Expanding the toolbox: New instruments in the monetary policy landscape

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The views expressed in this presentation correspond to the author, and do not necessarily represent the views of the BIS.

Outline

- Unconventional policies in AEs

- The scope of monetary policy independence in EMEs

- New monetary policy instruments?

Unconventional policies in AEs: prospects

- Following the financial crisis, and soon after the ZLB was reached in late 2008, unconventional policies were tried:
  - Balance-sheet policies (QE, LSAP, Operation Twist)
  - Forward guidance
- Growing consensus that some of these tools will continue having a role going forward
  - Williams (2013): LSAP unlikely to continue in Fed´s toolkit, forward guidance moves to the center
  - Friedman (2014): BSPs are here to stay, FG will stop being used to achieve policy objectives

LSAP have had a significant impact on markets

- Williams (2013) presents studies that estimate a drop of roughly 20-40bps in long term rates for USD 600 bn purchases

Table 1
Empirical estimates of LSAP effects

Study	Sample	Method	Estimated Effect of $600B LSAP (±2 std errors if avail.)[a]
Modigliani-Sutch (1966, 1967)	Operation Twist	time series	0 bp (±20 bp)
Bernanke-Reinhart-Sack (2004)	Japan, U.S.	event study	400 bp (±370 bp), 40 bp (±60 bp)
Greenwood-Vayanos (2008)	post-War U.S. (pre-crisis)	time series	14 bp (±7 bp)
Krishnamurthy-Vissing-Jorgensen (2011, 2012)	post-War U.S., QE1, and QE2	time series	15 bp (±5 bp)
Gagnon-Raskin-Remache-Sack (2011)	QE1	event study, time series	30 bp (±15 bp), 18 bp (±7 bp)
D'Amico-King (2013)	QE1 Treasury purchases	security-specific event study	100 bp (±80 bp)
Hamilton-Wu (2011)	U.S., 1990 - QE2	affine no-arbitrage model	17 bp
Hancock-Passmore (2011)	QE1 MBS purchases	time series	depends, roughly 30 bp
Swanson (2011)	Operation Twist	event study	15 bp (±10 bp)
Joyce-Lasaosa-Stevens-Tong (2011)	U.K. LSAPs	event study, time series	40 bp
Neely (2013)	effect of U.S. QE1 on foreign bond yields	event study	17 bp (±13 bp)
Christensen-Rudebusch (2012)	QE1, QE2, and U.K. LSAPs	event study, affine no-arbitrage model	10 bp
D'Amico-English-Lopez-Salido-Nelson (2012)	U.S., pre-crisis	weekly time series	depends, roughly 45 bp
Bauer-Rudebusch (2013)	QE1, QE2	event study, affine no-arbitrage model	16 bp
Li-Wei (2013)	U.S., pre-crisis	affine no-arbitrage model	26 bp

[a]Sources: Modigliani-Sutch (1966, Sections 3-4), Bernanke-Reinhart-Sack (2004, Table 7, Figure 6, and author's calculations), Greenwood-Vayanos (2008, Table 2), Krishnamurthy-Vissing-Jorgensen (2011, Section 4), Gagnon et al. (2011, Tables 1-2), D'Amico-King (2013, Figure 5), Hamilton-Wu (2011, Figure 11), Hancock-Passmore (2011, Table 5), Swanson (2011, Table 3), Chung et al. (Figure 10), Joyce et al. (2011, Chart 9), Neely (2013, Table 2), Bauer-Rudebusch (2013, Table 6), Christensen-Rudebusch (2012, Table 8), D'Amico et al. (2012, Conclusions), Li-Wei (2013, Tables 3, 6). Almost all of these estimates involve author's calculations to renormalize the effect to a $600 billion U.S. LSAP.

But FG has had an impact too

Table 2
Forward guidance effects on market expectations

	Treasury Yield Maturity					
	3-month	6-month	1-year	2-year	5-year	10-year
FOMC drops "considerable period" language on Jan. 28, 2004						
Jan. 27, 2004	0.89	0.96	1.17	1.69	3.08	4.39
Jan. 28, 2004	0.92	0.98	1.30	1.86	3.22	4.49
change (bp)	3.0	2.0	12.5	16.6	13.9	10.3
FOMC projects near-zero funds rate "at least through mid-2013"						
Aug. 8, 2011	0.05	0.07	0.17	0.27	1.13	2.59
Aug. 9, 2011	0.03	0.06	0.13	0.17	0.93	2.36
change (bp)	-2.0	-1.0	-4.3	-9.9	-20.4	-22.8
FOMC projects near-zero funds rate "at least through late 2014"						
Jan. 24, 2012	0.04	0.07	0.15	0.24	0.95	2.19
Jan. 25, 2012	0.04	0.07	0.14	0.20	0.85	2.11
change (bp)	0.0	0.0	-0.2	-3.8	-9.4	-8.0
FOMC projects near-zero funds rate "at least through mid-2015"						
Sep. 12, 2012	0.10	0.13	0.20	0.23	0.74	1.82
Sep. 13, 2012	0.10	0.13	0.20	0.22	0.70	1.79
change (bp)	0.0	0.0	-0.2	-0.9	-3.7	-2.9

Sources: Gürkaynak, Sack, and Wright (2007) and Federal Reserve Board of Governors.
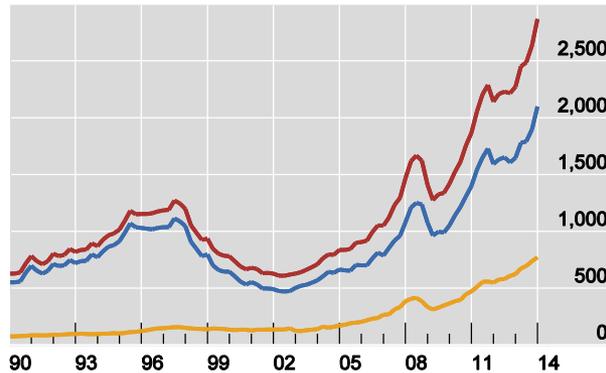
Implications for EMEs: Spillovers

● Banking flows to EMEs have accelerated since 2009
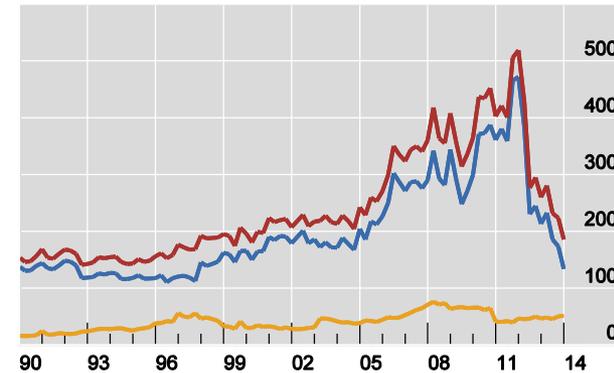
Cross-border bank lending by sector
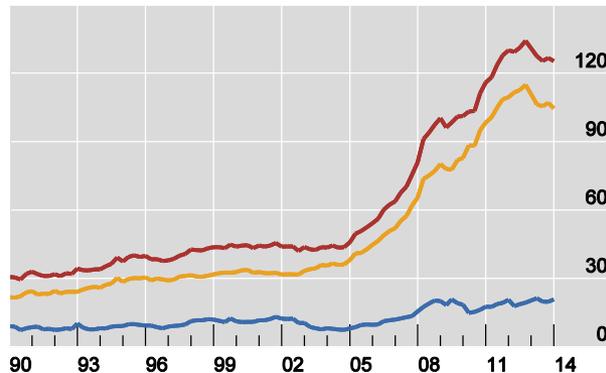
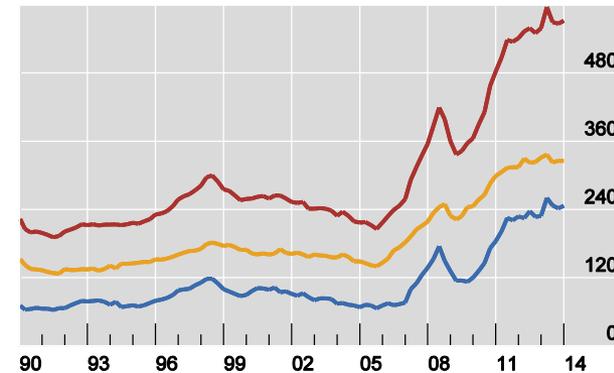In billions of US dollars   Graph 42

[1] China, Hong Kong SAR, India, Indonesia, Malaysia, Philippines, South Korea, Taiwan (China) and Thailand.   [2] Aruba, Bahamas, Barbados, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, Netherlands Antilles, St. Lucia, St. Vincent and the Grenadines and Trinidad and Tobago.   [3] Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama.   [4] Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Suriname, Uruguay and Venezuela.
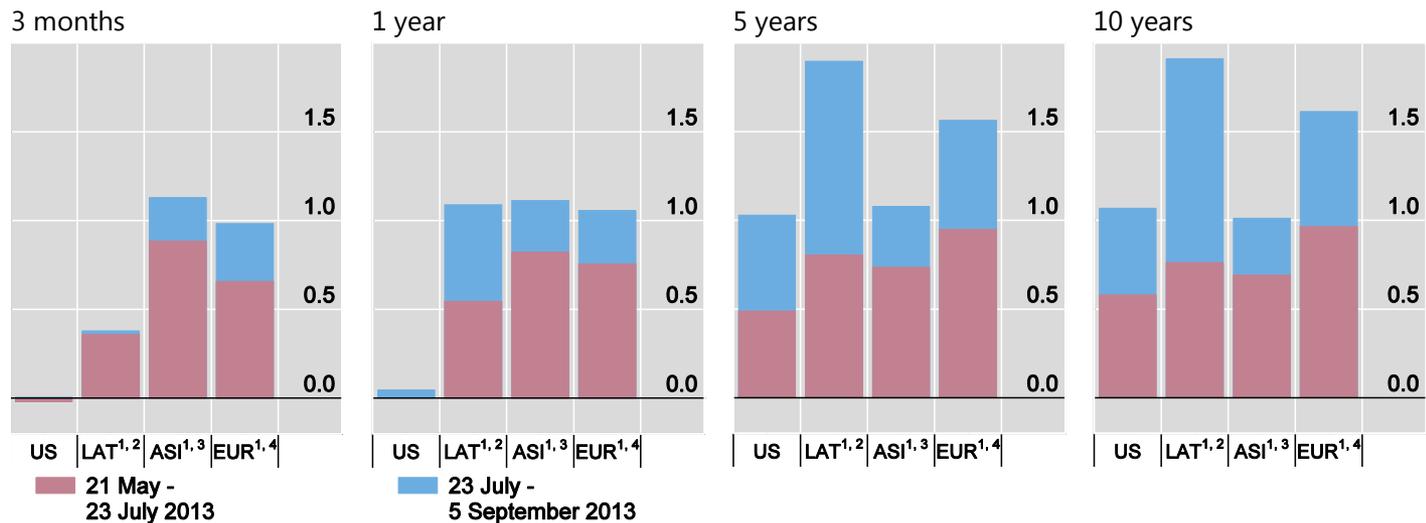
Source: BIS locational banking statistics.

Implications for EMEs: Spillovers

● **Interest rates respond strongly to US policy announcements**

Yield curve evolution after the "tapering off" announcement

Change, in percentage points

US = United States; LAT = Latin America; ASI = Asia; EUR = Emerging Europe.

[1] Change in weighted average based on 2005 GDP and PPP exchange rates of the economies listed. [2] Brazil, Chile, Colombia, Mexico and Peru. [3] China, Hong Kong SAR, India, Indonesia, Malaysia, Singapore, South Korea and Thailand. [4] Czech Republic, Hungary, Poland, Russia and Turkey.

Source: Bloomberg.

Policy spillovers: transmission channels

- Central banks see exchange rates, bond yields and asset prices a main transmission channels

Main channels of international monetary transmission

Number of central banks considering the channels relevant for their economy[1]

Transmission channel	Pre-2008 crisis	Post-2008 crisis	Current[2]
Foreign policy rate	14	13	12
Long-term interest rate (bond yield)	12	15	15
Exchange rate	16	18	18
International bank lending (credit)	10	9	9
Risk taking (asset price, balance sheet)	14	17	18
Other channels	5	6	6
Average number of identified channels	3.94	4.33	4.33

[1] Completed questionnaires are received from 18 central banks. [2] After the Fed tapering announcement in May 2013.

Sources: BIS questionnaire, March 2014.

Events are re-shaping macroeconomic discussion

- Right after the crisis, the focus was on financial stability and regulation

- As the new financial regulation is taking shape, and the acute phase of the crisis recedes, monetary policy is gaining ground

- In AEs, the debate is mainly about the effectiveness and future role of the new (or newly discovered) tools

- In EMEs, two main issues:
  - Monetary policy autonomy (trilemma revisited)
  - Evaluation of new tools

Monetary policy autonomy

- Two opposite views:
  - With open capital account, global financial cycle constrains domestic monetary policy irrespective of the exchange rate regime → no trilemma, just dilemma (Rey 2013)
  - Exchange rate regime still relevant, though capital flows can still increase co-movement of some interest rates
    - Goldberg 2013: impact depends on global banks insertion in local economy
    - Obstfeld 2014: interest rates autonomy remains at short horizons, but not at long end of yield curve
    - In practice, monetary policy pursues several objectives: trade-offs are worsened

Monetary policy autonomy

- Obstfeld 2014 tests a simple version of UIP:

$$\Delta i_{jt} = \alpha + \beta \Delta i_{bt} + \boldsymbol{\gamma}' \boldsymbol{X_{jt}} + u_{jt}$$

$$\beta = \beta_0 + \beta_1 \text{PEG}$$

Table 2: Exchange-rate pegs versus non-pegs

	(1) US-base SR	(2) Multi-base SR	(3) Multi-base SR with Time Effects	(4) Multi-base SR with VIX Percent Change	(5) US-base LR	(6) Multi-base LR	(7) Multi-base LR with Time Effects	(8) Multi-base LR with VIX Percent Change
US-base SR change	0.0303 (0.166)							
Peg * US-base SR change	0.464* (0.270)							
Multi-base SR change		0.0480 (0.226)	-0.0625 (0.268)	0.0856 (0.232)				
Peg * Multi-base SR change		0.622** (0.260)	0.491** (0.239)	0.622** (0.261)				
US-base LR change					0.344*** (0.0606)			
Peg * US-base LR change					0.221 (0.203)			
Multi-base LR change						0.494*** (0.0817)	0.418*** (0.136)	0.575*** (0.0755)
Peg * Multi-base LR change						0.164 (0.110)	0.0981 (0.110)	0.171 (0.109)
VIX Percent Change				0.00236* (0.00139)				0.00293*** (0.000668)
Constant	-0.00167** (0.000741)	-0.00151** (0.000737)	0.000186 (0.000718)	-0.00150** (0.000731)	-0.000792*** (0.000174)	-0.000618*** (0.000164)	-0.00113** (0.000438)	-0.000628*** (0.000164)
N	3273	3273	3273	3273	3076	3076	3076	3076
adj. R^2	0.035	0.038	0.062	0.038	0.048	0.086	0.138	0.095
Optimal Lags	5	5	5	5	0	0	0	0
p-value for F Test that growth and inflation change variables (and their lags, where applicable) = 0	4.92149E-12	7.98688E-11	3.94016E-07	3.67054E-10	0.070044306	0.195097457	0.042998338	0.147092349

Clustered standard errors in parentheses (at country level)
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Monetary policy autonomy

- Independent monetary policy is still possible, but probably weakened with reduced transmission to the long end of the yield curve

- However, financial stability can be hampered: if a larger interest rate increase is needed to achieve given domestic expenditure response, bank health can be hampered, or gross capital flows attracted

- Financial trilemma: policymakers can manage only two of the following objectives:
  - National control over financial policies
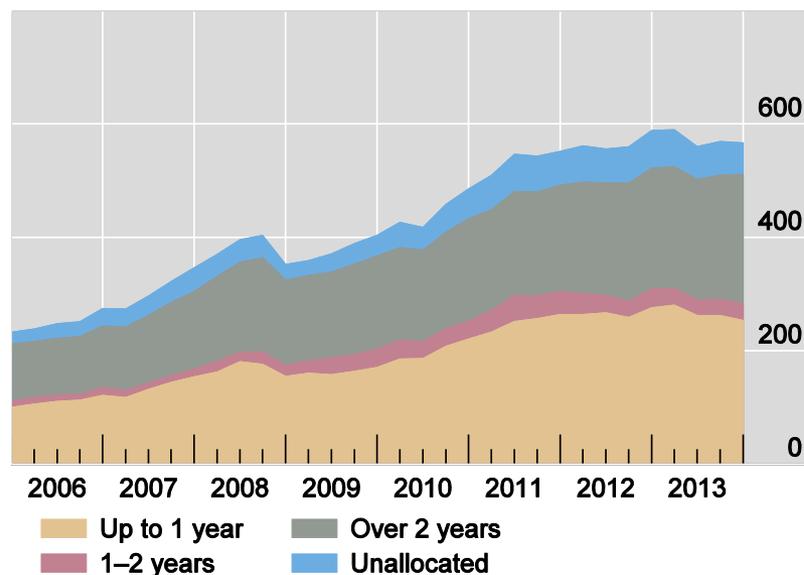 - Global financial integration
  - Financial stability

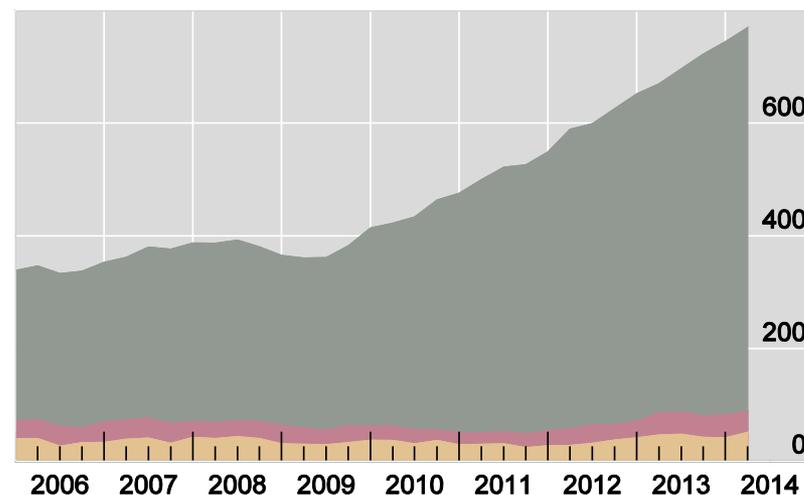# Growing role of portfolio flows create new challenges

International bank claims and international debt securities[1]

Breakdown by remaining maturity, in billions of US dollars

Bank claims[2]

Debt securities[3]

Legend: Up to 1 year · 1–2 years · Over 2 years · Unallocated

[1] Total amounts outstanding, in all currencies.　[2] Immediate borrower basis.　[3] By nationality of issuer.

Source: BIS consolidated banking statistics and international debt securities statistics.
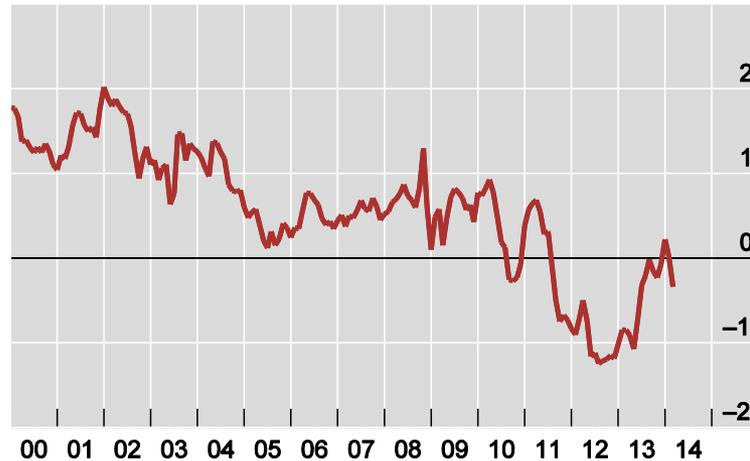
Term premium compression has been an important driver of this global "search for yield"
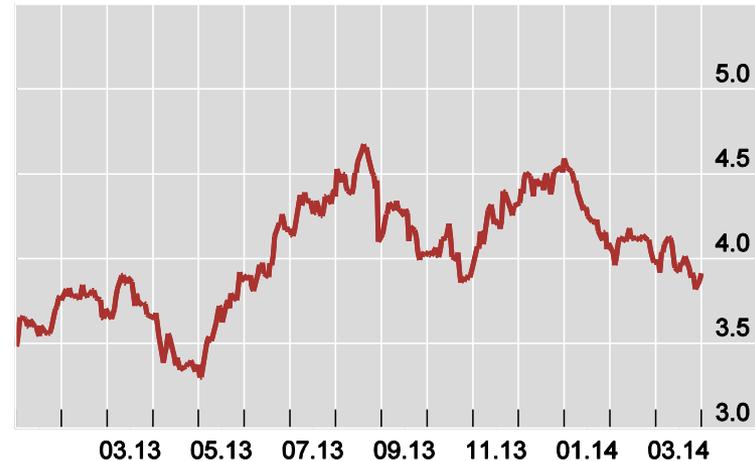
Yields on 10-year US Treasuries

In per cent

Nominal term premium[1]

5-year forward expectation

[1] Sum of inflation and real yield risk premia in the 10-year US Treasury yield. These are calculated using the BIS term structure model.

Sources: Bloomberg; national data; BIS calculations.

Assessing the stance of monetary policy

- The increasing role of capital markets as conduits of capital flows makes more complex the analysis of monetary stance

- Monetary conditions can be characterised along three dimensions (at least):

  - Short-term policy rate

  - Exchange rate

  - Long-term interest rate

- The relative importance of these dimensions might change over time

- If financial stability is also part of the central bank mandate, the scarcity of policy tools becomes even more acute

How can central banks in EMEs can respond?

- Rey (2013) suggests a stronger use of
  - Macro-prudential policy tools
  - Capital controls
- But macro-prudential policy tools are not adept to deal with the effects of the global financial cycle → international cooperation needed
- Capital controls? Effectiveness in the long term is doubtful, and might have undesired side-effects
- Filardo, Genberg and Hofmann (2014) propose a 3-pillar approach
  - Traditional macroeconomic stability pillar
  - Financial stability oriented pillar
  - Exchange-rate management pillar

Tools consistent with the 3-pillar approach

- Short-term policy interest rate

- Macro-prudential tools

- Balance-sheet policies
  - Large scale government bond operations
  - Sterilized (or not) FX intervention
  - Interest rate swaps
  - Duration swaps
  - FX derivatives

Tools based on derivative markets

- Advantages
  - Direct impact on private market prices
  - Unlimited use (in principle)
  - No impact on bank reserves
  - No additional capital requirement for banks
- Disadvantages
  - Difficult to explain to the general public
  - Operating frameworks not necessarily in place
  - Local banks might be less prone to participate
  - Collateral management can be burdensome
  - Marking to market can be tricky
- Where is the end?

BANK FOR
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SETTLEMENTS

Conclusions?

"Would you tell me, please, which way I ought to go from here?"

"That depends a good deal on where you want to get to," said the Cat.

"I don´t much care where -" said Alice.

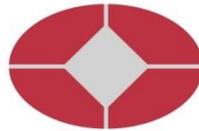*"Then it doesn´t matter which way you go."*

- Lewis Carroll, *Alice's Adventures in Wonderland (1865)*

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Thank you

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