

MONETARY EQUILIBRIUM AND NOMINAL INCOME TARGETING

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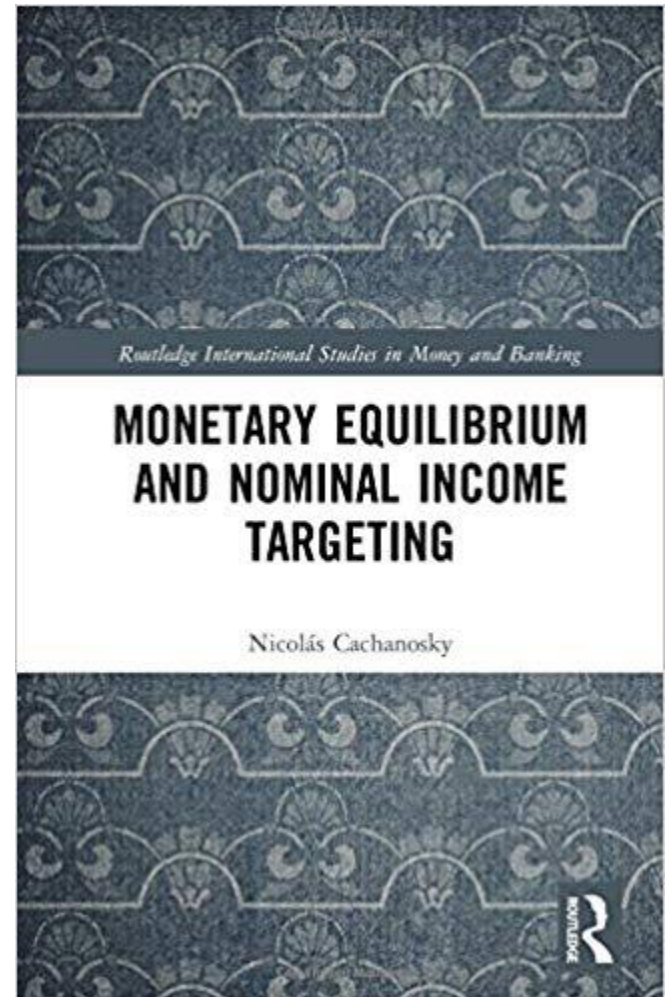
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OUTLINE

- Why the book?
- Book structure
- Lessons from free banking cases
- NGDP Targeting rule
- The 2008 Crisis
- Monetary reforms



WHY THE BOOK?



WHY THE BOOK?

- 2008 Crisis
 - Price level stability suffered a major empirical disconfirmation (again)
 - Renewed interest in nominal income targeting
 - First book on the subject
 - Put together a more comprehensive presentation on nominal income targeting
 - How does it fit with the rest of the literature

WHY THE BOOK?

- Table of contents
 1. Free banking and monetary equilibrium
 2. Nominal income targeting and the productivity norm
 3. Nominal income targeting and monetary rules
 4. Nominal income targeting and monetary disequilibrium
 5. Nominal income targeting as market outcome versus policy outcome
 6. The 2008 financial crisis
 7. Monetary reforms towards nominal income targeting

LESSONS FROM FREE BANKING CASES

LESSONS FROM FREE BANKING CASES

- A free market in money and banking is **endogenously** stable
 - Equilibrium: Nominal income stable per capita
- Some arguments against free banking
 - U.S. “free banking” period
 - Great Depression in the U.S. vs Canada
 - Diamond-Dybvig Model

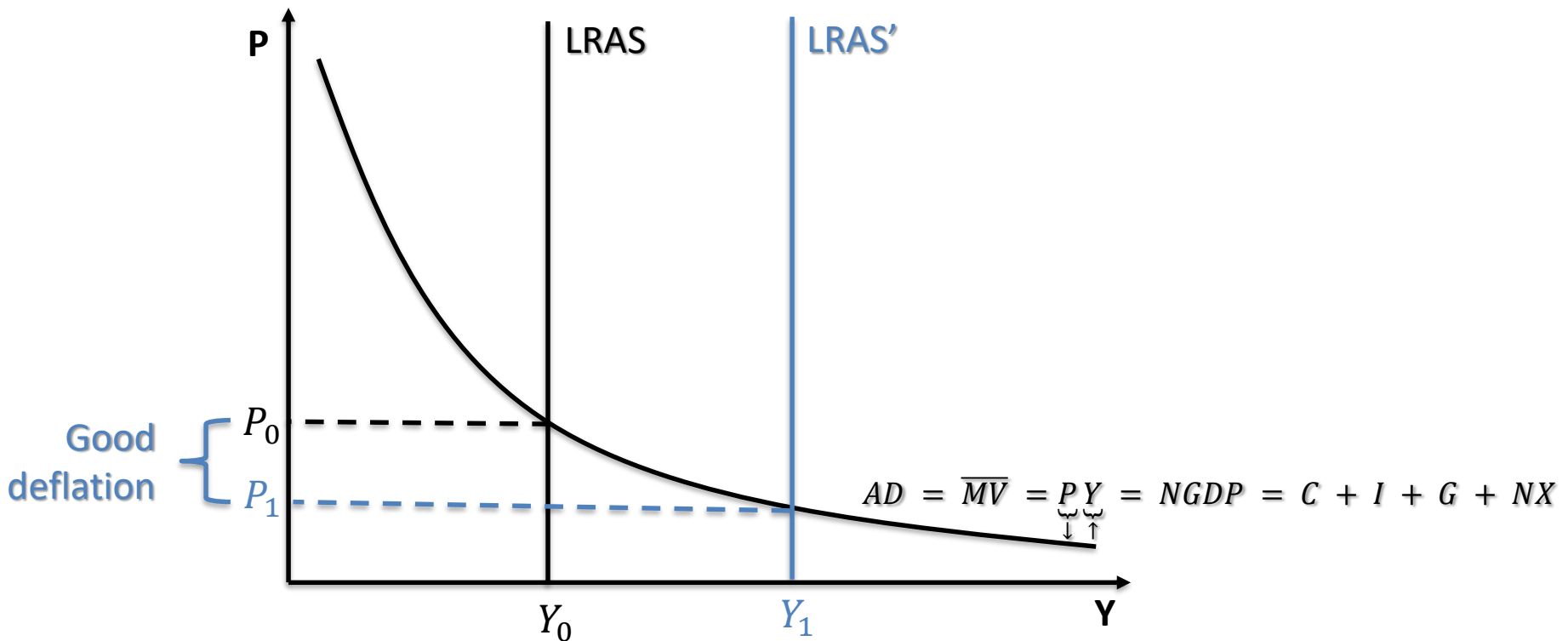
NGDP TARGETING RULE

NGDP TARGETING RULE

- $\overline{MV} = \underbrace{P}_{\downarrow} \underbrace{Y}_{\uparrow}$: Productivity Norm
 - $Y = A \cdot F(K; eL)$
- $\underbrace{M}_{\uparrow} \underbrace{V}_{\downarrow} = \overline{PY}$: Monetary rule

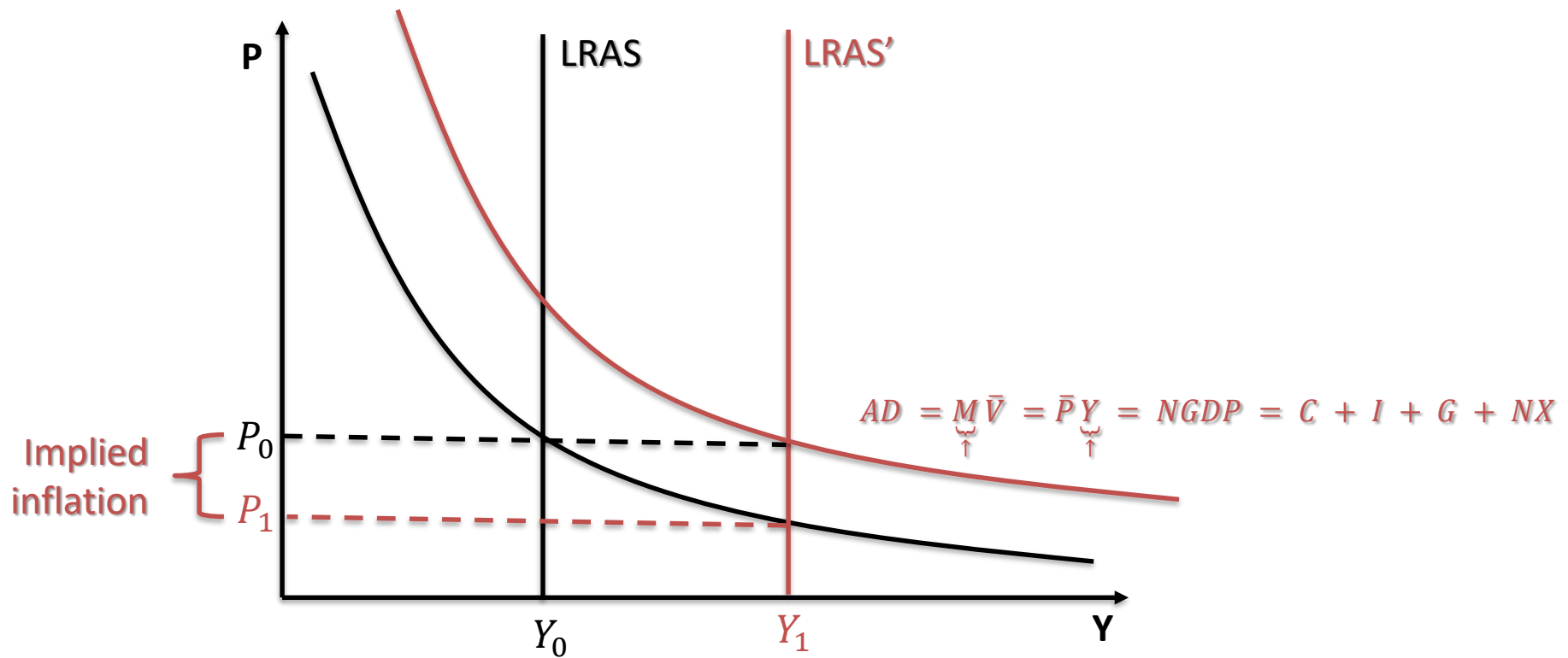
NGDP TARGETING RULE

- Productivity shock with NGDP Targeting



NGDP TARGETING RULE

- Productivity shock with price level stability



NGDP TARGETING RULE

- Where is the excess of money supply going?
 - To offset a fall in the price level
 - Increase of prices not captured in price level indices (CPI, GDP deflator, etc.)
 - Stock prices (Great Depression)
 - Housing prices (Great Recession)
 - Imports (trade deficit)
- The main difference of a nominal income targeting rule is not what to do if AD falls, but what to do if there is a AS shock

THE 2008 CRISIS

THE 2008 CRISIS

- What happened? Short story
 - Before the crash
 - During and after the crash

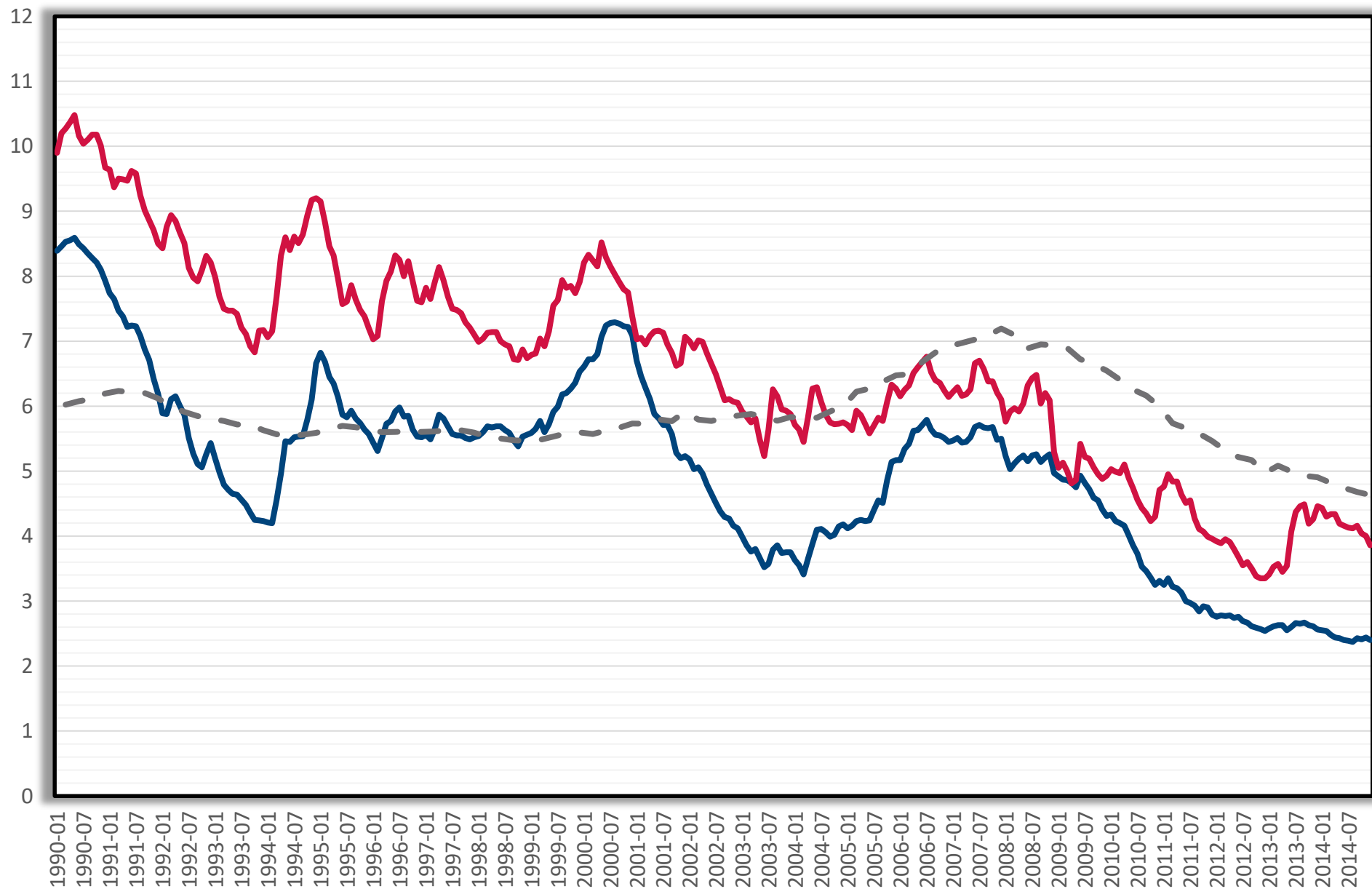
THE 2008 CRISIS

- 2001: Dot-com bubble and 9/11
 - Federal Reserve lowers interest rates
 - Regulatory framework channels credit expansion towards the housing market
 - 1993: DHUD starts legal actions against banks
 - 1996: Regulators are allowed to penalize banks with low CRA ratings
 - 2000: DHUD requires larger allocation of mortgages to high-risk clients

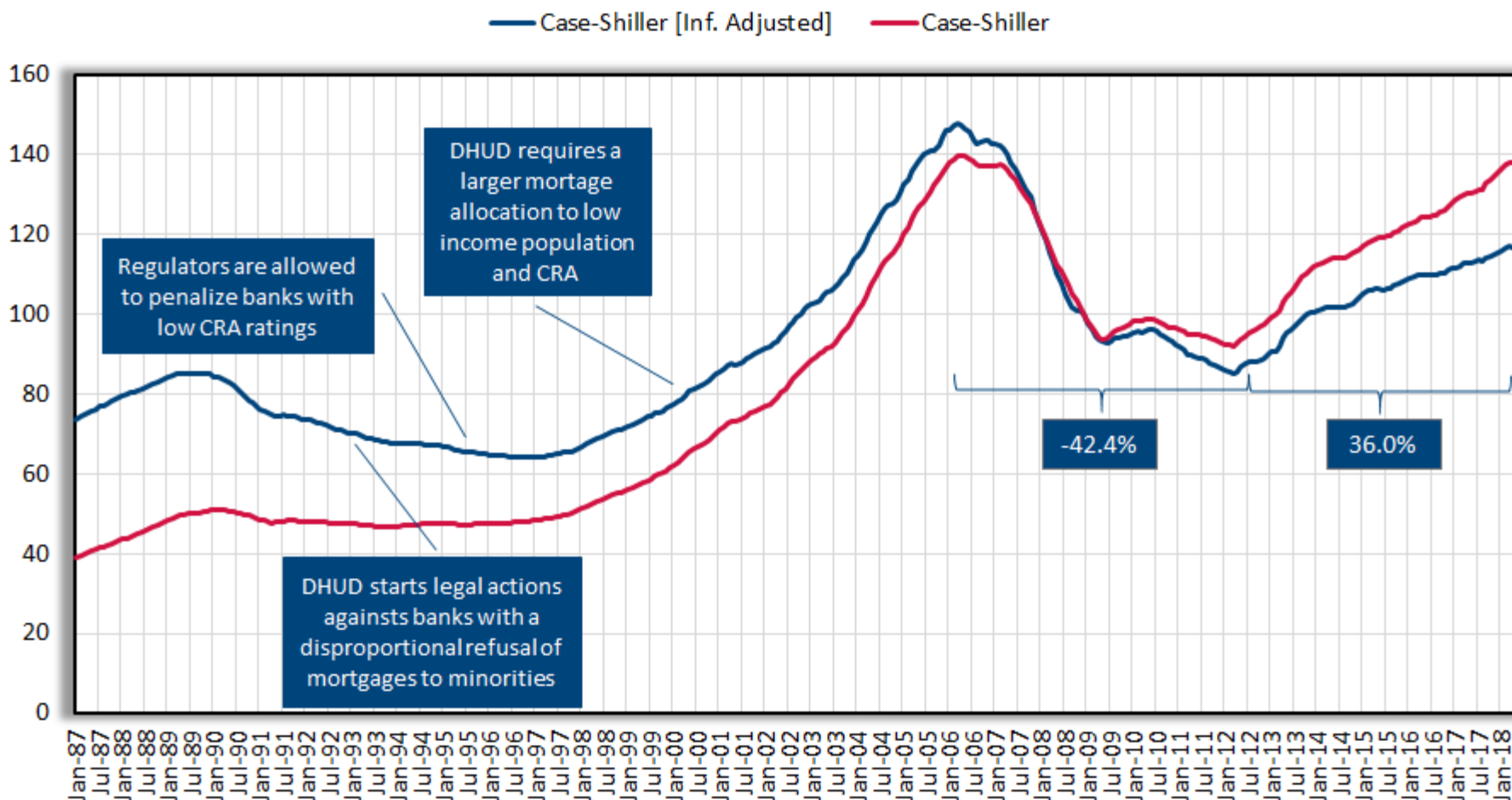
THE 2008 CRISIS

- Mortgage rates
 - Fixed rate
 - ARM
 - Affected by the Federal funds rate
 - New mortgages were issued with ARM rates
 - Existing fixed rate mortgages were transformed into ARM mortgages
- Implicit bailout through Fannie Mac and Freddie Mae

— 1-year ARM — 30-years fixed rate — mortgage (% of disposable income)



CASE-SHILLER 10-CITY COMPOSITE HOUSE PRICE INDEX



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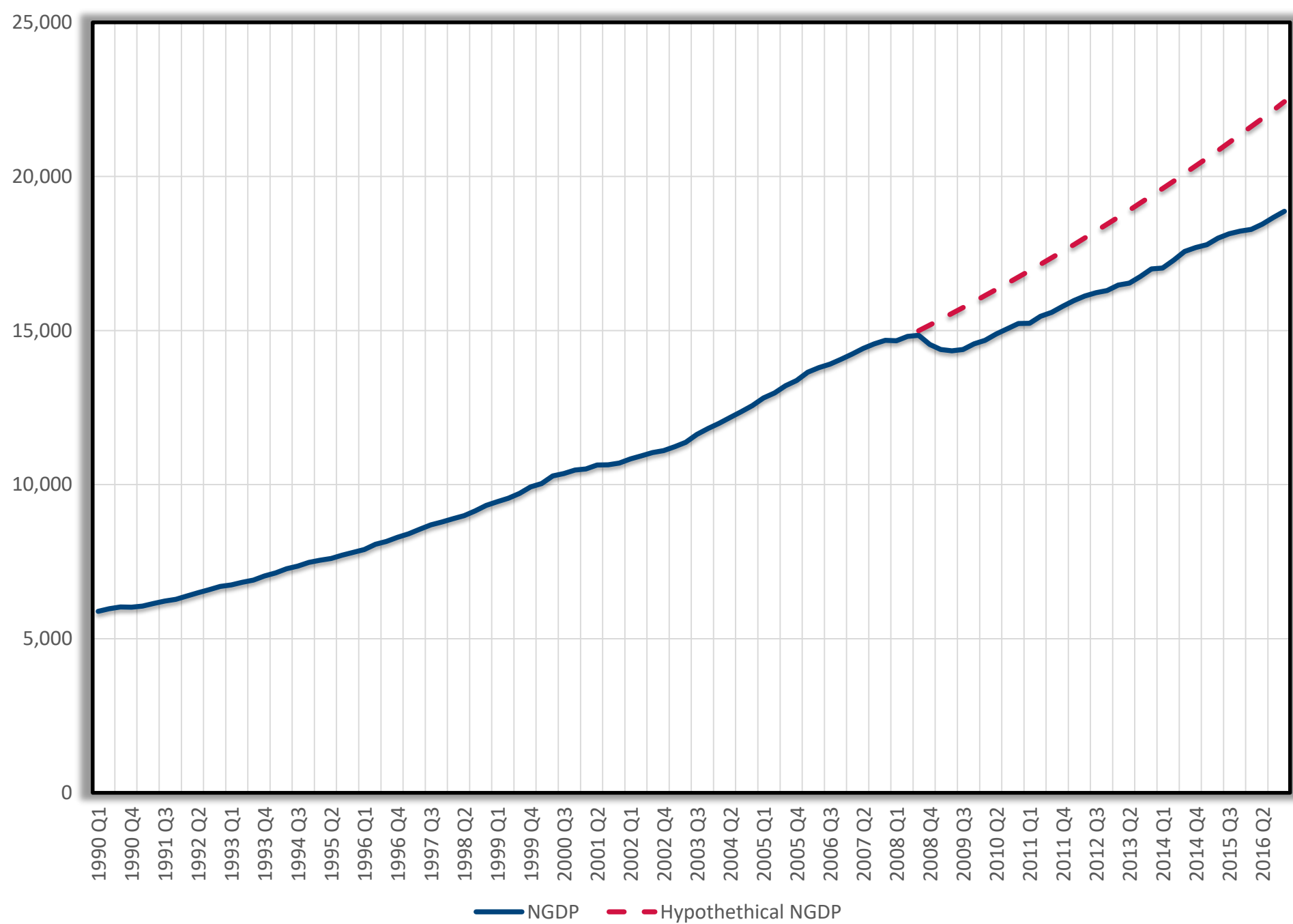
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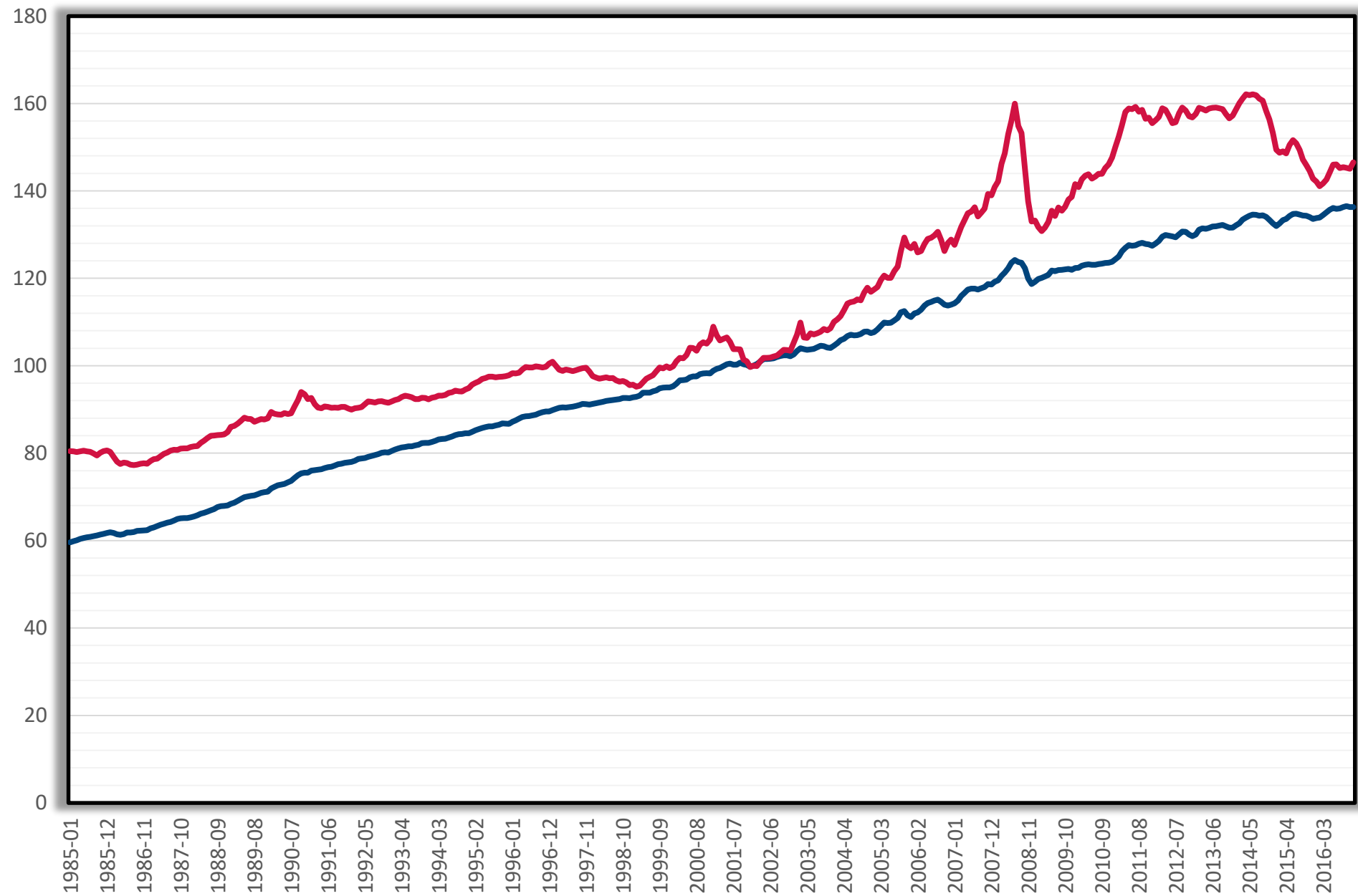
Source: S&P Dow Jones Indices LLC, S&P/Case-Shiller 10-City Composite Home Price Index [SPCS10RSA], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/SPCS10RSA>. In 31-Dec-08 dollars.



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— CPI — PPI

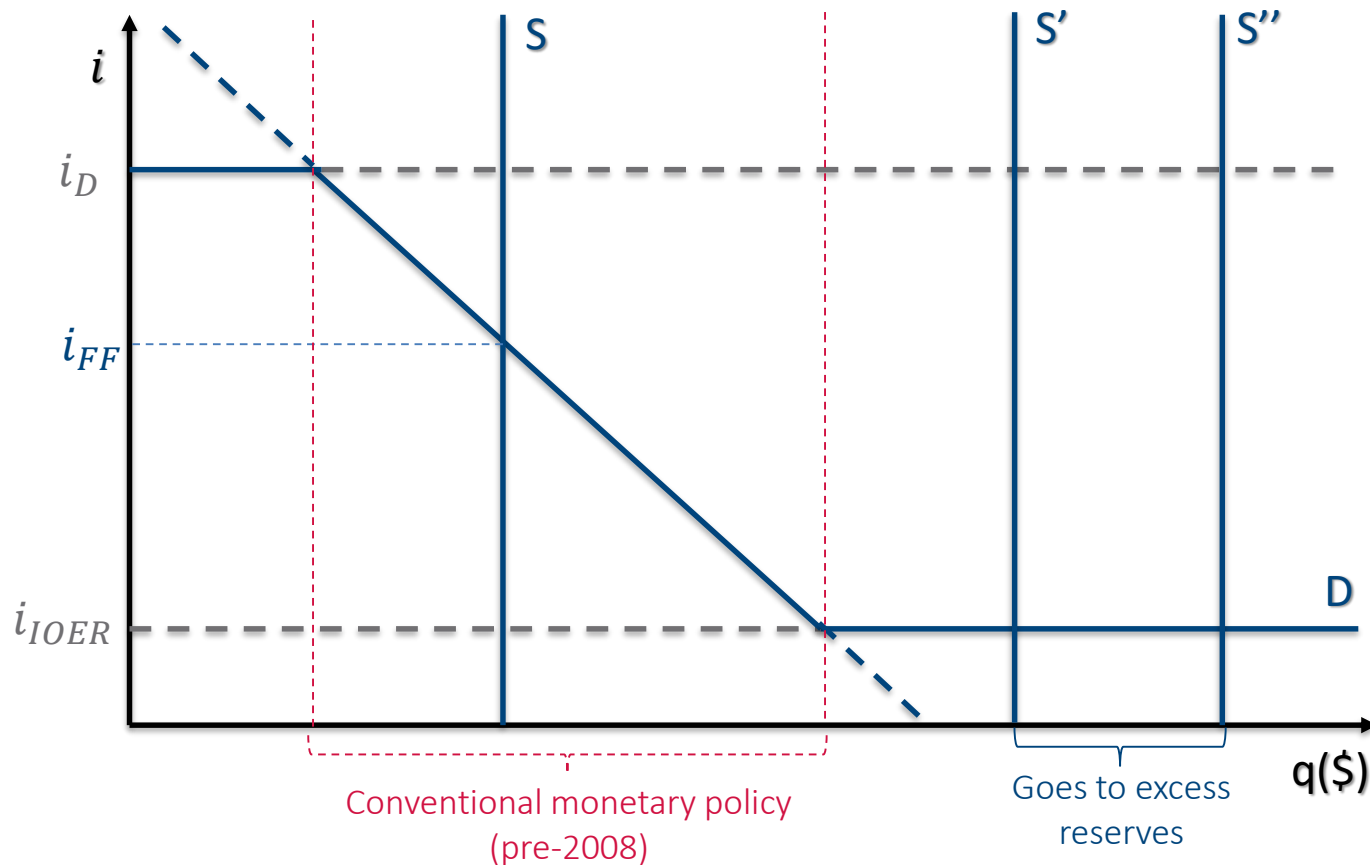


THE 2008 CRISIS

- Bailouts
 - Too big too fail doctrine (TBTF)
 - Keep chain of payments from collapsing
- Change in monetary policy framework
 - Bailout (QEs) where so large that monetary policy “fall out” of the downward slope zone of the federal funds market
 - Start paying interest on excess reserves (IOER)

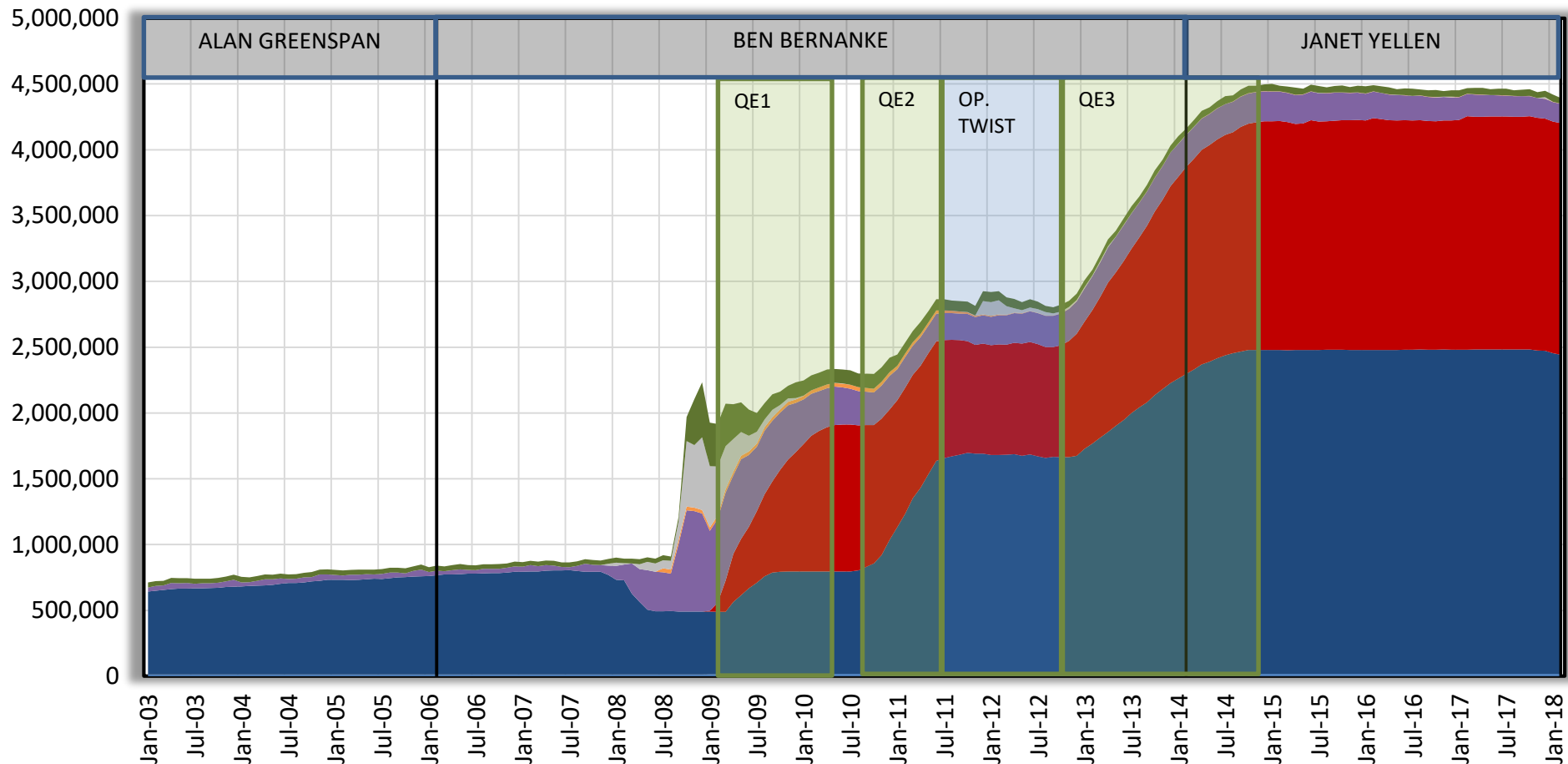
THE 2008 CRISIS

- The corridor system



FEDERAL RESERVE, ASSETS (MILLIONS)

■ Gold + SDR + Coins ■ US Treasury Securities ■ MBS ■ Other securities ■ Maiden Lane LLC ■ Central Banks Swaps ■ Others



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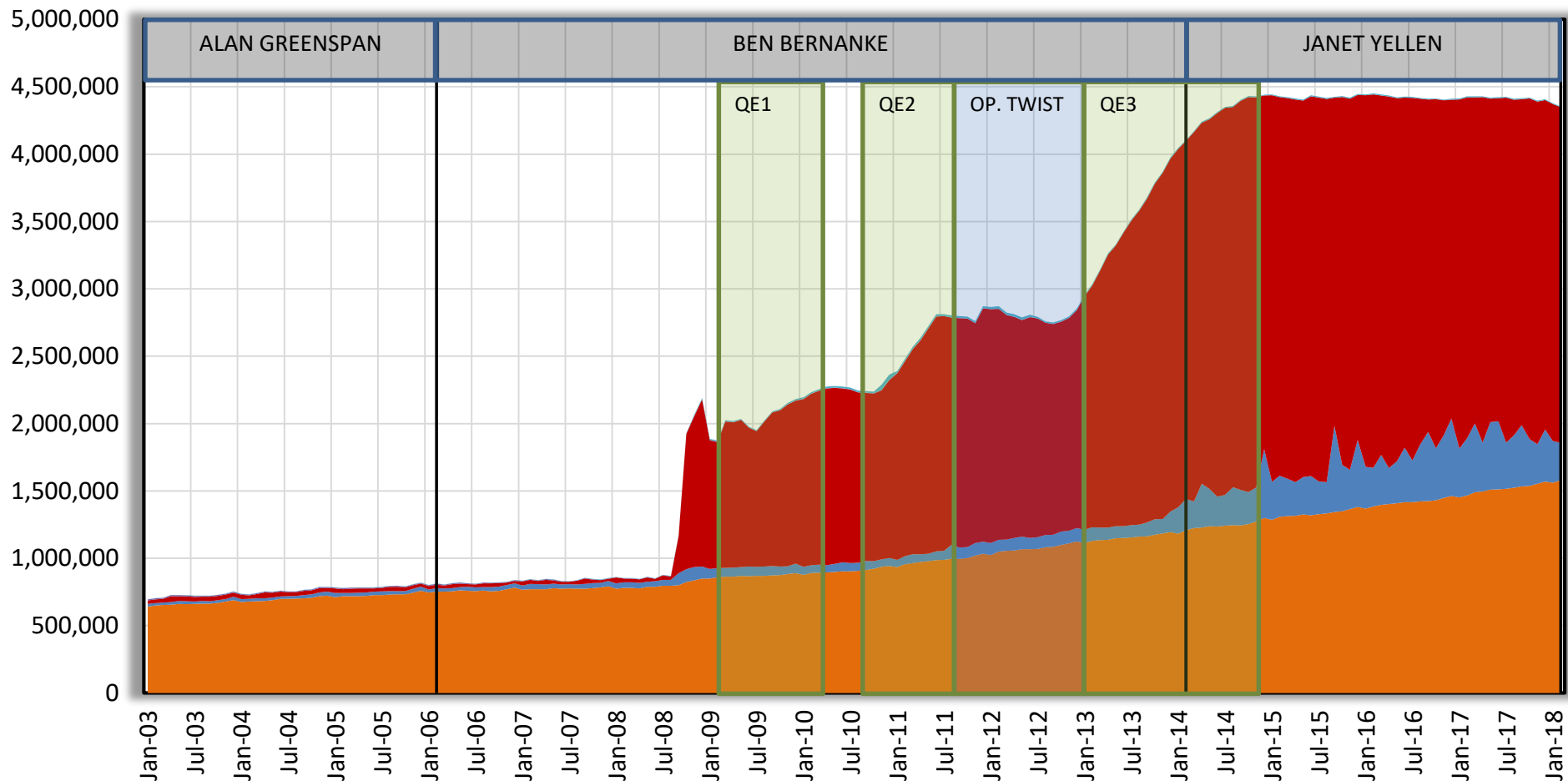
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Source: Board of Governors of the Federal Reserve System. Factors Affecting Reserve Balances (H.4.1)qe1

FEDERAL RESERVE, LIABILITIES (MILLIONS)

■ Federal Reserve Notes
 ■ REPOs
 ■ Deposits
 ■ Deferred availability
 ■ Other and accrued dividends



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MONETARY REFORMS

MONETARY REFORMS

- Free banking with U.S. dollar as base money
- Hayek's currency competition
- NGDP Futures market

- Thank you

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