

10th January 2022

# CFM TALKS TO... OLIVIER BLANCHARD

#### Introduction

We had the great pleasure of speaking to Olivier Blanchard, who shared his thoughts on all things macroeconomics, from US monetary policy and inflation to Agent-Based Modelling and Bitcoin. Olivier is the C. Fred Bergsten Senior Fellow at the Peterson Institute for International Economics in Washington D.C., and the Robert M. Solow Professor of Economics emeritus at his alma mater, the Massachusetts Institute of Technology (MIT). After obtaining his PhD in economics in 1977, he taught at both Harvard and MIT before being appointed Chief Economist at the International Monetary Fund (IMF) in 2008. He joined the Peterson Institute following his departure at the IMF in 2015.

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## CFM Talks To ... Olivier Blanchard



At some point, it might make sense for the Fed to adopt a 'whatever it takes' narrative

CFM: I feel otherwise compelled to start by asking about inflation. Do you think the US Federal Reserve made a blunder?

OB: I think the original sin was on the fiscal side. It was, to use your expression, a major fiscal blunder in real time to have engineered and to commit to a package that size - given the high level of uncertainty, as well as the size of the package relative to the output gap. What should the Fed have done? What the Fed should have done was to caution the Biden administration that the proposed fiscal stimulus was too aggressive. It may or may not have done so in private. I do not know. It could not have done so publically - it would have been politically untenable for a central bank to say sending cheques to poor people is a bad idea.

I suspect the Fed also convinced itself that it could eventually use monetary policy tools, consistent with the shift to the Flexible Average Inflation Targeting (FAIT) framework, to contain any risks.

I think that was a mistake. And the Fed has recognised it. It has clearly started moving the cursor and indicated to markets that it needs to, and will, do more, sooner.

Then the question is how fast should it move? If it went out and said 'we were wrong and we will start tightening next week' - which is probably what should be done from a purely economic viewpoint- it would run the risk of a financial market upheaval. So it has to find the right speed to get the markets to go along and not panic.

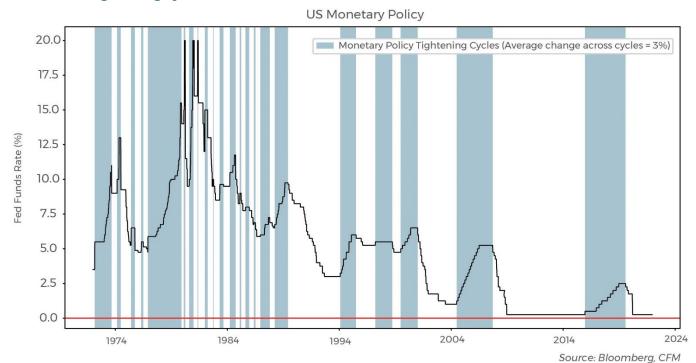
CFM: As you pointed out, the Fed has telegraphed quite unambiguously that they are likely to accelerate the reduction of asset purchases, and that the term 'transitory' should be retired. Do you think it's too little, too late?

OB: My sense is that he [Powell] may have to move faster than he currently indicates. Remember, you have a real rate at ~ -5% on the short end. You have an economy that is very strong. You have an economy that is more or less at full employment. It may take more than three hikes next year to achieve the inflation target.

These are, however, probabilities. There is a scenario where everything will be fine. Demand slows down on its own, supply chain constraints alleviate quicker, and the Fed could probably remain on the current trajectory. This has a positive probability.

The scenario which I think has got a higher probability, is that these things don't happen. In which case, there is a real risk that the Fed has to do more than what it is telegraphing.

#### **Historical Fed tightening cycles**



The Fed Funds Rate along with all the tightening 'cycles' since the early 1970s. There were frequent adjustments to monetary policy rates pre-90s, leading up to, and coming out of the 1970s inflation crisis. With the advent of forward guidance, and inflation expectations becoming more anchored, adjustments were less frequent, and the changes were more measured. Historically, when the Fed embarked on monetary policy tightening, interest rates were hiked, on average, by 3% during each cycle (albeit skewed by the 1970s extreme hiking period), and 2.3% post 1994.

	CTA (Barclay Hedge	US REITS	US 10Y Nominal TR	Hedge Funds (Macro Systematic)	Hedge Funds	S&P 500	DM Equities	AW Equities	Hedge Funds (Macro)	EM Equities	US 10Y TIPS TR	US Dollar	Bloomberg Commodity
Average annualised returns	17.87	10.82	10.72	10.04	9.09	8.40	6.35	6.14	6.02	5.59	5.48.	3.52	2.97

Source: Bloomberg, GFD, CFM

The average annualised returns of key asset classes limited during those Fed monetary policy tightening cycles. The performance is ranked best to worst, from left to right.

CFM: Robert Shiller gives much credit to Paul Volcker having intuitively understood the power of 'narratives', in that his war with inflation in the 70s was essentially a matter of changing people's thinking about the Fed's ability to produce price stability. Do you think the Fed has missed an opportunity on getting the 'narrative' right? How do you think the Fed would have to adapt its narrative going forward?

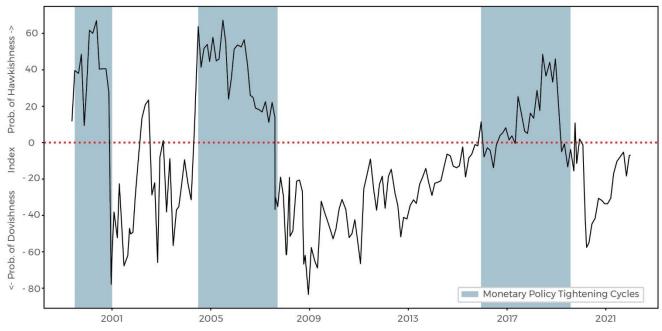
**OB**: If you move your narrative too fast, in the short run, it is very costly. You lose credibility. The Fed is changing its narrative slowly, as fast as it can, subject to the perceived constraint of not spooking markets. Acknowledging the upside risk of inflation. Very carefully.

At some point, it might make sense for the Fed to adopt a 'whatever it takes' (to make sure inflation remains under control) narrative. Remember, Draghi used this narrative very effectively to safeguard the euro, while governments used the same narrative during the Covid crisis, all but declaring that they would do whatever it took to protect the economy.

If things don't go as planned - there is still much uncertainty - then this might very well be the next narrative, assuring markets that inflation will not be allowed to rise out of control, no matter what.

#### **Federal Reserve sentiment**

#### Morgan Stanley NLP Model - FOMC Statements



Source: Morgan Stanley, CFM

Analysing the sentiment of official (or unofficial) central bank communications as it may relate to hawkish/dovish sentiment may be useful to identify inflection points, and recalibrate expectation of imminent tightening/loosening cycles. Moreover, given the historic monetary policy measures having been deployed, and its resulting effects on asset prices, central banks communiqué is increasingly been scrutinised. Much of this is now being done by sophisticated Natural Language Processing (NLP) and other learning techniques<sup>1</sup>.

Morgan Stanley produces a time series, MNLPFEDS Index (Morgan Stanley Natural Language Processing Federal Reserve Statement) that aims to provide a lead over monetary policy action. It assesses a hawkish/dovish back-and-forth, producing a score that range from -100 to 100, and representing the difference in probability of the text in an FOMC statement being hawkish/dovish. For instance, -100 is to be interpreted as the text having a 100% higher probability of being dovish than hawkish, and vice versa. The Index have been trending strongly higher since 2020, with the probability of a dovish statement now nearly 0.

CFM: Larry Summers has suggested the Fed needs four rate hikes in 2022 for it to regain credibility. What might the likely implications be to an unanticipated (or higher than anticipated) rate increase?

**OB**: Indeed, if economic growth remains buoyant, and wage momentum increases, it may take higher rates than currently priced in. Who will be caught short? Probably not financial players, at least not on a scale that would lead to a financial crisis. But it may be especially tough for Emerging Markets – particularly those who will be unable to adjust to large capital outflows.

CFM: It is our assessment that housing (the CPI Shelter component); the labour market; as well as high levels of household wealth (sustaining demand despite negative real wage growth) are all likely to keep inflation levels elevated. What is in your opinion some of the near-term dynamics that might keep inflation high(er)?

**OB:** Very similar to yours. In my estimation, demand might well remain strong owing to the sheer level of excess savings. Now, the saving rate has reverted back towards its longer term mean, but there was a huge accumulation over the past 18 months. This excess savings will eventually be spent. The big question is when. How much will be spent in 2022?

To me, the main issue right now, is wage behaviour. We do not understand exactly what is happening with participation rates, but I see no reason to think they will get back to where they were. The unemployment rate is fairly low. If people feel that their nominal wages have not caught up with price inflation, and the labour market continues to be very tight, they

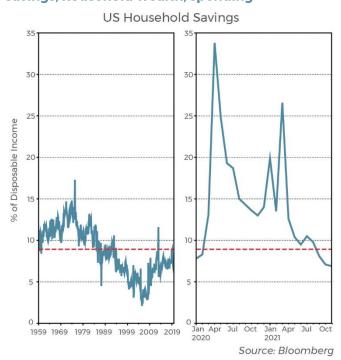
<sup>&</sup>lt;sup>1</sup> We have conducted a similar study on the communications of the European Central Bank (ECB). Interested readers can find the whitepaper 'Extracting the news(worthy) from the noise. Central bank topic and sentiment analysis using natural language processing', on our website

will ask for wage increases, starting a wage price loop or spiral. If this wage spiral takes hold, it will make inflation more persistent and more difficult to contain. This is something I worry about.

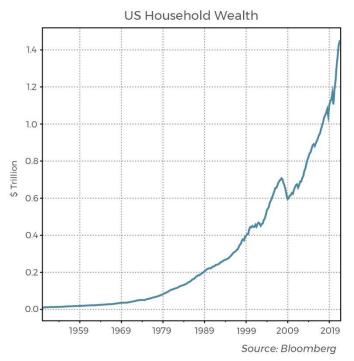
Nevertheless, there is of course a probability that some prices will decrease. Some prices went up on account of supply-chain constraints, which should become resolved. I wouldn't be surprised if inflation figures look better in Q1/2 of 2022, and my friend Paul Krugman declares victory. However, I think this may be a short-lived victory, since I believe the structural forces and momentum of especially wages will remain present.

I can see scenarios where, say, in the spring, inflation numbers look good, and there is pressure on the Fed to relax and not do anything. I think the Fed needs to see through this, acknowledge the hot labour market, realise that growth exceeds potential growth, and continue the tightening cycle.

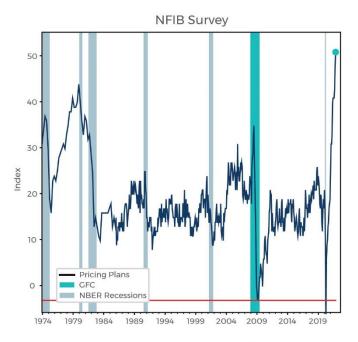
#### US savings, household wealth, spending



US Household Savings as percent of disposable income saw a significant jump following Covid-related lockdowns (restricting spending), and the distribution of stimulus cheques (much of which were saved or used to pay down debt). The savings rate has since reverted to its long-term mean of ~9%. However, households accumulated significant amounts of wealth during this period, with total US household wealth reaching a record high in Q3 2021.



US Household wealth reached a record high of \$1.4 trillion at the end of Q3 2021. Many economists think that consumer spending will stay strong going into 2022, in part based on the levels of household wealth. The headline data, however, hides a non-insignificant wealth distribution, with the wealthier having a much lower proclivity to spend.



#### Source: Bloomberg, NBER, CFM

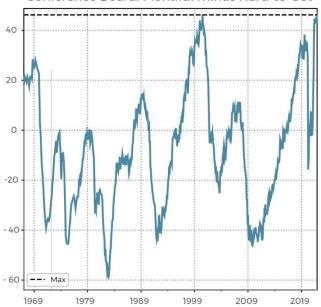
Firms can keep prices high as demand stays buoyant, and consumers may absorb those increases (as long as their savings hold out and/or wages keep rising). Firms have been able to pass much of the higher input prices on to consumers. Looking for instance at Q3 financial results, corporate margins have stayed healthy (in some industries it increased), despite the rise in input prices. Moreover, it is the intention of many firms to keep raising prices. A survey by the National Federation of Independent Business (NFIB) gauging the intention of firms to raise prices in the coming three months hit a record in November 2022. If consumers remain willing to absorb these higher costs, it is likely to keep inflation higher.

#### **US Retail Sales** 50 40 30 20 YoY 10 0 -20 2020-11 2021-02 2021-01 2020-07 2020-12 2021 2020-04 2020-05 2020-08 2020-09 000 05 Source: Bloomberg

US Retail Sales since 2020 have remained buoyant, if volatile. As a proxy for consumer demand, it shows low unemployment, combined with rising wages and high levels of accumulated wealth are giving Americans the capacity to spend more, despite higher costs. While a pacier Christmas shopping season partly explained the increased spending, the same drivers are likely to keep demand strong in 2022.

#### **US labour market**

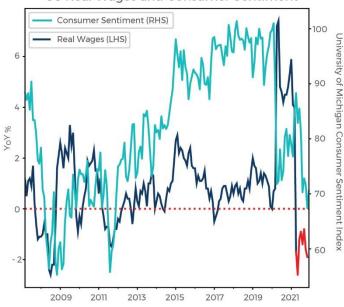
#### Conference Board: Plentiful minus Hard-to-Get



#### Source: Bloomberg, CFM

There are various indications that the US labour market is tightening. One widely tracked measure by the Fed and economists is the 'Job Openings and Labor Turnover Survey', or JOLTS. While the rate of

#### US Real Wages and Consumer Sentiment



#### Source: Bloomberg

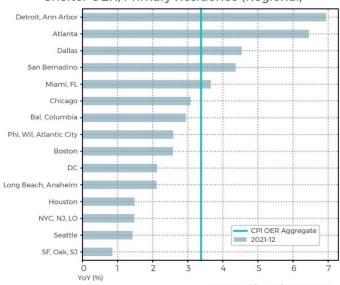
While wages have been increasing, on average, real wages – i.e. adjusted for inflation, are showing negative growth. With workers paying proportionality more for key daily expenses than the increases

employees quitting has dropped slightly, the level of job openings accelerated to a near all-time high in November 2022. Another measure to consider, is the Conference Board's Consumer Confidence Survey®, which, in the most recent data, show 58.0% of consumers said jobs are "plentiful", while only 11.1% of consumers said jobs are "hard to get". Looking at this spread, in the plot above, the difference between the two measures is hovering at an all-time high.

in their wages, there is likely to be more impetus to bargain. This dynamic is partly reflective of the drop in the University of Michigan Consumer sentiment index, which has fallen since reaching its recent high in April 2021 (and, historically, has featured a strong correlation with inflation).

#### **Shelter**

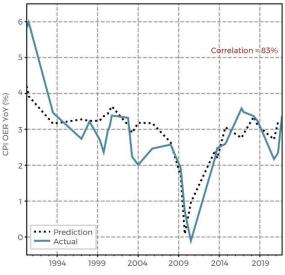
#### Shelter OER, Primary Residence (Regional)



#### Source: Bloomberg, CFM

There is an interesting spread in the underlying increases in Shelter CPI across US regions. One of the likely explanations has been the ability of many employees to work (or forced to work) from home, exploring more affordable housing options outside of the traditional economic hubs of the East and West coasts. San Francisco and surrounds is a case in point – many employees of the large tech firms have been given the opportunity to work partly or evenly fully remotely, with these workers – already strained by the high cost of housing – moving further afield. San Francisco saw the smallest increase in Shelter CPI, while the more expensive regions of New York also saw only a modest increase. The typically more affordable regions saw much higher increase, presumably owing to the pickup in demand there.

### Shelter CPI Regression



Source: Bloomberg, CFM

The Shelter component carries a weight of -30% in the overall CPI basket. And, despite both house prices and rents having accelerated substantially in 2021, the increases in the Shelter component have been much more modest. However, there is a lag between the increase of home prices and rent and CPI, while this lag might be even more pronounced now, owing to the eviction moratorium and rent forgiveness during Covid. We perform a regression analysis using Schiller house prices (lagged 5 quarters), but also include Vacancy rates and Inflation expectations. There is a very high correlation between the predicted value from our regression, and the actual Shelter CPI value. This suggests, given this lag and the increases in housing in the US, that the largest component in the CPI basket is set to increase meaningfully in the coming months – all else being equal.

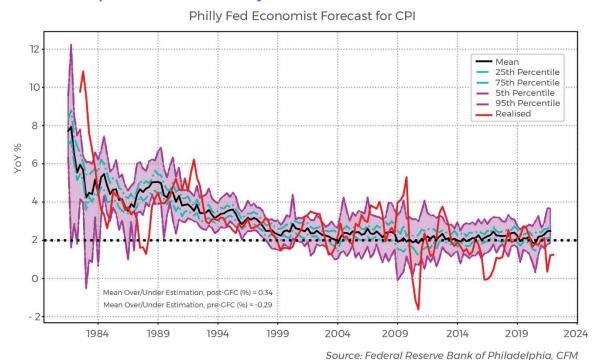
CFM: If you can briefly discuss some of the structural dynamics you think might keep inflation high(er). You mentioned supply chain disruptions that might ease. Do you think, given there have been strong calls for 'on-shoring' or so-called supply-chain nationalisation, that this might keep pressure up on supply chains? Additionally, the energy transition ('Greenflation'), for example – do you think this a candidate for keeping inflation higher?

**OB**: On the first point, the short answer is that this would take plenty of micro knowledge of each of the disruptions, which I do not have. Take the semiconductor industry, which, owing to the Leontief nature of many of our technologies today, has been a major source of disruption. I've consulted with a few chipmakers, and even they do not know exactly what to expect. One of the reasons is that firms, aware that there might be a shortage of chips, order a lot (an excess). This in turn creates a massive speculative increase in demand, and creates rationing. Assessing how much of the demand is due to this is difficult to assess.

On the energy transition, I agree. Clearly, given the policy capital being deployed, as well as the high buy-in from many stakeholders, the green transition will create demand. But only in the medium-term. I do not see it as a major factor in 2022 or the immediate future, but rather for the next 5-10 years.

Here, one might consider the secular stagnation hypothesis that Larry Summers developed. Before Covid there was clearly insufficient private demand, despite interest rates having been very low, and many central banks already at the zero lower bound. After Covid, if private demand reverts and remains weak, infrastructure spending can not only help on the supply side, but also on the demand side to sustain demand and activity.

#### Where do forecaster expect inflation to be in a year?



The latest readings from the Philly Fed's Survey of Professional Forecasters show a mean expectation for inflation in one year's time at ~ 2.5%, with the highest expectation at 3.9%. Forecasting inflation is a tricky business, with even professional forecasters having a hard time of it. There is as such, typically a non-insignificant spread between forecasters, and with the consensus expectations post GFC typically having been 'overestimated'.

CFM: China, hitherto a major exporter of deflation, is pushing forward with reforms to shift from an export-led, to a services-based economy. In addition to the on-shoring we discussed above, do you think this might drive (necessitate) a buy local (expensive) rather than foreign (cheap) dynamic?

**OB:** Should they push forward with reforms? Yes. Can they do it? Probably. But they have already done much of it. China's Current Account to GDP ratio is < ~2%, down from ~ 10% in 2007. Does it affect the world? It was a factor in what Ben Bernanke referred to as the global savings glut, and by implication in lowering world interest rates. But the Chinese current account surplus has decreased dramatically over time, replaced by current account surpluses elsewhere, Germany for example.

On the topic of de-globalisation, I worry that there is a coincidence of forces, from worries about security, the desire for more resilience of supply chains, geopolitics and the tensions between the US and China, the perception that trade leads to more within country inequality, Covid implications for business travel, and the messy nature of carbon border taxes, that may all lead to de-globalisation.

CFM: In our research we explore various other measures of prices, to gauge likely changes in consumer expenditure as well as monitor trends amongst industries. The Billion Price project is one such example. Is the current measurement of inflation, and its composition, still appropriate?

**OB**: It is dependent on what do you want to use it for.

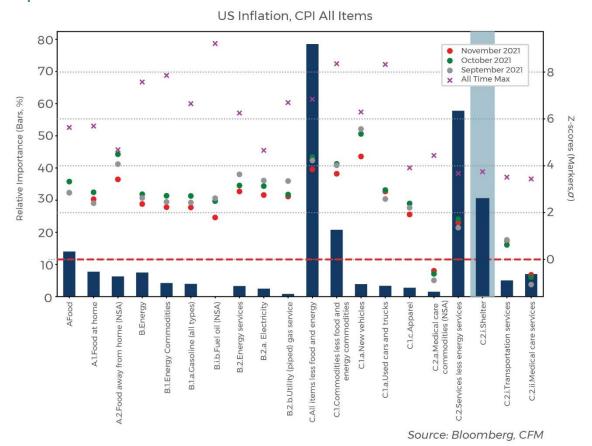
If you want to know how much it costs to consume, to a first approximation, CPI-U is an appropriate measure of consumption.

There are some minor issues, especially on housing. Given rents, house prices are much higher. That is true of any present discounted value at this point. Even with the same flow you get a higher value for the stock because interest rates have fallen. So the price of housing has gone up a lot, given the level of rent. But what is important for consumers in terms of their cost of living is the flow cost. If, taking an extreme example, rent levels hadn't changed, but the price of housing had doubled – should this increase in the price be reflected in the CPI? I do not think so.

Now, I know that rental cost itself has gone up, but I am not sure why. There is of course the argument that people, owing to Covid, wanted more space, many were able to work remotely, and this triggered a relocation spree. It is however hard to think that this should have a big effect, at least at the kind of frequency we're talking about. In 2021, is there really a much higher demand for square meters than there was in 2020? Even if so, this is not an inflationary effect, it is a relative price effect – the price of some of the housing goes up, and the price of some of the housing goes down.

So the answer to your question is: As a statistical issue, for the purposes of measuring the price of consumption, leaving aside the issue we just discussed, the CPI is fine. But if we want to understand what is behind inflation and where it is likely to go, we have to look at many measures. For example, there is tension between the measure the Fed largely cares about, namely Core CPI, or the Median CPI (cutting the tails), and what consumers perceive in their everyday life, which is precisely the non-core part, the increase in the price of gas and food. To the extent that this leads them to ask for higher wages, then the non-core component matters very much for inflation, even in the medium term.

#### **Inflation components**



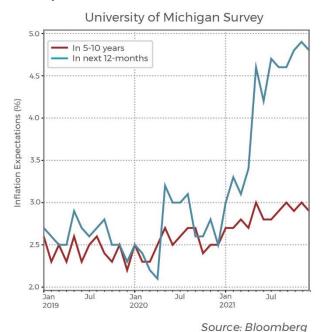
We calculate the rolling 7-year Z-score – a statistical measurement of the magnitude by which an observed value is above or below the mean value of the population (time series) in units of standard deviation – of YoY changes in each of the main underlying CPI subseries, and plot these scores (on the right hand y-axis). On the left-hand y-axis we plot the 'relative importance' or weight of each of the underlying components of Headline CPI in %. Not only are the CPI readings of all subseries well above their longer term means, but they have continued to move further away from their respective means. Data as of December 2021.

CFM: You mentioned Gas and Food, and inflation expectations. There is a large literature on the topic of inflation expectation formation in the US being driven mostly by Gas and Food. For many reasons. With both increasing more quickly than many other elements, do you think there is a risk of inflation expectations becoming unanchored? Or do you think this is already happening?

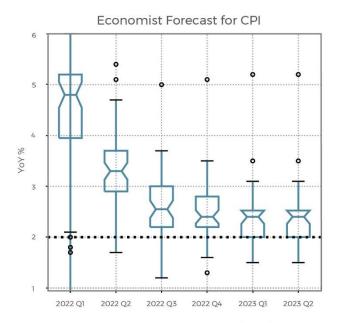
OB: I think there is too much focus at this stage on anchoring of expectations. If I am a worker today, I care about the fact that my wages do not seem to have gone up as much my perception of inflation last year. I do not care about future inflation. I care about my real wages. If the labour market is tight, I am in a position to ask for a raise. I think wage formation, which is of the essence today, is largely backward looking. This is what leads me to worry about the emergence of a wage price spiral: higher current inflation leading to higher wage inflation next year, leading, through mark-ups, to further inflation. Some people argue that, if we look at say the past two decades, wage increases (in any event rather benign) have not been passed through. This is right but there was in effect no wage action. I think this time is different – I have no doubt that increased labour costs will be passed on.

In the longer run, inflation expectations matter as they lead to wage norms, demands for what is thought as normal increases in wages. But I do not think this is the main factor in what happens to inflation in 2022.

#### **Inflation expectations**



Inflation expectations of consumers in 12 months' and 5 years' time as per the University of Michigan survey. The expectations of consumers are outpacing those of economists by ~ 2.5%.



Source: Bloomberg, CFM

Economists' inflation expectations for the end of each quarter until Q2 2023 from survey data collected by Bloomberg. There is a lower level of consensus about inflation in the near-term, owing to still much uncertainty about further economic growth being potentially hampered by Covid, the dynamics of the US labour market, as well as the trajectory of monetary policy. The spread of expectations nevertheless narrows towards 2023, while still higher than the Fed's 2% FAIT

CFM: How do you view central bank scope creep? Should they / should they not concern themselves with societal challenges like e.g. climate change or inequality. Those issues which many central banks have started to opine on? Do you think this is right?

**OB**: I have strong views on this topic. The job of a central bank is to deliver price stability and/or something close to what could be considered full employment. That is their mandate. That is what they have the tools to do. Already achieving this mandate is difficult. In the case of the Fed, they have these two mandates, and, in effect, only one main tool, the level of interest rates. Do you want to burden, or expect central banks to do more? No.

Fighting climate change is nearly orthogonal to the role of a central bank. Should they worry about climate change in the context of another of their functions, say regulation? Yes, to the extent that firms may find themselves with stranded assets or banks with defaulting loans. Is there an argument for buying green bonds rather than non-green bonds if they engage in QE? Maybe, but it won't make much difference. For climate change, it is not even clear to me that central banks can, even if they wanted to, move the needle on climate change.

Inequality is different. Actions of central banks have a direct impact on inequality. When a central bank reduces rates, it increases demand and employment, and it is good for everyone. When it sets rates very close to zero, the prices of assets skyrocket, and the people who own these assets get richer. Making rich people richer. I don't think this is a topic central banks can ignore, but, nor do I think they have the capacity, with the tools of monetary policy, to make any more than a marginal difference on this. This is an argument for using fiscal rather than monetary policy, as fiscal policy can be used in a way which does not increase inequality.

So, no. I am opposed to any formal extension of the mandate of central banks. Especially for the purpose of addressing key societal challenges. Of course, I understand the politics of the zeitgeist, but the reality is that governments and the private sector should, and are, in a better position, to address these issues.

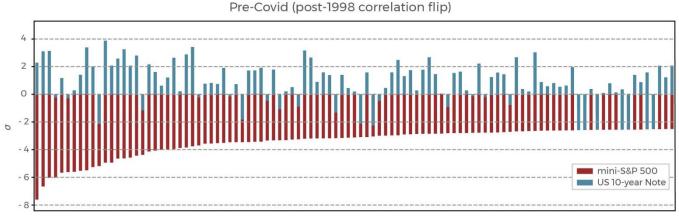
CFM: On political influence exerted on the central bank - e.g. the Democrats pressuring the Fed to do more, this of course owing to a worry about the mid-term elections in 2022?

**OB:** This is called fiscal dominance. I am not too worried about it in the US under the current management and the current president. Were Donald Trump to be re-elected, and were he to choose the next head of the Fed, I would worry more.

CFM: We have done research on bond-equity correlations and concluded that bonds, given rising inflation expectations, might not continue be an optimal diversifier. Is the 60:40 (or even Risk-Parity) portfolio dead?

**OB:** With some caveats, I believe the equity premium is larger than a reasonable risk premium for people like you and me, who are in the market for a long time. So, in my own portfolio, I have always gone closer to 70:30. Any reason to get out of equities at this stage? Do I believe that there is a stock market bubble? No, stocks are fairly priced, conditional on the rates on bonds being right. But, for reasons I have discussed, I believe the rates on bonds at intermediate maturities are likely to increase more than investors believe.

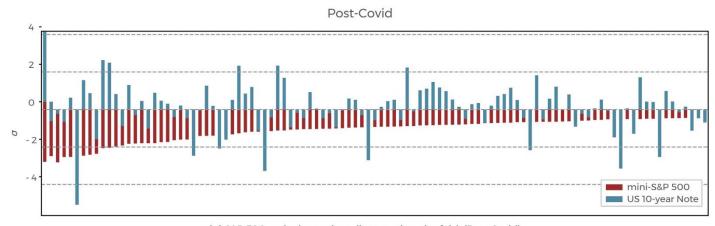
#### Bond-equity correlation: Mini-S&P returns and corresponding US 10-year note returns



mini-S&P 500 ranked negative tail returns in unit of risk (Post-1998, Pre-Covid)

Source: Bloomberg, CFM

This plot shows the 'hedging opportunity' of bonds in times of severe market stress, i.e. isolating only the most extreme, negative returns (the left-hand tail of the price distribution) of the US stock market (mini-S&P) and investigating the corresponding returns of US Treasuries (US 10-year note) on the same day. Here we plot only the most negative one percent of volatility standardised mini-S&P and corresponding US 10-year note returns, for the period post-1998, the moment where the bond-equity correlation 'flipped' from positive to negative, up until before the Covid crisis. During this period, the most negative events in the one percent of worst equity returns were accompanied, broadly, by positive bond returns.



mini-S&P 500 ranked negative tail returns in unit of risk (Post-Covid)

Source: Bloomberg, CFM

Repeating the exercise for only the period post-Covid, we see a different pattern. Bond returns more often moved in unison with stock returns, showing an increased positive correlation between bond and equity returns. Our research<sup>2</sup> shows that there is a strong relationship between inflation expectations and a positive bond-equity correlation. Given the current environment, where inflation expectations are increasing, investors are shying away from bonds as haven assets – as expected from our research.

CFM: Public debt, on average, hovers at  $\sim$  120% of GDP across the advanced economies. While interest rates, relative to the growth rate of GDP are low in most advanced economies (r < g), are you concerned, given, amongst others the inflationary pressures in the economy and fiscal stimulus, that if r jumps and exceeds g, the deficit gamble might fail – no more fiscal free lunch? How has your thinking shifted, if at all?

**OB**: The basic issue is what will happen to safe real rates over the medium run. My reading of the evidence is that the decrease in rates over the last 30 years reflects deep lasting factors, and that a reversal is unlikely. This of course must be qualified for any bumps in the near future, which we discussed earlier.

If so, then the weight of debt will remain small and manageable. And we must be ready to run deficits (or find other ways of sustaining demand) if central banks stay at the zero lower bound.

CFM: Many of the models in the economist toolkit fail to properly account for features of the economy such as emerging phenomena that result from the coordination / lack of coordination of innumerable agents; not taking into account endogenous shocks (DSGE); markets always clearing etc. Agent Based Modelling (ABM), for one, addresses many of these issues. Is wider adoption necessary?

**OB**: Yes. Two points. First: Representative agent models are clearly wrong. There is a heterogeneity amongst economic agents, and this heterogeneity matters for what happens on the macroeconomic level. So, yes, it is absolutely essential to recognise heterogeneity of economic actors, and the complexity of economic behaviour that emerges at the macro level, from the micro level.

Is it feasible to go all the way to individual agents? Probably not. But it makes a lot of sense to disaggregate to some degree, and, critically, today we have the kind of data which allows us to do that. For example, as it relates to the recent Covid crisis, the major banks have clear insights into how, for instance, US consumers went about spending their stimulus cheques. We can now trace who does what with this money - this is tremendously useful for understanding the behaviour of consumers. This trend, and the availability of more data, will only - as it should - accelerate the adoption of models like ABM.

Second, you mentioned DSGE models. There is something I very much dislike, and that is the pretence of deriving everything from micro foundations, which leads to twisted results that make no sense. Say you want to generate some

<sup>&</sup>lt;sup>2</sup> Bond Equity Correlations: Are the times a changin'?, CFM, October 2020 - Available on our website.

behaviour which has been observed, which you then reverse engineer, to find some utility function, and that you pretend is a micro foundation. This is a joke.

For applied economics, a disaggregated model with ad hoc, but empirically accurate and plausible behavioural equations would be my way to go.

# CFM: What is your reader's digest version on the ascendance of Bitcoin-like digital currencies, and the efforts of central banks to launch their own similar version?

**OB:** This is a semantic issue, since 'digital currencies' can mean many different things. Three completely different beasts are the Bitcoin-types of coins as you mentioned; the stable coins; and the central bank digital currencies (CBDCs).

The first is a bubble. Like gold. Gold has some limited industrial and other applications, but its price is far higher than what I justified by those uses. People buy it because they think it is going to go up. If you buy at the right time, and you are better than others at understanding other investors' psychology and get out at the right time, sure you can make money holding bubbles, but I wouldn't touch it as an investor. Bitcoins are not currencies, they are bets. However, we need to separate the technology from the assets - the technology is useful and interesting, but the asset is a bubble.

Stable coins, if regulated i.e. holding safe, liquid, assets on the asset side, make the fundamental difference between these and banks much smaller. They will be increasingly regulated. So the business model for me is not clear.

The big issue for CBDCs is who would have access to them. If anyone can have an account at the central bank, then you get disintermediation on a major scale. Unless we think intermediation is useless, which I think we don't, we need reintermediation. And then who does it? Then the banks have to again act as intermediaties – so this fundamentally doesn't make much sense to me. On the other hand, if only banks have access to these CBDCs so disintermediation is avoided, digital currencies might make it a bit simpler for banks than what they do now. But to me, this looks like plumbing improvements. That is not something I care a great deal about – perhaps it makes the banks slightly more efficient, but this does not seem like a major breakthrough.

So, it is either marginal - and it is not worth discussing. Or everyone gets access, in which case we have to rethink intermediation - and I'm not sure central banks want to fully disintermediate the whole financial sector.

#### CFM: What do you think the 'mega themes' for 2022 might be? What risks do you foresee?

There is the standard list. Implications and uncertainty surrounding the Omicron and/or other variants. My best guess - there will be some effect on both supply and demand but is difficult to know which one will be bigger, and thus whether it will reinforce inflation or the opposite. Wars in Ukraine and in Taiwan are of course, a major geopolitical risk, with likely macro consequences.

However, the one risk that I worry most about is hacking. It can be used by private actors or governments, and the technology exists to paralyse a country. It's one of the things I think we are not ready for.

#### Olivier Blanchard spoke with André Breedt, Research Associate in the Paris office of CFM.

- Interested readers are encouraged to follow Olivier's writing at the Peterson Institute for International Economics: <a href="https://www.piie.com/experts/senior-research-staff/olivier-blanchard">https://www.piie.com/experts/senior-research-staff/olivier-blanchard</a>
- ▶ Be on the look-out for Olivier's forthcoming book, "Fiscal Policy Under Low Interest Rates" to be released early in 2022

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