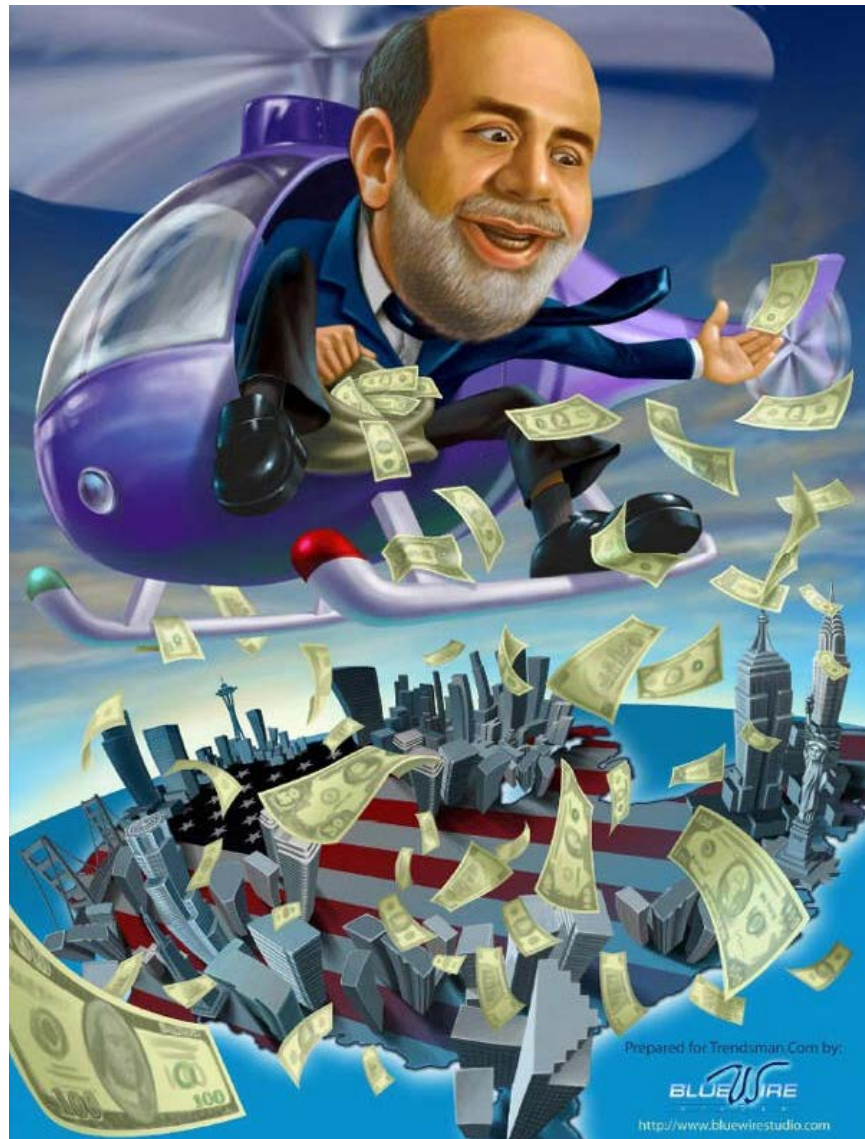

Monetary Policy Spillovers

Marcel Fratzscher

DIW Berlin, Humboldt-University Berlin and CEPR

NERO Meeting, OECD, 21 June 2013



"While everybody wants the US economy to recover, it does no good at all to just throw dollars from a helicopter."

**Guido Mantega,
Finance Minister of Brazil (2010)**



"This crisis started in the developed world, ... it will not be overcome through quantitative easing policies that have triggered ... a monetary tsunami, have led to a currency war and have introduced new and perverse forms of protectionism in the world."

President Rousseff of Brazil (2012)

DIW – ECB Research Agenda: What effects of Fed policies?

- **Controversial policy debate**
 - Positive effects on US economy should have positive externalities for ROW – via trade, stability, confidence
 - Short-term: Surge of capital flows to EMEs, asset price bubbles, FX overvaluation, overheating, risk sudden stops & crises
 - Longer term: excess global liquidity, excessive risk taking and leverage of financial institutions, volatility, inflation risk
- **Is there evidence for global spillovers of Fed QE policies?**
- **Focus so far narrowly on effects on US**
 - Literature: QEI was fairly effective

Global effects of Fed policies (future: ECB & others)

- **Global quantities/flows (mutual funds) vs prices vs. exchange rates, 65 countries**
- I. **QE1 vs. QE2 fundamentally different**
- **QE1** - Objective: Fed as LOLR, market repair, liquidity provision
 - effective in lowering yields, higher equities, USD appreciation
 - Portfolio balance channel: mainly across countries (into US)
- **QE2** - Objective: economic stimulus
 - Not effective in lowering yields, and strong USD depreciation
 - Portfolio balance channel: across countries (into EMEs) and across asset classes (from bonds into equities)

M. Fratzscher, M. Lo Duca, R. Straub, 2013. A global monetary tsunami? Measuring the spillovers of US Quantitative Easing, CEPR DP 9195

Global effects of Fed policies

2. Fed announcements (AN) vs. operations (OP)

- AN much smaller effect than OP, also for US
- New, and intuitive: esp. for market repair and liquidity functions

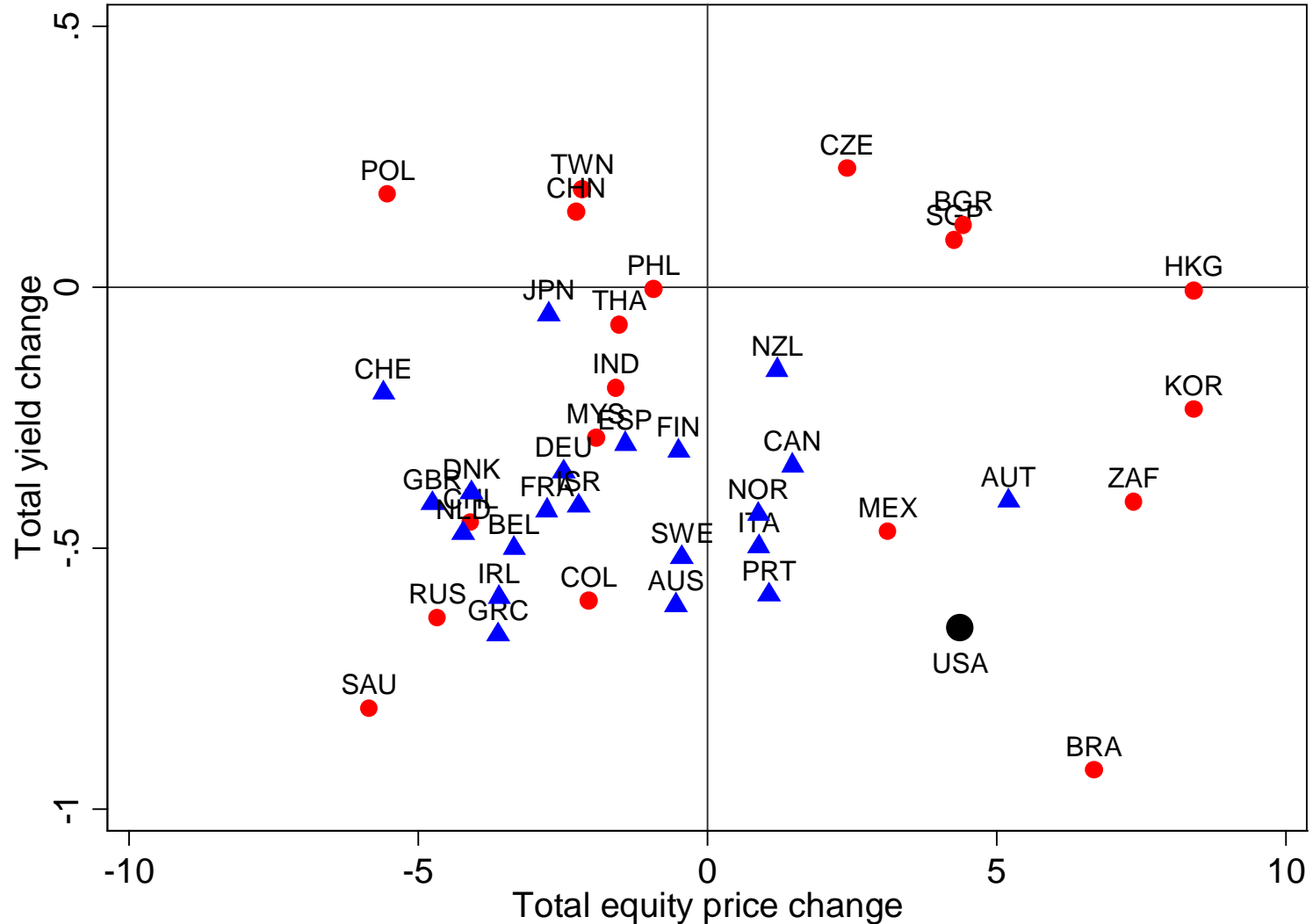
3. Economic significance

- Overall effects large on prices, but modest on capital flows
- QE policies function in pro-cyclical way for EMEs and counter-cyclical way for US (and other AEs)

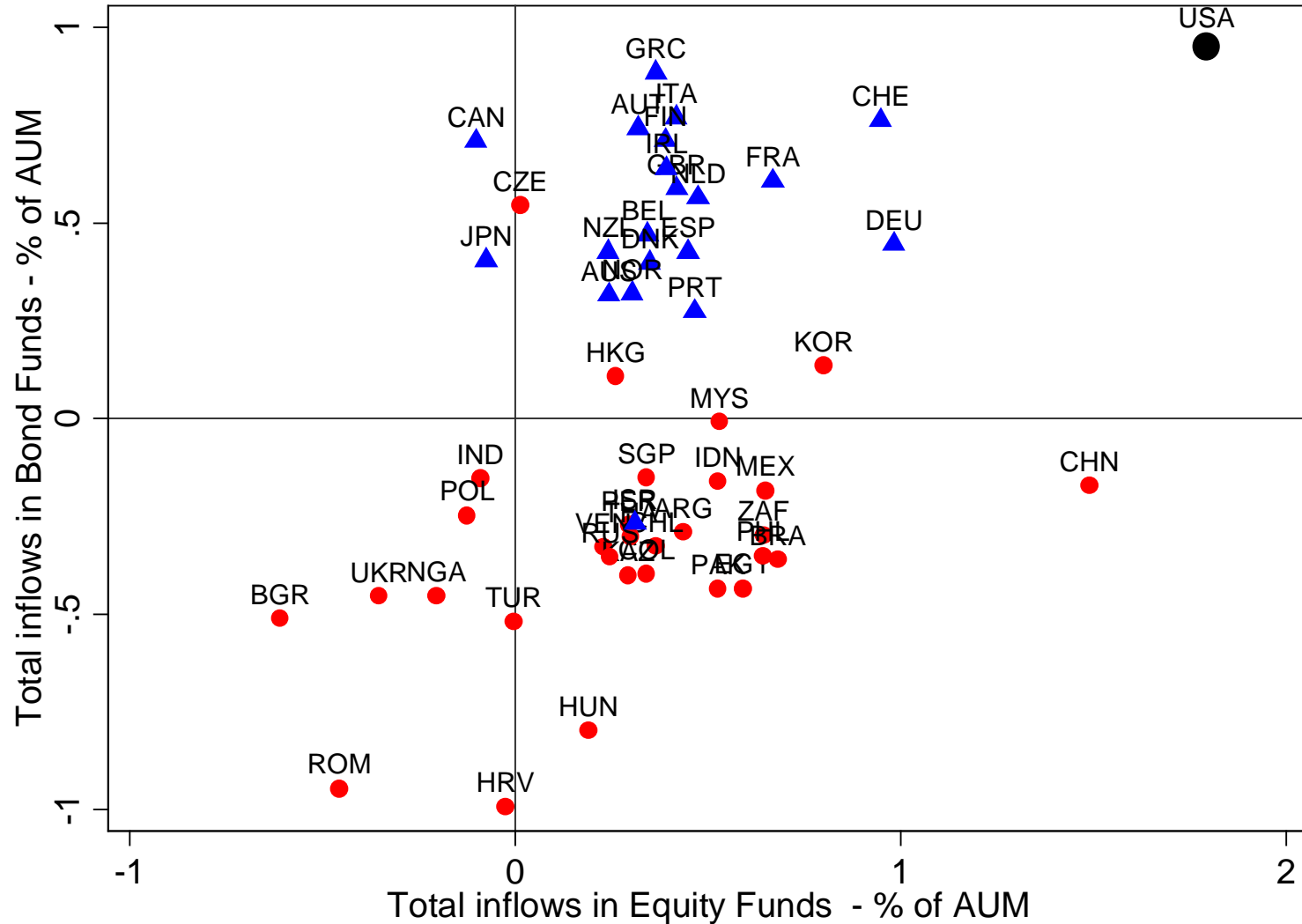
4. Large heterogeneity across countries

- Not explained by FX and monetary policy reactions in recipient countries...
 - ...but rather by quality of domestic institutions
- Indicative or role of risk and flight-to-safety phenomenon

Impact of QE I AN on yields & returns



Impact of QE I AN on bond & equity flows



The QE strategy of the Fed

First phase QE1 - liquidity support: promote market functioning, avoid aggressive de-leveraging, credit crunch

- Short term liquidity (collateralised) to banks –FED as LOLR
- Liquidity to key credit markets (support to non-banks, i.e. money market funds, commercial paper market and ABS market)
- Asset purchases of MBS, GSE debt
- LSAPI (Nov. 2008-2009): Treasury purchases

Second phase QE2 - Asset purchases:

- LSAP2 August 2010 (then “Operation Twist”): stimulate economic activity by lowering long term rates, boosting asset prices

Third phase QE3 - Asset purchases:

- LSAP3 since 2012 , MBS and Treasuries

Channels of Fed policies

- **Portfolio balance**
 - Effect via term premium
 - Imperfect substitutability; decline in yields for similar assets
 - Duration removal of LT asset purchases
- **Signalling** about future policy rates
 - Effect via risk-neutral rate (Bauer and Rudebusch 2011)
- **Confidence**
 - Signalling about economic prospects
 - May help explain portfolio rebalancing across countries
- **Liquidity and risk**
 - OP to achieve market repair, reduce liquidity & risk premia
 - May help explain role of operations

List of QE announcements

	Date	Event	Gagnon	Wright
QE I	(1) Tuesday 25/11/2008	FOMC statement	-22	0.75
QE I	(2) Monday 01/12/2008	Bernanke's Speech	-19	0.84
QE I	(3) Tuesday 16/12/2008	FOMC statement	-26	2.22
QE I	(4) Wednesday 28/01/2009	FOMC statement	14	-0.23
QE I	(5) Wednesday 18/03/2009	FOMC statement	-47	3.41
QE I	(6) Wednesday 12/08/2009	FOMC statement	5	0.15
QE I	(7) Wednesday 23/09/2009	FOMC statement	-3	0.85
QE I	(8) Wednesday 04/11/2009	FOMC statement	6	0.12
QE II	(9) Tuesday 10/08/2010	FOMC statement	NA	0.57
QE II	(10) Friday 27/08/2010	Bernanke's Speech	NA	-0.83
QE II	(11) Friday 15/10/2010	Bernanke's Speech	NA	-0.21
QE II	(12) Wednesday 03/11/2010	FOMC Statement	NA	-0.05

Empirical estimates of spillovers

	Equity Funds			Bond Funds		
	US	EME	AE	US	EME	AE
QE I Announcements	1.80%	0.16%	0.33%	0.95%	-0.35%	0.34%
QE II Announcements	0.02%	0.42%	-0.01%	-0.61%	0.09%	-0.19%
Liquidity Operations	4.88%	-1.46%	1.29%	3.33%	-4.37%	0.62%
Treasury Purchases	-0.80%	3.45%	0.01%	-9.73%	-10.52%	-2.04%
MBS Purchases	-2.67%	0.61%	0.54%	5.54%	5.80%	6.31%
	Equity prices			Bond yields		
	US	EME	AE	US	EME	AE
QE I Announcements	4.30%	-0.34%	-1.68%	-0.66	-0.48	-0.25
QE II Announcements	2.93%	1.12%	1.33%	-0.07	-0.01	-0.06
Liquidity Operations	-23.56%	-23.90%	-22.87%	-0.69	2.45	-0.69
Treasury Purchases	15.08%	18.31%	18.25%	1.31	-0.87	0.11
MBS Purchases	-6.61%	-1.03%	-2.58%	0.11	-0.57	-0.41

QE I appreciates vs. QE2 depreciates USD

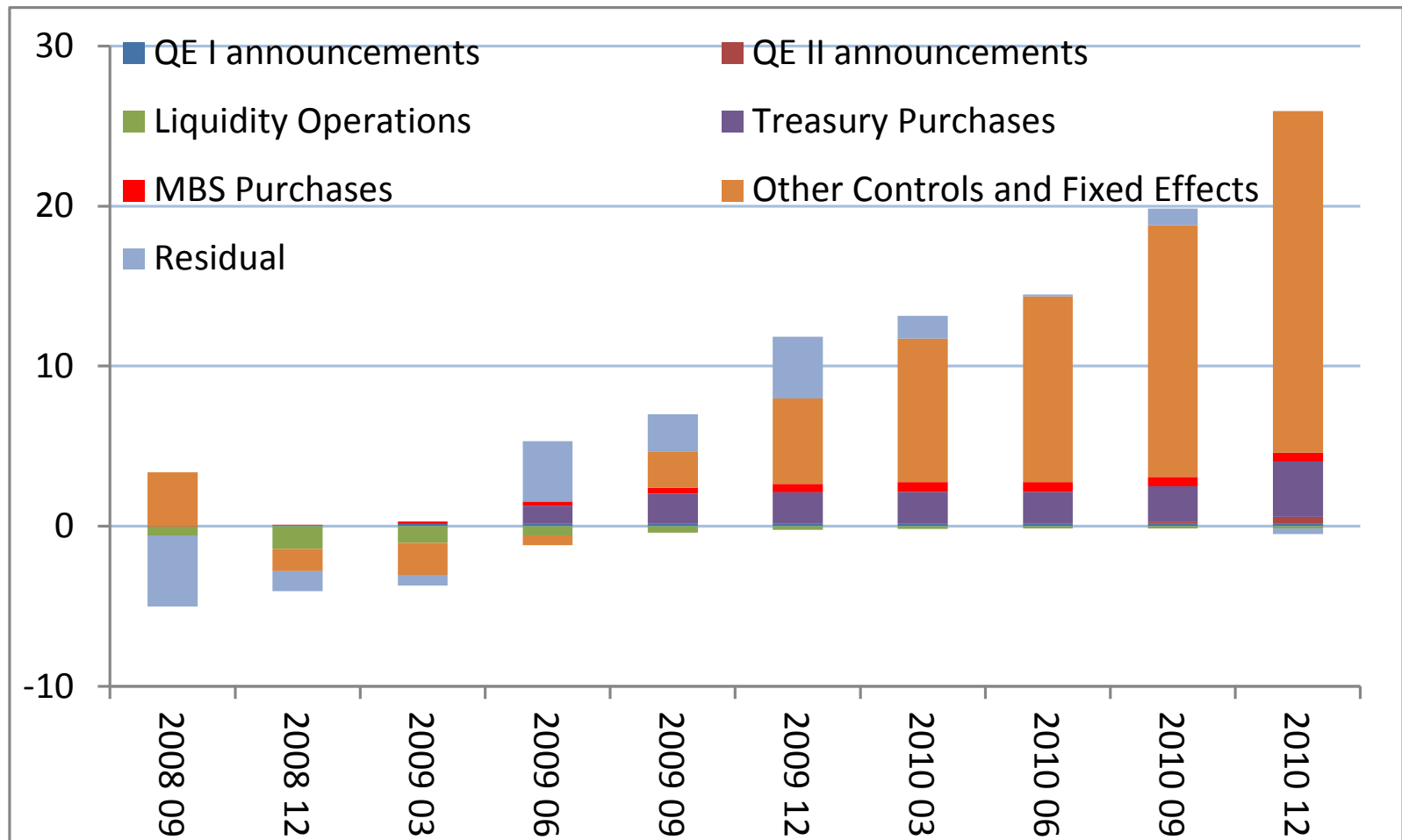
	Exchange rate		
	US	EME	AE
QE I Announcements	-3.24%	-0.62%	-5.61%
QE II Announcements	-0.19%	-0.30%	-0.94%
Liquidity Operations	7.45%	11.44%	8.39%
Treasury Purchases	-4.83%	-2.89%	-5.78%
MBS Purchases	5.71%	3.88%	-0.11%

But mixed economic significance

	Equity Funds			Bond Funds		
	US	EME	AE	US	EME	AE
Impact of all operations	-0.91%	4.45%	0.93%	-4.76%	-6.05%	3.75%
Total flows	-4.64%	25.43%	-17.08%	27.33%	33.78%	-3.94%
	Equity prices			Bond yields		
	US	EME	AE	US	EME	AE
Impact of all operations	14.30%	16.02%	13.59%	0.63	-1.70	-0.62
Total returns/yields	-20.31%	-0.41%	-35.08%	-1.40	-0.23	0.25

Strengthening of pro-cyclicality for EMEs

Cumulated impact on EME equity flows (% AUM)



Role of FX policy (“pull factors”) not relevant

	Fx flexibility			Fx Volatility			CB rate volatility		
	low	high	diff	low	high	diff	low	high	diff
equity flows									
<i>QE I Announcements (AN)</i>	0.0564 ***	0.1144 ***	*	0.0632 ***	0.0527 ***		0.0827 ***	0.0582 ***	
<i>QE II Announcements (AN)</i>	0.1137 ***	0.0257	***	0.0597 ***	0.0788 ***		0.0585 **	0.0911 ***	
<i>Liquidity (LQ)</i>	-0.0002	0.0002		0.0001	-0.0002		0.0002	-0.0003	
<i>Treasuries (TR)</i>	0.0047 ***	0.0013	**	0.0040 ***	0.0037 ***		0.0056 ***	0.0031 ***	
<i>MBS (MBS)</i>	-0.0001	0.0008 *		0.0007 ***	0.0006 *		0.0006	0.0003	
bond flows									
<i>QE I Announcements (AN)</i>	-0.0176	-0.0144		0.0133	-0.0380		-0.0764	0.0070	
<i>QE II Announcements (AN)</i>	0.0174	-0.0566 ***	**	0.0233	-0.0554 ***	***	-0.0030	-0.0095	
<i>Liquidity (LQ)</i>	-0.0013 ***	-0.0009 ***		-0.0013 ***	-0.0012 ***		-0.0014 ***	-0.0012 ***	
<i>Treasuries (TR)</i>	-0.0140 ***	-0.0116 ***		-0.0136 ***	-0.0122 ***		-0.0187 ***	-0.0124 ***	**
<i>MBS (MBS)</i>	0.0045 ***	0.0045 ***		0.0039 ***	0.0046 ***		0.0030 ***	0.0050 ***	**

...but quality of institutions matters

Principal components analysis

	Equity Flows	Bond Flows
<i>Estimated λ coefficients</i>		
QE1 An. (AN1)		
λ_0	-0.23476 ***	-0.47659 ***
Fundamentals	-0.00526	-0.01401 **
Policies	0.00593	0.01987 **
Institutions	0.00143	0.01432 **
QE2 An. (AN2)		
λ_0	0.25294 ***	0.14114 ***
Fundamentals	0.00698	0.00525
Policies	-0.00589	0.00697
Institutions	-0.01526 ***	-0.01409 ***
Liquidity (LQ)		
λ_0	-0.00089 ***	-0.00148 ***
Fundamentals	-0.00007 **	-0.00008 **
Policies	0.00004	0.00006 **
Institutions	0.00004	0.00012 ***
Treasury (TR)		
λ_0	-0.00303 ***	-0.00813 ***
Fundamentals	0.00021	-0.00053 ***
Policies	0.00020	0.00015
Institutions	-0.00025 ***	0.00057 ***

Summary & implications

- **What are externalities of Fed QE?**
 - Global perspective, esp. for EMEs – gap in literature
 - Quantities/flows (mutual funds) vs. prices/yields
- **QE1 vs QE2 differences**
 - QE1 PB into US, yields ↓, equities ↑, USD ↑
 - QE2 PB into EMEs/equities, yields ~, equities ↑, USD ↓
- **Fed announcements (AN) vs. operations (OP)**
 - AN much smaller effects than OP, also for US
 - Confirms partly market repair function of Fed policies
- **Economic significance**
 - QE policies function in pro-cyclical way for EMEs and counter-cyclical way for US (and other AEs)

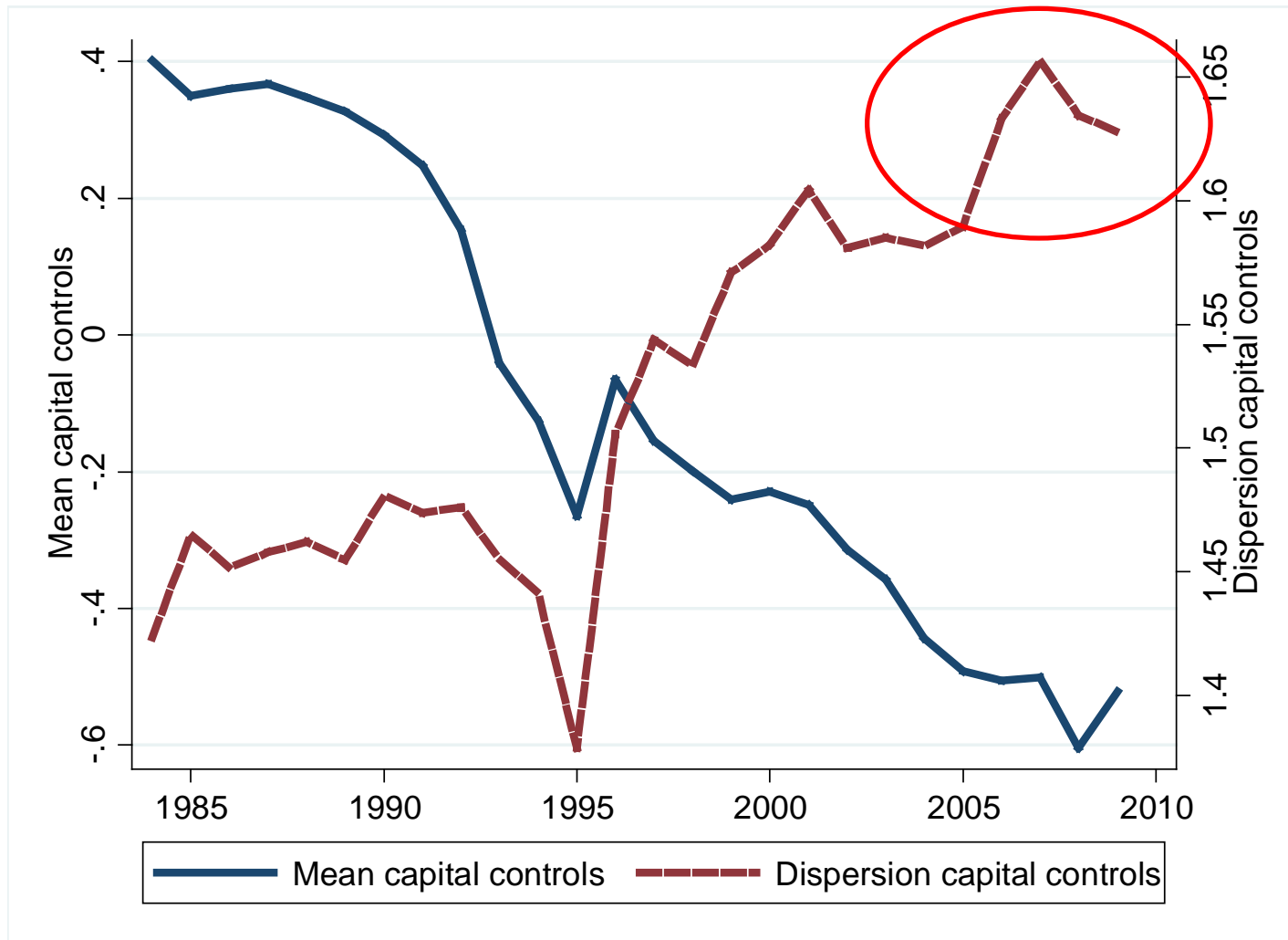
Summary & implications

- **Large heterogeneity across countries**
 - Not explained by FX and monetary policy reactions in recipient countries...
 - ...but rather by quality of domestic institutions
 - Indicative or role of risk and flight-to-safety phenomenon
- **Policy implications**
 - EME policy-makers' concerns not unfounded
 - Presence of adverse externalities (though limited)
 - Weighing of benefits against costs from QE

Policy implications: Externalities of CFM and monetary policy

- **“Monetary tsunami”** → capital flows, global liquidity
- **“Currency war”**
- **Financial “protectionism”**
 - Capital controls and FX policies in EMEs as forms of protectionism...
 - ...but also monetary policy and other policies of advanced economies?
- **What drivers of capital flows?**
- **What motives for policies?**
- **What are policy externalities?**
- **The case for policy coordination**

Rising risk of financial protectionism



Open questions

- How to deal with externalities from AE policies?
- Where do capital controls belong in pecking order?
 - Hard to see as first-best policy option under any circumstance
- Buying autonomy or time? → Risk of moral hazard
 - Limited progress on macroeconomic and prudential policies suggests policy choices and inertia become entrenched
- Financial protectionism as key global risk !
 - EMEs have most to lose: 1. AE monetary policy dominance, 2. institutions and markets mostly dominated by AEs
 - Example: Vienna initiative
- Why are externalities of policies ignored?
 - Evidence for externalities substantial – calls for global policy coordination, rather than “beggar-thy-neighbor” approach

Appendix

Channels: Fed purchase of US Treasury

	portfolio decisions / flows				prices / yields			
	US		EMEs		US		EMEs	
	equity	bonds	equity	bonds	equity	bonds	equity	bonds
1. Portfolio balance channel	+	-	+	+ ?	+	-	+	- ?
2. Signaling channel	+	-	+	-	+	-	+	-
3. Confidence channel								
flight to safety -- country/US	+	+	-	-	+	-	-	+
flight to safety -- asset class	-	+	-	+ ?	-	-	-	- ?
4. Liquidity/market channel	+ ?	+	- ?	- ?	+ ?	-	?	?