



Monetary policy and asset prices

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Background

- **Question:** Whether or not monetary authorities should base monetary policy on asset price movements?
- **Paper decomposition:**
 1. An overview of the literature on asset prices and monetary policy
 2. Experiments

Three arguments

1. Asset prices belong in a measure of the price level.
2. Asset prices forecast inflation.
3. There are structural links between asset prices and consumption and investment.

Broader price indexes

- Alchian and Klein (1973)
 - CPI and GDP deflator -> the price of goods consumed today
 - A complete measure of the cost of living -> includes changes in the prices of future goods
 - Their ideal index: “The minimum cost of purchasing a unit of life-time utility in a complete set of Arrow-Debreu futures markets”
 - A weighted sum of consumer price and asset price inflation
 - Two issues undermine the approach
 - Sources of asset price changes other than rising cost of future consumption e.g. higher expected profits
 - Choice between CPI and the ideal index as a measure of price stability depends on the welfare costs of inflation

Asset prices as indicators

- Asset prices are useful in forecasting inflation.
- Fisher (1911)
 - “Increases in money supply were first manifested in rising asset prices and only later in the prices of consumer goods.”
- Stock and Watson (1999)
 - Measures of real economic activity perform best.
 - Stock prices and ER perform poorly relative to a traditional Phillips curve
- Housing prices
 - real estate booms appear to have preceded inflation in Japan and the UK in the 1980s

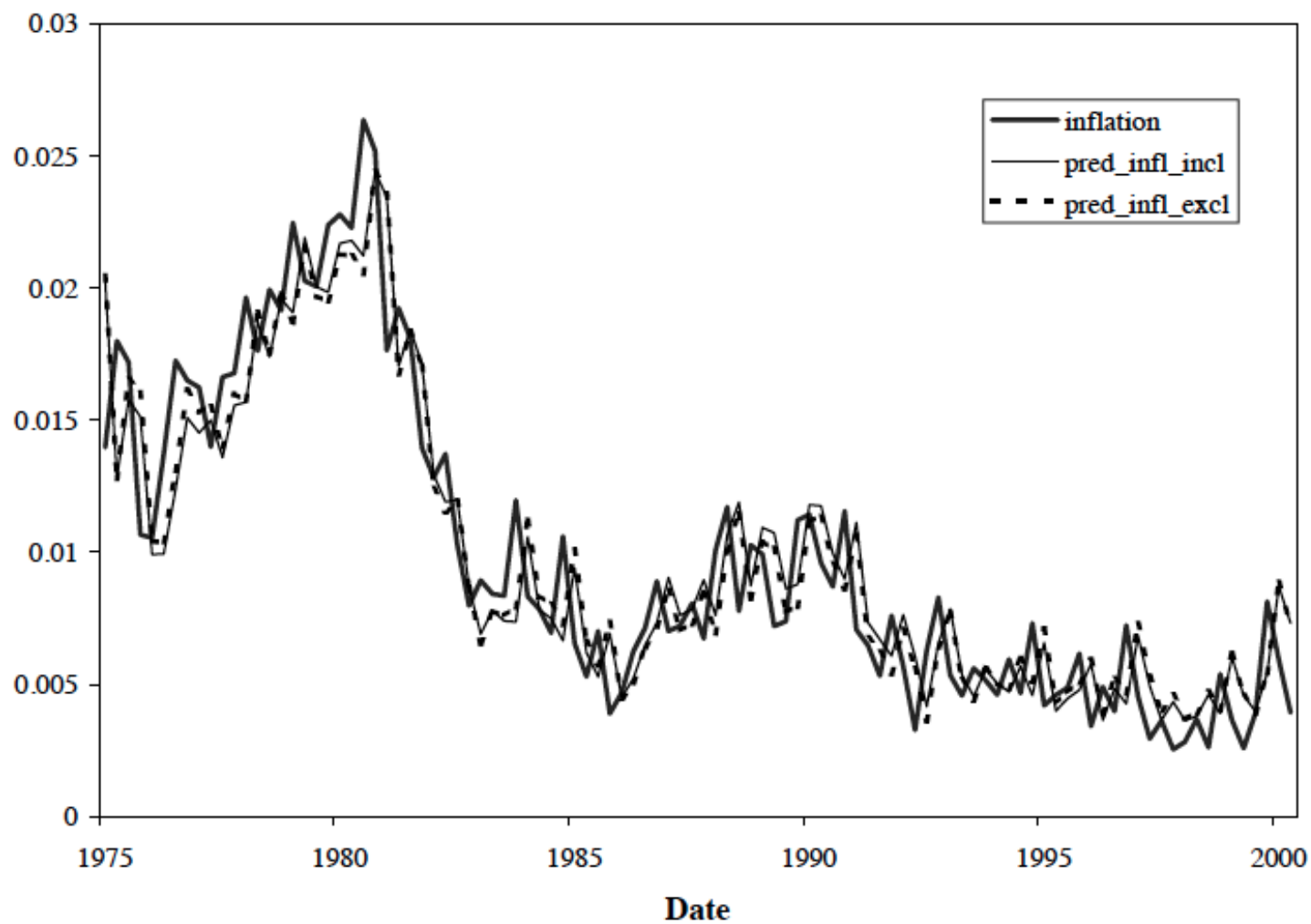
Table 1
Significance in forecasting equations

	Inflation	Output
Housing prices	2.69	2.83
S&P 500	−0.27	1.15
Spread	−2.63	−1.38
Housing starts	0.15	2.20
Cash flow	−0.36	−0.9

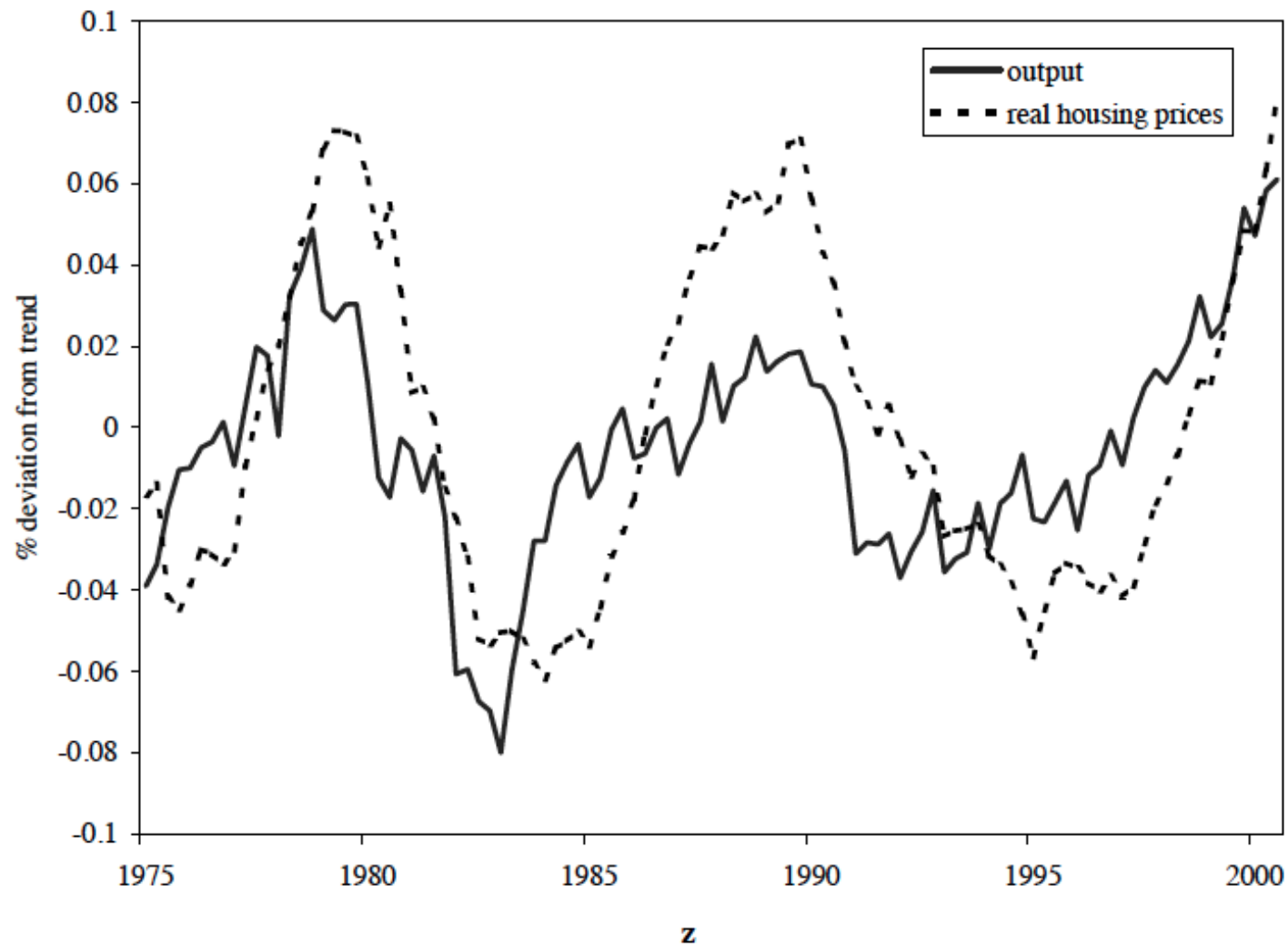
- T-stats
- Each regression includes a constant, lagged inflation, lagged output, the lagged consumption/output ratio and the asset variable of interest

*Spread between the prime lending rate and 1-year treasury bond rate = risk premium on loans

Housing prices



Housing prices as a lagging indicator



Asset prices and economic activity

- Asset prices may have a direct effect on the level of economic activity through three channels:
 1. **The wealth effect on consumption**
 - Most estimates find that an \$1 increase in financial assets leads to a 3 cents increase in consumption.
 2. **Tobin's Q effect on investment**
 - Q = The ratio of market value of a firm's existing shares to the replacement cost of the firm's physical assets
 - If $Q > 1$, additional investment in the firm is profitable.
 - Subsequent research shows that it performs poorly in investment regressions.
 - Blanchard (1993) – Stock prices may deviate from fundamentals. Managers therefore ignore signals from the stock market.
 3. **The financial accelerator on investment**
 - Bernanke and Gertler (1989) – Successful investment today leads to a greater net worth tomorrow, reducing the cost of capital tomorrow and increasing investment.

Asset prices and monetary policy

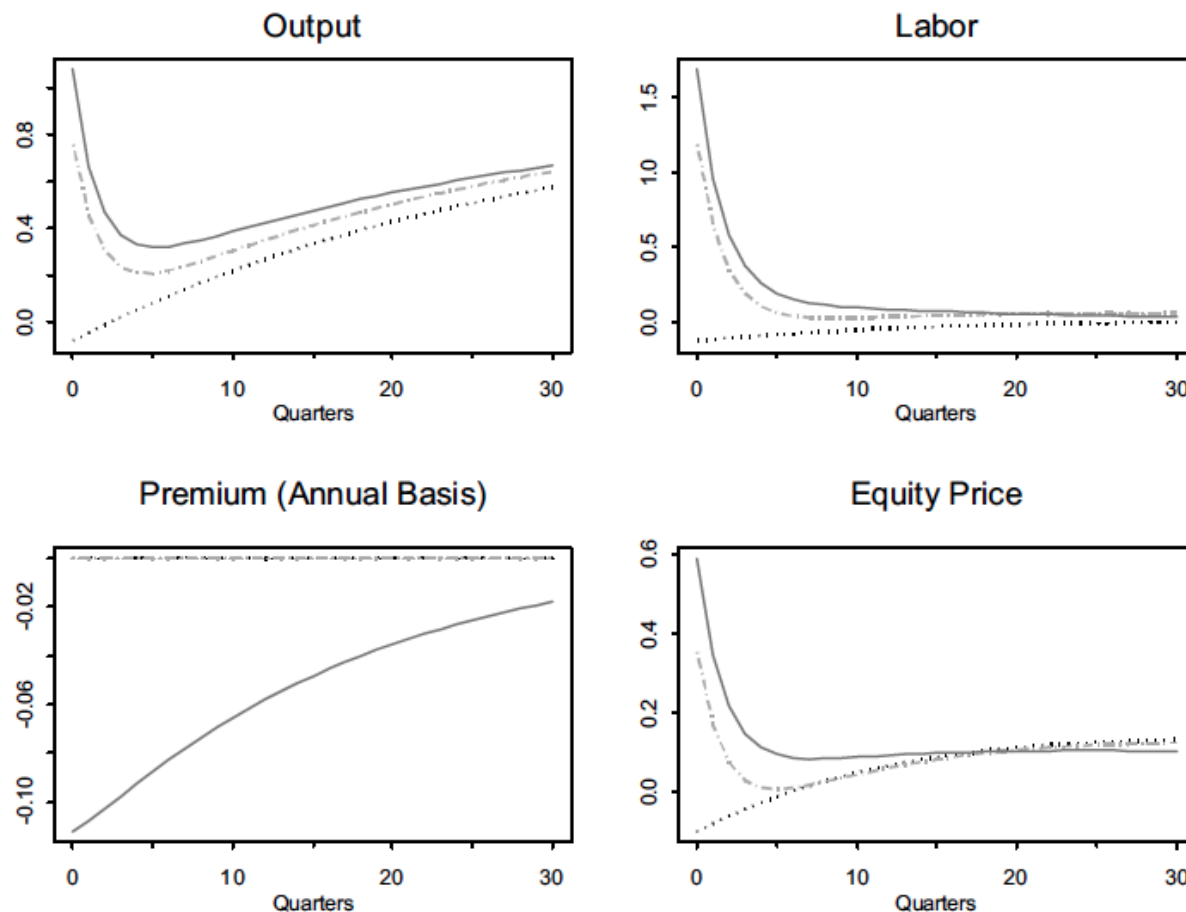
- Including asset prices in monetary rules, in practice, adds little to stabilizing output and inflation.
- Asset channels are similar to aggregate demand channels; they tend to increase both output and inflation.
- Inflation targeting yields most benefit of asset price targeting.

Shocks whose initial impacts is on expectations

- Stock market volatility and expectations
- Technology shock that is phased in gradually e.g. recent revolution in IT
- Three different models
 - Real Business Cycle (RBC): Frictionless benchmark
 - A new Keynesian model with price rigidity
 - A financial accelerator -> risk premium
- Monetary policy -> an interest rate rule

Weak inflation targeting;

$$i_t = \rho i_{t-1} + (1 - \rho)\gamma E_t \pi_t,$$

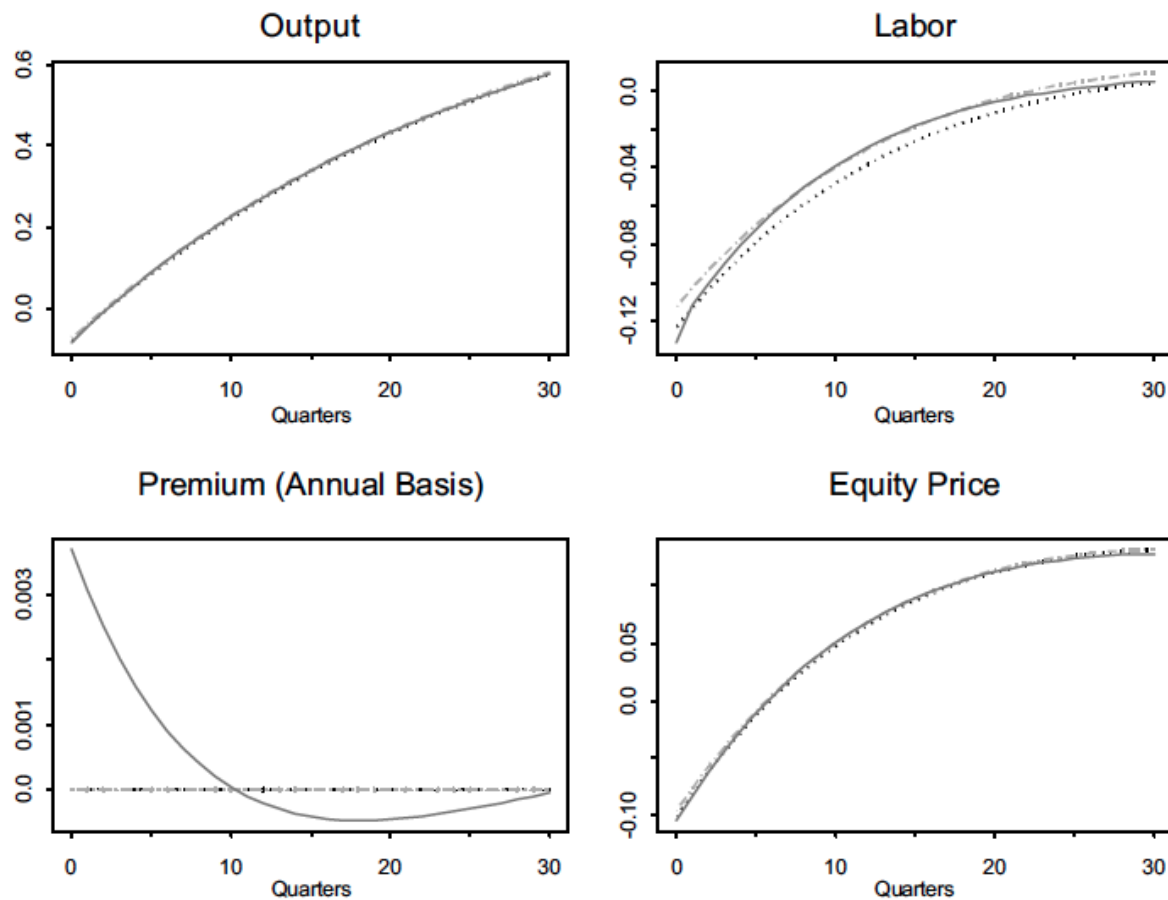


Dotted line – RBC

Dashed line – New Keynesian

Solid line – Financial accelerator

Strong inflation targeting; $i_t = \bar{r} + 2E_t\pi_{t+1}.$

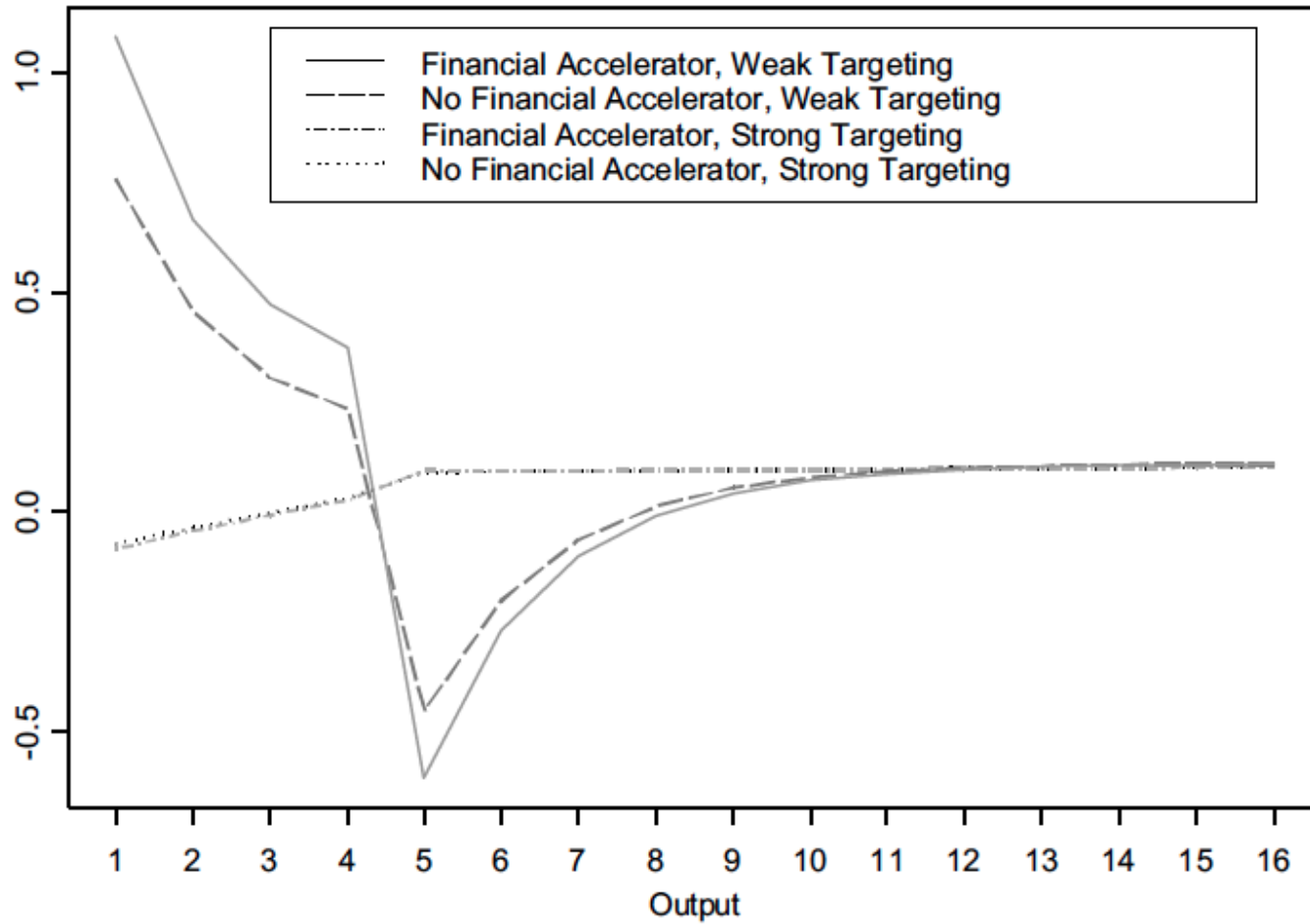


Dotted line – RBC

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Unfulfilled expectations



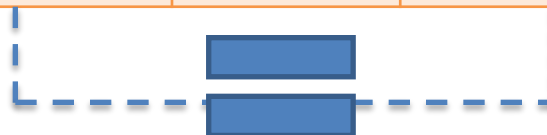
Shocks to net worth

- Financial accelerator model
- Many problems associated with asset price movements seem to concern the ability of banks to lend and firms to borrow.
- Risk premium on loans is one of the main distortions.
- Positive shocks on net worth increase firms' collateral; thereby, lowering the risk premium. Investment and output rise.
- Since this shock has no effect in RBC model, the efficient response is for no variable to respond to the shock.

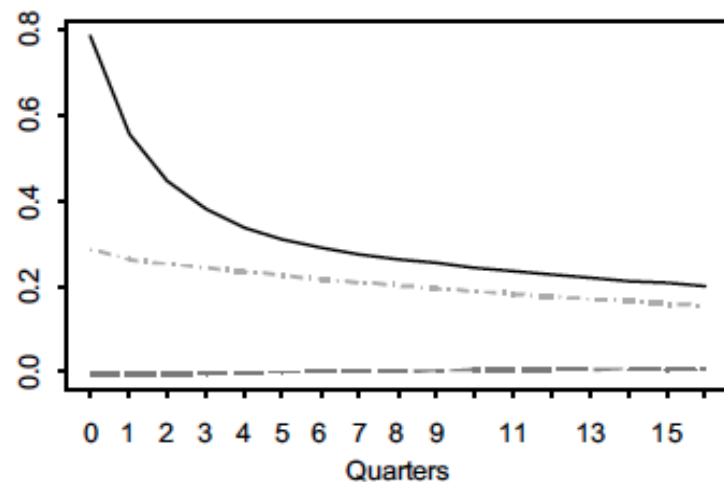
Shocks to net worth

	Output	Inflation	Real int. rate	C	Risk Premium	I
Weak Infl. Targeting	↑	↑	↑	↓	↓	↑
Strong Infl. Targeting	↑	×	↑	↓	↓	↑
Net Worth Targeting	×	↓	↑	↓	↓	↑

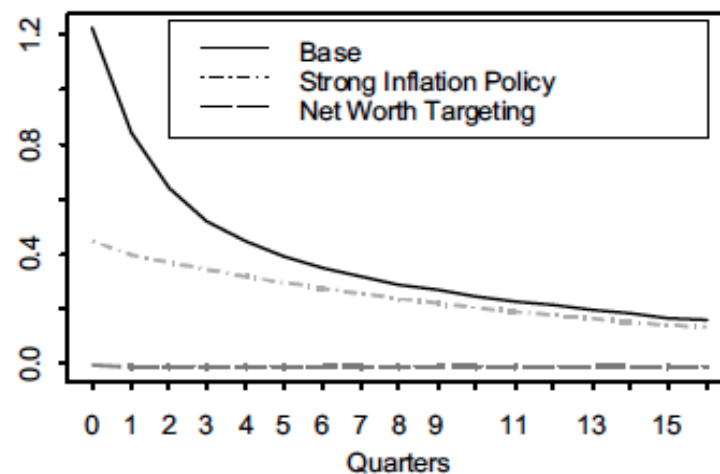
$$i_t = \bar{r} + 2E_t\pi_{t+1} + 0.37n_t,$$



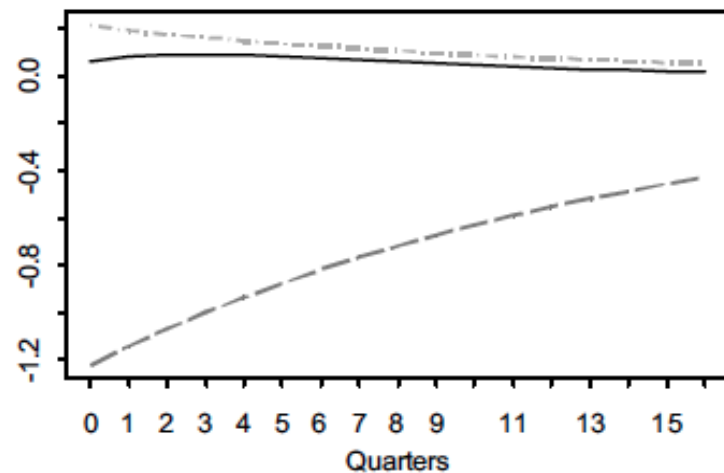
Output



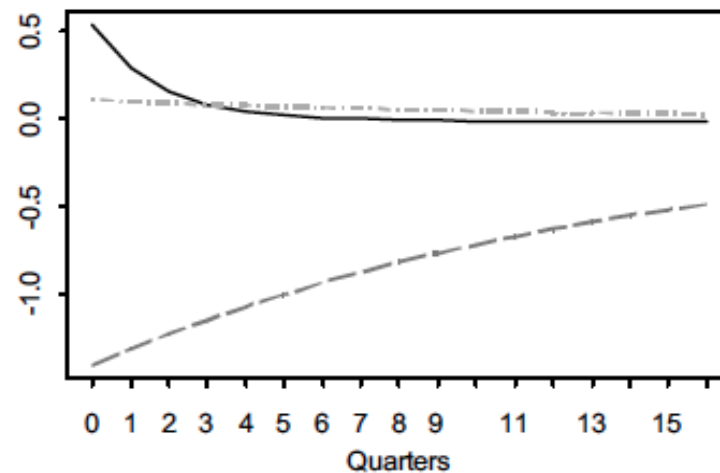
Labor



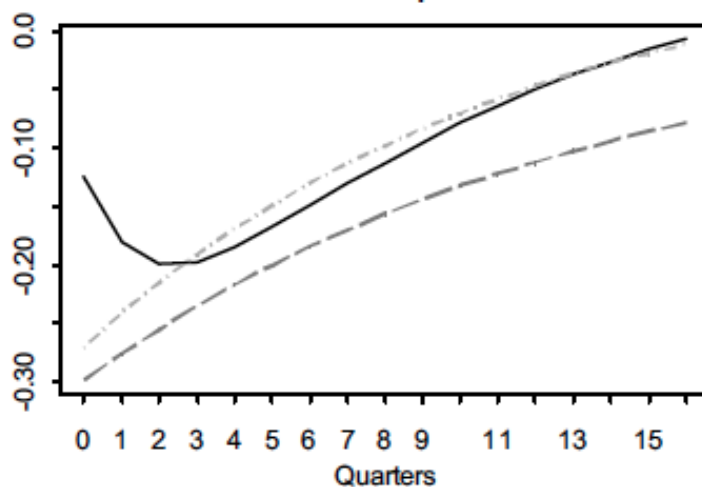
Nom. Interest (Annual Basis)



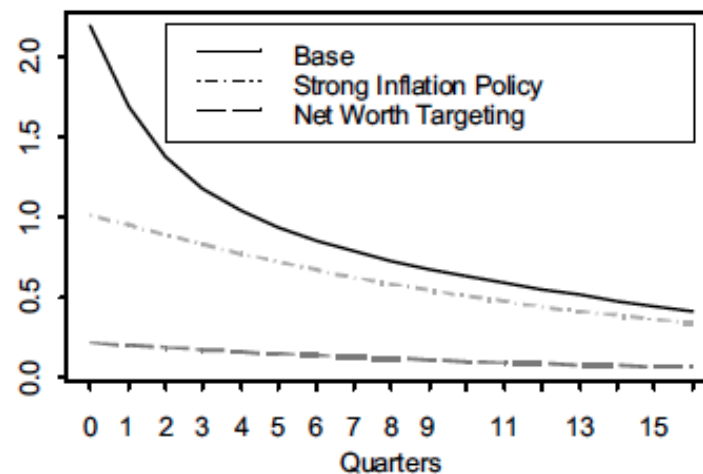
Inflation (Annual Basis)



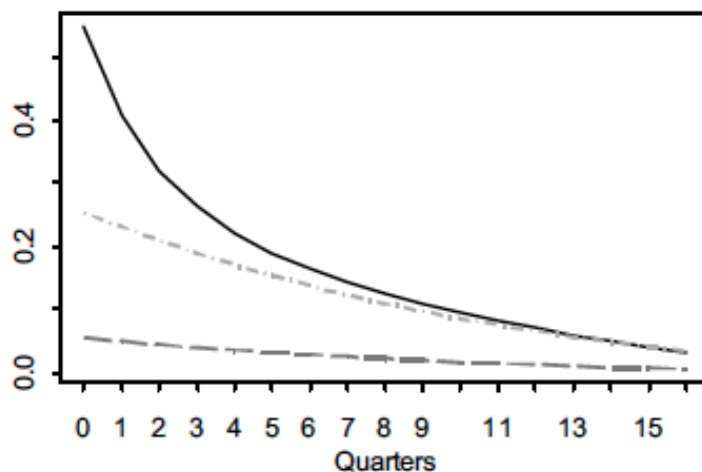
Consumption



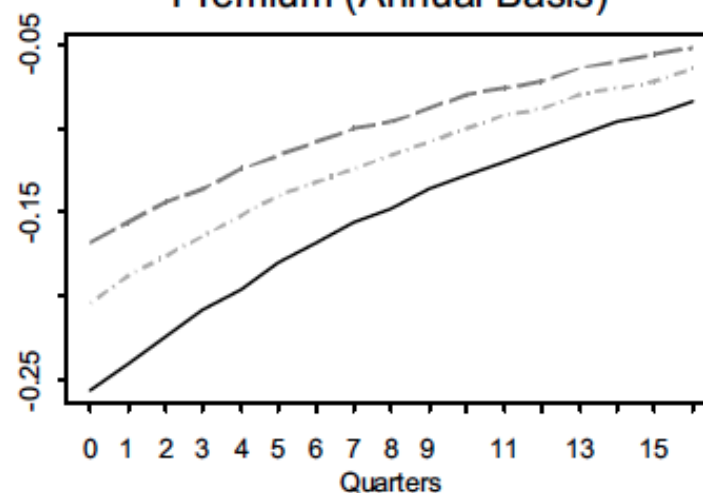
Investment



Equity Price



Premium (Annual Basis)



Conclusion

- There is a case where inflation targeting cannot stabilize output and inflation, but there is no interest rate policy that would achieve the efficient path.
- **Problem:** CB cannot raise borrowing rates faced by firms without raising that faced by investors.
- Reacting to asset prices, net worth, or the risk premium does not solve the dilemma.

Nominal interest and inflation response

