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ACCOUNTING FOR HOUSING IN CONSUMER PRICE INDEXES

In this paper, the authors take stock of how statistical agencies in different nations are currently accounting for housing in their consumer price indexes (CPIs). The rental equivalence and user cost approaches have been favorites of economists. Both can be derived from the fundamental equation of capital theory. Concerns about these approaches are taken up. They go on to argue that an *opportunity cost* approach is the correct theoretical framework for accounting for owner-occupied housing (OOH) in a CPI. This approach, first mentioned in a 2006 OECD paper by Diewert, is developed more fully here. The authors explore the relationship of this new approach to the usual rental equivalency and user cost approaches. The new approach leads to an owner-occupied housing opportunity cost (OOHOC) index that is a weighted average of the rental and the financial opportunity costs.

The authors call attention to the need for more direct measures of inflation for owner-occupied housing services. In a 2007 paper, Mishkin argues that central banks with supervisory authority can reduce the likelihood of bubbles forming through prudential supervision of the financial system. However, the official mandates of central banks typically focus on managing *measured* inflation. Barack Obama has pledged to give the Federal Reserve greater oversight of a broader array of financial institutions. They believe that an important addition to this pledge should be to give the BLS, BEA, and Census Bureau the funds and the mandate to aggressively develop improved measures of inflation for owner-occupied housing services. Central banks and national governments have many policy instruments at their disposal that they could use, in the future, to control inflation in housing markets. What

they lack are appropriate measures of inflation in the market for owner-occupied housing services. The proposed new opportunity cost measure for accounting for OOH in a CPI will not be simple or cheap to implement. However, the current financial crisis makes it clear that the costs of *not* having an adequate measure for inflation in the cost of owner-occupied housing services can be far greater.

Working Paper 09-4, "Accounting for Housing in a CPI," W. Erwin Diewert, University of British Columbia, and Alice O. Nakamura, University of Alberta School of Business, and Visiting Scholar, Federal Reserve Bank of Philadelphia

OPPORTUNITY COST TREATMENT OF OWNER-OCCUPIED HOUSING IN MEASURES OF INFLATION

This paper provides a brief introduction to a proposed new opportunity cost treatment of owner-occupied housing in measures of inflation for the United States. In addition, the paper introduces, and provides links to, a collection of nine other papers that discuss various aspects of the treatment of owner-occupied housing in measures of inflation for a number of nations, including Canada, Germany, Iceland, and the United States.

Working Paper 09-5, "Introduction to Price and Productivity Measurement for Housing," Bert M. Balk, Erasmus University Rotterdam; W. Erwin Diewert, University of British Columbia; and Alice O. Nakamura, University of Alberta School of Business, and Visiting Scholar, Federal Reserve Bank of Philadelphia

MODELING APPROACHES TO LABOR MARKETS AND IMPLICATIONS FOR INFLATION DYNAMICS

This paper reviews recent approaches to modeling the labor market and assesses their implications for inflation dynamics through both

their effect on marginal cost and on price-setting behavior. In a search and matching environment, the authors consider the following modeling setups: right-to-manage bargaining vs. efficient bargaining, wage stickiness in new and existing matches, interactions at the firm level between price and wage-setting, alternative forms of hiring frictions, search on-the-job and endogenous job separation. They find that most specifications imply too little real rigidity and, so, too volatile inflation. Models with wage stickiness and right-to-manage bargaining or with firm-specific labor emerge as the most promising candidates.

Working Paper 09-6, "Inflation Dynamics with Labor Market Matching: Assessing Alternative Specifications," Kai Christoffel, European Central Bank; James Costain, Banco de España; Gregory de Walque, National Bank of Belgium; Keith Kuester, Federal Reserve of Philadelphia; Tobias Linzert, European Central Bank; Stephen Millard, Bank of England; and Olivier Pierrard, Banque Centrale de Luxembourg

A MODEL OF HOUSING AND CONSUMPTION WITH REALISTIC LABOR INCOME AND HOUSE-PRICE UNCERTAINTIES

The authors estimate a structural model of optimal life-cycle housing and consumption in the presence of realistic labor income and house-price uncertainties. The model postulates constant elasticity of substitution between housing service and nonhousing consumption and explicitly incorporates a house adjustment cost. Their estimation fits the cross-sectional and time-series household wealth and housing profiles from the Panel Study of Income Dynamics quite well and suggests an intra-temporal elasticity of substitution between housing and nonhousing consumption of 0.33 and a housing adjustment cost that amounts to about 15 percent of house value. Policy experiments with estimated preference parameters imply that households respond nonlinearly to house price changes with large

house price declines leading to sizable decreases in both the aggregate homeownership rate and aggregate nonhousing consumption. The average marginal propensity to consume out of housing wealth changes ranges from 0.4 percent to 6 percent. When lending conditions are tightened in the form of a higher down payment requirement, interestingly, large house-price declines result in more severe drops in the aggregate homeownership rate but milder decreases in nonhousing consumption.

Working Paper 09-7, "Housing Over Time and Over the Life Cycle: A Structural Estimation," Wenli Li, Federal Reserve Bank of Philadelphia; Haiyong Liu, East Carolina University; and Rui Yao, Zicklin School of Business, Baruch College

OPTIMAL INFLATION RATE AND POLICY TRADE-OFFS IN A TWO-SECTOR MODEL

The authors develop a two-sector monetary model with a centralized and a decentralized market. Activities in the centralized market resemble those in a standard New Keynesian economy with price rigidities. In the decentralized market agents engage in bilateral exchanges for which money is essential. The model is estimated and evaluated based on postwar U.S. data. They document its money demand properties and determine the optimal long-run inflation rate that trades off the New Keynesian distortion against the distortion caused by taxing money and hence transactions in the decentralized market. The authors find that target rates of -1 percent or less are desirable, which contrasts with policy recommendations derived from a cashless New Keynesian model.

Working Paper 09-8, "Sticky Prices Versus Monetary Frictions: An Estimation of Policy Trade-offs," S. Boragan Aruoba, University of Maryland, and Visiting Scholar, Federal Reserve Bank of Philadelphia, and Frank Schorfheide, University of Pennsylvania, and Visiting Scholar, Federal Reserve Bank of Philadelphia