BANK FOR INTERNATIONAL SETTLEMENTS

Macroprudential policies: What have we learnt?

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Bank of Italy Conference
"Micro and Macroprudential Banking Supervision in the Euro Area"
Università Cattolica del Sacro Cuore, Milan, 24 November 2015

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Introduction

- Objective: Explore key issues in the design of Macroprudential Policy (MaP)
  - With specific reference to the financial cycle (FC)
- FC = Self-reinforcing interaction risk btw perceptions/tolerance & financing constraints
  - Historically the major source of systemic risk
    - Has lead to serious financial distress (FD) and macroeconomic dislocations
  - Major manifestation of the "procyclicality" of the financial system
- Implementation of MaP frameworks post-crisis is a huge step forward!
  - How far does it take us? What more needs to be done?
- Takeaways
  - FC has implications for design and limitations of MaP frameworks
  - Imprudent to think that MaP alone can address the FC
    - Need to blend boldness & realism
  - There is still unfinished business in MaP and beyond
- Structure
  - I - What is MaP? 1 objective, 2 dimensions
  - II - What are the key properties of the FC? 7 properties
  - III - What policy issues does it raise? 5 observations
  - IV - What is unfinished business? 3 areas

I. What are MaP frameworks?

- Three defining features (FSB-BIS-IMF reports for the G20)
  - Goal
    - limit systemic risk – the risk of widespread disruptions to financial services (crises) with serious costs for the real economy
  - Scope
    - Focus on the financial system as a whole, not individual institutions
  - Instruments and governance
    - (primarily) prudential tools calibrated to target specifically systemic risk
- Two dimensions
  - Time dimension (TD)
    - How systemic risk evolves over time
      - Self-reinforcing feedbacks within financial system and between financial system and the real economy (procyclicality)
      - Analogy: adjust speed limits with respect to traffic conditions
  - Cross-sectional dimension
    - How risk is distributed within the financial system at any given time
      - Impact of failure of institutions on the system as a whole
      - Analogy: have different speed limits for trucks and cars
- In what follows, focus only on TD: the FC takes centre stage

I – The MaP's TD: objectives and basic principle

- Two possible objectives in the TD
  1. Strengthen the resilience of the financial system
  2. Constrain the build-up of the financial boom

- How? General principle
  - Build up buffers during financial booms to draw them down during busts
    - Build-up during booms
      - Makes system better able to withstand the bust (objective (1))
      - May also constrain the boom and hence reduce the size of the bust (objective 2)
    - Draw down during busts
      - Absorbs the blow to the system and limits procyclicality (objective (1))

- Objective (2) is much more ambitious than (1)
  - For (1), it is sufficient to build up buffers (all MaP tools do that)
  - But (2) requires buffers' build-up to act as an effective dragging anchor

II. The FC: 7 key properties

- **P1:** Most parsimonious description: credit and property prices
  - Equity prices can be a distraction (Graph 1)

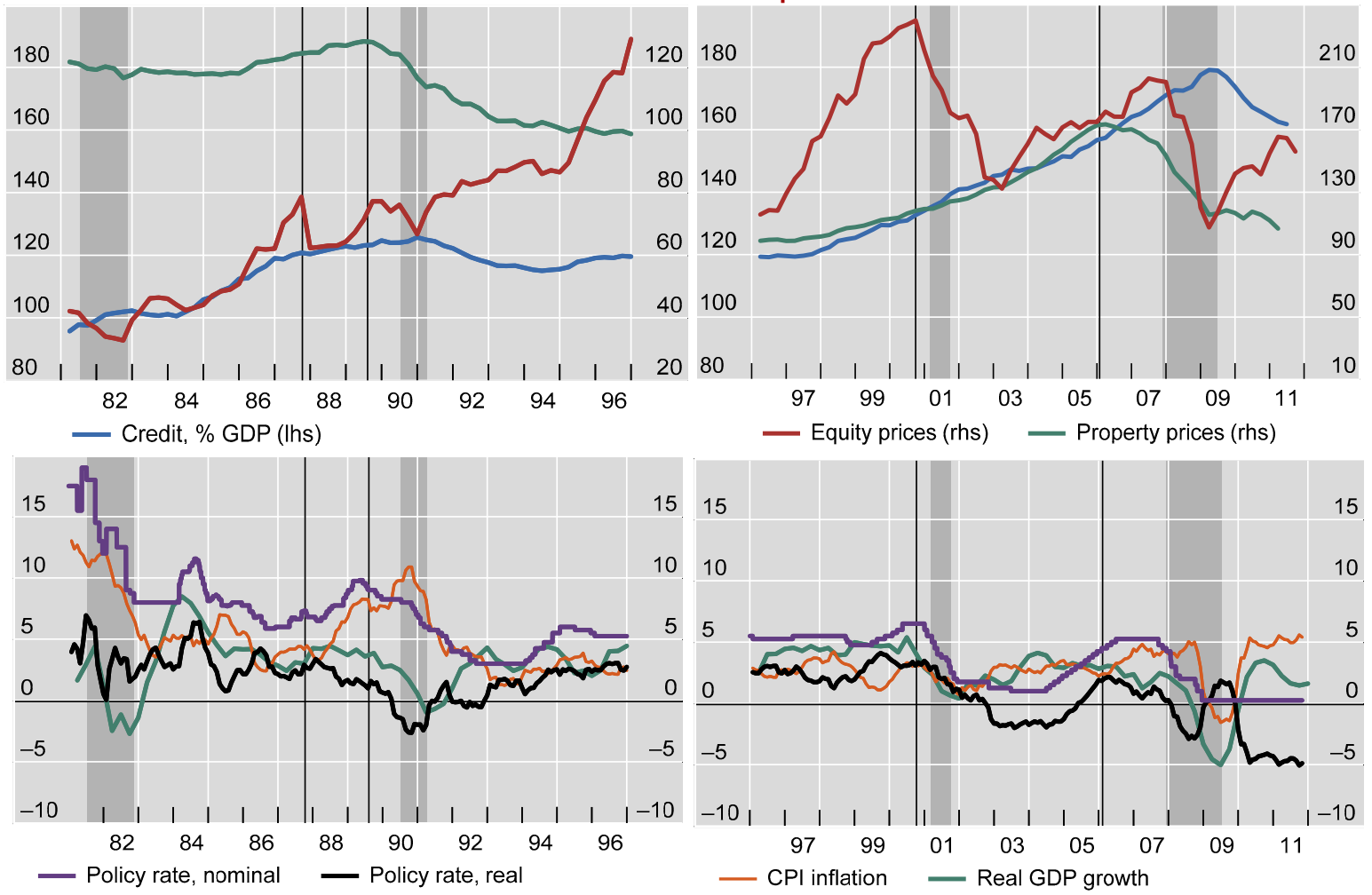
- **P2:** The FC has a lower frequency than traditional business cycle
  - (medium term!) 16-20 years approximately since early 1980s (Graph 2)
    - Traditional business cycle: up to 8 years

- **P3:** Peaks in the FC tend to coincide with FD (Graph 2)
  - Post-1985 all peaks do in sample of advanced economies examined
  - Few crises do not occur at peaks (all "imported": cross-border exposures)

- **P4**: FC helps to identify FD risks in real time with good lead (2-4 years)
  - (Private-sector) credit-to-GDP and asset prices (especially property prices) jointly exceeding certain thresholds (Graph 3)
    - proxy for financial imbalances
  - Cross-border credit often outpaces domestic credit (Graph 4)
  - Amplifiers: wholesale/retail funding; currency mismatches

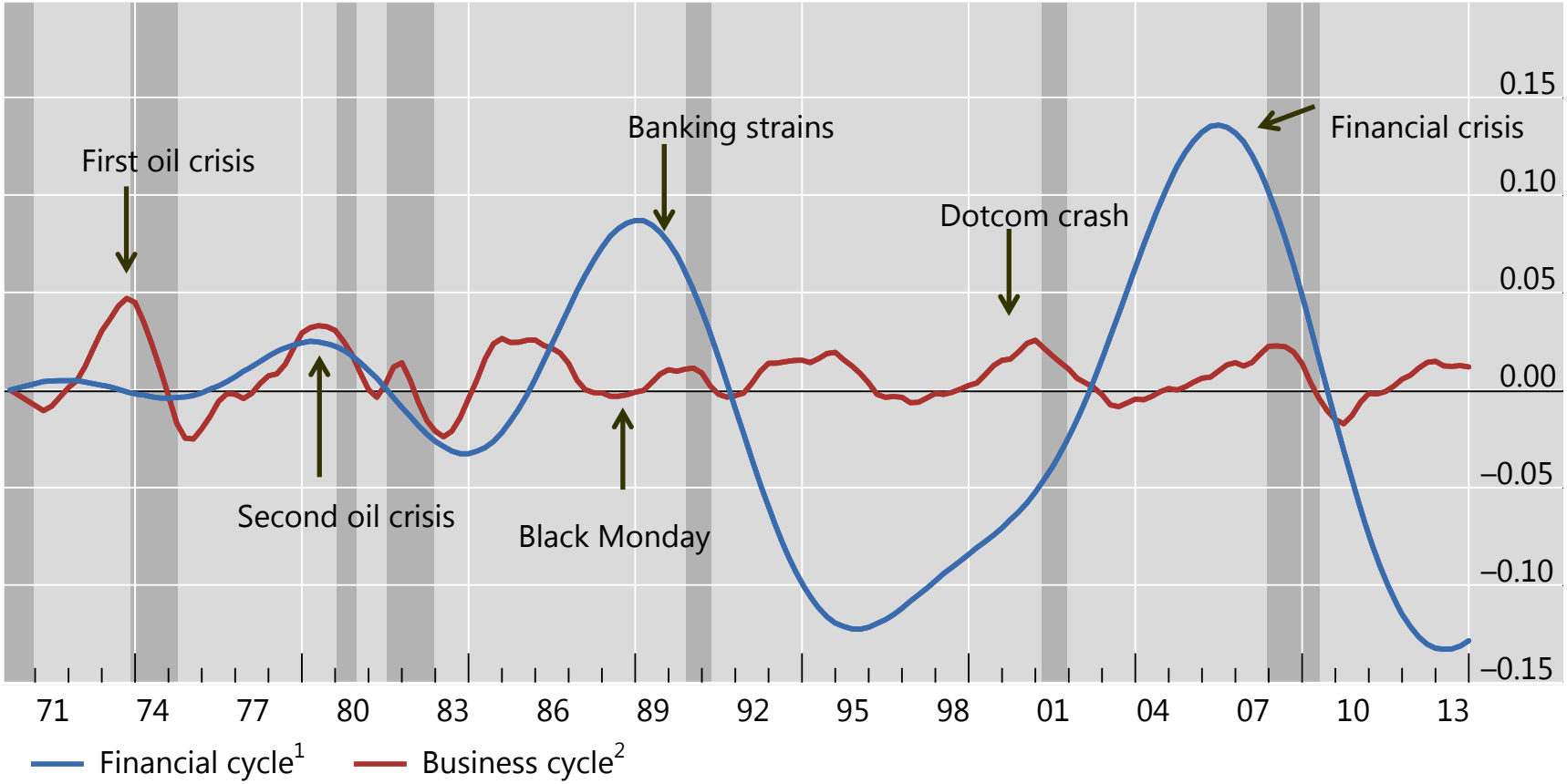
Graph 1: Financial cycles depend crucially on policy: Unfinished recessions

the US example



Source: Drehmann et al (2012)

Graph 2: The financial cycle is longer than the business cycle (the US example)

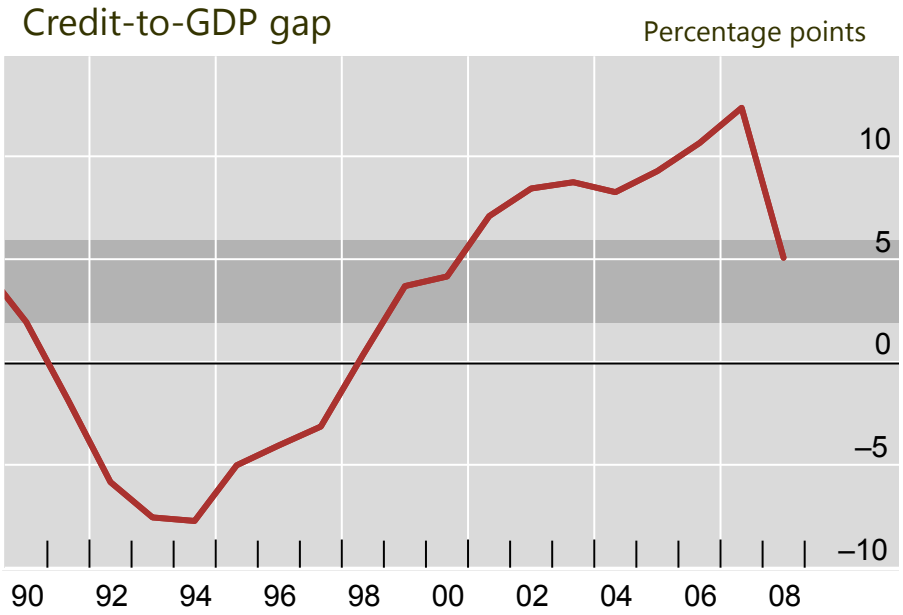


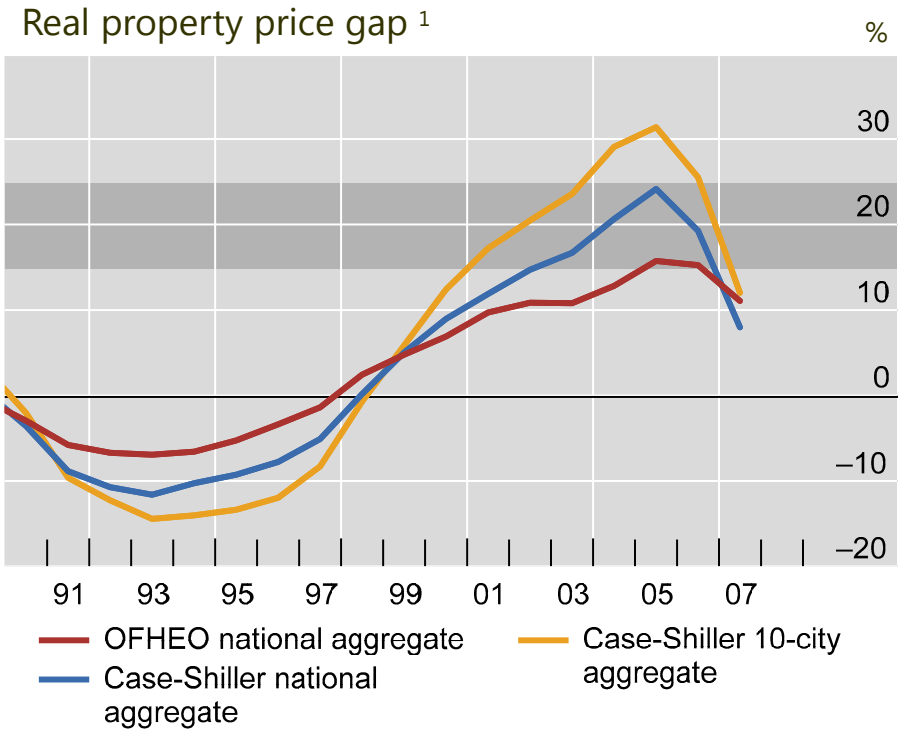
[1] The financial cycle as measured by frequency-based (bandpass) filters capturing medium-term cycles in real credit, the credit-to-GDP ratio and real house prices. [2] The business cycle as measured by a frequency-based (bandpass) filter capturing fluctuations in real GDP over a period from one to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

Source: from Drehmann et al (2012), updated.

Graph 3: Financial imbalances were identifiable in real time

The US example



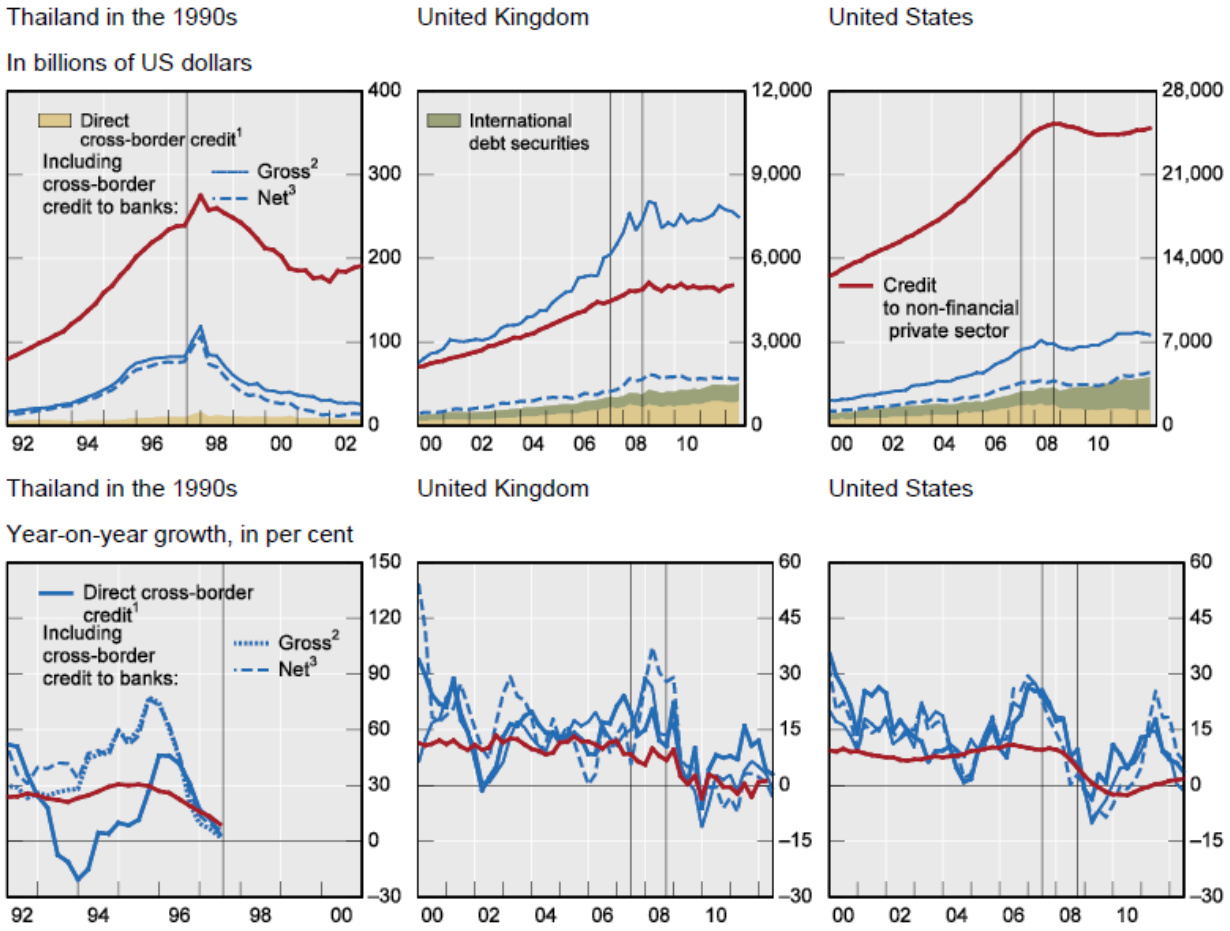


The shaded areas refer to the threshold values for the indicators: 2–6 percentage points for credit-to-GDP gap; 15–25% for real property price gap. The estimates for 2008 are based on partial data (up to the third quarter).

[1] Weighted average of residential and commercial property prices with weights corresponding to estimates of their share in overall property wealth. The legend refers to the residential property price component.

Source: Borio and Drehmann (2009).

Graph 4
Credit booms and external credit: selected countries



The vertical lines indicate crisis episodes end-July 1997 for Thailand and end-Q2 2007 and end-Q3 2008 for the United States and the United Kingdom. For details on the construction of the various credit components, see Borio et al (2011).

[1] Estimate of credit to the private non-financial sector granted by banks from offices located outside the country. [2] Estimate of credit as in footnote (1) plus cross-border borrowing by banks located in the country. [3] Estimate as in footnote (2) minus credit to non-residents granted by banks located in the country.

Source: Borio et al (2011)

II. The FC: 7 key properties (ctd)

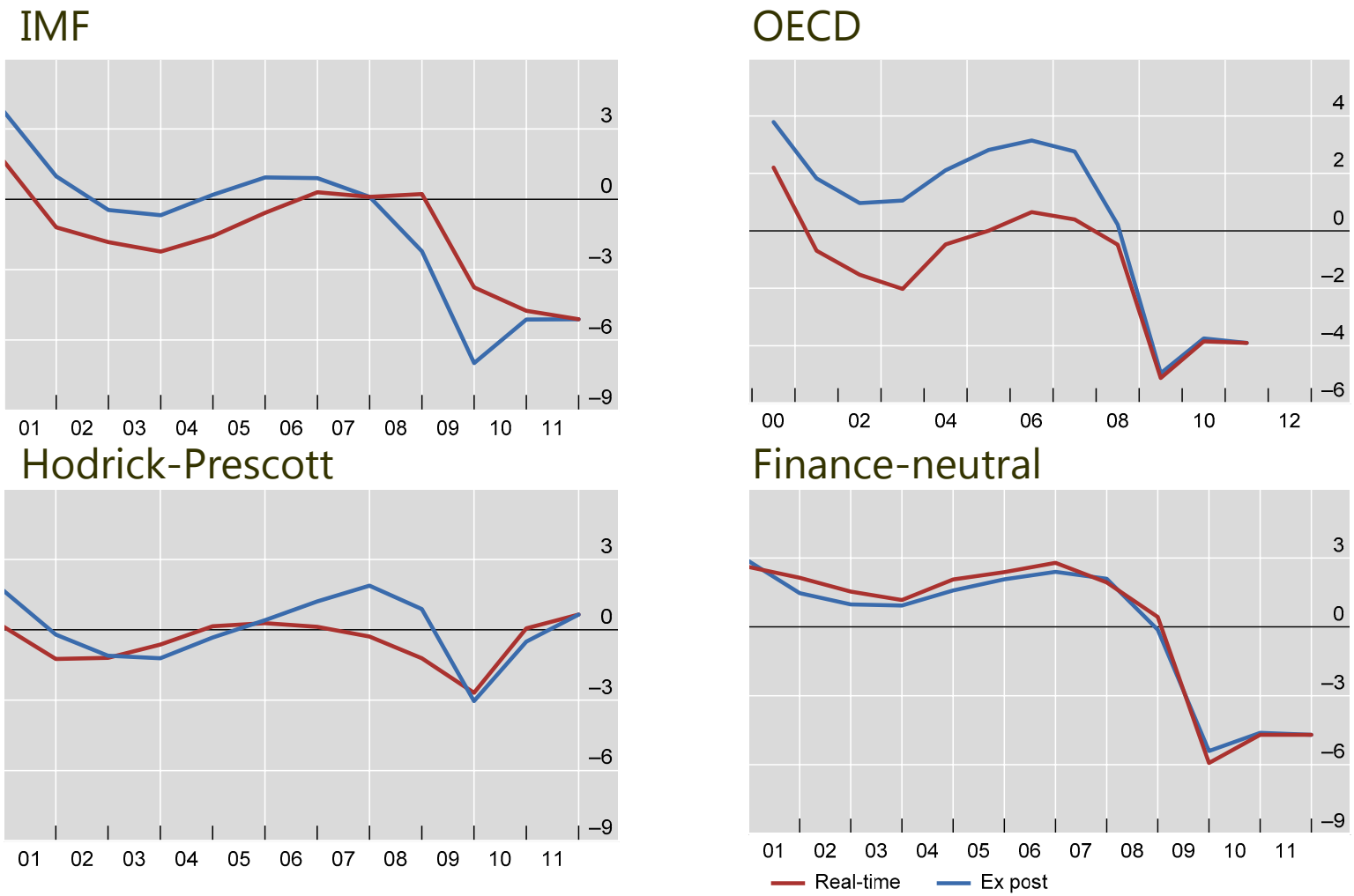
- **P5:** FC helps to measure potential (sustainable) output much better in real time
  - Current methods, partly based on inflation, can be very misleading (Graph 5)
    - None spotted in real time that output was above potential pre-crisis

- **P6**: Amplitude and length of the FC is regime-dependent (Graph 2): supported by
  - Financial liberalisation
    - Weakens financing constraints
  - MP frameworks focused on (near-term) inflation
    - Provide less resistance to build-up
  - Positive supply side developments (eg, globalisation of real economy)
    - ↑ financial boom; ↓ inflation

- **P7:** Busts of FCs are associated with balance-sheet recessions
  - Debt overhangs are much larger
  - Damage to financial sector is much greater
  - Usher in slow and long "credit-less" recoveries
    - Legacy of previous boom and of subsequent financial strains

Graph 5: US output gaps: ex post and real-time estimates

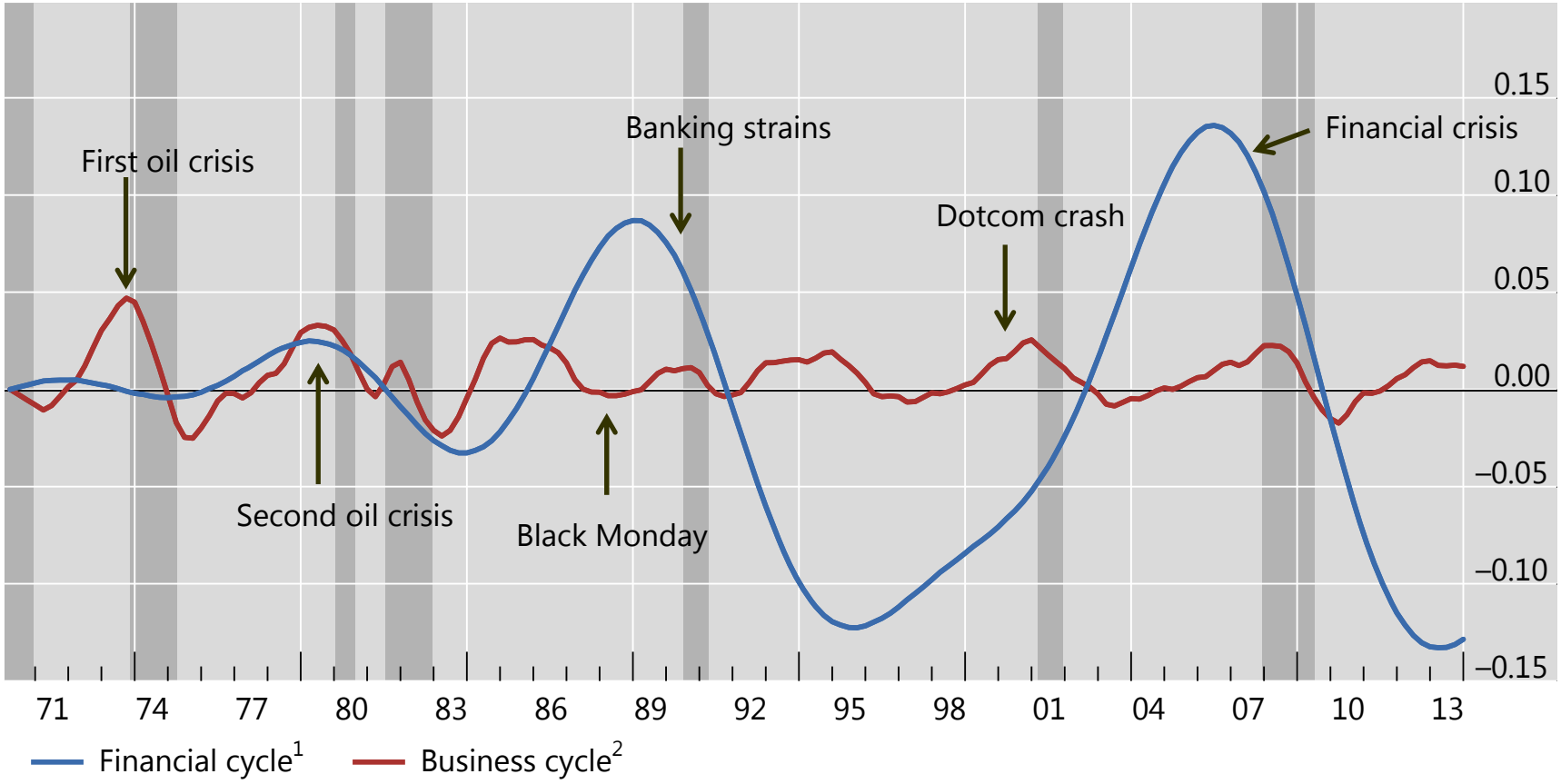
In per cent



For each time *t*, the "real-time" estimates are based only on the sample up to that point in time. The "ex post" estimates are based on the full sample.

Source: Borio et al (2013).

Graph 2: The financial cycle has grown over time
(The US example)



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Source: from Drehmann, M, C Borio and K Tsatsaronis (2012), updated.

III – Design: Macro stress tests

- **O1:** *Beware of Macro Stress Tests (MSTs) as early warning devices*
  - None flashed red ahead of the Great Financial Crisis!
- Problem 1: Technical -- Risk management (modelling) technology
  - MSTs cannot meaningfully (convincingly) capture non-linearities
    - No matter how hard you shake the box, little falls out
      - Required "shocks" become unreasonably large
    - Deeper point: essence of financial instability is that….
      - ….normal-sized shocks cause the system to break down
    - Unstable financial system = fragile financial system
      - Not one that breaks down only if hit by a huge shock
- Problem 2: Context -- Initial conditions are unusually good (peak of FC)
  - Paradox of financial instability: system looks strongest when it is most fragile (= systemic risk is highest)
    - Short-term volatility, risk premia, leverage at market prices are artificially low & credit growth, asset prices and profits high as risk builds up
    - What looks like low risk is a sign of high risk-taking
  - "This-time-is-different" temptation is extraordinarily powerful
- At worst, MSTs can lull policymakers into a false sense of security…
- …but if properly designed, can be effective for crisis management and resolution

III – Design: network analysis

- **O2:** *Beware of network analysis as a means to identify vulnerabilities*

- Problem: Technical
  - Bilateral linkages (counterparty exposures) matter far less than common exposures to third parties arising from FC
    - Hard to get large effects given size of interconnections
    - Financial crises are more like tsunamis than dominos
      - Indiscriminate behavioural responses during FD

- Information on bilateral exposures is more useful for crisis management
  - But needs to be very granular and very up-to-date

III – Design: effectiveness of tools

- **O3:** *Beware of overestimating the effectiveness of MaP tools*
- Problem 1: Technical : More effective in strengthening resilience (objective (1)) than in constraining booms (objective (2))
  - Effectiveness does vary across tools…
    - Limited: Capital (total, risk-weights, etc); provisions
    - Greater: Debt-to-income ratios; LTVs; restrictions on wholesale FX funding (?)
  - … but <u>all</u> vulnerable to regulatory arbitrage
- Problem 2: Context: Political economy -- even harder to take away the punchbowl (inaction bias)
  - Lags between build-up of risk and materialisation are very long
    - Longer than in the case of inflation
  - Prominent distributional effects
  - No constituency against inebriating feeling of getting richer!
- This puts a premium on
  - Governance arrangements
    - independence (cum accountability) & know how
  - Balance rules vs discretion
    - As rules based as possible, but no more

III – Design: setting and communicating objectives

- **O4:** *Beware of setting and communicating overly ambitious objectives*
- During the financial boom
  - Strengthening resilience (objective 1): clearly attainable
  - Restraining the boom (objective 2): clearly harder
    - Signs of financial imbalances in EMEs despite extensive use of MaP tools
  - Use tools vigorously, but be aware of the limitations/manage expectations
- During the bust
  - Wrong objective: try to boost credit growth at all costs
    - Boom-bust leaves too much debt in its wake (debt overhang)
    - Needs to be digested: credit demand is necessarily weak
    - Digestion (deleveraging) is necessary for self-sustaining/balanced recovery
      - Growing evidence: Post-bust recoveries are credit-less recoveries
  - Right objective: prevent unnecessary constraints on the supply of credit
    - Make sure buffers are sufficiently high to start with
      - So that markets do not become the lasting binding factor in the bust
    - Think harder of ways to maximise buffer resources
      - Restrictions on dividend payments?
        - If applied in the aggregate, would eliminate the bank-specific signaling effect & reduce procyclicality

III – Design: role of other policies

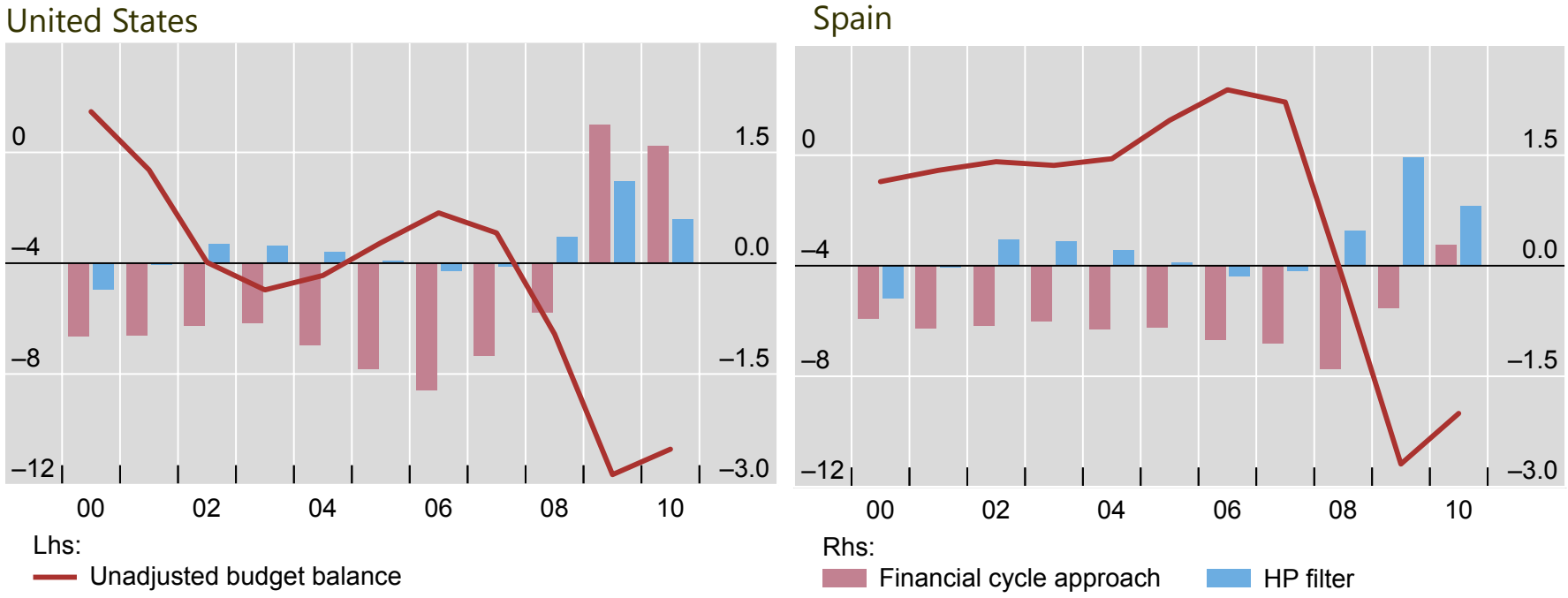
- **O5:** *Beware of overburdening MaP: it needs active support from other policies*

- MP: lean against the build-up of financial imbalances even if near-term inflation remains under control ("lean option")
  - MP sets the universal price of leverage
    - You can run but you cannot hide…

- FP: be extra prudent
  - Recognise fully the hugely flattering effect of financial booms on fiscal accounts
    - Overestimation of potential output and growth (Graph 6)
    - Revenue-rich nature of financial booms (compositional effects)
    - Large contingent liabilities needed to address the bust
  - Adjust other structural features
    - Eliminate the tax code subsidy of debt over equity

- MaP must be part of the answer, but cannot be the whole answer

Graph 6: Overestimating cyclically-adjusted fiscal strength in booms one-sided estimates



Source: Borio et al (2013).

IV – Unfinished business: 3 areas

- **A1:** *International coordination*
  - In place only for the Basel III countercyclical capital buffer
    - Designed to limit international arbitrage across banks
  - To be extended to other tools?
- **A2:** *Non-banking activities*
  - Most of the tools are bank-focused
  - Yet also non-banking activities can create systemic risk and have grown a lot
    - Leveraged players (eg, "shadow banks")
    - Asset management industry
      - Even if unleveraged, can amplify market disruptions
- **A3:** *The sovereign as source of risk*
  - MaP originally designed to address private sector excesses
  - But public sector excesses can also be a source of systemic risk
  - Especially hard to address because
    - The sovereign is the ultimate back stop for the banking system
    - Inextricably linked to fundamental macroeconomic questions
      - eg nexus between sovereign and central bank liquidity/solvency
  - What can be done at the level of the financial system to protect it?

Conclusion

- MaP frameworks are an essential step to promote financial stability
  - But their design deserves careful attention
  - Key aspect: their time dimension and how to address the FC

- FC has major implications for the design of MaP frameworks and beyond
  - Beware of MSTs as early warning devices
  - Beware of network analysis as a means to identify vulnerabilities
  - Beware of overestimating the effectiveness of MaP tools
  - Beware of setting and communicating overly ambitious objectives
  - Beware of overburdening MaP frameworks
    - MaP must be part of the answer, but cannot be the whole answer
    - Need a wise blend of boldness & realism

- There is unfinished business
  - International coordination
  - Non-banking activities
  - The sovereign as a source of systemic risk

- Post-crisis policy has been moving in the right direction
  - But a lot still needs to be done

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