RESEARCH RAP

Abstracts of research papers produced by the economists at the Philadelphia Fed

You can find more Research Rap abstracts on our website at: www.philadelphiafed.org/research-and-data/publications/research-rap/. Or view our working papers at: www.philadelphiafed.org/research-and-data/publications/.

TOOLS FOR ASSESSING MULTIVARIATE ASPECTS OF BAYESIAN DSGE MODELS

This paper develops and applies tools to assess multivariate aspects of Bayesian dynamic stochastic general equilibrium (DSGE) model forecasts and their ability to predict co-movements among key macroeconomic variables. The authors construct posterior predictive checks to evaluate the calibration of conditional and unconditional density forecasts, in addition to checks for root-mean-squared errors and event probabilities associated with these forecasts. The checks are implemented on a three-equation DSGE model as well as the Smets and Wouters (2007) model using real-time data. They find that the additional features incorporated into the Smets-Wouters model do not lead to a uniform improvement in the quality of density forecasts and prediction of co-movements of output, inflation, and interest rates.

Working Paper 11-5, "Evaluating DSGE Model Forecasts of Co-movements," Edward Herbst, University of Pennsylvania, and Frank Schorfheide, University of Pennsylvania, and Visiting Scholar, Federal Reserve Bank of Philadelphia

EXPLAINING FLUCTUATIONS IN TRADE DURING THE RECENT RECESSION

The authors examine the source of the large fall and rebound in U.S. trade in the recent recession. While trade fell and rebounded more than expenditures or production of traded goods, they find that relative to the magnitude of the downturn, these trade fluctuations were in line with those in previous business cycle fluctuations. The authors argue that the high volatility of trade is attributed to more severe inventory management considerations of firms involved in international trade. They present empirical evidence for autos as well as at the aggregate level that the adjustment of inventory holdings helps explain these fluctuations in trade.

Working Paper 11-6, "U.S. Trade and Inventory Dynamics," George Alessandria, Federal Reserve Bank of Philadelphia; Joseph P. Kaboski, University of Notre Dame; and Virgiliu Midrigan, New York University

RECENT ADVANCES IN THE ESTIMATION AND EVALUATION OF DSGE MODELS

Estimated dynamic stochastic equilibrium (DSGE) models are now widely used for empirical research in macroeconomics as well as for quantitative policy analysis and forecasting at central banks around the world. This paper reviews recent advances in the estimation and evaluation of DSGE models, discusses current challenges, and provides avenues for future research.

Working Paper 11-7, "Estimation and Evaluation of DSGE Models: Progress *and Challenges," by Frank Schorfheide, University of Pennsylvania, and Visiting Scholar, Federal Reserve Bank of Philadelphia*

MEASURING THE EFFECT OF EXTENSIONS OF UNEMPLOYMENT INSURANCE ON THE UNEMPLOYMENT RATE

This paper measures the effect of extensions of unemployment insurance (UI) benefits on the unemployment rate using a calibrated structural model that features job search and consumption-saving decision, skill depreciation, UI eligibility, and UI benefit extensions that capture what has happened during the current downturn. The author finds that the extensions of UI benefits contributed to an increase in the unemployment rate by 1.2 percentage points, which is about a quarter of an observed increase during the current downturn (a 5.1 percentage point increase from 4.8 percent at the end of 2007 to 9.9 percent in the fall of 2009). Among the remaining 3.9 percentage points, 2.4 percentage points are due to the large increase in the separation rate, while the staggering job-finding probability contributes 1.4 percentage points. The last extension in December 2010 moderately slows down the recovery of the unemployment rate. Specifically, the model indicates that the last extension keeps the unemployment rate higher by up to 0.4 percentage point during 2011.

Working Paper 11-8, "A Quantitative Analysis of Unemployment Benefit Extensions," Makoto Nakajima, Federal Reserve Bank of Philadelphia

FIXED VS. FLOATING EXCHANGE RATES: A RECONSIDERATION OF THE CONVENTIONAL WISDOM

According to conventional wisdom, fiscal policy is more effective under a fixed than under a flexible exchange rate regime. In this paper the authors reconsider the transmission of shocks to government spending across these regimes within a standard New Keynesian model of a small open economy. Because of the stronger emphasis on intertemporal optimization, the New Keynesian framework requires a precise specification of fiscal and monetary policies, and their interaction, at both short and long horizons. The authors derive an analytical characterization of the transmission mechanism of expansionary spending policies under a peg, showing that the long-term real interest rate always rises in response to an increase in government spending if inflation rises initially. This response drives down private demand even though short-term real rates fall. As this need not be the case under floating exchange rates, the conventional wisdom needs to be qualified. Under plausible medium-term fiscal policies, government spending is not necessarily less expansionary under floating exchange rates.

Working Paper 11-9, "Floats, Pegs, and the Transmission of Fiscal Policy," Giancarlo Corsetti, Cambridge University; Keith Kuester, Federal Reserve Bank of Philadelphia; and Gernot J. Müller, University of Bonn

USING NEW TIME SERIES TO STUDY THE UK ECONOMY DURING WORLD WAR I AND THE INTERWAR PERIOD

This article contributes new time series for studying the UK economy during World War I and the interwar period. The time series are per capita hours worked and average capital income, labor income, and consumption tax rates. Uninterrupted time series of these variables are provided for an annual sample that runs from 1913 to 1938. The authors highlight the usefulness of these time series with several empirical applications. The per capita hours worked data are used in a growth accounting exercise to measure the contributions of capital, labor, and productivity to output growth. The average tax rates are employed in a Bayesian model averaging experiment to reevaluate the Benjamin and Kochin (1979) regression.

Working Paper 11-10, "UK World War I and Interwar Data for Business Cycle and Growth Analysis," James M. Nason, Federal Reserve Bank of Philadelphia, and Shaun P. Vahey, Australian National University

COMPARING BORROWER OUTCOMES AFTER DIFFERENT TYPES OF CREDIT COUNSELING

This paper compares outcomes for borrowers who received face-to-face credit counseling with similarly situated consumers who opted for counseling via the telephone or Internet. Counseling outcomes are measured using consumer credit report attributes one or more years following the original counseling. The primary analysis uses data from a sample of 26,000 consumers who received credit counseling either in-person or via the telephone during 2003. A second sample of 12,000 clients counseled in 2005 and 2006 was provided by one of the agencies to examine Internet delivery. Technology-assisted delivery was found to generate outcomes no worse — and at some margins better — than face-to-face delivery of counseling services.

Working Paper 11-11, "Is Technology-Enhanced Credit Counseling as Effective as In-Person Delivery?," John M. Barron, Purdue University, and Michael E. Staten, University of Arizona, and Visiting Scholar, Federal Reserve Bank of Philadelphia

EXPLORING THE LINK BETWEEN LENDERS' HOUSE-PRICE EXPECTATIONS AND SUBPRIME LENDING

This paper explores the link between the house-price expectations of mortgage lenders and the extent of subprime lending. It argues that bubble conditions in the housing market are likely to spur subprime lending, with favorable price expectations easing the default concerns of lenders and thus increasing their willingness to extend loans to risky borrowers. Since the demand created by subprime lending feeds back onto house prices, such lending also helps to fuel an emerging housing bubble. The paper, however, focuses on the reverse causal linkage, where subprime lending is a consequence rather than a cause of bubble conditions. These ideas are illustrated in a theoretical model, and empirical work tests for a connection between price expectations and the extent of subprime lending.

Working Paper 11-12, "Subprime Mortgages and the Housing Bubble," Jan K. Brueckner, University of California—Irvine; Paul S. Calem, Board of Governors of the Federal Reserve System; and Leonard I. Nakamura, Federal Reserve Bank of Philadelphia

HOW IS THE RISKINESS OF THE POOL OF HELOC ORIGINATIONS AFFECTED OVER THE CREDIT CYCLE?

The authors empirically study how the underlying riskiness of the pool of home equity line of credit originations is affected over the credit cycle. Drawing from the largest existing database of U.S. home equity lines of credit, they use county-level aggregates of these loans to estimate panel regressions on the characteristics of the borrowers and their loans, and competing risk hazard regressions on the outcomes of the loans. The authors show that when the expected unemployment risk of households increases, riskier households tend to borrow more. As a consequence, the pool of households that borrow on home equity lines of credit worsens along both observable and unobservable dimensions. This is an interesting example of a type of dynamic adverse selection that can worsen the risk characteristics of new lending, and suggests another avenue by which the precautionary demand for liquidity may affect borrowing.

Working Paper 11-13, "Credit Cycle and Adverse Selection Effects in Consumer Credit Markets: Evidence from the HELOC Market," Paul Calem, Board of Governors of the Federal Reserve System; Matthew Cannon, CoreLogic; and Leonard Nakamura, Federal Reserve Bank of Philadelphia

EFFECTS OF LENDERS' ACCESS TO INFORMATION ABOUT BORROWERS' PAST DEFAULTS

In many countries, lenders are restricted in their access to information about borrowers' past defaults. The authors study this provision in a model of repeated borrowing and lending with moral hazard and adverse selection. They analyze its effects on borrowers' incentives and access to credit and identify conditions under which it is optimal. The authors argue that "forgetting" must be the outcome of a regulatory intervention by the government. Their model's predictions are consistent with the cross-country relationship between credit bureau regulations and the provision of credit, as well as the evidence on the impact of these regulations on borrowers' and lenders' behavior.

Working Paper 11-14, "Bankruptcy: Is It Enough to Forgive or Must We Also Forget?," Ronel Elul, Federal Reserve Bank of Philadelphia, and Piero Gottardi, European University Institute

TRACKING THE PATTERNS OF HOME EQUITY WITHDRAWAL AMONG RETIREES

The authors study empirically and theoretically the patterns of home equity withdrawal among retirees, using a model in which retirees are able to own or rent a home, save, and borrow against home equity, in the face of idiosyncratic risks concerning mortality, health, medical expenditures, and household size and observed house price changes. The estimated model is found to successfully replicate the patterns of homeownership and the saving/borrowing decisions of retirees. They use the estimated model for several counterfactual experiments. There are three main findings. First, the model predicts that a house price boom suppresses homeownership and increases borrowing, while a decline in house prices has the opposite effect. Second, the costs of home equity borrowing restrict the borrowing of retirees, and thus a reduction of such costs (e.g., lower costs of reverse mortgage loans) might significantly raise home equity borrowing. Third, there are two implications for the retirement saving puzzle. Although the cost of borrowing against equity in the house affects the borrowing of retirees, it does not affect total asset holding, implying that equity borrowing costs do not seem to offer a quantitatively significant contribution to resolving the retirement saving puzzle. On the other hand, the magnitude of the retirement saving puzzle might be exaggerated because a sizable part of "retirement saving" is due to house price appreciation.

Working Paper 11-15, "Home Equity Withdrawal in Retirement," Makoto Nakajima, Federal Reserve Bank of Philadelphia, and Irina A. Telyukova, University of California—San Diego

SOURCES OF THE DECLINE IN EMPLOYMENT VOLATILITY 1956-2002

This study documents a general decline in the volatility of employment growth during the period 1956 to 2002 and examines its possible sources. The authors use a panel design that exploits the considerable state-level variation in volatility during the period. The roles of monetary policy, oil prices, industrial employment shifts and a coincident index of business cycle variables are explored. Overall, these four variables taken together explain as much as 31 percent of the fluctuations in employment growth volatility. Individually, each of the four factors is found to have significantly contributed to fluctuations in employment growth volatility, although to differing degrees.

Working Paper 11-16, "The Long and Large Decline in State Employment Growth Volatility," Gerald Carlino, Federal Reserve Bank of Philadelphia; Robert DeFina, Villanova University; and Keith Sill, Federal Reserve Bank of Philadelphia