Financial crises: characteristics and crisis management

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The views expressed are my own and do not necessarily represent the position of the Bank of Finland

Structure of presentation

- Introduction
- Causes of financial crises
- Empirical characteristics
- Crisis management
- Concluding comments

I. Introduction

- **Financial crises** arise when some financial institutions or assets suddenly lose a large part of their value.

- There are a number of different types of crises:
  - **Banking crises** (runs or related difficulties)
  - **Speculative bubbles and crashes** (stock markets, real estate)
  - **Currency crises**; isolated crises and contagion

- **Systemic crises**: a large number of institutions or assets behave in a non-sustainable way.

- The frequency of financial crisis doubled in the period since 1973 in comparison to 1945-71:
  - Annual frequency is about 12 percent in 1973-2001 period, vs. about 6,5 percent in 1945-71 (Bordo et al 2001).
- Excluding the current crisis, six out of ten biggest bubbles have occurred since 1970s (Table).
- Systemic crises have major macroeconomic consequences (Figures: Nordic crises in 1990s, current crisis later).

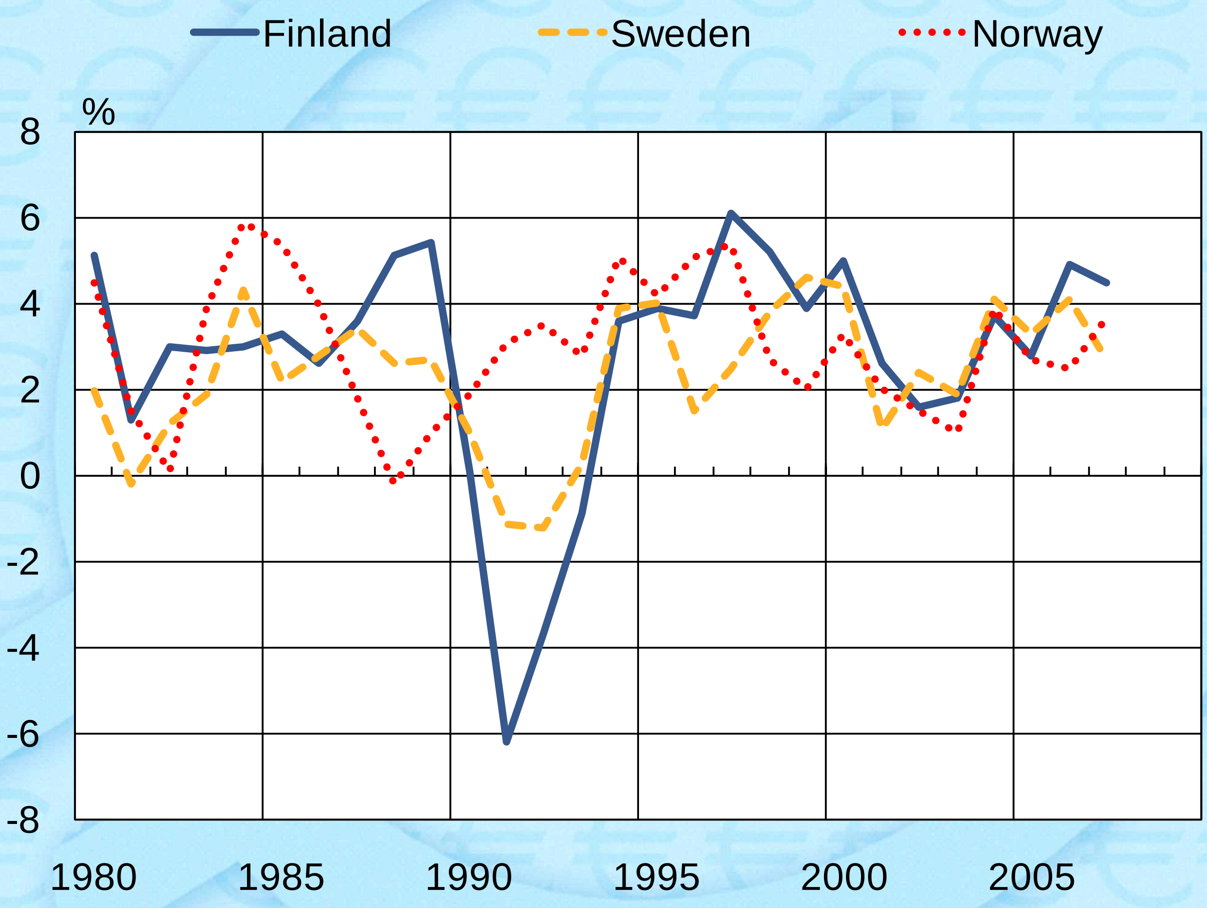
The big ten financial bubbles

(from Kindlberger and Aliber 2005)

1. The Dutch Tulip Bulb Bubble 1636
2. The South Sea Bubble 1720
3. The Mississippi Bubble 1720
4. The late 1920s stock price bubble 1927–29
5. The surge in bank loans to Mexico and other developing countries in the 1970s
6. The bubble in real estate and stocks in Japan 1985–89
7. The 1985–89 bubble in real estate and stocks in Finland, Norway and Sweden
8. The bubble in real estate and stocks in Thailand, Malaysia, Indonesia and several other Asian countries 1992–97
9. The surge in foreign investment in Mexico 1990–93
10. The bubble in over-the counter stocks in the United States 1995–2000

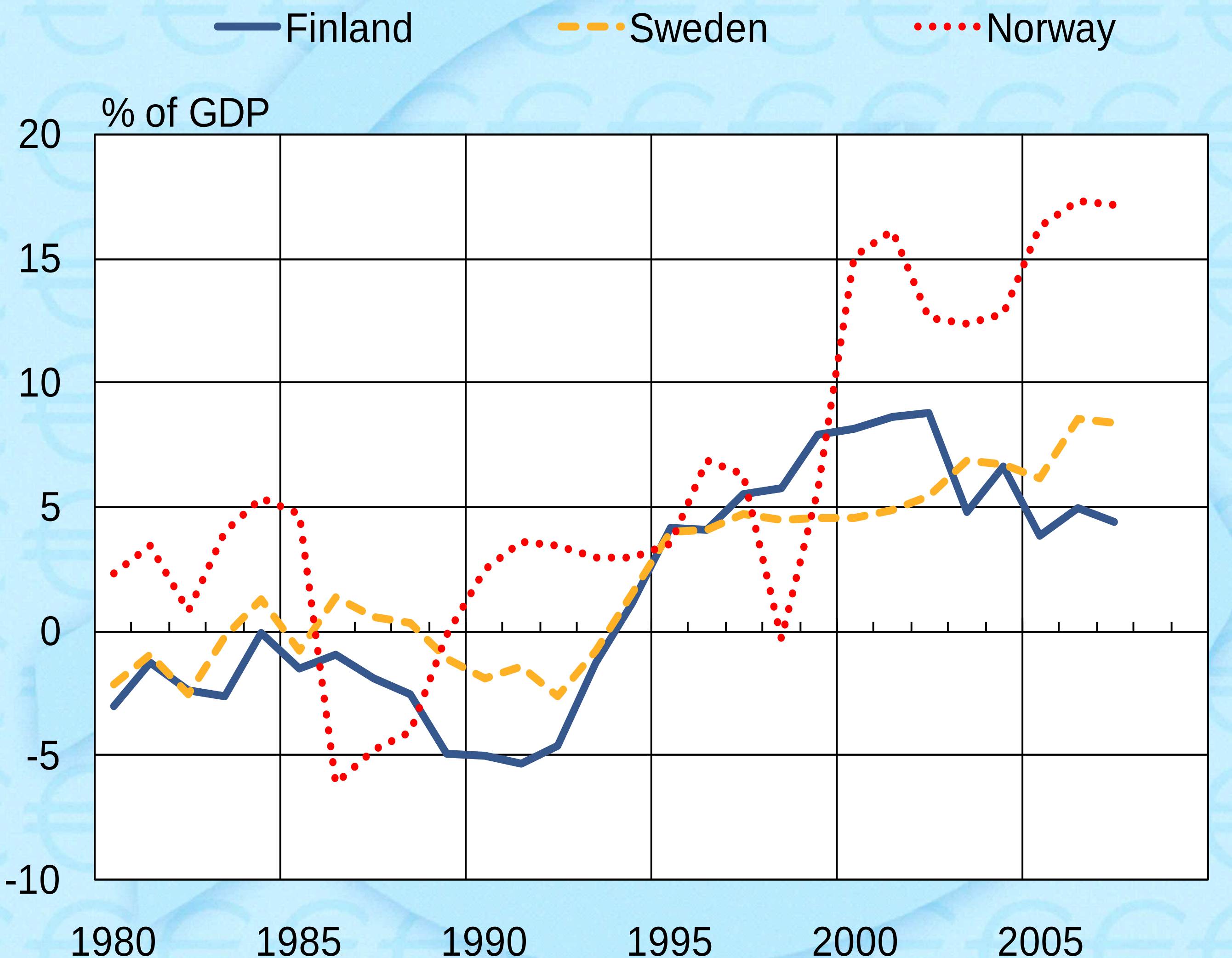
Source: C.P. Kindleberger and R. Z. Aliber: Manias, Panics and Crashes, A History of Financial Crises, 2005

Figure 1. Real GDP growth



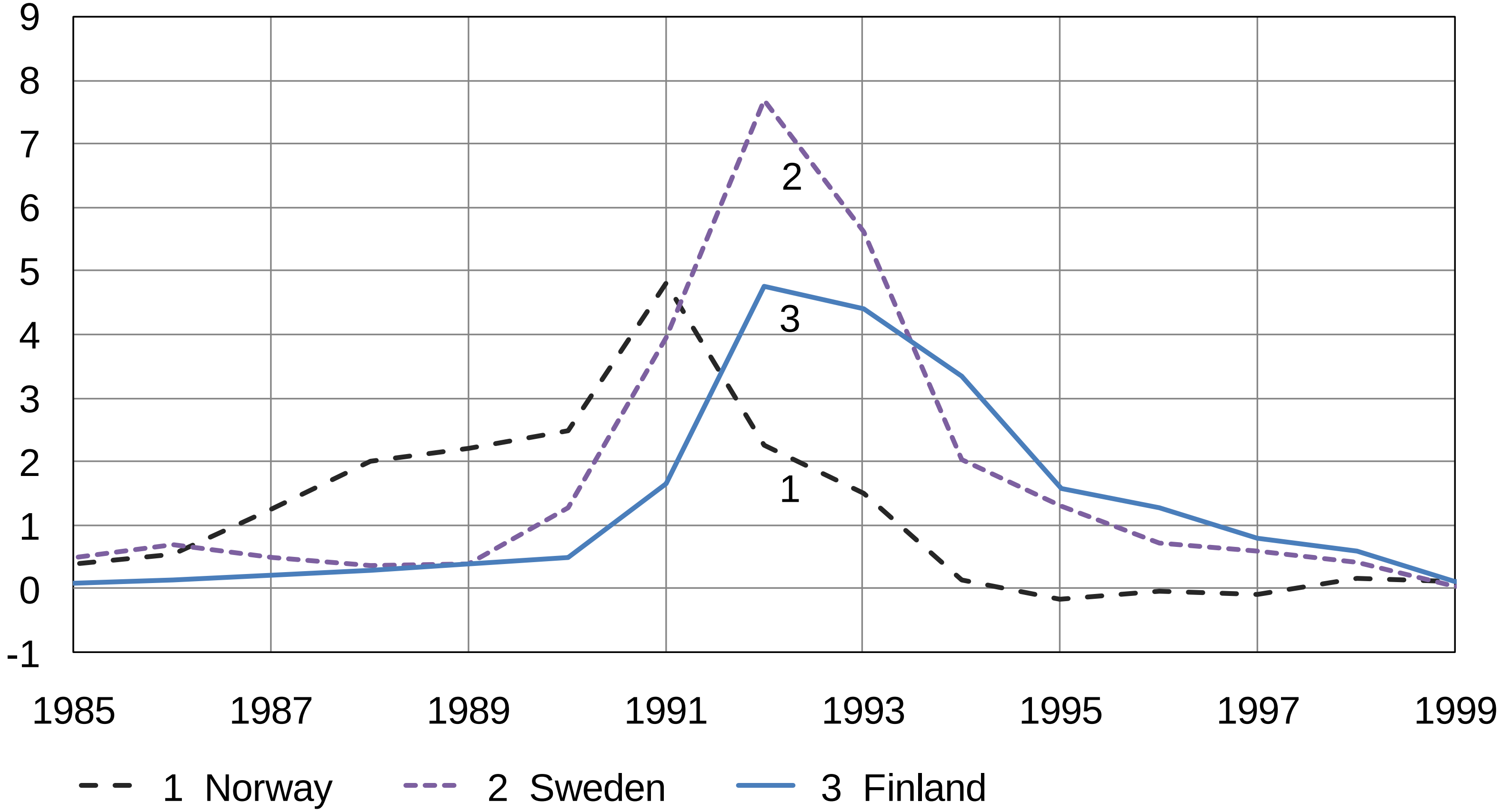
Sources: Eurostat and IMF.

Figure 2. Current account



Source: European Commission.

Loan losses/lending in the Nordic countries' banking sector 1985-1999, %



Source: Central banks.

II. Causes of financial crises

- Fragility of financial systems
  - Intermediation, asset-liability mismatch
  - Strategic complementarity
- Amplifying factors
  - Imperfect knowledge and herd behavior
  - Credit and high leverage
- Collapse of asset prices
  - Liquidity problems
  - Possible contagion
- Regulatory failures

II.1 Fragility of financial systems

- Strategic complementaries are common in financial markets
  - Successful investments require guess work about other investors
  - Investors choices are strategic complements: incentives to coordinate decisions => **strategic complementarity**
- Intermediation of funds creates asset-liability mismatches
  - Banks provide liquidity to depositors as the timing of use of funds is uncertain
  - Banks earn by lending to illiquid long-term investments

- Asset-liability mismatch can lead to bank runs (Diamond-Dybvig 1983)
  - These can be a self-fulling prophecy: depositors best response is to withdraw in response to withdrawals by other depositors.
  - A ”no-run” outcome is another equilibrium in this kind of system.
- Mismatch also arise from assets and liabilities in different currencies => **currency crises**
  - Currency crises usually emerge when currency exchange rates are fixed (or regulated).
  - Mobility of capital across the border is another precondition.

II.2 Amplifying factors

- Imperfect knowledge and limitations in human reasoning:
  - These often lead to overestimated assets values after major financial and technical innovations.
  - **Learning** (gradual improvement of knowledge) and **herding** (imitation of other investors) lead to more volatility.
- **High leverage** contributes to financial crises.
  - If an institution or investor invests only his own money, the worst outcome is loss of these funds.
  - If additional funds are borrowed to invest more, then potential gains are increased but so are potential losses.
  - Moreover, bankcruptcy risk arises, which can spread financial troubles to other institutions and markets => **contagion and increased systemic risk.**

- Real shocks:
  - Adverse shocks in business cycles will reduce assets of banks.
  - If shocks are big, customers will anticipate weakness of a bank, triggering withdrawals and a possible run.
  - This is an alternative explanation to pure expectations-based models.
  - Both fundamental- and expectations-based models thought to be relevant.
- Regulatory failures
  - Argued to be important in the current crisis
  - Movement of liabilities off balance sheets via securization
  - CDS and other OTC markets non-transparent
  - Misguided regulation: Basel II led to procyclicality
  - Fraud is present (e.g. Madoff case), but in aggregate not so important

II.3 Trade-offs

- Financial systems have important trade-offs:
  - Deeper intermediation and markets improve allocation of resources and of risks.
  - Imperfect information creates liquidity problems when confidence is lost.
  - Asymmetric information creates incentives that contribute to adverse outcomes (moral hazard, adverse selection).
  - Possibility of bad outcomes from asset-liability mismatches that become sour.

III. Empirical Overview

III.1 **Duration and depth of systemic crises**

– peak to trough measures (Reinhard and Rogoff 2009)

♦ Real house prices:

– average fall 35.5 percent; biggest fall 53 percent (Hong Kong 1997)

– average duration 6 years; highest 17 years (Japan 1990s)

♦ Real equity prices:

– average fall 55.9 percent; biggest fall 90 percent (Iceland 2007)

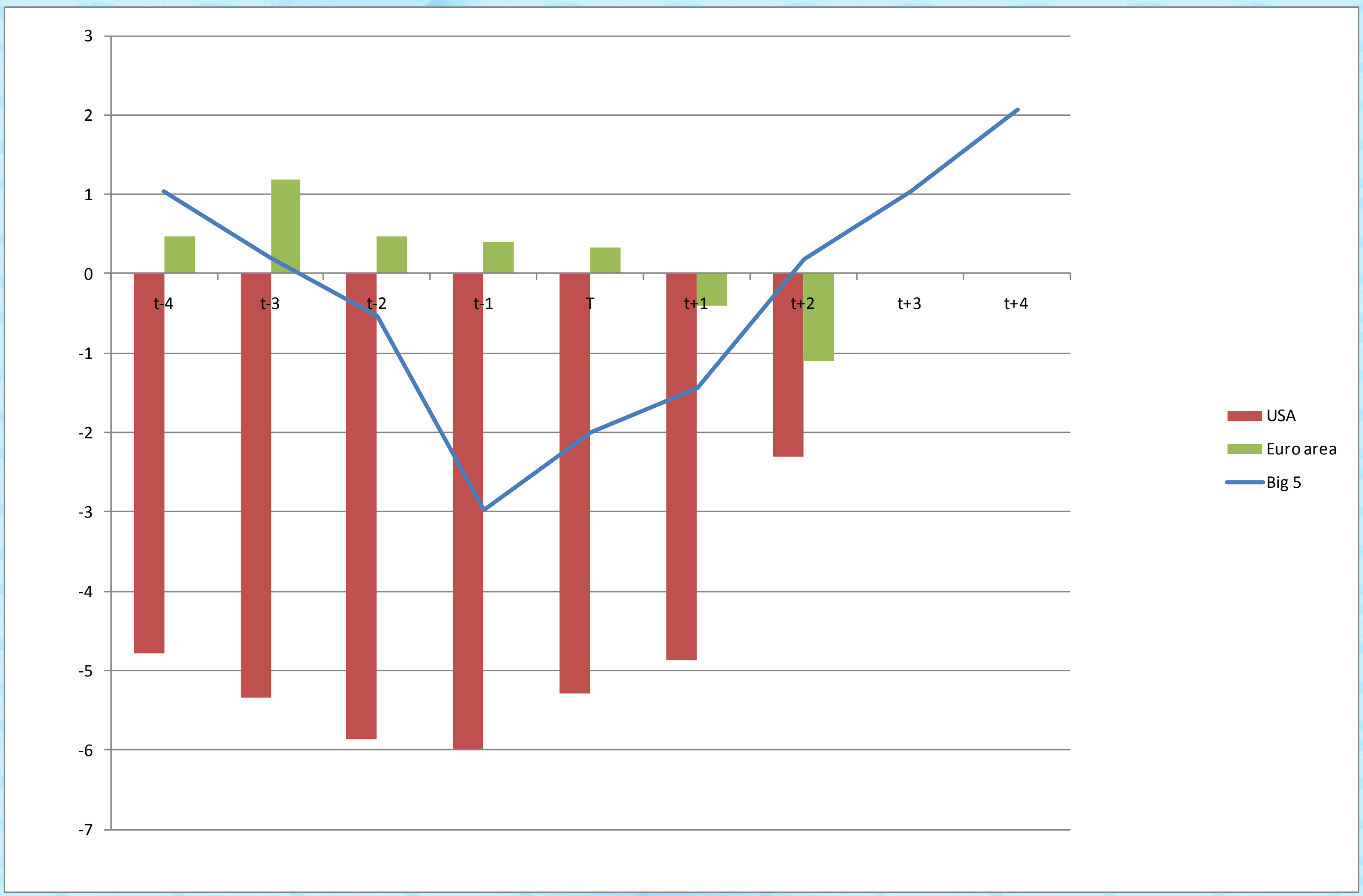
– average duration 3.4 years; highest around 5 years (Spain 1977, Malaysia 1997, Thailand 1997)

- Real per capita GDP:
  - average fall 9.3 percent; biggest fall around 29 percent (US 1929)
  - average duration 1.9 years; highest 4 years (Finland 1991, Argentine 2001, US 1929)
- Unemployment:
  - average rise 7 percent; biggest rise 22 percent (US 1929)
  - average duration 4.8 years; highest 11 years (Japan 1992)
- Increase in public debt (3 years after a banking crisis) :
  - average rise 86 percent; biggest rise 180 percent (Finland 1991, Columbia 1998)

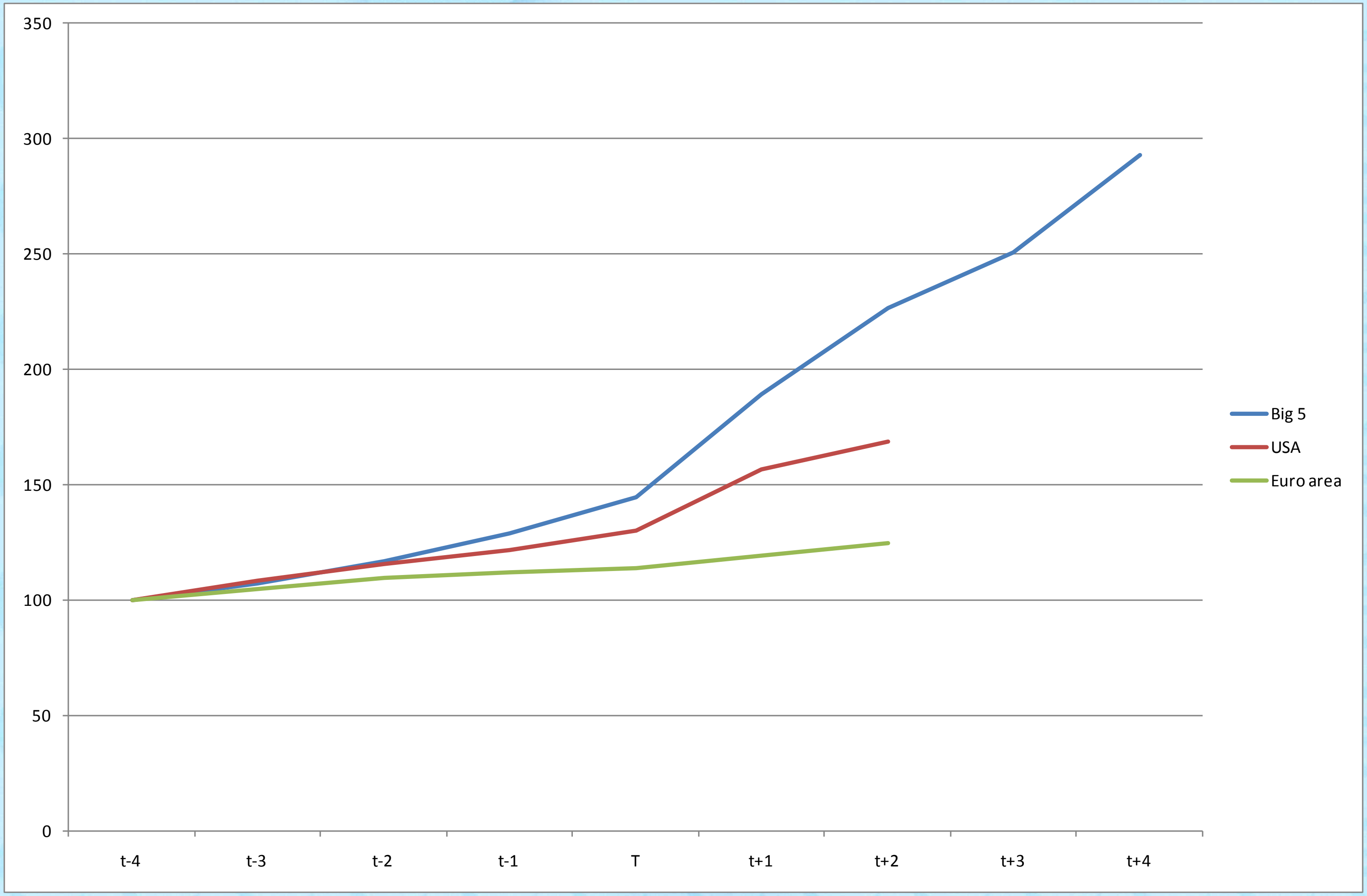
III.2 The Current Crisis

- Next we look at the current crisis in the US and euro area.
  - Imbalances: current account, public debt
  - Asset prices: real house and equity prices
- Comparison to the average of the ”Big Five” crises in advanced economies:
  - Nordics (Finland, Norway, Sweden) in 1990s, Spain in 1980s, Japan in 1990s
- Note: T represents the year of start of the financial crisis in the next figures.

Current account

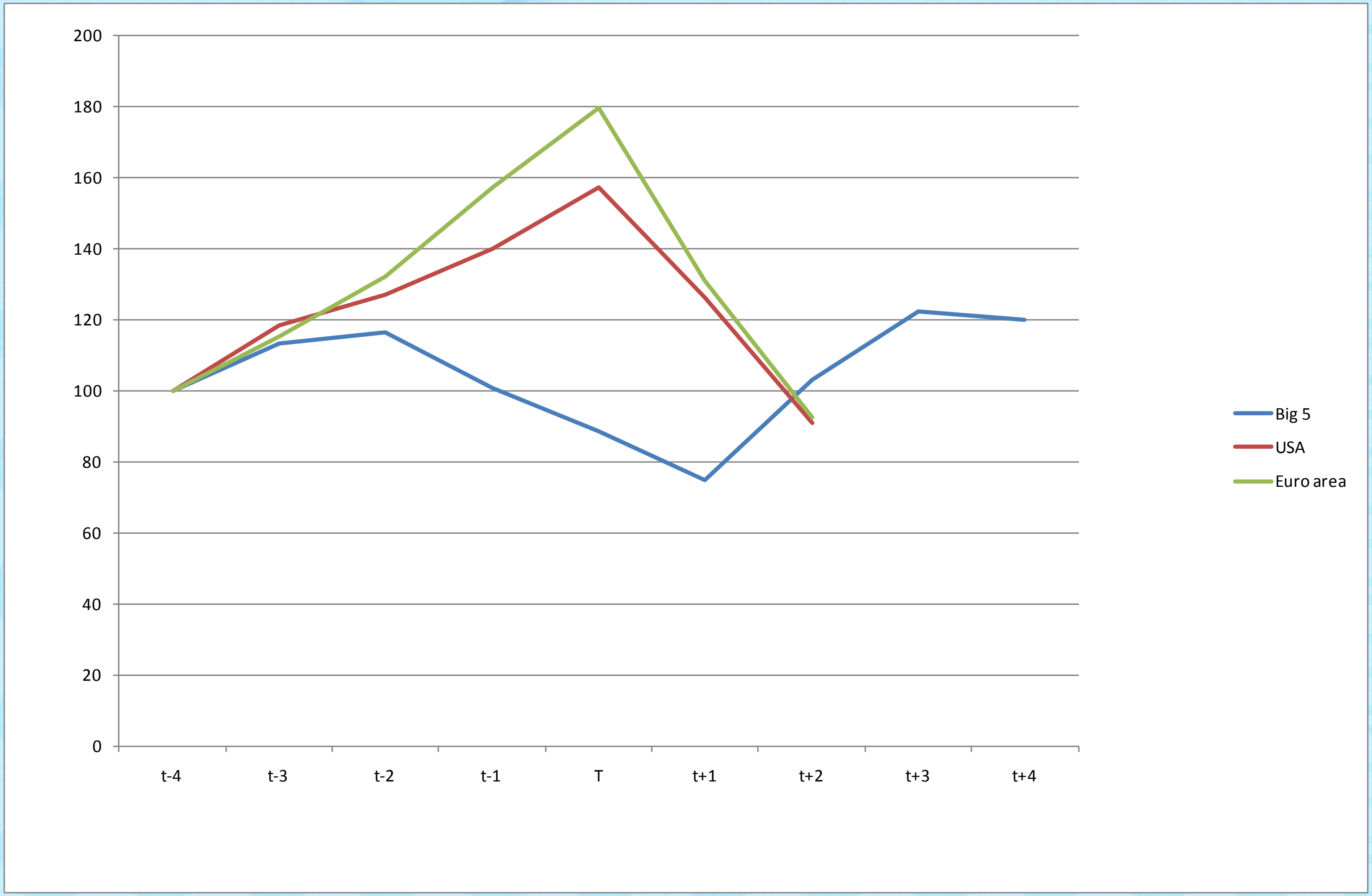


Public debt

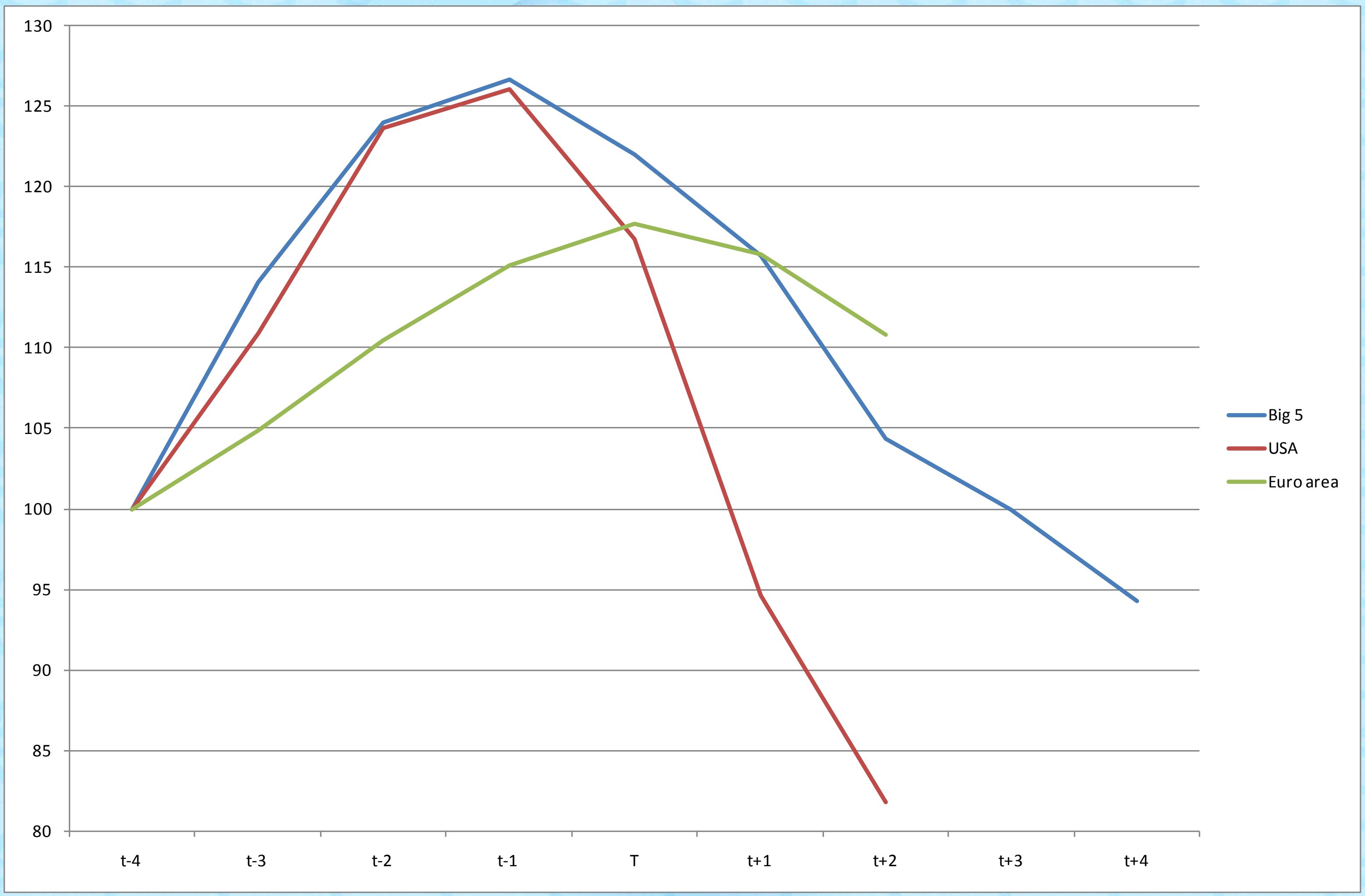


350
300
250
200
150
100
50
0
t-4
t-3
t-2
t-1
T
t+1
t+2
t+3
t+4
Big 5
USA
Euro area

Real equity prices



Real house prices



III.3 Special features of the current crisis

- The crisis is global and affects all countries.
  - Globalization of finance is a challenge for policy making.
- Macroeconomic reasons behind the current crisis:
  - Global imbalances,
  - Loose monetary policy: low interest rates after the burst of the IT bubble.
- Financial innovation:
  - Originate-and-distribute banking model,
  - New complex and opaque instruments,
  - Shadow banking system permitted a lot of securitization, more leverage and risk-taking.
  - Housing boom fuelled by the new practices and excessive lending (originate-and-distribute banking model)

IV. Crisis management

- We look at the practices and experiences from the 1990s Nordic crises.
- Comparison to resolution of the US Savings and Loans crisis in the late 1980s and early 1990s.

IV.1 The Nordic experience

- Finland
  - 1st measure: Bank of Finland took control of Skopbank in September 1991
  - Public support: preferred capital certificates to banks, with strict requirements
  - Support to be converted into shares if not repaid
  - Government set up the crisis management agency to restructure the banking system
  - Policy-makers made promises to guarantee banks' obligations, also further public support

- Finland (continued)
  - Banks became profitable again in 1996
  - Improved efficiency (staff halved, etc.)
  - Major restructuring of banking system:
    - savings banks largely disappeared,
    - one big commercial bank was merged to another
    - remaining comm. bank merged with a Swedish bank (Nordbanken)

  - Nowadays 60 percent of banks owned by foreigners

=> Biggest part of the crisis was in Savings Banks

- Sweden
  - Crisis erupted in autumn 1991 with Första Sparbanken; government gave a loan and FS merged with other savings banks
  - Nordbanken (3rd largest comm. bank) was 71% govt owned and had to be recapitalized
  - Many banks made heavy credit losses
  - In autumn 1992 blanket creditor guarantee by government
  - Crisis resolution agency set up, public support with strict criteria in risk reduction and efficiency

- Sweden (continued)
  - Some banks did not need public support

⇒ In the end nearly all support went into two banks, Gotabanken and Nordbanken.

⇒ Nordbanken became a pan-Nordic bank ”Nordea”.

- Norway
  - Crisis erupted in autumn 1988
  - Initially private guarantee funds provided support and bank mergers took place
  - In late 1990 private funds were exhausted, so government guarantee funds set up in early 1991
  - Support had to be converted into solvency support
  - In autumn 1991 capital support needed
  - In Spring 1992 several banks, incl. three biggest commercial banks were nationalized

- Norway (continued):
  - no blanket guarantee by government, but specific announcements about securing depositors and creditors
  - Banks' situation started to improve in 1993
  - One of the nationalized banks was sold in 1995 and two other banks were sold later
  - Government still owns about one third of one bank

=> In the end the Norwegian tax payer made money out of the crisis. Next table shows gross and net fiscal costs.

	Gross cost	Net cost
Finland	9.0 (% of 1997 GDP)	5.3 (% of 1997 GDP)
Norway	2.0 (% of 1997 GDP), 3.4 (present value , % of 2001 GDP)	-0.4 (present value, % of 2001 GDP)
Sweden	3.6 (% of 1997 GDP)	0.2 (% of 1997 GDP)

IV.2 The US savings and loan crisis

- S&Ls (aka thrifts) were cooperative organizations:
  - Saving accounts, home mortgages were initial business activities
  - In 1970s regulators controlled deposit rates; deregulation of thrift industry at the end of 1970s
  - Big expansion into new and risky business areas
    - Consumer and commercial loans, transaction accounts, credit cards
    - Investments in commercial real estate.
- Many failures in early 1980s: hundreds of S&Ls failed during 1980-90s.
- Total cost was about 160 billion USD, with about 124 paid by US government.

- ♦ US government (FSLIC) had to pay deposit insurance and close nearly 300 S&Ls in 1986-1989.
- ♦ Resolution Trust Corporation in 1989-95 to liquidate assets from insolvent S&Ls.
  - – RTC used ”equity partnerships” to achieve better execution of liquidation (a variety of schemes)
  - – Private sector partners acquired partial interest in a pool of assets, controlled the sale of the pool and paid distributions to RTC.
- ♦ RTC was an asset disposition agency, not for restructuring.

V. Some lessons for crisis management

- Nordic crises as example

V.1 Prevention of major crisis

- This is the first priority
  => stability-oriented macro and regulatory policies
- How to diagnose an overheating situation?
  - rapid credit expansion
  - strong increase in leverage
  - big external deficits in open economies
- **Political-economy reasons** can be a major obstacle in crisis prevention.

V.2 Crisis management

- Maintaining confidence in the banking system is critical
  - Bipartisan political support and speedy response are important
  - Political guarantees to banks’ obligations in Finland and Sweden but not in Norway
- The role of central banks: liquidity provision, emergency loans
  - Liquidity support in Norway and Sweden
  - Bank of Finland had to take over a problem bank

- **Restructuring of the banking system**
  - **Crisis resolution agencies** were used all Nordic countries
  - Capital injections to banks
    - treatment of ”old shareholders” was mixed
  - Guidance for restructuring of the banking system
  - Administrative separation from central bank and ministry of finance

- **Asset management companies** (”bad banks”) to deal with non-performing assets
  - Norway: banks had their own bad banks
  - Finland and Sweden had public agencies
  - A private good bank / bad bank scheme used by Finnish cooperative banks

VI Concluding discussion

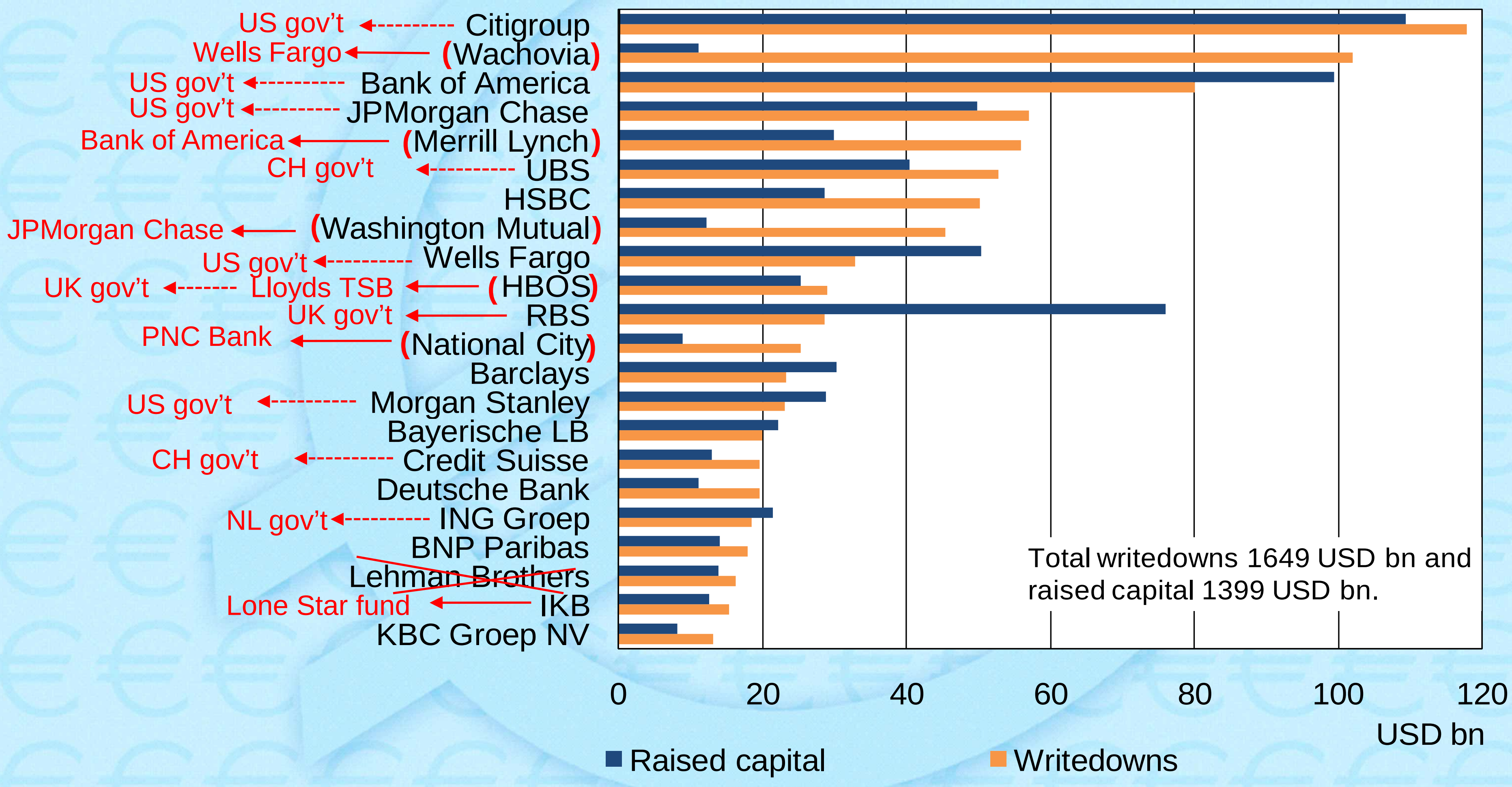
VI.1 The current crisis

- Response to the current crisis has been unprecedented.
- Coordinated macroeconomic response
  - Quick easing of monetary policy by the Federal Reserve, ECB and other central banks
  - Expansionary fiscal policy
- Rebuilding confidence in banking system
  - Loss of confidence was a huge concern in October 2008
  - Increased levels of deposit insurance
  - Announcements of public schemes for recapitalizating banks
  - Unconventional monetary policy: special liquidity provision to markets and/or institutions

- ♦ We are still in the crisis.
  - – Financial markets have improved but are not back to normality.
  - – The recession is the deepest since WW II, though there are difference between countries.
  - – Turnaround of different economies seems to be at hand.
    - Turnaround may be weak and slow.
    - Risks are still significant.
- ♦ Management of toxic assets has been initiated:
  - – More difficult than in earlier crises because of asset complexity.
  - – Asset management companies in some countries.
  - – Geither scheme in the U.S.
- ♦ Restructuring and recapitalization of banking systems are ongoing.

Banks' writedowns and capital raised

(Oct 20, 2009)



Source: Bloomberg.

VI.2. Regulatory reform

- Major reform of financial regulation and supervision is in process.
  - International cooperation as finance trancends national boundaries.
    - G20 coordination: Financial Stability Board
- Reforms in process in the EU and the U.S.

New financial supervisory architecture in Europe

European Systemic Risk Board (ESR)

Members with voting rights:

- Members of the ECB General Council
- Chairpersons of the European Supervisory Authorities
- Member of the European Commission

Members without voting rights:

- High-level national supervisors (1 / country)
- The President of the Economic and Financial Committee

Supervisory information

Risk warnings and recommendations

European System of Financial Supervision (ESFS)

European Banking Authority (EBA)

European Insurance and Occupational Pensions Authority (EIOPA)

European Securities and Markets Authority (ESMA)

National banking supervisors

National insurance supervisors

National securities and markets supervisors

US regulatory reform

- Providing the federal government with the authority and responsibility to oversee <u>all</u> financial firms that pose a threat to financial stability, not just banks and bank holding companies.
- Merging the Office of the Comptroller of the Currency (OCC) and the Office of Thrift Supervision (OTS) into a new National Bank Supervisor.
- Consolidating consumer authorities into one agency, the Consumer Financial Protection Agency (CFPA), which will write rules, oversee compliance, and address violations by non-bank providers, as well as banking institutions.

VI.3 Concluding remarks

- It is much too early to reach strong conclusions about the management of the current crisis.
- Crisis prevention failed, but
  - troubled financial institutions are being treated in different countries, and
  - the internationally coordinated policy response has been encouraging.

- The current crisis is providing a large number of very topical research problems to macroeconomics and finance.
  - Most current macro models do not have a proper financial sector.
  - The efficient market approach is much less pertinent.
- Also new research directed at the foundation of finance and macroeconomics.
  - Insights from behavioral economics may turn out to be important.
  - Behavior at the face of complex environments is clearly a major concern,
    - e.g. inability to valuate complex securities,
    - robust valuation when data is very limited or nonexistent .

- Behavior when it is not possible to prepare in advance against all contingencies.
  - Disagreement between agents about the contingencies.

♦ Forthcoming financial regulation needs, if possible, support from research.

- Models for analyzing systemic risks and implications to regulation
- Evaluation of bank recapitalization schemes

♦ Future directions for the international monetary system

Thank you