INTRODUCTION

Monetary economics usually defines inflation as a fall in the purchasing power of money. Inflation, therefore, does not necessarily coincide with a rise in the consumer price index, commonly abbreviated to CPI, or in the Eurozone to HICP (Harmonized Index of Consumer Prices). Analytically, this is fully reflected in Irving Fisher's famous equation of exchange $MV = PT$, contrasting flows of money, MV, with flows of goods and services, PT. This equation reveals at least two features of great importance within a monetary policy framework. The first is that the relevant measure of purchasing power P depends heavily on the flow of goods and services. Traditionally, the latter usually includes the current production of those items. However, it may be argued that it would be analytically correct to consider a broader concept of transactions, including all sorts of asset and wealth transactions. Early attempts to include asset prices in measures of inflation can be traced to Irving Fisher (1911), but he has always made it clear that the measurement of the price level differs depending on the problem examined. He considered price index numbers, for example, to optimally reflect the price level implied by the equation of exchange. So if we include other measures than these transactions, any additional measure of inflation should take into account changes in asset prices. This largely dormant approach has been reactivated forcefully by Alchian and Klein (1973). In their seminal paper Alchian and Klein argue that assets represent future claims on goods and services which in trading determine their prices. So if we put more money in the world economy, prices will rise. Therefore, Alchian and Klein propose to focus on the current costs of lifetime consumption instead of on the costs of current consumption. Application of Fisher's equation of exchange in a monetary policy framework presumes sort of an equilibrium or long-run environment. In terms of measurement this means that a distinction should be made between a permanent and a transitory component of inflation or price movements.

So two major research areas remain. The first is to examine the feasibility of broadening the relevant measurement including asset inflation and to develop alternative indicators for inflation. The second is to consider possibilities to identify the permanent component of inflation by eliminating temporary price movements. The literature often refers to the resulting indicators as underlying headline or core inflation. Both the conceptual and the measurement issue are important problems for monetary theory and policy and were discussed in a two-day international conference 'Measuring Inflation for Monetary Policy Purposes' hosted by the Nederlandsche Bank in November 2000. This special issue contains three of the papers presented at this conference. These papers consider the above two topics and show that these issues are strongly related.

The paper by Bryan, Cecchetti and O'Sullivan addresses the issue of including asset prices in measuring inflation, following Alchian and Klein's proposal. They consider three different ideal routes of integrating asset prices into a price

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index. The first is through construction weights for the price index on the basis of expenditure systems offered by consumer behavior theory. Several attempts to use this method have been published in the literature, but have all failed to solve the excluded goods bias in the price index, i.e. to appropriately measure the current cost of a claim to future consumption, which, as a matter of fact, is the focus of including asset prices in the price index. An alternative route is the signaling approach, focusing on the intuitive idea that any change of the price of goods and services has a common and an idiosyncratic component. According to Cecchetti et al. the measurement relies heavily on the statistical properties of the price series of consumer goods and assets, but has no base in consumer theory. They propose a dynamic factor approach which in their view resolves this shortcoming to a certain extent. Cecchetti et al. apply this to US and UK data and find that asset prices, in particular housing prices, matter for measuring the common long-run component in aggregate price movements, but contain little information for month-to-month inflation. It appears that index measures which include asset prices indicate that inflation has been slightly higher than other measures would suggest.

The paper by Genberg also considers the inclusion of asset inflation, emphasizing the macroeconomic theory rather than statistical implications. His paper offers a theoretical macroeconomic framework to examine the success of inflation targeting policy according to a Taylor rule when news on asset price shocks is taken into account. The paper argues that asset prices may convey information about imbalances in the economy and may therefore constitute an area-important indicator of expected inflation useful in monetary policy-making. Moreover, it shows on the basis of model simulation that exchange rate misalignments, share price volatility or substantial movements in housing prices may result in undesirable effects on output or the allocation of resources which ultimately lead to financial stress and macroeconomic instability. Unlike the paper of Cecchetti et al. Genberg does not go into the different empirical approaches of how to account for asset inflation in day-to-day monetary policy. On the contrary, the emphasis is on the change in the monetary policy perspective in light of acquiring information on asset prices.

The paper of Folkertsma and Hubrich considers analytical measures of core inflation in the context of an applied general equilibrium model augmented with a structural VAR approach, earlier used by Fase and Folkertsma (2000) to estimate core inflation in the Netherlands and EMU. Core inflation measures attempt to gauge price level movements that are due to monetary factors. Most of the core inflation measures have been constructed in a rather *ad hoc* way. Only one approach explicitly uses monetary theory in order to derive core inflation estimators. This approach is based on structural vector autoregressive (SVAR) models with which one can decompose observed inflation into a core or monetary part and non-core part. Monetary theory is used to motivate the long-run restrictions that identify the core inflation part. For example, some of the estimators assume

that core inflation is output-neutral in the long run. However, SVAR based core inflation measures have been criticised on practical and theoretical grounds. The main theoretical concerns are that SVAR models rely on assumptions which are difficult to test or even untestable and that economic time series may contain too little information on long-run relations.

In order to assess the quantitative effect of these concerns on SVAR based core inflation estimates, Folkertsma and Hubrich develop in their article a monetary general equilibrium model calibrated to EMU conditions. This model enables them to generate time series for headline inflation and observe the true core inflation simultaneously. Hence, using the model as a laboratory, the authors can determine the measurement errors implied by different core inflation estimators. The result of their simulation study suggests that existing SVAR-based core inflation estimators are too imprecise to be useful for monetary policy.

Measuring inflation is a much broader issue than designing a sufficient statistic and indicator for monetary policy and offers a host of analytical and empirical opportunities to explore. The three papers that follow serve us an interesting illustration.

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