International Monetary Monitor

Webinar for HKIMR and the Hong Kong Academy of Finance, delivered on Wednesday, 2nd November 2022

"Inflation in the aftermath of Covid-19 – was it inevitable or avoidable?"

By John Greenwood

Introduction and Overview

- Last week I attended the Global Financial Leaders conference in Hong Kong and took the opportunity to visit subscribers and potential readers of IMM.
- During my visit I used variations of the same presentation document both for three public speeches and for individual meetings. This document summarises the topics covered in my speeches and presentations.
- The outlook for the US is central to global asset market prospects. In particular, the very unusual contraction in US M2 since the start of 2022 is worrying for long only investors and will exacerbate the depth and duration of the coming recession. But it will not bring down inflation in the near term.
- The UK, the euro area and Canada are all experiencing inflation for the same reason as the US – excess broad money growth during the Covid pandemic.
- Japan, Switzerland, and China, however, are experiencing inflation rates of only 2-3% because they did not create excess money growth during the pandemic. This demonstrates that the common narrative about inflation being due to supply chain disruptions or the war in Ukraine is absurd.
- Digressing from the economic outlook, I ask the question, why did mainstream economists completely fail to forecast the inflation?
- I also ask whether inflation was inevitable as a result of the anti-Covid strategies of central banks and governments, or whether there could have been an alternative approach that would have avoided the inflation.
- The implications for asset price movements and asset allocation, as well as my real GDP and inflation forecasts are set out on pp. 20-21.

International Monetary Monitor Ltd

The IMM Newsletter offers economic research written by John Greenwood, founder and Chief Economist of International Monetary Monitor Ltd. John was also the publisher, editor and lead author of ***Asian Monetary Monitor****, a bi-monthly publication that he operated for 20 years from Hong Kong between 1977 and 1996. He was a pioneer of monetary research in Asia. From 1999 to 2021 he was Chief Economist at Invesco, based in London.*

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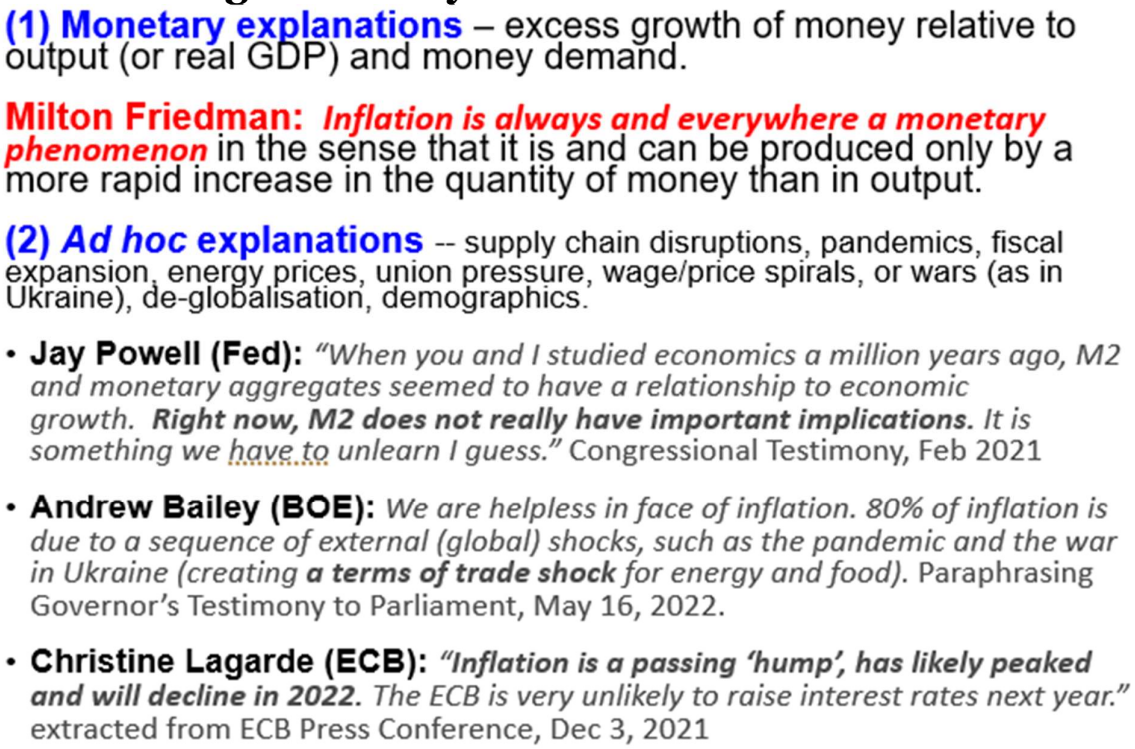
Figure 1. Only Two Views of Inflation



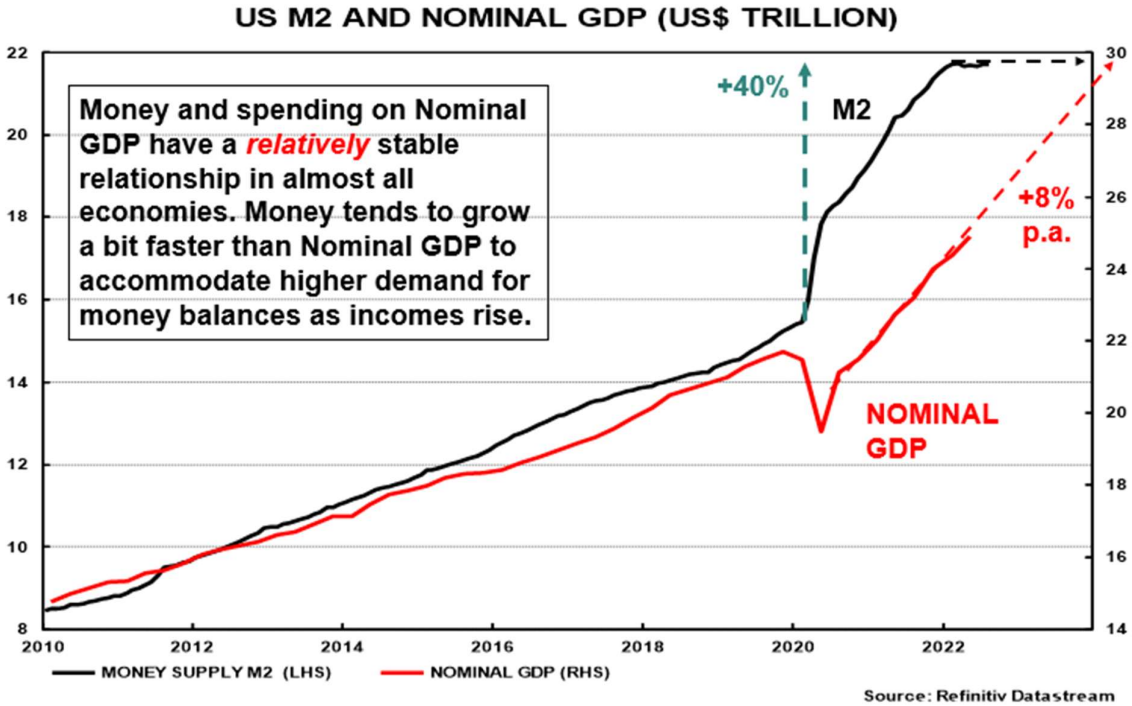
Historically there have always been just two types of explanations for inflation: *ad hoc* explanations and monetary explanations. Historically, the *ad hoc* explanations have been in terms of special factors present on particular occasions: commodity price increases due to bad harvests, supply disruptions due to restrictions on international trade, profiteers or monopolists holding back scarce goods, or trades unions pushing up wages leading to a wage-price spiral or cost-push pressures, and so on in great variety. Even the widely used aggregate demand-aggregate supply model is a species of *ad hoc* explanation in the sense that it relies on idiosyncratic factors driving estimates of the output gap or special factors affecting the supply of labor or productivity. The monetary explanations for inflation have focused on increases in the quantity of money: either new discoveries of gold and silver in centuries past, or fiat money creation by the banking system or by the central bank in modern times.

Currently, in the United States and in numerous other economies, we are witnessing a flood of ad hoc explanations, this time focused on supply chain issues following the COVID-19 pandemic and the reopening of economies. There is a widespread view among officials at the Federal Reserve System, among economists in the Biden Administration, among academics (led by people like Paul Krugman, who claimed to be a spokesman for "Team Transitory") and even among large parts of the business community that the current bout of U.S. inflation is:

1. Largely the result of supply chain disruptions which
2. By their nature will turn out to be "transitory"; and

3. As a result, the inflation will melt away in 2022 as the supply chain issues are addressed and resolved. In my view, these notions are fundamentally wrong, representing misstatements of the problem and its true causes. In this presentation I will show that much of the consensus makes the mistake of conflating relative price changes with changes in the overall price level. Instead, it is my view that the U.S. and numerous other economies have been facing two separate problems:
(1) a big shift in the composition of demand which, in the short term, is leading to supply chain problems and consequent relative price movements; but
(2) unlike other economies, the U.S. and a limited number of other economies have engineered a substantial excess of broad money growth over the two year 2020-21 that is exacerbating the supply chain issues by inflating overall spending or demand. Equally important, the excess money growth will cause increases in the overall price level that have only recently become apparent due to the typical two-year lag in effect between accelerations in the rate of monetary growth and the emergence of higher inflation.

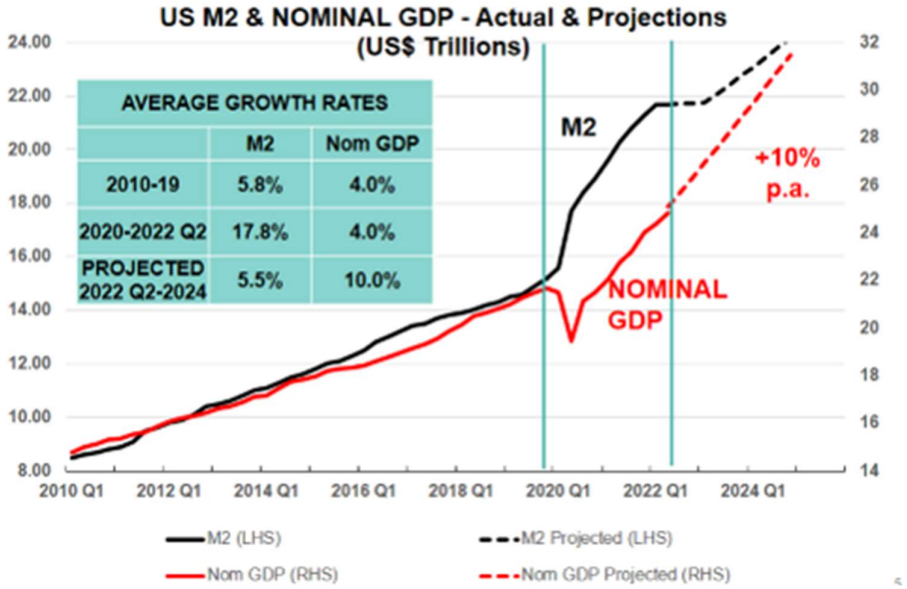
Figure 2. Money and Nominal GDP have a stable relationship but diverged since the onset of Covid.



The first thing to examine is the true source of the inflation – starting with the US. In the decade prior to Covid (2010-19), US M2 and nominal GDP were growing at fairly steady rates averaging 5.8% and 4.0% p.a. respectively. This gave the US an average inflation rate of just under 2% p.a. When Covid struck, NGDP fell abruptly while the Fed embarked on vigorous asset purchases of T-bonds and MBS, buying from non-banks. This created new deposits (money) in the hands of the sellers, and the accumulation of large reserves by banks at the Fed. Cumulatively since the onset of covid, M2 has increased by 40%. Nominal GDP has increased only 20% so far, but

over time, if the relation between M2 and NGDP is to be restored, NGDP will close the gap with M2.
Depending on the date assumed for convergence of the two series, we must expect growth rates of NGDP of 8-10% between now and 2024 or 2025. This breaks down into 2% real GDP and then the rest will be inflation. This is why the inflation was never going to be transitory; it was always going to be persistent.

Figure 3. Money and Nominal GDP have had a Stable Relationship; when will they re-converge?



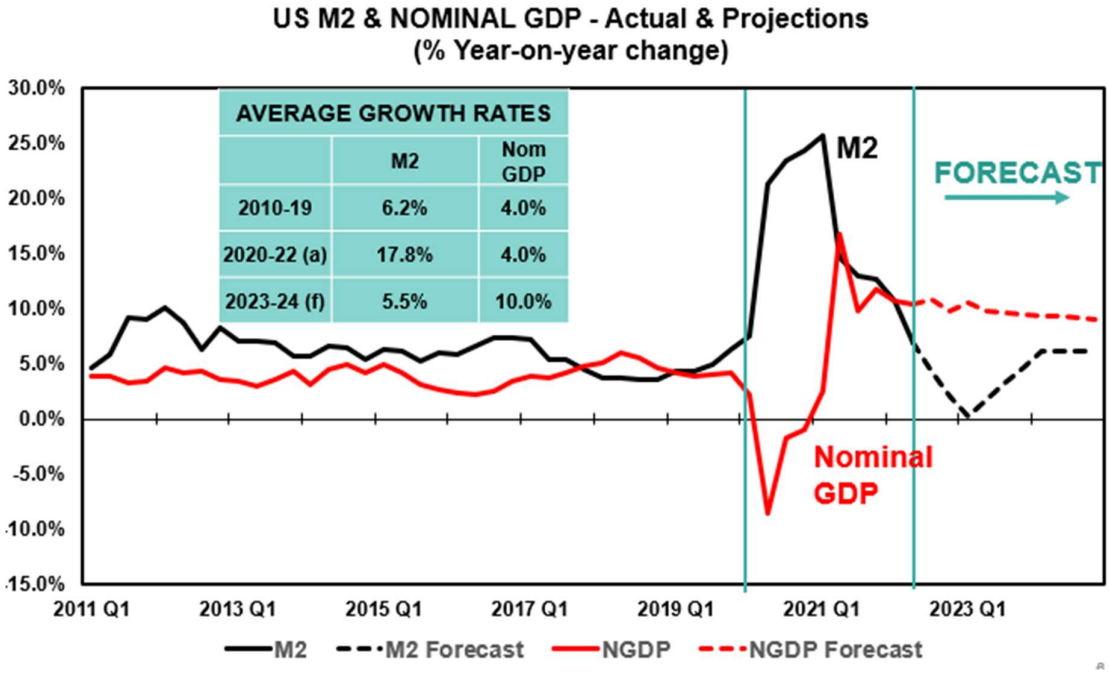
Looking into the future in a little more detail, in the current year since December 2021 M2 has not increased at all. In other words, after an average growth rate of 17.8% between the start of Covid in 2020 Q1 and 2021 Q4, M2 growth has come to a sudden stop. Mechanically, this for two reasons. First, deposits have been drained from M2 by the Fed ceasing to do QE and shifting to QT, reducing the size of its balance sheet so far by $240 billion (since April). The reduction in deposits comes when non-banks purchase new Treasuries issued to replace those that have matured on the Fed's balance sheet. Second, the amount of domestic funds placed on deposit with the Fed's Reverse Repo (RRP) account has increased to $2.3 trillion. Together these have reduced banks' reserves by $1.1 trillion, from $4.2 to $3.1 trillion so despite strong loan growth, the volume of deposits at commercial banks has fallen during the calendar year.

Translating the two previous level charts into year-on-year rates of change, the stable growth of both M2 and NGDP pre-Covid contrasts sharply with the behaviour of the two series after the onset of the pandemic (between the two vertical lines).On the right hand side of the chart I have added some tentative projections of M2 and NGDP to give some idea of how these two series is likely to develop in 2023-24.

The table in the upper left shows that M2 growth roughly trebled during the Covid episode, rising from 6.2% p.a. to nearly 18% p.a. Initially NGDP fell during the early

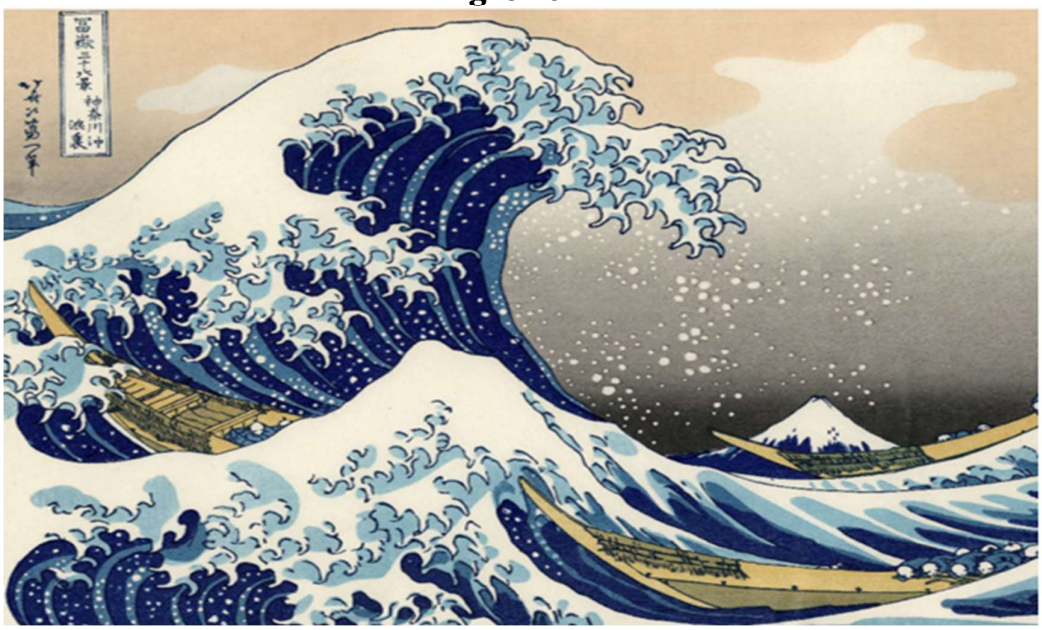
lockdowns, but subsequently rebounded under the impetus of all the added purchasing power.

Figure 4. Why inflation was always going to be persistent: it will take time for consumers and firms to reduce their excess money balances



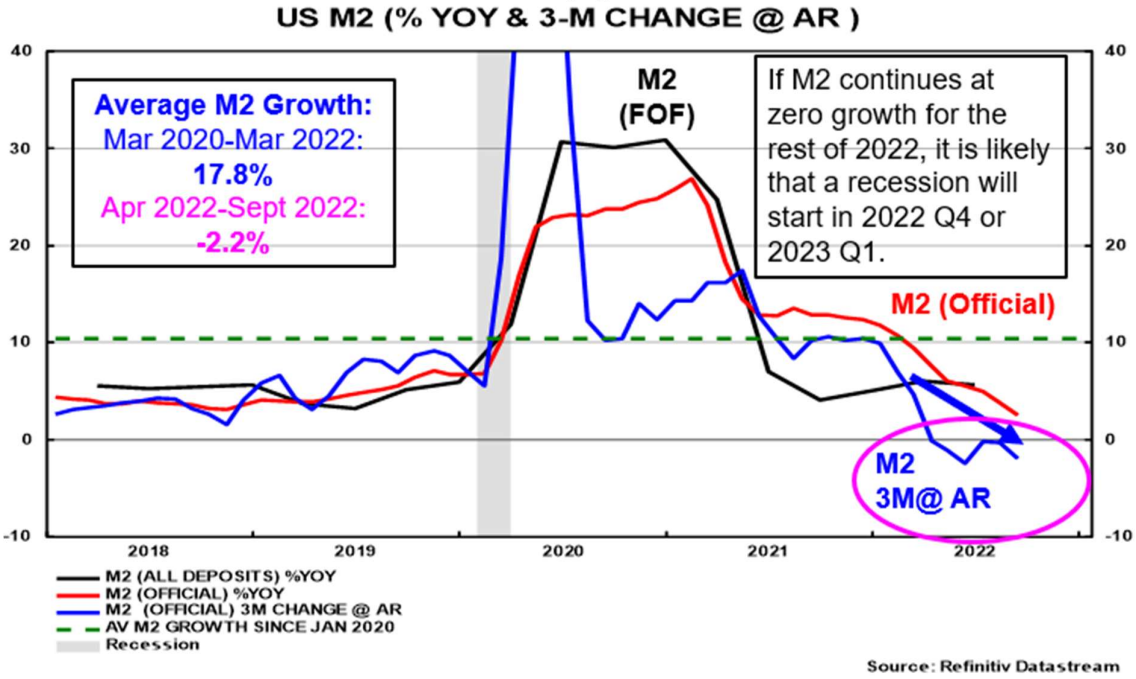
Projecting forward, I have assumed that M2 growth slows to zero but then accelerates moderately in 2024. However, following the release of the September data for M2 we now know that M2 growth for 2022 is already zero.

Figure 5. Hokusai's Giant Wave off Kanagawa, a metaphor for US M2 growth



One metaphor for money growth is that having put its foot hard on the accelerator in 2021-22, the Fed has now slammed its foot hard on the brake. Another metaphor is that, out of a calm sea of steady money growth pre-pandemic, a tsunami suddenly arose. To illustrate the wave metaphor, I like to use the image of the "Great Wave off Kanagawa", a famous woodblock print by Japanese artist Hokusai (1835). The wave represents the huge surge in money about to leave a destructive trail of inflation. The artist included in his woodblock picture some frightened fishermen in canoes. In my inflation metaphor, they represent the consumers and pensioners of today's world who are seeing – or are going to see -- their savings and purchasing power eroded by inflation.

Figure 6. The severity of the US recession depends primarily on monetary growth



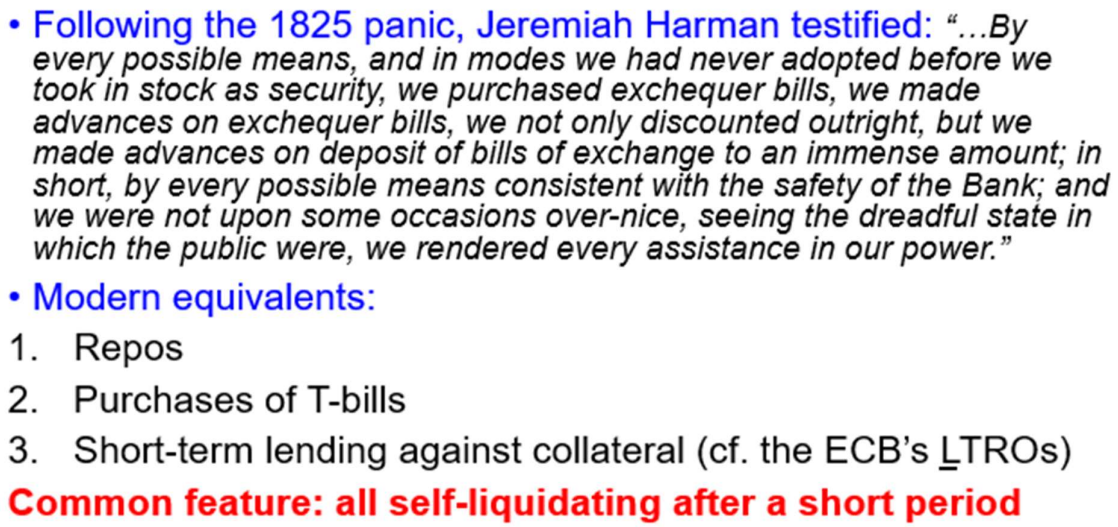
Actually, the situation is worse than conveyed by the Hokusai Great Wave metaphor because the Fed has already allowed M2 to stall or even shrink. In the chart there are three measures of M2 –a series compiled from the US Flow of Funds tables shown in black, the official monthly figures shown in red, and the same series shown as a 3-month annualised rate of change (in blue).

Compared with an average growth rate of 17.8% during the period 2020 Q1 to 2022 Q, M2 growth has slowed abruptly to -2.2% in the six months April to September. I have not been able to find any period in post-war US economic history when money growth has been negative for such an extended period. In short, intentionally or not, the Fed is in process of engineering the most severe monetary squeeze of the last seven decades.

While at first sight it might seem reasonable to offset the previous period of excess M2 growth with a temporary period of monetary contraction, the problem here is

that a sustained contraction of M2 will first impact asset markets and then intensify the economic downturn before it helps to reduce the inflation rate in about two years' time. The right thing to do would be for the Federal Reserve to shift now to the correct rate of M2 growth – about 5 or 6% p.a. – rather than engage in overkill.

Figure 7. Was inflation inevitable after Covid, or avoidable? Was there an alternative strategy the Fed could have followed?

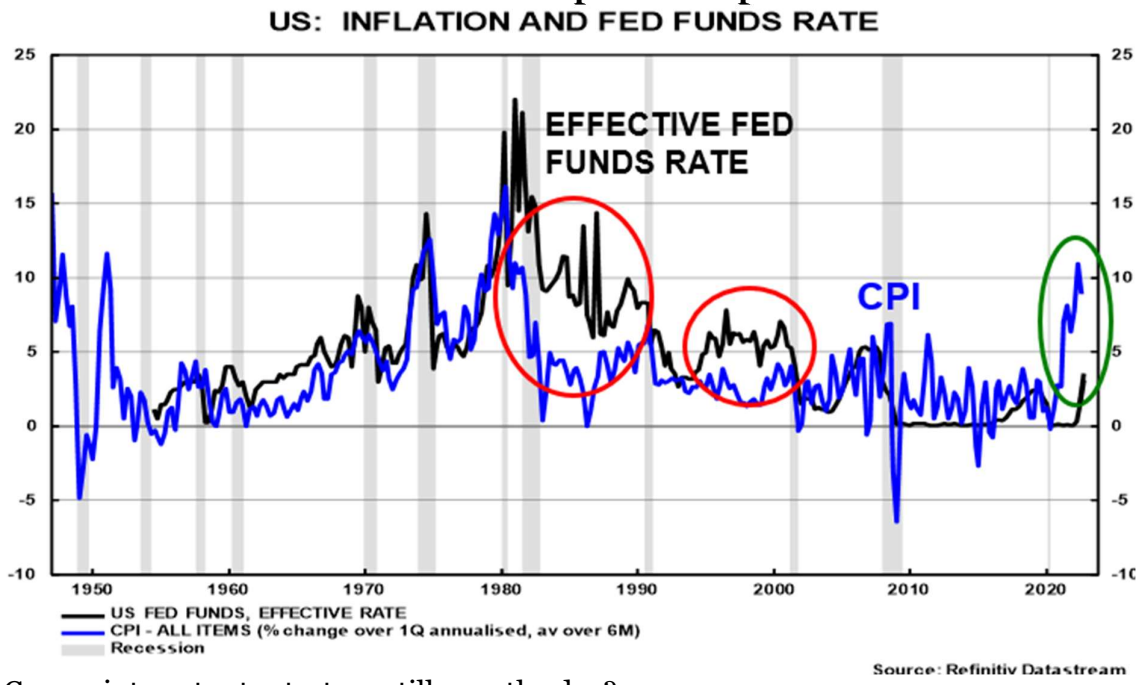


Was there any alternative strategy the Fed could have followed in the face of the pandemic?

In my view the Fed should have followed the classic remedy described by Walter Bagehot in his famous book of 1873, "Lombard Street – a Description of the Money Market". In a panic or sudden shortage of liquidity, the central bank should lend freely but at a premium interest rate. Moreover, the instruments used should be short-term, self-liquidating. This is exactly what the Bank of England did in the crisis of 1825, as reported in the classic testimony of Jeremiah Harman, quoted in Figure 7. At the start of the Covid crisis there was indeed a panic – a dash for cash, or a dash for safe securities – that needed the central bank to respond.

The modern equivalents to the instruments used in 1825 would have been repos, purchases of T-bills -- instead of long-term Treasuries and mortgage-backed securities (MBS), and other short–term loans. The objective should have been to avoid a permanent addition to the money supply by using only short-term instruments which would have matured in a matter of weeks or months. By this means, the Fed could have provided an "elastic" money supply, i.e., the availability of funds would have been temporarily increased, but any excess would have been withdrawn after the panic had subsided. And all this could have been done without resort to zero rates.

Figure 8. Ending the inflation of the 1970s and 1980s required four recessions and two extended periods of positive real rates



Can an interest rate strategy still save the day?

We often read of analysts recommending a move to positive real interest rates. Such proposals are based on conventional historical analysis (Figure 8) which argues that the inflation of the 1970s and 1980s was only overcome after four recessions (1980, 1981-82, 1990-91 and 2001) and two extended periods of positive real interest rates (red circles).

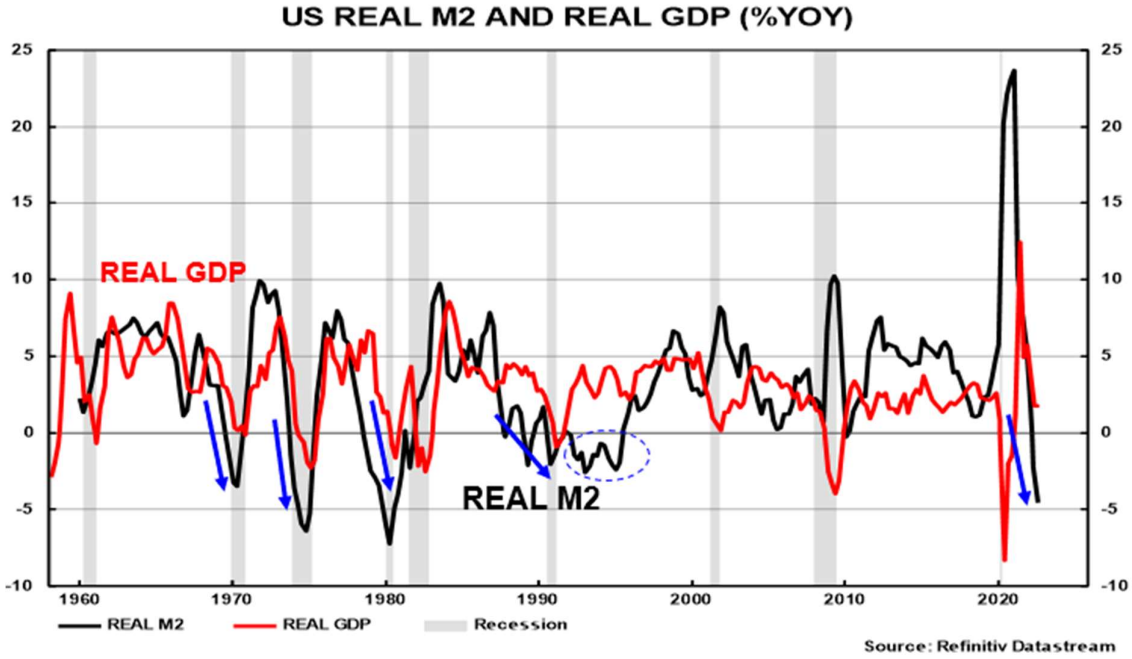
What would such analysis suggest for the current situation? Even after the Fed raised the range for the Fed funds rate to 3.75%-4.00% on November 2nd there are very few price indices that suggest real rates are positive. But raising interest rates to, say, 10% or thereabouts to ensure positive real rates would be a disaster. We already know (from Figure 6) that US M2 has been declining since December – the longest and deepest decline in post-war US history. Squeezing even further will only hit asset prices extremely hard and exacerbate what already promises to be a severe economic downturn.

Because interest rates are such an unreliable tool for designing a sensible monetary policy it is preferable to depend on monetary analysis for guidance. Reviewing the same span of US monetary history as in Figure 8, Figure 9 shows the rates of change of real M2, or year-on-year percentage changes in M2 deflated by the CPI.

Whenever real M2 (M2 deflated by the CPI) turned negative in the past – as shown by the four blue arrows at the left side of the chart – a recession followed. The dashed oval in the early 1990s indicates negative real M2 growth associated with the large-scale transfer of funds from failing S&Ls to the newly created 401k plans. This

episode was essentially a change in the definition of M2 rather than a contraction resulting from earlier policy. In September real M2 growth was -5.6%, and therefore merits a blue arrow, suggesting a recession is imminent.

Figure 9. Every time real M2 growth has turned negative, a recession has followed



My commentary so far has related entirely to the US, but the same themes and arguments apply to numerous other leading economies, although the magnitude of the monetary expansions elsewhere is somewhat less for these economies than for the egregious case of the United States. Figure 10 adds the data for the UK, the euro area and Canada. The charts show 18-month moving averages of year-on-year percentage changes of broad money growth in each case, together with 6-quarter moving averages of year-on-year nominal GDP. In each panel the monetary series has been shifted forward by 18 months to account for the typical lag in effect between changes in money growth and changes in nominal GDP growth.

Figure 10 shows the common response of major central banks in the developed world to the pandemic: ease monetary conditions – which in effect allowed monetary growth to accelerate to such an extent that all four economies now face an inflation crisis.

Why did the central banks allow this mistake to occur? Aside from ignoring money (see below p. 11), my view is that the central bankers thought that since QE had not produced inflation in the aftermath of the GFC, they thought they could play the same trick again. What they appear to have misunderstood is that after the GFC bank balance sheets were impaired due to loan and security losses, so banks were unable to expand lending and create money even at zero rates. Central bank money creation took the place of commercial bank money creation. Under Covid, however, banks

were in good financial shape, so this time central bank money creation added new money in line with the amount of QE implemented in each economy.

Figure 10. Broad money growth creates a ceiling for nominal GDP: Higher inflation economies

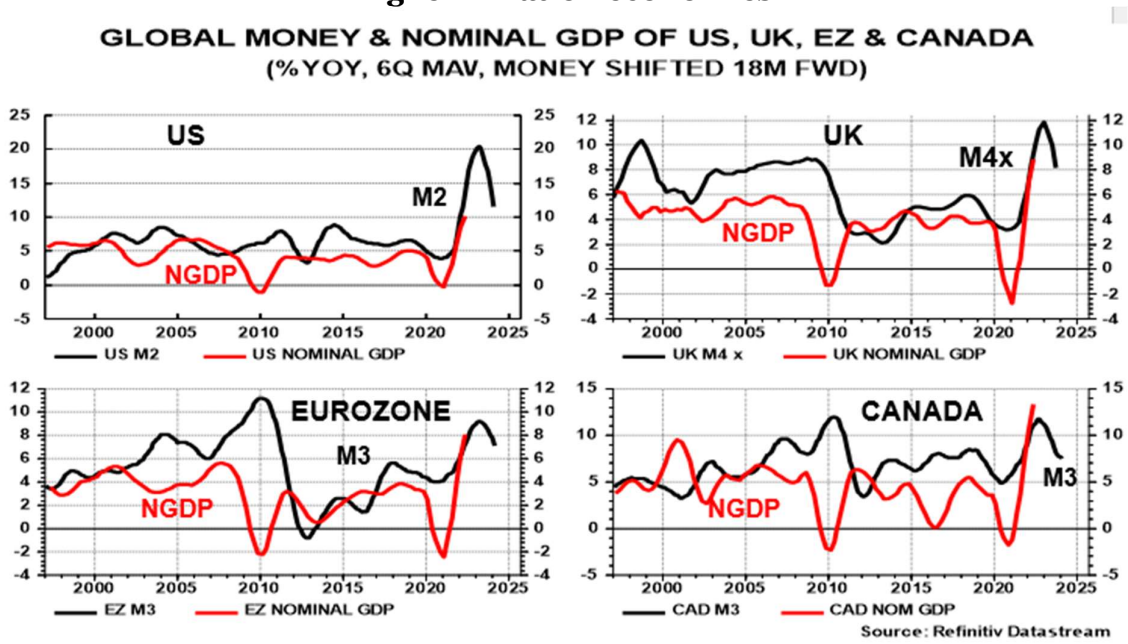
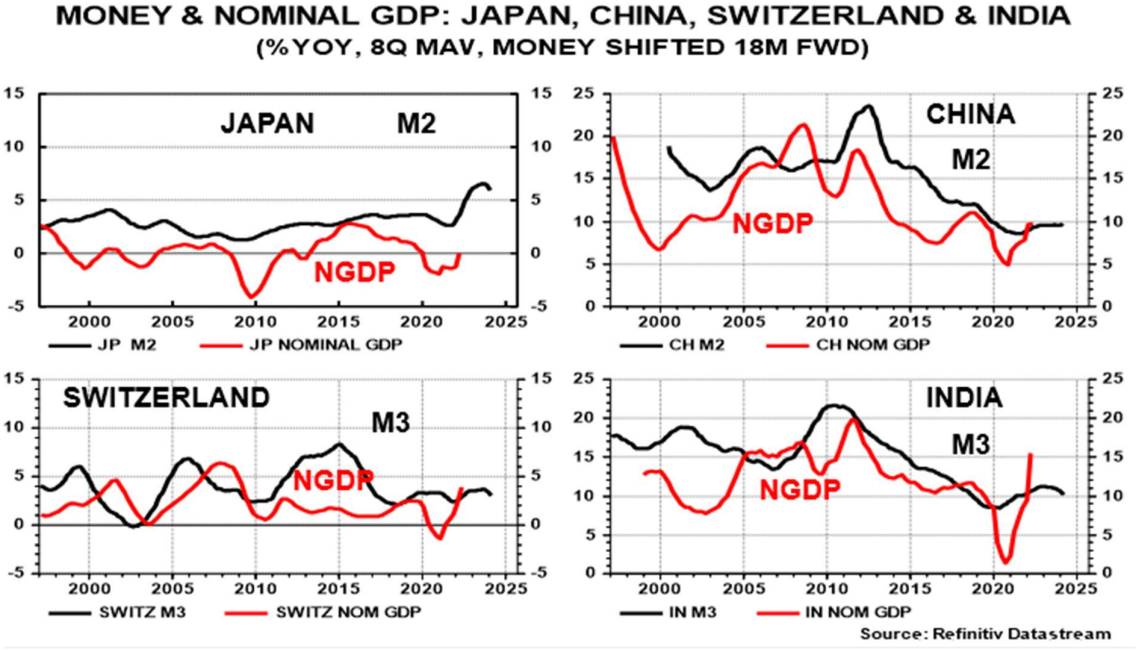


Figure 11. Broad money growth creates a ceiling for nominal GDP: Lower inflation economies



Fortunately, not all central banks made the same error. Figure 11 shows four economies where monetary growth did not expand excessively -- or in some cases it did not accelerate at all.

In Japan M2 accelerated from about 2.6% to 6.5% on the smoothed basis shown in the chart. The upturn was not due to poorly designed QQE which was already in place prior to the pandemic, but due to the BOJ's scheme for lending to commercial banks copied from the Bank of England's Funding for Lending. This has been enough to raise nominal GDP and to lift inflation temporarily to 2%.

In China the People's Bank of China (PBoC) barely responded to the pandemic – at least in the sense of allowing or encouraging money to grow more rapidly. The result has been hardly any Covid-related inflation.

In Switzerland, where the supply chain disruptions and the energy price increase have been very similar to those in its euro area neighbours, money did not accelerate and hence there has been no significant upturn in inflation.

In India the RBI did not engage in any QE-type operations and M3 did not surge as it has done elsewhere. Nevertheless, a bad monsoon has pushed up food prices which comprise a large part of India's CPI, so like China under African swine flu, India's prices have risen somewhat, though this should be regarded as a change of relative prices, not a change in the overall price level.

In combination, these four low inflation cases demonstrate that the current inflation is ***not*** due to supply chain disruptions or the war in Ukraine as so often claimed by mainstream economists.

At this stage I want to digress to discuss in more detail why the consensus of economists completely failed to predict the current episode of inflation. Having also failed to predict the GFC, this is the second major failing of the profession in just over a decade.

Figure 12. Why did mainstream economists fail to predict inflation?

1. Modern neo-Keynesian or New Keynesian macroeconomics economics **omits money**. But the business cycle is a monetary process: Money → Assets → Real GDP → Prices
2. **Interest rates** are a bad way to assess or manage monetary policy. (a) Interest rates (r*) are **not the price of money**, and (b)The **Keynesian Liquidity Preference** function is wrong. Irving Fisher got it right: interest rates are a symptom, not a cause. Friedman: 2-stage impact of monetary changes.
3. The **Output Gap** and the **Phillips Curve** are both "reduced form" tools, linking two symptoms of a common cause.
4. The **Taylor rule** is a combination of (2) and (3).

"Monetary policy is not about interest rates; monetary policy is about the rate of change of the quantity of money." (Milton Friedman)

I have already mentioned that central bankers did not understand that QE in the aftermath of the GFC did not produce inflation only because commercial banks were shrinking their balance sheets and QE by central banks compensated for what would otherwise have been a decline in the money supply. But we need to ask, what were the deeper sources of this failure?

In my opinion, modern macroeconomics has taken some serious missteps.

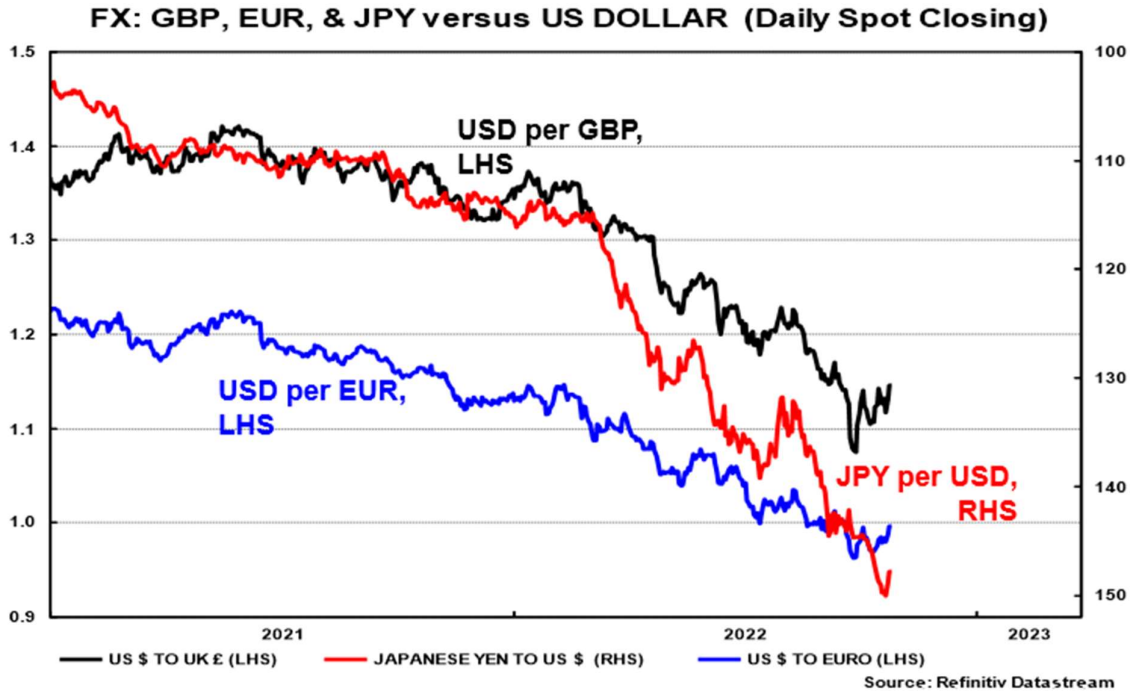
1. Modern New or neo-Keynesian macroeconomic models omit money. But the business cycle is a monetary process: Money → Assets → Real GDP → Prices This means that the transmission of faster or slower money growth is mainly through asset prices, *not* just through the interest rate on new lending as taught by Keynesian economics.
2. Modern macro as taught in universities focuses hugely on interest rates, but interest rates are a bad way to assess or manage monetary policy. For example, (a) Interest rates (or the "neutral" rate r*) are not the price of money, and (b) The Keynesian Liquidity Preference function, on which the monotonic model is based, is wrong. Irving Fisher got it right: interest rates are a symptom, not a cause. It was Milton Friedman who best explained the 2-stage impact of monetary changes on interest rates.[1]
3. Modern macro makes extensive use of the Output Gap and the Phillips Curve. Both are "reduced form" tools, linking two symptoms of a common cause. In the mini flow process set out in red above, both the output gap and the Phillips curve attempt – bizarrely – to explain inflation by ignoring the first two elements (money growth and asset markets).
4. A "workhorse" model widely taught in universities and applied in central banks is the Taylor rule. But the truth is, unfortunately, that the Taylor rule is a combination of (2) and (3).

Turning to the US dollar and its recent strength against most other currencies, this can be ascribed to the view among market participants that the Fed is conducting a tighter monetary policy than other central banks. The market view judges "tightness" in terms of the size of central bank rate hikes, although occasionally an analyst will mention QT as a contributing factor. However, almost none will take into account the relative growth rate of money – past or present – and its consequences.

Measured against the British pound, the Japanese yen and the euro (Figure 13), the perceived relative tightness of the Fed has pushed the USD up an escalator all this year (2022). Looking forward we should expect the relative outperformance of the USD to continue until market perceptions shift and the Fed is perceived to be less tight, or about to become less tight, than other central banks. This will revolve around the peaking of the Fed funds rate but more significantly around any move to lower the Fed funds rate. At that point I expect the USD to move from rising on the escalator to declining in the lift.

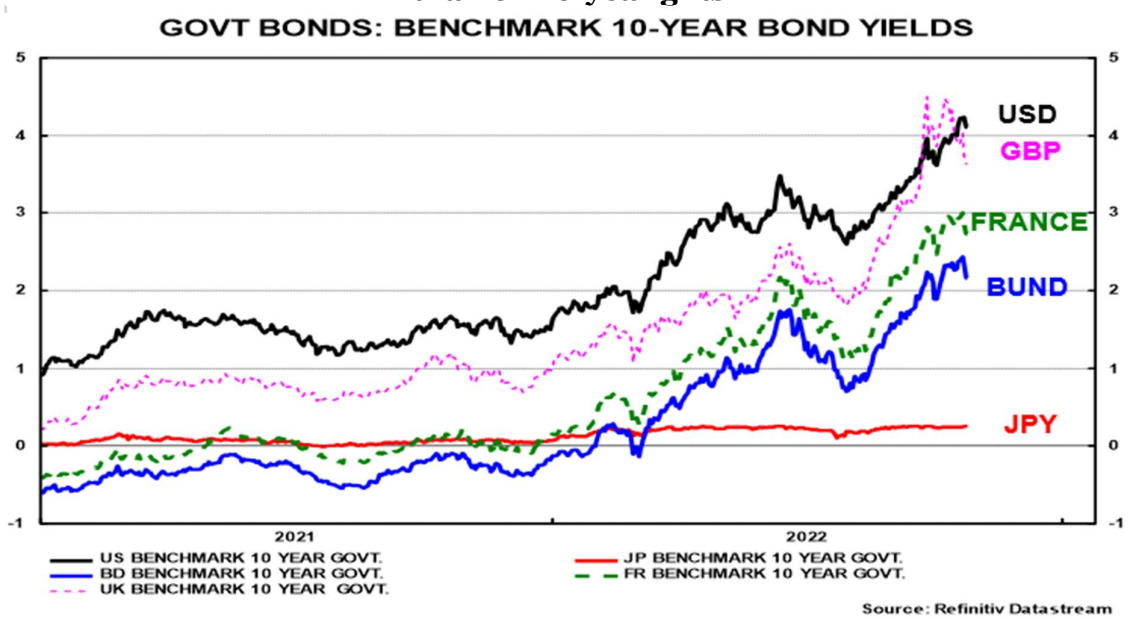
[1] See "Monetary Trends in the United States and the United Kingdom – Their Relation to Income, Prices and Interest Rates, 1867-1975" by Milton Friedman and Anna J. Schwartz(1982), Chapter 10, *Money and Interest Rates.*

Figure 13. US dollar strength reflects the perception that Fed policy is tighter than the policy of other central banks



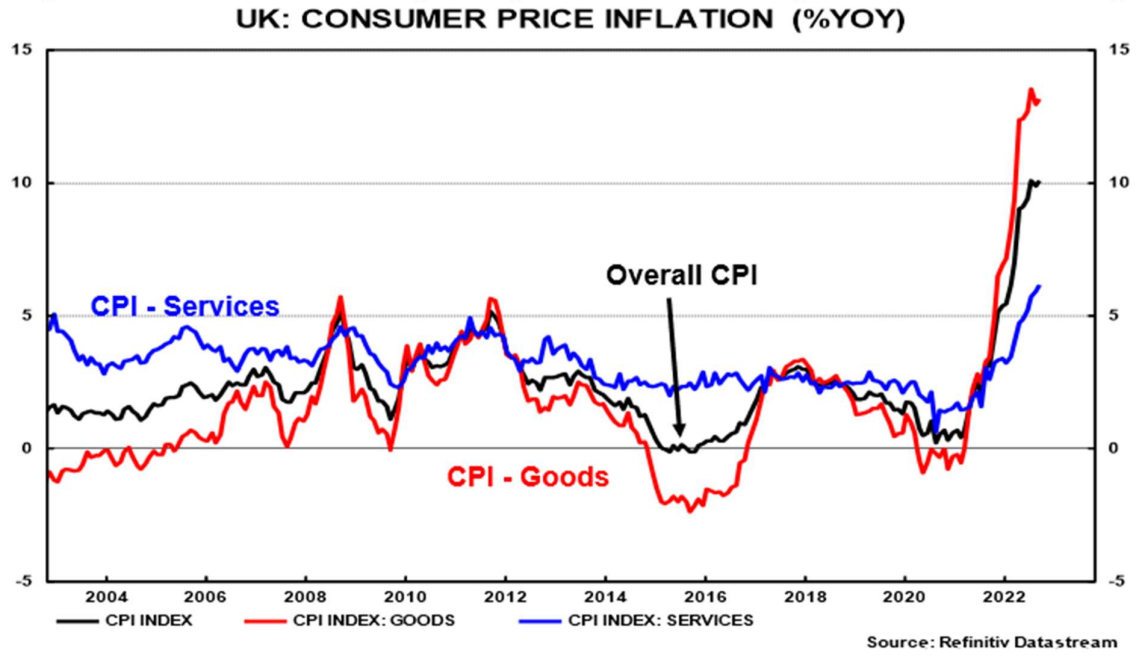
The reason why I expect an abrupt shift – comparable to what happened after the Plaza Agreement in September 1985 – derives from market positioning. With substantial long USD-short JPY carry trades outstanding, traders will want to reverse their positions as soon as there is any risk of sustained USD weakness.

Figure 14. Until Sept 28, yields on 10-year US Treasuries were higher than on 10-year gilts



As well as dealing with many other post-Covid challenges, the British economy recently suffered a triple crisis (for details see IMM Newsletter #6). The only point I want to highlight here is that the yield on the 10-year nominal gilt briefly exceeded that on the 10-year US Treasury bond. Although the yield has returned to a level below US rates, sterling-denominated debt is now trading more like USD debt than euro area debt. The decoupling of the UK from the euro area continues.

Figure 15.In UK inflation, goods prices led, service prices still to catch up



In contrast to the divergent inflation performance of leading economies due to differing monetary responses to Covid, one area in which the experience of all covid-impacted economies has been almost uniform has been in the behaviour of relative prices.

Figure 15 shows the breakdown of the UK CPI into its goods and services components. A notable feature of the three decades 1990-2019 was that cheap manufactured goods from China, India and other EM economies reduced the relative prices of manufactured imports, as reflected in the sub-indices for goods or durable goods in many countries. In the UK goods prices increased at a persistently lower rate than service prices during these decades.

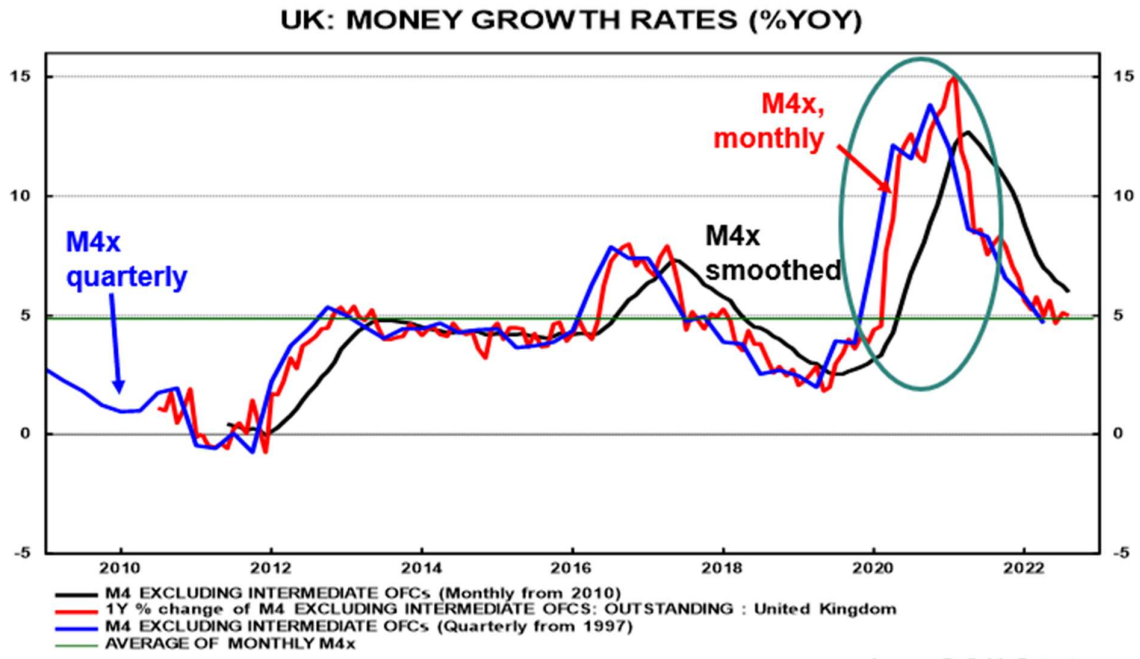
Although many people mistakenly say that China exported deflation during these three decades, the truth is very different. The ***overall*** level of prices in any economy is driven by its monetary policy (i.e., by its monetary growth), but ***relative*** prices reflect specific factors affecting competitiveness in the world economy. Therefore, if consumers have to spend less to acquire manufactured goods they will have funds left over to bid for services. This is why, over the same period, service prices have risen more rapidly than goods prices. It follows that we should adjust Friedman's

dictum that “Inflation is always and everywhere a monetary phenomenon” to say that it is also always “local” phenomenon in the sense that it reflects local monetary growth.

Before the pandemic goods prices rose generally more slowly than service prices, but during the pandemic the pattern has reversed with goods prices rising much more steeply than service prices. The shutdown of large parts of the service industry diverted spending to goods – ordering goods for delivery at home remained feasible – and away from services. Goods prices were bid up; service prices fell. As the inflation from rapid money growth plays out over the next year or two, I expect the relationship between goods and service prices to return broadly to the pre-Covid template – goods prices will fall back while service prices will catch up. Over the next year or two most of the inflation will therefore appear in the service sector as employees and service providers attempt to restore wages and prices to their pre-Covid positions.

The migration of inflation from goods to services will set off a whole debate – is setting off a debate – about whether inflation is becoming “entrenched”, and what to do about inflation expectations, whereas in reality we are simply seeing different phases of the transmission mechanism in operation.

Figure 16. Growth rate of M4x in UK



Source: Refinitiv Datastream

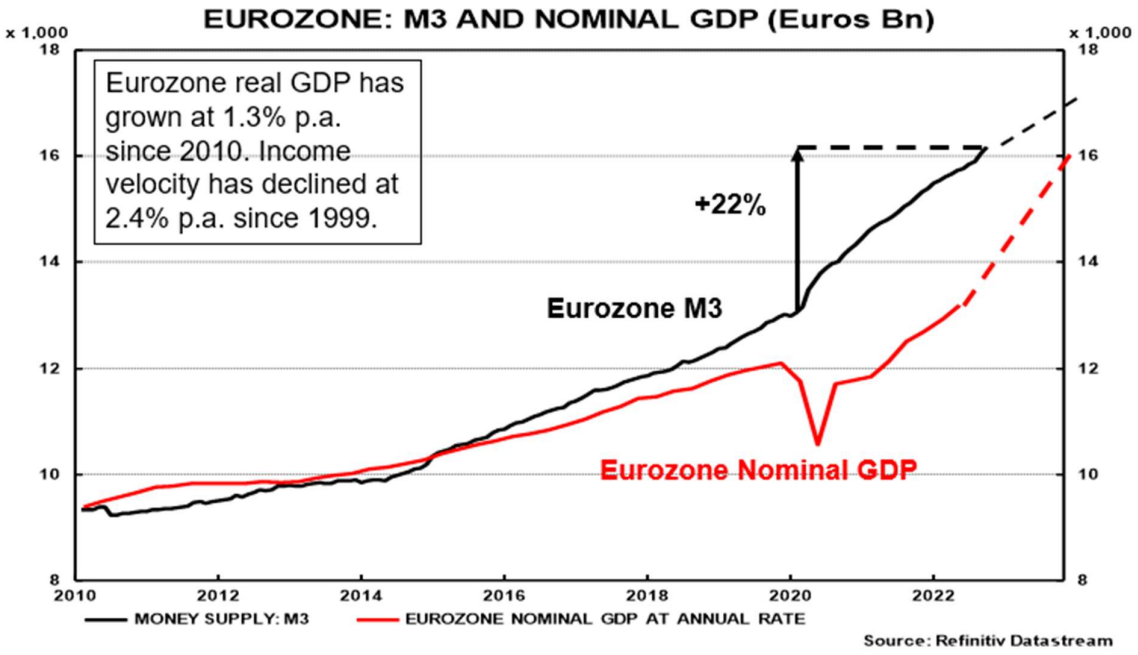
As shown in Figure 16, during the pandemic M4x growth surged, resulting in an excess of money balances relative to income. Compared to a pre-Covid growth rate of just below 5% p.a., M4x growth increased to a peak of nearly 15%.

As firms and households have attempted to dispose of those excess money balances they have spent – on assets, on new investment, on consumption, on inventory

accumulation etc. But since one person's spending is another person's income, the public at large cannot eliminate the excess of money in the economy. The only solution is for prices to rise, eroding the real value of those money balances. This is the inflation that central bankers have unleashed on their economies.

In contrast with the US, so far the UK has not seen monetary growth fall to negative growth rates – at least not on a sustained basis. However, the Bank of England's plan to conduct asset disposals of £80 billion over the period November 2022 to October 2021 is highly likely to tighten monetary conditions by squeezing money growth. The Bank argues that QE and QT are asymmetric in the sense that QE can be very helpful in "smoothing market conditions" in a crisis, but that it can be withdrawn via QT without any adverse effects. This is just plain wrong and ignores money. Doing QE adds to M4x; doing QT directly reduces M4x. Unless QT is counterbalanced with healthy loan growth, QT on its own will create a DECLINE of £80 billion p.a. in M4x that will need to be offset somehow. Such a squeeze would not only hurt the asset markets but would also deepen the recession and raise unemployment even further. And the impact on inflation will only come in 2024 at the earliest.

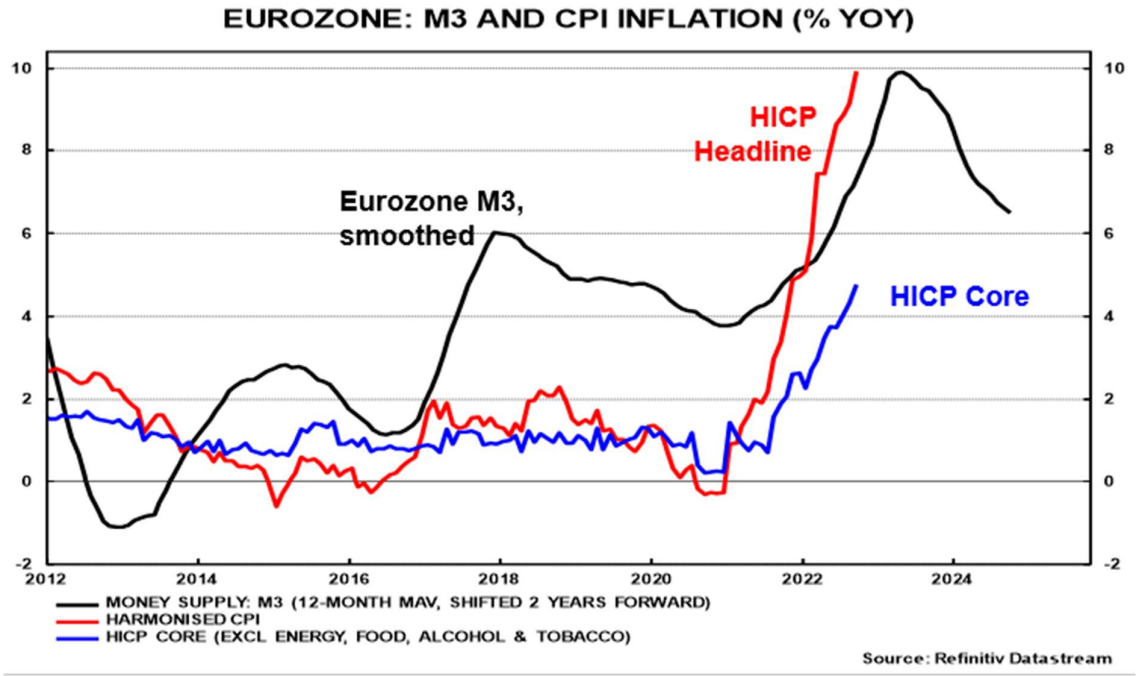
Figure 17. Eurozone nominal GDP will narrow the gap with M3



Turning to the euro area, the monetary excess has been less outrageous than in the US, but nevertheless during the pandemic the ECB generated a rate of growth of M3 far in excess of what is required for price stability in the eurozone. As shown in Figure 17, the cumulative increase in M3 since the onset of covid has been 22%, equivalent to about four years of M3 growth at the required, non-inflationary rate of about 5% p.a. In other words, in two and a half years the ECB has delivered four years' worth of money growth.

The result will be inflationary since the excess has been created by purchases of long-term securities through the PEPP (Pandemic Emergency Purchase Plan) and T-LTROs (Targeted Long Term Refinancing Operations) i.e., four-year loans to commercial banks. The only comfort is that although consumer prices are currently rising more rapidly in the eurozone (+9.9%) than in the US (+8.3%), inflation will almost certainly subside more rapidly than in the US.

Figure 18. Based on M3 growth, eurozone inflation will peak this winter



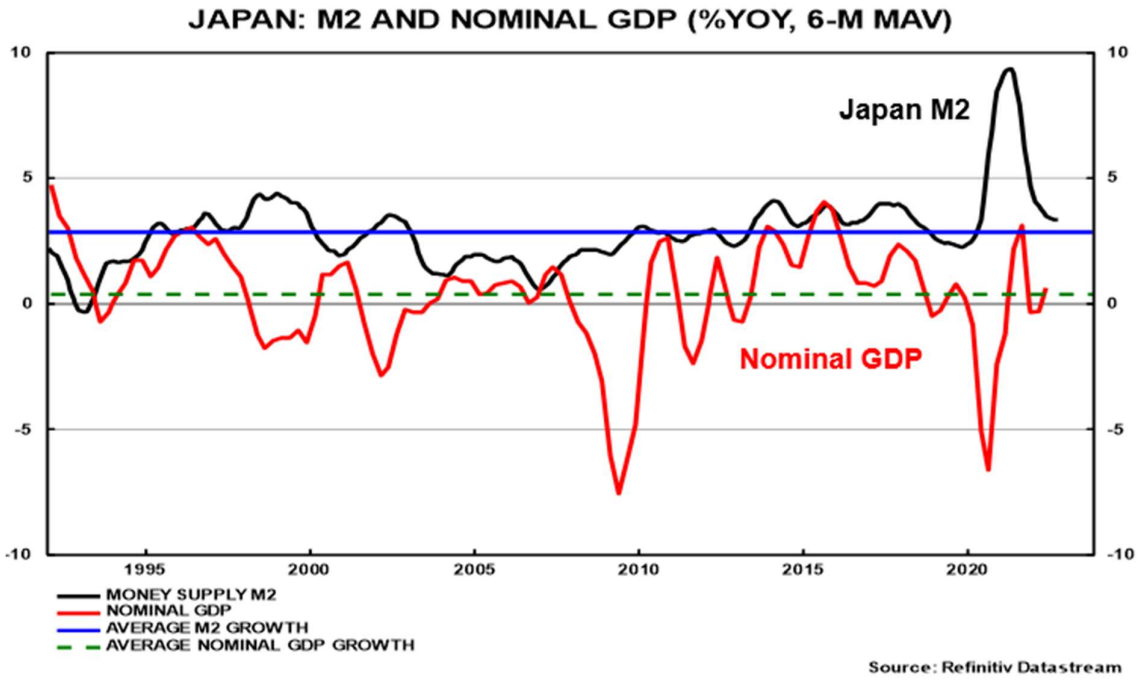
Shifting a 12-month moving average of M3 growth forward by two years in Figure 18 enables us to see that euro area inflation will probably reach a peak over the next six months and then begin to subside. However, as with the US and the UK, inflation will migrate from goods prices to service prices. Employees will seek to attempt to restore their real wages through wage-bargaining while providers in the service sectors will be raising prices to restore their pre-covid profit margins.

The primary problem of Japanese monetary policy of the past three decades since the asset bubble burst in 1990 is that M2 growth has been too low, averaging about 2.5% p.a. (as shown by the horizontal blue line in Figure 19), roughly half what was needed to reach the 2% inflation target. The Governor of the Bank of Japan, Mr Kuroda, introduced so-called "QQE" or Quantitative and Qualitative (monetary) Easing and YCC (yield curve control) but both have singularly failed to increase M2 growth.

The main reason M2 expanded during covid was not QQE or YCC, but the Bank of Japan's lending to commercial banks, copied from the Bank of England's "Funding for Lending" scheme. That scheme is now expiring, and the loans are in process of being repaid. As a result, recently the Bank of Japan's balance sheet has declined abruptly, and M2 growth has returned almost to its pre-covid growth rate.

Together these developments mean that the current 2% inflation will be a "flash in the pan" event[2], and by mid-2023 inflation will have fallen back to pre-covid rates. Japan will return to its low inflation, low interest rates equilibrium (see IMM Newsletter # 4 for a more extended discussion).

Figure 19. With M2 growth down to 3%, Japan's 2% inflation will be short-lived



China, along with Japan and Switzerland, was one of the few economies ***not*** to create excess money growth in response to the Covid pandemic in 2020-21. However, again in contrast to most key economies, in 2022 China's M2 growth has accelerated instead of slowing as seen in many other economies (teal arrow in Figure 20). Given so many headwinds for China's expansion (among which are the zero covid policy, deleveraging under the "three red lines" policy in the property sector, the attack on the tech companies in 2021, and the vague and erratic policies pursued under the CCP's slogan of "common prosperity"), the acceleration of M2 growth from 8% to 12% during 2022 may count for little. In stock market terms, any growth in earnings may well be offset by a decline in PE ratios. The inflationary consequences are also likely to be minimal and will certainly be delayed until 2024.

[2] A thing or person whose sudden but brief success is not repeated or repeatable. The phrase did have a literal meaning, that is, it derives from a real flash in a real pan, but not a prospector's pan. Flintlock muskets used to have small pans to hold charges of gunpowder. An attempt to fire the musket in which the gunpowder flared up without a bullet being fired was a 'flash in the pan'.

Figure 20. China's recent monetary acceleration must contend with many headwinds

However, I want to point out something of perhaps much greater significance. Throughout the last decade since the end of the post-GFC stimulus policy (2008-10), M2 growth has gradually decelerated, bringing down China's underlying inflation rate to about 2%. At the same time, curiously, China's debt ratio was steadily increasing. In short, there was a credit boom at the same time as a sustained monetary tightening.

First, this illustrates the important distinction between money and credit. Second, it challenges the conventional view that money and credit are essentially the same thing, and that both expand and contract together. It is therefore interesting to ask the question, are there any other cases of credit and money moving in opposite directions? I can only think of one: the case of the United States during the 1920s.

From January 1922 until September 1929, or for nearly seven years ahead of the New York stock market crash of October 1929, US M2 grew at the modest annual average rate of 4.7% p.a. Inflation in the seven years before the October 1929 crash was only 0.4% p.a.[3] In other words, there was no monetary excess during these years. However, there was a real estate boom and a stock market bubble. These asset price booms were based on developer loans and broker loans, as well as other non-bank lending – what we would nowadays call shadow bank lending. When the stock market crashed in 1929 the shadow bank credit pyramid collapsed, just as it imploded after the Lehman Brothers bankruptcy in 2008. In addition, between 1929 and 1933 US M2 also contracted as banks reduced lending and runs on banks began.

[3] The M2 data come from Friedman & Schwartz, "A Monetary History of the United States" while the inflation data come from the US Bureau of Labor Statistics.

The parallels with China are striking. China, too, has had very modest M2 growth relative to its potential growth rate in the past decade since the 2008-11 fiscal and monetary stimulus policy. Yet China also experienced a shadow banking boom built around WMPs (Wealth Management Products) and has seen big increases in developer loans for real estate purchases by households over the past decade. One is therefore compelled to ask; how will China's policymakers engineer a gentle deleveraging? If de-leveraging – as under the three red lines policy for real estate developers – is to be accomplished without a widespread collapse, it will surely be essential to maintain relatively buoyant growth of M2.

Summary and Conclusions

- Inflation follows from excess money, ***not*** from pandemics, supply chain disruptions, changes in the terms of trade, or wars.
- Central banks (CBs) in US, UK, & euro area created excess money in 2020-21. It is *that* excess money that is currently fuelling inflation.
- Inflation will only return to target about 2 years after the excess money is eliminated.
- Meantime, with central banks abruptly raising rates and shrinking their balance sheets (via QT), main risk is that sharp slowdowns of money will lead to steeper declines in output and bigger increases in unemployment than required to bring inflation back to target.
- Key indicators to watch are broad measures of money…
- …M2 or M3 proxies in the US, M4x in UK, M3 in Eurozone etc.
- …NOT interest rates, or the shape of the yield curve
- …NOT the size of CB balance sheets, or the monetary base

Implications for Asset Markets

- **USD to remain strong until financial markets sense that Fed may ease; then the fall in the USD will be sudden and steep**
- **US stock market has mainly fallen due to higher interest rates (i.e., PE ratios have declined); declines in EPS due to recession still ahead (e.g., FactSet still predicting 6% EPS gains in 2023).**
- **Bond yields to rise further. 2-year Treasury bond yield to reach 6%; 10-year Treasury yield to reach 5%.**
- **IG bond yields to follow Treasury yields upward; High-yield bonds very vulnerable to defaults and bankruptcies.**
- **Real estate to follow US stock market downwards.**
- **For inflation and real GDP forecasts, see tables on p.21 .**

Figure 21.
Forecasts of Real GDP Growth & CPI Inflation: US, UK, & EZ

	UNITED STATES			UNITED KINGDOM			EUROZONE		
	Nom GDP	Real GDP	CPI Inflation	Nom GDP	Real GDP	CPI Inflation	Nom GDP	Real GDP	CPI Inflation
2022	10%	+1%	9%	9%	-1%	10%	8%	-2%	10%
2023	7%	0%	7%	6%	-2%	8%	7%	0%	7%
2024	5%	+2%	3%	5%	+2%	3%	4%	+1%	3%

Figure 22.
Forecasts of Real GDP Growth & CPI Inflation: JP, CH & SW

	JAPAN			CHINA			SWITZERLAND		
	Nom GDP	Real GDP	GDP Deflator	Nom GDP	Real GDP	CPI Inflation	Nom GDP	Real GDP	CPI Inflation
2022	1%	1%	0%	5%	3%	2%	6%	2%	4%
2023	2%	1%	1%	6%	4%	2%	4%	1%	3%
2024	1%	1%	0%	7%	5%	2%	3%	2%	1%