Money and Credit in Monetary Policy

Based on work by:

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Anchoring Inflation Expectations is the Widely Accepted Goal of Monetary Policy

- Without a solid anchor, inflation expectations can take on a ‘life of their own’, with potentially damaging social consequences (e.g., 1970s)

Anchoring Inflation Expectations and Inflation Forecast Targeting

- Strategy
  - A policy which raises interest rates more than one-for-one with a rise in inflation forecast, ensures that inflation expectations will be stable.

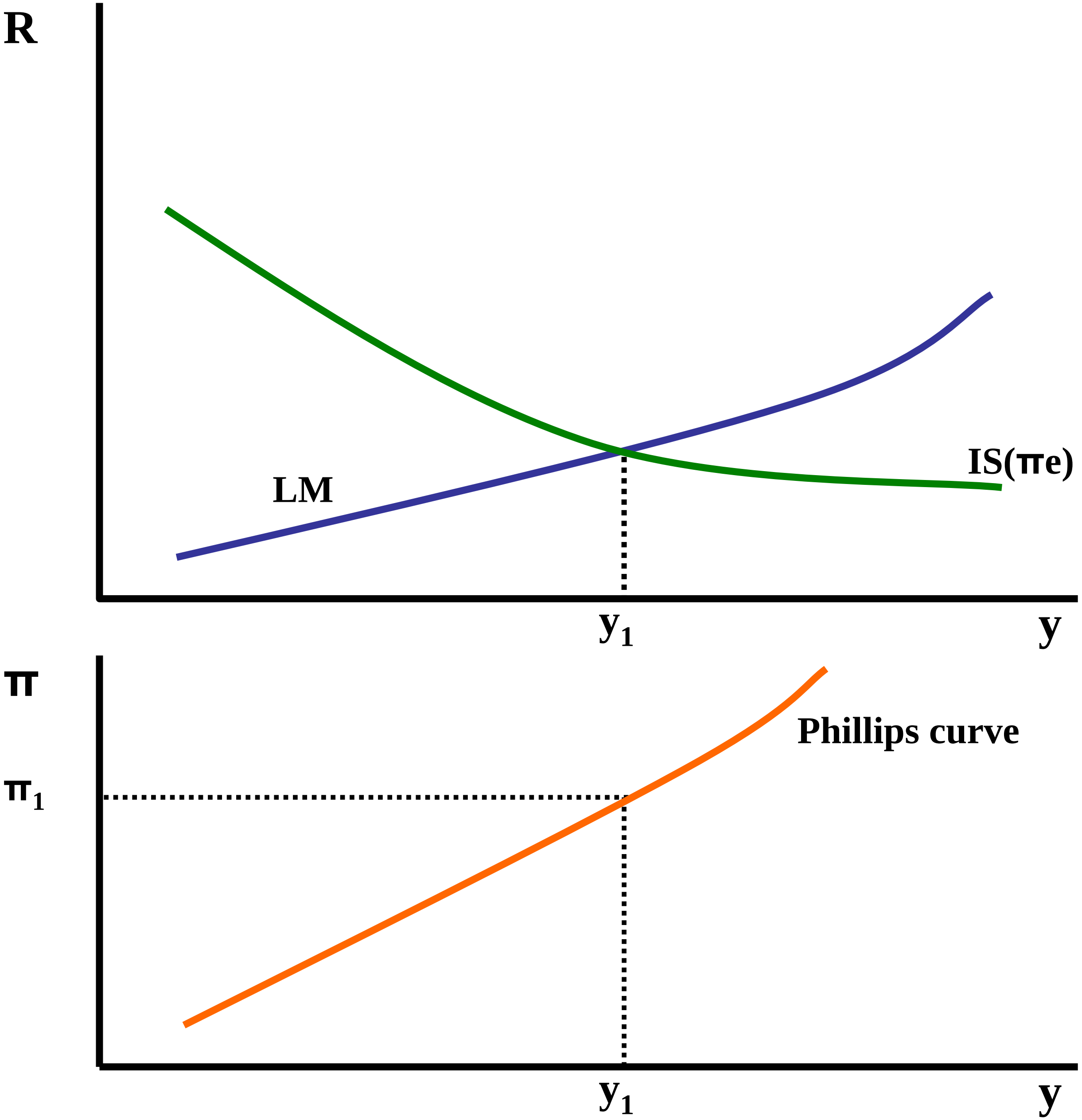
$$R_t = \alpha \pi_{t+1}^{e}, \ \alpha > 1$$

Conventional Wisdom: Money/Credit Has No Role to Play in Inflation Forecast Targeting

- Interest rate rule
  - No need for information on the money supply or credit aggregates to implement such a rule
- Money does not seem to matter for the fit or dynamic properties of economic models
  - Money typically just dropped from models.

But, Money/Credit May Have a Role After All

- Inflation forecast targeting could inject undesirable volatility, for two reasons:
  1. Ironically, inflation expectations can lose their anchor
  2. In an economy with wage-frictions, inflation forecast targeting is ‘real wage targeting’ (Erceg-Henderson-Levin).
     - May produce excessive volatility by distorting the information content of the price mechanism
- Undesirable volatility may be minimized by
  - Monitoring money and credit indicators
  - Intervening, or threatening to intervene, when indicators display substantial instability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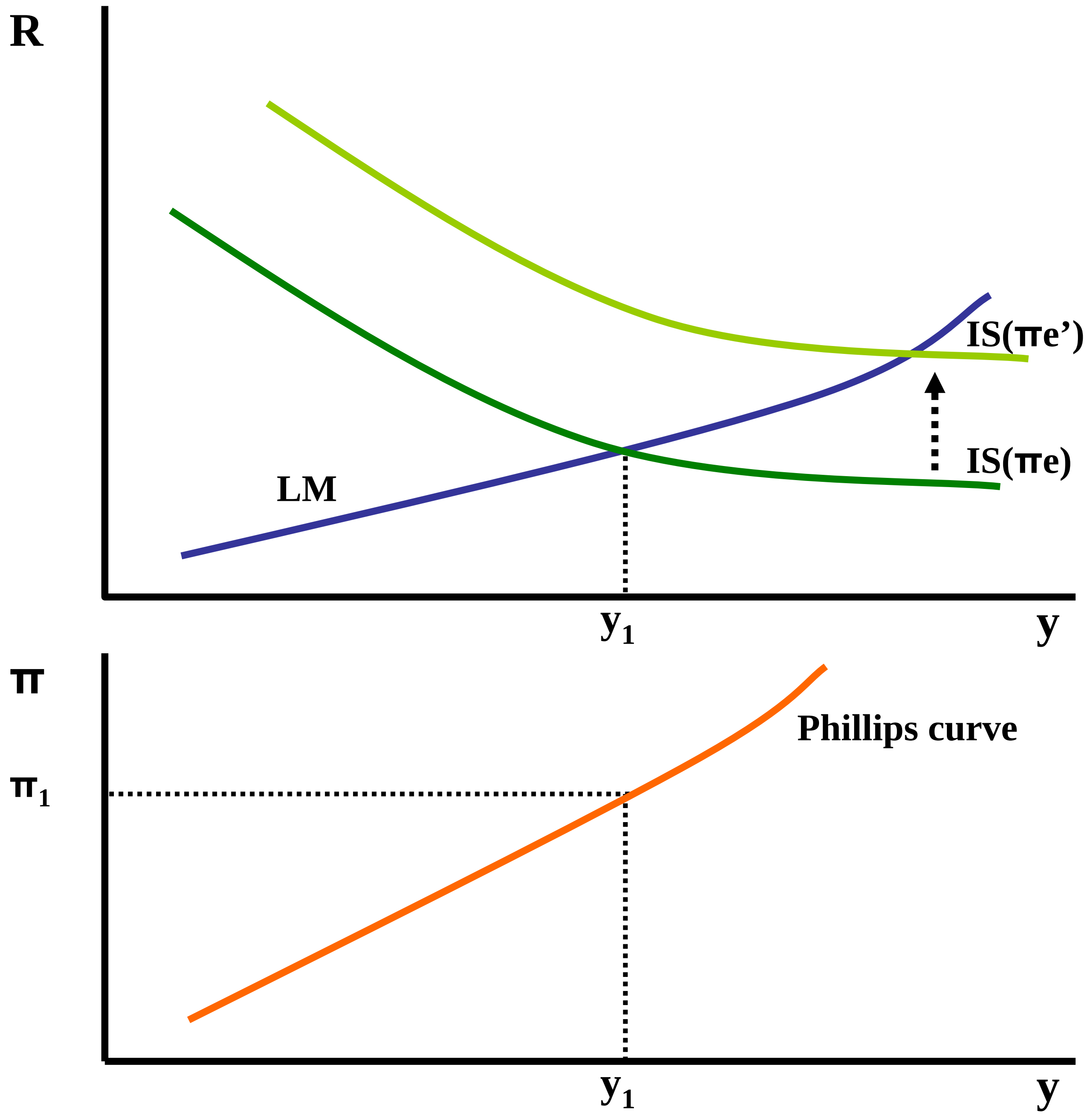
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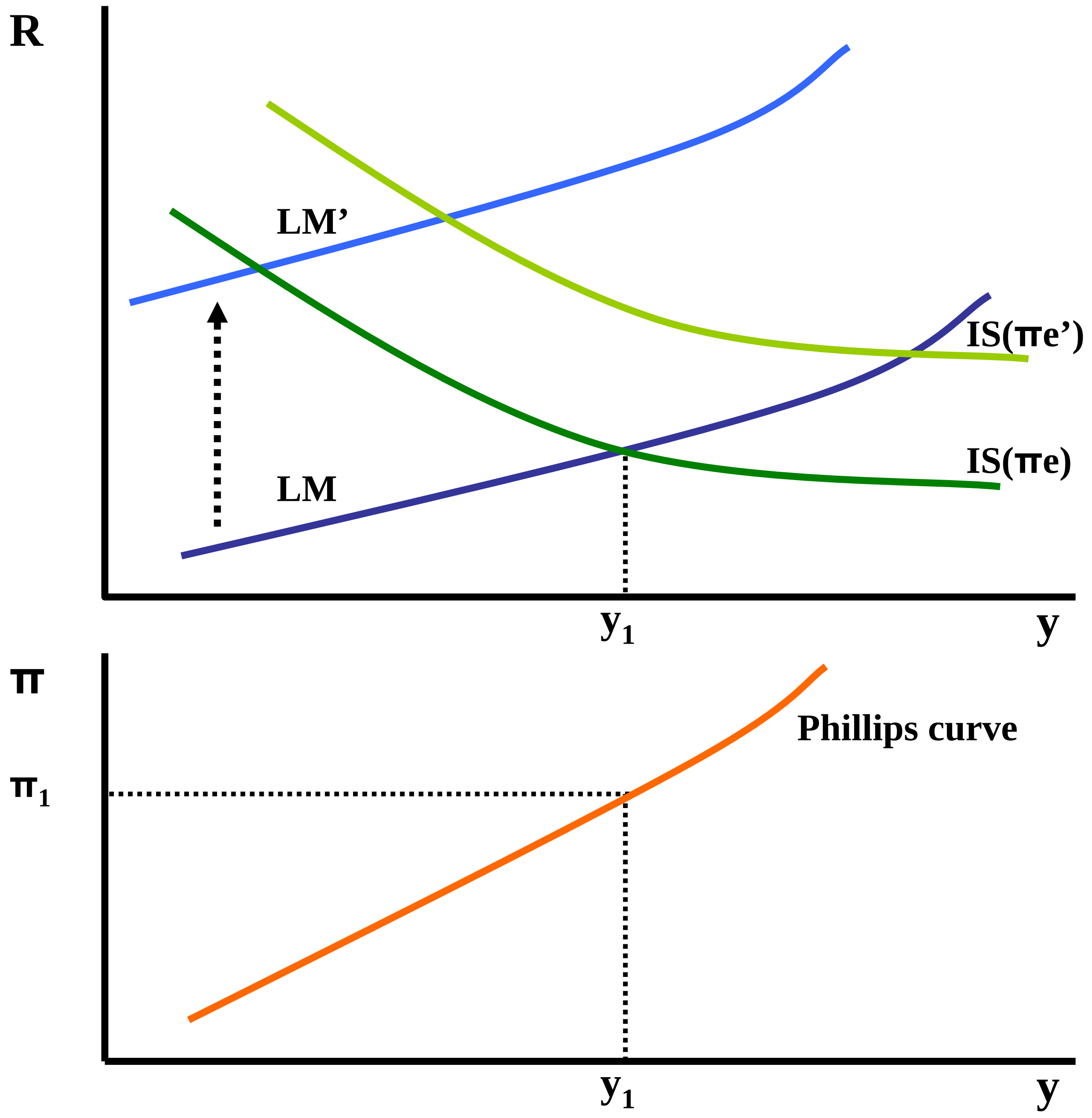
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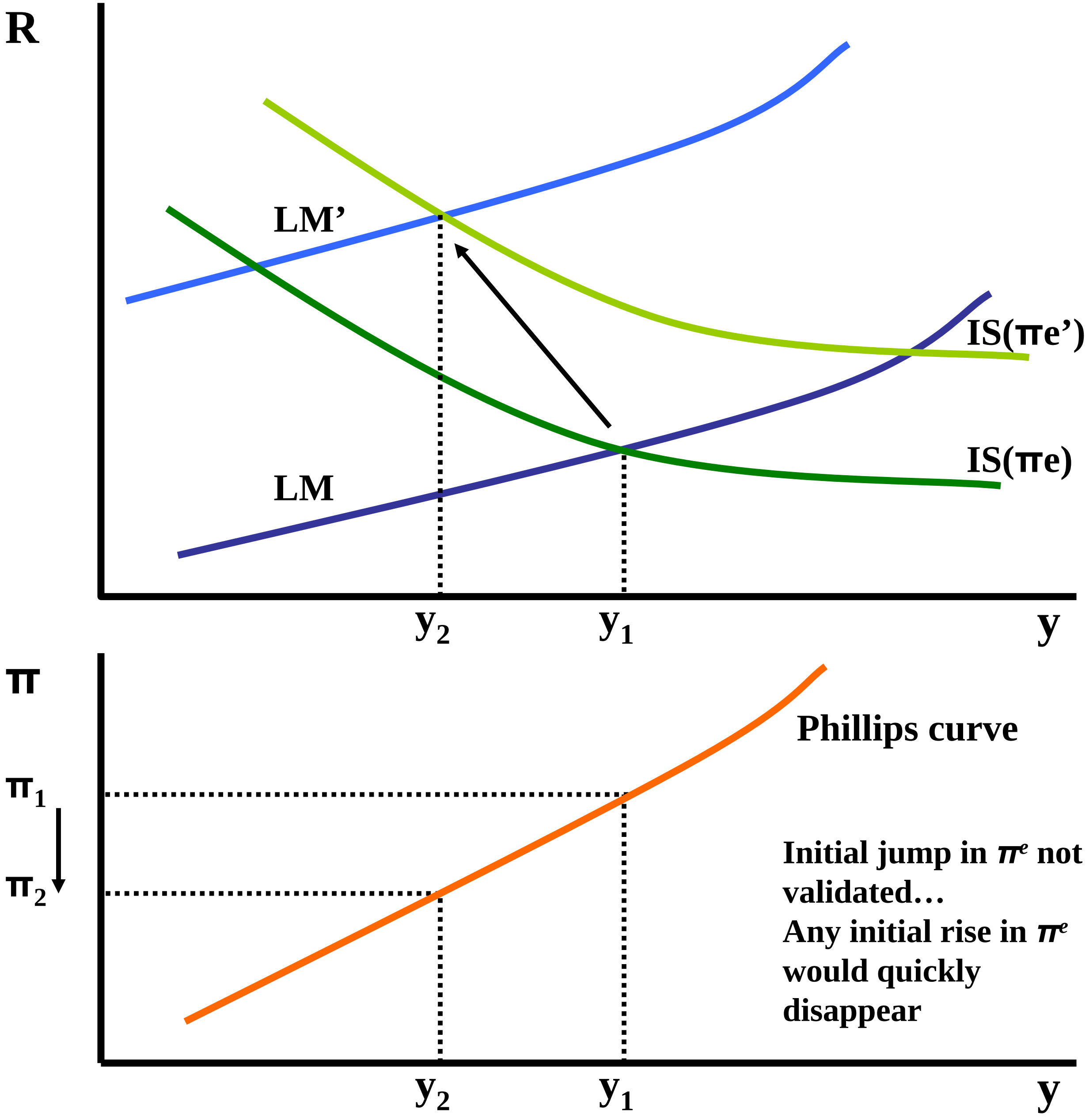
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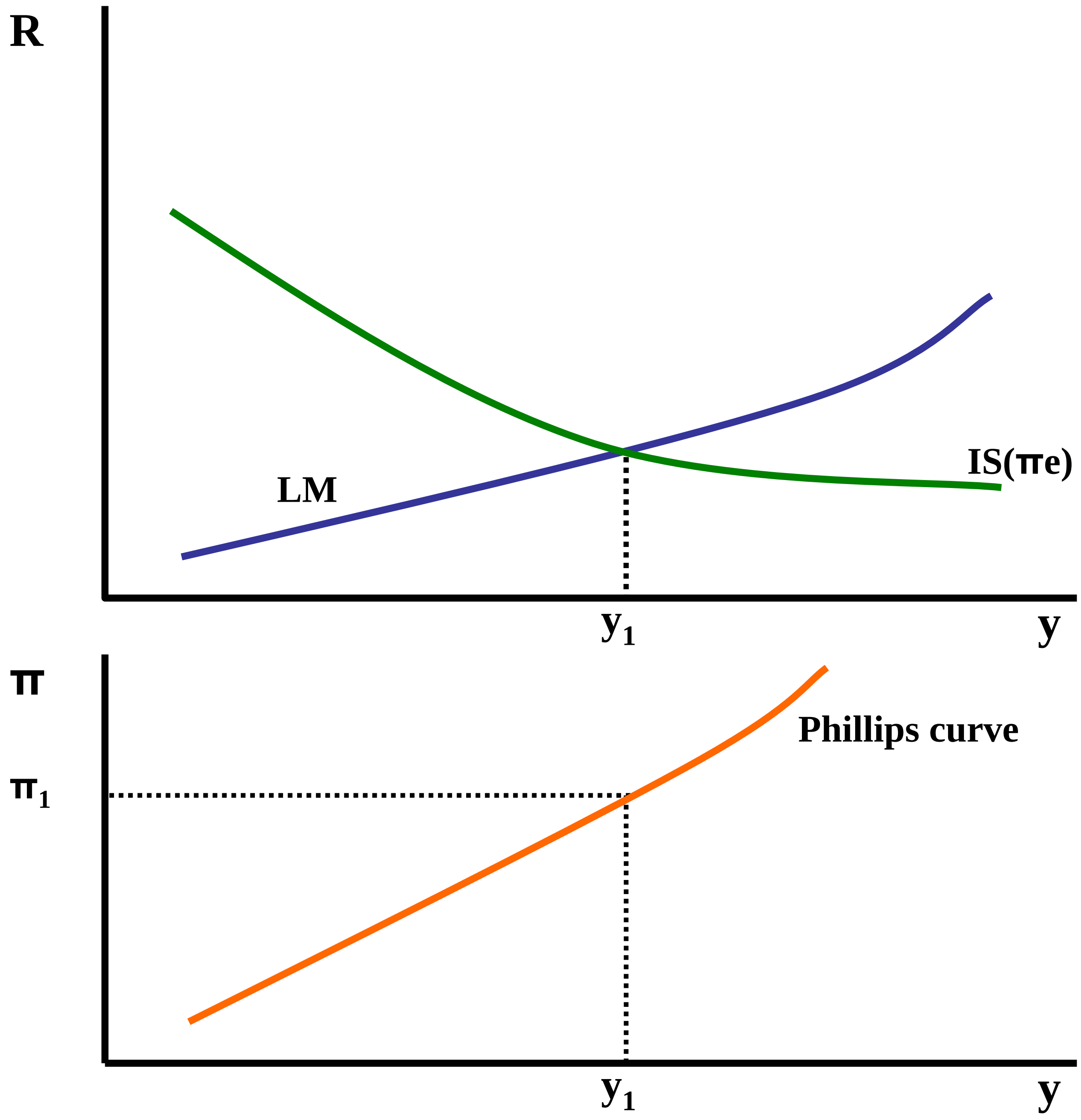
Initial jump in π^e not validated…

Any initial rise in π^e would quickly disappear

Is Inflation Forecast Targeting Robust?

- Suppose environment is slightly different from conventional model
  - Higher *R* has negative supply-side effect
    - Working capital channel (Barth-Ramey, Christiano-Eichenbaum-Evans, ‘Price Puzzle’).
    - Other financial frictions which tighten with rise in *R*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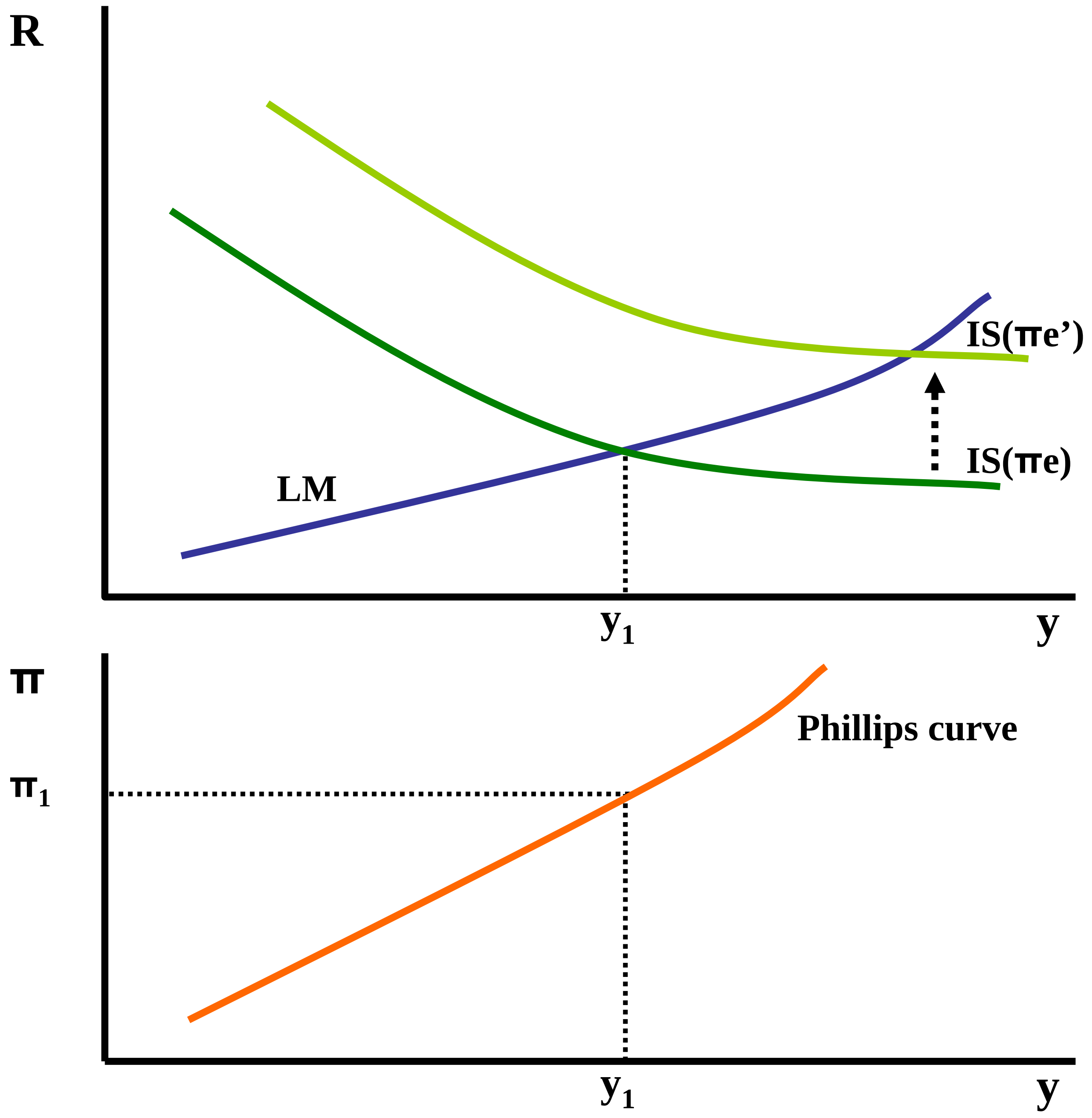
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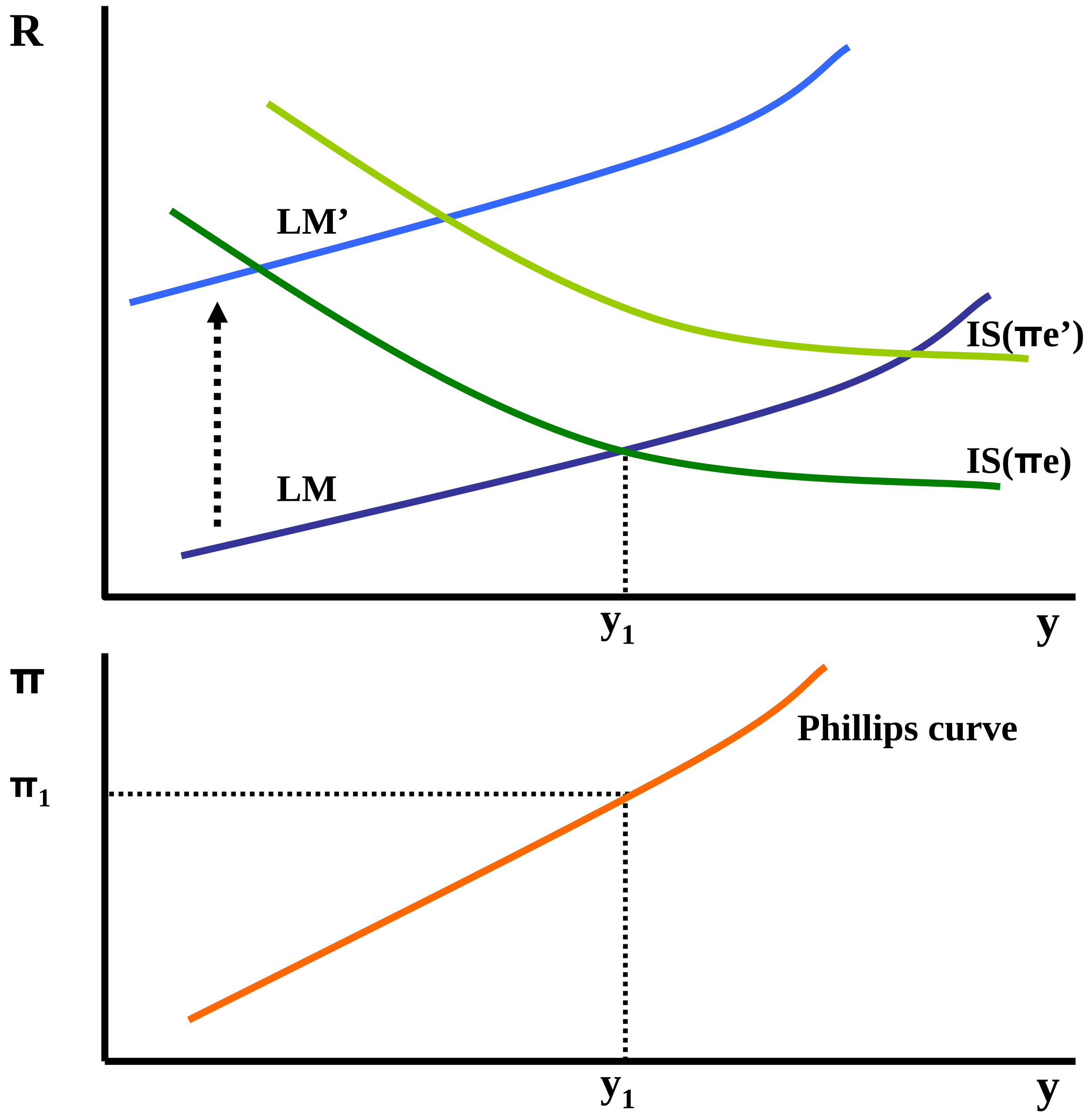
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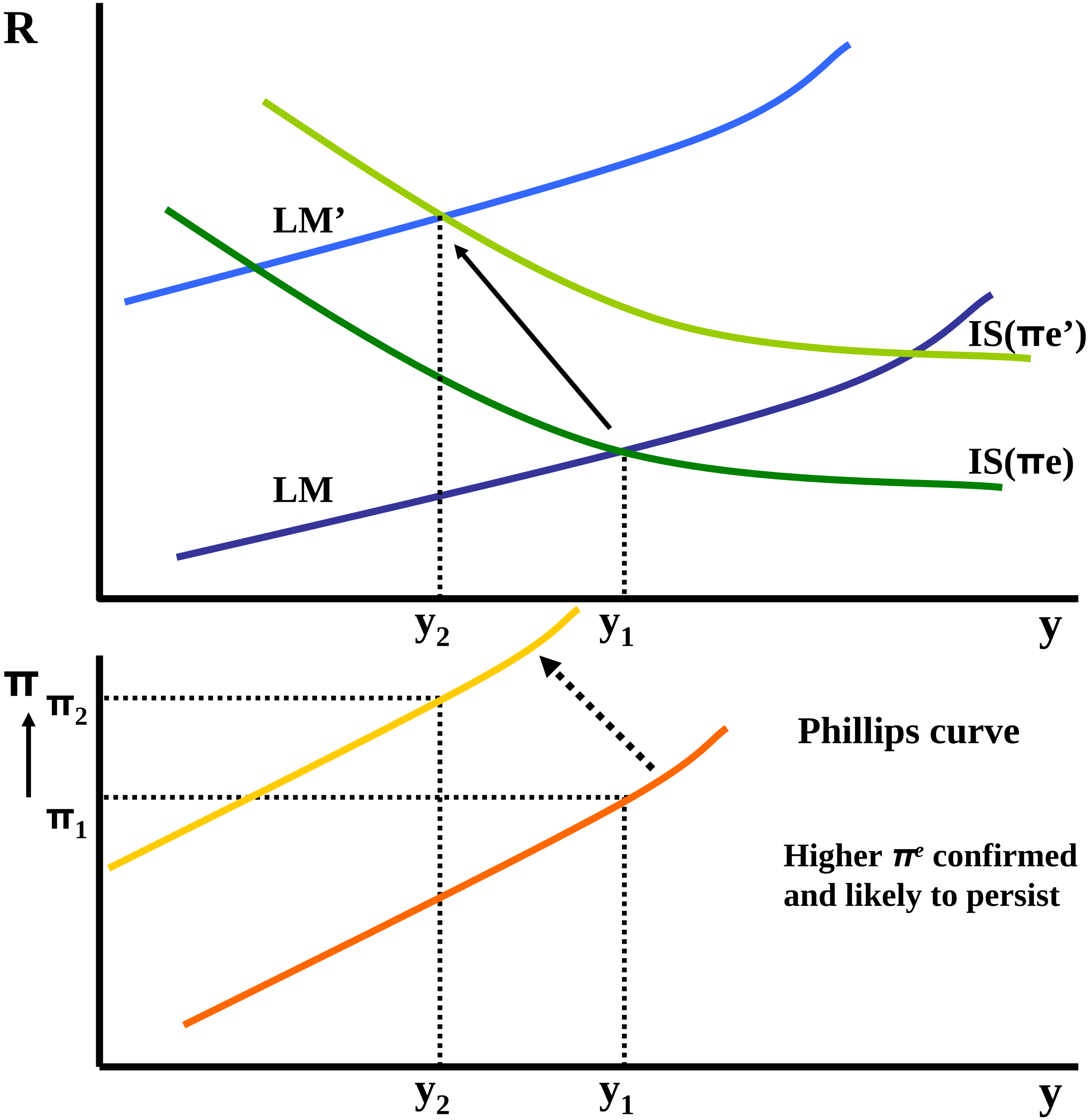
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y

Phillips curve

Higher π^e confirmed and likely to persist

Monetary Monitoring

- Analyze various models and find various forms of instability under inflation forecast targeting (Benhabib-Schmitt Grohe-Uribe)

  - Economy can display periodic cycles
  - Random fluctuations
  - Fall into a deflation trap

- In each case, instability is associated with erratic behavior in money supply

- Motivates ‘escape clause’

  - Follow inflation forecast targeting rule unless a monitoring range for money growth is violated

  - If monitoring range is violated, commit to shifting to money growth rule

A Second Way that Inflation Forecast Targeting May Introduce Instability

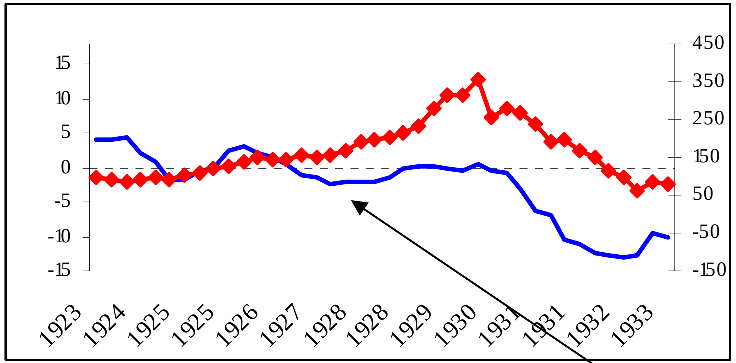
- When wages are sticky, inflation forecast targeting distorts the information content of the price mechanism

Boom-Busts and Inflation Forecast Targeting

- We simulate the response of a standard DSGE model to a news shock (Beaudry-Portier)
- A signal about higher future productivity generates a need for real wage to rise.
- Inflation forecast targeting and sticky wages short-circuit ability of economy to generate a rise in real wage.
- Employers get wrong signal:
  - Real wage falls, wrongly indicating that labor is cheap
- The boom-bust is three times larger than what it should be.
- Interestingly, boom-bust resembles in may ways the boom-busts we see in data.

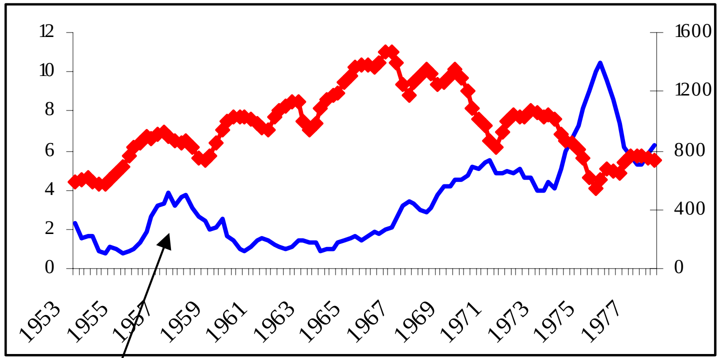
Inflation and Stock Price

Inflation and Stock Price (real terms) in Interwar Period



Note: Inflation is computed as the year-on-year change in GNP Deflator. Stock Price is Dow Jones divided by GNP Deflator.

Inflation and Stock Price (real terms) in 1950s to 1970s



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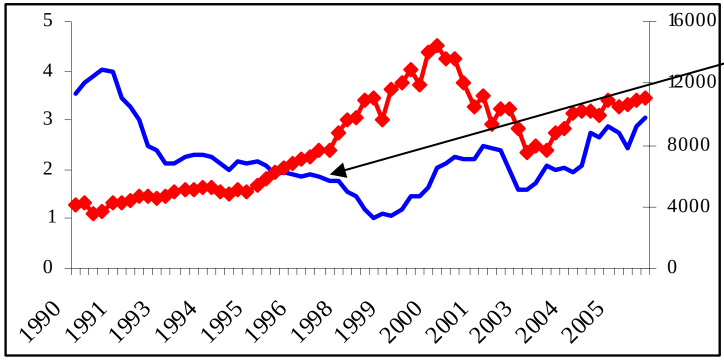

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Inflation appears to be falling during the start-up of boom-bust episodes

🟥 Stock Price (right-hand scale)

🟦 Inflation (percentage points, left-hand scale)

Figure 9: Simple Monetary Model and Associated Ramsey Equilibrium

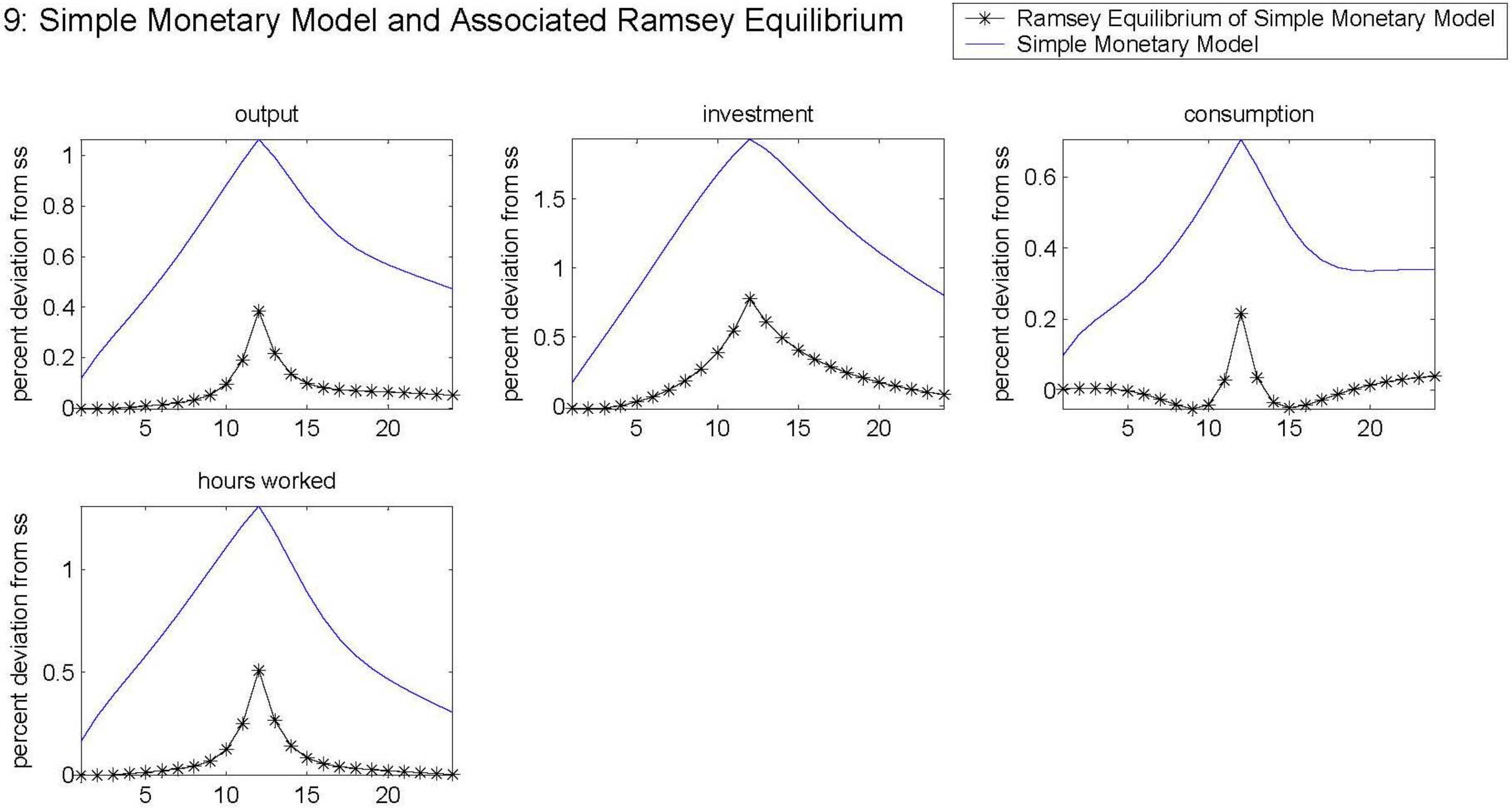
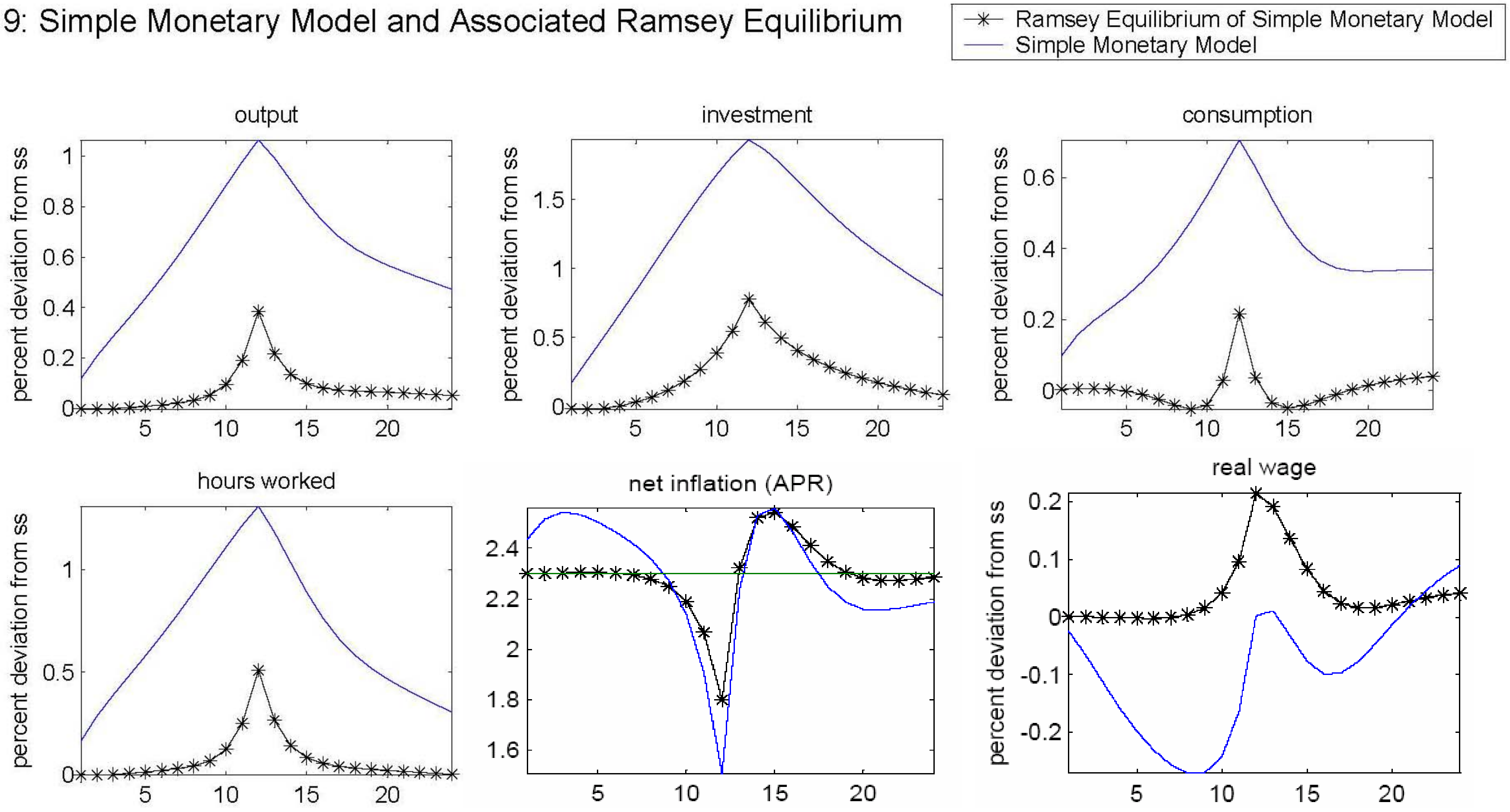


Figure 9: Simple Monetary Model and Associated Ramsey Equilibrium



Conclusion

- Showed two examples of potential for inflation forecast targeting to destabilize:
    - Ironically, may not prevent inflation expectations from losing an anchor
    - Can inject undesired volatility by distorting price system (sticky wages)
- In both cases, committing to work with money/credit would help.

Questions for Further Analysis

- Monetary Monitoring:
  - What is the appropriate monitoring range?
  - How to handle velocity shocks?

- Reacting to Credit Growth
  - improves economy’s response to news shocks
  - what about other shocks?

Questions…

- Why money/credit?
  - Our model analysis says:
    - ‘monitoring money and sometimes reacting to it can be a good idea’
  - Model does not say:
    - ‘money is the *only* variable that can serve this purpose’
  - To assign special status to money, must step outside model
    - monetary authorities have unique access to credit data and to understanding what they mean
    - Monetary authorities can credibly control money and credit

Clarida-Gali-Gertler Model with Supply Side Channel

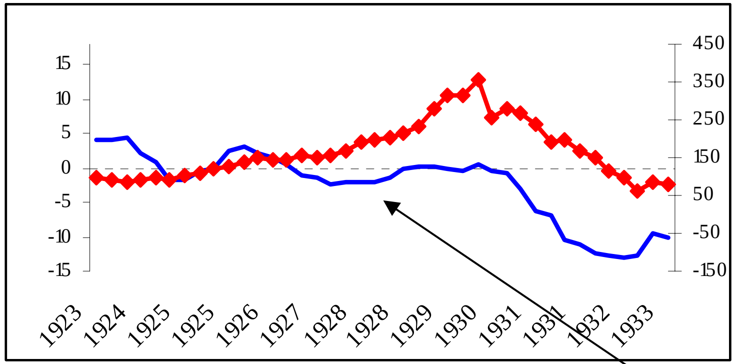
$$y_t = -(R_t - \pi_{t+1}) + y_{t+1}$$ *IS* curve

$$\pi_t = 0.085 y_t + \overbrace{\gamma R_t}^{\text{working capital channel}} + 0.99\pi_{t+1}$$ Phillips curve

$$R_t = \overbrace{1.5}^{\text{aggressive Taylor rule}} \pi_{t+1}^e$$ Taylor rule

Minimal Blanchard-Kahn root less than unity and monotonically falling for $\gamma > 0.005$

Inflation and Stock Price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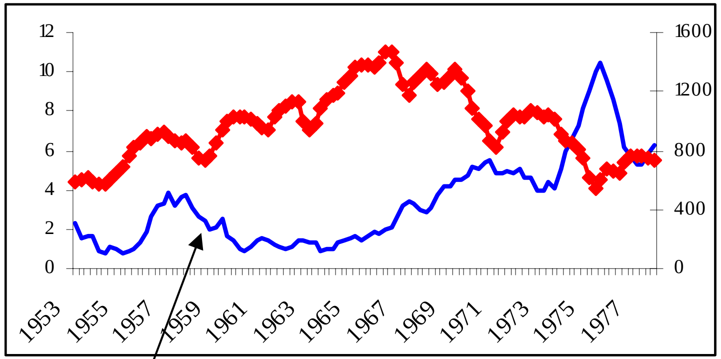
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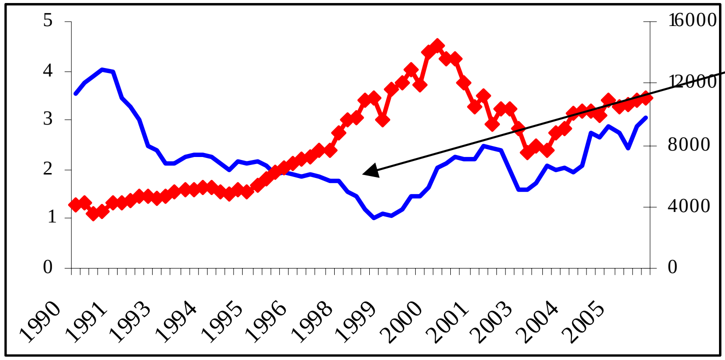
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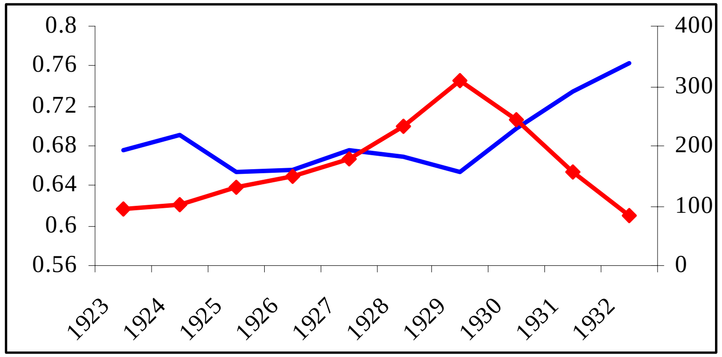
🟦 Inflation (percentage points, left-hand scale)

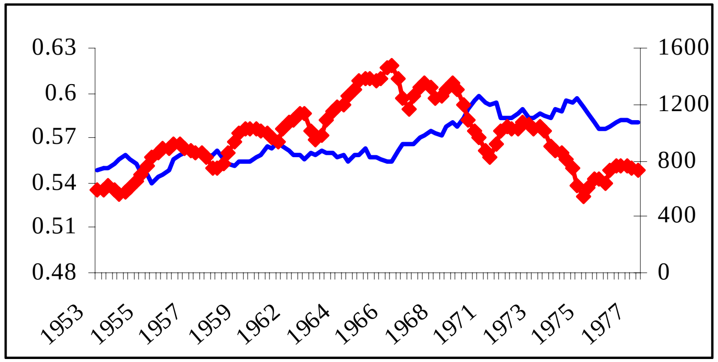
Labor Share and Stock Price

Labor Share and Stock Price (real terms) in Interwar Period



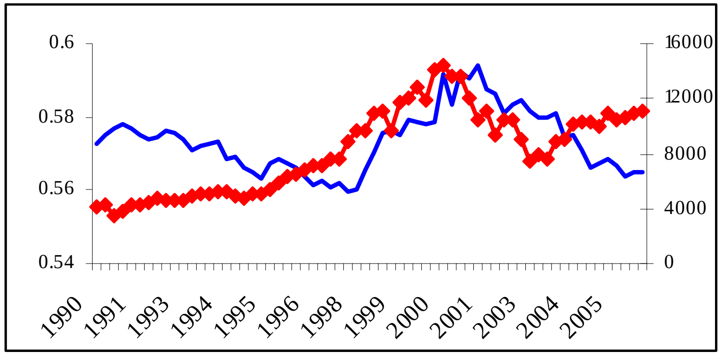
Note: Labor share is computed as hours worked (from Kendrick, 1961) times hourly wage in manufacturing (from Hanes) divided by GNP. Stock Price is Dow Jones divided by GNP Deflator. Data are annual.

Labor Share and Stock Price (real terms) in 1950s to 1970s



Note: Labor share is computed as total compensation divided by GDP. Stock Price is Dow Jones divided by GDP Deflator.

Labor Share and Stock Price (real terms) in 1990s to 2005



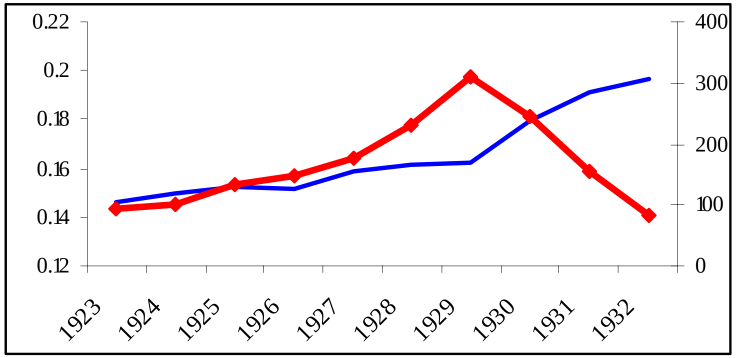
Note: Labor share is computed as total compensation divided by GDP. Stock Price is Dow Jones divided by GDP Deflator.

🟥 Stock Price (right-hand scale)

🟦 Labor Share (left-hand scale)

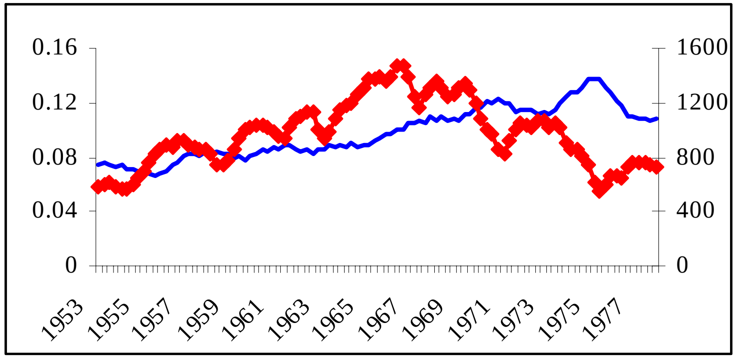
Credit and Stock Price

Inverse Credit Velocity and Stock Price (real terms) in Interwar Period



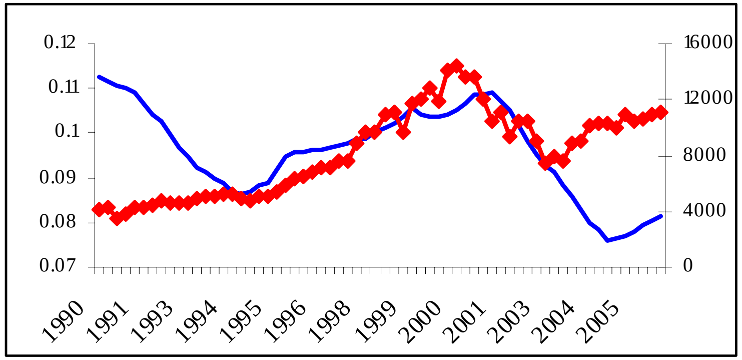
Note: Inverse credit velocity is computed as total bank loans divided by GNP. Stock Price is Dow Jones divided by GNP Deflator. Data are annual.

Inverse Credit Velocity and Stock Price (real terms) in 1950s to 1970s



Note: Inverse credit velocity id computed as banks' loans divided by GDP. Stock Price is Dow Jones divided by GDP Deflator.

Inverse Credit Velocity and Stock Price (real terms) in 1990s to 2005



Note: Inverse credit velocity is computed as banks' loans divided by GDP. Stock Price is Dow Jones divided by GDP Deflator.

▬ Stock Price (right-hand scale)

▬ Inverse Credit Velocity (Left-hand scale)