Turkish Economic Review
econsciences.com
Volume 11 September 2024 Issue 3

Beware financial conditions indicators!

By John GREENWOOD †

Abstract. This paper compares two versions of the transmission mechanism of monetary policy: the monetarist model and the widely popular Financial Conditions Index (FCI) model. The focus is on the role of interest rates and spreads as indicators of the business cycle. In the monetarist model, following a sustained upswing or downswing in the rate of growth of money, theory and evidence point to two subsequent stages for interest rates – first the liquidity effect, followed by the Fisher effect. These two movements are in opposite directions, both being effects of prior monetary growth. The first effect is typically quite brief; the latter effect usually lasts much longer. I find that the monetarist model fits the experience since March 2020 like a glove. By contrast, the FCI model generally ignores monetary growth and constructs an index consisting of a composite of rates, spreads and other financial market indicators. This index is taken as the driver for subsequent moves in asset prices, credit market developments and their impact on the real economy. To my knowledge, the FCI model is nowhere fully articulated and is only vaguely specified in mathematical terms. Based on evidence from business cycle developments since the onset of Covid for the US, the euro-area, and the UK, the FCI results are shown to be inconsistent and sometimes contradictory.
Keywords. Monetary economics; Business cycle; Interest rates; Inflation.
JEL. E19, E32, E52, G10.

1. Introduction

During the past few months since April/May 2023, US bond yields have been steadily rising. There has been plenty of ink spilled discussing why this has happened. Could it be that real economic growth is going to continue strongly, putting upward pressure on inflation and rates? After all, the Atlanta Fed's GDPNow index is currently suggesting about 5% real GDP growth in 2023 Q3. In addition, Fed Chair Powell's speech at Jackson Hole and his remarks following the FOMC meeting on September 19-20, plus the dot plot on the rates outlook by FOMC members have all suggested that rates would stay higher for longer than market participants had expected.

Or are the expanded funding needs of the US government – from the huge increase in the federal deficit and its higher interest costs – the reason for the upward pressure on bond yields? Or is it due to (cash) sales of US Treasury bonds as part of the "basis" trade? Or is it the withdrawal of numerous foreign central banks and SWFs from the US Treasury market that is the source of rising yields?

In this debate, widely quoted US "Financial Conditions Indices" such as the Chicago Fed's National FCI in Figure 1 have been supportive of higher yields because they have been tightening in 2023 (red dashed line) along with rising bond yields (second blue solid line). (Note the inverted scale on the right-hand axis, selected to conform with the recent movement of bond yields.)

Yet this narrative, if correct, conflicts with the story that FCIs told in 2021-2022. Over the nine months from October 2021 until June 2022, or arguably

† Institute for Applied Economic, Global Health, and the Study of Business Enterprise, Johns Hopkins University, USA.

until October 2022, "financial conditions" as measured by the Chicago Fed's National Financial Conditions Index (NFCI) were allegedly easing (blue dashed line) even as Treasury bond yields (blue solid line) were rising. In the background, M2 growth in 2021 was still in double digits, the Fed did not raise rates until March 2022, the economy was growing strongly, and inflation was already rising. Also, it was widely expected that the Fed would continue to hike the Fed funds rate.

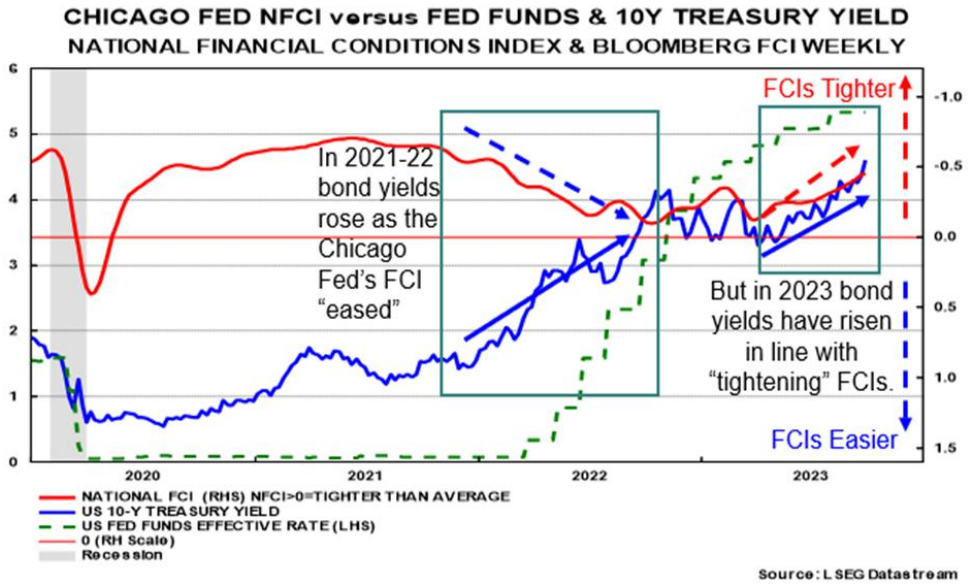

Figure 1. *Popular (FCI) theories of the monetary transmission mechanism are obviously wrong or contradictory.*

How can both explanations be credible? Clearly, they cannot. The problem is that there is something fundamentally wrong with FCIs. The reason is that FCIs are fundamentally an example of what Kenneth Boulding called "facts without theories" and, in that sense, "meaningless". Central bankers are therefore flying blind. To the extent they rely on FCIs (albeit with other data) and claim they are "data-dependent," they are not using a properly formulated theory of how monetary policy works, or how money growth is transmitted.

The fundamental problem for FCIs concerns the form and sequencing of the transmission mechanism implicit in their construction. To explain this, I shall set out briefly the monetary transmission mechanism long proposed by Irving Fisher and Milton Friedman, followed by the transmission mechanism implicit in FCIs.

One problem with FCIs is that they are monotonic – that is, they associate higher interest rates and spreads plus lower equity prices with "tighter" conditions, and lower rates and spreads plus higher equity prices with "easier" conditions. In other words, the FCI relationship is one-way. But monetary analysis shows that there is a distinct and important two-way relationship between money and interest rates that is ignored by FCIs (see Section 2).

A second, deeper problem is that FCIs assume that interest rates and spreads rates are the drivers of financial or business conditions whereas monetary analysis shows that rates are symptoms or effects of past money growth, and that the effects come in two stages – first lower then higher rates for an sustained expansionary monetary policy; and first higher then lower rates for a sustained tight or contractionary monetary policy. FCIs therefore

fail to take into account the 2-stage impact of changes in money growth on rates and spreads, and this is why they produce inconsistent results.

Market participants mostly make the same presumptions as are implicit in FCIs: i.e., that higher rates mean tighter monetary conditions and lower rates mean easier monetary conditions. But monetary analysis in this paper shows that this is either wrong or contradictory. As a result, there will inevitably be policy mistakes or incorrect forecasts at critical moments in the business cycle deriving from use of the FCI framework.

2. The monetarist transmission mechanism

In monetary analysis, sustained and substantial increases in the rate of growth of the quantity of broad money lead first to a decline in velocity (which amounts to saying that temporarily people hold larger money balances than they intended).

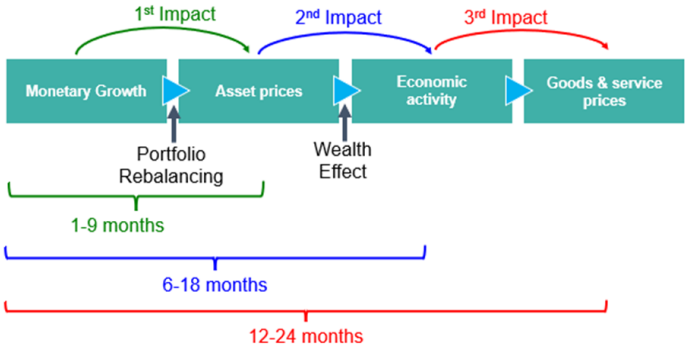

Figure 1. *A monetary view of the transmission mechanism and the lags in effect*

Second, after some weeks or months, portfolios are rebalanced and asset prices rise while market yields on assets decline (i.e., interest rates fall) as the excess money balances are invested in a wide range of existing assets such as bonds, houses, equities, commodities etc. Third, after a further period, typically 6-9 months but sometimes as long as 18 months, economic activity starts to rise under the impetus of the wealth effect, the demand for loans increases and interest rates start to rise. Fourth, still later and after a lag of typically 12-18 or 24 months after the initial surge in money growth, inflation increases and lenders react by raising rates even further to protect themselves against the erosion of the real value of their loans. Other participants in the market – such as firms manufacturing goods or firms providing services, and wage earners – react by raising their prices to compensate for their loss of profits or purchasing power. (NB This does not "create" inflation. The money to finance the higher prices has already been created.)

A converse set of statements can be made for sustained and substantial declines in the rate of growth of broad money.

In summary, in the monetary model rates first fall under the stimulus of sustained and substantial faster money growth, but then rise, and tend to stay at higher levels for longer (and conversely for monetary decelerations). Quantity Theory (or changes in the quantity of money) provides a credible theory of how the business cycle works, and a clear explanation of what has happened since March 2020.

It follows that if interest rates are the consequence of prior money growth, and that rates can move both downwards and upwards as a result of the same

episode of monetary acceleration or deceleration, they cannot be relied on as a sound indicator of business conditions. The key takeaways from this analysis are that (1) money growth is the driver of the business cycle, not interest rates which react to prior sustained and substantial changes in money growth, and (2) there is a 2-stage process for rates with the first effect of faster money growth being lower rates, and the second, more prolonged effect being higher rates. (The converse is true for slower money growth.)

3. Application of the monetarist framework to the United States

Now apply this monetary analysis of the transmission mechanism to the business cycle in the US since March 2020, as summarised in Figure 3.

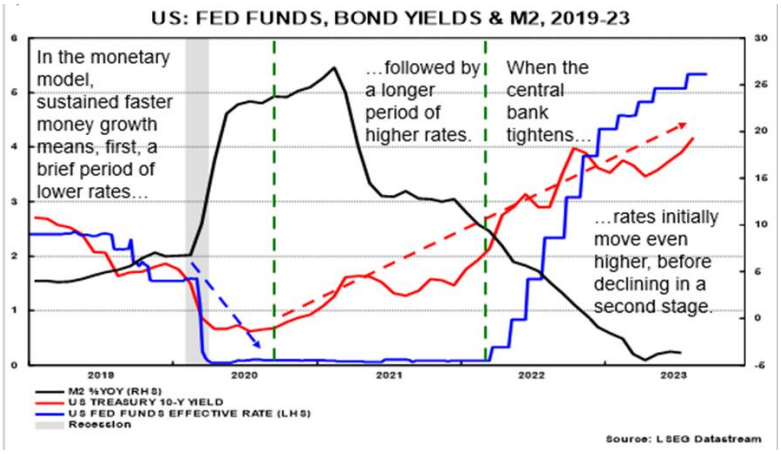

Figure 3. *The Monetary Transmission Process in 2020-2023*

In the period since the start of Covid in March 2020 until mid-2021, the Fed (1) cut the Fed funds rate steeply to 0-0.25%, and (2) conducted aggressive asset purchases (QE) causing M2 to explode upwards. The first set of effects included a substantial decline in market yields, accompanied by a panic or flight to quality, evident in the decline of 10-year Treasury yields from 1.76% in January 2020 to 0.6% in the period April to September 2020 (the period to the first green dashed vertical line, Figure 3).

By September 2020 the economy had started to recover strongly, and market yields had begun rising, pausing from March to December 2021 in face of a new wave of Covid. But then yields resumed an upward path to just over 2% by March 2022 when the Fed first hiked the Fed funds rate (indicated by the second green dashed vertical line). Subsequently, market interest rates have continued to rise, albeit erratically, with the 10-year Treasury yield reaching over 4.6% in September 2023. According to monetary theory, all this is due to the second stage effects of rapid money growth in 2020-21.

To recap, the first effect of rapid money growth in 2020-21 was a brief period of lower rates; the second effect was a much longer period of higher rates. Rates can be high or low under either monetary expansion or monetary slowdown or contraction.

However, as is clear from Figure 3, circumstances have now changed dramatically. Since February 2021 when the year-on-year rate of M2 growth peaked at 26.9%, broad money growth has plunged, especially in 2022 and 2023. M2 reached an absolute peak in March 2022, and since then it has been

declining persistently in absolute terms at an annualised rate of -2.7% – unprecedented since the early 1930s.

Based on the monetary analysis above, the first effects of tight money should be higher rates, and the second, more permanent effects will be lower rates. Due to the large overhang of excess money growth in 2020-21, however, it is possible that we are only now just starting to see the first effects of the tighter monetary policy (i.e., the lower money growth rate). This is because there was so much money created by the Fed through QE (almost $5 trillion, or an astonishing 30% of M2 in February 2020) that part of the excess supply of money relative to demand has remained on household and corporate balance sheets until now. But we can be sure that such a prolonged period of tight money (i.e., low money growth) in 2022-23 will produce both a downturn in economic growth and a sharp decline in inflation once the overhang of excess money has been "used up", probably in 2024-25.

4. Transmission of monetary policy based on the FCI framework

FCIs or Financial Conditions Indices measure a variety of indicators, but what is their message? The truth is nobody is quite sure. As a result, it has not been possible to find a fully articulated theory of how FCIs impact the economy in the way described above for changes in monetary growth. However, since major central banks and investment banks in the US, the euro area, and the UK all use FCIs in their modelling and analysis, providers and users should at least be able to explain their perceived role.

After providing a concise explanation of the construction of the Bank of England's Monetary and Financial Conditions Index (MFCI), a brief article by BOE staffers in April 2021 says that the MFCI is designed to "answer the specific question: how do moves in asset prices and credit indicators affect the real economy?" The Bank's authors say, "we have used [the MFCI] since 2019, alongside other metrics, to help analyse evolving UK financial conditions... The MFCI incorporates the key variables that influence the outlook for UK GDP (or proxies for them), and each variable is weighted based on its estimated marginal impact on UK GDP. These weights are based on a range of empirical estimates. They are similar in principle to those used in the Monetary Policy Committee's quarterly forecast, but not identical."

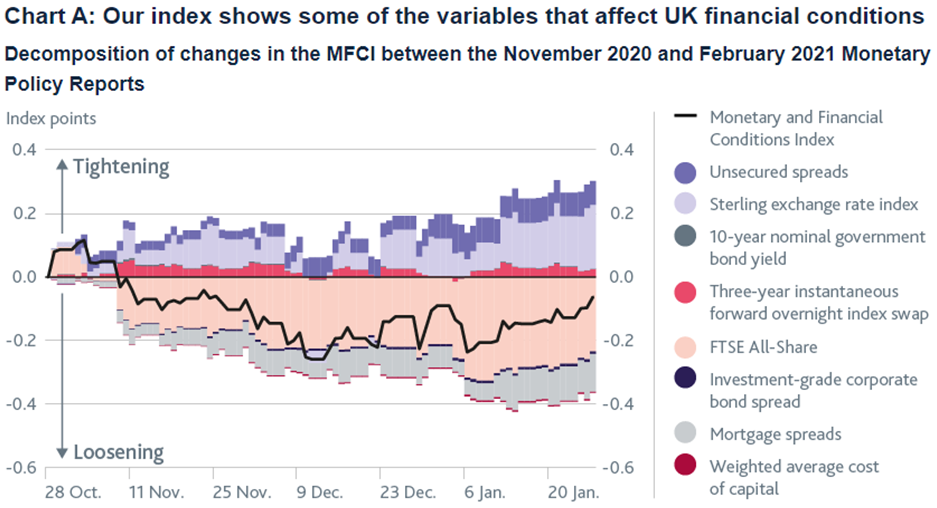

Figure 4. *The Bank of England's MFCI in 2020-21*

Sadly, this is as close as the Bank comes to connecting their MFCI to broader asset prices (such as houses or commodities), real GDP, or CPI inflation.

The Bank is, however, suitably cautious about the use of its MFCI, stating, "We tend to look at the MFCI over short periods of time [...] Particular care should be taken in interpreting movements in the MFCI over longer time periods, however. That is because the index level exhibits a clear downward trend over time." Even so, Deputy Governor Broadbent has said explicitly in press conferences after MPC meetings that monetary policy is transmitted by means of "monetary and financial conditions" and in April 2023 he gave a tendentious speech arguing that monetary policy is transmitted more through these kinds of market prices than through quantities of money or credit. MPC member Silvana Tenreyro has also claimed, absurdly, that QE operates in a manner similar to Bank Rate, and there is effectively no "independent 'money' channel."

This is not the place for a full rebuttal of Broadbent's claims, nor is it appropriate here to critique Prof. Tenreyro's stance in any detail. Instead, I shall simply note that the retired former Governor of the Bank of England, Mervyn King, has, on at least two occasions, criticised the policies adopted by the Bank and its MPC (Monetary Policy Committee) during the Covid pandemic.

In short, central bankers are ignoring the quantity of money and placing all their bets on "data dependency" as encapsulated in FCIs. The problem is that (a) FCIs are devoid of theory and (b) lag money by many months, while (c) central bankers are inclined to treat interest rates and other components of FCIs as the primary, causative and monotonic driver of GDP instead of acknowledging that interest rates are largely the effects of prior growth rates of money, and (d) FCIs clearly fail to take into account the critical two-stage impact of changes in monetary growth on interest rates.

5. Application of monetary and FCI frameworks to the US

Now we turn to the FCI view of the US business cycle since March 2020.

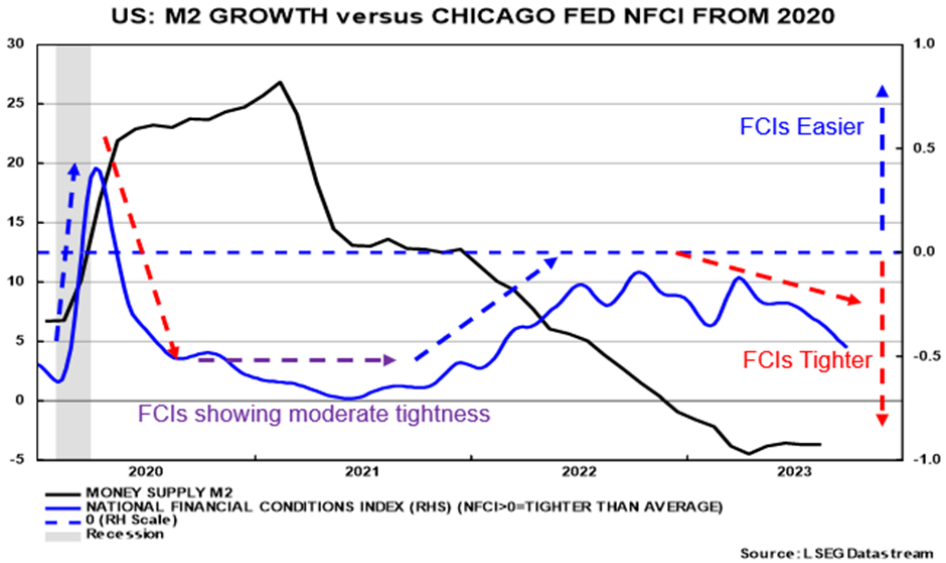

Figure 5. *FCIs are lagging indicators of monetary growth.*

As already depicted in Figure 1, FCI indicators have been notably contradictory. In Figure 5 the signal from Chicago Fed's National Financial Conditions Index (NFCI) is compared only with the year-on-year percentage growth of M2, this time without inverting the FCI scale.

First, from late February 2020 to mid-April 2020 the Chicago Fed's NFCIs indicated a dramatic easing of financial conditions, with the indices rising (blue dashed arrow) from -0.6 to +0.43. At the same time there was an unprecedented explosion in the growth rate of M2. At this stage, the NFCI is consistent with the sudden monetary expansion. The easing NFCI (first blue dashed arrow) was reflecting the sharp falls in the Fed funds rate, bond yields, and spreads as the Fed initiated its policy of "smoothing market functioning" or "easing financial conditions" with rate cuts and massive QE operations, overcoming the dash-for-cash or the dash for safe securities by panicky investors.

Second, by the end of April 2020, the NFCIs was suggesting the start of some "tightening" or normalising of financial conditions (see first red dashed arrow), but the S&P500 Composite Index had already risen from its low on March 18 of 2,398.10 to 2,939.51 on April 29, a rise of 22.6%, and it continued to rise. By mid-May the NFCI began to indicate a genuine tightening – i.e., the value of the index turned negative (or "tighter than average"), falling below the horizontal green dashed line in Figure 5 above. But still M2 continued to rise at a prodigious pace and the S&P Composite also continued to rise, only pausing briefly in September-October 2020 when a second wave of Covid threatened.

Nevertheless, the NFCI continued to send a message of moderate "tightness" all the way through the next 15 months from late 2020 until mid-2021 (as shown by the horizontal purple dashed line), and then "easing" from late 2021 to mid/late 2022 (rising blue dashed line) when the indices started to approach the zero line again. Yet all this time (late 2020 to mid-2022) M2 growth on a year-to-year basis remained in double digits and the S&P Composite continued to rise until December 29, 2021, as did house prices and a range of other asset prices.

The episodes of "easing" in 2021-22 (second blue dashed arrow in Figure 5) and "tightening" in 2022-23 (second red dashed arrow) have already been described in the Introduction.

In summary, from April 2020 to October 2021, and again from October 2022 until September 2023, the signal from the Chicago Fed's NFCI has at best been misleading. More seriously, the "data dependency" that the NFCI and similar indicators encourage along with FOMC members' rejection of monetary theory is the fundamental reason for their total failure to predict the inflation of 2021-23.

Figure 6 below shows the widely used Bloomberg FCI for the US. When inverted it has the same general profile as the Chicago Fed's NFCI shown in Figure 1. Confusingly, moves towards a greater negative number by the NFCI show a "loosening" of financial conditions (and conversely for positive or smaller negative readings), while for the Bloomberg US FCI (ticker : BFCIUS <Index>) a larger negative number means a "tightening" of financial conditions. But conditions "eased" (green dashed arrows) soon after the Fed started raising rates in March 2022.

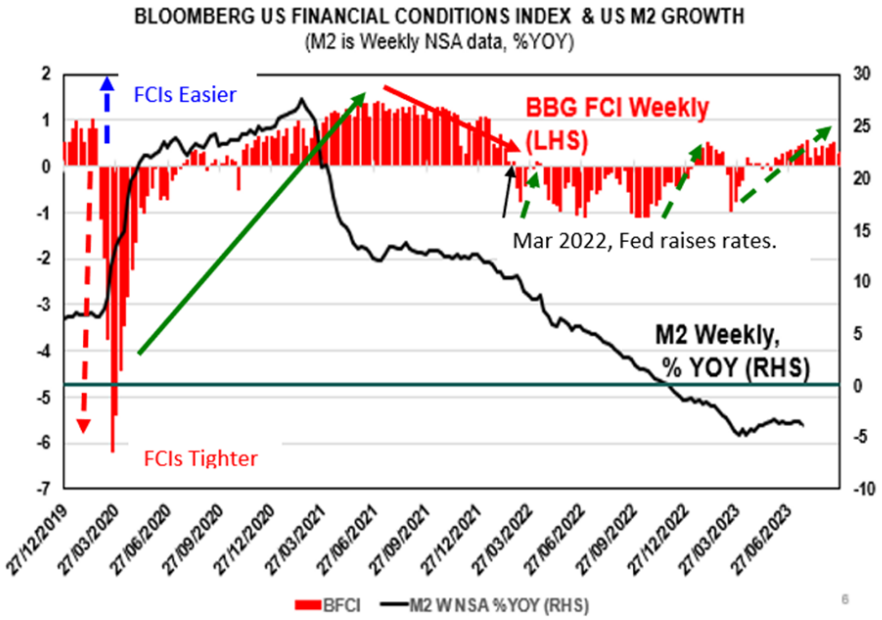

Figure 6. *Bloomberg's FCI and M2 Growth*

According to the Chicago Fed, "The NFCI [and Adjusted NFCI] are each constructed to have an average value of zero and a standard deviation of one over a sample period extending back to 1971. Positive values of the NFCI have been historically associated with tighter-than-average financial conditions, while negative values have been historically associated with looser-than-average financial conditions." This means that the Bloomberg FCI has a much wider arithmetic range of variation than the normalized NFCI or ANFCI measures.

Having said all of that, there is little to be added from an analytical standpoint in respect of the Bloomberg FCI which produces the same anomalies and inconsistencies as the NFCI. Figure 6 shows several cases where the index has been "easing" in line with the huge monetary expansion engineered by the Fed (green solid arrow) or seemingly "easing" despite the Fed raising rates or money growth contracting (green dashed arrows). And what are we to make of the "tightening" in March-May 2020 when the Fed organised the most aggressive expansion in its history? Of course, much of the movement in rates and spreads was market-induced, not policy-imposed, but is it the role of an index to pay more attention to the market or to policy? Can financial conditions really be tightened by market movements alone?

As a final example of US FCIs, we can look at the St Louis Fed's Financial Stress Index, or STLFSI. The STLFSI4, the third revision of the original STLFSI1, measures the degree of financial stress in financial markets and is constructed from 18 weekly data series: seven interest rate series, six yield spreads and five other indicators. Each of these variables captures some aspects of financial stress. Accordingly, as the level of financial stress in the economy changes, the data series are likely to move together. The remarks in the following three paragraphs are an edited extract from the St Louis Fed's description of its Financial Stress Index.

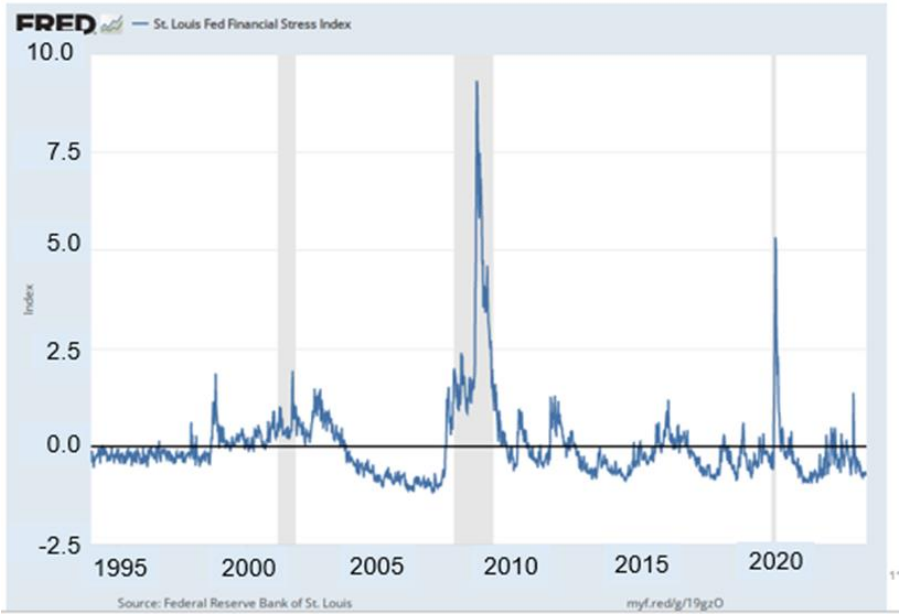

Figure 7. *The St Louis Fed's Indicator Fares No Better*

"In particular, the STLFSI is designed to quantify financial market stress. There's no specific definition for financial market stress, but periods of stress have historically been characterized by increased volatility of asset prices, reduced market liquidity conditions, or the narrowing or widening of key interest rate spreads.

"The main element of the 4th revision is the replacement of the 90-day backward-looking SOFR rate with the 90-day forward-looking SOFR rate. In the view of the compilers, the forward-looking SOFR better captures financial market expectations in response to expected changes in the federal funds rate and its attendant effects on other asset prices and yields.

"How to Interpret the Index: The average value of the index, which begins in late 1993, is designed to be zero. Thus, zero is viewed as representing normal financial market conditions. Values below zero suggest below-average financial market stress, while values above zero suggest above-average financial market stress."

To summarize for the United States, the construction and regular distribution of FCIs by the Chicago or FSIs by the St Louis Federal Reserve Banks shows that considerable efforts are being put into the design and application of these indicators. We know also from comments by Chairman Jerome Powell that FCIs are used by FOMC members and are important in helping to form the views of the committee (refer to the link in footnote 8 on p. 9). Yet the indicators suffer from the same problems as mentioned earlier. To recap, central bankers are ignoring the quantity of money and placing all their bets on a tentative, short-run analysis from FCIs that (a) treats interest rates and other components of FCIs as the primary driver of GDP instead of acknowledging that interest rates (and yields and spreads etc) are effects driven by prior growth rates of money which is the cause; that (b) this framework clearly fails to take into account the critical two-stage impact of changes in monetary growth on market interest rates; and (c) the FCIs are measuring coincident indicators of current market developments; they reflect current market sentiment but have very little capacity to forecast compared with money growth.

6. Application of monetary and FCI frameworks to the euro area

To reinforce the last point -- the difficulty in interpreting and the poor forecasting record of FCIs -- consider the comparison in Figure 8 below between the Natixis FCI for the eurozone and M3. In each of the selected (arrowed) cases, changes in M3 growth clearly lead changes in the FCI. Just as futures prices are not always a good guide to future spot prices, any reading from FCIs can be misleading as a predictor of the future direction of GDP or inflation. At best, FCIs are a measure of current sentiment in financial markets as expressed through yields, spreads, and other prices such as exchange rates or equity prices, and they follow monetary growth (as shown in Figure 8). As such, they are vulnerable to abrupt reversal if market sentiment proves to be out of line with underlying realities, as several episodes below illustrate.

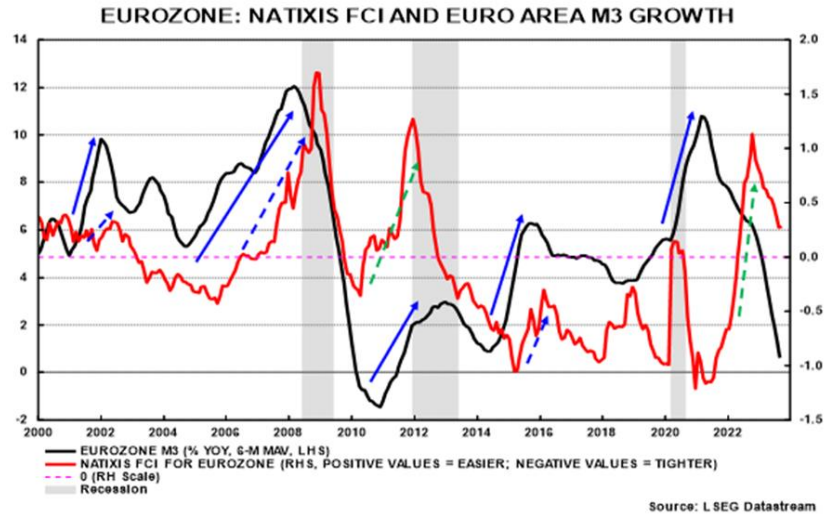

Figure 8. *Euro-area FCIs generally lag changes in M3, and/or they give misleading signals.*

Figure 8 shows examples from the eurozone of (a) cases where M3 growth clearly leads the subsequent signal from the FCI (shown by the blue solid arrows for accelerations in M3 growth, and blue dashed arrows for the later move upwards in the FCI), and (2) two cases where the FCI gave clearly misleading signals – far greater easing than occurred in reality in 2010-11 ahead of the euro debt crisis, and the surge or easing of the FCI in 2022 contrary to the steep downturn in M3. (The signals of alleged easing in the FCI are shown by the green dashed arrows). The reason the FCI signals are wrong is that they simply reflect the earlier M3 surge in 2020-21 (i.e., first falling rates then rising rates), but the lag may be so long that M3 has already changed direction – as in 2022-23.

It is fair to ask: how relevant are these observations for the ECB's policy decisions? The answer can be gleaned from studying the construction of the regular Monetary Policy Statement read out at each monthly press conference by the President of the ECB, Madame Lagarde. In every recent Statement there is a section entitled, "Financial and monetary conditions" which, in the latest (September 2023) issue explains that "monetary policy tightening continues to be transmitted strongly to broader financing conditions. Funding has become more expensive for banks..." One saving grace for the ECB is that the following

paragraph does at least refer to some bank balance sheet measures such as the growth of loans to firms and households and the slowing of M3 "to an all-time low of -0.4 per cent [year-on-year] in July," although it has to be said that the move into negative territory by M3 has as yet produced no reaction whatever by ECB officials.

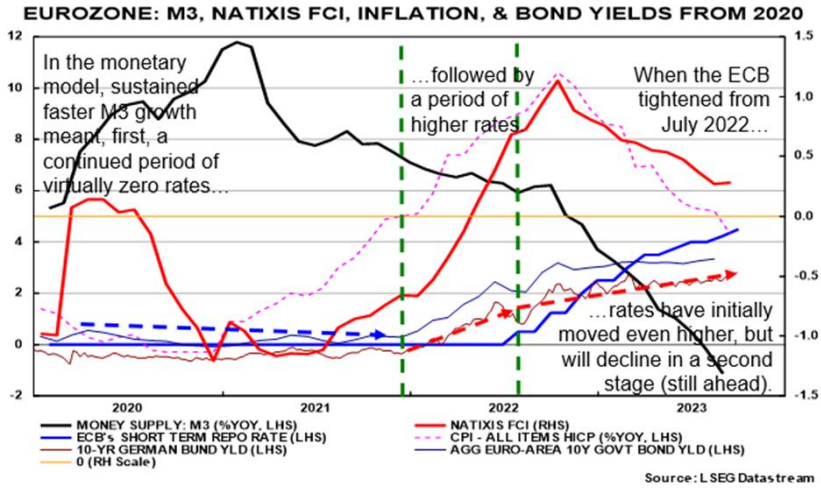

Figure 9. *Since Covid, Euro M3 has been a better guide than FCIs.*

Using the same format as in Figure 3 for the US, we can also look at euro-area M3 growth and its consequences for market rates, bond yields, and inflation in Figure 9.

Once again, we divide the business cycle into phases showing how the cycle has conformed to monetary analysis, not the FCI framework. Initially from March 2020 the ECB more than doubled M3 growth by a combination of lending to the banks via T-LTROs and by conducting asset purchases (QE). M3 did not surge at anywhere near the rate seen for M2 in the US (due to the ECB conducting its asset purchases with banks, not non-banks), but even so, the ECB boosted M3 enough to cause market yields to fall (blue dashed arrow), which was the first effect of faster money growth. From August 2020 until December 2021, market interest rates and yields remained close to zero.

However, as the euro area economy recovered in 2021 and inflation moved above 4% year-on-year in October 2021 as a result of the rapid M3 growth in 2020-21 (well before the Russian invasion of Ukraine), market rates and bond yields began rising after the first vertical green dashed line. This was the second effect of faster M3 growth. The ECB Governing Council, still claiming inflation was transitory in the final quarter of 2021, only ended QE in March 2022, and finally raised its main repurchase rate starting from July 2022 (at the second green dashed line).

In the monetary expansion phase, therefore, the eurozone has shown the same results as the US. The first effect of faster M3 growth was to lower interest rates, but the second effect was to raise them (from December 2021).

After the T-LTROs had been mostly repaid and the ECB had ceased QE operations, M3 began slowing (see the black line in Figure 9 just after the second vertical green dashed line). The deceleration of M3 steepened in the second half of 2022 and into 2023, so that the latest figure for year-on-year growth of M3 is -1.1% (in August 2023). As expected by monetary theory, the first effect of the slowdown in M3 has been even higher rates. The overhang of excess M3 from 2020-21 suggests that market interest rates may have further

to rise before a more serious economic downturn takes hold in 2024. But later — perhaps in 2024 — investors will start to envisage the threat of deflation in late 2024 or in 2025. At that point, interest rates will plunge. So the second effect of tight money (i.e., slow money growth) will be lower rates.

As an addendum on the euro area, we should note that in a speech on 25 September in Regensburg ECB Executive Board member Isabel Schnabel discussed the role of money (both M1 and M3) in the euro area's inflation. Her conclusion, after what I assess to be some dubious judgements about monetary history and reliance on econometric studies that start out with some questionable assumptions, is a grudging acknowledgement of the role of money in the current inflation.

Her first "takeaway" is that the response of the economy to QE "fundamentally depends on the broader state of the economy, as reflected in its balance sheet capacity". QE, in her words, "only becomes inflationary if and when banks, households, firms and governments are both able and willing to respond to low interest rates, thereby boosting money growth, economic activity and, ultimately, inflation." [Emphasis added.] But monetarists have known this for a long time. In any case, low interest rates are not the issue – think how many countries have progressed from already high inflation with high interest rates to hyperinflation. The truth is that inflation only results from more rapid money growth. Moreover, it is money in the hands of the public that matters, not money on the books of the central bank.

Her second "takeaway" is that "excessive money growth can entrench adverse cost-push shocks. As such, it may have predictive power for risks to price stability that central banks need to monitor carefully. This is especially important for the future in which supply-side shocks, related to the green transition or structural changes in global value chains, threaten to drive inflation away from central banks' targets more often than in the past. Strong money growth may make such shocks more persistent."

But these are weasel words. Money has predictive power for inflation (or deflation) irrespective of whether there is a green transition, structural changes in global value chains, climate change, or a host of other modern fads, and (broad) money always has had that predictive power.

She concludes by sitting firmly on the fence: "All in all, while a distinct monetary pillar is no longer essential to conduct monetary policy, money deserves a firm place in central bankers' analysis." In short, we can expect the ECB only to pay lip service to ensuring control of monetary aggregates, basically ignoring the monetary causes of business cycle fluctuations and the recent inflation, while continuing to prioritize interest rate management and relying on unreliable measures of the effects of prior monetary growth such as FCIs.

7. Application of monetary theory and FCI framework to the UK

Turning to the UK, if Figure 3 for the US and Figure 9 for the euro area is replicated for the UK, as in Figure 10, the glove fits perfectly. In short, monetary analysis again provides a clear and comprehensive analysis of the UK's interest rate and inflation experience since the Covid outbreak.

Briefly, the enormous additions to money – GBP 500 billion by January 2022 due mainly to the Bank of England's QE operations from March 2020 and only trivially due to the cut in Bank Rate from 0.75% to 0.1% in March 2020 –

translated into a rough trebling of the year-on-year growth rate of M4x from 4.6% in February 2020 to 12.6% by July, and ultimately to a peak of 15.0% in February 2021. As in the US and euro area cases, market rates first declined (blue dashed arrow in Figure 10) through much of 2020 before starting to rise in October 2020 (the first vertical green dashed line) and more significantly from February 2021. Yields then continued rising until the Bank increased Bank Rate in December 2021 (second vertical green dashed line), whereupon a steeper rate of rise in market rates (here represented by the yield on 10-year gilts) took over. The spike in gilt yields in September/October 2022 due to Prime Minister Truss's budget at that time and the knock-on impact on LDI (Liability Driven Investment) portfolios in the UK pensions market was only a temporary interruption of the otherwise steady upswing in gilt yields.

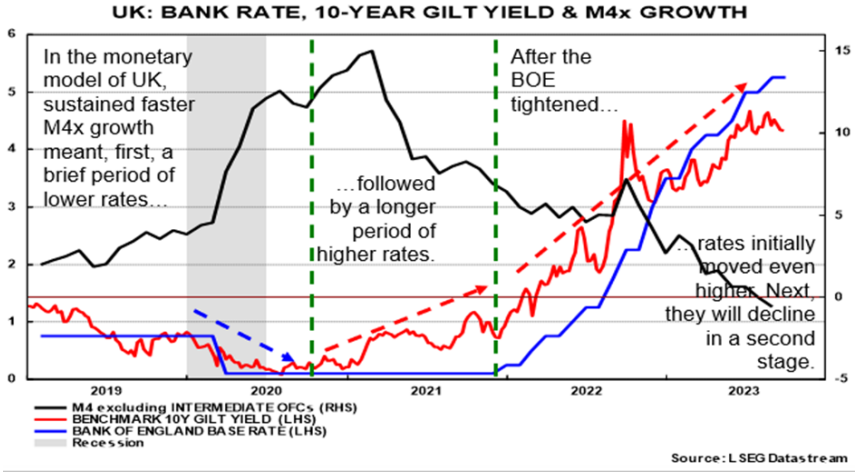

Figure 10. *Since Covid, M4x has been a reliable predictor of outcomes*

Again, the first effect of rapid money growth in 2020-21 was lower rates; the second and more prolonged effect was higher rates, exactly as spelled out in Section 2 (pp. 4-5) above.

During all of this period, however, the signals from FCIs or from the Bank's own MFCIs have been distinctly mixed and, frankly, confusing. An example is shown in Figure 11 which relates to the period January 2021 to May or June 2021.

Recall that the Bank had kept Bank rate at 0.1% throughout 2021 until December when it was raised only to 0.25%, and M4x growth (which the MPC ignored) remained in double digits on a year-on-year basis until April 2021, only slowing to an appropriate 5.5% year-on-year in January 2022, by which time M4x had averaged 10% year-on-year throughout 2020 and 2021, roughly double the non-inflationary M4x growth rate that it should have been pursuing to meet its 2% inflation target. The inflation horse had already bolted.

But far from shutting the stable door, the MPC acted on the basis of the signals it was receiving from its MFCI . The Bank's own MFCI was telling them (in August 2021) that "UK financial and credit conditions remain tight relative to Jan[uary]" as reported in the Bank's own chart (Figure 11, with the Bank's headline text in blue), and that this assessment "in part informed the vote [of the MPC] to extend asset purchases in June."

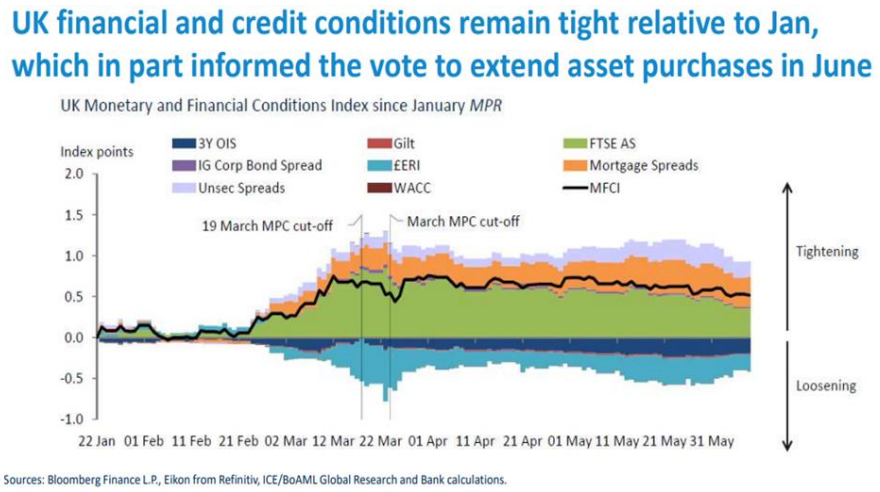

Figure 11. *How the Bank of England was misled by its own MFCI (Monetary & Financial Conditions Index) in 2021*

Incredible as it may sound, after 15 months (March 2020 to June 2021) of double-digit money growth, the Bank's MFCI was still telling key Bank officials and the MPC that monetary and financial conditions were tight!

To my knowledge, the Bank has not released a full data series for its MFCI, despite occasionally publishing different versions of it in its quarterly Monetary Policy Reports (MPR). The index has undergone several changes since it was introduced in 2019, and the lack of a satisfactory correlation with economic activity or inflation data may well be the reason why the Bank is reluctant to release the data. For example, the index has not featured in the quarterly MPR since August 2021. For more information, see the two Bank Overground posts, "How can we measure UK financial conditions?" and "How do we monitor UK financial conditions?"

The conclusion for the UK is no different than the conclusion for the US and the Eurozone. Susutained changes in money growth are essentially the cause of business cycle expansions or contractions; interest rates are one of the effects (of prior monetary growth). FCIs measure the effects; they do not monitor the causes of the change in direction of the business cycle.

Moreover, there is a two-stage effect of changes in monetary growth on interest rates. The initial effect of an unanticipated (or ignored) acceleration or decleration of monetary growth on interest rates and yields is in the opposite direction from the longer-term effects. This was clear in the initial downward movemment of UK rates between February and August 2020, and then in the gradual upward movement of rates subsequently, even though the Bank resisted this tendency, not raising Bank Rate until December 2021.

Reliance by MPC and Bank officials on FCIs rather than on money caused them to ignore the risks inherent in the big changes in the quantity of money which have been responsible for the painful episode of inflation that the UK has suffered in 2021-2023. It caused the MPC to fail completely to forecast inflation successfully. Moreover, it caused them to continue to maintain asset purchases far too long (as we saw in Figure 11).

The conclusion is that, as a tool for formulating policy, FCIs or MFCIs should be ditched in favour of a more reliable monetary indicator such as the growth of M4x in the UK. FCIs are merely coincident indicators of current market developments; they are lagging indicators of prior monetary growth. As such FCIs generate confusing signals. For example, do rising rates (and

spreads etc) represent the first stage of a tight monetary policy or the second stage of an expansionary monetary policy?

An equally serious problem for FCIs is that because they inevitably reflect current financial market rates, spreads, and exchange rates etc (that are themselves by-products of prior changes in money growth), they have no reliable capacity to forecast compared with money growth.

8. Conclusion

This paper has discussed what ultimately drives the business cycle, i.e., what creates major turning points in the economy.

Monetary analysis shows that if money growth is too rapid for an extended period, an asset bubble, strong economic growth and inflation will follow. These developments cause market interest rates initially to fall and later to rise, with the latter effect tending to last significantly longer. This is exactly what has happened in most major economies since March 2020.

Monetary growth in major developed economies surged in the early weeks of the Covid pandemic. While central banks cut their policy rates, the first effect was a decline in market interest rates from March to August 2020. However, later in 2020, during 2021 and into 2022 as the economies recovered, the second effect of faster money growth came into operation with rising market interest rates. Currently, in September/October 2023 we are probably seeing the first effects of tight money (i.e., slower money growth); in 2024 and 2025 we will likely see the second effects of tight money growth, namely falling interest rates.

By contrast, FCIs do not have such a clear impact either on subsequent financial conditions or on the real economy and inflation. This paper has shown several examples of cases where FCIs have given the wrong signals. It seems likely that the monotonic properties of FCIs mean that they will only send the correct signal in the first stages of monetary expansion and the first stages monetary tightening. In the second stages of monetary expansion or monetary tightening they will tend to show the wrong signal, but this may happen at other times also. Indeed, the major economies may be approaching a time when FCIs could give misleading signals.

Based on monetary analysis, the major developed economies are approaching just such a critical time. Looking forward to 2024, for example, if rates fall due to recession and falling prices due to the second effects of current tight money (meaning slow money growth), FCIs could well be reporting an "easing" of financial conditions, even if money growth remains too low and therefore too tight.

Interest rates have been rising in the US, the eurozone, the UK, and in other major economies as the second effect of excess money growth in 2020-21. With central bankers still worrying about "wage-price spirals" or inflation somehow becoming "embedded", they have pushed policy rates up even higher, creating tighter financial conditions, but, more importantly, through a combination of QT and higher rates, they have generated slower and even negative money growth. The second effects of this tight money growth are liable to show up in 2024 as recession, falling interest rates, and substantially lower inflation or even deflation in 2025.

Taking their cue from falling interest rates, FCIs will then convey the message that financial conditions have eased – even if money growth remains too low (too tight) to hit the 2% inflation target. Major economies will then

struggle to escape from deflation. (This is exactly the trap that Japan fell into in the 1990s.)

Because central bankers ignore money growth, they stepped too hard on the accelerator in 2020-21, and they are now making the opposite mistake, stepping too hard on the brake by tightening sharply -- causing money growth in the US, the Eurozone and the UK to decline on a year-on-year basis.

The only thing that has been keeping spending afloat is the overhang of excess money balances from the egregious money supply increases in 2020-21. As soon as that excess is used up, there will likely be an abrupt slowdown in spending (likely in 2024), accompanied by a recession and followed by a sharp slowdown in inflation in 2024 – and possibly even deflation in 2025, i.e., two years after the monetary squeeze in 2022-23.

To my knowledge, these extended lags and the 2-stage effect of money growth on interest rates, have not been successfully modelled by any central bank. But just because, in monetary analysis, short-term correlations between money and its subsequent effects are low does not mean that the monetary transmission mechanism described here is not the correct one. Nor does it mean that the relationship between substantial and sustained changes in monetary growth and subsequent changes in asset prices, output (real GDP) and inflation is not a solid one. Understanding and tracking the famously long and variable lags in effect is a vital part of tracking the transmission mechanism.

References

Bank of England. (2019). How can we measure UK financial conditions? Bank Overground. https://www.bankofengland.co.uk/bank-overground/2019/how-can-we-measure-uk-financial-conditions

Bank of England. (2021). How do we monitor UK financial conditions? Bank Overground. https://www.bankofengland.co.uk/bank-overground/2021/how-do-we-monitor-uk-financial-conditions

Bank of England. (2021). How do we monitor UK financial conditions? Bank Overground. https://www.bankofengland.co.uk/bank-overground/2021/how-do-we-monitor-uk-financial-conditions

Bloomberg. (2023, July 20). Transcript: Mervyn King says the Bank of England is making a big mistake. https://www.bloomberg.com/news/articles/2023-07-20/transcript-mervyn-king-says-the-bank-of-england-is-making-a-big-mistake

Bloomberg. (2022, March 24). Why financial conditions are easing after the Fed raised rates. https://www.bloomberg.com/news/articles/2022-03-24/why-financial-conditions-are-easing-after-the-fed-raised-rates

Boulding, K. (1941). Economic analysis. Harper & Brothers.

Borio, C., et al. (2023). The role of money in inflation. Bank for International Settlements Bulletin, 67. https://www.bis.org/publ/bisbull67.pdf

Broadbent, B. (2023, April). Speech hosted by National Institute of Economic and Social Research. Bank of England. https://www.bankofengland.co.uk/speech/2023/april/ben-broadbent-speech-hosted-by-national-institute-of-economic-and-social-research

Federal Reserve Bank of St. Louis. (n.d.). St. Louis Fed financial stress index [STLFSI4]. FRED, Federal Reserve Bank of St. Louis. https://fred.stlouisfed.org/series/STLFSI4

European Central Bank. (2023, September 25). Keynote address by ECB official [Press release]. https://www.ecb.europa.eu/press/key/date/2023/html/ecb.sp230925_1~7ad8ef22e2.en.html

Financial Times. (2022, November). Report on speech in Italy. https://www.ft.com/content/8981df2f-f723-4a1a-8044-0e7a3e4856a0

Fisher, I. (1906). The nature of capital and income. The Macmillan Company.

Fisher, I. (1907). The rate of interest. The Macmillan Company.

Fisher, I. (1930). The theory of interest. The Macmillan Company.

Friedman, M. (1963). Money and business cycles, section III: A tentative sketch of the mechanism transmitting monetary changes. In M. Friedman, The optimum quantity of money (pp. 229-234). Aldine Transaction. (Reprinted 1996).

Tenreyro, S. (2023, April). Quantitative easing, quantitative tightening [Speech]. Bank of England. https://www.bankofengland.co.uk/speech/2023/april/quantitative-easing-quantitative-tightening-speech-silvana-tenreyro