

Executive Summary

According to the Oxford dictionary, inflation is defined as “a general increase in prices and fall in the purchasing value of money” (Oxford Dictionaries, 2018). Thus, an adequate measure of inflation needs to measure the change in the purchasing power of money. More than 40 years after Alchian and Klein’s (1973) paper on a *correct* measure of inflation, the discussion on how inflation should be measured correctly, is still ongoing. Alchian and Klein (1973) claimed that for the purpose of monetary policy, a correct measure of inflation should measure price changes of both current *and* future consumption services (cf Alchian, & Klein, 1973). Today, conventional price indices, such as consumer price indices (CPI) are confined to current consumption products and services. Alchian and Klein (1973) argued that changes in asset prices – representing current prices of claims to future consumption services – affect today’s purchasing power of money, which in turn is what central banks aim to hold constant under their primary mandate of maintaining price stability (cf Alchian, & Klein, 1973, p.173).

Today’s inflation measures serving as target variables for monetary policy are exclusively based on current consumption prices. They track price changes of a fixed consumption basket of current consumption services weighted by their relative share of total household expenditures (cf ILO et al., 2004, p.1 ff). Asset prices only affect those measures of inflation through indirect effects on consumer prices. Thus, movements in asset prices only enter inflation measures with a significant lag and of mitigated magnitude (cf Cecchetti, Genburg, Lipsky, & Wadhwani, 2000, p.86). In times when asset and consumer prices diverge, it can lead to monetary policy decisions that are mistimed and mistuned, causing severe harm to the economy once this divergence is reversed (cf Goodhart, 2001, p.8 ff).

Studies attempting to include asset prices into the measurement of inflation suggest that house prices bear significant information regarding the future trend of inflation and potentially help to improve the way inflation measures display changes in the purchasing power of money. The inclusion of equity or bond prices on the other hand, does not improve the measurement of inflation, as they are much more volatile (cf Cecchetti, Genburg, Lipsky, & Wadhwani, 2000, p.83 ff; Goodhart, & Hofmann, 2000, p.132 ff). Based on these results, the focus of this paper will be on the inclusion of house prices, rather than equity or bond prices.

An inclusion of house prices could incorporate macro-prudential considerations into the primary monetary policy target and therefore induce central banks to act in a more counter-cyclical manner in order to prevent macroeconomic instability following the collapse of large asset price bubbles (cf Hampl, & Havránek, 2017, p.8 f). Such considerations are especially relevant in today's environment of ultra-loose monetary policy and surging asset prices in combination with stumbling inflation at relatively low levels (cf Fleming, 2017; Economist, 2017). Could it be that the effects of the ultra-loose monetary policy are not yet displayed in conventional inflation measures? And do asset prices, or more particularly house prices, convey information about the future trend of inflation? Does an index that incorporated asset prices display a different image of inflation, leading to potentially different monetary policy decisions?

In order to shed light on those questions, I will provide an extensive review about the literature on the measurement of inflation in the first part of this paper. Therefore, I will start with Alchian and Klein's theoretical claim on a correct measure of inflation and present alternative approaches of measuring inflation to today's current consumption measures.

In the second part, I will assess how inflation today is measured in eight major currency areas: the Euro area, United States of America (USA), United Kingdom (UK), Japan, Switzerland, Canada, Australia and Sweden. Focal aspects of this assessment will constitute (i) the institutional framework, i.e. who is in charge of the production of the estimates and the decision about the underlying methodology; (ii) the index construction, i.e. the underlying formulas applied on the respective aggregation levels and the data that feeds into these formulas; (iii) the definition of the scope of the index, with particular focus on the treatment of asset prices and more precisely housing prices; and (iv) the weighting of the individual index components.

In the third part, I will then provide a descriptive analysis of the inflation measures used in monetary policy of five selected currency areas, comparing them to a broader measure of inflation that incorporates house prices into conventional price indices. This alternative index expands the scope of the CPI to house prices and is based on the concept of Hampl and Havránek (2017). Moreover, I will evaluate how the application of such a broader measure of inflation could potentially affect monetary policy decisions.

My analysis suggests that the inclusion of house prices can add information with respect to the future trend of inflation. In currency areas where housing is relatively underrepresented in the current measure of inflation such as the Euro area or UK, the inclusion of house prices can alter the image of inflation so that changes in the trend of inflation are reflected earlier. This could

potentially induce monetary authorities to act more aggressively countercyclical in the sense that they react earlier to a divergence of asset and consumer prices. By relying on an inflation measure including house prices, monetary authorities add a macro-prudential dimension to their inflation target.

However, in currency areas such as the USA, Japan or Switzerland, where housing is already well represented by a relatively large weight assigned to imputed rents of owner-occupied housing, such an expenditure-weighted index does not change the image of inflation significantly. This is mainly because the weight assigned to house prices is simply too little in order to exert sufficient influence on the overall path of inflation. In those cases, an expanded index does not convey much additional information with respect to the future trend of inflation. Moreover, house price data is only available on a quarterly or annual basis and only with a certain lag of one or more periods. This poses a major technical limitation to an application of such an index in the context of monetary policy, as data availability and reliability represent hard requirements to a possible application as a primary measure of inflation.

In conclusion, a broader concept of inflation including the prices of housing bears the potential of serving as an additional supplementary indicator of changes in the future trend of inflation to monetary authorities. Therefore, such an index might represent an alternative to existing measures of core inflation, which are mostly based on a narrower concept of inflation (i.e. excluding elements that exhibit high volatility) (cf Rich, & Steindel, 2007, p.19 ff).

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