Financial Systemic Risk and Optimal Monetary Policy

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Questions

1. How do financial crisis (systemic crisis) translate into macro crisis (short-fall in aggregate demand)?
2. What should be done in response?
   - Traditional tools
   - Non-traditional tools
3. Has policy followed what suggested by literature?

Based on

- “The Great Escape?” joint with Andrea Ferrero, Marco Del Negro and Nobu Kiyotaki
- “Debt, Deleveraging and the Liquidity Trap,” joint with Paul Krugman
- “The Zero Bound and Optimal Monetary Policy,” joint with Michael Woodford
- “The inflation output trade-off revisited” joint with Marc Giannoni

What is a systemic crisis?

- Want a theory that does not just explain why certain banks fail.
- Want a theory that explains why factors of production are underutilized.

Bank Run

How does this line translate into…..

…. this line

underutilized factors of production

Two building blocks

1. Shocks in the "financial sector" that trigger the need for large adjustment in the price of consumption/investment today relative to the future.
   - **Certain "groups" of players cut their spending due to the "crisis". Prices need to adjust in a particular way to induce other to make it up**.
2. Keynesian pricing frictions that make the adjustment hard to accomplish at positive interest rates.

A simple example

1. $$\hat{Y}_t = E_t \hat{Y}_{t+1} - \sigma(i_t - E_t \pi_{t+1} - r_t^e)$$

"natural rate of interest"

2. $$\pi_t = \kappa \hat{Y}_t + \beta E_t \pi_{t+1}$$

1. Stories for the drop in r_t^e (ex 1)

- Eggertsson and Krugman (2012)
  - Borrowers and savers

$$Y_t = \chi C_t^{\ b} + (1-\chi) C_t^{\ s} \qquad (1+r_t) D_t \leq \overline{D}_t$$

  - Minsky moment.

$$\overline{D}^{high} \rightarrow \overline{D}^{low}$$

$$\hat{Y}_t = E_t \hat{Y}_{t+1} - \sigma(i_t - E_t \pi_{t+1} - r_t^e(\overline{D}_t\ ))$$

2. Stories for the drop in r_t^e (ex 2)

- Del Negro, Ferrero, Eggertsson and Kiyotaki (2012)
  - Entrepreneur own private asset that are incompletely liquidly (resellability constraint)
  - There is an (exogenous) collapse in resellability (secondary markets "freeze")

  → Investment drops. Consumption needs to make up for it

$$Y_t = I_t + C_t$$

  - Real interest rates needs to drop

2. Need a story of "coordination failure"

- Not really enough to just give a story for why r_t^e drops. $Y_t = A_t K_t^{\alpha} L_t^{1-\alpha}$
- Why, as a response, factors of production not utilized?
- The most natural approach: Firms do not readjust their price → Demand recession.
- Real interest rate can't adjust due to pricing frictions and the zero bound

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What can policy do?

- Traditional tool
  - Policy can drop the nominal interest rate

$$\hat{Y}_t = E_t \hat{Y}_{t+1} - \sigma(i_t - E_t \pi_{t+1} - r_t^e)$$

  - Limited by doing so by the zero bound
  - Can cut more, the higher the inflation
  - Turkey vs US (Turkey cut interest rate more than 1.000 basis points in the crisis!)

What can policy do?

- Policy can act directly against the "drop" in r_t^e

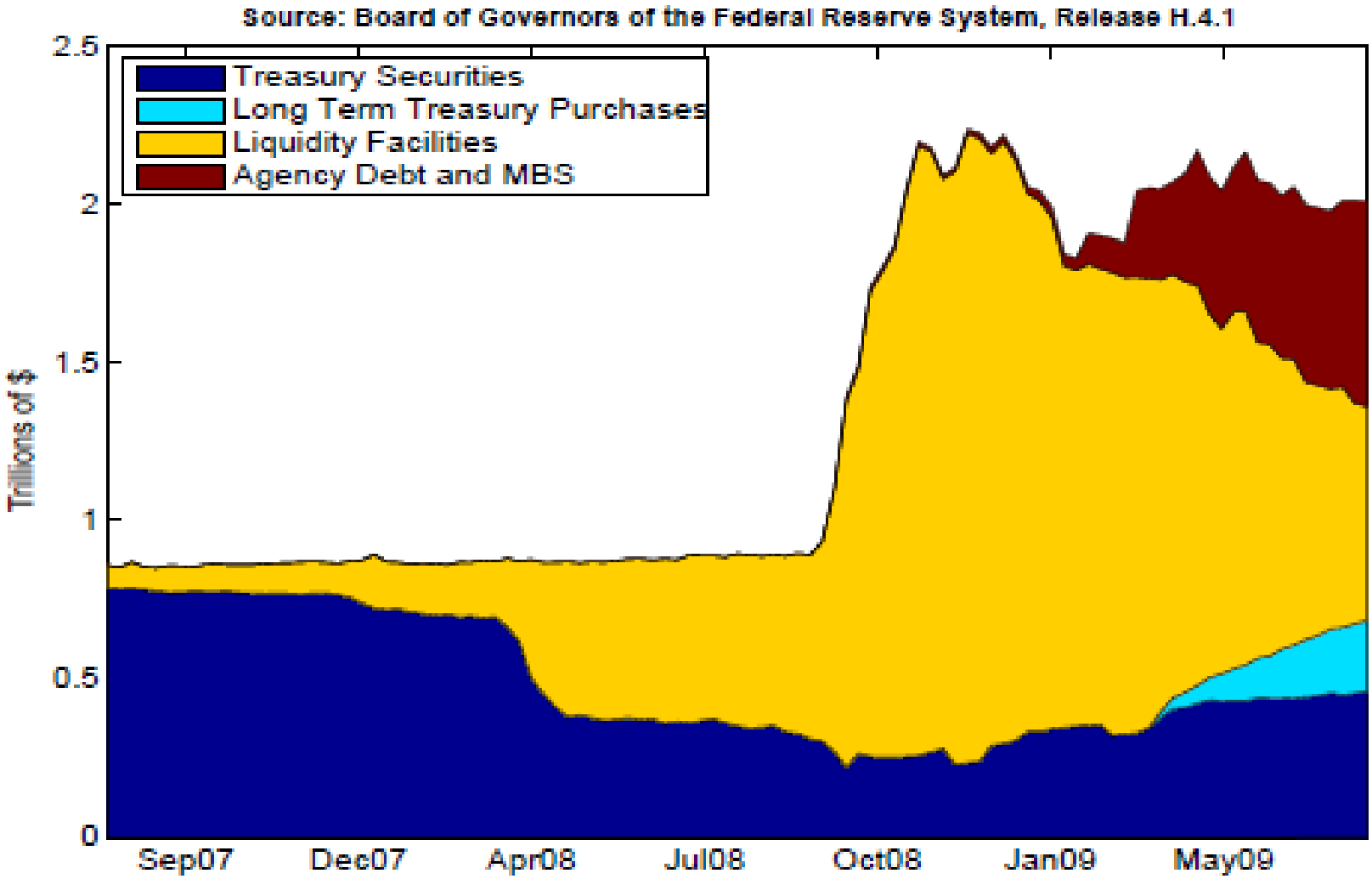
$$\hat{Y}_t = E_t \hat{Y}_{t+1} - \sigma(i_t - E_t \pi_{t+1} - r_t^e)$$

  - Buy stuff that is difficult to sell
    - Great Escape?
      - Del Negro, Ferrero, Eggertsson and Kiyotaki
  - Targeted transfers, government spending, write off debt
    - Debt, Deleveraging and the Liquidity trap
      - Eggertsson and Krugman

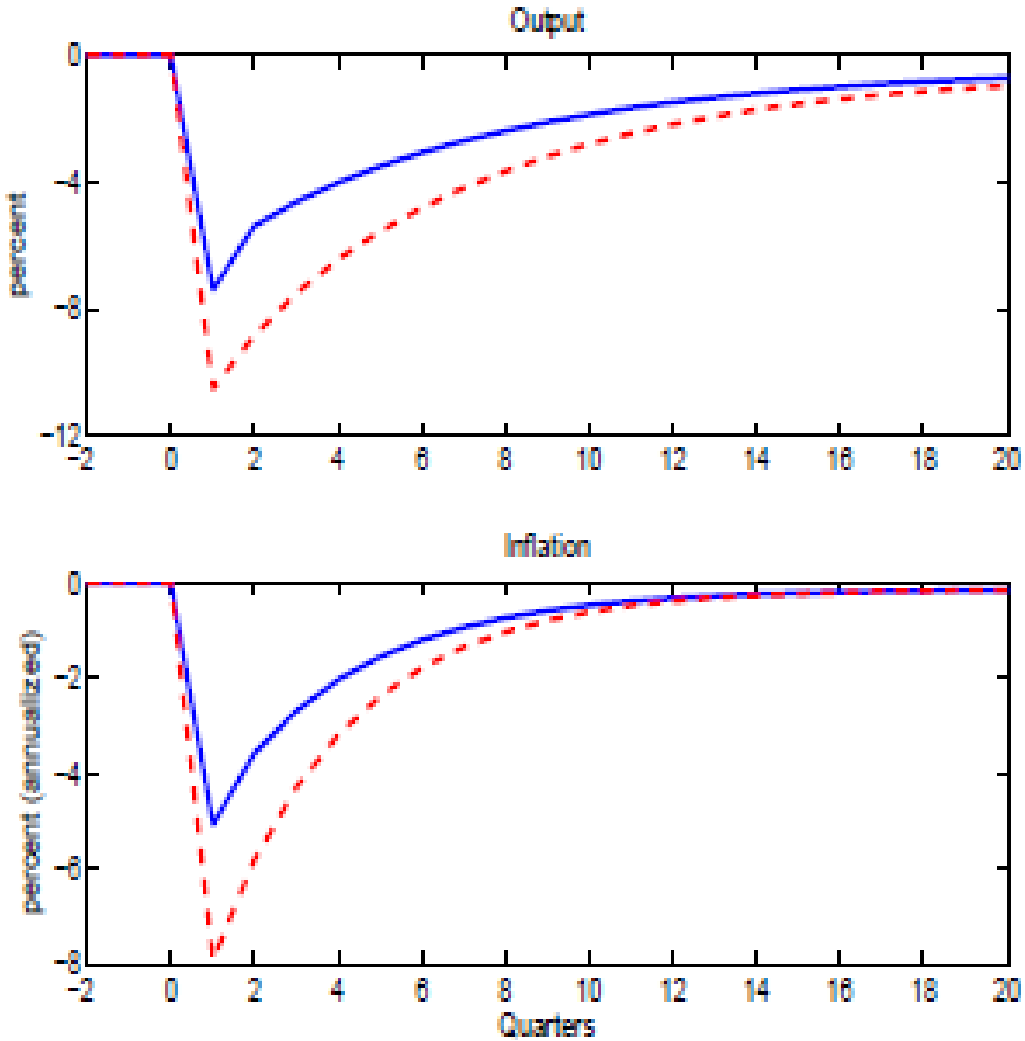
Great Escape?

- Del Negro, Eggertsson, Ferrero and Kiyotaki (2011)
- Consider a drop in “resellability” of privately issued paper.
- Suppose the government buys this paper on the open market with government liquidity
  - Discount window lending
  - Non-conventional open market operations
- In standard NK models these operations are irrelevant

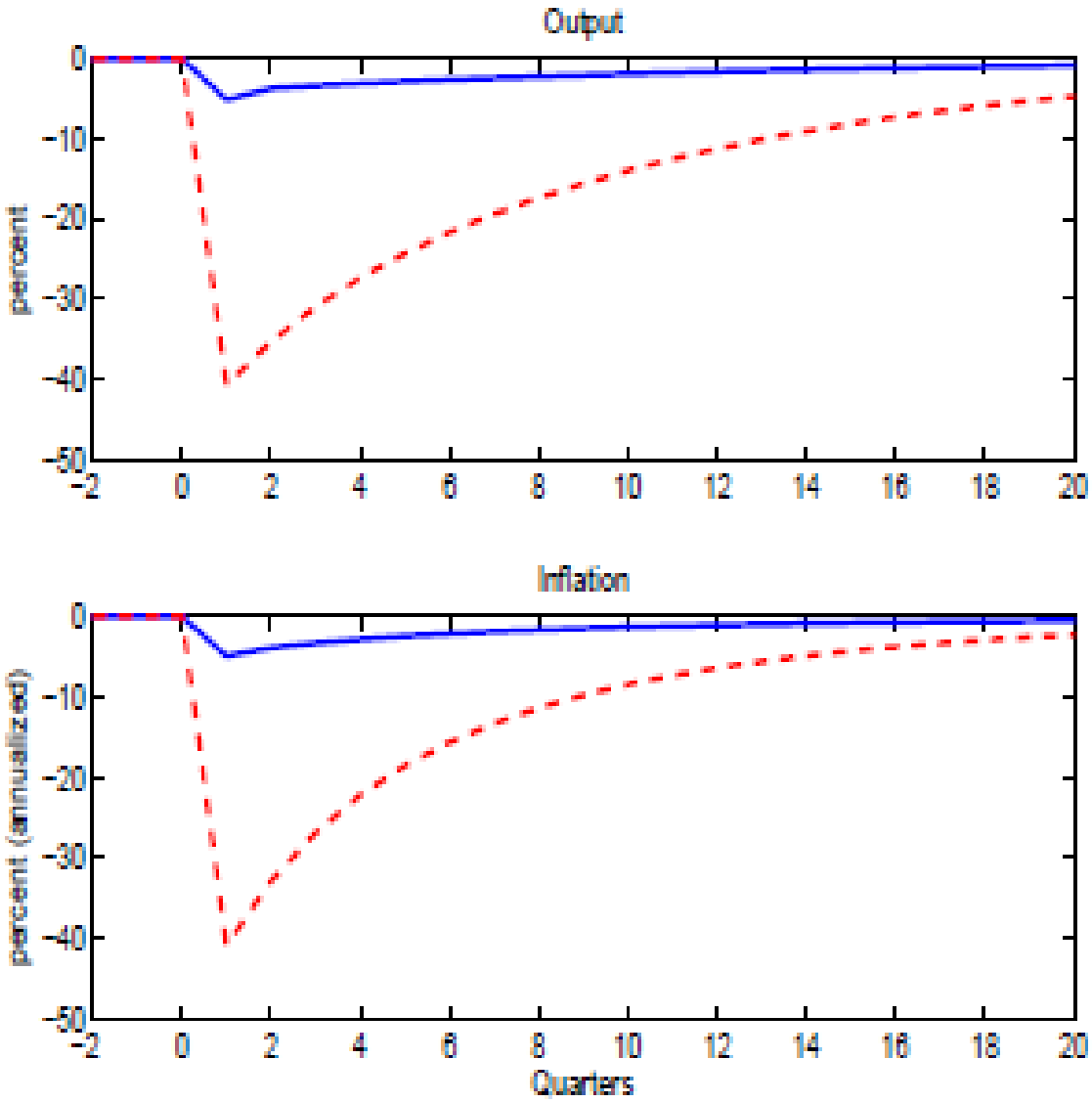
The Fed's Response to a Black Swan



The Effect of Policy Intervention



The Great Escape?



Fiscal policy

- Eggertsson and Krugman (2012)
- With financial frictions fiscal policy a natural "solution".
- Fiscal policy relatively effective as Ricardian equivalence fails when some people are liquidity constrained.
  - E.g. government spending
- Financial shock can be directly offset via redistribution
  - Mortgage restructuring

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In broad terms….

… one can at least make a case that CB directly intervened to respond to “freeze” in markets with QE1

… that at least to some extent fiscal policy has been tried, although views on how aggressively is surely debatable.

But…….

Puzzle created by the crisis

- Hard to say any central bank deliberately "reflated" the economy
- Virtually all modern macroeconomic models suggest:
  - You want to lower real rates.

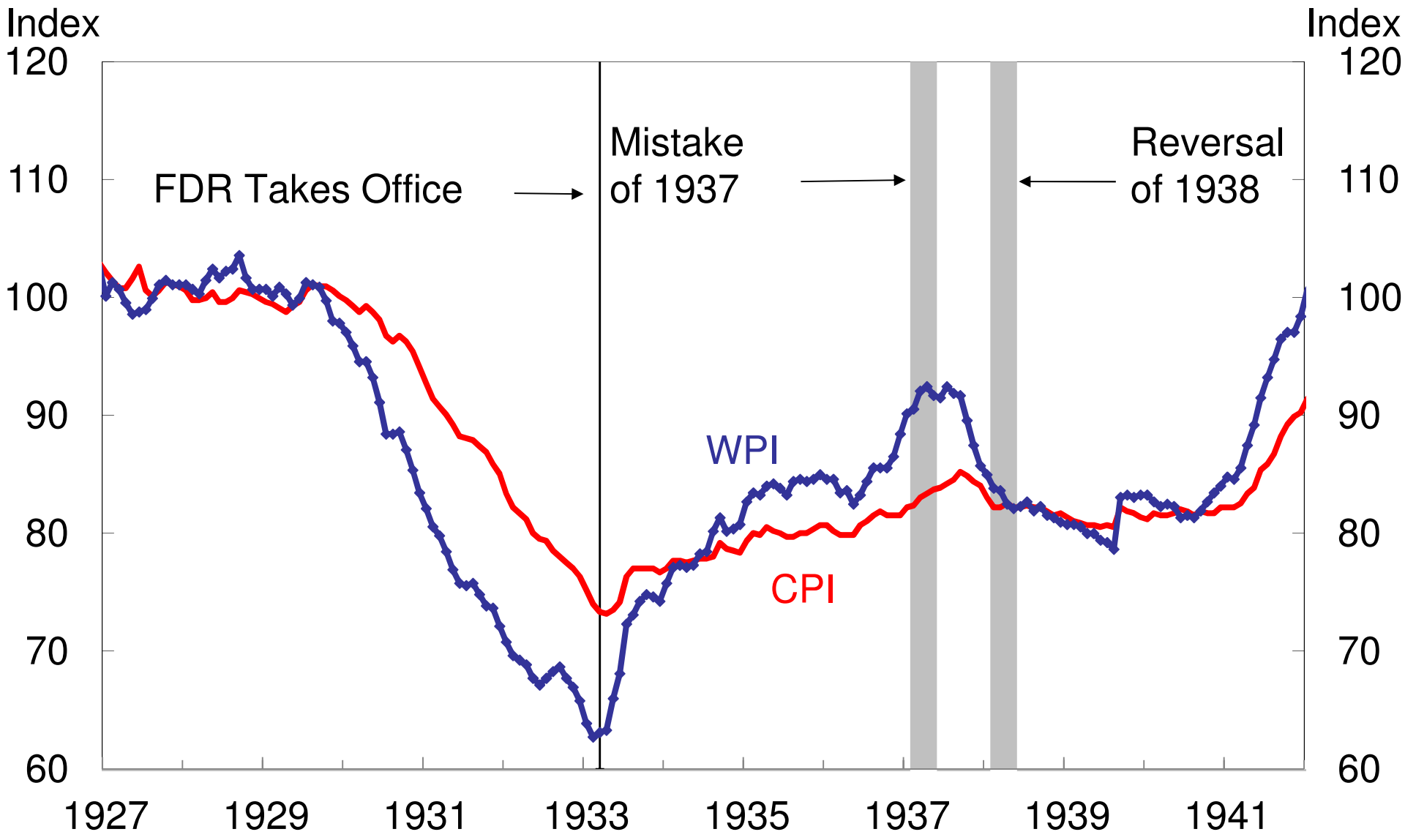
$$r_t = i_t - E_t \pi_{t+1}$$

  - One way of doing so is cut nominal rates
  - But another is to increase inflation expectations
  - This has not really been tried.

- Contrasts sharply with the response to the Great Depression.
- US deliberately committed to “reflation”.

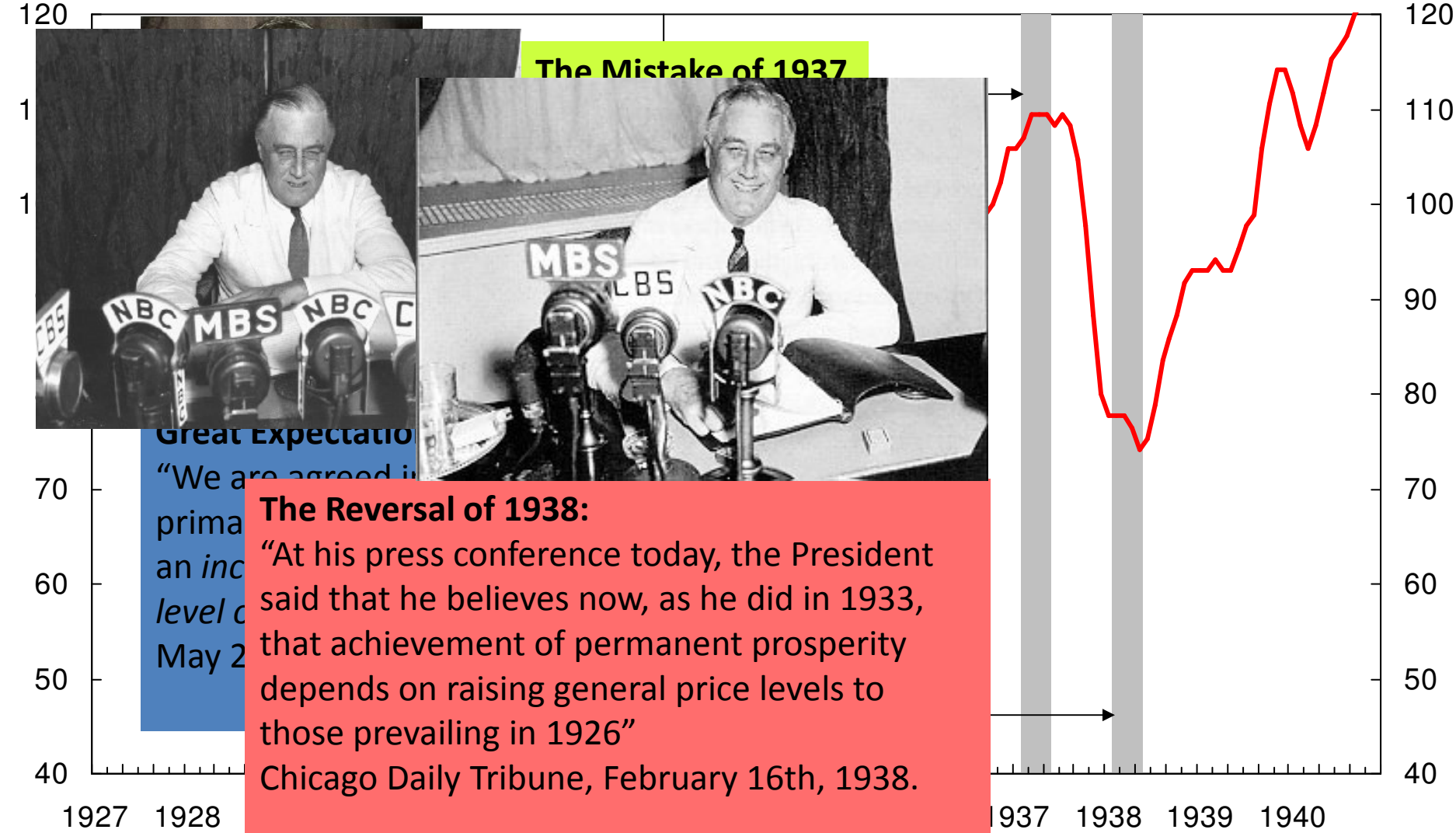
Price Indices

(1929=100)



Source: NBER Macrohistory Database

Examples of Commitments (Communications by FDR)



The Mistake of 1937

Great Expectatio

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May 2

The Reversal of 1938:

"At his press conference today, the President said that he believes now, as he did in 1933, that achievement of permanent prosperity depends on raising general price levels to those prevailing in 1926"

Chicago Daily Tribune, February 16th, 1938.

Source: Federal Rese

Questions

1. How do financial crisis (systemic crisis) translate into macro crisis (short-fall in aggregate demand)?

   A: Financial crisis trigger a "needed" drop in real interest rates that can't be accommodated due to pricing frictions and the zero bound

2. What should be done in response?

   A: non-standard open market operations + fiscal policy

   →and reflate the price level

3. Has policy followed what suggested by literature?

   A: Perhaps.