



Monetary Policy and Financial Stability

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The views expressed in this paper are those of the authors and do not necessarily represent those of the IMF, its Executive Board, or Management.

Talk Plan

- Evolution of consensus on role of monetary policy in financial stability
- Some empirical regularities
- Cost/benefits of leaning against the wind
- Role of financial variables in estimating potential output
- Governance challenges when MP has multiple targets

Before the crisis ... A theory gap

□ Macro literature:

- Financial intermediation seen as macro neutral
- Asset prices (including property prices) did matter. They could accentuate the cycle through financial accelerators ([BGG etc.](#))
- But macro model largely ignored their impact on bank risk taking. In equilibrium, no bank defaults

□ Banking literature

- Focused on excessive risk taking by intermediaries operating under limited liability and asymmetric information
- Defaults/crises in equilibrium
- But there was little attention to macro and monetary policy conditions

Before the crisis ...A policy gap

- Monetary policy to focus on inflation (and output gap): “divine coincidence”
- Asset prices and credit aggregates a concern only through their impact on GDP and inflation (exceptions RBA, Riksbank, EMs)
- Benign neglect approach to boom/busts:
 - Bubbles difficult to identify
 - Costs of clean up limited and policy effective
 - → Better clean up than prevent
- Bank risk taking important, but job of regulators

Before the crisis ...A policy gap

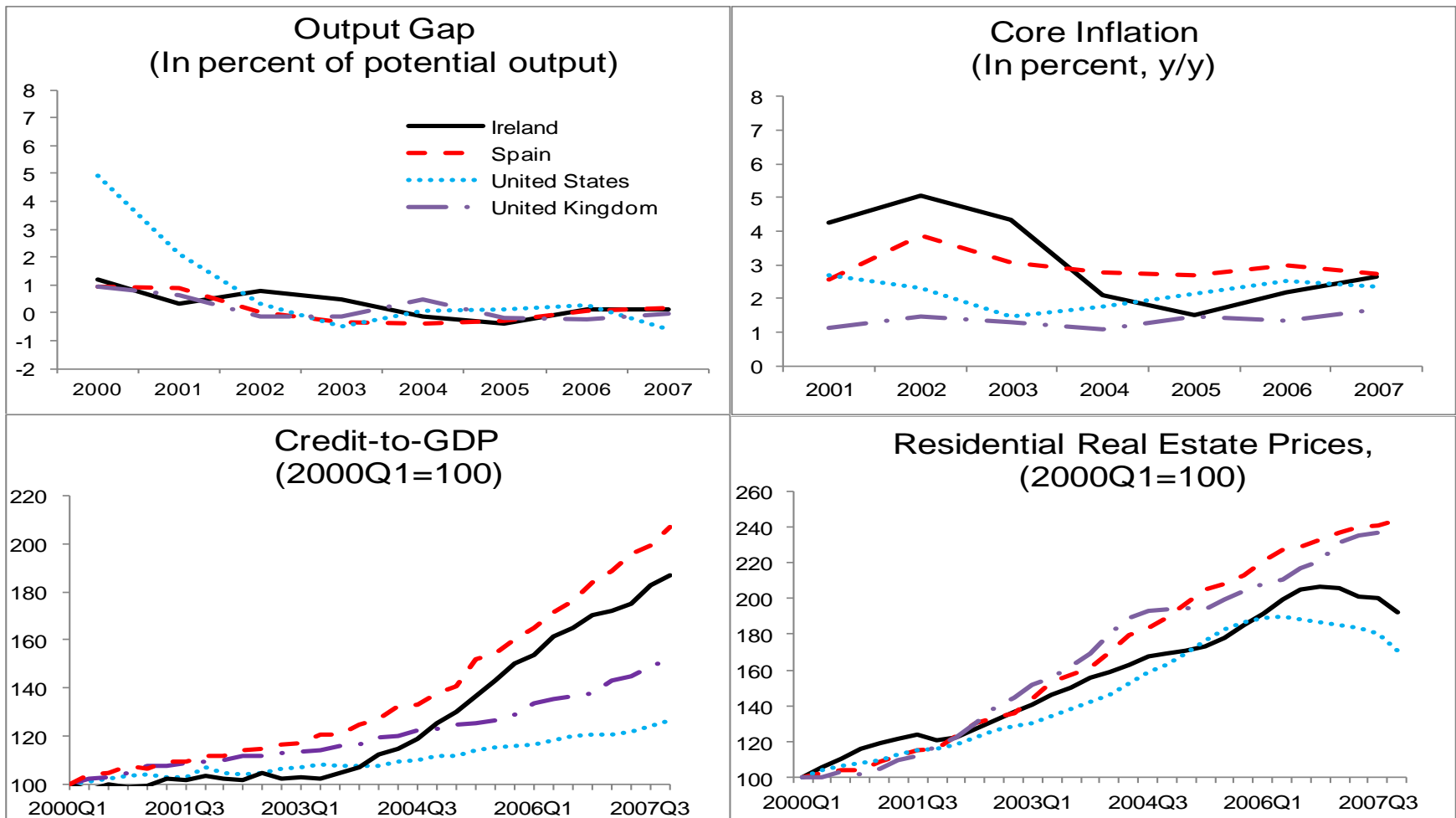
- Regulatory policy focused on individual institutions
- Limited attention to credit aggregates or asset price dynamics
- Ill equipped to deal with booms:
 - Correlated risk taking
 - Fire sales and other externalities
 - Few regulators had necessary tools (exceptions: Spain/Colombia)

Pre-crisis Consensus: No leaning against the wind

- *“I find it difficult to conceive the degree of central bank certainty to justify the scale of preemptive tightening that would likely be necessary to neutralize a bubble.” Alan Greenspan, 2002*
- *“First, the Fed cannot reliably identify bubbles in asset prices. Second, even if it could identify bubbles, monetary policy is far too blunt a tool for effective use against them.” Ben Bernanke, 2002*
- *“...monetary policy should not respond to asset prices per se, but rather to changes in the outlook for inflation and aggregate demand resulting from asset price movements...attempting to “prick” an asset price bubble, should be avoided.” Rick Mishkin, 2008*

Pre-crisis: Macro ok, but risks were growing

Figure 1. Output Gap, Core Inflation, and Financial Indicators Before the Crisis



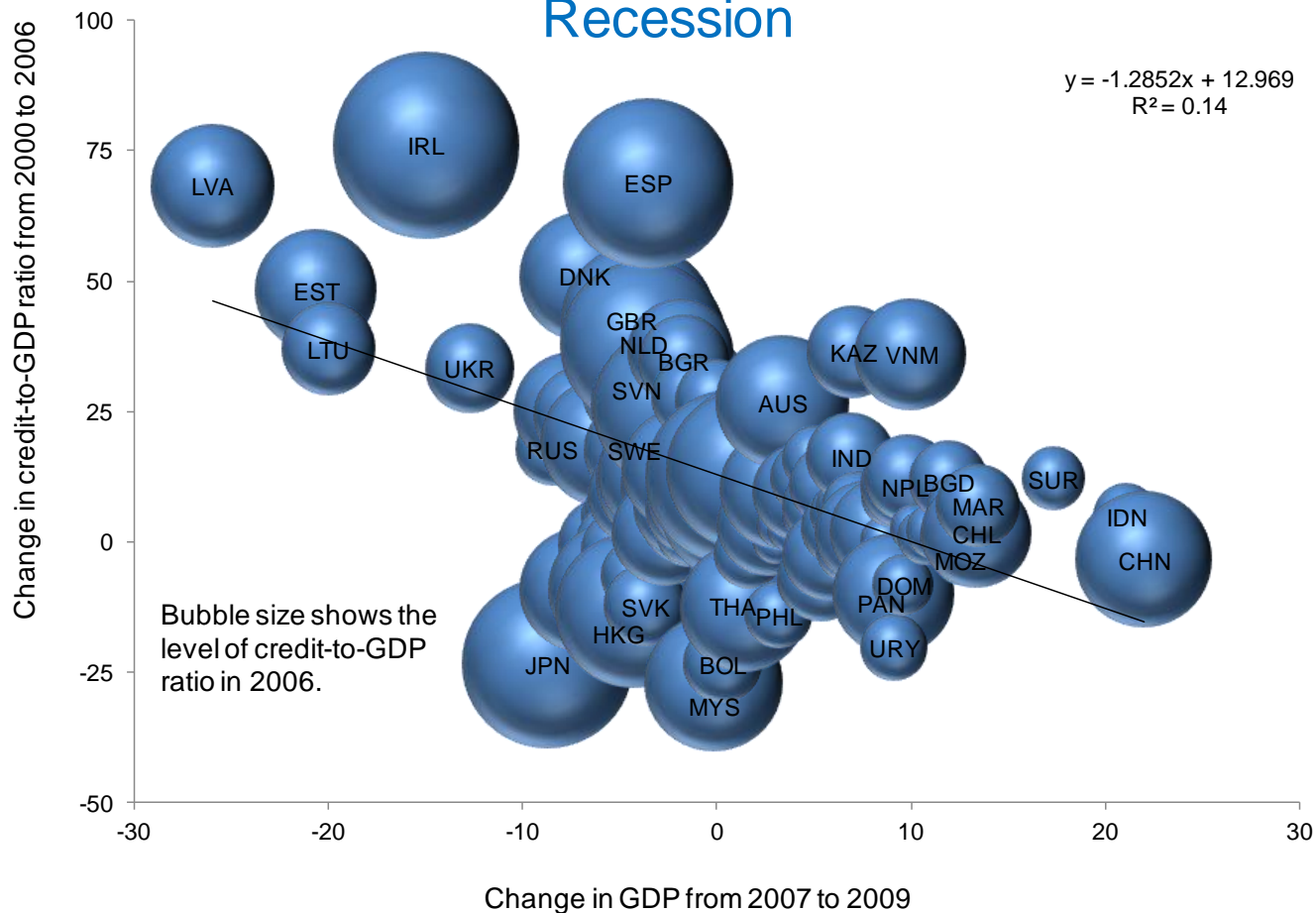
Source: World Economic Outlook (September 2007 vintage for the output gap) and Haver Analytics.

Then the crisis came ...

- Standard policies rapidly hit their limits
- Limited effectiveness of less traditional policies
- Large fiscal and output costs
- Multiple banking crises; especially in countries with their own credit and real estate booms

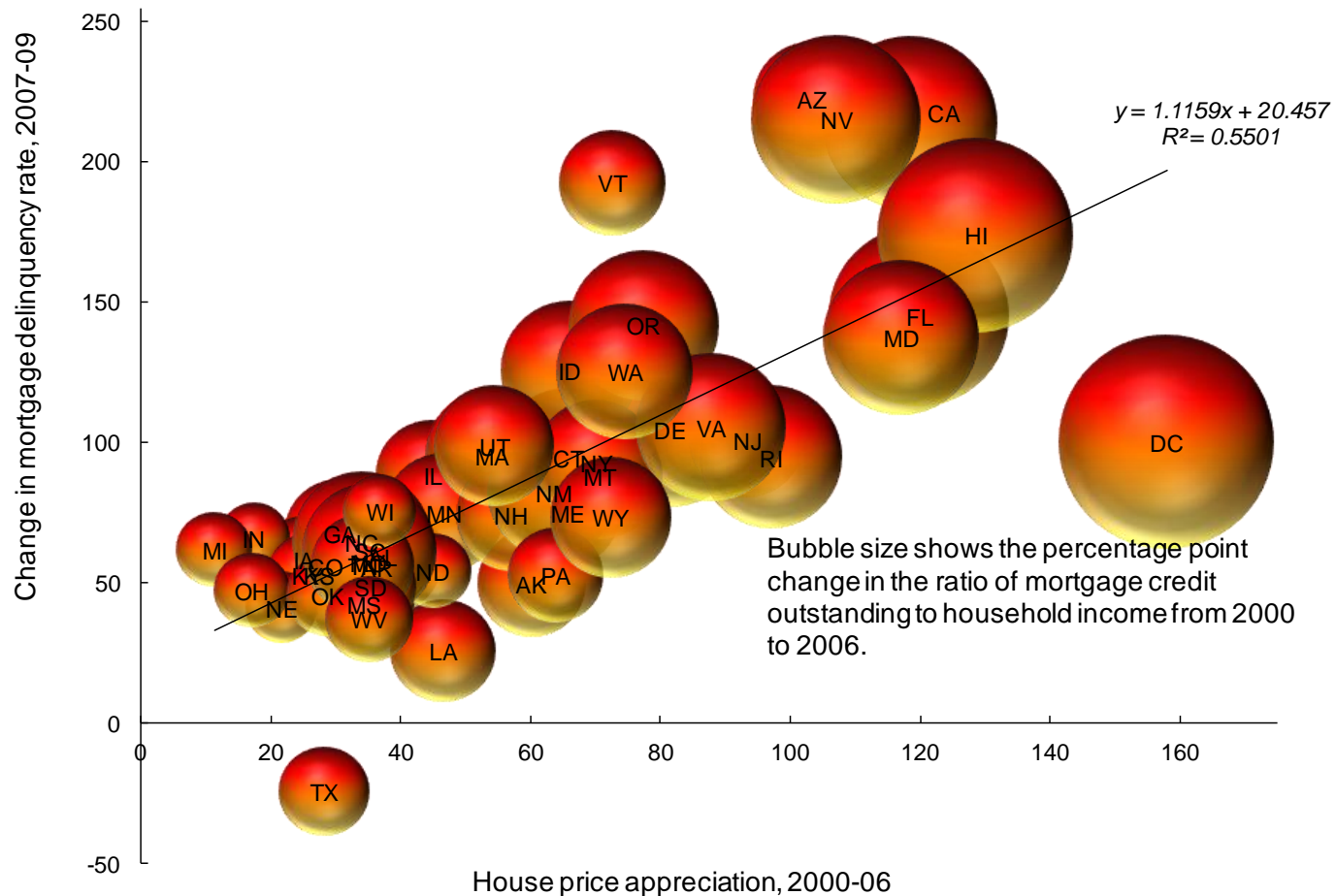
Crisis: severity in line with magnitude of credit booms

Credit Growth and Depth of Great Recession



Crisis: severity in line with magnitude of credit booms

Subprime Boom and Defaults



The crisis challenged existing consensus

- Many stories/theories linking interest rates and risk taking
- Some compatible others opposite to each other
- Often different implications for different types of agents/intermediaries
- Few entail views about “excessiveness” of risks
- Empirically: growing evidence that low rates imply greater risk taking.
But magnitudes unclear

The risk taking channel: Theory

- Many argued that monetary policy provided intermediaries with the wrong incentives (Borio et al., 2008)

- Several stories associate low interest rate environment to crisis
 - Overly loose monetary policy (Taylor, 2009)
 - Abundant liquidity – [search for yield](#) (Rajan, 2005)
 - Risk-shifting: what matters are transitions (Landier et al., 2011)
 - Liquidity risk (Acharya and Naqvi, 2010, Freixas et al., 2011)
 - [Adverse selection and strategic effects](#) in credit booms (Allen and Carletti, 2011, Dell’Ariccia and Marquez, 2006, Ruckes, 2004)
 - Increase in leverage (Adrian and Shin, 2008, 2009...Dell’Ariccia et al., 2011)

- Others focus on how expected macro bailout and risk externalities seed ground for new crises
 - Diamond and Rajan (2010), Farhi and Tirole (2009), Acharya and Yorulmazer (2007)

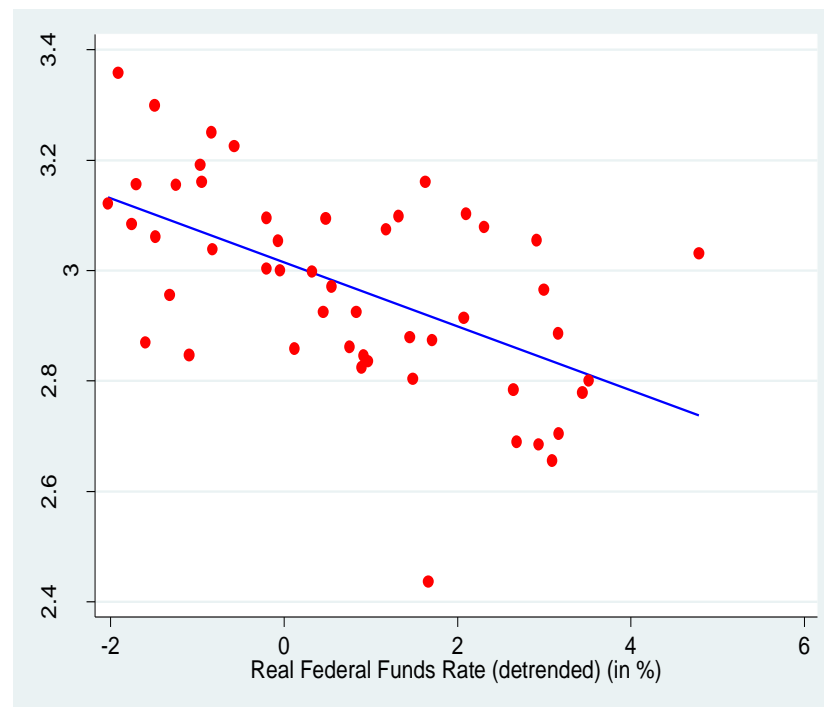
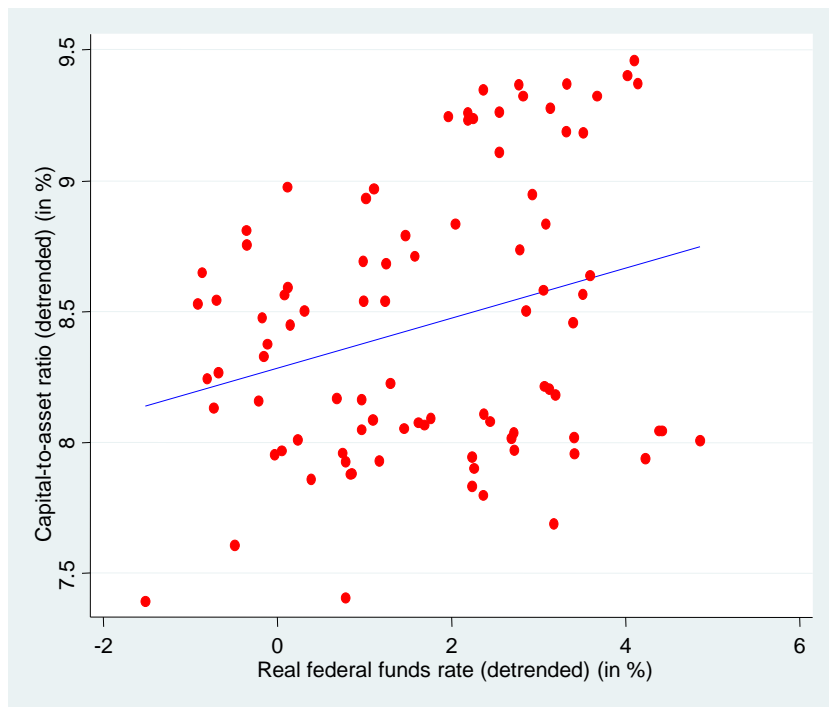
The risk taking channel: Evidence

- Growing literature linking monetary easing to greater risk taking
 - Ioannidou, Ongena, and Peydró (2009): Bolivia; Altunbas, Gambacorta, and Marques-Ibañez (2010), Maddaloni and Peydró (2011): Lending standards euro area (and US); Jimenez et al. (forthcoming): Spain; Dell’Ariccia, Laeven and Suarez (2013): US. Lown and Morgan (2006): lending standards (not significant). Paligorova and Santos (2012), Delis et al. (2012): Differential spreads on syndicated loans. Buch/Eickmeier/Prieto (2011): aggregate version of STBL. Adrian and Shin (2011): Leverage

- Magnitude of effect less robust
 - Different papers reach different conclusions
 - Cross-sectional dimension (which intermediaries are most affected) also in question

- Little sense of whether this risk taking is “excessive”

Some evidence from the US



Dell’Ariccia, Laeven, Suarez,
2016, (JF, forthcoming)

Implications for monetary policy

- Is the “divine coincidence” dead?
 - We already knew short-term trade-off inflation/output
 - Is there also one between output/inflation eqlb and financial stability?
 - Financial frictions imply that low/stable inflation is not enough any longer (assuming systemic risk taking is excessive)

- Other tools?
 - Macroprudential (LTVs, DTIs, dynamic provisioning, cyclical CARs)
 - But unlikely to work perfectly
 - Potential need to lean against the wind

- Many questions:
 - What metrics (leverage, asset-prices, credit growth,...)
 - Rules versus discretion
 - General overhaul of IT and Taylor rules or case-by-case practical approach?

Today's views are more diverse

“Monetary policy is poorly suited for dealing with financial stability concerns, even as a last resort.” John Williams, 2015

“For existing empirical estimates and reasonable assumptions, the marginal cost of leaning against the wind is much higher than the marginal benefits. Thus, leaning against the wind is not justified.” Lars Svensson, 2015

“Monetary policy faces significant limitations as a tool to promote financial stability... [But] it may be appropriate to adjust monetary policy to ‘get in the cracks’ that persist in the macroprudential framework.” Janet Yellen, 2014

“It would make sense not to rule out the possible use of the interest rate for this purpose, particularly when other tools appear to be lacking.” Stan Fischer, 2015

“In other words, we have been leaning against the wind.” Oystein Olsen, 2015

“Financial stability is too large a task for prudential... frameworks alone. Monetary policy strategies also need to... lean against the build-up of financial imbalances even if near-term inflation remains low and stable.” Jaime Caruana, 2011

To lean or not to lean? A three step approach

□ Transmission

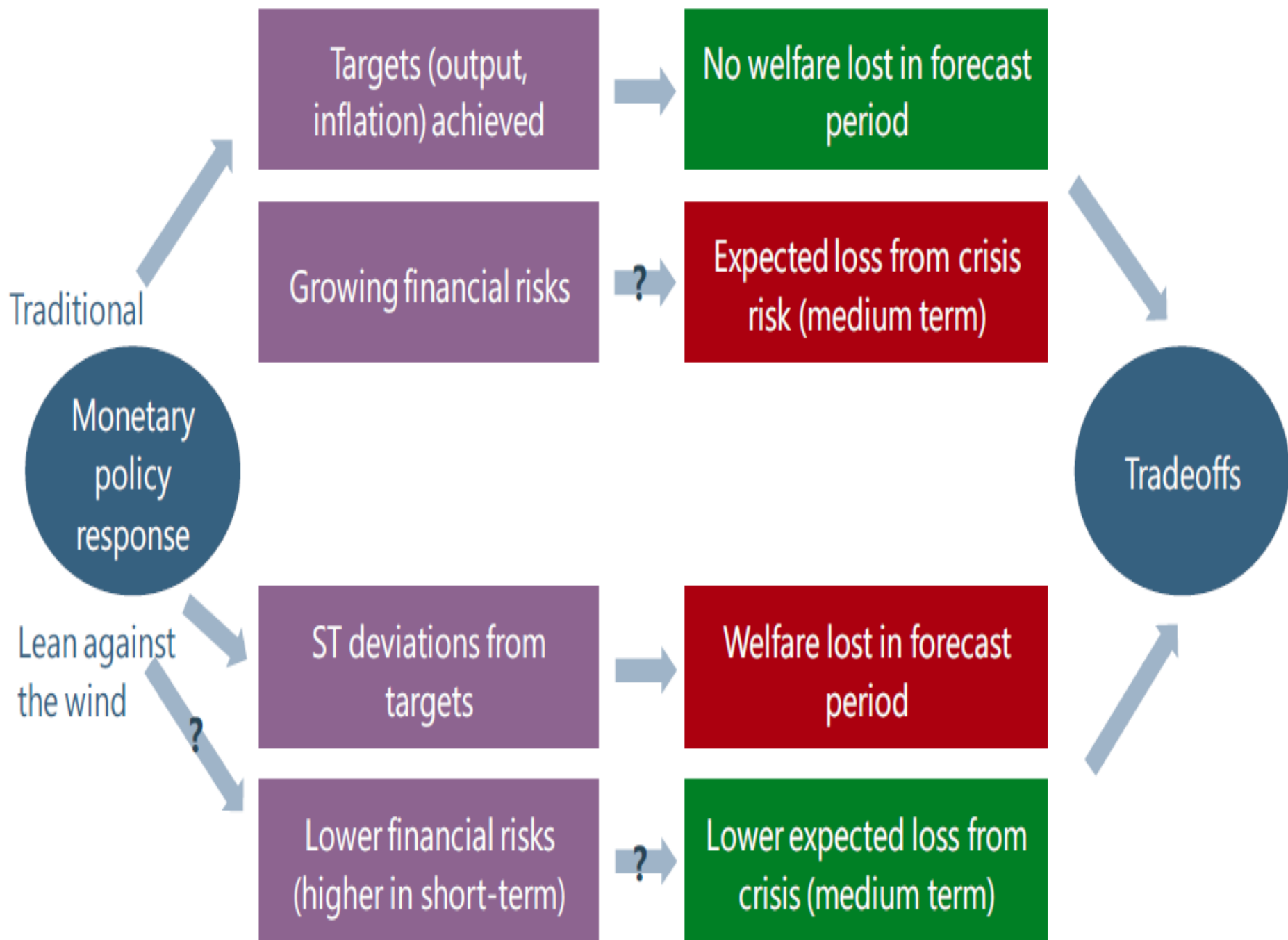
- How does monetary policy affect financial variables?
- What are the effects on financial stability?

□ Tradeoffs

- Is policy tightening for inflation purposes sufficient?
- How often do we see a conflict between price and financial stability objectives?

□ Welfare analysis

- Costs and benefits of leaning against the wind



Costs/benefits analysis: Should monetary policy lean against the wind?

□ In general, no.

- Reasonable parameters suggest costs exceed benefits
- Other tools (macro- and micro-prudential)

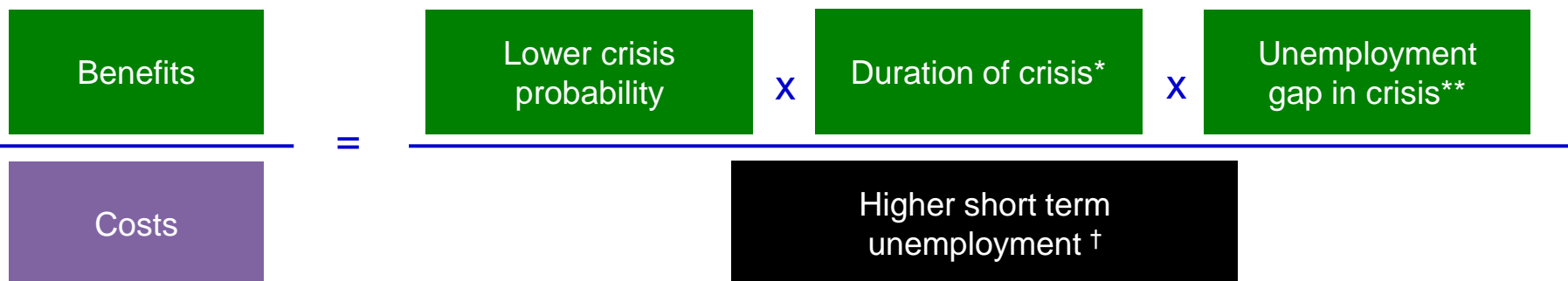
□ Yet, benefits grow relative to costs when:

- *Conjuncture*: rapid credit growth, low unemployment, high probability of long-lasting and severe crisis,
- *Structure*: large, interconnected economy (spillovers)

□ Prudential policies should be the first policy considered

- More targeted, probably less costly,
- Both micro- and macro-prudential can play a role

Putting empirical results together



Illustrative scenarios

Building blocks	Average probability	High (peak) probability	High (peak) probability, severe crisis
Lower crisis probability, pp	0.02	0.3	0.3
Duration of crisis, years	4.5-6	4.5-6	6-8
Unemployment gap in crisis, %	5	5	7
Higher unemployment, pp	0.5	0.5	0.5
Benefits	0.008	0.113	0.294
Costs	0.25	0.25	0.25
Ratio (B:C)	0.03	0.45	1.18

(†) Due to 100 bps increase in rates for 1 year.

A Different Role for Financial Variables?

- Before the GFC:
 - Real-time estimates of output gaps did not signal substantial overheating
 - CPI inflation was below target in most advanced economies

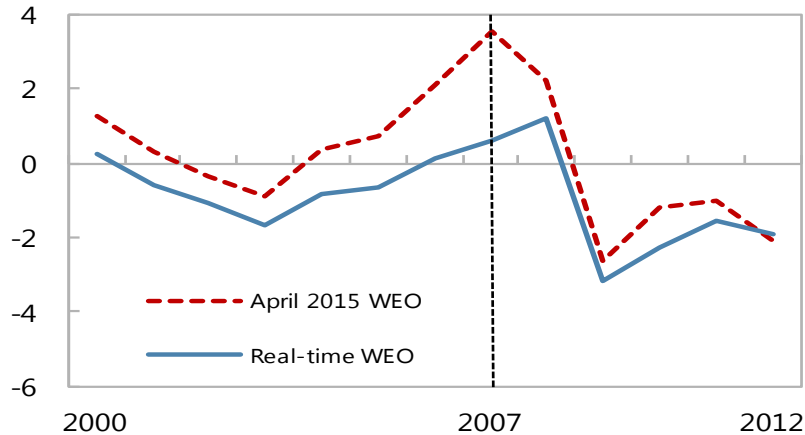
- After the GFC:
 - Large upward revisions to output gaps
 - Greater awareness of the role of housing and credit booms

- Use real-time financial data to reduce errors in potential output estimates

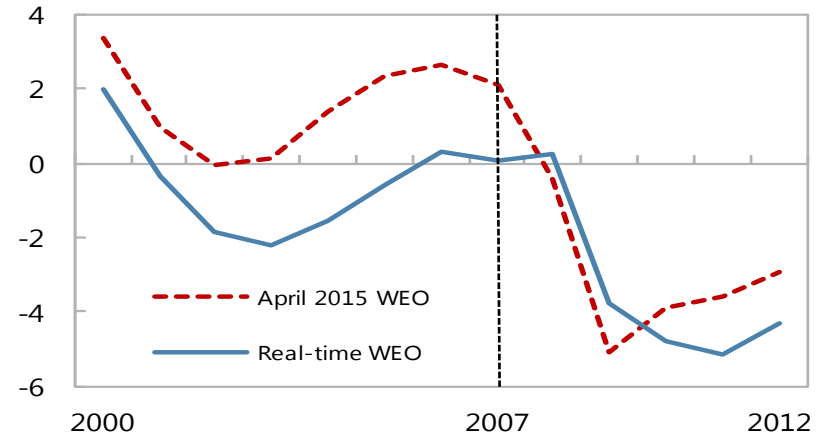
- Conflict between mandates looks smaller ex-post than ex-ante

Potential output a bit of a moving target

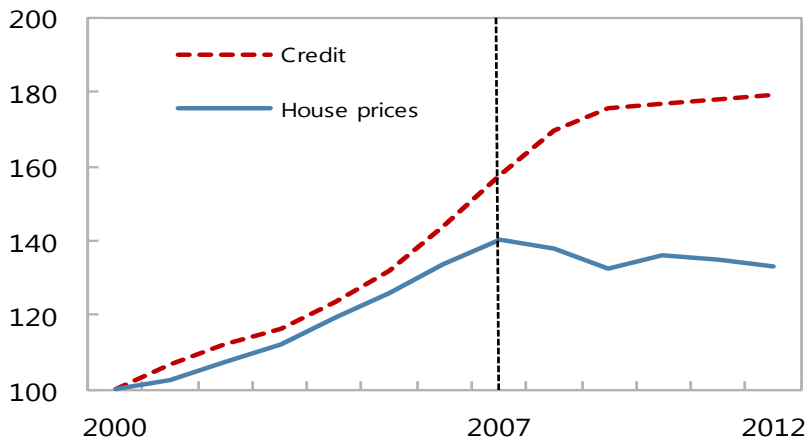
Panel 1. Cross-country average, output gap
(Percent)



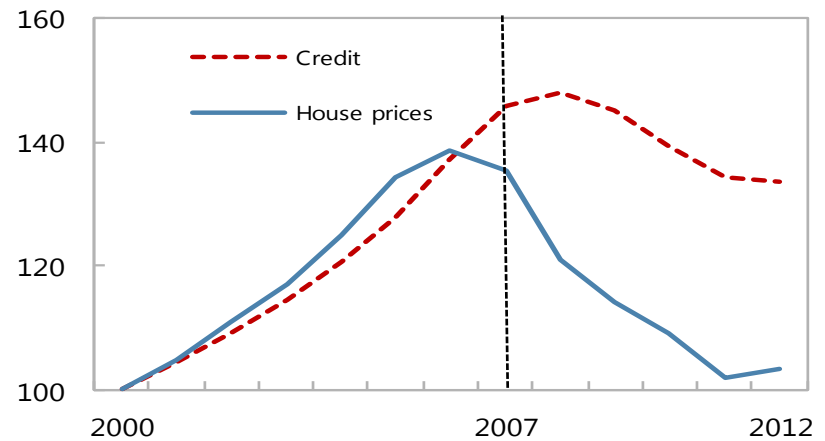
Panel 2. United States, output gap
(Percent)



Panel 3. Cross-country average, credit and house prices
(Real indexes, 2000=100)

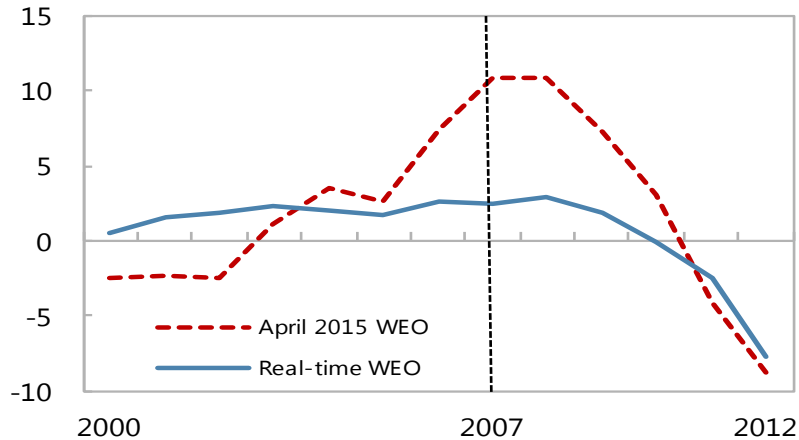


Panel 4. United States, credit and house prices
(Real indexes, 2000=100)

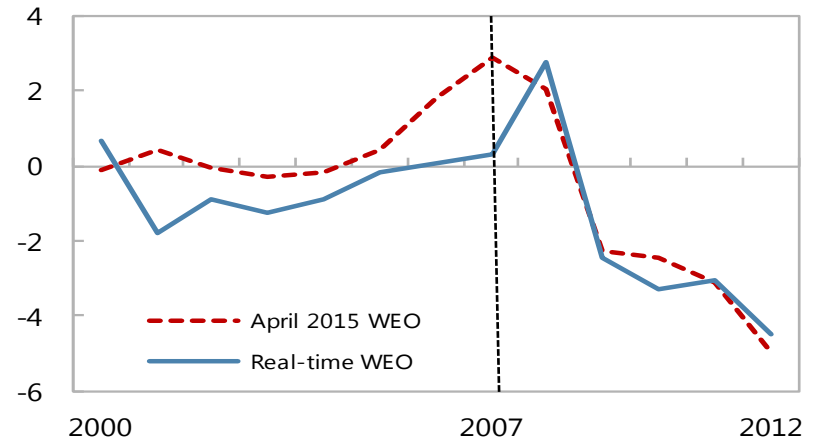


Potential output a bit of a moving target

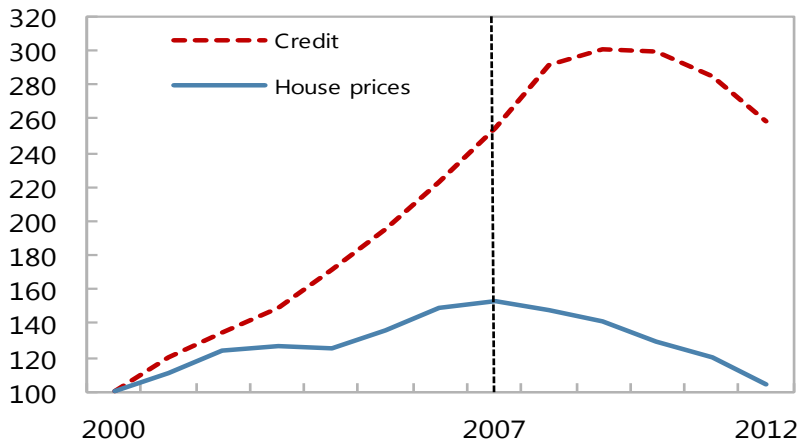
Panel 1. Greece, output gap
(Percent)



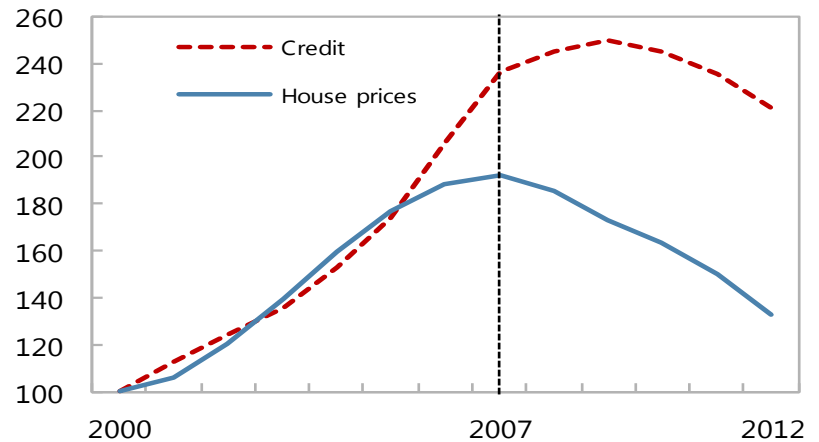
Panel 2. Spain, output gap
(Percent)



Panel 3. Greece, credit and house prices
(Real indexes, 2000=100)

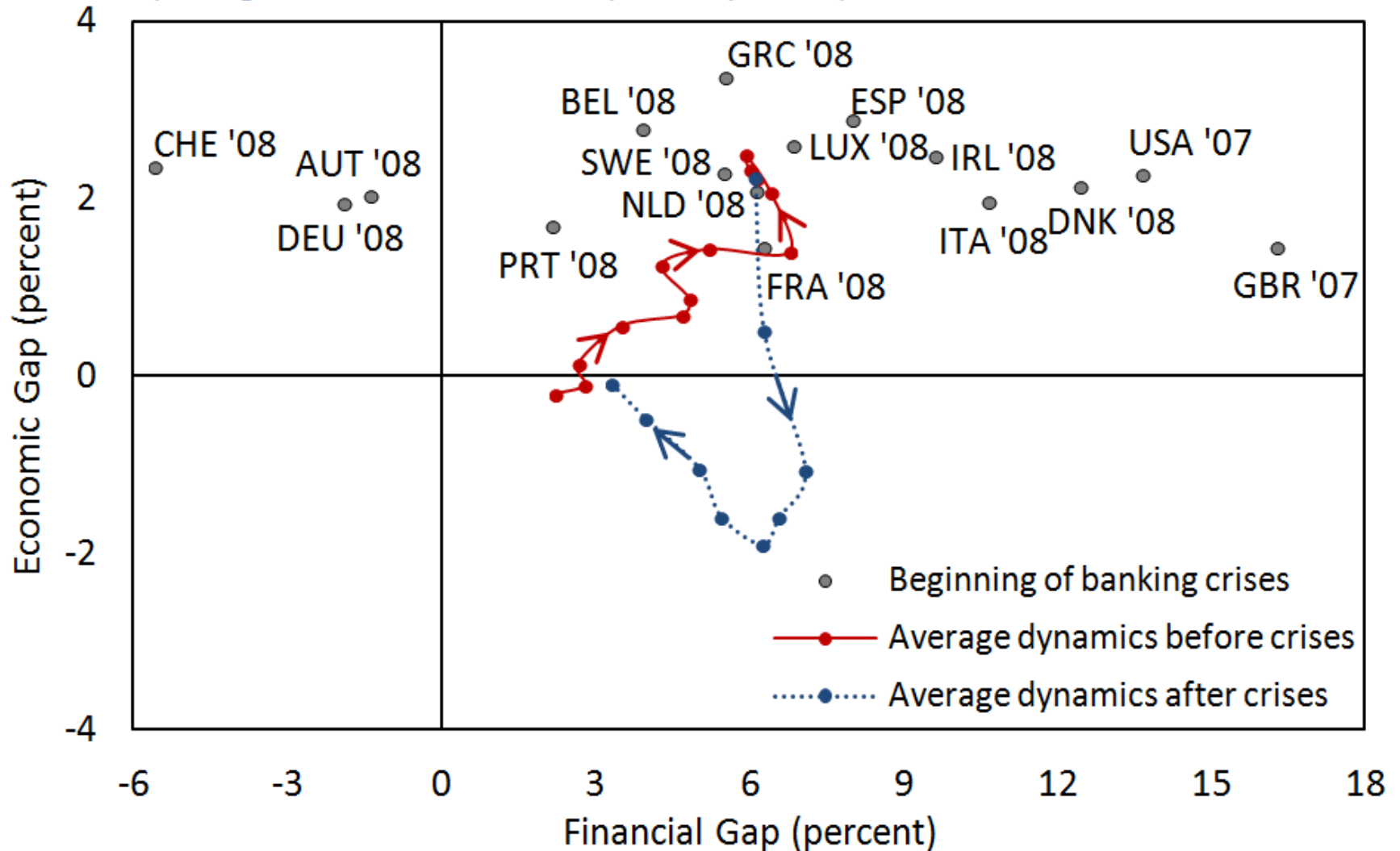


Panel 4. Spain, credit and house prices
(Real indexes, 2000=100)



Economic and financial overheating

Economic and financial gaps around banking crises
(AEs, global financial crisis, quarterly data)



Is macro-prudential policy the answer?

□ Potential issues

- Circumvention
- Calibration
- Difficult political economy

□ Evidence

- Promising results: negative association with incidence of booms and booms turning bad (even with adverse bias)
- But effects often limited (and sometimes temporary)
- More success in building up buffers than preventing booms altogether
- Limited use in AEs so far

Relationship with other policies

- How many agencies in charge of MoP/MaP?
 - Two instruments (Policy rate, MaP)/ Two objectives (Inflation/output, Stability)
 - Each instrument affects both objectives
 - If perfectly functioning, design does not matter

- But, if not, separation improves credibility
 - Especially if CB's mandate very clear
 - Similar to fiscal/monetary policy divorce (think Barro/Gordon)
 - At potential cost of second-best policy mix

- Example, in a recession:
 - CB cuts rate aggressively to stimulate demand
 - FA reacts by tightening macro-prudential regulation to reduce risk-taking → CB eases even more → FA
 - Result: a policy mix with too low interest rates and too tight macro-prudential measures

Governance issues with financial stability mandate

- Outsourcing price stability to independent CBs was “easy”:
 - A clear and measurable objective: low and stable inflation (some attention to short-term output)
 - Clearly understood (often mono-dimensional) tools: the policy rate
 - Accountability led to properly designed incentives for central bankers
- Outsourcing financial stability is much more complicated

Governance issues with financial stability mandate

- Paradox of success
 - Unlike monetary pol.: No easily measurable target (is there a too stable financial sector?)
 - Unlike prudential supervision: No yardstick
 - Nobody sees the crisis that did not happen

- Politically charged (with or without MaP)
 - Hit most vulnerable
 - Against increased credit access

- Need for rule-based approach. But...
 - Measurability makes delegation challenging
 - Far from calibration of DSGE standards

Risks to Central Bank Independence?

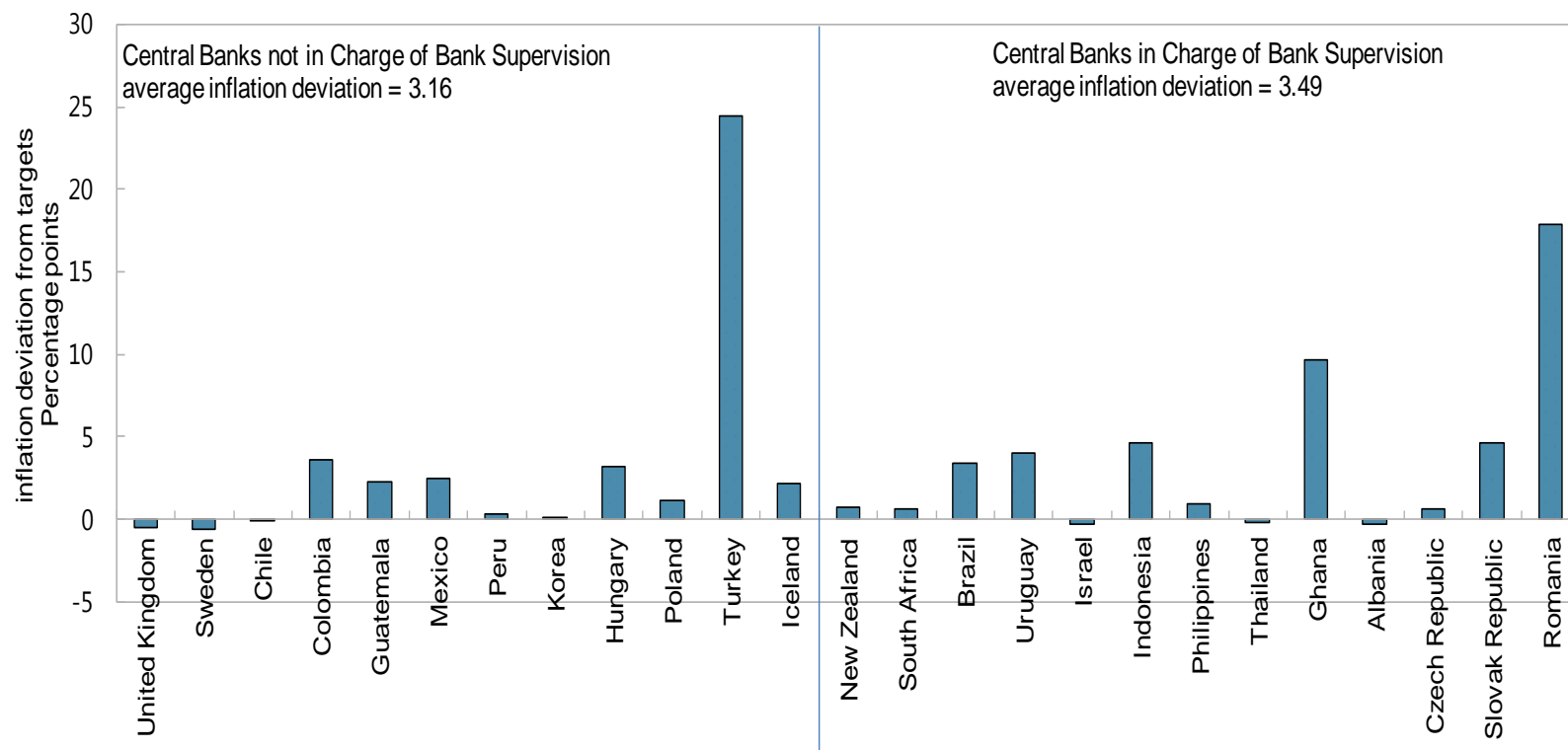
- Theoretical foundation for CB independence on price stability:
 - Inflation is an inferior tool to deal with fiscal constraints
 - Time-inconsistency problem
 - This clearly still desirable

- Analogous arguments for financial stability?
 - Governments may be tempted to use regulation to distort incentives for banks to finance the treasury
 - Politicians may be reluctant to tighten if this is politically costly

- Legitimate concerns
 - Democratic deficit if a central bank is endowed with powers ranging from setting interest rates to credit allocation and financial regulation
 - Especially in the context of mandates with measurability issues

Evidence: Little difference in inflation performance with multiple mandates

Figure 7. Inflation Performance and Bank Supervision among Inflation Targeters



Note: Average inflation deviation from the target since the central bank introduced inflation targeting until 2006Q4. Difference in means is not statistically significant.

Source: Central Banks' websites, Haver Analytics, and staff calculations.

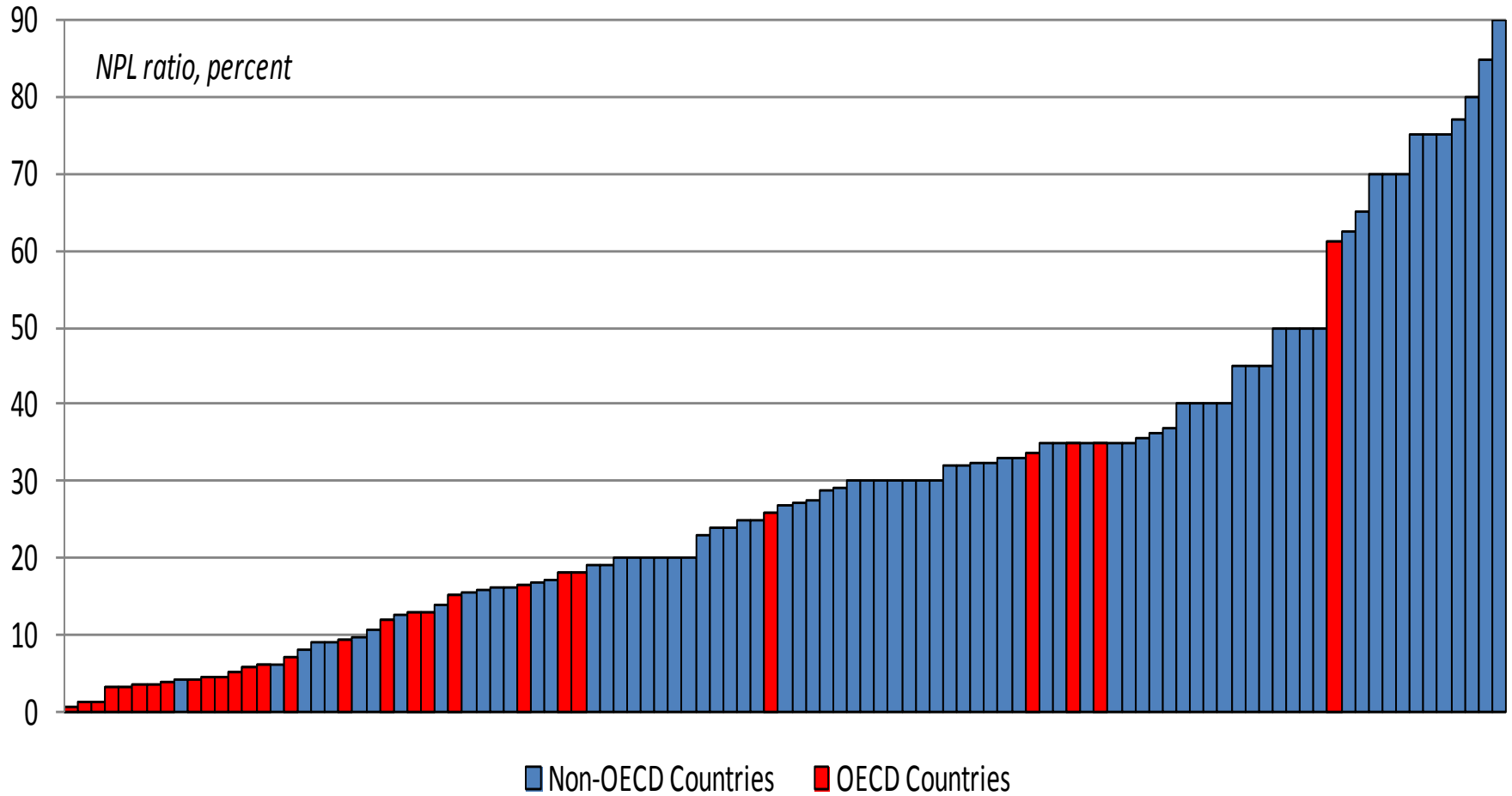
Yet, important concerns remain

- So far, a financial stability mandate has meant to be in charge of relatively “a-cyclical” bank regulation and supervision
- Political pressures can intensify:
 - Tools with more targeted effects (with clearer winners and losers)
 - Cyclical use of prudential tools
- Communication/credibility challenges
 - One tool/two targets
 - Conflicting mandates
- Key challenge:
 - Protecting MP independence (on price stability) if government/public chooses to exercise greater oversight on new central bank responsibilities

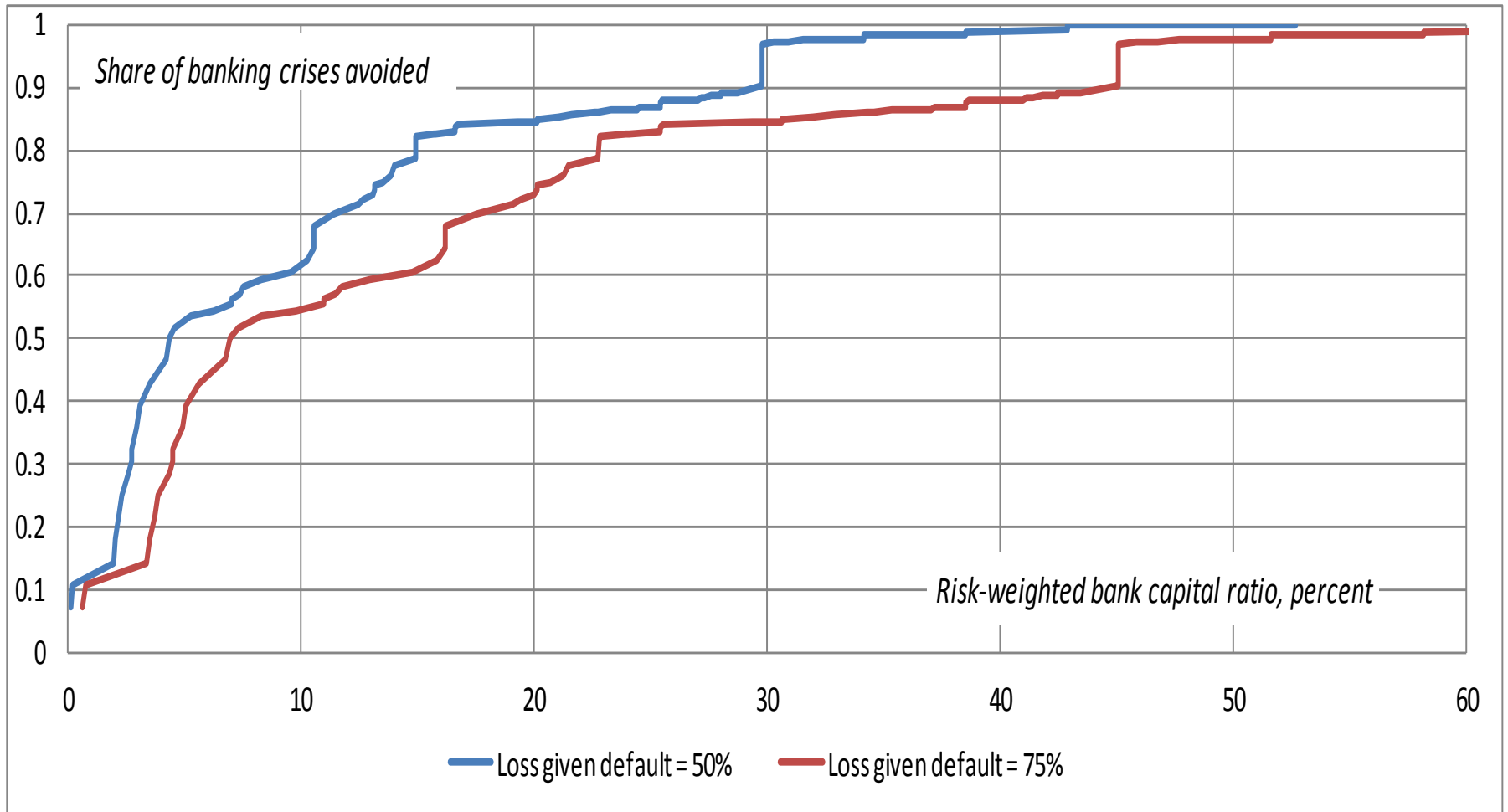
Policy summary

- ❑ Adverse trade-offs in using MP for financial stability purposes
- ❑ Limited effectiveness of macroprudential measures (intended as cyclical use of prudential rules)
- ❑ Complicated governance issues
- ❑ Go back to basics?

Bank NPLs in crises



Role of bank capital/loss absorption



Thank You