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The Driver of Bond Yields is Inflation, not Debt.

By John Greenwood

Overview

- In recent weeks and months before the December 12-13 meeting of the Fed's FOMC, I was asked several times whether the large volume of US Treasury issuance due to the Covid-related budget deficits and the growth in the absolute size of the federal debt would cause long-term yields to shift upwards. Less often I was asked the same question in relation to the UK and the euro-area.
- These questions were predictable in the light of Congressional Budget Office forecasts for a fiscal deficit of at least 6% of GDP every year over the next 10 years.
- Following the FOMC meeting on December 12-13, the SEP (Summary of Economic Projections) made it clear that FOMC members envisaged a median of three cuts of 25 basis points in the Fed funds rates during 2024.
- In response, long bond prices rallied and the questions about the impact of the burden of debt have, for the moment, disappeared.
- But there can be little doubt that the questions will return, and at that time it will be useful to have at hand a primer on the drivers of long-term bond yields.
- This is the purpose of the current Newsletter.
- To anticipate the conclusions, my findings are that in the overwhelming majority of cases, bond yields are determined by inflation, not by the size of the government budget deficit or the outstanding debt.
- Only in extreme cases where the solvency of the government is questioned and its creditworthiness is put at risk do debt and deficit considerations play any role in setting yield levels, but these instances are rare for developed economies.

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The IMM Newsletter offers economic research written by John Greenwood, founder and Chief Economist of International Monetary Monitor. A pioneer of monetary research in Asia, 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. From 1999 to 2021 he was Chief Economist at Invesco, based in London.*

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Introduction

In recent weeks and months before the recent December 12-13 meeting of the Fed's FOMC, I was asked several times whether the large volume of US Treasury issuance due to the Covid-related budget deficits and the growth in the absolute size of the federal debt would cause long-term yields to shift upwards. Less often I was asked the same question in relation to the UK and the euro-area.

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My procedure in this Newsletter is to study the monetary history of five major economies over the past 50 years since 1970 (the US, Japan, Germany, the UK and Italy), examining the history of the interaction of four variables: broad money growth, inflation, changes in the level of government debt, and bond yields. For three of the countries (the US, Japan, and the UK) the data is available for the entire period. For Germany and Italy some of the data series are not available for the early years.

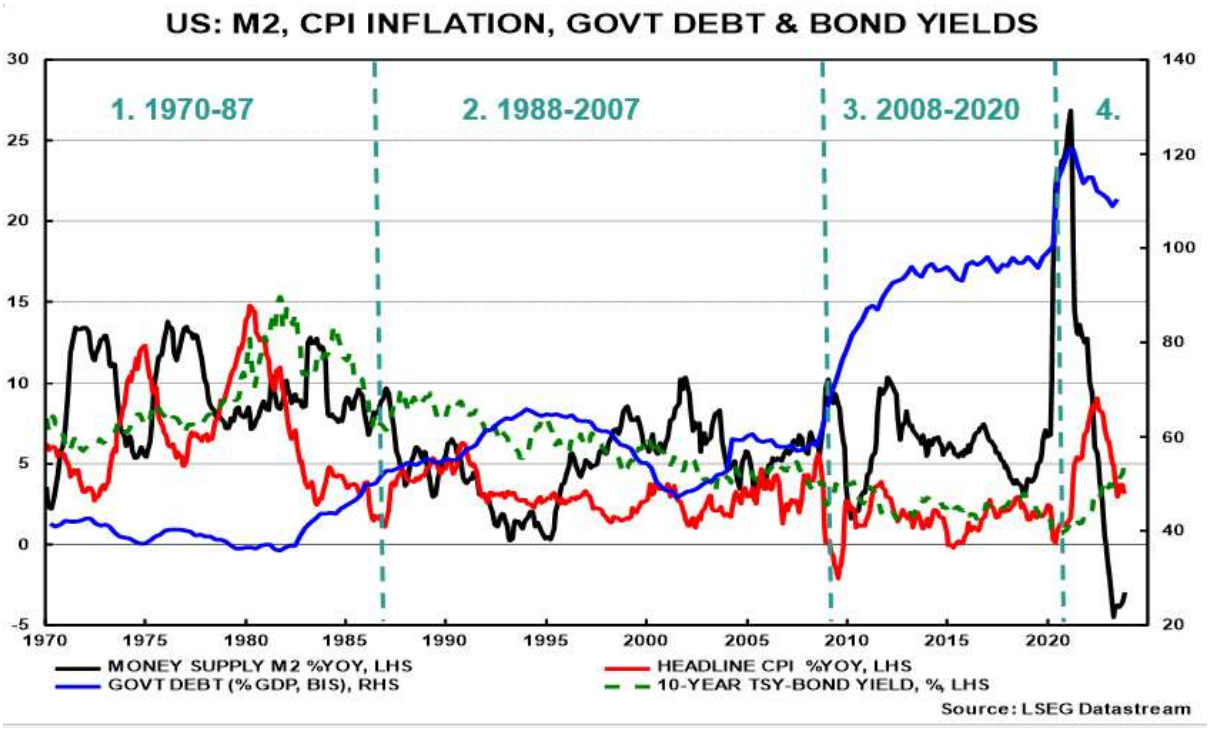
The five decades are divided into convenient periods to obtain conclusions about the relationships among these key variables.

In my study I have basically considered whether, in normal cycles, it is monetary policy and inflation that drive government bond yields rather than questions about the size of government deficit or debt. For these five major economies, with the possible exception of Italy, creditworthiness has seldom been an issue, and I have not attempted to pinpoint when that tipping point might be reached. Of course, it is true that at some point - when a government is seen to become over-indebted – that yields can move sharply upward, jeopardising future bond issues. This is particularly applicable to economies that issue debt in foreign currency such as smaller EM economies or whose domestic debt markets do not have the volume or depth to absorb larger government issues at short notice.

The conclusions are therefore to be taken as applicable to standard, developed economies that mostly issue debt in their own currency and do not approach the threshold of being considered for a significant credit downgrade. With that caveat, we can now proceed to the economies and the data.

Section 1. The United States

Figure 1. In the US, inflation has been the dominant driver of yields. The size of government debt plays no role in determining yields.



The monetary history of the United States since 1970 can be conveniently divided into four periods, as shown in the chart.

First, in the period 1970-87 monetary growth (represented here by M2) initially accelerated in two large waves up to 1981 (averaging 9.8% p.a. between 1971 and 1981) and then decelerated sharply to 1987. During this period, the ratio of government debt-to-GDP remained below 50%. Rapid M2 growth, not debt, was unquestionably the source of the surge in inflation and hence bond yields.

Second, In the period 1988-2007 M2 growth remained subdued (averaging 5.0% p.a.), government debt averaged 57% of GDP, and inflation slowed to an average of 3.1% over the 20 years. Low inflation, driven by moderate M2 growth, was the primary reason for falling yields. Note that investor scepticism about any sustained fall in inflation was responsible for the slow decline of bond yields in the early part of these two decades.

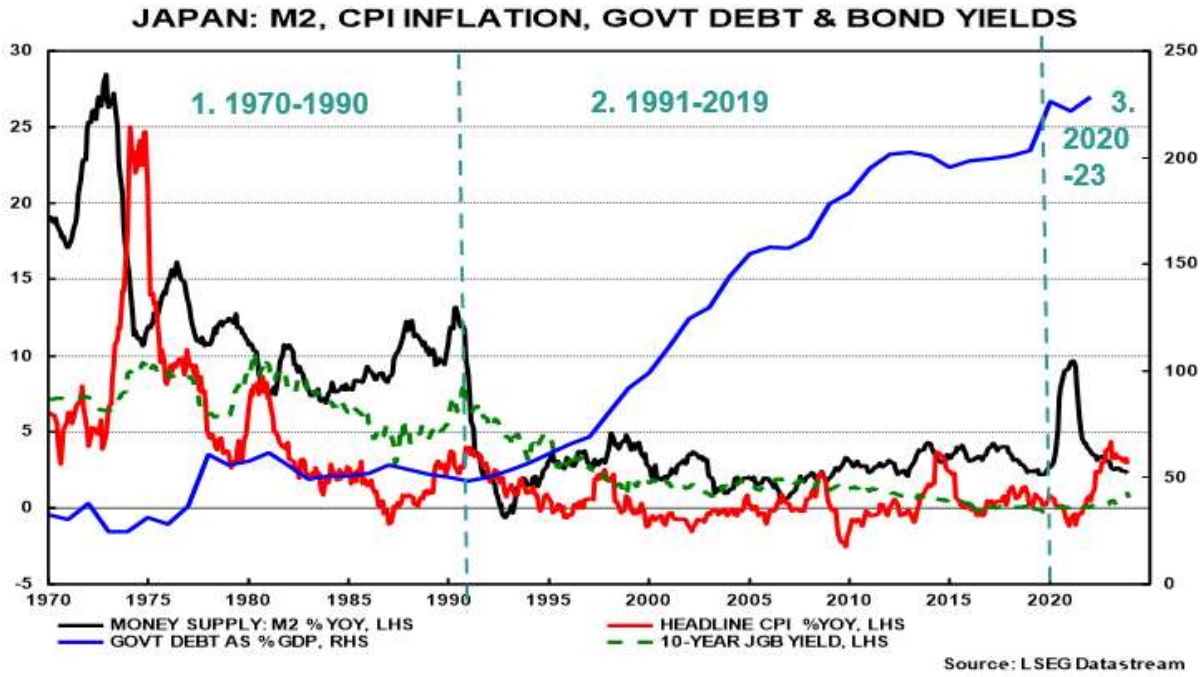
Third, in the period 2009-19, M2 growth continued to be moderate (averaging 7.1% p.a.), but government debt climbed steeply from 58% to 96% of GDP in the wake of the Global Financial Crisis (GFC). Even so, inflation remained low. Once again, M2 proved to be the dominant driver of inflation and hence bond yields.

Fourth, the Covid period (2020-23) has seen surges in both M2 growth and in government debt. Given what we know from the three earlier periods, we can say without fear of contradiction that it was the renewed surge in M2 that was responsible for the upswing in inflation and with it the upturn in bond yields, not the increase in government debt.

The overall conclusion from 50 years of US monetary experience is that bond yields are driven by inflation which is in turn driven by broad money growth. The size of government debt has little if any bearing on the outcome for bond yields.
After reviewing comparable data for Japan, Germany, the UK, and Italy I will explain why the size of government debt has so little impact on bond yields – see pp. 9-10.

Section 2. Japan

Figure 2. In Japan, JGB yields followed inflation down until the Bank of Japan started YCC. The size of government debt played no role.



To analyse Japan's experience with inflation, government debt, and bond yields, it is convenient to divide the five decades since 1970 into three periods.

First, the period 1970-1990 covers the high inflation of the 1970s, its decline into the late 1980s, and the asset bubble to 1990. The big surge of inflation to 28% in 1974 was preceded by an extraordinary acceleration of M2 growth from 17% in December 1970 to 28% by November 1972. The OPEC oil price increases affected the profile of inflation, but the underlying cause was the monetary explosion. Government debt remained below 40% of GDP until 1977, then increased to about 60% of GDP, but by this time the inflation had already declined from 28% to below 5%.

Money explains the inflation of the 1970s, not government debt. Similarly, the milder inflation episodes of 1979-80 (during the second oil crisis) and 1988-90 (the asset

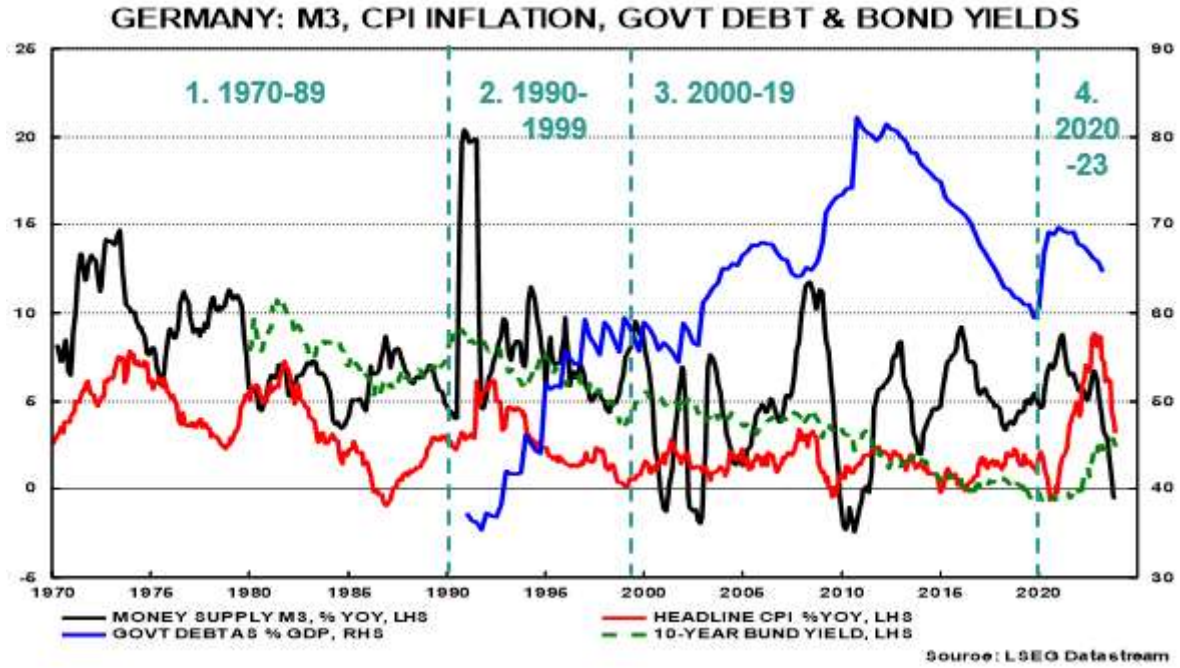
bubble), are explained by moderate upturns in M2, not by government debt. Throughout, bond yields tracked inflation, not government debt.

Second, the period 1991-2019 covers the three "lost decades" of low money growth and near-deflation. During these three decades M2 growth averaged just 2.6% p.a., far below what was needed to reach the 2% inflation target. Consequently, inflation (including three Consumption Tax hikes) averaged only 0.4% p.a. The enormous increase in government debt from 48% of GDP in 1991 to 203% on the eve of Covid made no difference to bond yields which followed inflation downwards, even before the Bank of Japan adopted "yield curve control" (YCC).

Third, since the onset of Covid in 2020, both money and debt have increased, triggering mild increases in inflation, bond yields and wages. But as money growth returns to pre-Covid growth rates, inflation and bond yields are falling back, confirming their lack of dependence on government debt.

Section 3. Germany.

Figure 3. In Germany, Bund yields gradually closed the gap with inflation until the ECB started QE in 2015, when the y fell below inflation. Government debt has played no role in determining yields.



In Germany, monetary policy since 1970 can be divided into four periods.

First, the years 1970-89 saw two episodes of inflation, peaking in December 1973 and October 1981, each following two or three years of accelerated growth of M3. I was unable to obtain data for the West German government debt during this period, but Bund yields (available from January 1980) broadly tracked inflation with a spread of 200-300 basis points.

Second, the period 1990-99 includes re-unification with East Germany (hence the spike in M3 growth) and the transition to the euro. It is notable that despite a jump in government debt from 36% of GDP to nearly 60% associated with re-unification, M3 growth slowed, and Bund yields fell in line with slowing inflation. As far as inflation and Bund yields are concerned, monetary trends dominated fiscal forces.

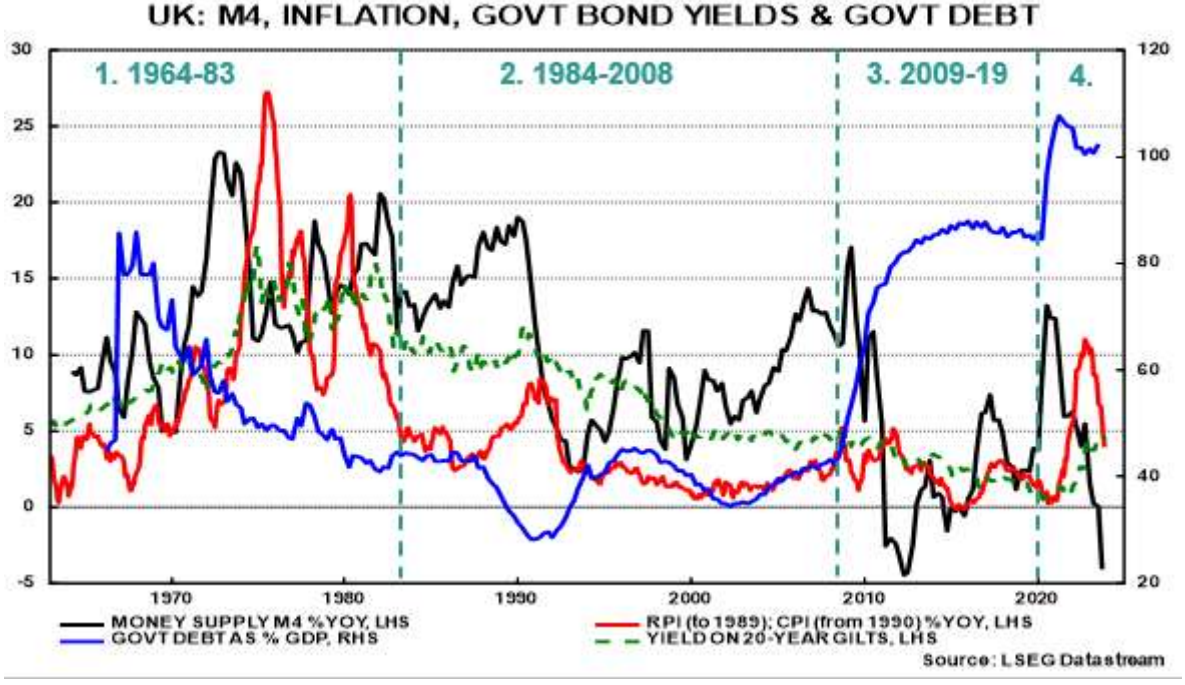
Third, the first two decades under the euro (2000-2019) witnessed moderate average growth of the German component of euro M3 at 4.4% p.a. which was reflected in very low average inflation (1.5% p.a.). This was despite the substantial increase in government debt associated with the aftermath of the GFC when the government debt-to-GDP ratio increased from 64% in 2007 to 82% in 2010. Throughout the period Bund yields remained on a broadly downward track, falling from 5.5% in 2000 to negative levels in 2016. Arguably, both the decline in the government debt ratio to 60% by 2019 and the ECB's negative rate policy contributed to the fall in Bund yields.

Fourth, the period since 2020 has seen both M3 accelerating and government debt increasing, so that inflation and Bund yields have also risen temporarily, but now that M3 is shrinking inflation and yields are likely to fall back towards pre-Covid levels.

The conclusion from the past five decades in Germany is that M3 growth and inflation are the drivers of bond yields, not the level of government debt.

Section 4. The UK.

Figure 4. In UK, gilt yields followed inflation down until Covid. After the GFC & Brexit, inflation rose briefly above gilt yields. The level of government debt played no role in determining yields.



The UK's monetary history since the mid-1960s can be conveniently divided into four periods for our purposes.

First, the period 1964-1983 consists of a generally rising rate of monetary growth accompanied by rising inflation (averaging 9.2%) and bond yields that rose into double-digit territory. By contrast, from a peak of 85% of GDP in 1966-67, government debt as a percent of GDP fell to just above 40% in the early 1980s. Excess monetary growth is clearly the source of the inflation, not fiscal expansion.

Second, the period 1984-2008, began with the Lawson boom and its associated rapid money growth leading to 8% inflation. After this was corrected, the subsequent period is sometimes referred to as the Great Moderation since it included significant declines in the rate of M4 growth, a much lower average inflation rate below 3%, and falling gilt yields. The ratio of government debt-to-GDP fluctuated around a low average level of 40%. The period ended with another surge of money growth (to 14% in mid-2006) that mainly fuelled asset price increases, not CPI inflation.

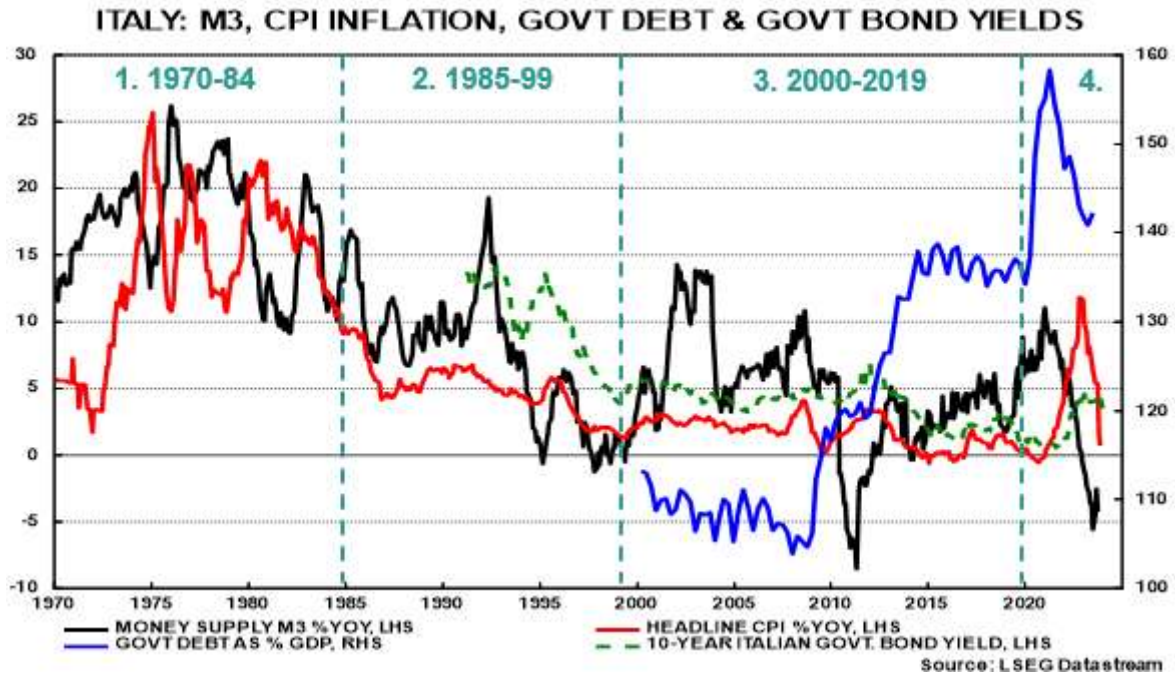
Third, the post-GFC period 2009-19 again featured low average M4 growth and low inflation, despite the steep rise in the ratio of government debt-to-GDP. This episode of increasing government debt clearly had no impact on inflation.

Fourth, the Covid era (2020-23) witnessed rapid M4 growth (due to the Bank of England's QE purchases) and a simultaneous surge of the government debt-to-GDP ratio (due to fiscal support programmes during the pandemic). The result was rising inflation and bond yields. On this occasion one could argue that the fiscal expansion underwrote the rise in inflation, but in the absence of M4 expansion, the evidence from countries like China and Switzerland - which did not boost money growth and did not suffer inflation - it is doubtful if inflation would have risen much.

As in the case of other economies, the conclusion from the UK is that money growth explains each episode of inflation and hence bond yields, whereas the level of government debt has very little explanatory or predictive power.

Section 5. Italy.

Figure 5. In Italy, yields gradually closed the gap with inflation until Covid when they fell behind (temporarily). Government debt played a negligible role in determining yields.



Italian monetary and fiscal history since 1970 can be divided into four periods for our purposes.

First, 1970-85 was a period of sustained double digit money growth (with M3 averaging 17% p.a.) during which inflation also rose into double digit rates (averaging 13.3% p.a.). The lack of available data on government debt and bond yields limit the conclusions one can draw, but the M3 and inflation data are enough to say that the inflation was very closely associated with the rapid M3 growth.

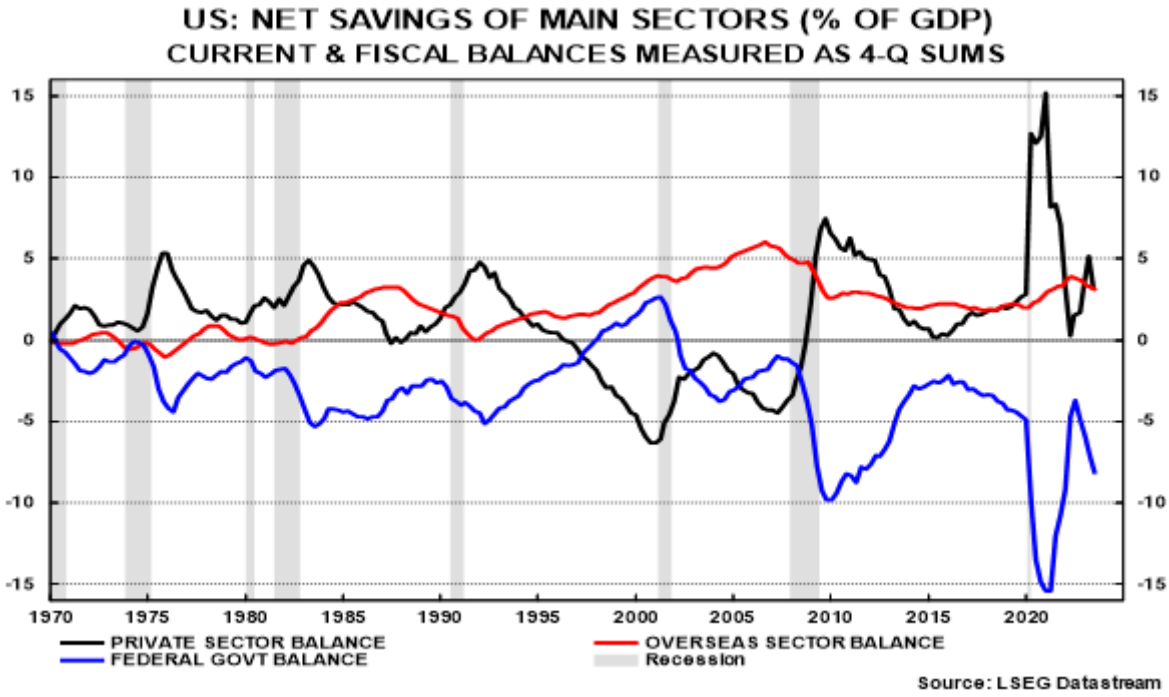
Second, the period from 1986 to 1999 was the period of preparation for European monetary union, which began with various schemes to reduce exchange rate variability across the European region. This implied a degree of external pressure to limit money and spending growth, resulting in lower rates of growth of money, inflation, and in the latter half of the period, falling bond yields. Although there was also pressure to reduce fiscal deficits, the slowdown in M3 growth appears to have played the main role in inflation control, not fiscal measures.

Third, the first two decades of participation in the euro (2000-2019) have continued to apply the same external pressures to limit money and spending growth. The result for Italy has been very weak real economic growth, but the reward has been low inflation and comparatively low bond yields – despite the surge in the government debt-to-GDP ratio from 105% in 2008 to 130-140% by 2014.

Fourth, as in other economies, the Covid period 2020-23 has seen a simultaneous expansion of Italian government debt along with an acceleration of Italian M3. Inflation and bond yields also spiked upwards, but these are now falling as M3 growth has turned sharply negative while the government debt-to-GDP ratio has also fallen back. From a statistical viewpoint it will be hard to separate out the relative contributions of monetary and fiscal contraction, but the consistency of the lead-time between monetary slowdown and inflation downturn is an indication that once again monetary forces are dominating fiscal forces in the determination of inflation and bond yields.

Section 6. Why bond yields are mostly unaffected by increases in government debt – up to a point.

Figure 6. The reason why large government deficits do not necessarily raise bond yields: net sectoral balance must equal zero.



Based on the analysis above we have established that government bond yields are primarily determined by inflation, which in turn is a result of the rate of growth of broad money.

But how can it be that large increases in the government deficit do not necessarily lead to higher bond yields?

One way to explain the outcome is to recognise that no matter what happens to the government sector balance, the net balance of savings and investment in the other sectors must enable the sum of all sectors to be zero, that is, when the government sector has a budget deficit, the non-government sectors (the private domestic sector and foreign sector together) must have a surplus, and vice versa. In other words, if

the government sector is borrowing, the other sectors taken together must be lending.

As shown in Figure 6, during the Covid episode, the surge in the government sector deficit - due to fiscal support programs for households and firms - was fully offset by the build-up of a very large surplus in the private sector. Households were staying home and spending much less than usual, but their income was boosted by federal government checks, while corporates were also investing less and hiring less, causing the overall private sector savings rate (for households and firms together) to rise to just over 15% of GDP. These surpluses in effect financed the government deficits of the pandemic period.

Summary, Forecast, and Investment Conclusions

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- These questions were predictable in the light of Congressional Budget Office forecasts for a fiscal deficit of at least 6% of GDP every year over the next 10 years.
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- In response, long bond prices rallied and the questions about the impact of the burden of debt have, for the moment, disappeared.
- But there can be little doubt that the questions will return, and at that time it will be useful to have at hand a primer on the drivers of long-term bond yields.
- This is the purpose of the current Newsletter.
- The conclusions from my findings are that, in the overwhelming majority of cases, bond yields are determined by inflation, not by the size of the government budget deficit or the outstanding debt.
- Only in extreme cases where the solvency of the government is questioned and its creditworthiness is put at risk do debt and deficit considerations play any role in setting yield levels, but these instances are rare for developed economies.
- The immediate investment conclusion is that with inflation rates set to fall significantly over the next 12-24 months in all five major economies studied in this analysis – based on exceptionally low rates of monetary growth in the past 12-18 months – investors should add to their long duration government bond positions.

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