Comments on

Monetary Policy
and Stock Market Boom-Bust Cycles

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The views expressed are solely the responsibility of the discussant, and should not be interpreted as reflecting the views of the Board of Governors of the Federal Reserve System or of any other person associated with the Federal Reserve System.
Overview

⇒ Objective

What explains the dynamic effects of anticipated pickup in future productivity that turns out to have been overoptimistic?

⇒ Methodology

- Highlight three U.S. stock market boom-bust episodes
- Formulate DSGE model that can generate a boom-bust cycle
- Perform sensitivity analysis with respect to alternative model specifications (including credit channel, structure of labor markets)
Outline of Comments

⇒ DSGE Model Specification and Optimal Monetary Policy
  • Strategic Complementarities in Firms’ Price-Setting Behavior
  • Risk-Sensitive Household Preferences

⇒ Reconsidering the Three U.S. Boom-Bust Episodes

⇒ Central Bank Tools for Monitoring the Impact of News
  • The Near-Term Macro Outlook
  • Near-term Policy Expectations
  • The Longer-Term Outlook
Model Specification and Optimal Monetary Policy

Macroeconometric Equivalence

DSGE models with distinct microeconomic foundations may be difficult or impossible to distinguish solely from the first-order approximation of equilibrium conditions for the aggregate economy (e.g. Sargent 1976; Sims 1998).

Microeconomic Dissonance

Distinct micro specifications of preferences, technology, and information can have crucially different implications for optimal policy and welfare (cf. Levin, Lopez-Salido, and Yun 2006; Levin, Lopez-Salido, Nelson, and Yun 2007).
Phillips Curve Slope: Macroeconometric Equivalence

Alternative mechanisms may influence the sensitivity of a firm’s price with respect to its marginal cost:

- Factor Specificity (Woodford 2003; ACEL 2005)
- Non-Constant Elasticity of Demand (Kimball 1995)

Both models generate the same New Keynesian Phillips curve:

$$\pi_t = \beta E_t \pi_{t+1} + \kappa_p \gamma m c_t$$

Factor Specificity

$$\gamma = \frac{1}{1 + \epsilon \alpha_f / (1 - \alpha_f)}$$

Quasi-Kinked Demand

$$\gamma = \frac{1}{1 - \mu \psi}$$
Phillips Curve Slope: Microeconomic Dissonance

Welfare

\[ L_t = \lambda_\pi \pi_t^2 + \lambda_x x_t^2 \]

Firm-Specific Factors

\[ \lambda_\pi = \frac{\epsilon}{\kappa \gamma} \]

Quasi-Kinked Demand

\[ \lambda_\pi = \frac{\epsilon}{\kappa p} \]

Thus, with \( 1/\gamma \approx 10 \), the costs of inflation variability differ by an order of magnitude under these two specifications.
Slope of IS Curve: Macroeconometric Equivalence

Many studies have analyzed Epstein-Zin preferences (Tallarini, 2000)

\[
U_t = V_t + \frac{\beta}{\sigma} \log(E_t \exp[\sigma U_{t+1}])
\]

\[
V_t = \log C_t + \varphi_0 \log(1 - N_t)
\]

This specification generates the same IS equation as in the prototypical NK model with expected utility:

\[
y_t = E_t y_{t+1} - \rho [r_t - E_t \pi_{t+1}], \quad \text{where } \rho = 1
\]
Slope of IS Curve: Microeconomic Dissonance

Optimal Policy Responses to Technology Shocks

Output

Horizon

Epstein–Zin

Expected Utility
Slope of IS Curve: Microeconomic Dissonance

Optimal Policy Responses to Technology Shocks

Inflation

Horizon

Epstein–Zin

Expected Utility
Reconsidering the Three Boom-Bust Episodes

⇒ Was the boom induced by an anticipated pickup in future productivity growth?

⇒ Was the bust induced by a subsequent downward revision in anticipated future productivity growth?

⇒ Did monetary policy contribute to the boom-bust cycle by focusing too much on the stability of price inflation?

Logarithm

- Real S&P500
- Trend (Christiano-Fitzgerald)
The Evolution of U.S. Long-Run Inflation Expectations


The Recent Evolution of Long-Run Growth Projections

Consensus Economics surveys of projected U.S. GDP growth 6-to-10-years ahead
FRB/US Model-Based Assessments of Potential Growth

The Evolution of the External Finance Premium


our sample. The external finance premium shifted upward in fall 1998—following the Russian default and the collapse of LTCM—but remained below one percentage point even for the 75th percentile of the sales-weighted distribution of firms. The marked absence of an economically significant premium on external financing during this period reflects relatively small estimates of expected bankruptcy costs and is consistent with the rapid pace of capital spending during the late 1990s.

Starting in mid-2000, the model-implied external finance premium exhibits a marked upward shift for nearly all firms in our sample. In particular, the external finance premium rose more than 100 basis points for the sales-weighted median firm and about 300 basis points for the firm at the 75th percentile. As the recession ended, the external finance premium started to move lower but then jumped up again in late 2002; as noted above, this spike likely reflected investors’ concerns about the veracity of corporate balance sheets.
with moderate credit spreads even for firms with relatively high leverage ratios and expected default probabilities. During these portions of the sample, the average estimate for $\mu_t$ is roughly 10 percent, remarkably close to the value chosen by BGG in the steady-state calibration of their model, and also within the range of bankruptcy costs estimated by Altman (1984) for a sample of industrial firms that declared bankruptcy in the mid-1970s. It should be noted, however, that many of the point estimates of $\mu_t$ over these portions of the sample are not statistically significant from zero; indeed, the estimated value of $\mu_t$ drops to zero in 1997Q4.

In contrast, an upward shift in the bankruptcy cost parameter is crucial for explaining the sharp widening of credit spreads that preceded the last macroeconomic downturn. Indeed, the estimated value of $\mu_t$ starts increasing in mid-2000 and reaches a peak of about 60 percent in 2001Q1—the NBER’s official date for the onset of the

\footnote{Altman’s (1984) estimates of bankruptcy costs include both the direct and indirect costs and average between 11 percent and 17 percent of the value of the firm. Direct costs—explicit administrative costs paid by the debtor during the reorganization/liquidation process—were taken from the bankruptcy records of individual firms. Measures of indirect costs, namely lost profits, were estimated.}
The Recent Evolution of Expectations for U.S. GDP Growth in 2008

Source: Philadelphia Fed Survey of Professional Forecasts
The Impact of News on Near-Term Policy Expectations

Money Market Futures Rates

- FOMC statement
- Durable goods
- ISM Chairman's speech
- Nonfarm payrolls
- FOMC minutes

Money Market Rates

- December 2008 Eurodollar
- May 2008 federal funds

Note. 5-minute intervals, 8:00 a.m. to 4:00 p.m. No adjustments for term premiums.
### The Impact of News on the Longer-Term Outlook

<table>
<thead>
<tr>
<th>Indicator</th>
<th>One-Year Treasury Rate</th>
<th>Ten-Year-Ahead Forward Rates</th>
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<tr>
<td></td>
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<td>Real Rate</td>
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<tr>
<td>Capacity Utilization</td>
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<td>ISM Manuf. Survey</td>
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<tr>
<td>Core CPI</td>
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<tr>
<td>Real GDP</td>
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<tr>
<td>Initial Jobless Claims</td>
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<td>New Home Sales</td>
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<td>-1.0</td>
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Real Rate Breakeven Inflation

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Regression t-statistics from Table 2 of Gurkaynak, Levin, and Swanson (2007), “Does Inflation Targeting Anchor Long-Run Inflation Expectations?”
Figure 2: Probability of five-year ahead inflation outcomes from the ECB SPF

Source: ECB Survey of Professional Forecasters. Probabilities based on a probability density function published by the ECB aggregated over the individual probability densities supplied by respondents.

Dispersions in Long-Run Inflation Expectations in Surveys of Professional Forecasters

Sources: ECB Survey of Professional Forecasters and Federal Reserve of Philadelphia Survey of Professional Forecasters. Note: Forecasts for the euro-area pertain to five-year ahead inflation in the euro-area harmonized index of consumer prices. Forecasts for the United States pertain to ten-year ahead core consumer price inflation. The ECB publishes the standard deviation to one decimal place, so the standard deviation calculated from individual responses to the US SPF has been rounded similarly.
reflects a revision of inflation expectations, but at longer horizons could be due to revision of long-run inflation expectations or an increase in the inflation risk premium.

Three new variables also appear as significant determinants of daily movements in ten-year ahead inflation compensation. One of these, real GDP (advance) is illustrated in the right panel of Figure 6. At a short horizon, where inflation expectations are likely to account for much of the movement in inflation compensation, the surprise component of real GDP does not evoke a reaction in market rates. Rather, its effect is concentrated after six years. This is suggestive that some data releases might not prompt revision of inflation expectations but may nonetheless cause affect inflation risk premia demanded for longer horizons. Augmenting the regression to include the euro-area regressors does not materially affect the coefficients on U.S. data surprises, although French business confidence and French CPI are found to have a statistically significant effect on U.S. inflation compensation far out along the term structure (shown in Table B3 in Appendix B).
forward rates appear to move forward inflation compensation in the euro area at short or long horizons. Only the U.S. monetary policy surprise has a statistically significant effect at medium-term horizons. The sign indicates that unexpectedly tighter policy in the United States today is associated with slightly higher inflation compensation in the euro area four- to five-years ahead. This could be consistent with tighter monetary policy signaling an unfavorable inflation forecast in the United States that contains information for future euro area inflation.