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Inflation and the money multiplier

01 Introduction

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03 Why these ratios have fallen

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Key take aways

- Despite the recent pick-up in inflation rates, it is still difficult to see Inflation as a purely "monetary phenomenon" (as Friedman put it) dependent on money supply or central bank balance sheet growth.
- There are multiple perspectives on the current situation. While broad monetary aggregates have grown, money multiplier and velocity ratios have fallen. Factors behind recent inflation trends include longer-term issues such as globalization and diversion of money into financial assets and real estate.
- However, factors such as changing consumer inflation expectations could still refocus attention on the money multiplier, possibly resulting in swift changes in inflation rates, given the amount of liquidity in the system. We therefore cannot be sure that high inflation will not return.

01 Introduction

Milton Friedman's view was clear-cut. As he put it in 1970: "Inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output."

But this apparent link between money supply, central bank balance sheets and inflation has faded over the last five decades. The ECB has even shifted away from the traditional focus on monetary analysis by recently stating that "owing to a weakening of the link between monetary aggregates and inflation – the original focus of the monetary analysis has become less important. At the same time, the global financial crisis (has) brought to the fore the relevance of macro-financial linkages that further emphasise the need for integrated analyses."

Since the global financial crisis (GFC) started in 2007, central banks around the globe have expanded their balance sheets and this process has accelerated during the COVID 19 crisis. Inflation however has been broadly in check since the early 1980s (even allowing for recent rises) and central banks like the ECB had until recently failed to reach their inflation targets.

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02 The money multiplier and velocity

Broad money aggregates growth in developed markets has risen recently, as shown in Figures 1 and 2.

However, there are different ways of looking at this. Broad monetary aggregates may have grown, but other monetary measures have done the reverse.

The money multiplier for the U.S. (i.e. the ratio between broad money and the monetary base) collapsed during the GFC from around 12 (where it had been relatively stable for the previous ten years) to below 10 and then decreased continuously to levels of around 6 until the onset of the COVID-19 crisis when it dropped below 4. The velocity of money (i.e. nominal GDP/broad money) has also decreased significantly from levels around 1.5 in 2000 to around 1.0 before the onset of COVID-19 and has decreased by another 20% since then.

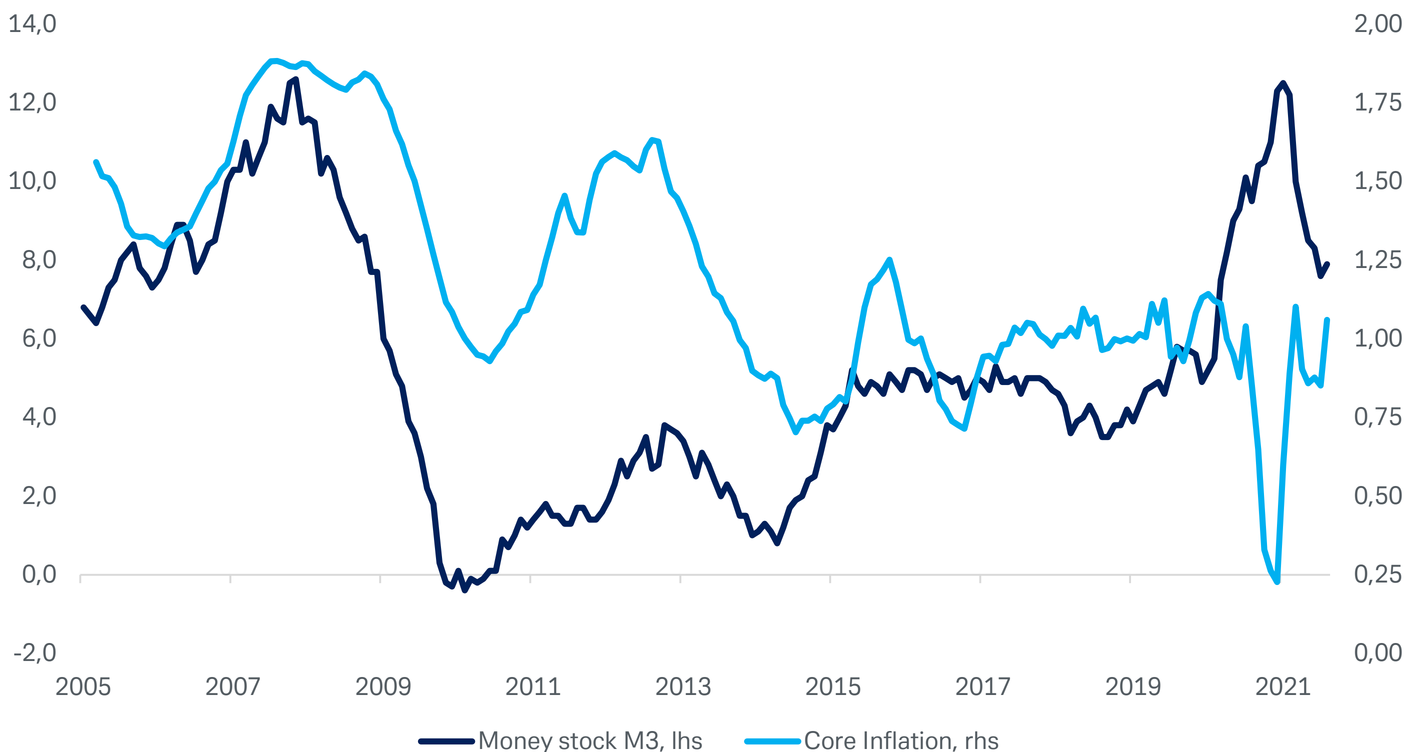
Even before the current crisis, it was therefore evident that broader money aggregates were rising at a lower pace than base money (i.e. central bank balance sheets). The money multiplier – the extent to which central banks can drive commercial bank loans – had already decreased. But the reasons for this may not relate directly to money.

03 Why these ratios have fallen

The process of trade itself may have contributed to this collapse in the money multiplier and the velocity of money. Over the last few decades, there has also been a strong disinflationary force in play called globalization. Access to cheap labour has allowed prices for many goods to decrease, via shifts in production. Some of these globalization effects may now be reducing, but there are other reasons why the money multiplier has decreased.

Consider the four transmission channels for expansionary monetary policy i.e. savings, credit, wealth and exchange rates. The first two of these are the most important ones in this context. Precautionary savings and weaker bank lending because of private deleveraging and risk aversion (by both consumers and banks, the latter due to regulation) have pushed down the money multiplier. For example, credit growth to the private sector in the Eurozone was around 12% YoY before the GFC but has decreased to single digit levels since then. In other words, increases in the central bank monetary base have not been proportionally transmitted into broader money aggregates. For inflation to happen, base money produced by central banks needs to be multiplied in the banking system and

Figure 1: Eurozone M3 and core inflation



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be used for real consumption. Monetary theory calls this the quantity equation, linking money supply and velocity of money with the price level and real value of transactions. As has been shown, however, economic reality is less precise than economic theory and this has been challenged by some economists.

What is also observable is that banks are also not running short of liquidity – in fact they are drowning in it. In normal times a bank running short of reserves to meet its clients' demand for credit or savings withdrawal could exchange other assets for central bank reserves, so commercial banks themselves have an influence on central bank balance sheets. In times of quantitative easing (as now) the central bank itself determines its balance sheet, but the transmission channel is distorted.

Another reason why inflation has not risen so much as monetary aggregate growth might suggest could be that an increasing amount of money is not used in the so-called real economy but is invested in financial assets or real estate, where we have seen strong price increases since the early 1980s. In this assessment, consumer price inflation data (which focuses on the price of goods and services, not assets) can therefore be seen as an incomplete measurement of money devaluation.

In general, historical evidence shows that there is little correlation between money growth and inflation. In fact, rather counterintuitively, accelerating money growth can even, at the margin, be linked to declining inflation. A reason for this may be that periods of strong money growth happen during economic crises, with the aim of stimulating the economy but when demand may be limited versus the supply of goods and services.

Going back to Milton Friedman's quote, the link between monetary policy and inflation may be true on a very long time-horizon or when inflation has started accelerating to high levels already, and as a consequence the velocity of money is already increasing rapidly.

04 Conclusion

Inflation always needs to be considered in context. In the current situation, a lower money multiplier seems to have contributed to low inflation over recent years. Nevertheless, there is a common misperception that higher base money leads necessarily directly to higher inflation. For this to happen broader money aggregates need to rise as well, which has not happened at the same pace for reasons laid out above.

In fact, to understand inflation, it may be necessary to go back even further in time and move from such a "monetarist approach" to more structural (one might almost say "Keynesian") considerations. Potential growth (growth achievable over the medium term without generating excess inflation) appears to have been on the decline for years. Many explanations for slower trend growth focus on changing working-age populations, ageing societies and technological progress. Real economic growth of course deviates from potential growth to the up and downside over the economic cycle. In upswings strong demand may lead to a temporary deviation from longer-term inflation trends to the upside and vice versa. Some of these factors – demographic changes, technological progress and globalization – are also out of control of central banks. Hence the increase of central bank balance sheets and low yields could be seen as inappropriate means for an unrealistic goal.

However, as we said, context always matters and such a "monetarist" approach to understanding inflation may still be useful. An increase in the money multiplier if consumer perceptions around price stability change could still result in swift changes of inflation rates, given the high levels of liquidity in the system, and be difficult to control. So, while the money multiplier may have fallen, we cannot be sure that higher inflation will not return. Could this be Milton Friedman 2.0?

Figure 2: U.S. M2 and CPI

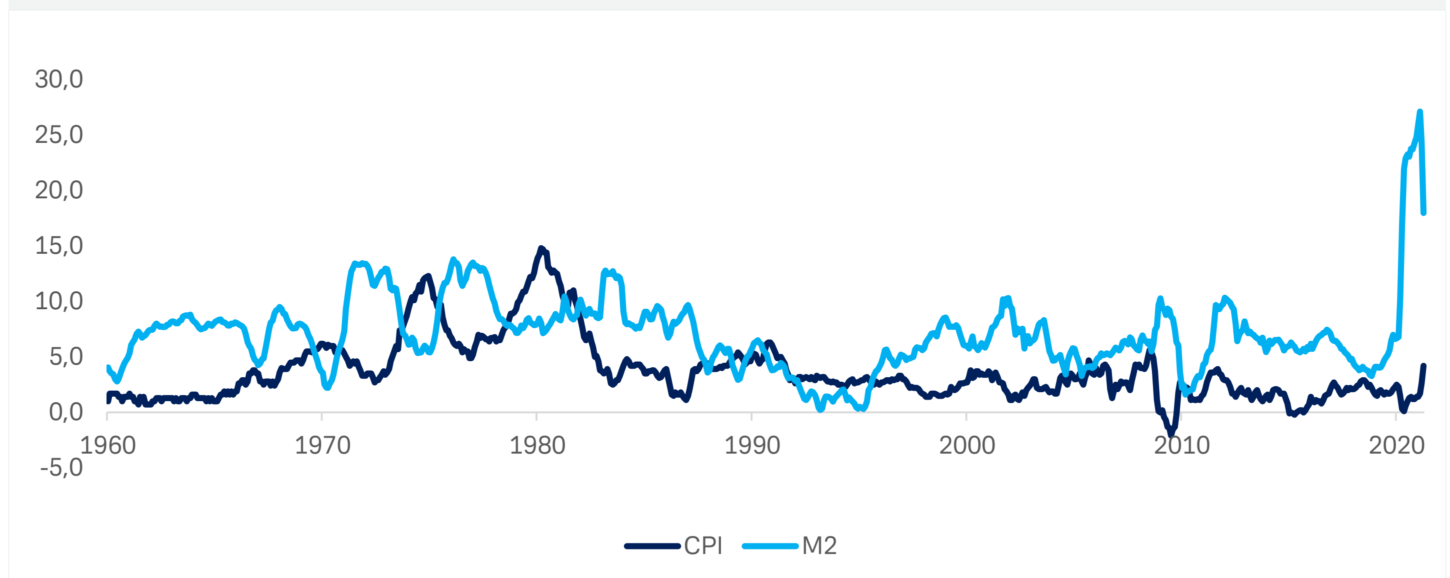

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Figure 3: M2/M1 ratios

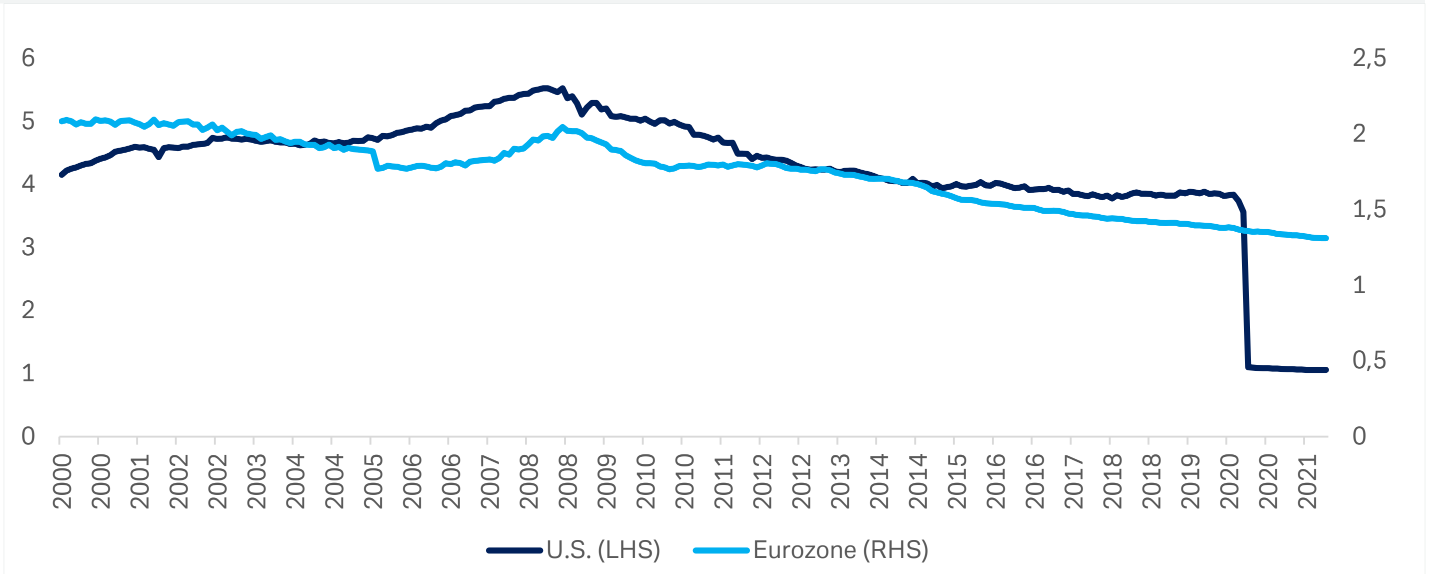

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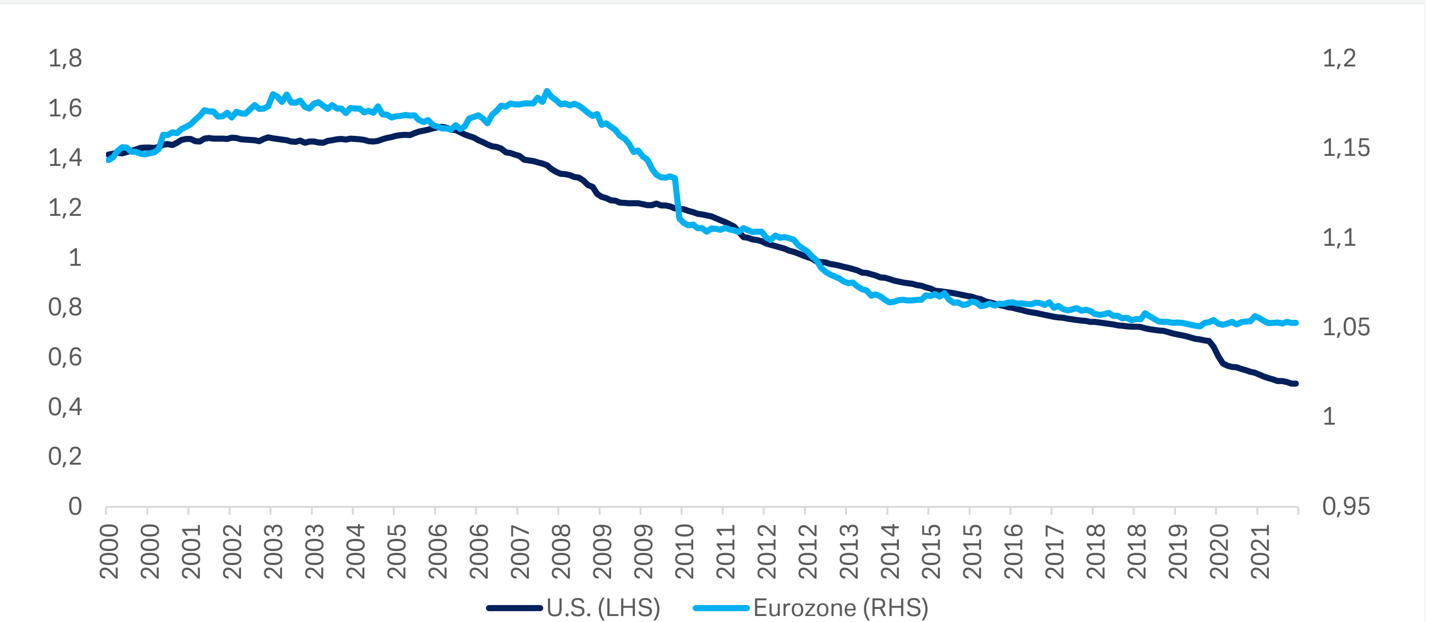
Figure 4: M3/M2 ratios



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Glossary

The consumer price index (CPI) measures the price of a basket of products and services that is based on the typical consumption of a private household.

The European Central Bank (ECB) is the central bank for the Eurozone.

The Global Financial Crisis (GFC) refers to the crisis of 2007-2008.

M1 is the sum of currency in circulation and overnight deposits.

M2 is the sum of M1, deposits with an agreed maturity of up to two years and deposits redeemable at notice of up to three months.

M3 is a broad measure of money supply, bringing in institutional money market funds, large time deposits and other forms of liquid assets.

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