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Research UPDATE

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RESEARCH AND MARKET ANALYSIS GROUP

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Inflation Forecasts Based on Single Indicators Prove Unreliable

Analysts looking for signs of rising inflation often attach great importance to the movements of a particular indicator. Declines in the unemployment rate are watched closely by some analysts; for others, increases in the price of gold or oil are key.

In “The Unreliability of Inflation Indicators” (***Current Issues in Economics and Finance***, vol. 6, no. 4), Stephen Cecchetti, Rita Chu, and Charles Steindel argue that we should, in fact, put little stock in predictions of inflation that are based on the movements of a single indicator. The authors reach this conclusion after examining the usefulness of a range of variables that are widely thought to be linked to movements in the consumer price index (CPI). These variables include commodity prices, the unemployment and capacity utilization rates, and financial measures such as exchange rates and the monetary aggregates.

To test the predictive power of the indicators, the authors construct a simple statistical model that produces quarterly inflation forecasts for 1985-98. Initially, the model includes as explanatory variables only past values of CPI growth. The authors then add to the model each of the indicators in turn. By comparing the resulting forecasts with the actual values of inflation during the 1985-98 period, the authors determine whether the addition of individual indicators improves the accuracy of the model’s forecasts.

The analysis reveals that in any one period, incorporating an indicator selected at random produces a less accurate inflation forecast than that produced by a model based simply on inflation’s past values. Half of the indicators tested—including the exchange rate level,

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various interest rate variables, and the unemployment and capacity utilization rates—consistently reduce the accuracy of the inflation forecasts when they are added to the model.

Cecchetti, Chu, and Steindel note that even those indicators that are reasonably well correlated with overall inflation have drawbacks that limit their usefulness. For example, variables such as growth in average hourly earnings are difficult to forecast independently of inflation.

Although the authors acknowledge that the variables *in combination* might produce reliable forecasts, they conclude that "simple models based on single indicators fail to yield consistently useful information."

Simple Capital Ratios May Merit a Role in Bank Regulation

The current review of the 1988 Basel Capital Accord has prompted considerable discussion of the ratios used to assess banks' capital adequacy. In "Capital Ratios as Predictors of Bank Failure" (***Economic Policy Review***, vol. 6, no. 2), Arturo Estrella, Sangkyun Park, and Stavros Peristiani argue that, to be useful for bank regulation, capital ratios should bear a significant negative relationship to the risk of subsequent bank failure.

With this standard in mind, the authors examine the effectiveness of three capital ratios in forecasting bank failure over different time frames. The most complex of the three—the *risk-weighted ratio*—compares a bank's capital with its risk-weighted assets, as defined in the Basel Accord. The *leverage ratio* and the *gross revenue ratio* are considerably easier to compute: the first compares capital with total assets, while the second compares capital with total interest and noninterest income.

Significantly, the authors find that even the simple ratios can be strongly informative and useful in predicting bank failures. Although

Publications and Papers

The Research and Market Analysis Group produces a wide range of publications:

- ***The Economic Policy Review***—a policy-oriented research journal focusing on macroeconomic, banking, and financial market topics.
- ***Current Issues in Economics and Finance***—a newsletter-style publication offering concise and timely analyses of economic and financial topics.
- ***Second District Highlights***—a regional supplement to ***Current Issues*** covering financial and economic developments in the Federal Reserve System's Second District.
- ***Staff Reports***—technical papers intended for publication in leading economic and finance journals. This series is available only in electronic form.
- ***Publications & Other Research***—an annual catalogue of the Group's research output.

the risk-weighted measures prove more accurate in forecasting failure over long horizons, the leverage and gross revenue ratios perform as well in predicting failure over one- or two-year horizons. This result leads the authors to conclude that the leverage and gross revenue ratios might provide timely signals of the need for prompt supervisory action. In addition, the authors note, the simple ratios have the advantage of being virtually costless to implement.

The study concludes with the suggestion that the simple ratios may deserve a role in a revised capital framework. Although sophisticated measures are best for formulating primary capital requirements, simple ratios might serve as supplementary indicators or backstop thresholds that would trigger regulatory action if breached.

Loan Officer Survey Helps to Predict Banks' Commercial Lending and U.S. Economic Activity

With more than 8,000 banks in the United States, can sixty loan officers tell us anything useful about aggregate lending? Evidently, they can tell us quite a lot.

Responses to the Senior Loan Officer Opinion Survey help the Federal Reserve to determine whether bankers are growing more or less cautious in their lending practices.

In "Listening to Loan Officers: The Impact of Commercial Credit Standards on Lending and Output" (***Economic Policy Review***, vol. 6, no. 2), Cara Lown, Donald Morgan, and Sonali Rohatgi conclude that the Federal Reserve's Senior Loan Officer Opinion Survey offers useful information for forecasting commercial loan growth and overall economic activity. Specifically, they identify a strong connection between loan officers' reports of tighter credit standards and slowdowns in commercial lending and output, even after they control for demand and other predictors of lending and economic activity.

"The idea behind the survey," observe the authors, "is that the availability of bank credit depends not just on interest rates, but on credit standards as well." Accordingly, once each quarter, loan officers at roughly sixty large U.S. banks are asked about their moves to tighten or ease commercial credit standards since the previous quarter. The responses help the Federal Reserve to determine whether bankers are growing more or less cautious in their lending practices.

Despite the long-standing use of the survey, there are reasons to question its results, according to the authors. For instance, the survey is purely qualitative—it solicits loan officers' opinions rather than actual numbers. The survey's relatively small sample size also suggests that the opinions of the more than 8,000 banks operating nationwide are not fully represented. Furthermore, the potential for reporting bias raises another area of doubt.

Because loan officers work for banks that are likely supervised by the Federal Reserve, they might suspect, albeit wrongly, that their input will be used for supervisory purposes and they may shade their responses accordingly.

Lown, Morgan, and Rohatgi acknowledge that these issues reflect legitimate concerns. Nevertheless, they find that despite such drawbacks, the loan officers' responses are informative: "Loan officers not only report accurately, they provide us with information that we could not infer from other measures of credit availability, such as loan rates, loan growth itself, or the mix of bank loans and other sources of credit."

In addition, the authors determine that the reported changes in credit standards also help to predict overall economic growth as well as narrower measures of business activity. One such measure is inventory investment, where commercial credit availability from banks seems most crucial. Finally, the study suggests that a shock to credit standards and its aftermath closely resemble a "credit crunch": banks' commercial loans plummet immediately after a tightening in credit standards and continue to fall until lenders ease up. Economic activity (GDP) falls as well.

Fed Conference Addresses the Changing Structure of the Financial System

In June, more than 150 professionals in the fields of banking, securities, insurance, economics, risk management, and bank supervision gathered at the Federal Reserve Bank of New York to discuss how technological change and regulatory reform will affect the financial system.

The Bank's Banking Studies area sponsored the daylong conference, "Specialization, Diversification, and the Structure of the Financial System: The Impact of Technological Change and Regulatory Reform." The sessions examined the risks and rewards inherent in the corporate strategies of multiservice as well as specialized firms in banking, securities, and insurance. Central to the discussions was how the evolution of technology and regulatory reform will figure into these strategies.

"The conference brought to the surface important issues that the industry will face going forward," says Beverly Hirtle, vice president in Banking Studies and conference organizer. "Namely, we discussed the complex task that financial institutions have before them in determining the impact of regulatory reform and technological change on their businesses. Our consensus was that as technology advances and regulatory reform takes shape, the industry will no doubt adapt, despite these new challenges."

The conference proceedings will be published in an upcoming issue of the Bank's ***Economic Policy Review***.

New Titles in the *Staff Reports* Series

The following new ***Staff Reports*** are available at the Research and Market Analysis Group's web site: **www.ny.frb.org/rmaghome**.

Macroeconomics and Growth

No. 102

Finite Horizons, Political Economy, and Growth

James A. Kahn and Jong-Soo Lim

This study analyzes the political economy of growth when economic agents and the government have finite horizons and equilibrium growth is inefficient. A representative government with only the ability to tax and transfer can improve somewhat on the market allocation. However, it cannot achieve optimum growth because it lacks the ability to bind future governments. The authors argue that this ability is linked to political stability, and show that stability and growth policies are meaningfully related.

No. 106

Uncertainty and Labor Contract Durations

Robert Rich and Joe Tracy

The authors investigate the relationship between ex ante U.S. labor contract durations and uncertainty over the 1970-95 period. They construct measures of inflation uncertainty as well as aggregate nominal and real uncertainty. Their results not only corroborate findings of an inverse relationship between contract durations and inflation uncertainty, but also show that this relationship extends to both measures of aggregate uncertainty.

International

No. 103

Excess Volatility of Exchange Rates with Unobservable Fundamentals

Leonardo Bartolini and Lorenzo Giorgianni

The authors conduct tests of excess exchange rate volatility that impose minimal structure on the data and do not commit to a choice of exchange rate "fundamentals." By examining data for three major exchange rates going back to 1984, the authors find broad evidence of excess volatility with respect to the predictions of the canonical asset-pricing model of the exchange rate with rational expectations.

Microeconomics

No. 104

Public Infrastructure Investments, Productivity, and Welfare in Fixed Geographic Areas

Andrew F. Haughwout

Measures of the value of public investments are critical inputs into the policy process, and aggregate production and cost functions have become the dominant methods of evaluating these benefits. This paper examines the limitations of these approaches in light of applied production and spatial equilibrium theories. Its findings suggest that although public capital provides significant productivity and consumption benefits, an ambitious program of locally funded infrastructure provision would generate negative net benefits for the cities studied.

Banking and Finance

No. 105

Rating Banks: Risk and Uncertainty in an Opaque Industry

Donald P. Morgan

This study argues that bond raters' frequent and sharp disagreement over banks and insurance companies indicates that these firms are inherently more opaque than others. It finds that ratings agencies' uncertainty over banks stems from bank assets, loans and, in particular, trading assets—the risks of which are hard to observe and easy to change. Banks' high leverage, which invites agency problems, is also found to compound the uncertainty over bank assets.

Papers Presented by Economists in the Research and Market Analysis Group

"Day-to-Day Monetary Policy and the Volatility of the Federal Funds Interest Rate," *Leonardo Bartolini*. Rutgers University Macroeconomics Seminar Series, New Brunswick, New Jersey, April 25.

Bartolini considers several theoretical predictions of the cyclical behavior of the federal funds rate's volatility and of the volatility's response to changes in Federal Reserve intervention procedures. His examination of the U.S. federal funds market shows that many of those predictions prove to be accurate.

"Entrepreneurship and Bank Credit Availability," *Sandra Black and Philip Strahan*. Seminar sponsored by Miguel Hernandez University, Alicante, Spain, May 31.

The authors show that states with more efficient banks experience a higher rate of new business creation.

"The Source of Border Effects: Nationality or Location?" *Carolyn Evans*. Midwest International Economics Association Spring Conference, Lexington, Kentucky, May 20.

Evans analyzes nine OECD countries between 1985 and 1994. She finds that borders per se are more important than some inherent difference between foreign and domestic products in explaining why borders affect the volume of imports of U.S. products.

"Foreign and Domestic Bank Participation in Domestic Markets: Lessons from Mexico and Argentina," *Linda Goldberg*. SUERF (Société Universitaire Européenne de Recherches Financières) Twenty-Second Colloquium, Vienna, Austria, April 28. With Gerard Dages and Daniel Kinney.

The paper's findings suggest that the health of privately owned banks, and not foreign versus domestic ownership per se, is a critical element in the growth, volatility, and cyclicality of bank lending. Diversity in ownership appears to contribute to greater stability of credit in times of domestic crises and low domestic demand.

"Inflation, Monetary Transparency, and G3 Exchange Rate Volatility," *Kenneth Kuttner*. SUERF (Société Universitaire Européenne de Recherches Financières) Twenty-Second Colloquium, Vienna, Austria, April 28. With Adam Posen.

The paper examines the possible role of monetary policy transparency in attenuating exchange rate volatility. In the United States, a more clearly articulated emphasis on controlling inflation has led to a modest decline in volatility; in Japan, uncertainty about the goals of monetary policy appears to have contributed to an increase in volatility.

"Settlement Risk under Gross and Net Settlement," *James McAndrews*. Midwest Macroeconomics Conference, University of Iowa, Iowa City, Iowa, April 16. With Charles Kahn and William Roberds.

The study's model of both net and gross settlement systems reveals a previously overlooked advantage of net settlement: net settlement systems lessen the incentives to engage in strategic default.

"Rent Increases in the CPI: Are They Plausible?" *Jonathan McCarthy and Richard Peach*. American Real Estate and Urban Economics Association's Midyear Meetings, Washington, D.C., May 31.

The authors find that recent rates of increase of the tenants' rent component of the CPI appear to be consistent with results from the American Housing Survey. However, their other finding—that recent rates of increase of the owners' equivalent rent component of the CPI appear to be lower than the survey suggests—indicates that there may be some understatement of inflation as measured by both the CPI and the PCE deflator.

"Beggar-thy-Neighbor or Beggar-Thyself: The Income Effect of Exchange Rate Fluctuations," *Cédric Tille*. Seminar sponsored by the University of Pennsylvania's Department of Economics, Philadelphia, Pennsylvania, March 28.

The author analyzes the welfare effects of exchange rate fluctuations. He shows that intermediaries who purchase goods from foreign firms to sell in the domestic market play a key role in determining whether a country benefits or suffers from a depreciation of its currency.

Recently Published

Sandra Black. 2000. "The Rise of Female Professionals: Are Women Responding to Skill Demand?" with Chinhui Juhn. ***American Economic Review*** 90, no. 2 (May): 450-5. Papers and Proceedings of the 112th Annual Meeting of the American Economic Association.

Andrew Haughwout. 2000. "The Paradox of Infrastructure Investment: Can a Productive Good Reduce Productivity?" ***Brookings Review*** 18, no. 3 (summer): 40-3.

James Kahn. 2000. "The Design of Bank Loan Contracts," with Gary Gorton. ***Review of Financial Studies*** 13, no. 2 (summer): 331-64.

James Kahn. "What Inventory Behavior Tells Us about Business Cycles," with Mark Bils. ***American Economic Review*** 90, no. 3 (June).

Martin Lettau. 2000. "Can Habit Formation Be Reconciled with Business Cycle Facts?" with Harald Uhlig. ***Review of Economic Dynamics*** 3 (January): 79-99.

Martin Lettau. 2000. "Cross-Variable Restrictions in Euler Equations and Risk Premia." ***Applied Economics*** 3, no. 2 (February): 99-102.

Cara Lown and Stavros Peristiani. 2000. "Capital Regulation and Depository Institutions," with Kenneth Robinson. In James R. Barth, R. Dan Brumbaugh, Jr., and Glenn Yago, eds., ***Restructuring Regulation and Financial Institutions***, 41-72. Santa Monica, CA: Milken Institute Press.

Paolo Pesenti. 2000. "The (Past and) Future of European Currencies," with Giancarlo Corsetti. ***Cuadernos de Economia*** 37, no. 110 (April): 35-62.

Paolo Pesenti and Cédric Tille. 2000. "Competitive Devaluations: Toward a Welfare-Based Approach," with Giancarlo Corsetti and Nouriel Roubini. ***Journal of International Economics*** 51, no. 1 (June): 217-41.

Simon Potter. 2000. "Nonlinearity, Structural Breaks, or Outliers in Economic Time Series?" with Gary Koop. In William Barnett et al., eds., ***Nonlinear Econometric Modeling in Time Series Analysis***, 61-78. Cambridge: Cambridge University Press.

Simon Potter. 2000. ***Surveys in Economic Dynamics***, with Donald George and Les Oxley. Oxford: Blackwell's.

Marc Saidenberg. 2000. "Diversification, Organization, and Efficiency: Evidence from Bank Holding Companies," with Peter G. Klein. In Patrick T. Harker and Stavros A. Zenios, eds., ***Performance of Financial Institutions: Efficiency, Innovation, Regulation***, 153-74. Cambridge: Cambridge University Press.

Marc Saidenberg. 2000. "Evaluating Credit Risk Models," with Jose Lopez. ***Journal of Banking and Finance*** 24, nos. 1/2 (January): 151-65.

Joao Santos. 2000. "The Importance of Bank Seniority for Relationship Lending," with Stanley D. Longhofer. ***Journal of Financial Intermediation*** 9, no. 1: 57-89.

Kevin Stiroh. 2000. "U.S. Economic Growth at the Industry Level," with Dale W. Jorgenson. ***American Economic Review*** 90, no. 2 (May): 161-7. Papers and Proceedings of the 112th Annual Meeting of the American Economic Association.

Eric van Wincoop. 2000. "Growth Uncertainty and Risksharing," with Stefano Athanasoulis. ***Journal of Monetary Economics*** 45, no. 3 (June): 447-505.

RESEARCH AND MARKET ANALYSIS GROUP PUBLICATIONS AND PAPERS: April-June 2000

Economic Policy Review, Vol. 6, No. 2

Listening to Loan Officers: The Impact of Commercial Credit Standards on Lending and Output
Cara S. Lown, Donald P. Morgan, and Sonali Rohatgi

The Timing and Funding of Fedwire Funds Transfers
James McAndrews and Samira Rajan

Capital Ratios as Predictors of Bank Failure
Arturo Estrella, Sangkyun Park, and Stavros Peristiani

Support for Resistance: Technical Analysis and Intraday Exchange Rates
Carol Osler

Current Issues in Economics and Finance, Vol. 6

No. 4
The Unreliability of Inflation Indicators
Stephen G. Cecchetti, Rita S. Chu, and Charles Steindel

No. 5
New York–New Jersey Job Expansion to Continue in 2000
James Orr and Rae D. Rosen
Second District Highlights series

No. 6
Explaining the Gap between New Home Sales and Inventories
James A. Kahn

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Rapidly Rising Corporate Debt: Are Firms Now Vulnerable to an Economic Slowdown?
Carol Osler and Gijoon Hong

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