GLOBAL FINANCIAL CRISIS OF 2007-09

ANATOMY AND LESSONS FOR ECONOMIC AND REGULATORY POLICY

Seminar Held on August 4, 2009
Pakistan Institute of Development Economics - PIDE

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We'd like to thank Lahore Business School, University of Lahore for providing us with facilities and support for this seminar

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Keywords

"Sometimes some good ideas can even come from Economists"

- Innovation
- Regulation / Deregulation
- Interest Rates, Inf./Def.
- Technology
- Capital
- Competition
- Macro and Mon. Policy
- Mon.Excesses
- Greed / Risk
- Ideology-SR / LR

Genesis of Global Fin. Crisis

- The classic explanation of Fin. Crisis goes back almost 100 years (Taylor 2008, Mundel, 2000)
- What caused it? What prolonged it?
- Why did it worsen so dramatically?
- In economics, no single answer.
- But the history & empirical research give us good clues: therefore, a bit of Eco. History of the 20th century

A History of Global Financial Events & Crisis

- 1896 - Creation of Dow Jones Industrial Index
- Early Fin. Panics of 1907, 1908
- Creation of Fed (1913, 1914)
- Tremendous Fin. activity during 1901-20.
- WW1 Fin. Imbalances
- The Great Depression (1928-1932)
- 1937 mini Depression again with deflation

Cont.

- Relative Stability (1940-1972) except WW2.
- 1970's not real Fin. Crisis but Stagflation
- Turning point of Deregulation 1980.
- The S&L Crisis (1989,1990) - 2500 banks failed
- S. America debt defaults problems 1980's
- Stock Market Crash (1987)
- The rise of "Junk Bond " market (M Miliken) and LBO collapse of 1990
- Y2K over investment in technology.

Cont.

- Long Term Capital Management: Hedge Fund- Bail Out (1997) of Four Billion $.
- Asian Financial Crisis (1998): Currency Manipulation in Asian countries
- Stock Market Internet Bubbles Burst (2000) (↓ 50% - 75%)
- Mini Credit Debacle of 2002 (Enron, MCI)
- Sarbane Oxley Act 2003
- Pakistan 2005
- The Financial Crisis of 2007-2009?

What are Tentative Lessons ?

- L.1: One Lesson learnt from these crises is that Boom and Bust are part of the Business cycle Activity. (Minski, Vernon Smith)

- L.2: "Originate to distribute" Model to credit extension (Ben. Bernanke 2008)

  – The 'model' spreads risk and reduces financing costs, greater access to capital to a <u>wide</u> range of borrowers, while allowing investors greater flexibility in <u>choosing</u> and <u>managing</u> credit exposure.

Lessons Cont.

- L3: A Common Thread of most crises is
  - excessive risk taking
  - increase Fin. Leverage
  - lax regulation

- L4: Personal Bias: Eco. History and history of Eco. Thought is very much alive along with:

  - "My R-square is higher than yours"
  - "Testing Granger Causality"

HISTORY

A Reconstruction of 20th Century: Mundel

- Began with a highly efficient Int. Mon. System that was destroyed in WW1 due to (dollar policy)
- The Century can be divided into **Three parts**.
- **1900-1933**: Story of Int. Gold Std. (I.G.S) operated smoothly to facilitate trade, BOP and capital movements.
- Generally, Inf. and deflation rates were low in this period e.g., range of CPI was 78 to 160 (1914-1933)

Fed-Monetary Policy: 1914-1934

- Monetary Economists have investigated the causes of deflation and depression.

  – Consensus view is *misdirected* M.P. pursued during Great Depression e.g. tight M.P.

  – Discretionary policies of Fed, BOE, Bundes Bank etc. affected the *efficiency* of Gold Std.

Part Two: 1934-1971

- Devaluation of the dollar and U.S took the dollar off gold Std.
- WW2 again suffered monetary imbalances like WW1.
- U.S. Regulatory response (G.S. Act 1933); end of Bretton Wood 1972.
- Firewalls in Fin. Sector
- Role of U.S. in international F. system was asymmetric.
- It allowed U.S. the option of fixing price of gold instead of fixing E.R. of other members.
- Key lesson is the 'tail cannot wag the dog'.

Part Three: 1972-2000

- Collapse into flexible Exch. Rates.
- Massive inflation and stagflation in 1970's;
- Euro $ market expanded from $200B to $2400B (1971-81) to finance the deficits of the West, oil imports.
- Breakdown in the Monetary discipline in G-7
- Plaza Accord, Louvel Accord (1980's)

Role of Money in 1970’s

- Was money a “Veil”? (David Ricardo and Don Patinkin).
  - NO
- 1970’s a decade of Inflation

- 1980’s a decade of Corrections of 1970’s

- 1990’s a decade of F. Stability and end of Cold War.

- Era of Fin. Innovations

Rise of Supply-Side Economics in 1980's.

- Supply Side Economics: Policy Mix (F.P. + M.P.)
- Several Lessons
- L1: Inflation, Budget Deficits., large debts, big Govt. are all detrimental to public welfare

  => Prudent Finance
- Partially adopted in F.P. (on T, but not on G) e.g. U.S. debt 1T to 8T
- L2: Flexible E.R did not provide same discipline as fixed rate.
- L3: Cost of inflation is much higher for the economy

Lessons (Cont.)

- L4: Need for Monetary Stability and Independence of Central Bank's is established

- L5: We can debate the unnecessary evil of regulation and its degree but *Effective Regulation* is necessary.

  – If you cannot discipline yourself, someone else (IMF) will ask you to do so.

- L6: Dysfunctional volatility of exchange rates could sour international relations in times of Fin. crisis.

- L7: There is usually a lag between Theory/policy and regulation What Kane (JMCB) has called: Thesis-Anti thesis and synthesis.

Deregulation

- Deregulation in financial institutions and F. markets started in 1980s and 1990s. DIDMCA,

- 1999 Fin. Modernization Act (Gram Balleli Act)

- Technology Revolution increased productivity- Bill Gates effect 1990s.

  - MSFT earned economic profits of $ 1B a year, while Michael Milken, the inventor of junk bond earned an annual income about the same in 1990's (Productivity Vs Compensation).

- Emerging debate in Corporate Governance in 1990's

Financial Deregulation

- Begin to dismantle Glass-Steagall Act
- Ceilings on interest rates lifted, checking accounts interest allowed, entry of mutual funds
- 1982 – Garn - St Germain Act - S&L diversify
- Commercial banks to underwrite securities, to trade securities, derivatives
- Same ideology of deregulation spread globally, Lifting of capital controls and trade barriers (liberalization) by Emerging Economies and Markets

Cont.

- Trickle down impact
- Ideology of EVA (Economic Value Added) school
- Remember two:
  - Dr. M. Haque(1960's)
  - Dr. M. Haque(1970's,1980's)

- Similarly two Alan Greenspan's

Cont.

- Basle Accord 1989 and RBK std.
- Were <u>not</u> enough, RBK I,
- RBK II (2003)
- RBK III Dead!

Impact of Financial Deregulation

- A rat race of competition among F.I.s
- Under competition from domestic and foreign players, financial institutions are pushed to enter into riskier businesses to meet or enhance shareholders profitability
- S&L, Japan, SE Asia, USA
- Financial engineering and innovations: securitization, securitization
- Banks forgot their basic business activity of Deposits taking and holding of assets on the B.S.
- Leveraging to increase ROE

Deficits

- The 20th century ends with Monetary system in Deficits compared to the first decade of 20^{th}.
- This suggests New Dawn of Capitalism.
- Huge U.S Govt. budget deficits, trade deficits and National Debt.
- Stock Market Bubble Burst in 2000 caused by " Irratioinal Exuberance"

U.S. Debt ($ billion)

	1974	2006	% GDP (2006)
Tot Debt	2,407	44,704	340%
Dom Fin. Debt	258	14,184	107%
Household Debt	680	12,873	97%
Non-Fin Corp Debt	821	9,031	68%
Fed Govt Debt	358	4,885	37%

Current Decade: 2001-10

- Starts with Recession 2001-02
- Geo-political Events
- Strong Recovery 2003-2006
- A.G.'s Interest-Rate conundrum: Why LT rates are low?
- Fed's Easy M.P. (data on FFR)
- Inverted Y.C. in 2007-2008, but no recession
- Y.C. is powerful tool
- Summer of 2007 (August).

Ideology of Deregulation

- Mar 14, 2008 **Josef Ackermann**:

  "I no longer believe in market's self-healing power"

- October 22, 2008, **Greenspan**:

  "What is good for the self interest is good for the public - no conflict between the two"

  "Those of us who have looked to the *self-interest* of lending institutions to protect shareholders' equity, myself included, are in a state of shocked disbelief"

Ideology of Deregulation

- January 23, 2008 **George Soros**:

"Fundamentalists believe that markets tend towards equilibrium and the common interest is best served by allowing participants to pursue their self interest."

" It is an obvious *misconception*, because it was the intervention of the authorities that prevented financial markets from breaking down, not the markets themselves"

BACKDROP OF FINANCIAL CRISIS

- Macro-Imbalances
  - Saving Vs Investment
  - Current Account
  - Wealth and Income
  - Financial Vs real sector
- Regulatory Failures
  - Faith in Free-Markets
  - Financial Innovations and Regulatory lags
  - Flying Under the Radar

Macro Causes of Current Crisis

Structural Imbalances

- Saving Vs Investment imbalance
  - Loose Monetary Policies
- Current Account Imbalance
- Wealth & Income Imbalance
- Financial Sector Imbalance

Keep Pakistan in mind for some of above imbalances

Rising Global Imbalances

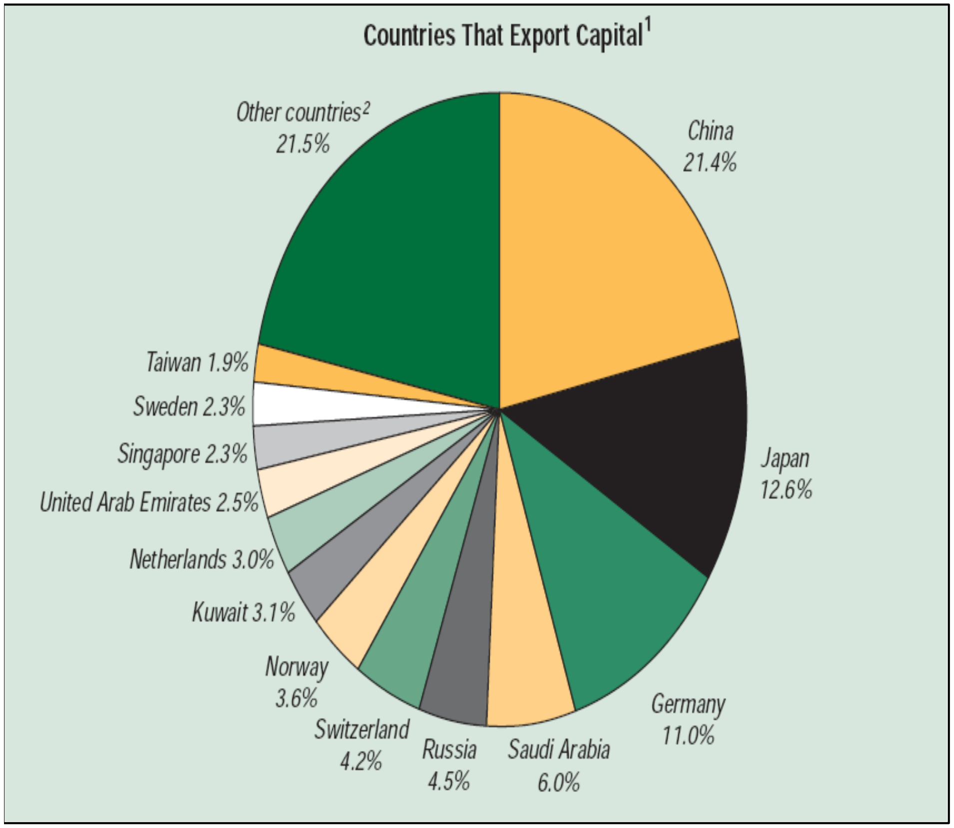
- Global Savings in excess of global investment
  - low long term real interest rates

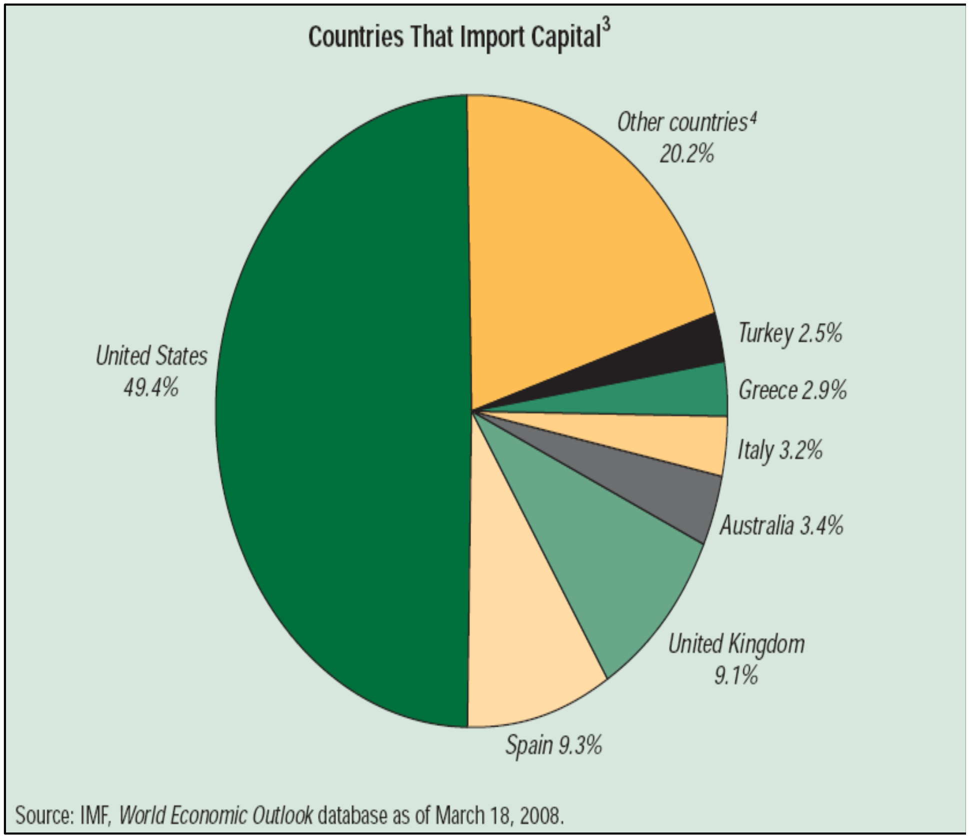
- National savings and investment imbalances
  - Countries with national savings greater than national investment run current account surpluses

  - Countries with national investment greater than national savings run current account deficits

1. Origins – broad view

Macroeconomics – saving imbalances (1)





Current Account Imbalance

- 10 Asian countries hold \$3.4 trillion (59%) of world's foreign reserves; Petro\$ 3.4 trillion
- Foreigners hold \$2.2 trillion (44%) of U.S. \$5 trillion public debt
- 2007 U.S. current acct deficit of \$800bn 90% financed by current acct surpluses of China, Japan, Germany and S Arabia.
- Capital inflows funded the U.S. asset backed securities while volume of U.S. agencies debt declined.
- EMCs saving to finance credit binge of USA

Wealth & Income Imbalance

- In U.S. 1970-2006, share of GDP to labor down from 60% to 56%; share of GDP to capital up from 27% to 43%.
- In China, 1998-2005, share of GDP to labor fell from 53% to 41%
- Bush tax cuts, 400 highest income earners (min of $87m in 2000) paid same % of taxes as proportion of their income as people earning $50k - $75k.
- Avg Wall Street employee $435,084 per year vs $40,368 for private sector - 10x.
- Annual compensation of CEOs of top Wall Street banks >$40mn - 1000x.

Excessive Liquidity

- Excessive Liquidity - due to loose monetary policy to combat recession as in Japan or the U.S.
  - Growth of Hedge funds, Sovereign Wealth Funds, Private Equity, Cash Balance of MNCs
- Capital flow in financial markets to take advantage of high yields resulting in
  - Loose credit discipline
  - Build-up of asset bubbles

Chase for Yields

- Excessive wealth concentration (limited consumption) ⇨ Excess savings ⇨ chase for yields
- Increase risk appetite; decline risk premium
- Invest in financial assets ⇨ asset bubble
- Financial innovations to meet demand for yields
- Deregulation of financial sector - Glass Steagall Act dismantled

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Sectoral Imbalance - Financial vs. Real Sector

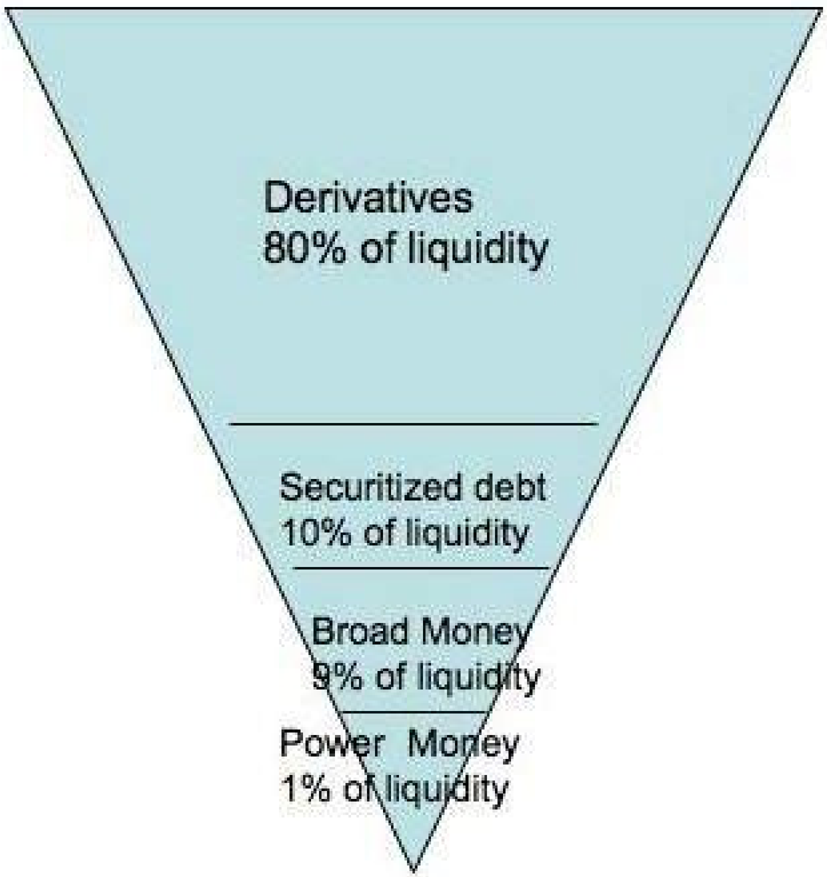
- Global financial assets = world GDP in 1980. Today it is 316%
- Volume of FX trades and **derivatives** is $5 trillion per day ($1,825 trillion per year) vs. total world trade of $12 trillion per year.
- Derivatives and securitized liquidity have overshadowed traditional money supply liquidity.
- New monetarism and inverted liquidity pyramid.

U.S. – Financial vs Manufacturing Sector

% Corporate Profit	**1950**	**2004**
Financial	10%	40%
Manufacturing	50%	< 10%
% GDP Share	1950	2004
Financial	11%	20%
Manufacturing	30%	12%

Finance – Tail Wagging the Dog

- Inverted Liquidity Pyramid - $607 trillion - 13 x world GDP



Similarities to Pakistan

- Twin Imbalances
  - Fiscal Deficits
  - Current Account Deficits
- Monetary Policy?
- Consumer Credit financed growth
- Economic structural development
  - Role of Fin. Sector
  - Underestimation of potential of agriculture and Manufacturing
- Regulatory Weaknesses

From History To Economic Theory To Macro-Economic Policy

- US Context

Taylor Rule

- Taylor rule is a monetary-policy rule that stipulates how much the central bank would or should change the nominal interest rate (ST) in response to divergences of actual inflation rates from target inflation rates and of actual (GDP) from potential GDP. (Taylor 1993). Taylor equation is:

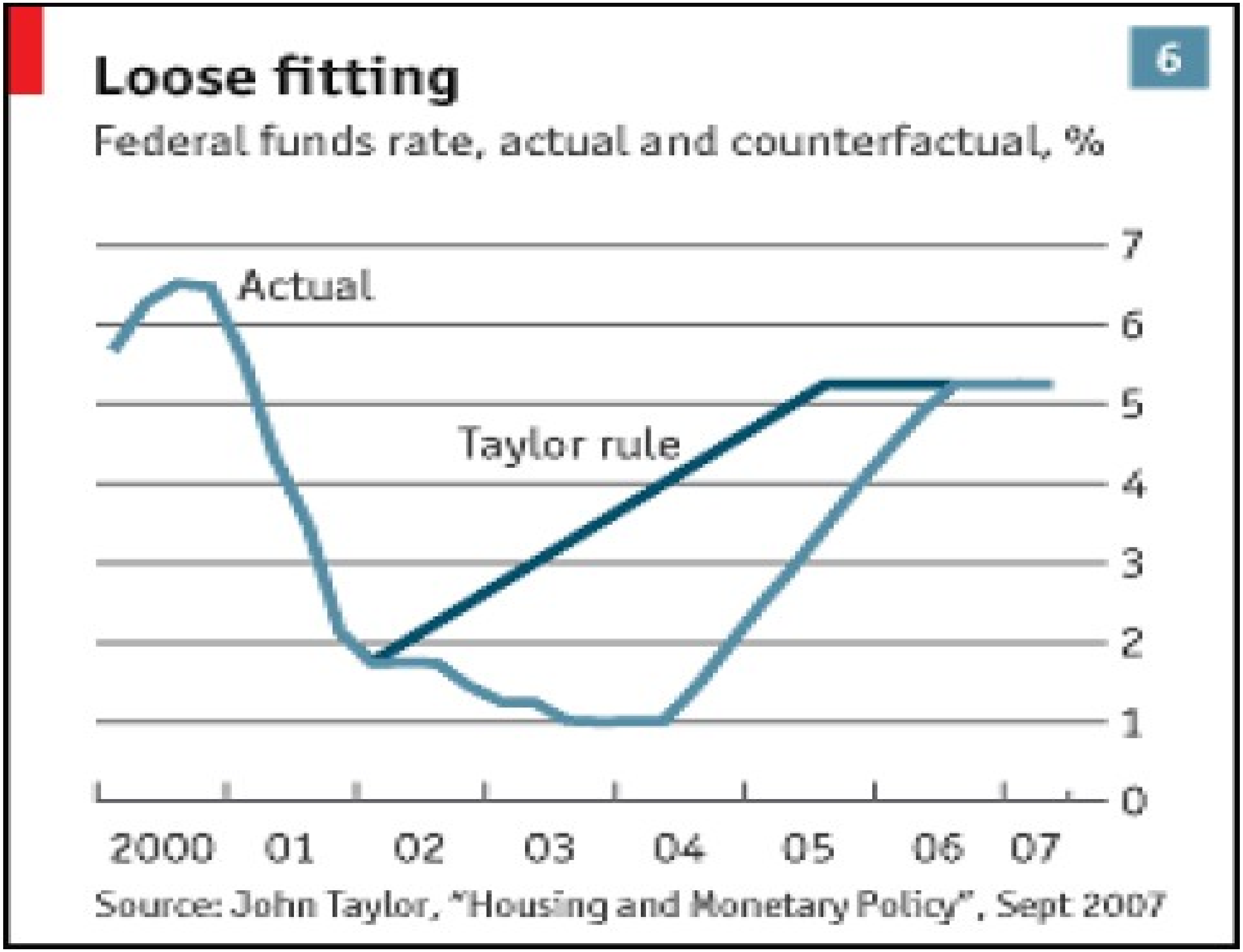
$$i_t = \pi_t + r_t^* + a_\pi(\pi_t - \pi_t^*) + a_y(y_t - \bar{y}_t).$$

- The Fed does not explicitly follow the rule, show that the rule does a fairly accurate job of describing how US Monetary policy actually was conducted earlier under Alan A.G. e.g.

Loose M.P.

- Actual i-rate fell deep below the historical level.
- The imp. point is that line shows what of i-rate would have been if Fed had followed the Taylor Rule that worked during (regular periods) 1980-2000.
- It was purposeful deviation from ‘regular’ interest-rates.

Chart from *The Economist*, Oct. 18, 2007



Cont. Loose M.P.

- Fed was explicit in its language: "low rate for considerable period", and will rise at a "measured pace"

  (Greenspan's famous phrase at 2:15 p.m. FOMC announcement)

- This Fed effective discretionary interventions were to stem deflationary fears.

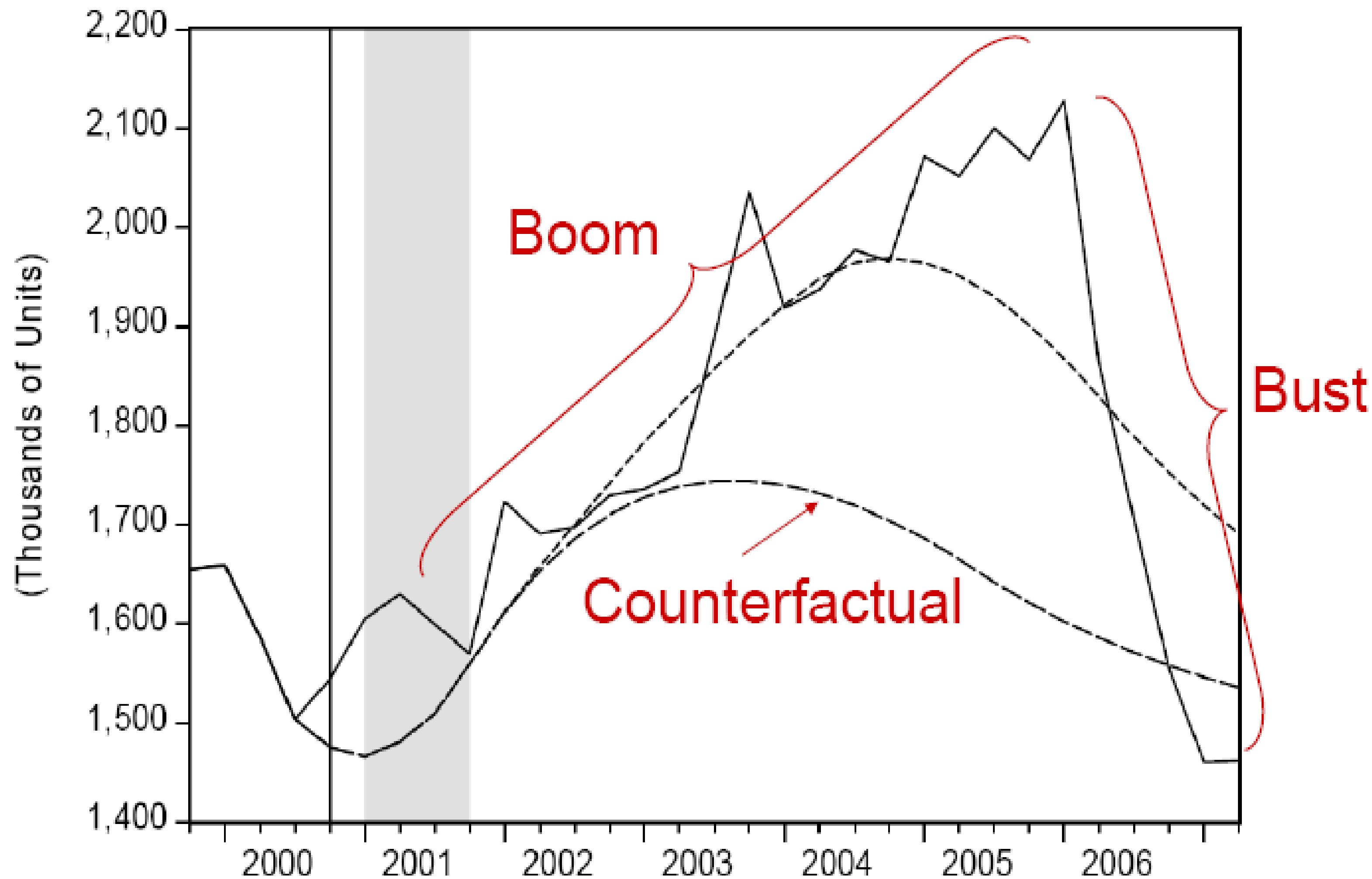
The Counterfactual: No Boom, No Bust

- Taylor provides stat. evidence that this i-rate deviation of earlier graph could bring housing boom.

- He estimated a model to see relationship between i-rate and Housing starts.

- The line with shorter dashes shows model simulations with the actual interest rate.

The Boom-Bust in Housing starts Compared with the Counterfactual

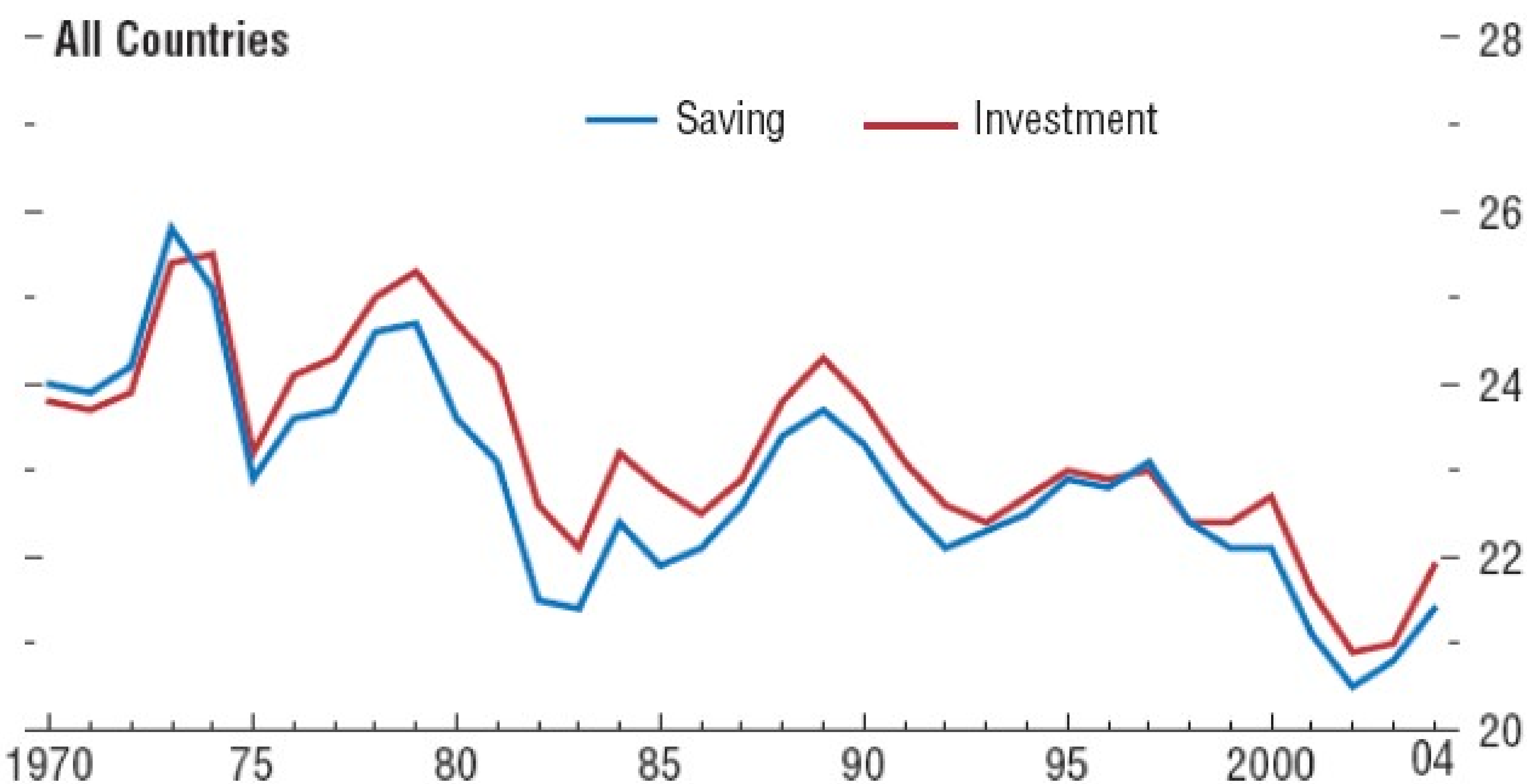


Taylor Criticism of 'Global Saving' Glut Hypothesis.

- Taylor problem with this hyp. is:

  "that there is no evidence for G.S. glut; there seems to be a saving shortage."
- World saving as a fraction of world GDP- was low(2000-2005) compared to 1970, 1980.
- U.S. saving < Inv. as U.S. was running current account deficit
- Positive saving gap globally was offset by Negative extra S. gap in the U.S. No extra impact on world i-rates.

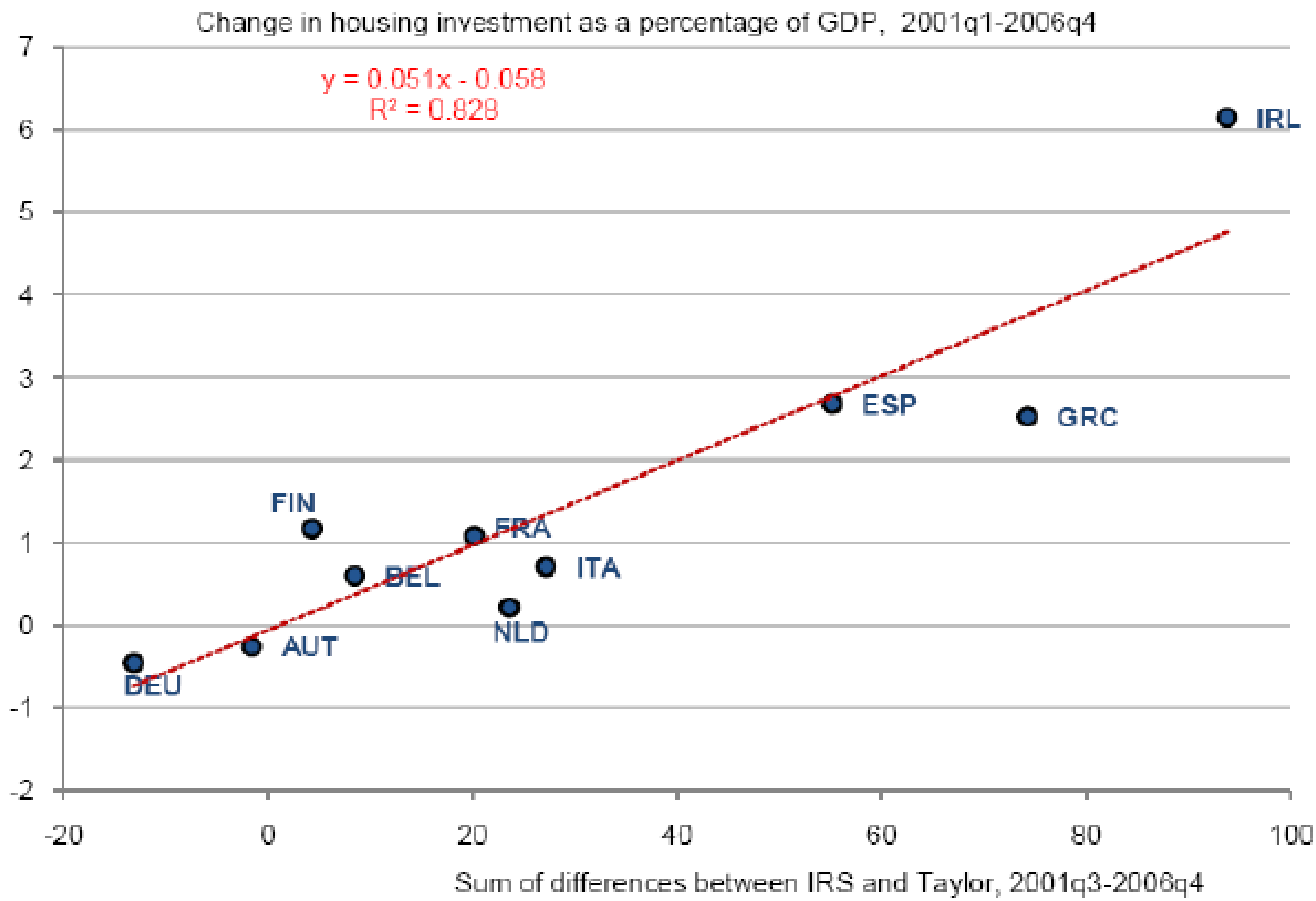
Global Saving and Investment as a Share of World GDP



M.P. in Other Countries: Taylor

- The evidence suggests that i-Rates in major other central banks also deviated from historical regularities.
- Housing booms were largest in countries where dev. From 'Taylor Rule' were largest e.g.
  - Largest dev. in Spain, biggest housing boom in Spain measured by Δ in Housing Investment as a share of GDP.
  - Smallest dev. In Austria, Δ in housing inv. smallest

Housing Investment Versus Deviations From the Taylor Rule in Europe



Taylor: Implications for Int. Fin.System Reforms

Q. Were low rates in other countries influenced by U.S. decisions

OR

Q. Interaction among central banks that caused global ST-rates to be lower than….

(Ph.D. thesis Topic for a longer period)

- Taylor calculated the (residuals) of ECB i-Rates decisions from the policy rule and found ECB also below the Rule i.e. found –VE residuals

Cont.

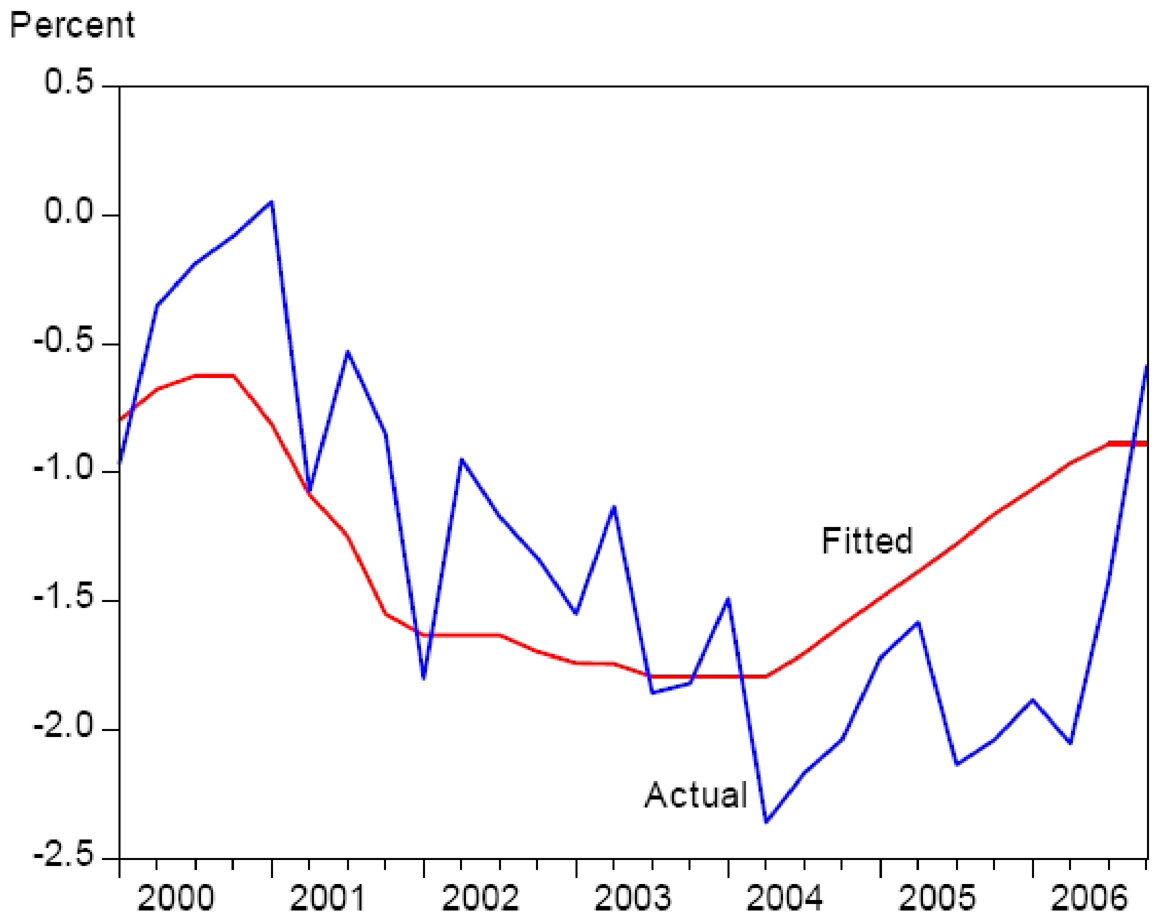
- Were those residuals influenced by Fed-rate decisions ?
- Ran a regression of them (residuals) on the FFR and found Beta coefficient of 0.21, and stat. significant.
- PIDE graduates can test "G-Causality"

  – ECB follows Fed

    and/or

  – Fed follows ECB

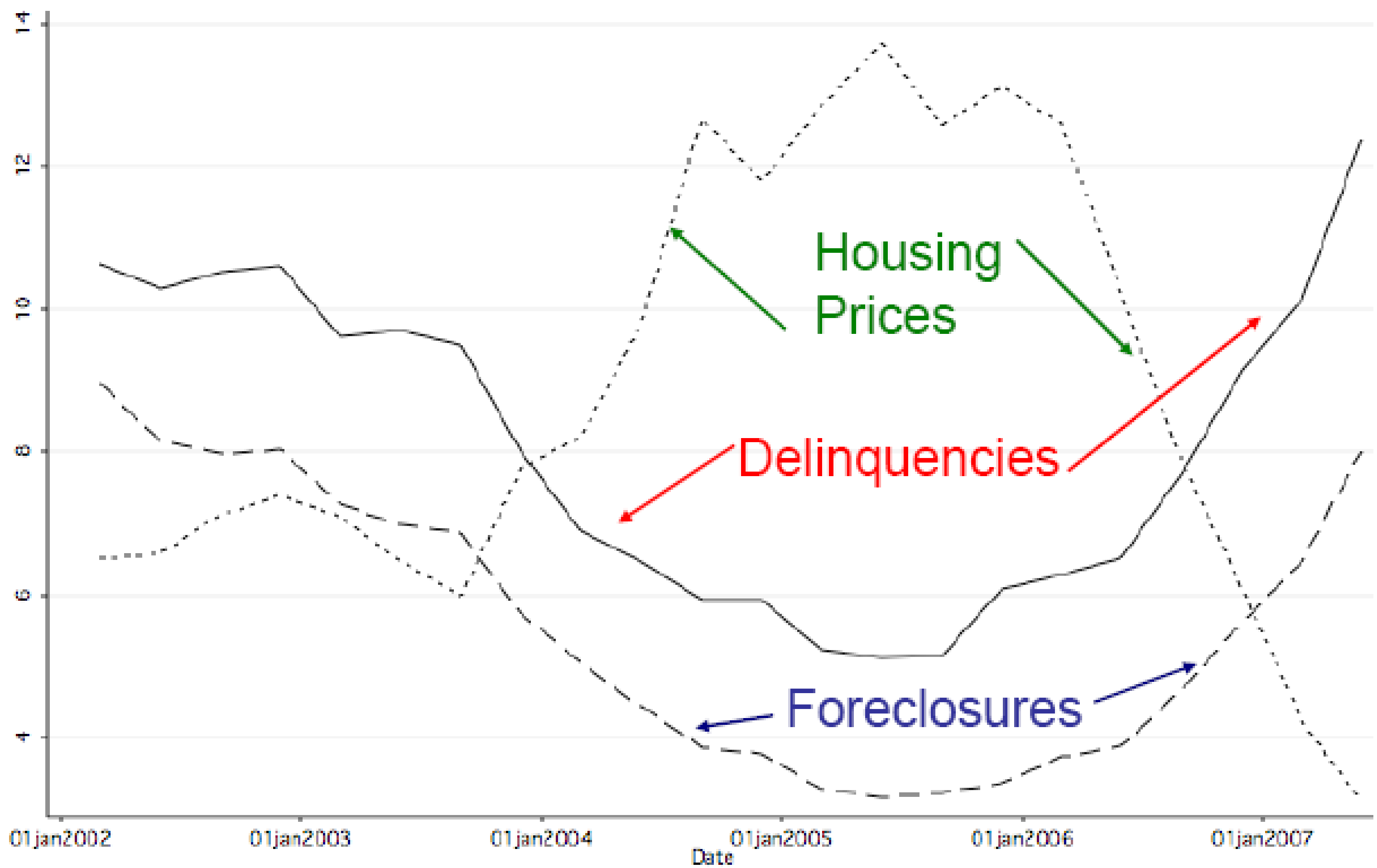
Actual Deviations from a Euro Policy Rule and the Predicted (fitted) Values Based on the Federal Funds Rate



M.P. Interaction with Sub-Prime Mortgage Market

- Note: Relationship between low rates and excessive risk taking lowering credit std's
- Boom and bust in Housing market would be expected.
- It's impact on Fin. markets (Aug 07)
- Falling housing prices lead to delinquencies and foreclosures
- Delinquencies rates/foreclosures rates were negative related to housing price inflation.

Housing Price Inflation and Subprime ARM Delinquencies and Foreclosures



Cont.

- These effects were amplified by Sub-prime M., ARM, excessive risk taking, U.S. govt. programs (home ownership)
  - A noble goal but overdone in retrospect.
- Lesson: How unintended things can happen when policy deviates from the norm.
- Conventional wisdom is good thing

More Complications:

Securitization, ABS, DCO, CDS

Dr. Jamshed Uppal

Sources of current account imbalances

- Fall in Asia investment
- Fall in US (public and private saving)
- Fluctuations in US investment
- Rising oil prices
- High Chinese savings relative to investment

Role of excess savings

- Search for yield
- Low real interest rates encouraging risk taking led to apparent mispricing of risk

The Euphoric Economy

- Self-fulfilling expectations
  - Decline in risk aversion causes increase in investment
    - Investment expansion causes economy to grow faster
  - Asset prices rise
    - speculation on assets profitable
  - Increased willingness to lend increases money supply
    - Money supply endogenous money, not under RBA control
      - Riskier investments enabled, asset speculation rises
- The emergence of “Ponzi” (Bond, Skase…) financiers
  - Cash flow less than debt servicing costs
  - Profit by selling assets on rising market
  - Interest-rate insensitive demand for finance

The Assets Boom and Bust

- Eventually:
  - Rising rates make conservative projects speculative
  - Non-Ponzi investors sell assets to service debts
  - Entry of new sellers floods asset markets
  - Rising trend of asset prices falters or reverses
- Ponzi financiers go bankrupt:
  - Can no longer sell assets for a profit
  - Debt servicing on assets far exceeds cash flows
- Asset prices collapse, increasing debt/equity ratios
- Endogenous expansion of money supply reverses
- Investment evaporates; economic growth slows
- Economy enters a debt-induced recession
  - Back where we started...

Fin Leverage

- U.S., H.H and corporate debt
- Growing Wealth effect (Stock Markets + Home Values)
- Extreme Fin. Leveraging by all (HH, Corp; Fin.Inst. and Govt.)
- Overall levels of ST and LT rates at trend rate, e.g. FFR, 10-30 year USGBY
- Unregulated segments of Fin.System e.g.