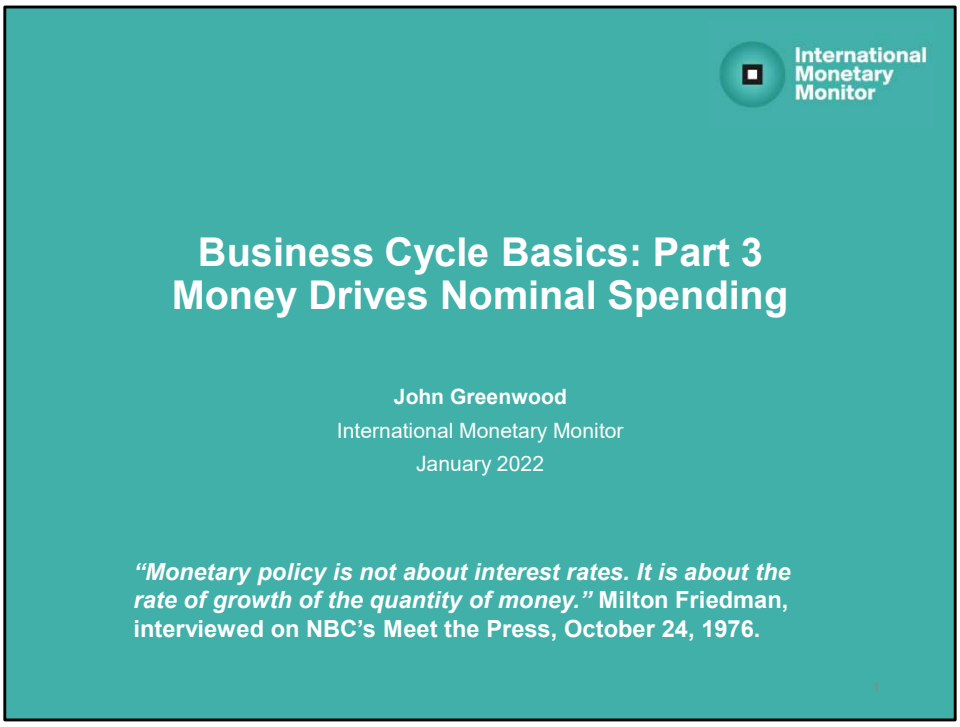
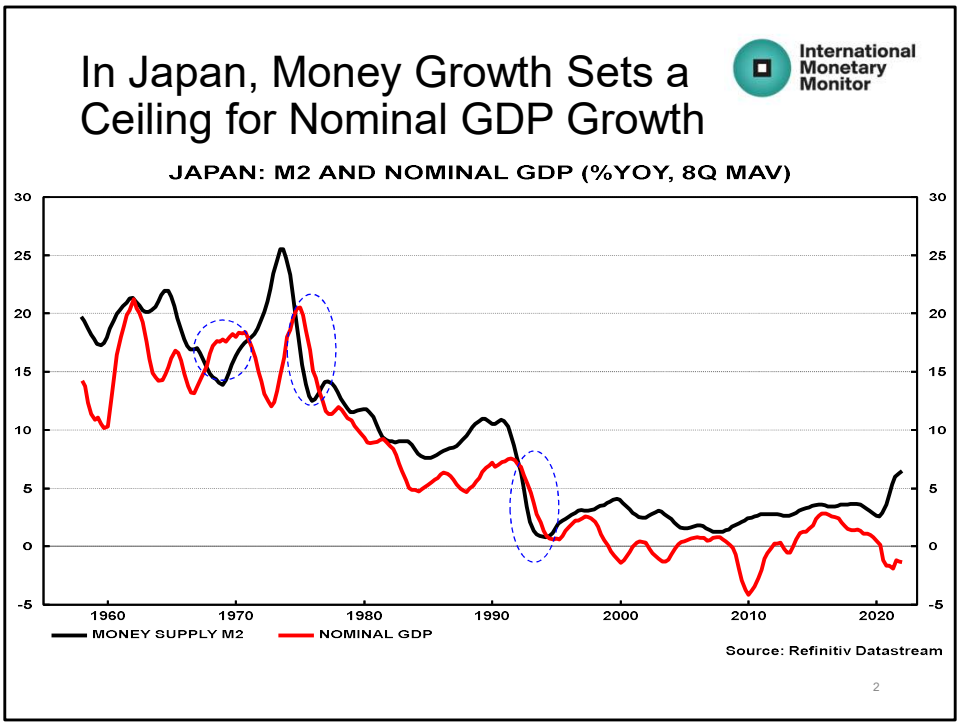


During a 50-year career working in financial markets on three continents I have applied the same broad framework for analyzing and understanding monetary policy, the movement of asset prices, the development of real economic activity, and the inflation rate. My framework treats these three elements as an integrated whole and does not resort to a different kind of analysis or model for treating any particular part of the system. I call the overall framework a Monetary Theory of the Business Cycle because sustained changes in the quantity of money, broadly conceived, are the central, driving engine of the entire process.

However, most students of economics and some financial market practitioners, especially all those who have been trained to think of the economy in terms of the famous Keynesian expenditure flow equation, namely Y=C+I+G +(X-M), tend to view the mechanisms driving asset prices on the one hand and inflation on the other as separate from the drivers of C+I+G. One of my aims in this series of "Business Cycle Basics" is to demonstrate that this is not the case. I intend to explain how the forces that drive expenditure in any economy are the same as those that also drive asset prices and inflation (or deflation).

The key point to understand is that although there are many different moving parts --

changes monetary policy, changes in asset prices, changes in economic activity such as real GDP or industrial production, and changes in consumer prices – they are all related together. Provided that we are considering ***sustained*** changes in each of these elements, the data from many different economies across many different time periods shows that they are not random changes driven by different forces. Starting with sustained changes in monetary growth the changes in all the other component elements of the business cycle can be best understood as consequences of monetary changes. Where there appear to be exceptions, it has been my experience that these are rare and are generally the result of mismeasurement or a failure to apply monetary analysis in a broad, fundamental way.



In the flow chart for the business cycle introduced in Part1, a sustained change in broad money growth had its first impact on asset prices, then on real economic activity and later on goods and service prices i.e., inflation. Parts 4 and 5 deal with each of these separately, but in Part 3 we will concentrate on the impact of changed money growth on economic activity and prices combined, i.e., nominal income growth.

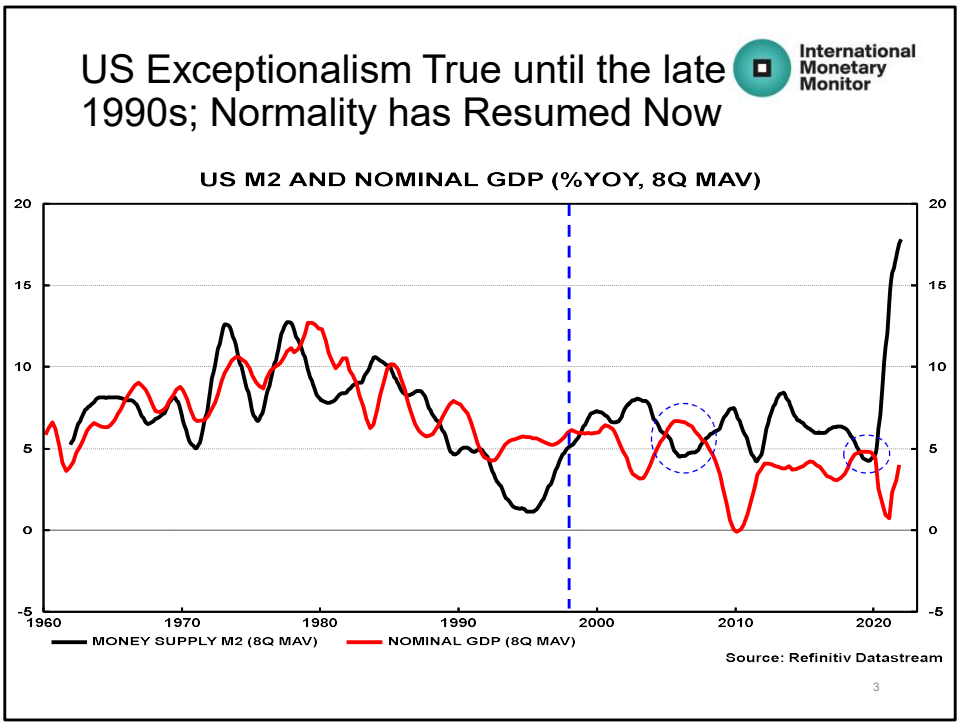
Elsewhere, notably in my Velocity Primer (*), I have shown that in all major economies velocity (Nominal GDP/Broad Money) has a steady downward slope. This means nominal GDP in the numerator does not grow as rapidly as broad money in the denominator. The reason is that as people get richer they tend to hold larger portfolios of financial and real assets, and money is simply one of those assets. The result, which is very clearly demonstrated for Japan in the chart above is that there is usually a gap of 1-3 percentage points between the growth rates of the two series.

From the quantity theory or the equation of exchange, MV=Py, if V declines at a steady rate then – in normal circumstances -- M must grow somewhat faster than Py. Conversely, if we know that V is declining, the rate of growth of Py or nominal income cannot be greater than the growth of M (money) for any sustained period. **In other words, broad money growth sets a ceiling for the growth of nominal GDP.**

The Japanese data since the late 1950s illustrate this proposition almost perfectly. Most of

the time nominal GDP growth is below the growth of M2. The few circled exceptions – 1967-69, 1974, and 1992-3 -- were the result of abrupt and usually short-lived changes in M2, or exogenous, non-monetary shocks which proved temporary.

JP10a (*) Available on request.

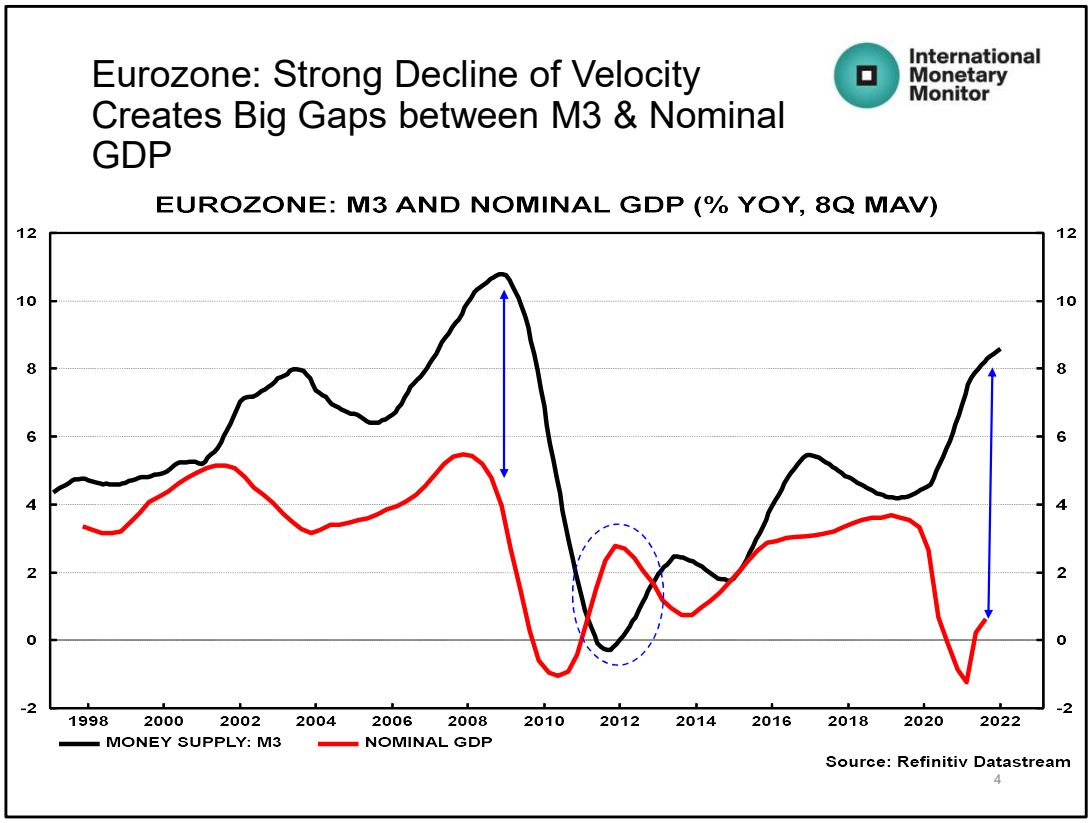


A case study of the US is more complicated than Japan, but a global perspective helps to overcome some of the difficulties. One problem is that many economists start by studying the US and have tended to pay most attention to research findings about the US due to its importance in the global economy. However, the US is in many ways the exception rather than the rule. First, as mentioned on the previous page, in almost all economies income velocity has a stable downward slope, declining at an annual rate of 1-3% p.a. However, velocity in the US did not behave like this in the 1950s, 1960s and 1970s. There were then a series of regulatory changes in the 1980s and 1990s that led to unusual movements of money and hence income velocity. Second, there have been big measurement issues that have been swept under the carpet by the Fed. For example, the official M2 omits large time deposits of $100,000 or more. But if one adopts a wider definition of money than M2 – wider is almost always better – income velocity behaves much more normally over a much longer period. However, Bernanke's Fed, in my view foolishly, stopped publishing M3 in March 2006.

Therefore there is a strong case to make that economists have been misled about US (and global) velocity due to the specific problems with post-war US conditions and data measurement issues.

Fortunately, despite the massive redefinition of M1 in April 2021, most of the regulatory changes affecting money have diminished in recent decades, so that since 1997 US income

velocity for M2 has been on a steady downward path, declining at 1.7% p.a. In the chart of the US above therefore the gap that we observed for Japan between M2 growth and nominal GDP growth has become evident since the 1990s. This implies that money growth is likely, once again, to be a reliable predictor of nominal income growth, providing one builds in the lags in effect and allows for velocity. This is why we have shown the data using 8-quarter moving averages. US10



Turning to the Eurozone, the history is much shorter, but we have long histories for some of the key constituent countries like Germany, France, Italy and Spain. Nevertheless, most of the observations for Japan carry over to the Eurozone.

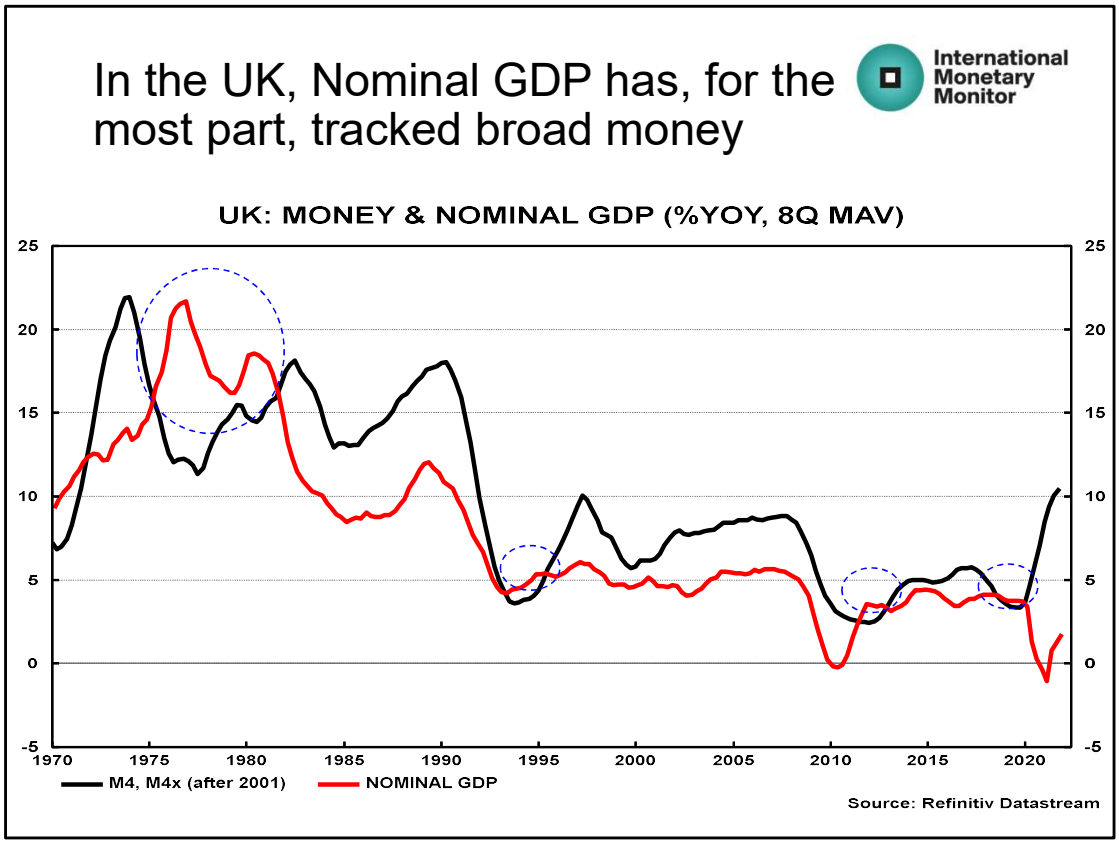
Like Japan (and the US since 1997), the Eurozone has a strong downward trend of income velocity for M3. Since the start of the euro in 1999 income velocity has declined at an average rate of 2.3% p.a. **Like Japan, this means that M3 growth creates a ceiling for nominal GDP growth.** It follows that, using the 8-quarter moving average data shown in the chart above, the gap between M3 growth and nominal GDP growth between 1999 and 2019 (just before the onset of the pandemic) has averaged 2.2 percentage points.

Most of the time nominal spending has broadly conformed to our previous observation, growing well below the M3 growth rate, but there are three significant deviations to explain. First, the six percentage point difference between M3 and nominal GDP in 2008-09 (arrowed) was a result of the abrupt decline in Eurozone activity -- precipitated not so much by any domestic tightening of monetary growth by the ECB, but by events in the US, notably the Lehman Brothers bankruptcy and the resulting global credit crunch.

Second, the bounceback in growth after the GFC (circled) raised Eurozone nominal GDP above M3 growth for a while in 2010-11, just before the onset of the Eurozone debt crisis (2011-12) caused nominal GDP growth to fall back again.

Third, the start of the pandemic in 2020 led to a big decline in spending while the ECB boosted Eurozone M3, for a while creating a gap of 8 percentage points with nominal GDP

(arrowed). As in other economies, over the next few quarters that gap should diminish considerably as spending catches up. EU03c



The relationship between money growth and nominal GDP growth in the UK follows the template of Japan and the Eurozone. Except for a few years in the 1970s, money growth (M4 before 2001; M4x after 2001) regularly exceeded nominal GDP growth with only three brief exceptions: during the upturn of the early 1990s, during the recovery after the GFC, and a short period in 2019 when the Bank of England allowed money growth to fall too low and did nothing to prevent the monetary slowdown.

The period of the 1970s when nominal spending exceeded money growth followed a huge surge in money growth averaging almost 22% p.a. over the year 1973 -- just ahead of the first oil crisis of 1973-74. That left a substantial residual of excess spending power in the hands of consumers and businesses that fuelled spending for several years afterwards. In addition, until Mrs Thatcher took over as Prime Minister in 1979, the Labour government's incomes policies were consistent with high wage demands from the trades unions, translating excess money growth into persistently rising wages.

The two exceptions of the early 1990s and the recovery after the GFC – when nominal GDP growth briefly exceeded money growth -- illustrate the tendency for the natural bounceback of the economy after a recession to outrun the monetary stimulus. The latest 2019 episode illustrates the ever-present risk that central banks can make mistakes with interest rates if they fail to focus on money growth. In this case they stood by while M4x growth slowed to just 3% through 2018 and 2019.

UK03a

Summary and Conclusion

International Monetary Monitor

- Thanks to the lags in effect of monetary policy (i.e., monetary growth), money leads changes in asset prices, changes in economic activity, and changes in inflation.
- A key finding of monetary research is that velocity has a stable downward trend in many economies, typically declining by 1-3% p.a. in developed economies.
- Due to declining velocity, we can use the quantity theory to predict that broad money growth will generally create a ceiling for nominal income growth.
- These predictions are supported by empirical observations from most of the developed and emerging market economies during most time periods.