



BANK FOR INTERNATIONAL SETTLEMENTS

The movie plays on: A lens for viewing the global economy

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Theme and takeaways

- Objective: to offer a lens to answer the question:
 - Why almost a decade since the Great Financial Crisis (GFC) does the global economy seem unable to return to sustainable and balanced growth?
- Three takeaways
 - Failure to fully come to grips with financial booms and busts
 - Inability to constrain build-up of financial imbalances (FIs)
 - Progressive loss of policy room for manoeuvre
 - Prevailing analytical lens is not fully adequate
 - Need stronger focus on financial, medium-term and global factors
 - The road ahead is quite narrow
 - Economy could rebalance smoothly
 - But there are risks of further serious financial distress
 - Policy is key
 - Need to abandon debt-fuelled growth model

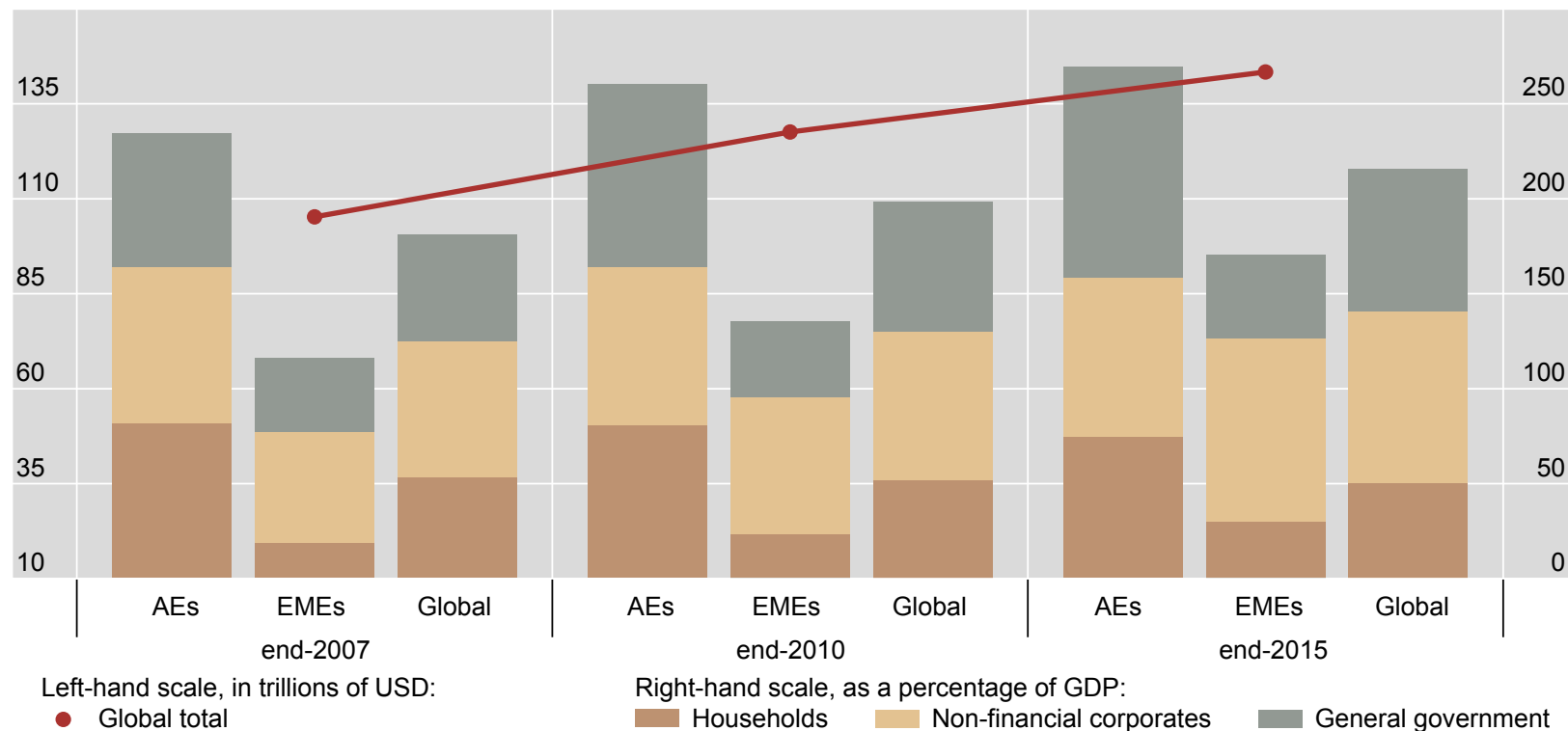
Structure of remarks

- Review symptoms of unsustainable and unbalanced global expansion
 - Highlight three of them
- Explain the main features of the proposed lens
 - Highlight six of them
- Provide the corresponding narrative and identify risks ahead
 - Explain how a faulty lens may have contributed to current predicament

I - The symptoms of unbalanced and unsustainable expansion

- Symptoms of the malaise: the “ugly three”
 - Debt too high
 - Productivity growth too low
 - Policy room for manoeuvre too limited
- **S1:** Globally, debt in relation to GDP has not adjusted post-crisis (G 1)
 - Crisis-hit countries: some decline in private sector, increase in public sector
 - Non-crisis-hit countries: increase in private sector (esp EMEs; G 2, 3)), mixed in public sector
 - Several have been exhibiting signs of build-up of FIs
- **S2:** Decline in productivity growth (G 4)
 - Started well before the crisis, intensified thereafter
- **S3:** Progressive loss in the policy room for manoeuvre
 - Fiscal (debt levels)
 - Monetary (policy rates & ballooning balance sheets)
 - Persistent ultra-low interest rates, regardless of benchmarks (G 5)
 - Both policy rates and long-term rates
 - New peak: over \$6.5 trillion worth of sovereign paper trading at negative yields

Graph 1: Debt levels continue to rise



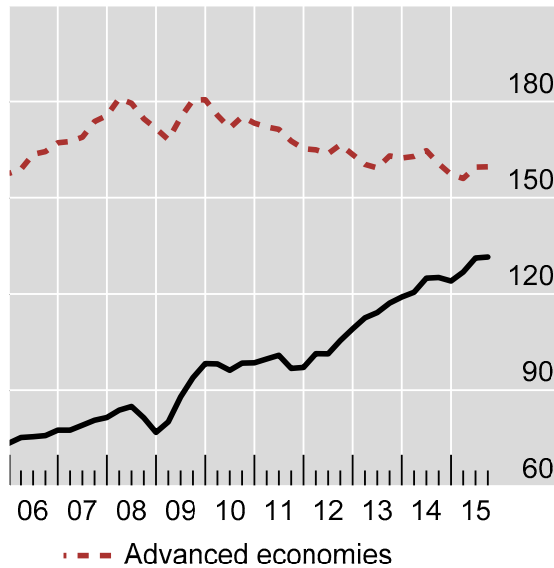
The global sample of countries includes: Argentina, Australia, Brazil, Canada, China, the Czech Republic, Denmark, Germany, France, Greece, Hong Kong SAR, Hungary, India, Indonesia, Ireland, Italy, Japan, Korea, Malaysia, Mexico, Netherlands, Norway, Poland, Portugal, Russia, Saudi Arabia, Singapore, Spain, South Africa, Turkey, the United Kingdom and the United States. AEs = advanced economies; EMEs = emerging market economies.

Sources: national data; BIS debt statistics.

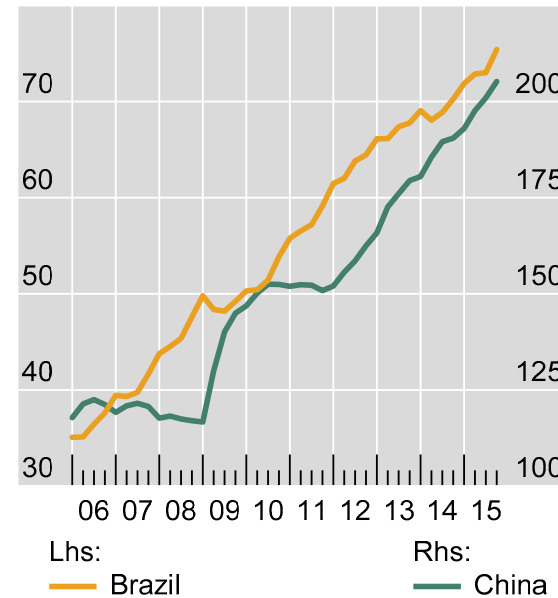
Graph 2: Private sector debt surges in EMEs

As a percentage of nominal GDP

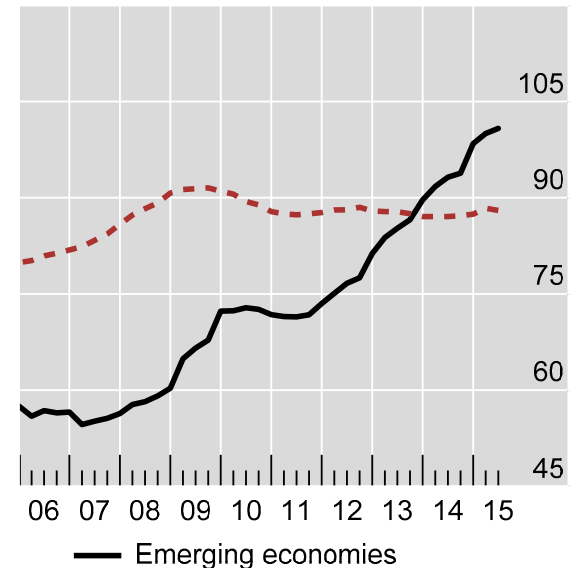
Non-financial private sector debt



Non-financial private sector debt



Non-financial corporate debt

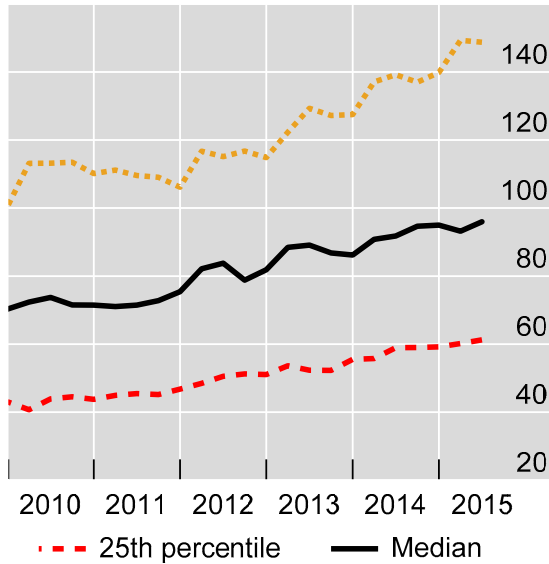


Source: Caruana (2016).

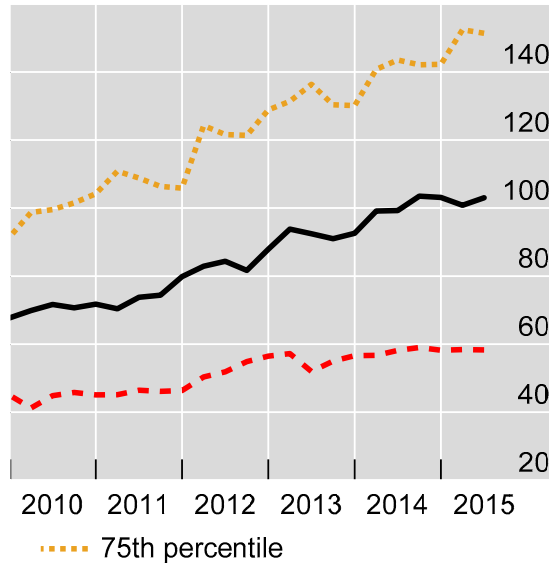
Graph 3: As EME corporates' debt surges profitability plunges

In per cent

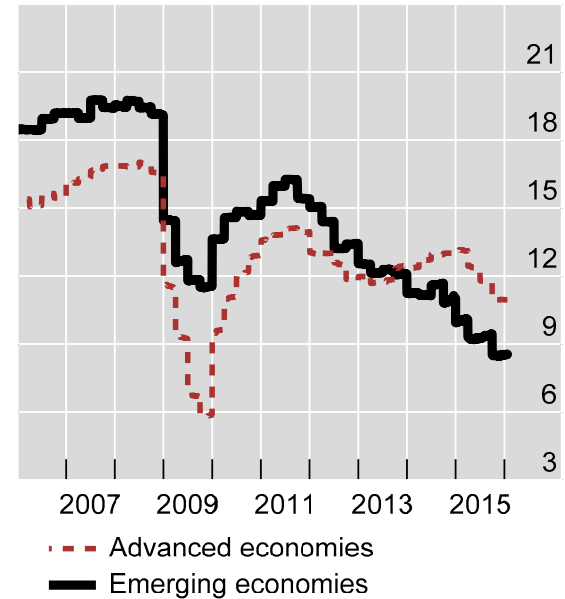
Full sample, total debt to equity



Non-tradable sectors, total debt to equity

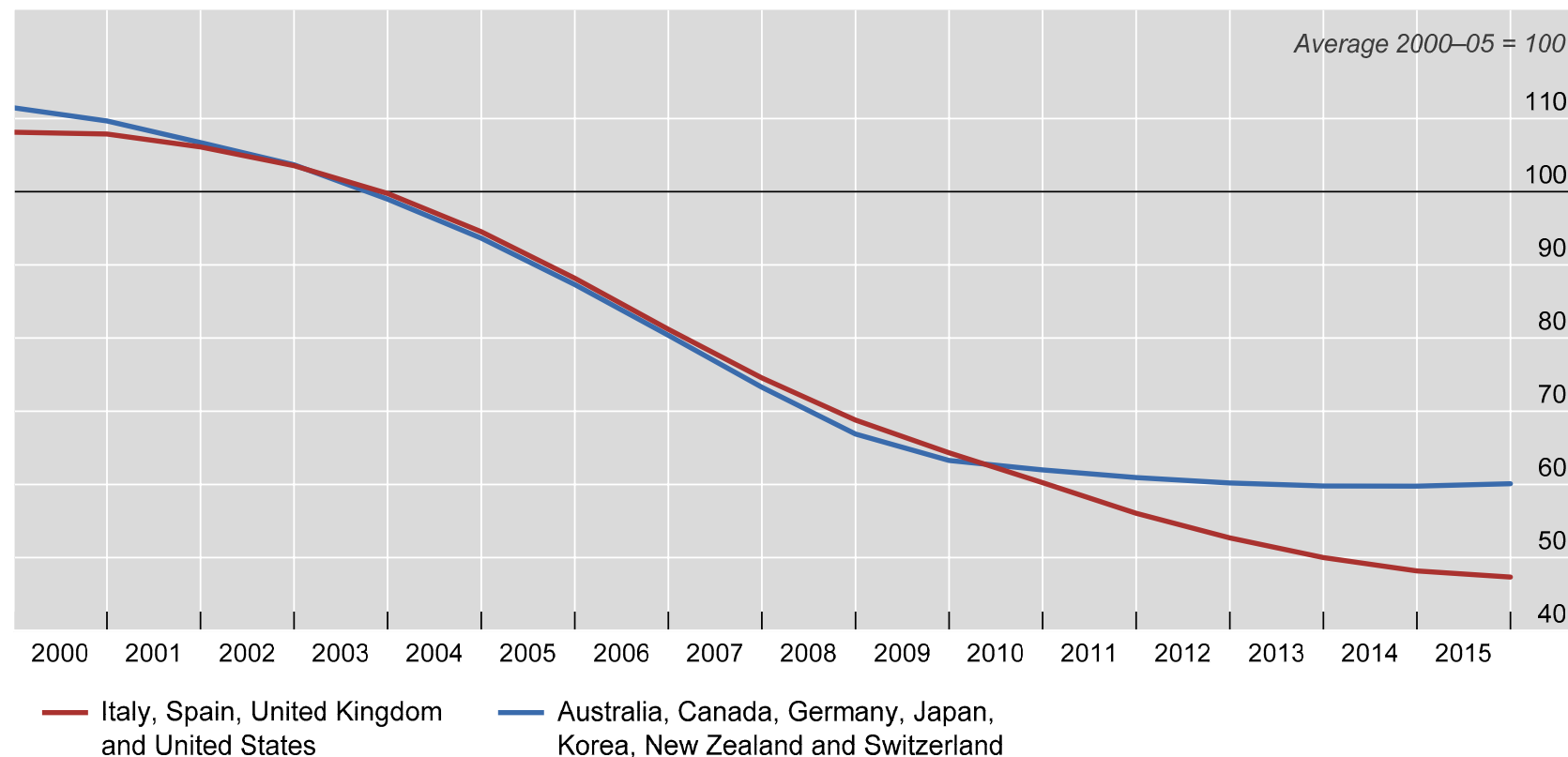


Profitability of non-financial companies



Source: Caruana (2016).

Graph 4: Productivity growth declines

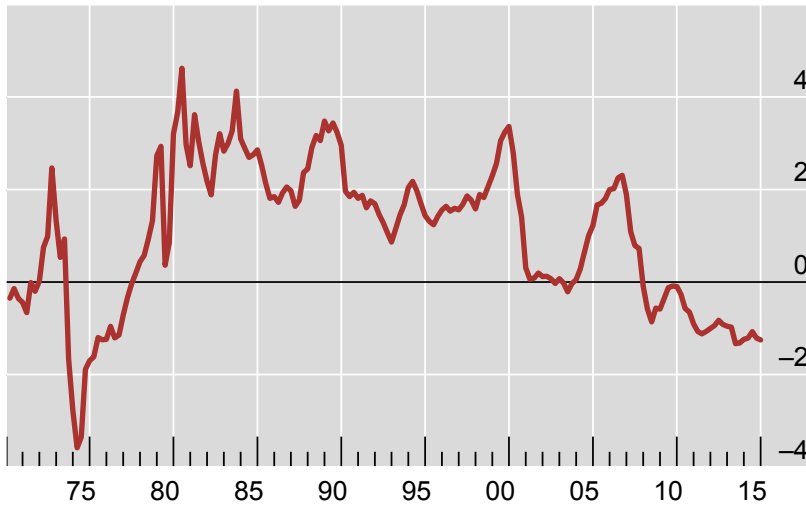


Hodrick-Prescott (HP) filter applied to annual growth of output per person employed. Aggregates are weighted averages of trend growth based on GDP at current PPP exchange rates.

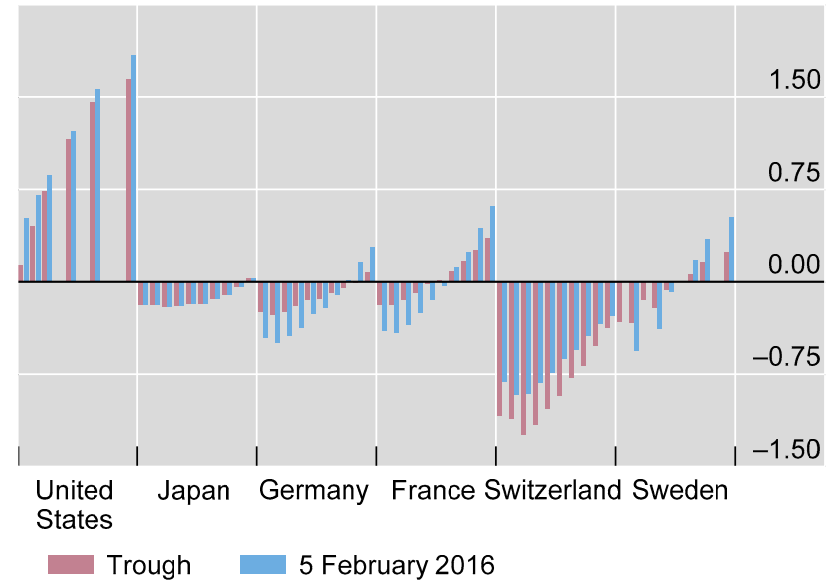
Sources: EU, KLEMS; IMF, *World Economic Outlook*; OECD, *Economic Outlook* and STAN; Conference Board, *Total Economy Database*; GGDC 10-sector database; BIS; BIS calculations.

Graph 5: Interest rates have been exceptionally and persistently low

G3 real policy rates¹



Bond yields²



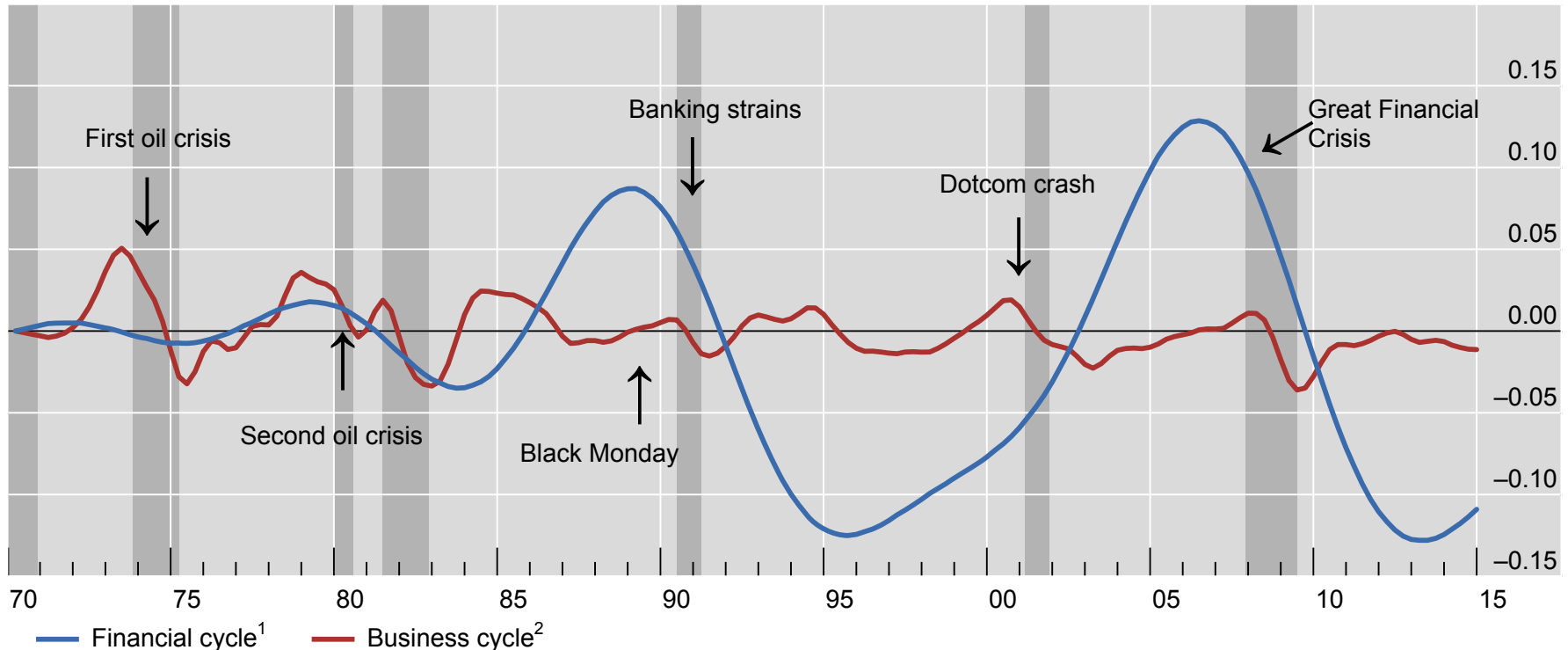
¹ Nominal policy rate less consumer price inflation excluding food and energy. Weighted averages for the euro area (Germany), Japan and the United States based on rolling GDP and PPP exchange rates. ² Yield per maturity; for each country, the bars represent the maturities from one to 10 years.

Sources: updated from Borio (2015).

II – A different lens: 6 key propositions

- **P1:** Macroeconomics cannot ignore the financial cycle (FC) (G 6)
 - Self-reinforcing financial booms and busts that
 - Can lead to systemic financial crises and serious macroeconomic dislocations
 - Best described by joint booms and busts in credit and property prices
 - Much longer than the traditional business cycle
 - Were at the root of the GFC
- **P2:** FCs cause major and long-lasting damage to the real economy
 - Previous work: permanent output losses
 - New BIS research: also long-lasting damage to productivity growth (G 7)
 - During a typical credit boom: some 1/4 pp per year
 - Largely through sectoral misallocations: almost 60% of total loss
 - & with larger effects if a crisis follows: some 0.5 pp per year
 - 5-year boom & 5-year post-crisis window: 4 pp cumulatively

Graph 6: The financial cycle is longer than the business cycle (the US example)



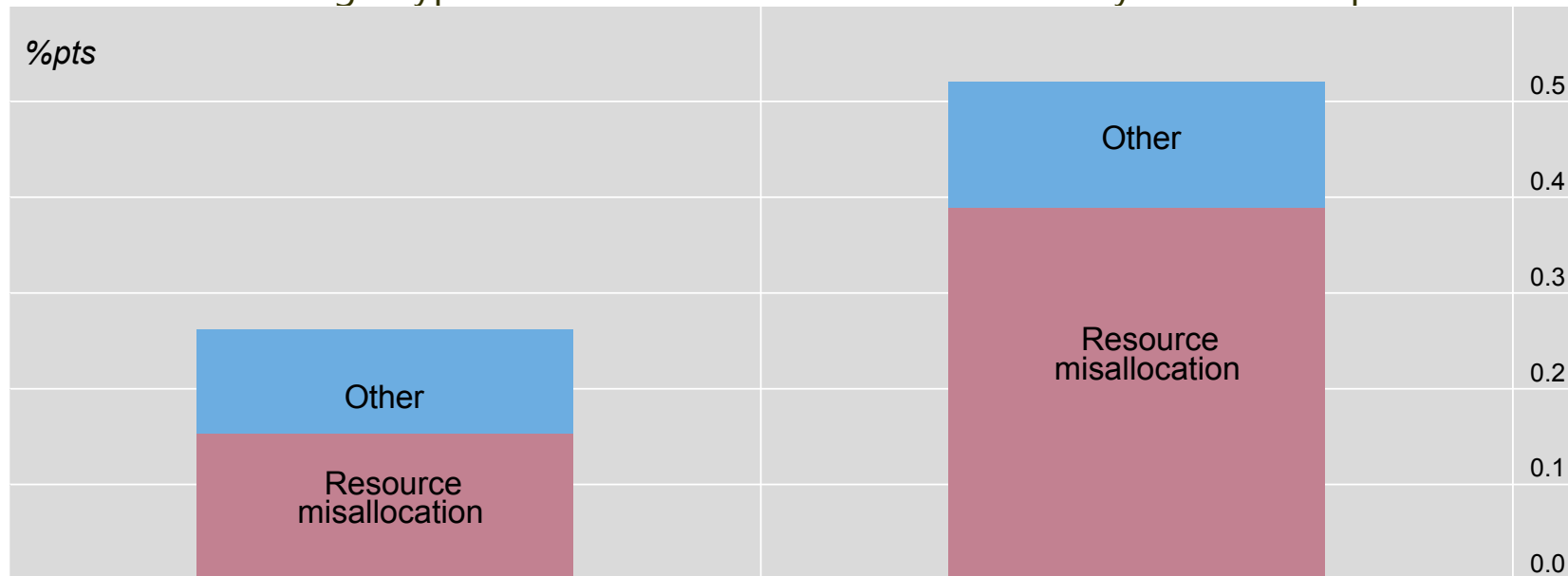
¹ The financial cycle as measured by frequency-based (bandpass) filters capturing medium-term cycles in real credit, the credit-to-GDP ratio and real house prices. ² The business cycle as measured by a frequency-based (bandpass) filter capturing fluctuations in real GDP over a period from 1 to 8 years.

Source: Drehmann et al (2012), updated.

Graph 7: Financial booms sap productivity by misallocating resources

Annual cost during a typical boom ...

... and over a five-year window post-crisis



Estimates calculated over the period 1969–2013 for 21 advanced economies. Resource misallocation = annual impact on productivity growth of labour shifts into less productive sectors during a 5-year credit boom and over the period shown. Other = annual impact in the absence of reallocations during the boom.

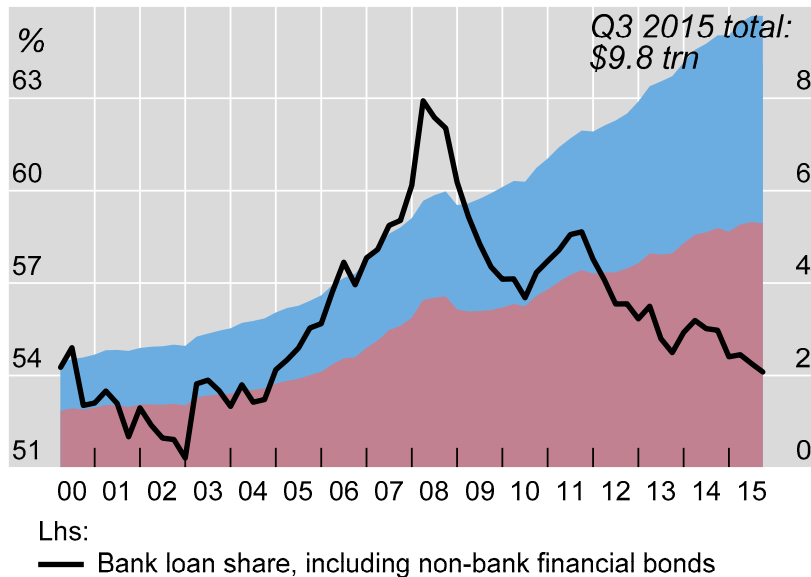
Source: Borio et al (2015b).

II – A different lens: 6 key propositions (ctd)

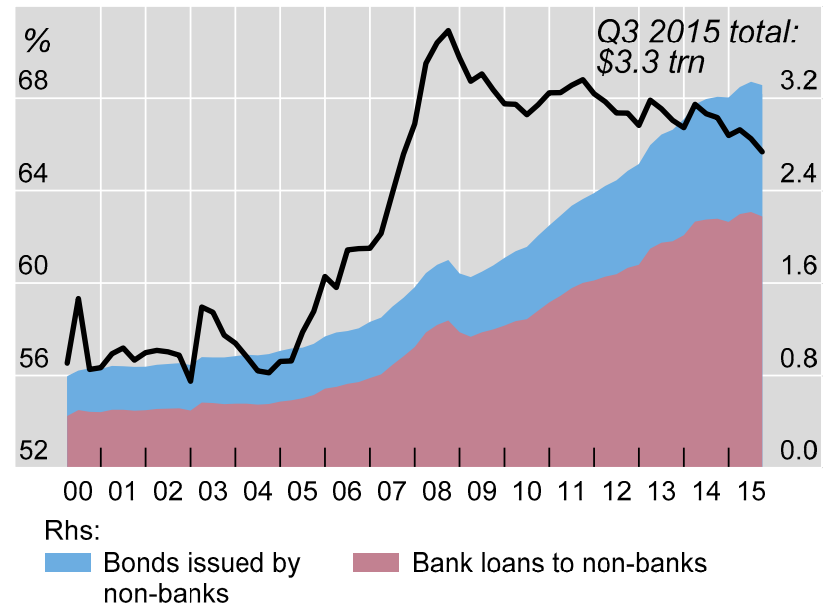
- **P3:** FCs have become bigger since early 1980s, following
 - Financial liberalisation (more ample and cheaper funding)
 - Monetary policy frameworks focused on near-term inflation control (less resistance)
 - Globalisation of the real economy (encourages booms, causes disinflation)
- **P4:** The international monetary and financial system amplifies this through the interaction of domestic monetary and financial institutions (“regimes”)
 - Monetary frameworks pay little attention to the build-up of FIs
 - Spread easing bias from the core economies to RoW through
 - Extensive reach of international currencies
 - Post-crisis surge of dollar credit outside the US (G 8)
 - Resistance to currency appreciation (policy rates kept lower/FX intervention)
 - US policy rates matter beyond domestic conditions (G 9) and FX reserves balloon
 - Liberalised financial markets mean that
 - Market’s global pricing of risk and global liquidity play a key role
 - External funding boosts domestic financial booms
 - Exchange rates overshoot
 - Watch the exchange rate risk-taking channel!

Graph 8: Surge in US dollar-denominated credit to non-banks outside the United States

World



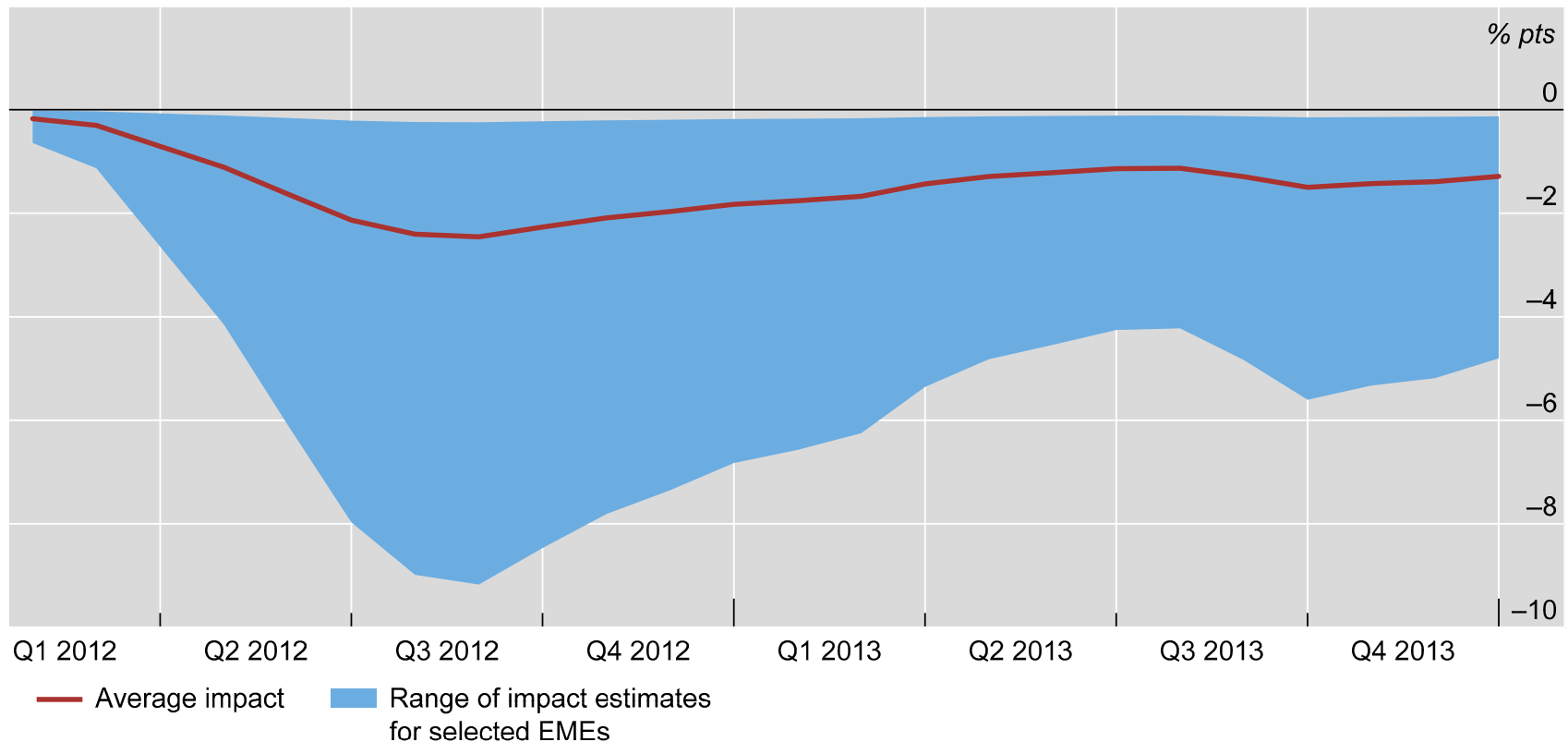
EMEs



Bank loans include cross-border and locally extended loans to non-banks outside the United States. For China and Hong Kong SAR, locally extended loans are derived from national data on total local lending in foreign currencies on the assumption that 80% are denominated in US dollars. For other non-BIS reporting countries, local US dollar loans to non-banks are proxied by all BIS reporting banks' gross cross-border US dollar loans to banks in the country. Bonds issued by US national non-banks financial sector entities resident in the Cayman Islands have been excluded.

Sources: IMF, *International Financial Statistics*; Datastream; BIS international debt statistics and locational banking statistics by residence; authors' calculations.

Graph 9: Unusually easy monetary policy spreads globally: the impact of US monetary policy



Estimated impact of US monetary policy on foreign policy rates over and above policymakers' response to domestic macroeconomic conditions, as captured by a standard Taylor rule. The graph indicates that foreign policy rates have been kept lower than what the benchmark indicates. Countries covered: Brazil, China, Colombia, the Czech Republic, Hungary, India, Indonesia, Israel, Korea, Mexico, Peru, the Philippines, Poland, Singapore (overnight rate), South Africa and Turkey.

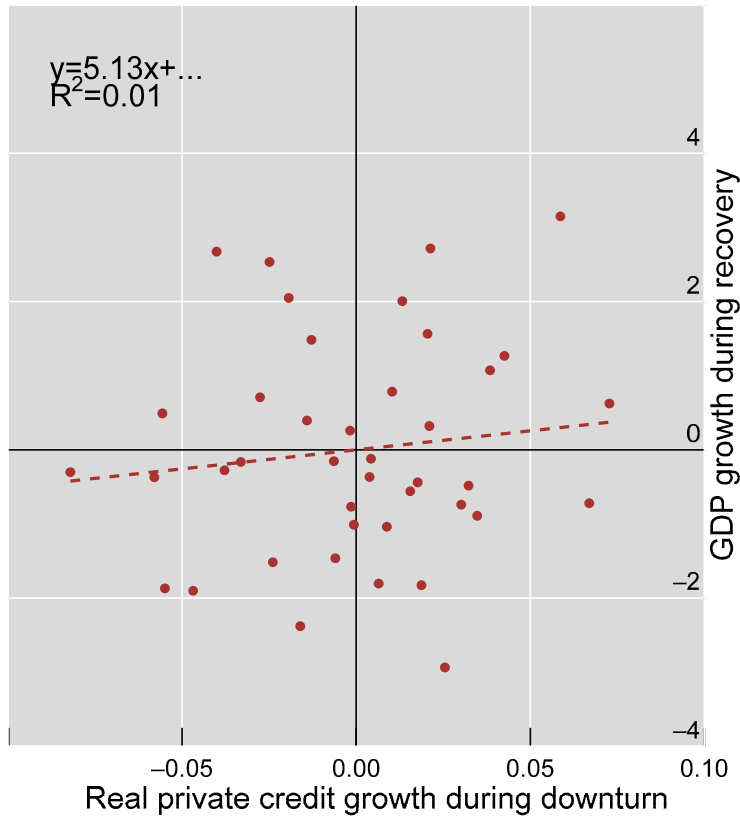
Source: Takáts and Vela (2014).

II – A different lens: 6 key propositions (ctd)

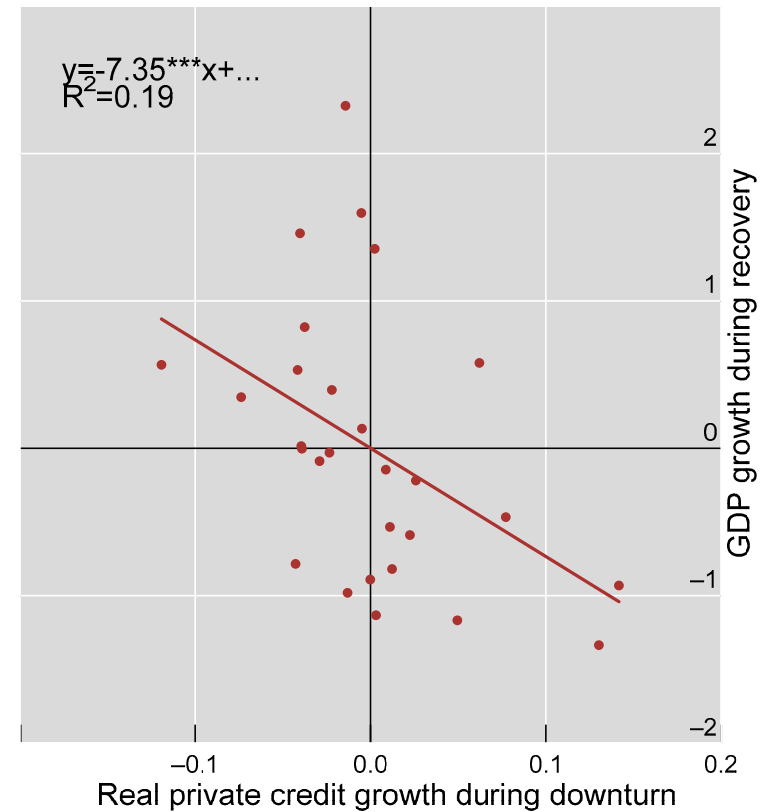
- **P5:** Post-financial boom (balance-sheet) recessions are less amenable to demand management
 - Less policy room for manoeuvre
 - Less policy traction
 - Deleveraging boosts subsequent recoveries (G 10)
 - Hence importance of balance-sheet repair and structural reforms
- **P6:** Global forces have become major drivers of inflation/disinflation
 - Well-known: link between inflation and domestic slack has been very elusive
 - But evidence of growing role of global factors, including slack (G 11)
 - Key role of globalisation (and possibly technological change)
 - Eg, integration of China/former communist countries into global economy
 - Huge increase in global competition (labour & goods markets more “contestable”)
 - Such forces are “good”: boost output while reducing prices
 - BIS research:
 - Historically there is only a weak link between deflation and output growth (G 12)
 - Much stronger link with asset price declines (equity and esp property) (G 13)
 - No evidence of debt-deflation spirals
 - But damaging interplay of debt with property price declines

Graph 10: Deleveraging strengthens the subsequent recovery

Standard recessions



Financial crisis recessions

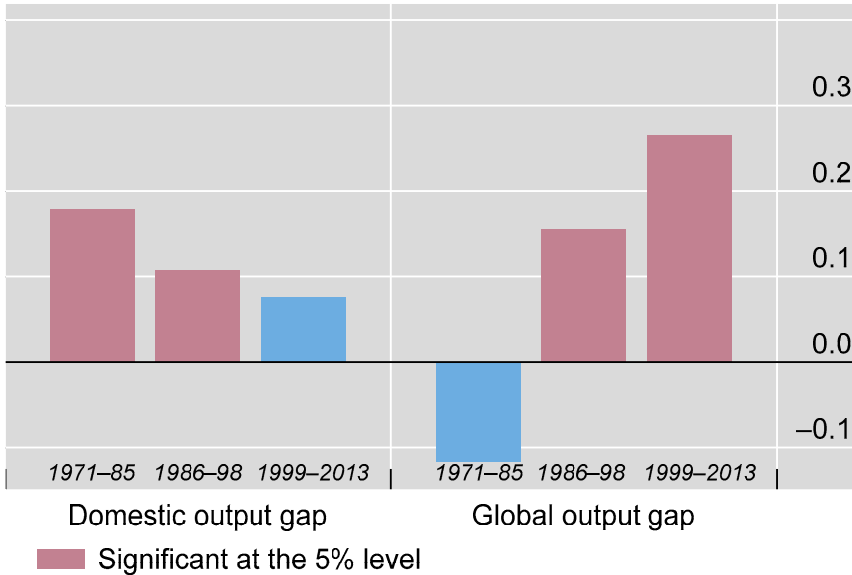


*/**/** denotes significance at the 10/5/1% level.

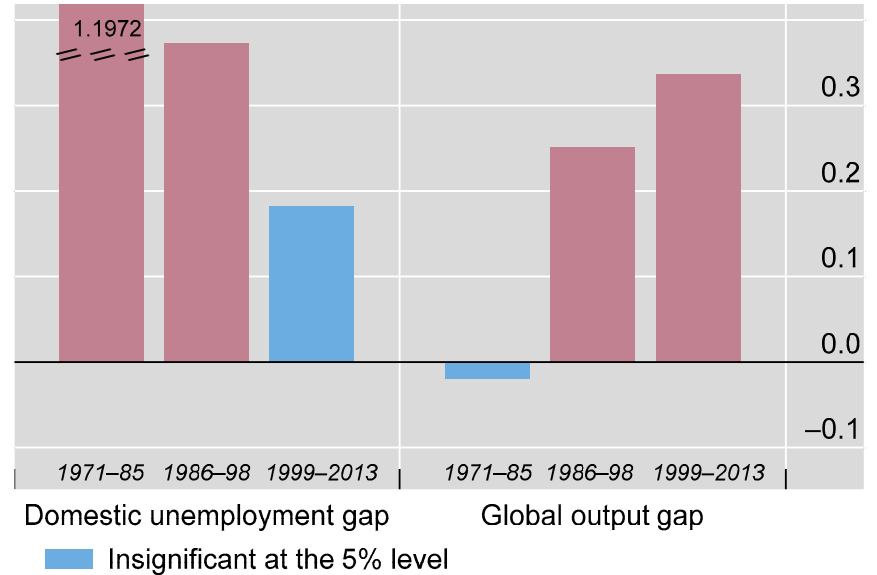
Source: Based on Bech et al (2012).

Graph 11: Domestic inflation more influenced by global slack

Price Philips curve



Wage Philips curve

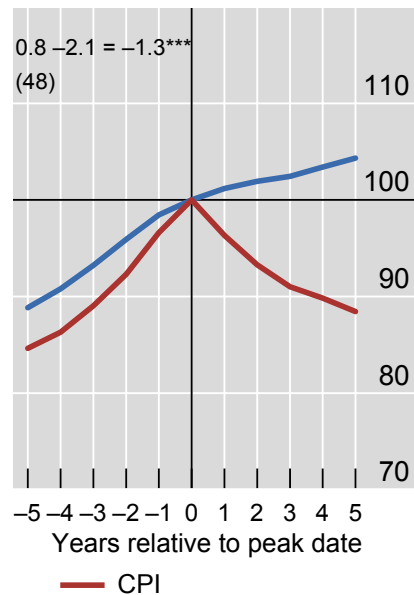


Source: BIS (2014).

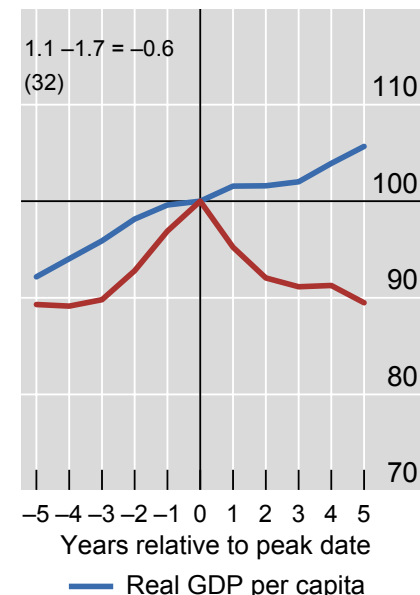
Graph 12: Output costs of deflations: now you see them...¹

Thirty-eight economies, 1870–2013, variable peak² year = 100

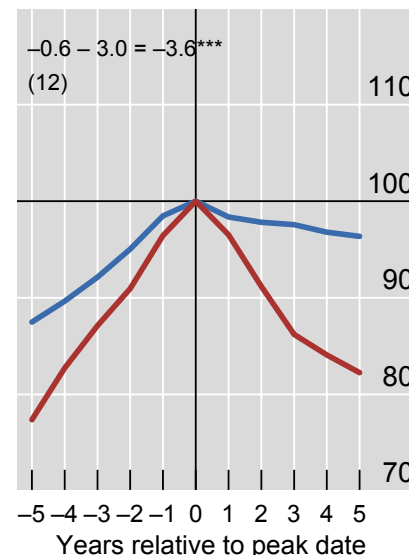
Full sample



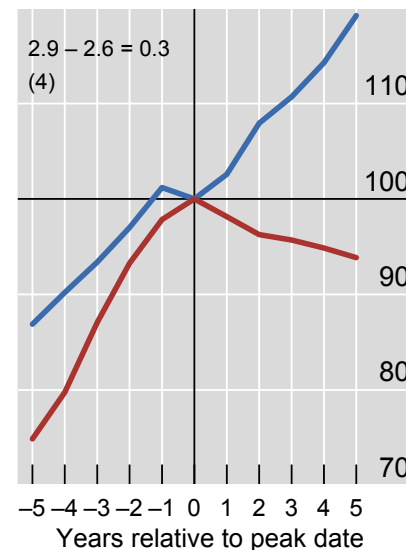
Classical gold standard



Interwar period



Postwar era



The numbers in the graph indicate five-year averages of post- and pre-price peak growth in real GDP per capita (in per cent) and the difference between the two periods (in percentage points); */**/** denotes mean equality rejection with significance at the 10/5/1% level. In parenthesis is the number of peaks that are included in the calculations. The data included cover the peaks, with complete five-year trajectories not affected by observations from 1914–18 and 1939–45. For Spain, the Civil War observations are also excluded (1936–39).

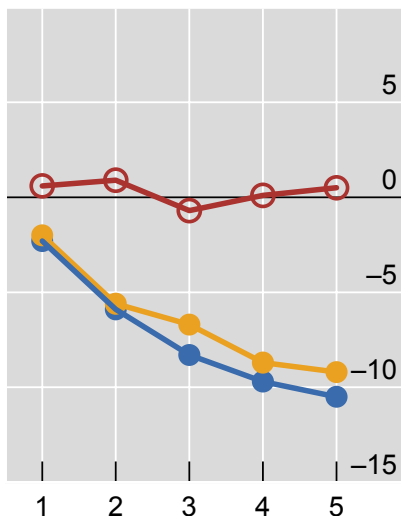
¹ Simple average of the series of CPI and real GDP per capita readings five years before and after each peak for each economy, rebased with the peaks equal to 100 (denoted as year 0). ² Associated with a turning point in the five-year moving average and peak levels exceeding price index levels in the preceding and subsequent five years.

Source: Borio et al (2015a).

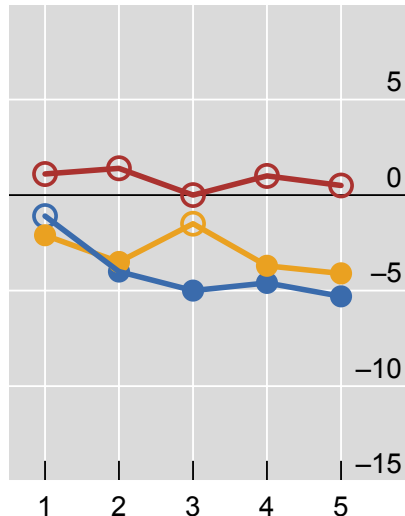
Graph 13: Output costs: asset price falls matter more than deflation¹

In percentage points²

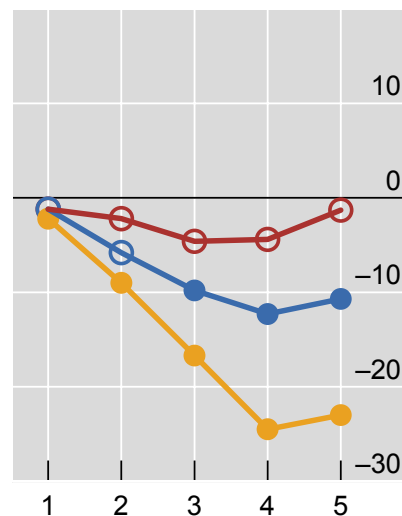
Full sample



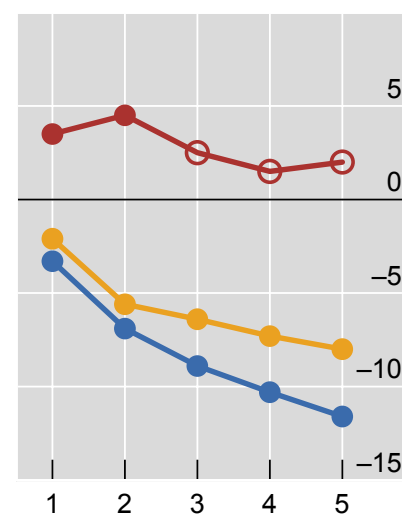
Classical gold standard



Interwar period



Postwar era



— Consumer prices

— Property prices

— Equity prices

The estimated regressions are: $(y_{i,t+h} - y_{i,t}) - (y_{i,t} - y_{i,t-h}) = \alpha_i + \beta_1 P_{i,t}^{CPI} + \beta_2 P_{i,t}^{PP} + \beta_3 P_{i,t}^{EP} + \varepsilon_{i,t}, h = 1, 2, 3, 4, 5$

where y is the log level of per capita real GDP and α_i are, P^{CPI} , P^{PP} , P^{EP} respectively, the CPI, property and equity price peaks.

A circle indicates an insignificant coefficient, and a filled circle indicates that a coefficient is significant at least at the 10% level. Estimated effects are conditional on sample means (country fixed effects) and on the effects of the respective other price peaks (eg the estimated change in h-period growth after CPI peaks is conditional on the estimated change after property and equity price peaks).

¹ The graph shows the estimated difference between h-period per capita output growth after and before price peak. ² The estimated regression coefficients are multiplied by 100 in order to obtain the effect in percentage points.

Source: Borio et al (2015a).

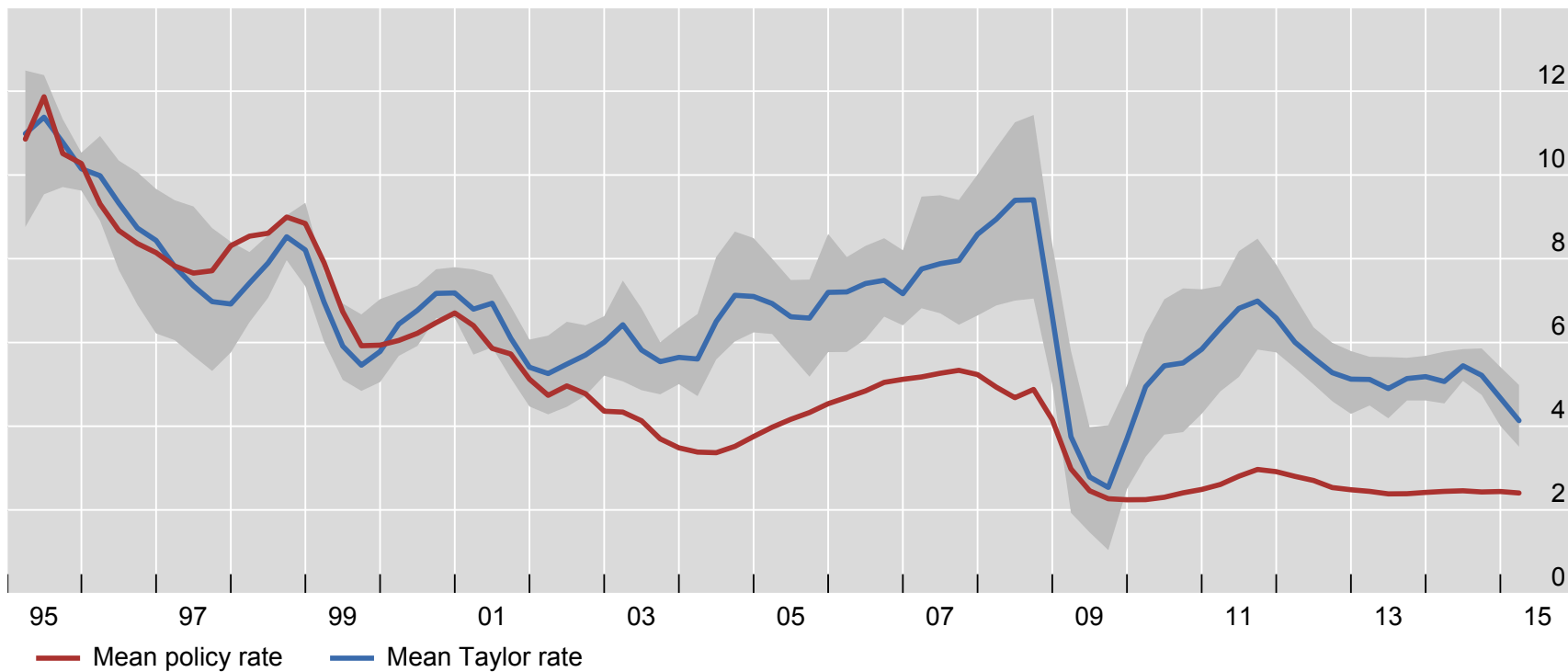
II – A different lens: 3 key features

- Three key features distinguish the BIS lens from the prevailing one
- **F1:** BIS lens stresses the medium term and the finance-real economy nexus
 - The FC is a medium-term process
- **F2:** BIS lens stresses that not all slack is born equal
 - And hence amenable to the same remedies
- **F3:** BIS lens stresses the importance of a global perspective
 - As a long-term driver of disinflation
 - In highlighting the limited insulation properties of exchange rates

III – A different narrative

- Policymakers have failed to come to grips with the FC
 - They did too little to constrain financial booms
 - They relied too much on demand management to address financial busts
- Drawbacks of policy most evident post-crisis
 - As other policies lagged behind, monetary policy became overburdened
 - Low rates in countries fighting a financial bust induced problems elsewhere
 - Exchange rates took adjustment burden and appreciations elsewhere were resisted
 - Easing begets easing
- Helps explain
 - Unusually low policy rates for the world as a whole regardless of benchmarks (G 14)
 - Signs of the build-up of dangerous FIs in countries less affected by the crisis (T 1)
 - Relentless rise in debt globally (G 15)
 - Protracted slowdown; further decline in productivity growth
 - Progressive loss in policy room for manoeuvre
- Recent developments are just the latest scene in this movie
 - Turning financial cycles in EMEs and tightening external financial conditions
 - Risk of vicious circles, serious financial distress and weakness spreading to ROW

Graph 14: Unusually accommodative global monetary conditions



Source: BIS (2015)

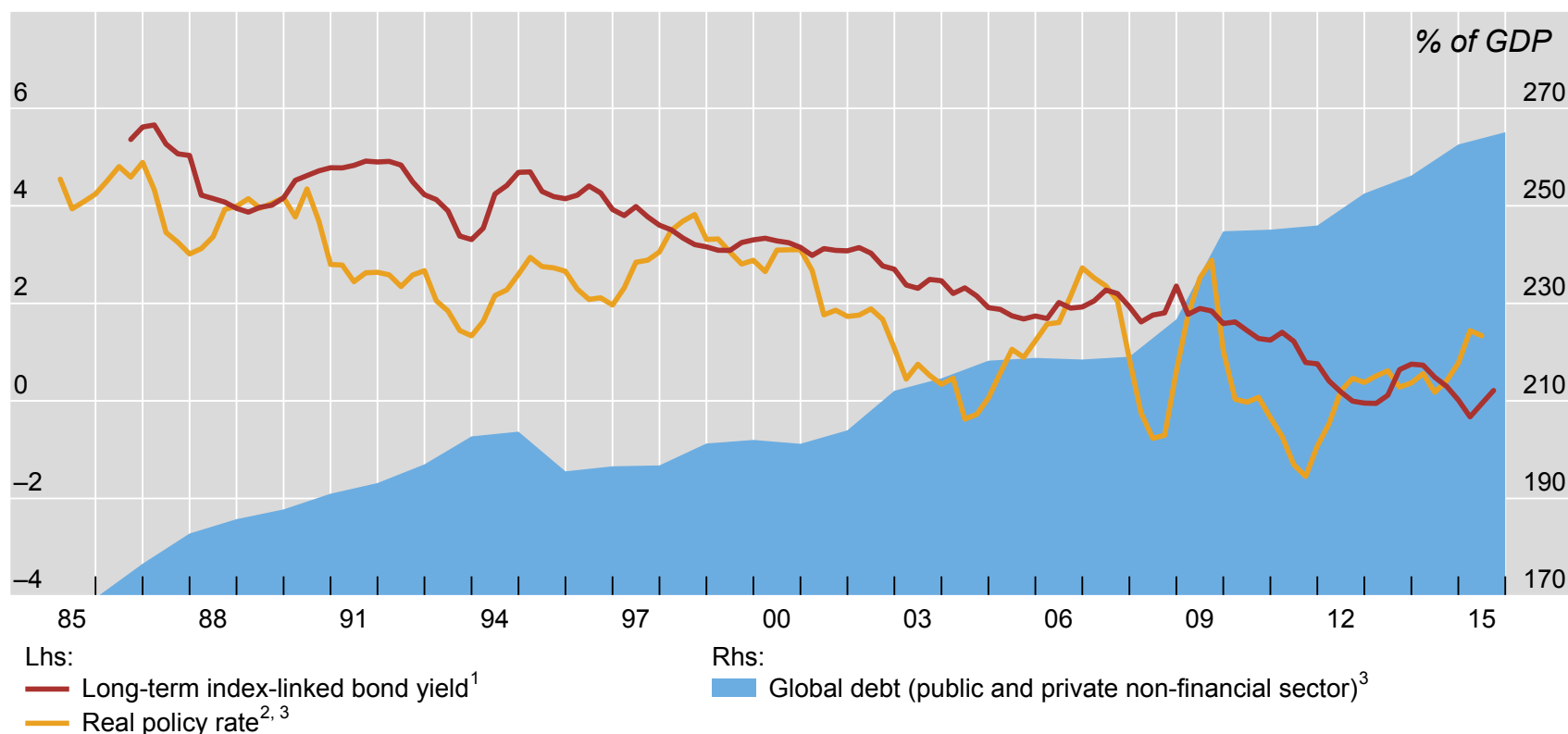
Table 1: Early warning indicators of banking distress – risks ahead

	Credit-to-GDP gap	Property price gap	Debt service ratio	Debt service ratio if interest rates rise by 250 bp
Asia	16.4	10.6	2.0	4.3
Australia	4.9	5.1	0.9	4.7
Brazil	9.9	-13.9	6.6	8.4
Canada	12.3	4.9	2.3	6.3
China	27.7	-5.8	5.4	8.7
Central and Eastern Europe	-11.2	6.6	0.5	2.0
France	1.5	-10.9	1.0	4.0
Germany	-5.8	10.3	-1.6	0.2
Greece	-9.3	4.1		
India	-3.4		1.7	2.9
Italy	-10.8	-16.2	0.6	2.8
Japan	4.4	13.6	-1.9	0.9
Korea	3.9	6.4	0.0	3.6
Mexico	7.3	4.2	0.5	1.2
Netherlands	-18.4	-15.3	1.0	5.8
Nordic countries	0.5	2.6	1.1	5.1
Portugal	-36.0	9.7	-0.9	2.5
South Africa	-1.4	-7.4	-0.7	0.6
Spain	-44.2	-21.7	-2.5	0.4
Switzerland	7.2	9.9	0.0	3.2
Turkey	15.6		5.5	7.1
United Kingdom	-30.1	0.3	-2.2	0.6
United States	-10.9	2.0	-1.9	0.7
<i>Legend</i>	<i>Credit/GDP gap > 10</i>	<i>Property gap > 10</i>	<i>DSR > 6</i>	<i>DSR > 6</i>
	<i>2 ≤ Credit/GDP gap ≤ 10</i>		<i>4 ≤ DSR ≤ 6</i>	<i>4 ≤ DSR ≤ 6</i>

¹ 2015Q3 figures, except for property prices gap: for China 2015Q2, for Netherlands, Switzerland, Korea and Norway 2015Q4; Credit-to-GDP gap: for Greece 2015Q2.

Sources: National data; BIS; BIS calculations.

Graph 15: Interest rates sink as debt soars



¹ From 1998, simple average of France, the United Kingdom and the United States; otherwise only the United Kingdom. ² Nominal policy rate less consumer price inflation. ³ Aggregate based on weighted averages for G7 economies plus China based on rolling GDP and PPP exchange rates.

Sources: Borio and Disyatat (2014), updated.

Conclusion

- The global economy is struggling to achieve sustainable and balanced expansion
 - Most conspicuous sign: exceptionally low interest rates for exceptionally long
 - Most recent slowdown in EMEs is but latest scene in a long movie
- I have offered a possible lens to understand this predicament
 - Key: inability of policy frameworks to come to grips with the global economy's...
 - ...propensity to generate hugely damaging financial booms and busts
- This raises near-term and long-term risks
 - Further episodes of serious financial distress
 - Entrenching instability and chronic weakness
 - A rupture in the open global economic order
- Adjustments to policy frameworks are needed
 - Address the FC through all policies (PP, MP and FP) – more symmetry is key
 - Rebalance the policy mix towards structural measures
 - Not presume that if one's own house is in order the global village will also be
 - Lengthen policy horizons
- We cannot afford to rely on the current debt-fuelled growth model any longer
 - The sooner we realise this, the better

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