

Financial Frictions in Dynamic Economics

Class Notes from Economics 586B

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Lecture 1: Introduction to the course

1.1 General Topics

(a) Implications of financial frictions and limited factor mobility in economies with sectoral and idiosyncratic shocks

1. Motivation: Understanding volatility in financial markets and the real economy. Why does credit fluctuate much more than aggregate income? Why do loans outstanding, GDP and stock market valuation move together? Can small and infrequent shocks have large and persistent consequences like recessions, financial meltdowns or depressions? What is the origin of asset price bubbles and why do they burst? How should policy react to financial shocks?
2. Frictions:
 - Collateral (or asset backed) and reputational (or non-asset backed) borrowing under endogenous debt limits for secured and unsecured loan in economies with complete markets (no equilibrium default) and incomplete markets (default in equilibrium)
 - Secured collateral borrowing (borrow up to the present value of your collateral assets). Default forfeits your collateral which goes to your creditors
 - Unsecured or reputational borrowing (borrow up to the point where you are indifferent between solvency and default). Default destroys reputation and inhibits future borrowing.)
3. Implications of interest:
 - Limits to consumption smoothing in exchange economies and to capital mobility in production economies
 - Business cycles in economies without aggregate or economy-wide shocks; amplification, persistence and other dynamic properties of detrended GDP in economies with sectoral shocks.
 - Development and growth (poverty traps and large growth fluctuations in emerging economies)

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- Inequality in the distribution of wealth and income
- Monetary policy as lending of last resort, provision of income insurance and equilibrium selection.

(b) Property rights and economic growth

1. Motivation: why does capital often flow from poor to rich countries? [Lucas, 1990]
Why do some nations fail to protect private investment against theft and corruption? [Acemoglu and Robinson]
2. Endogenizing economic institutions
 - Extraction and appropriation as economic activities in a two-sector growth model
 - Individual choices and social choices
 - Occupations and deterrence, kleptocracy, productivity and growth

12 Contents of the Class

1. The logic of debt limits: Both unsecured and secured borrowing restrict loans below the borrower's present value of future income.

Debt limits restrict arbitrage

- Resources do not necessarily flow to the consumer or firms who value them the most
- Limits on capital mobility
- Misallocation of resources and of productive inputs like capital and labor

2. Debt limits in dynamic general equilibrium (DGE)

- need for DGE
 - simplicity
 - unified framework for all of macroeconomics
- need for frictions
 - poor match of DGE economies without frictions (eg. the RBC model) with data from business cycle dynamics, international development patterns, and asset returns

3. RBC vs. the data

Representative household in standard RBC model:

Payoff:

$$V_0 = E_0 \sum_{t=0}^{\infty} \beta^t [\log c_t + \gamma \log(1 - L_t)] \quad 0 < \beta < 1, \gamma > 0$$

Resource constraint:

$$c_t + K_{t+1} = (1 - \delta)K_t + F(K_t, L_t)$$

Technology:

$$F(K_t, L_t) = z_t K_t^\alpha L_t^{(1-\alpha)}$$

where $\log(z_t) = \rho \log(z_{t-1}) + \epsilon_t$
 $\rho \in (0, 1), \epsilon \sim i.i.d., 0 < \alpha < 1$

Equilibrium: Dynamic properties of output are exactly those of the Solow residual. Output is as persistent as z_t , shocks do not build up or amplify. Convergence to steady state following a shock is rapid.

13 Initial reading list

(a) Limited enforcement

- Lilien, JPE 1982 (first empirical attempt to connect business cycles with sectoral shocks)
- Bulow and Rogoff, AER 1989 (reputational borrowing with weak default penalties)
- Hsieh and Klenow, QJE 2009 (first international evidence on misallocation)
- Azariadis and Kaas, working paper 2009 (growth implications of capital misallocation)
- Kehoe and Levine, RES 1993 (reputational borrowing with strong default penalties) (*)
- Kocherlakota, RES 1996 (elaboration of Kehoe and Levine)
- Kiyotaki and Moore, JPE 1997 (collateral amplifies TFP shocks) (*)
- Kiyotaki, JER 1998 (business cycle implications of collateral borrowing)
- Alvarez and Jermann, Econometrica 2000 (endogenous debt limits for reputational borrowing with strong default penalties) (*)
- Hellwig and Lorenzoni, econometrica 2009 (extends Bulow-Rogoff model)

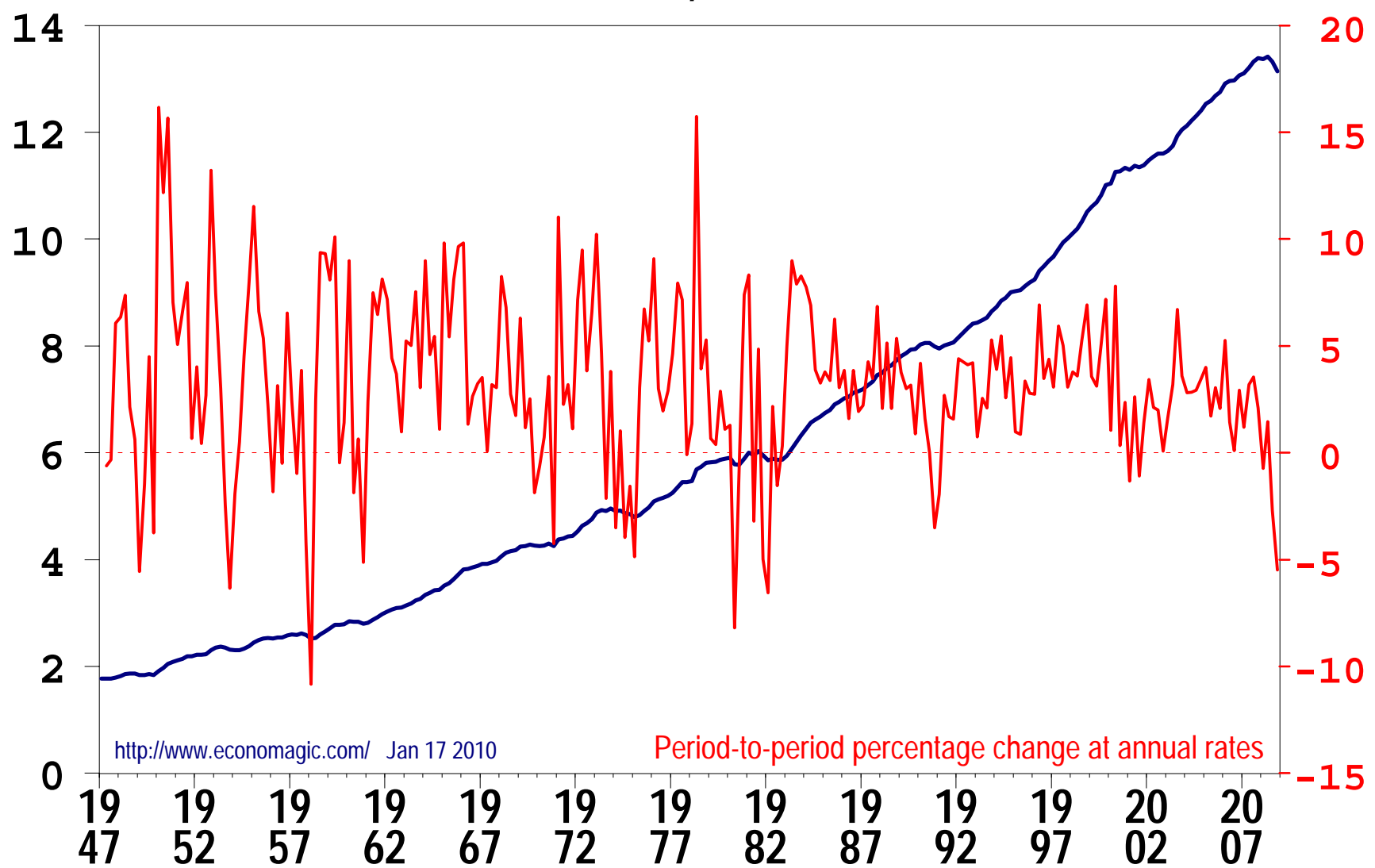
(b) Lending of Last Resort

- Diamond and Dybvig, J. Polit. Econ., 1983 (bank runs)
- Champ, Smith and Williamson, Can. J. Econ., 1996 (curing financial panics)
- Goodhart, International Finance, 1996 (lending of last resort)
- Martin, Econ. Theory, 2006 (deposit insurance v.s. liquidity provision)
- Ennis and Keister, J. Monet. Econ., 2010
- Rochet and Vives, J. Europ. Econ. Assoc., 2004

(C) Property Rights

- Rose and Ackerman, J. Public Econ., 1975
- Acemoglu, Johnson and Robinson, Handbook of Econ. Growth, 2005 (broad survey of institutions)
- Dal Bó and Dal Bó, J. Europ. Econ. Assoc., 2011 (social conflict)

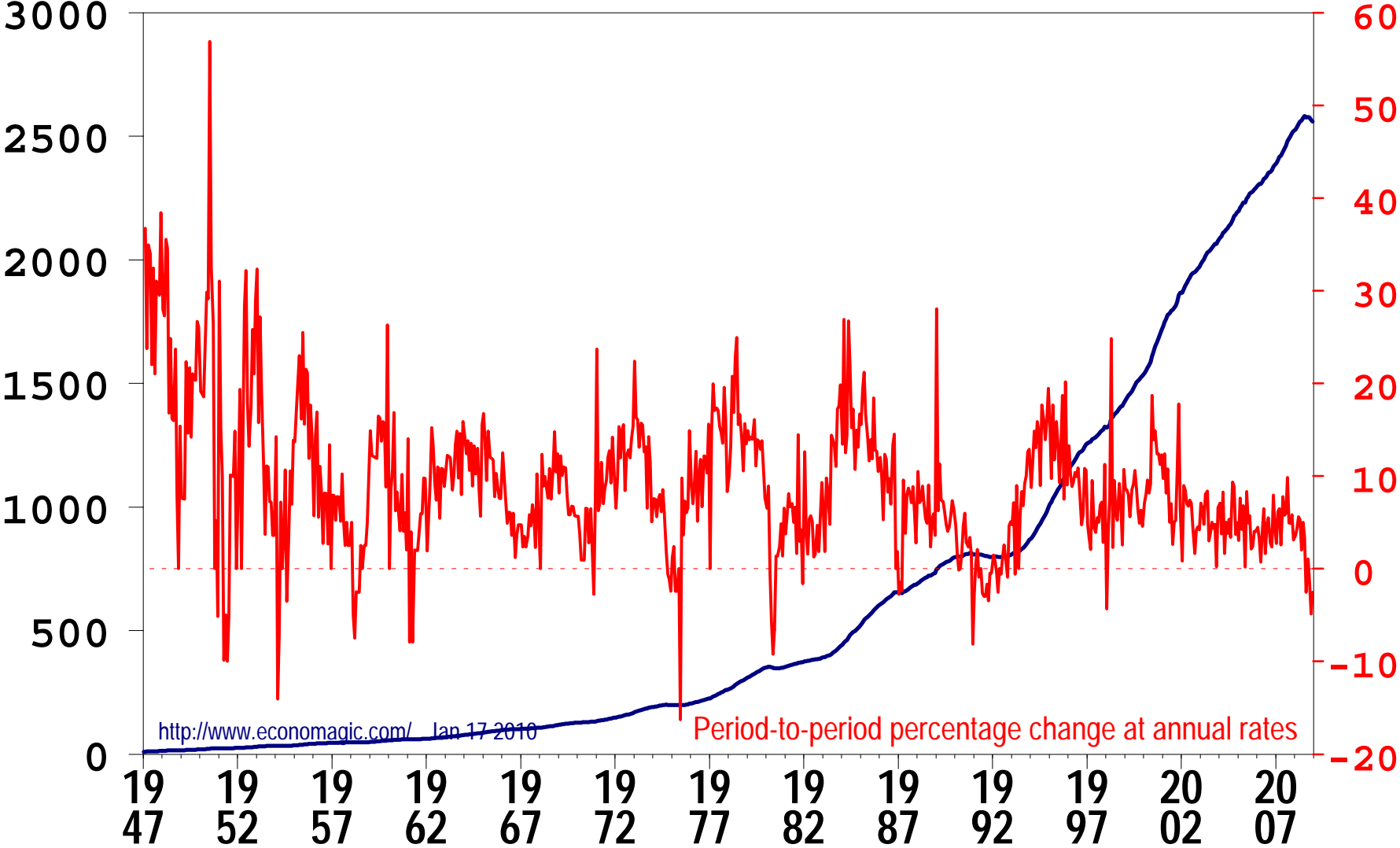
Real Gross Domestic Product, 3 Decimal: Billions of Chained 2005 Dollars



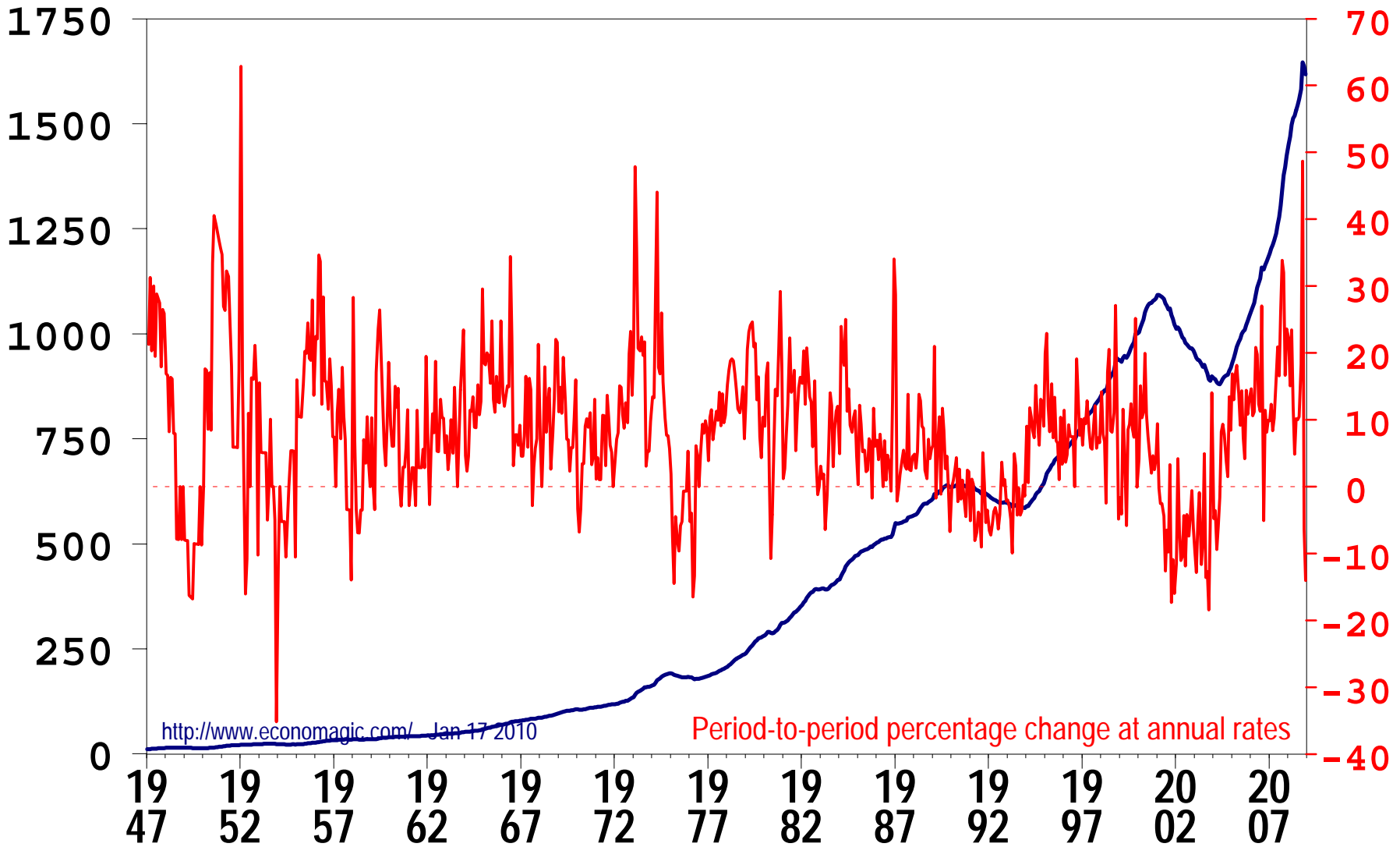
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Period-to-period percentage change at annual rates

Total Consumer Credit Outstanding: Billions of Dollars: SA



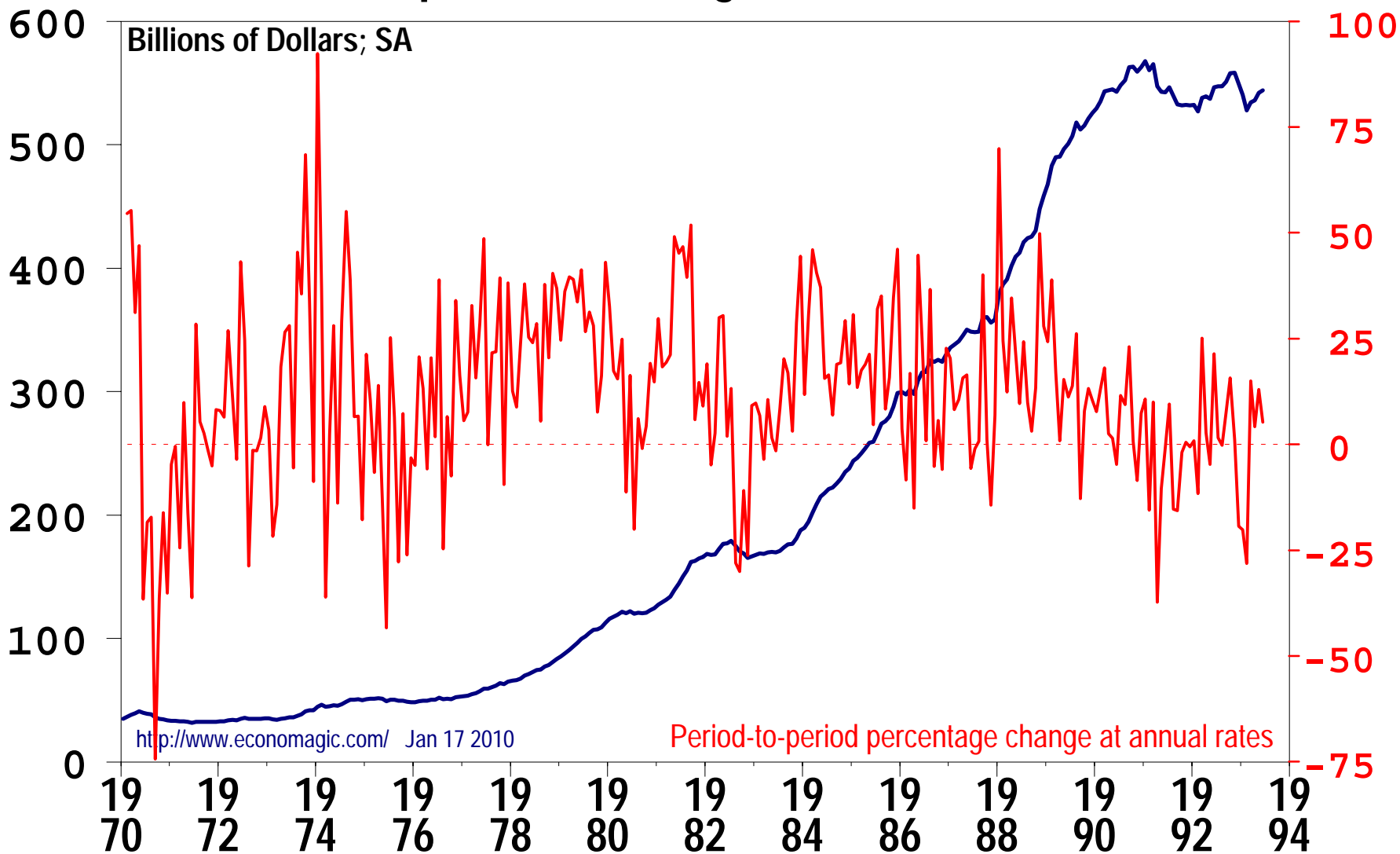
Commercial and Industrial Loans at All Commercial Banks: Billions of



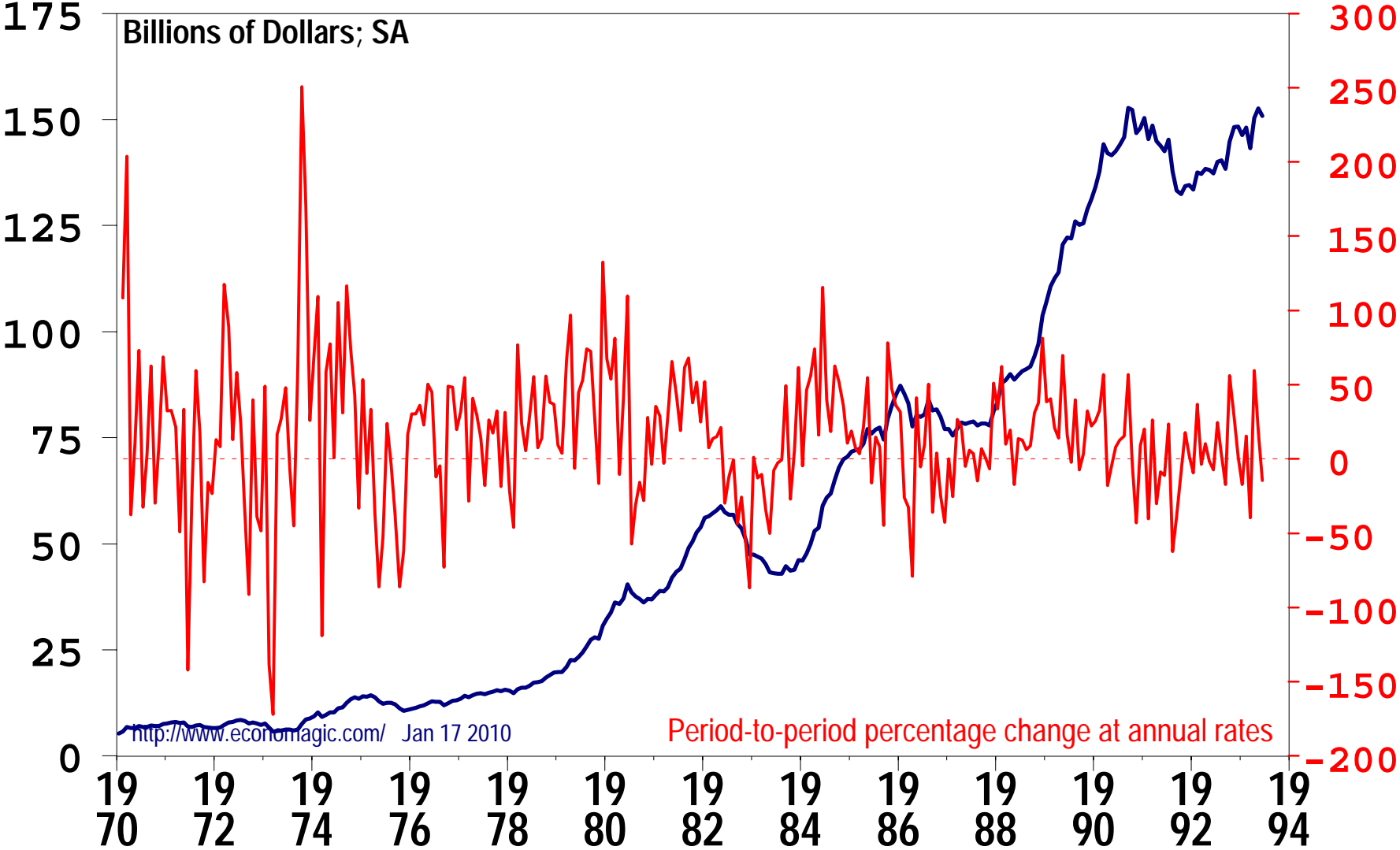
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Period-to-period percentage change at annual rates

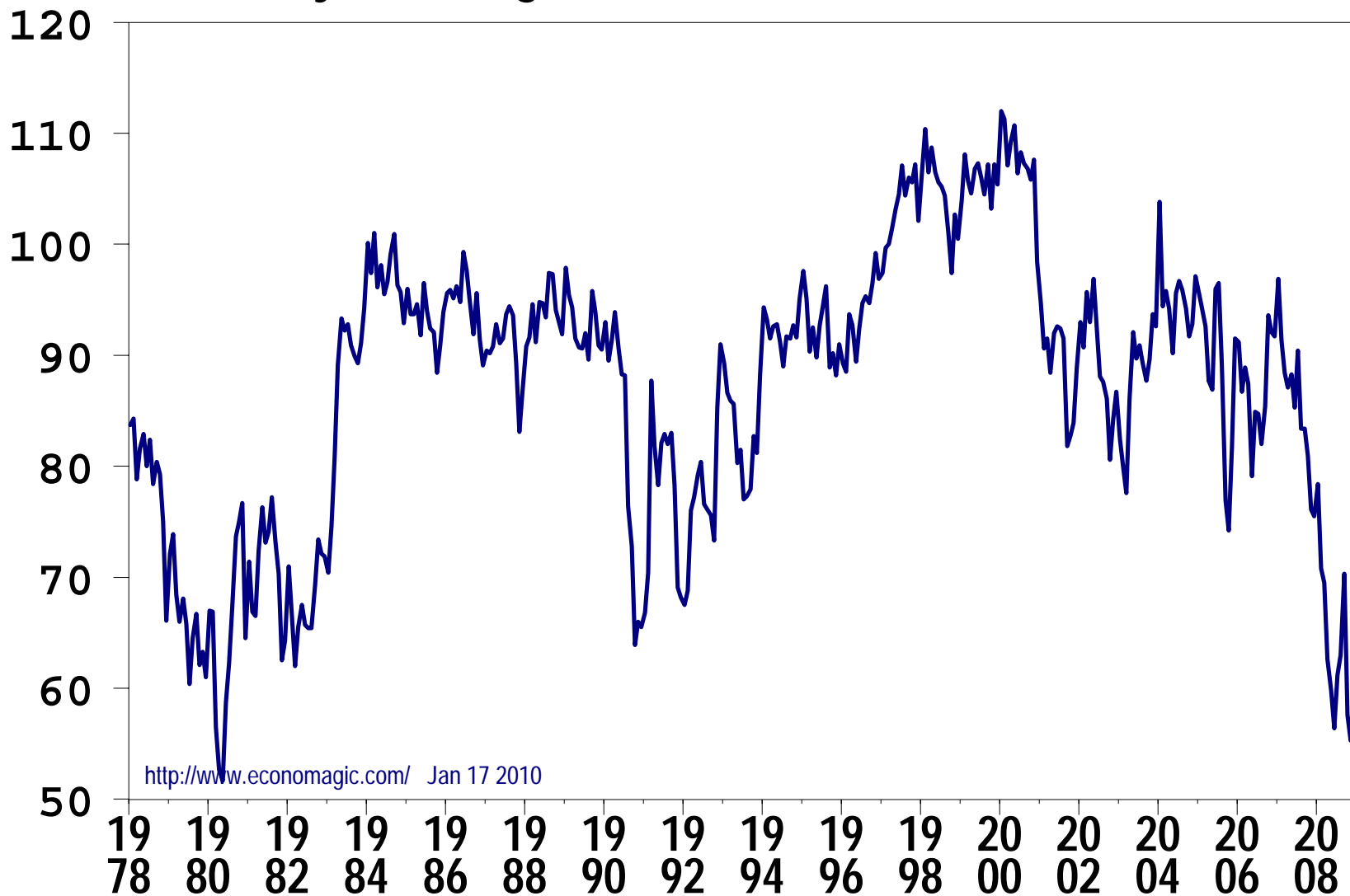
Commercial Paper Outstanding - All Issuers



Commercial Paper Outstanding of Nonfinancial Companies



University of Michigan: Consumer Sentiment: Index 1st Quarter 1966=



Commercial Outstanding: 1995-2009

