

Remarks by Viral Acharya at the NY Fed FAR, May 6 2022

Thank you to Nina and Matt for inviting me to present some thoughts today on the Implications of Monetary Policy Tightening and a very good afternoon to you all. As I pored through articles – academic and practitioner, and stared at incoming data over the past weeks, trying to make sense of it all especially in the context of the historical stagflationary episodes, I felt somewhat humbled by the exercise. It is easier to write a narrow, well-researched piece than to connect the dots across seemingly unrelated terrains and undertake the more complex analysis that goes into real-time policy-making. Nevertheless, I will try to summarize my thinking as possible answers to two of the three questions posed:

- Has the pass-through of monetary policy tightening to real rates changed in recent periods?
- What are the medium run risks to the economy and financial stability if real rates rise substantially?

Please interpret these possible answers with large confidence bands and do the necessary model averaging. I will focus on three aspects:

First, the implications of monetary tightening in the midst of a large oil price shock, especially from the standpoint of household expectations.

Secondly, the implications for financial market volatility given the substantial rise in corporate debt levels over the past decade.

And thirdly, the implications for financial market volatility given the high levels of inflation and what that means for government bond markets to continue to serve the purpose of a safe haven in times of high uncertainty.

In the choice of these themes, I have been driven by my concern that pressures on monetary policy tightening from financial and fiscal dominance may be crucial to understand and plan for. These may both play out via financial market volatility or turbulence. There are many aspects I have chosen to not focus on, notably the housing market related channel. My assessment of household balance-sheets and net worth is far more benign than that of corporate and government balance-sheets. I have chosen also not to focus on the risk from globally coordinated rate hikes without a large economy that can act as a global stimulator of last resort. Happy to cover these in Q&A.

1. Oil prices have risen remarkably, even prior to the Russian invasion of Ukraine. The invasion appears to have taken prices into the territory of over \$100 p.b. that most considered to be in the right tail of the distribution; worse, the CBOE Crude Oil Volatility Index is now persistently over 50%, the recent Oil VIX peaks being 80% at the time of COVID outbreak and in the early days of invasion. Car prices, food prices, restaurant meal costs, wages – all seem to be rising at a pace not witnessed in recent decades. Hence, from a scenario analysis standpoint, a stagflationary outcome can't be ruled out. A particular concern is that high inflation, especially on energy costs, will hit hardest the lower income households which have the highest marginal propensity to consume.

At a recent presentation for the Markus Academy, Jim Hamilton summarized that oil-supply shocks of Nov 73, Nov 78, Oct 80 and Aug 90, ranging from 6-10% of global supply were associated with – and likely caused – 45-95% increase in fuel prices and recessions that followed either right away or within six months, boosting inflation by up to 2%, depressing consumer expectations, and spilling over to declines in auto production and employment. While energy security in the United States is higher now than in these prior episodes, inflation this time around was already broad-based prior to the most recent fuel price shock and monetary policy was already in ultra-accommodative phase.

The ability of monetary policy to engineer a soft landing if and when a likely recession hits may therefore be dependent on consumer expectations not having become far too pessimistic by then. Both from my experience in India as a central banker and from the recent academic studies for the US, household inflation expectations are mostly adaptive to past price observations and not sophisticated enough to separate supply shocks from demand shocks, a separation that seems hard in real time even if one is more sophisticated than the average household.

Viewed this way, quickly regaining some space in monetary policy to respond in a timely manner if and when the recession hits might be a necessary evil; it will likely help anchor household expectations of inflation and consumption to more manageable levels, and this would be an added collateral benefit along the way.

2. One key challenge with creating such monetary space lies in the transition. Here, things may be different than in the 70s.

Since the end of last year, equity markets, IG bond index and HY bond index have corrected respectively by around 13%, 16% and 8%. Corporate bonds trading at yields greater than 10% - a distress indicator used by many including my colleague, Ed Altman - has doubled from \$14 bln in Dec 2021 to over \$27 bln by end of April. VIX, while not at

global financial crisis or pandemic highs, is far above the normal-time average of around 15-20% p.a. Of these many datapoints, I wish to stress that the IG bond index has corrected by more than both stocks and notably the HY bond index, and that 16% decline for IG is already 2/3rd of its peak decline seen during the global financial crisis and the pandemic outbreak. One proximate explanation is that it has a greater duration of around 8 years compared to 4.5 years for HY bond index. Another explanation I wish to put on the table – based on my work with Ryan Banerjee, Matteo Crosignani, Tim Eisert and Renee Spigt – is the following.

In times of quantitative easing, which affects long end of the term structure the most, investors such as insurance companies and IG-focused managers pour heavily into the lowest-rated BBB-rated bonds within IG. This class of bonds – the so-called “prospective fallen angels” – has risen from around \$750 bln of outstanding in 2008-09 to now over \$2 trillion, growing faster than any other individual rating class; relative to other rating classes of bonds, both safer and riskier, these prospective fallen angels show worsening book and market leverage, and higher debt to EBITDA ratios (around 4 now compared to below 3 in 2009). While their interest coverage ratio seems manageable for now, many of these seem prime candidates for downgrades to junk status. If and when that happens, a repeat of March 2020 volatility in corporate bond markets can't be entirely ruled out. Over \$400 bln of BBB bonds got downgraded to junk then, some by multiple notches.

What might be the implications for now? Let us look at some quantities. Over 50% of issuance in 2020 was BBB-rated or lower and at tight spreads relative to historical levels; this now comprises over 80% of the overall corporate bond space. As scores of BBB bonds get downgraded to junk, these firms facing steeply higher costs of capital after falling off the cliff would likely cut back investment sharply, as seen in the work of Christian Blikle and Joao Santos for high debt to EBITDA firms. Such downgrades could also create a crowded investor space for high yield bonds, raising costs of capital steeply for these other firms too. Issuance activity seems heavily down since January, and given high uncertainty on interest-rate outlook over the medium term, bearish bets on IG and HY ETF puts are picking up in volumes as retail investors are allocating to IG and HY bonds less and less.

To cut a long story short, corporate America has leveraged steadily at its favorite rating – namely BBB – for over ten years and the tight credit spreads on such issuance pre-pandemic and post-April 2020 have now reversed, turning the credit cycle decisively. Some accidents on this front for leveraged or immediacy-providing intermediaries such

as hedge funds, debt funds, and possibly also significant corrections to some insurance company valuations, appear to be part of a likely scenario in near future.

3. Finally, will the rise in market volatility necessarily induce a flight for safety to the US Treasuries and soften the yield curve through a rise in their convenience yield?

Since the end of last year, Treasuries have widened substantially too in yield as more rate hikes are getting priced in; April of this year was a remarkable month in that a decline of greater than 5% in the stock market was accompanied by a greater than 2% decline in Treasuries, something that is the opposite of what happens in data typically. Why might this time be different? Correlations between stock and treasury returns over the past five decades – using some data I obtained from my colleague Toomas Laartis - provides some insight. During the stagflationary period of 70's as well as during the inflation-targeting period of 80's that followed, stock and treasury returns covaried positively for most part (average correlation being about +0.3); this pattern reversed gradually in the nineties, most dramatically after the South East Asian crisis (average correlation since then being about -0.3), implying that in past two decades, treasuries on average gained when the stock market corrected.

A key question then is whether stock and treasury correlation will switch to positive during the ongoing monetary tightening cycle as seen this past month and as witnessed during 70s and 80s. If it does, it would mean correlated losses for investors on the risky leg of their portfolios as well as on the safe leg, potentially inducing margin spirals at leveraged intermediaries, a generalized “dash for cash”, and drawing down of bank credit lines both by corporates and non-bank financial firms. Many central bank reserve managers who are holding Treasuries for safety are right now dealing both with external sector volatility and an erosion in the value of their safe asset holdings; they might look for switching into reserves over treasuries too. While all this is of course hypothetical, we did see this happen in March 2020. My general point is that stock-bond correlation might be worth tracking as a potential early warning signal for heightened financial investor losses and their demand for reserves, something that the Fed might have to factor in while deciding the pace at which it normalizes the size of its balance-sheet.

In summary, after some eclectic reading and peek at historical data, I concluded that while stagflationary impulses might be similar between now and the 70's, a key difference is that the corporate sector and government balance-sheet are far more leveraged; financial market turbulence stemming from this initial condition might be the key additional challenge for the monetary policy tightening to contend with this time around.