

The Philadelphia Fed Policy Forum

How Should Monetary Policy React to Asset Prices?

How should a central bank react to changes in equity prices, housing prices, and/or exchange rates?

Can the central bank act in a way to help ensure macroeconomic stability? Is such an attempt misguided?

Are asset prices helpful in predicting future inflation? Or are they too noisy to be of use?

How Should Monetary Policy React to Asset Prices?

It depends on the frictions

Alvarez – Asset market frictions

Duport -- Sticky prices, costs of adjusting capital stock, irrational beliefs

Gertler – Sticky prices, information asymmetries, bubbles

Can the central bank act in a way to help ensure macroeconomic stability?

Alvarez – Yes -- Monetary Policy should respond positively asset prices (Price/Div ratios)

Dupor – Yes -- Central Bank should respond negatively to asset prices to mitigate over-investment

Gertler – Yes -- Central Bank should ignore asset prices except to the extent that they help signal underlying inflationary or deflationary pressures, and as part of a broad set of indicators of the overall state of the economy

Are asset prices helpful in predicting future inflation or the overall state of the economy?

(Stock and Watson, March 2001, “Forecasting Output and Inflation: The Role of Asset Prices”)

Literature Review (66 Papers, post 1988)

<u>Indicator</u>	<u>- - As a predictor of: - -</u>	
	<u>Inflation</u>	<u>Real output</u>
Interest rates	yes & no	yes & no
term spreads	mostly no	yes, maybe unstable
default spreads	no	yes, unstable
stock returns, dividend yield	no	possibly, but probably unstable
misc (exchange rates, housing infl, other spreads,...)	sometimes	no
real activity	yes, maybe unstable	--

Empirical analysis:

- Data set:
 - 7 countries (Canada, France, Italy, Germany, Japan, UK, US).
 - 38 leading indicators (interest rates, spreads, stock market, housing prices, exchange rates, gold&silver; also real activity measures, money)
 - Full data set: quarterly 1959:I – 1999:IV (not all country/indicator pairs available)
- Recursive Out-of-Sample Forecasting
 - 1971-1983
 - 1984-1998
- Usual Granger-Causality and “Chow” Statistics

Forecasting Using Stock Returns

Inflation – 4 Quarters Ahead

CA FR GY IT JP UK US

GC P-Value	0.76	0.60	0.58	0.71	0.46	0.00	0.03
QLR P-Value	0.13	0.85	0.56	0.18	0.48	0.19	0.80
RMSFE - I	0.99	1.18	1.02	1.35	0.86	0.85	0.95
RMSFE-II	1.12	1.01	1.00	1.07	2.64	1.15	1.20

Output – 4 Quarters Ahead

CA FR GY IT JP UK US

GC P-Value	0.00	0.30	0.00	0.41	0.00	0.08	0.00
QLR P-Value	0.38	0.00	0.00	0.04	0.01	0.47	0.10
RMSFE - I	0.91	1.16	1.00	1.05	0.93	0.95	0.75
RMSFE-II	1.13	1.24	1.12	1.02	0.92	1.06	1.72

Forecasting Using Term Spreads

Inflation – 4 Quarters Ahead

CA FR GY IT JP UK US

GC P-Value	0.07	0.02	0.72	0.01	0.14	0.32	0.00
QLR P-Value	0.80	0.03	0.92	0.00	0.00	0.73	0.04
RMSFE - I		1.10	1.13				0.91
RMSFE-II	1.07	1.46	0.99	2.55	1.24	1.12	1.40

Output – 4 Quarters Ahead

CA FR GY IT JP UK US

GC P-Value	0.00	0.05	0.00	0.10	0.00	0.42	0.00
QLR P-Value	0.13	0.00	0.37	0.09	0.02	0.38	0.07
RMSFE - I		1.14	0.72				0.53
RMSFE-II	1.08	0.82	0.95	1.50	0.92	0.95	2.59

Forecast Combination Results

Relative MSFEs of combination forecasts: CPI inflation, h=4

	CA	FR	GY	IT	JP	UK	US
Activity							
1971-84	0.96		0.82	0.89	0.99	0.82	0.72
1985-99	0.77	0.95	0.91	0.90	1.07	0.77	0.82
Asset Prices							
1971-84	0.80	0.91	1.03	1.01	1.05	0.83	0.88
1985-99	0.98	0.87	1.02	0.88	0.92	0.84	0.93
All Categories							
1971-84	0.88	0.96	0.91	0.89	0.92	0.81	0.82
1985-99	0.89	0.88	0.95	0.75	0.80	0.74	0.85

Relative MSFEs of combination forecasts:

IP Growth, h=4

CA FR GY IT JP UK US

Asset Prices

1971-84	0.79	0.82	0.75	0.94	0.95	0.95	0.58
1985-99	0.81	0.96	0.89	0.83	0.91	0.90	0.95

All Categories

1971-84	0.88	0.86	0.84	0.92	0.89	0.89	0.76
1985-99	0.93	0.96	0.97	0.75	0.88	0.89	0.96

Are asset prices helpful in predicting future inflation?

Yes

Or are they too noisy to be of use?

Yes