $\Delta$ Fed_expectations	-1.660
	(-5.202)**
D1* $\Delta$ Fed_expectations*Financial_risk_rating	0.030
	(5.783)**
D1* $\Delta$ Fed_expectations*Political_risk_rating	0.007
	(2.973)**
year*id	0.001
	(17.264)**
Observations	1748
R <sup>2</sup>	0.925

t-statistics are in parentheses. \* and \*\* denote statistical significance at 10 and 5 % respectively.

# Conclusion

- We estimate a SUR model for a panel of 19 EM countries, using monthly data from January 2010 to October 2017.
- Rather than conventional pull and push factors cited in the literature, we use Fed funds futures contracts and PRS Group's financial and political risk ratings.
- We focus on country shares in portfolio flows, rather than actual country flows. Our setting allows us to capture whether a country with stronger fundamentals compared to its counterparts, is still able to increase its share in total flows even when the pie gets smaller.

## Conclusion

- Our findings suggest that the effect of Fed's policy expectations is asymmetric.
- The expectations of Fed's monetary policy is found to reduce the share of countries in total portfolio flows when expectations imply a policy tightening, while easing expectations do not have a significant effect on country shares.
- Both financial and political risk ratings are found to play a significant role in affecting country shares, though the effect of financial resilience is found to be more pronounced.
- Lesson to be taken: countries that improve their financial resilience and better position themselves in terms of political and institutional climate, would be able to downsize the adverse effect of Fed's future policy tightening on their share from EM flows.

# References

- Ahmed S. and A. Zlate, 2013, "Capital flows to emerging market economies: a brave new world?," International Finance Discussion Papers 1081, Board of Governors of the Federal Reserve System (U.S.).
- Ahmed S., B. Coulibaly and A. Zlate, 2015, "International Financial Spillovers to Emerging Market Economies: How Important Are Economic Fundamentals?," Board of Governors of the Federal Reserve System International Finance Discussion Papers, No: 1135, April.
- Bernanke B. and K. Kuttner, 2005, "What Explains the Stock Market's Reaction to Federal Reserve Policy?," The Journal of Finance, vol. 60(3), June, pp. 1221–1257.
- Bowman D., J. M. Londono and H. Sapriza, 2014, "U.S. Unconventional Monetary Policy and Transmission to Emerging Market Economics," Board of Governors of the Federal Reserve System International Finance Discussion Papers, no: 1109.
- Calvo, G., L. Leiderman and C. Reinhart, 1993, "Capital inflows and the real exchange rate appreciation in Latin America: The role of external factors," IMF Staff Papers 40, no. 1, pp. 108-51.
- Dahlhaus T. and G. Vasishtha, 2014, "The Impact of U.S. Monetary Policy Normalization on Capital Flows to Emerging-Market Economies," Bank of Canada Working Paper, no: 2014-53, December.
- Erduman Y. and N. Kaya, 2014, "Determinants of Bond Flows to Emerging Markets: How Do They Change Over Time?," Central Bank of the Republic of Turkey Working Paper, No:14/28.
- Fernandez-Arias, Eduardo, 1996. "The new wave of private capital inflows: Push or pull?," Journal of Development Economics, Elsevier, vol. 48(2), March, pp. 389-418.
- Fratzscher M., 2011, "Capital Flows, Push versus Pull Factors and the Global Financial Crisis" NBER Working Paper, no: 17357, August.
- Fratzcher M., M. Lo Duca and R. Straub, 2013, "On the International Spillovers of US Quantitative easing," ECB Working Paper Series, no: 1557, June.
- Gürkaynak R., 2005, "Using federal funds futures contracts for monetary policy analysis," Board of Governors of the Federal Reserve System Paper.
- Gürkaynak R, B. P. Sack and E. T. Swanson, 2006, "Market-Based Measures of Monetary Policy Expectations" Federal Reserve Bank of San Francisco Working Paper Series, no: 2006-04.
- Hamilton J., 2008, "Daily monetary policy shocks and new home sales," Journal of Monetary Economics, vol. 55(7), October, pp. 1171–1190.
- Hausman J.A., 1978, "Specification Tests in Econometrics", Econometrica, 46, 1251-1272.
- Hausman J. and J. Wongswan, 2011, "Global asset prices and FOMC announcements," Journal of International Money and Finance, vol. 30(3), pp. 547-571.
- Koepke R., 2013, "Quantifying the Fed's Impact on Capital Flows to EMs," IIF Research Note, December.
- Koepke R., 2016, "Fed Policy Expectations and Portfolio Flows to Emerging Markets" IIF Working Paper, September.
- Kuttner K., 2001, "Monetary policy surprises and interest rates: Evidence from the Fed funds futures market," Journal of Monetary Economics, vol. 47, pp. 523–544.
- Mishra P., K. Moriyama, P. N'Diaye and L. Nguyen, 2014, "Impact of Fed Tapering Announcements on Emerging Markets," IMF Working Paper, no:14/109.
- Montiel P. and C. Reinhart, 1999, "Do capital controls and macroeconomic policies influence the volume and composition of capital flows? Evidence from the 1990s," Journal of International Money and Finance, vol. 18(4), pp. 619–635.
- PRS Group, undated, "International Country Risk Guide Methodology" Available at: <https://www.prsgroup.com/wp-content/uploads/2012/11/icrgmethodology.pdf>
- Taylor, M. P. and L. Sarno, 1997, "Capital flows to developing countries: long, and short-term determinants," The World Bank economic review. vol. 11(3), pp. 451-470.
- World Bank, 2014, "Global Economic Prospects: Coping with policy normalization in high Income Countries", January, vol. 8.