



Liquidity and the dynamic pattern of asset price adjustment: A global view

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ARTICLE INFO

Article history:

Received 15 July 2008

Accepted 29 December 2009

Available online 6 January 2010

JEL classification:

E31

E52

F01

F42

Keywords:

Global liquidity

Inflation control

Monetary policy transmission

Asset prices

ABSTRACT

Global liquidity expansion has been very dynamic since 2001. Contrary to conventional wisdom, high money growth rates have not coincided with a concurrent rise in goods prices. At the same time, however, asset prices have increased sharply, significantly outpacing the subdued development in consumer prices. We investigate the interactions between money and goods and asset prices at the global level. Using aggregated data for major OECD countries, our VAR results support the view that different price elasticities on asset and goods markets explain the observed relative price change between asset classes and consumer goods.

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1. Introduction

Global liquidity has been expanding steadily since 2001. In most industrial countries and more recently also in some emerging market economies with a dollar peg, especially China, broad money growth has been running well ahead of nominal GDP. But goods price inflation had been widely unaffected by the strong monetary dynamics in many regions of the world. Only with a considerable lag surplus liquidity poured into raw material, food and goods markets. Over the same time horizon, however, many countries have experienced (in some cases two) sharp but sequential booms in real estate and share prices. Many observers interpret the sequence of increases of asset prices as the result of liquidity spill-overs to certain asset markets (Adalid and Detken, 2007; Greiber and Setzer, 2007). From 2001 to 2006, for instance, house prices strongly increased in the US (55%), the euro area (41%), Australia (59%), Canada (61%) and a number of further OECD countries; the HWWI commodity price index surged by 110% in the same period and stock prices more than doubled in nearly all major markets from 2003 to 2006.

From a monetary policy perspective, the different price dynamics of assets and goods prices in recent years raises the question as to whether the money-inflation nexus has changed (thereby calling into question the close long-term relationship between monetary and goods price developments that was observed in the past) or whether effects from previous policy actions are still in the pipeline. To investigate the relative importance of these developments, this study tries to establish an empirical link between money, asset prices and goods prices. For this purpose, we estimate a variety of VAR models including a measure of global liquidity, proxied by a broad monetary aggregate in the OECD countries under consideration (United States, Euro area, Japan, United Kingdom, Canada, South Korea, Australia, Switzerland, Sweden, Norway and Denmark) and analyse the impact of a shock to global liquidity on global asset and goods price inflation. The basic idea is that different price elasticities of supply lead to differences in the dynamic pattern of price adjustment to a global liquidity shock. While goods prices adjust only very slowly to changing global monetary conditions due to plentiful supply of consumer goods from emerging markets, asset prices such as housing and commodity prices react much faster since the supply of real estate and commodities cannot be easily expanded. Thus disequilibria on these markets are generally balanced out by rather quick price adjustments.

The main emphasis is on globally aggregated variables which implies that we do not explicitly deal with spill-overs of global

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liquidity to national variables. We follow [Rueffer and Stracca \(2006, p. 8\)](#) in this respect and argue that the concept of global liquidity is useful but that it does not allow us to distinguish whether what we observe at a global level is due to the simple aggregation of the impacts in the individual economies or, at least to some extent, also to a spill-over across countries. We feel legitimized to proceed like this because recent research corroborates that inflation is a global phenomenon. So far, the relationship between money growth, different categories of asset prices and goods prices has been little studied in an international context. Only recently, a few authors suggested specific interactions of global liquidity with global consumer price and asset price inflation ([Baks and Kramer, 1999](#); [Sousa and Zaghini, 2006](#); [Rueffer and Stracca, 2006](#)). However, so far we are not aware of any study which investigates the dynamic pattern of price adjustment to a global liquidity shock in a systematic fashion.

The remainder of the paper is organised as follows: in Section 2, we convey an impression of the global perspective of the monetary transmission process. In Section 3, we develop some simple theoretical considerations to illustrate the potential role of different supply elasticities as potential drivers of asset- and goods-specific price adjustments to global liquidity shocks. In Section 4 we turn to an econometric analysis using the VAR technique on a global scale. Moreover, we conduct a wide array of robustness checks. Section 5 finishes with some policy conclusions.

2. The global perspective of monetary transmission

Both with respect to global inflation and to global liquidity performance, available evidence becomes stronger that the global instead of the national perspective is more important when the monetary transmission mechanism has to be identified and interpreted. For instance, [Ciccarelli and Mojon \(2005\)](#) find empirical evidence in favour of a robust error-correction mechanism, meaning that deviations of national inflation from global inflation are corrected over time. Similarly, [Borio and Filardo \(2007\)](#) argue that the traditional way of modelling inflation is too country-centred and a global approach is more adequate. Considering the development of global liquidity over time, the question is often raised whether and to what extent global factors are responsible for it. [Rueffer and Stracca \(2006\)](#) investigate this aspect for the G7 countries in the framework of a factor analysis and conclude that around fifty percent of the variance of a narrow monetary aggregate can be traced back to one common global factor. One prominent example of such a global factor is, for instance, the expansionary monetary policy stance of the Bank of Japan (BoJ) during the last years. The BoJ has accumulated a significant amount of foreign reserves and has set extremely low interest rates – at some time even approaching zero. By means of carry trades, financial investors took up loans in Japan and invested the proceeds in currencies with higher interest rates. Such kind of capital transactions has impacts on the evolution of monetary aggregates far beyond the special case of Japan and national borders in general.

An additional argument in favour of focusing on global instead of national liquidity is that national monetary aggregates have become more difficult to interpret due to the huge increase of international capital flows. Simply accounting for the external sources of money growth and then mechanically correcting for cross-border portfolio flows or M&A activity, on the presumption of their likely less relevant direct effects on consumer prices, is not a sufficient reaction. Instead, these transactions have to be investigated with respect to their information content and potential wealth effects on residents' income and on asset prices which might backfire to goods prices as well. In the same vein, [Sousa and Zaghini \(2006\)](#)

argue that global aggregates are likely to internalize cross-country movements in monetary aggregates – due to capital flows between different regions – that may make the link between money, inflation and output more difficult to disentangle at the country level. [Giese and Tuxen \(2007\)](#) stress the fact that in today's linked financial markets shifts in the money supply in one country may be absorbed by demand elsewhere, but simultaneous shifts in major economies may have significant effects on worldwide asset and goods price inflation.

Some critics might argue that global liquidity, as measured in one currency, can only change in quantitative terms if one assumes a fixed exchange rate system worldwide. Note, however, that international liquidity spill-over effects may occur regardless of the exchange rate system. Under pegged exchange rate regimes official foreign exchange interventions result in a transmission of monetary policy shocks from one country to another. Under a regime of flexible exchange rates, the validity of the “uncovered interest rate parity” (UIP) relationship should in theory prevent cross-border monetary spill-overs. According to the UIP, the expected appreciation of the low-yielding currency in terms of the high-yielding currency should be equal to the difference between (risk-adjusted) interest rates in the two economies. However, the violation of the UIP – often referred to as the “forward premium puzzle” – is a common empirical finding in the literature on macroeconomics and finance (see *inter alia* [Darvas, 2009](#)). The enduring existence of carry trades can be taken as evidence that exchange rates diverge from fundamentals for lengthy periods, as the exposure of a carry trade position involves a bet that UIP does not hold over the investment period. More generally, the experience of Iceland whose monetary policy autonomy was undermined by carry trades can be mentioned here.

In addition, currency substitution may enable international liquidity spill-overs in a framework of flexible exchange rates. Both older and more recent studies have shown that investors hold an array of currencies, and that these money holdings change in response to changes in the relative opportunity cost of holding one currency instead of another one ([Miles, 1978](#); [De Santis et al., 2008](#)). These international adjustments of money holdings allow the transmission of monetary shocks from one economy to another (via money demand) even in system of flexible exchange rates.

Note as well that exchange rates might quite rarely be considered as truly flexible across our estimation period anyway, as, for instance, [Reinhart and Rogoff \(2004\)](#) classify only 4.5% of the exchange rate regimes under their investigation as “freely floating”.

The concept of “global liquidity” has attracted growing attention in the empirical literature in recent years. One of the first studies in this field is [Baks and Kramer \(1999\)](#) who use different indices of liquidity in seven industrial countries to explore the dimension of the relationship between liquidity and asset returns. The authors find evidence that there are important common components in G7 money growth and that an increase in G7 money growth is consistent with higher G7 real stock returns and lower G7 real interest rates.

Recently, a number of studies have applied VAR or VECM models to data aggregated on a global level. Important contributions include ([Rueffer and Stracca, 2006](#); [Sousa and Zaghini, 2006](#); [Giese and Tuxen, 2007](#)). These studies find significant and distinctive reaction of consumer prices to a global liquidity shock. In contrast, the relationship between global liquidity and asset prices is mixed. In the study by [Rueffer and Stracca \(2006\)](#), e.g., a composite real asset price index that incorporates property and equity prices does not show any significant reaction to a global liquidity shock. [Giese and Tuxen \(2007\)](#) find no evidence that share prices increase as liquidity expands; however, they cannot empirically reject cointegration relationships which imply a positive impact of global liquidity on house prices.

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