International Monetary Monitor

Date: 23/10/2023
Newsletter No. 27

Where FCIs Go Wrong

By John Greenwood

Introduction and Overview

- In my previous IMM Newsletter (IMM#26 – Beware Financial Conditions Indicators! 2nd October 2023) I laid out the case against reliance on a family of indicators called FCIs or Financial Conditions Indicators/Indices.
- Essentially my argument was that FCIs misconstrue the underlying mechanism that drives the business cycle. Because they are compiled from concurrent yields or spreads or foreign exchange rates or equity prices, they mistakenly convey the message that these indicators are the drivers of the business cycle.
- By contrast I showed that a much clearer and more correct message was conveyed by study of monetary growth rates; monetary growth was ultimately responsible for the levels of yields, spreads, and prices etc featured in FCIs.
- More importantly, a single, sustained episode of monetary expansion or contraction invariably has an impact on FCI components that pushes them in one direction initially and then in the opposite direction later – and for longer.
- In other words, as a standalone signal the FCIs contained conflicting data – an "easy" reading could be reflecting the early stages of a monetary expansion or the later stages of a monetary tightening or contraction.
- Conversely, and more relevant to the financial environment today, "tight" readings for FCIs are ambiguous: do they reflect the late stages of the monetary expansion in major economies of 2020-21 or the early stages of the monetary tightening/contraction that started in 2022?
- In my previous Newsletter I failed to mention that at his Jackson Hole speech in August, Fed Chairman Jerome Powell had specifically referenced a new measure of Financial Conditions compiled by economists at the Federal Reserve headquarters in Washington. This indicator seems likely to play a prominent role in future FOMC deliberations.
- The purpose of the current brief supplement is to give readers a concise overview of this new index and to show where, like its cousins, the new "FCI-G" has the potential to be seriously misleading.

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*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. To access my research please email your request to* IMM@eri-c.com

1. What Fed Chair Powell said about the Fed's new FCIs

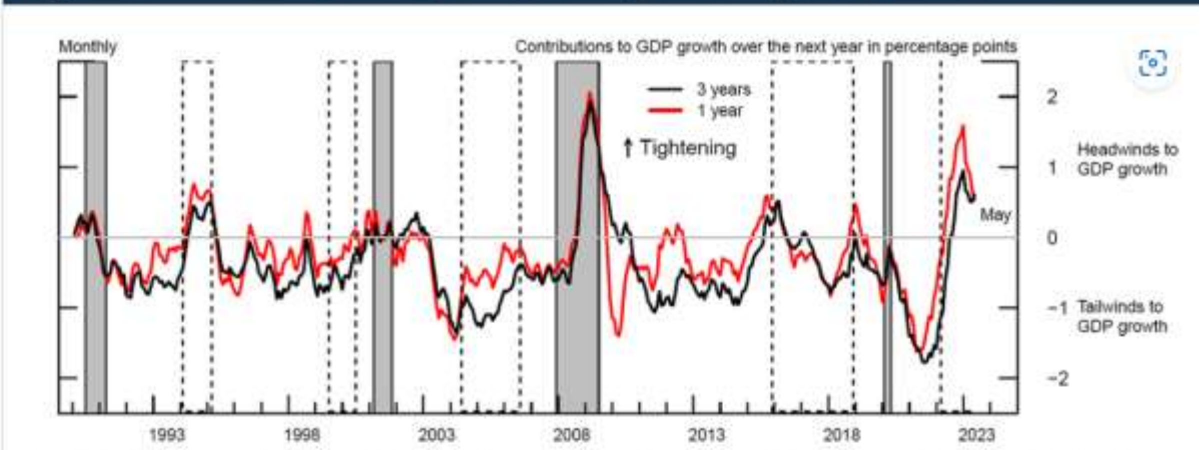
It his speech at the Kansas City Fed's symposium at Jackson Hole, Wyoming on August 25th this year, Jay Powell made a very specific reference to "financial conditions". In discussing the prospects for economic growth, he said, "*Restrictive monetary policy has tightened **financial conditions**, supporting the expectation of below-trend growth."* An accompanying footnote appended to this sentence gave more detail: *"For an example of how tighter financial conditions affect economic activity, see the Federal Reserve Board staff's new index measuring U.S. financial conditions through their effect on the outlook for growth; the index is discussed in Andrea Ajello, Michele Cavallo, Giovanni Favara, William B. Peterman, John W. Schindler IV, and Nitish R. Sinha (2023), "A New Index to Measure U.S. Financial Conditions," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, June 30)."*

Wisely, perhaps, he concluded his Jackson Hole speech this year by saying, "*As is often the case, we are navigating by the stars under cloudy skies",* this being a reference back to his Jackson Hole speech of 2018 when – somewhat tongue-in-cheek, I think – he had compared the challenges of monetary policy to "navigating by the stars", referring to unmeasurable variables popular with the current generation of economists such as r* and u*.[1]

The new indicator being promoted by Chair Powell is shown in Figure 1, reproduced from the Fed's publication in June (accessible from the link above).

Figure 1. Two versions of the Fed's new FCI-G index.

Figure 1. Financial Conditions Impulse on Growth, with 1- or 3-year Lookback Window



Note: The figure shows the Financial Conditions Impulse on Growth computed with a 1−year and 3−year lookback window, respectively, in red and black. Positive (negative) values of the two indexes denote headwinds (tailwinds) to GDP growth over the next year. The upward arrow indicates the direction of tightening of financial conditions and increasing headwinds to future GDP growth. Gray shaded bars denote periods of recession as dated by the National Bureau of Economic Research: July 1990-March 1991, March 2001-November 2001, December 2007-June 2009, and February 2020-April 2020. The dashed bars represent monetary policy tightening cycles: February 1994-March 1995, July 1999-July 2000, June 2004-August 2006, December 2015-July 2018, March 2022-present. Tightening cycles are defined to start on the month of the first federal funds rate increase and end after the last rate hike.

[1] https://www.federalreserve.gov/newsevents/speech/files/powell20180824a.pdf

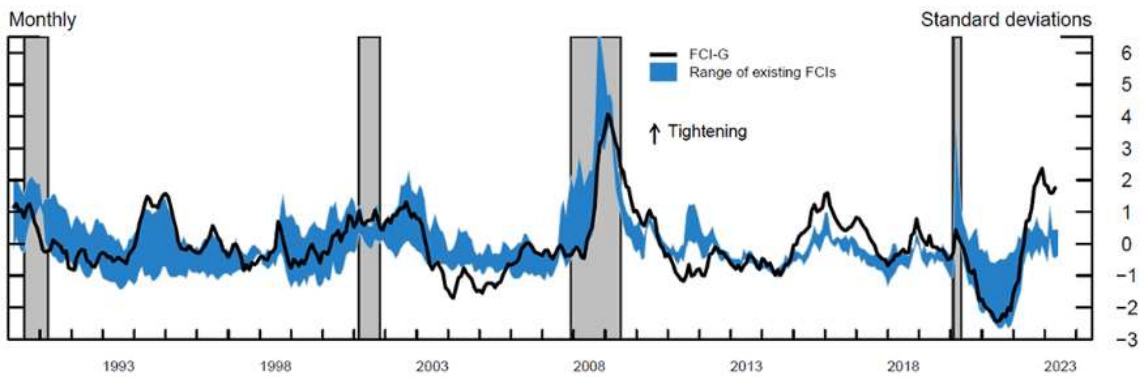
Figure 1 above plots two monthly versions of the Fed's FCI-G (i.e., an FCI constructed to give guidance on real GDP growth) from January 1990 through May 2023, with higher values of the index denoting tighter financial conditions. The black line is the baseline index, computed by cumulating the effects on one-year-ahead GDP growth of the three-month changes in financial conditions during the preceding **three years**. The red line displays the version of the index cumulating the effects on GDP growth of changes in financial conditions that occurred only up to **one year** earlier.

While the time lags built into this indicator – i.e., 3-month changes in the components and measuring their impact on real GDP growth ***one year ahead*** – seem eminently plausible and in line with the notion of "long and variable lags", this only takes account of the **first set of effects** from changes in monetary growth. As I showed in the previous article (IMM#26), **the second and more important, more permanent effects** come later and are in the opposite direction. This is overlooked by all FCIs, including these latest ones from the Washington Fed. They ignore completely the second set of effects.

Expressing it differently, the impact of *<u>substantial and sustained</u>* changes in monetary growth on interest rates are *<u>non-monotonic</u>* – that is, they push first in one direction and second in the opposite direction later. By contrast, the FCIs have a built-in *<u>monotonic</u>* bias – that is, tightening FCIs always spell a weaker economy (and implicitly lower inflation) while easing FCIs always spell a stronger economy (and implicitly higher inflation). But both theories of the transmission mechanism cannot be correct.

Figure 2. Comparing the Fed's 1-year FCI-G to other FCIs.

Figure 2. Financial Conditions Impulse on Growth and Other Financial Conditions Indexes



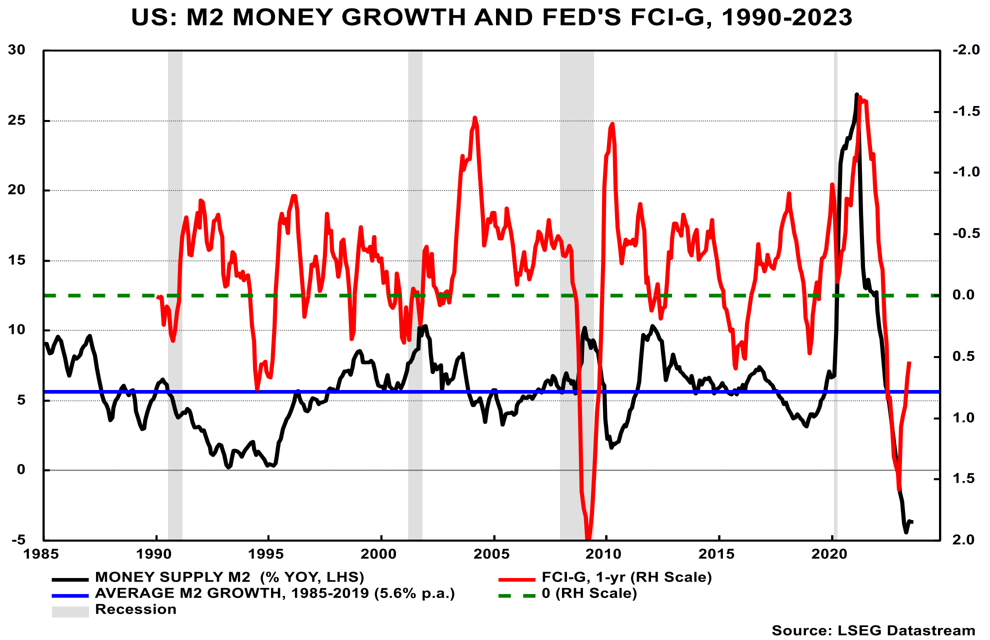
Note: The blue shaded region represents the range of 5 standardized financial conditions indexes (FCIs) developed by Bloomberg, Goldman Sachs, and the Federal Reserve Banks of Chicago, St. Louis, and Kansas City. The upward arrow indicates the direction of tightening of financial conditions. Gray shaded bars denote periods of recession as dated by the National Bureau of Economic Research: July 1990-March 1991, March 2001-November 2001, December 2007-June 2009, and February 2020-April 2020. FCI-G is Financial Conditions Impulse on Growth.

Source: Bloomberg; Federal Reserve Banks of Chicago, St. Louis, and Kansas City; Haver Analytics; U.S. Census Bureau, Decennial Census of Population and Housing; CoreLogic; Authors' calculations.

In Figure 2, the authors provide a comparison of their new FCI-G index (with the 3-year look-back window) with normalised versions of five other FCIs available from three other Federal Reserve Banks and from two private sector compilers. Quoting directly from the authors' conclusions on the comparison, "*Over most of the past three decades, the FCI-G closely tracks changes in broad financial conditions as measured by other FCIs, whose range is represented by the blue shaded region. However, some differences appear, especially during periods of transitory market stress, when the statistical-based FCIs tend to tighten sharply, partly reflecting that some of these indexes are designed to measure stress in financial markets or tend to place larger weights on measures of market volatility. By construction, the FCI-G moves notably when tightening or easing in financial variables are sustained for some time. In recent months, a wedge has appeared between the FCI-G and other FCIs, reflecting the lags through which the rapid and sustained tightening of financial conditions recorded in 2022 acts as a headwind to future GDP growth.*"

Eyeballing Figures 1 & 2, since 1990 there have been few significant deviations of the new FCI-G indicator from the five other FCIs. There were two periods of significant undershoot in 2003 through the first half of 2004, and in 2010-11 (suggesting easier conditions than the other indices). There were also two significant overshoots in 2015-17 and since March/April 2022 to the present (suggesting tighter conditions than reported by the other five indices). It is not clear if these have any meaning for investors.

Figure 3. The Great Moderation Resulted from More Stable Money Growth



The other important point to note about the 33-year track record of the two FCI-G indices is that the period 1990-2023, over which it has been constructed, roughly coincided with the so-called "Great Moderation"[2] -- from the mid-1980s until at least 2007, i.e., until the GFC (which was more a credit crisis than a monetary crisis). It could be argued, too, that the Great Moderation was renewed after the interruption of the GFC from 2010 until 2019.

The key point to understand about the Great Moderation is that, compared to the late 1960s and the 1970s, it reflected relatively low and stable money growth rates, such as the average 5.6% (blue line) shown in Figure 3 for annual growth of US M2 from 1985 to 2019.[3] **It was the moderation of money growth that produced the Great Moderation.** Moderate money growth in turn resulted in low nominal GDP growth and mild inflation. In other words, the major economies including the US were sailing on a sea of monetary tranquillity.

An early example of the Great Moderation was the decade of the 1990s, during President Bill Clinton's two terms. His administration worked hard to reduce major fiscal or other imbalances; spending was kept under control to the degree that there were even two years of budget surpluses. The Fed, led by Alan Greenspan from 1987 to 2006, did a notable job of keeping money growth stable, and inflation duly fell.

In short, during the Great Moderation there was **no substantial and sustained** shift in the rates of money growth, and therefore the two-stage effects of monetary changes on interest rates were either absent or harder to detect. The monotonic FCIs (constructed years later) only *appeared* to work because monetary conditions -- i.e., money growth rates -- were moderate and stable. But in truth, it was a mirage.

As soon as money growth expanded dramatically during Covid and subsequently declined in absolute terms from March 2022, the flaws in the theory underlying FCIs have been exposed. And central bankers have been correspondingly – and deservedly – whiplashed, first by the unexpected inflation, and next by the unexpected deflation.

In short, FCIs are a fair-weather friend. As soon as a storm hits – in the form of extended periods of either excessive money growth or very inadequate money growth – their usefulness is degraded. Currently the US, the euro area, the UK, and numerous other developed economies are in the midst of one of those periods when FCIs will be caught out because the second-stage effects of recent (inadequate) money growth will be so powerful as to overwhelm the initial upward impact on rates. The coming declines in rates will cause FCIs and their ilk to report "easier" conditions whereas in reality the falls in rates will be the result of excessive prior tightness in the quantity of money.

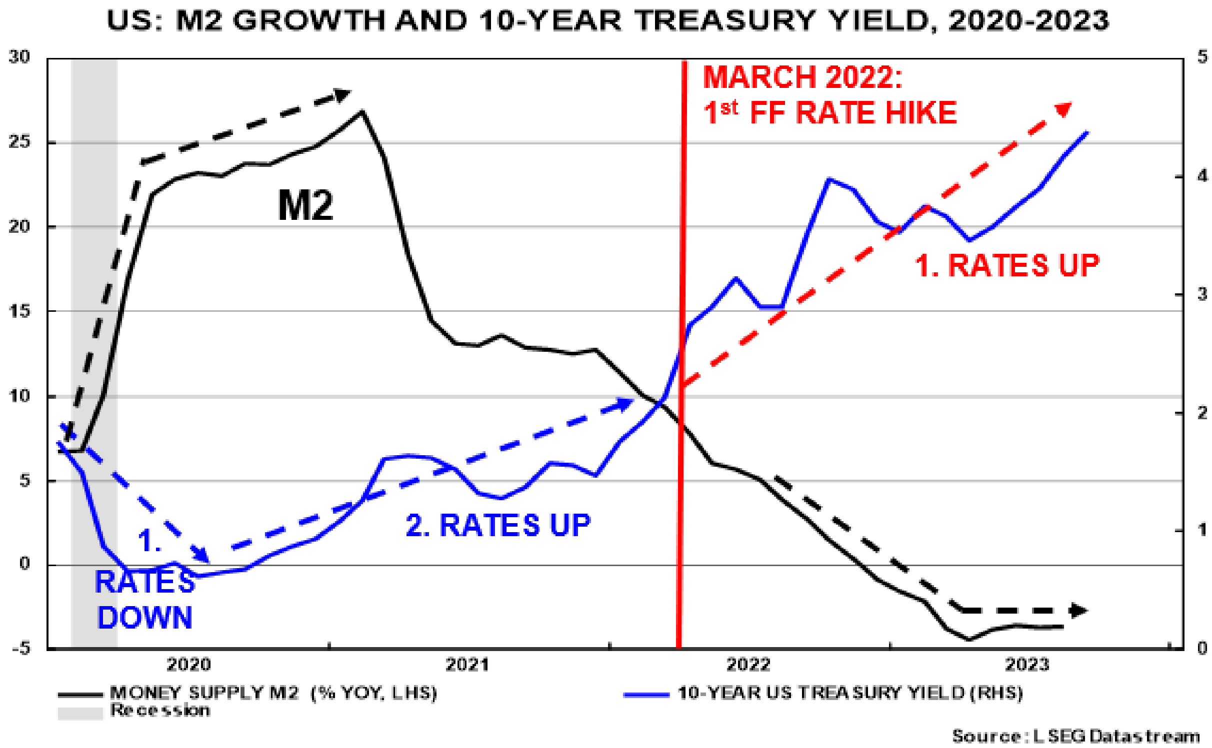
[2] The term was first used by James Stock and Mark Watson in a 2003 paper entitled "Has the Business Cycle Changed and Why?" https://www.nber.org/system/files/chapters/c11075/c11075.pdf
[3] This 5.6% average growth rate is almost exactly in line with the calculated "Golden Growth Rate" for broad money in the US, i.e., the rate that, for a given real GDP potential growth rate of 2%, and the known annual increase in the demand for money (+1.7% p.a.), will generate the specified 2% inflation target.

2. The Impact of Money Growth on Interest Rates

By contrast with the confusing signals from FCIs, the past three and a half years between March 2020 and September 2023 have provided a brilliantly clear illustration of the two-stage effect of changes in monetary growth on interest rates. Starting with the huge acceleration of M2 (or M3 if readers maintain their own proxies because the Fed foolishly abandoned publication of M3 in 2006) from March 2020 until March 2022 (when the Fed started hiking rates), M2 growth surged to 16.5% on an annualised basis, roughly three times the appropriate rate required to achieve the 2% inflation target. This fully meets the **substantial and sustained** change in money growth criterion mentioned on p.3.

As Figure 4 shows (in year-on-year terms), this egregious growth was split into the initial surge to February 2021 (end of the first dashed black arrow), followed by a gradual deceleration which continued after the Fed started hiking rates in March 2022. Starting in March 2020 the Fed engaged in massive asset purchases and lending operations. When the Fed buys securities from non-banks, the seller receives a direct payment of new money from the Fed; new money is added to the money supply. As shown in Figure 4, this resulted in a massive increase in the quantity of M2 – an increase unprecedented since World Wars 1 & 2 and 1935 just after the Great Depression. Furthermore, the rate of growth of M2 remained in double digits (on a year-on-year basis) until March 2022 when it slowed to 9.4%.

Figure 4. The two-stage effect of money growth on market interest rates



Only in June/July 2022 did M2 growth return to a 5% year-on-year growth rate that could be deemed normal, or suitable for attaining the Fed's 2% inflation target. But even then, the deceleration did not stop. M2 continued to decelerate, falling below 0% change on a year-on-year basis from December 2022. In August, the decline was -3.7%.

In the M2 acceleration phase, as explained in IMM Newsletter #26, interest rates (shown in Figure 4 by the yield on 10-year Treasuries) first fell (1), but then as the economy started to recover, as the demand for credit picked up, and as inflation started to become apparent from the spring of 2021, rates rose (2).

This is the classic response of interest rates to a ***sustained and substantial*** increase in the quantity of money.

- Expansionary monetary growth produces ***TWO EFFECTS:***
- The **first,** and temporary, effect is to **lower** market rates.
- But the **second**, and more permanent effect, is to **raise** market rates.
- i.e., the same monetary expansion has ***opposite*** effects on interest rates.

Next, as monetary growth finally slowed or tightened, the converse set of effects started to become apparent. Between June/July 2022 and August 2023 M2 growth has been persistently declining to an average of -0.6% year-on-year or -2.7% on an annualised basis. So far, we have only seen the initial effects on interest rates, but the process may be expected to play out in the same, classic way. Currently market rates are generally ***rising*** as the monetary squeeze intensifies, but as the economy slows into recession, the demand for credit falls, and inflation gives way to deflation in 2024/25, interest rates will plunge.

In other words, we are likely to see the classic response of interest rates to a ***sustained and substantial*** decrease in the quantity of money.

- Contractionary monetary growth produces ***TWO EFFECTS:***
- The **first,** and temporary, effect is to **raise** rates (which is where the US economy is now).
- But the **second**, and more permanent effect, is to ***lower*** rates.
- i.e., the same monetary contraction or tightening has ***opposite*** effects on interest rates.

In short, the US economy is still in the ***first phase*** of tightening monetary growth (leading to higher rates), but soon the economy will enter the ***second phase*** when rates will fall due to slack demand and falling inflation.

All of this means that reliance on interest rates -- or their cousins, Financial Conditions Indicators -- to judge the stance of monetary policy is foolish and likely to lead to mistaken forecasts of the economy and inflation.

3. Eine Kleine Verrücktmusik

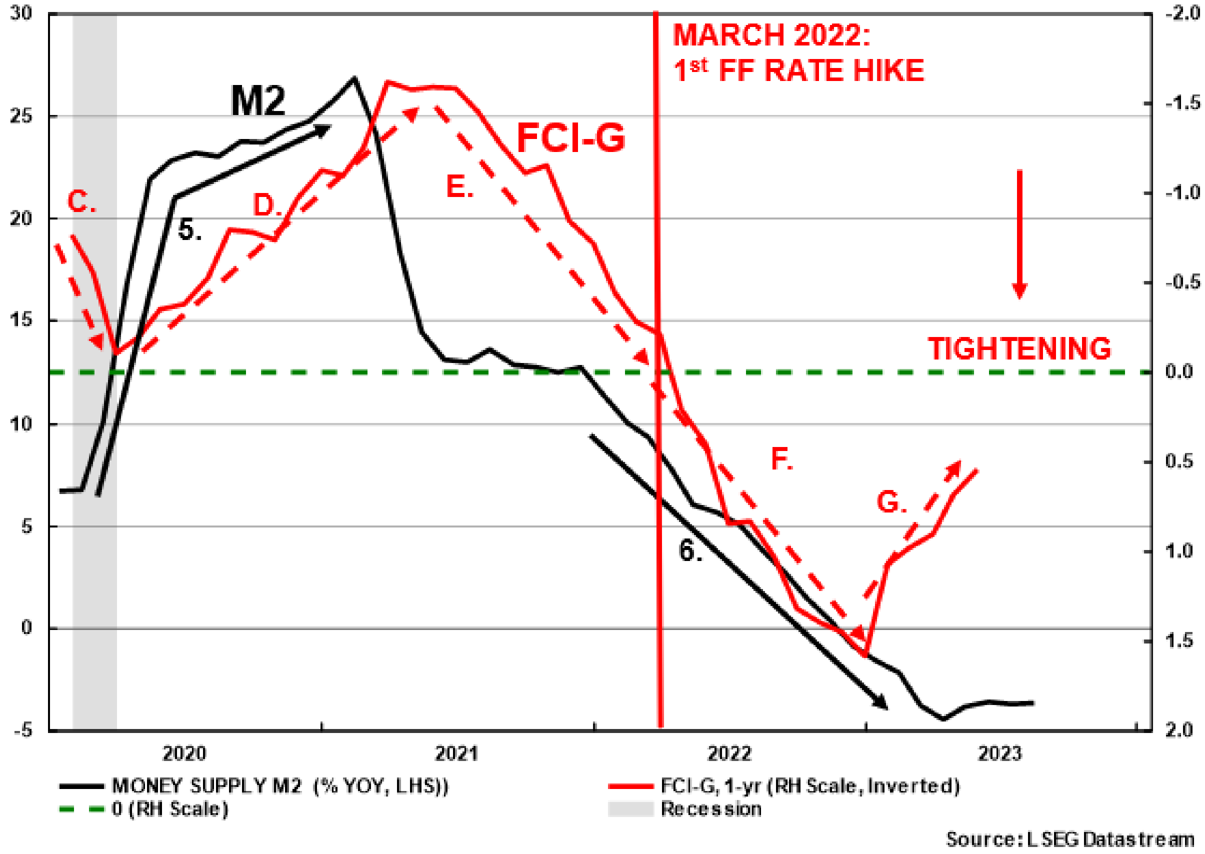
If readers will forgive my play on Mozart’s joyous Eine Kleine Nachtmusik (A Little Night Music), I want share with readers some “mad music” played to us recently by FCIs (*Verrückt* in German means insane, mad, or crazy).

Recall that Chair Powell and his colleagues on the FOMC are extremely concerned to bring down the rate of inflation. Having been blindsided by the outbreak of sustained (not transitory) inflation in 2021-2023 after completely failing to predict it, they are now placing the blame for this catastrophic outcome on alleged supply-chain disruptions, exogenous shocks such as malicious acts by foreign oil producers, or the Russian invasion of Ukraine. In short, they are relying on all kinds of non-monetary explanations of inflation. They are therefore clutching at straws for an explanation of what has happened. Unfortunately, the FCIs constructed by their economist staffers have not been very helpful.

Figure 5 shows the behaviour of the Fed's new FCI-G (Financial Conditions Index focused on Growth of the US economy) compared with the percentage year-on-year growth of M2. **Note that the right-hand scale has been inverted**. Initially, in the very early stages of the Fed's huge expansion of its balance sheet and M2, the FCI-G showed a tightening of conditions (C), reflecting the panic or "dash-for-cash"

Figure 5. The Fed's New FCI-G has been Singing a Crazy Tune

M2 MONEY GROWTH AND FED'S FCI-G, 2020-23



or safe securities in financial markets. At just the time when the Fed was embarking on its most ambitious expansion of its balance sheet ever and a huge increase in money growth, the FCI-G was saying that conditions were tight.

However, from April 2020 onwards, the signal from FCI-G shifted to expansionary (D), a reading maintained until March-June 2021. Given that the Fed was simultaneously pumping up its balance sheet and generating huge growth of M2, this was reasonable.

But then from July 2021 FCI-G started to convey the message that financial conditions were tightening (E). Against a highly expansionary backdrop, with M2 growth remaining in double digits (in percentage year-on-year terms) until March 2022, anyone relying on this index would have been seriously misled. The FCI-G was essentially taking its cue from rising rates in the financial markets, themselves responding to the earlier expansion of M2.

Suppose that M2 had not decelerated but had continued to grow at 20-25%. In that case the FCI-G would have indicated “tightening” despite the fact that underlying money growth was far too rapid.

Eventually, from June or July 2022 M2 growth declined to about 5% year-on-year. In a monetary sense, money growth was normalising, but the FCI-G continued to show tightening (F). Once again, FCI-G was out of kilter with “true” monetary conditions.

If M2 growth had been maintained at 5% p.a. from this point onwards, the FCI-G measure would have shown continued tightening (more F) -- another false signal.

In fact, M2 continued to slow to a negative growth rate, enabling the continued tightening signalled by the FCI-G to come back into line with reality. This happy coincidence was preserved until December 2022.

However, from January 2023 the FCI-G has been conveying “easing” conditions (G), or less headwinds to growth. On the basis of monetary analysis, this is completely mad! Negative M2 money growth since March 2022 has steadily been squeezing excess purchasing power out of the economy, constraining housing and consumer spending as it gradually lays the groundwork for a sharp slowdown in spending and lower inflation towards year-end 2023 or in early 2024.

Looking ahead, if the monetarist forecast based on M2 growth is correct and the economy enters recession from, say, 2024 Q1 or Q2, the Fed’s FCI-G will likely continue to convey “easing” on the basis of falling interest rates even though money growth may remain negative or close to zero. We can only conclude that FCI-G and its family of similar indicators are unhelpful at best, misleading and wrong at worst, in parsing the economic environment or making forecasts.

The only times when FCIs are broadly “correct “ in their signalling is when market rates and yields are moving in the same direction as the simplistic headlines from monetary policy. For example, in Figure 5, the correct signals were given in just two phases out of five. These were when monetary policy was overtly expansionary (D), and when monetary policy was consciously tightening following the raising of the Fed funds rate from March 2022 onwards until December 2022 (F). Apart from these two phases, the FCI-G has been consistently out of line with the predictions from monetary growth i.e., during phases (C), (E) and (G).

What is going on here? Fundamentally, FCIs fail to forecast or fail to interpret correctly the second-stage effects of money growth on interest rates. They naively presume that interest rates are the ***cause*** of the financial and economic conditions going forward, instead of seeing them as the ***effect*** of earlier monetary growth.

This is why FCIs are essentially monotonic. They imply that higher rates always mean (**cause**) tighter conditions. They can explain why a headline monetary slowdown leads to higher rates (at least initially), but they cannot get to grips with lower rates reflecting the second stage of slow money growth or tight monetary conditions.

Similarly, for FCIs, lower rates always mean (**cause**) easier financial conditions. They can explain why a headline monetary acceleration leads to lower rates (at least initially), but they cannot get to grips with higher rates reflecting the second stage of rapid money growth or excessively easy monetary conditions.

I close this pair of essays on FCIs by repeating the title of IMM Newsletter #26 as a warning, "Beware Financial Conditions Indicators!"

Summary and Investment Implications

- This Newsletter is the second of two successive articles focused on the construction, meaning and usefulness of so-called Financial Conditions Indicators (FCIs). In recent years, portfolio managers and financial market participants have been confronted with a plethora of these indices constructed by investment bank economists and even central bank economists around the world. FCIs are – regrettably – also creeping into the framework, analysis and policymaking of central banks (as any speech by Christine Lagarde will show).
- The analysis here has shown that FCIs are based on a false understanding of the business cycle. They assume or set out to claim that the driving force in asset markets, in economic activity – and linked to that inflation - is the change in a constructed composite of interest rates, spreads, equity values, exchange rates, and volatility measures.
- A far better hypothesis for the transmission mechanism of the business cycle comes from classical statements of monetary analysis, notably by Clark Warburton and Milton Friedman, but also by others, in many texts stretching back to the 1940s, invariably supported by voluminous empirical evidence[4].

[4] Here are just three: (1) Clark Warburton, (1966). **Depression, Inflation, and Monetary Policy; Selected Papers, 1945–1953** Johns Hopkins Press. (2) Friedman, M. (1970). **The Counter-Revolution in Monetary Theory**, re-printed in: Wood, G.E. (eds) (1996) Explorations in Economic Liberalism. Palgrave Macmillan, London. See *Key Propositions of Monetarism*. (3) Friedman, M. (1996). **The Optimum Quantity of Money and Other Essays**, Aldine, Chicago, Ch 9, *The Supply of Money and Changes in Output and Prices* (reprinted from the Review of Economics and Statistics, vol 45, no. 1, part 2: supplement (February 1963) deals with the relation between prices and money, and between prices and output. See pp. 171-184. Also, in Ch 10, *Money and Business Cycles* refer to section III, *A Tentative Sketch of the Mechanism Transmitting Monetary Changes*, pp. 229-234.

- Monetary analysis shows that the business cycle – asset prices, economic activity and goods and service price inflation – is a monetary phenomenon, and I have set out numerous charts and data in this paper and elsewhere to show that this framework fits the facts of the latest business cycle like a glove.
- In contrast, in this Newsletter we found that FCIs regularly give false signals because their authors misconstrue the business cycle, thinking that it is determined by rates and spreads and other elements included in FCIs.
- The primary error in FCIs is the failure to start with changes in money growth, and the second most important failure is that this approach misses the crucial second stage impact of monetary expansions or contractions on market interest rates. The second-stage effect is sometimes known as the "Fisher effect" after Irving Fisher's empirical demonstrations that high rates of growth of money are invariably associated with high rates of interest (due to inflation), and conversely.
- Using the experience of the most recent Covid-era business cycle, we found that FCIs only work in the first stage of a monetary expansion or in the first stage of a monetary slowdown or contraction.
- At other times (typically in the second stage), FCIs are prone to convey false signals because they are inherently monotonic, meaning "easier" or "looser" FCIs translate into higher asset values and/or faster growth and inflation, while "tighter" FCIs translate into lower asset values, slower growth and lower inflation (although the underlying theory is seldom set out clearly).
- Investors need to understand what drives the business cycle, i.e., what creates major turning points in the economy, the steps in the transmission process, and the time lags involved.
- The monetary expansions of 2020-21 created big increases in asset prices , surges in economic activity when lockdown orders were lifted, and subsequently entirely predictable inflations in those countries that had increased the quantity of money rapidly.
- Attempting to counter this hard evidence, central bankers along with business and academic economists claimed the inflation was "transitory," being due to relative price changes coming from supply chain disruptions. Laughably, this led a to a mini-industry creating indices of global supply chain pressure. Numerous other non-monetary narratives have also been adduced to "explain" inflation. All should be rejected. "Inflation is always and everywhere a monetary phenomenon".
- Currently portfolios should consist mainly of cash and very short -term government bonds. But investors should stand ready to buy long duration bonds and go short equities as the major economies reach the next two turning points – (1) when the overhang of excess money balances is used up and real spending power evaporates, causing recession to set in, and (2) when, as demand weakens and business and consumer spending power diminish, falling inflation (and possibly deflation) takes over from the current inflationary phase. At some stage over the next 6-18 months, I expect these deflationary forces to have a major impact on bond yields – probably in 2024 and stretching into 2025 and possibly beyond.

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