THE CASE FOR U.S EQUITY MARKETS TAPERING DOWN BY THE END OF 2021

20BSP435

F019736
Word Count:2289

Table of Contents

"U.S Equity markets will finish at all-time highs at the end of 2021"

Theoretical Framework and Overview:

In order to analyse the current progression of U.S equity markets and where they will finish within the next four months, key factors revolving around monetary policies enacted by the Federal Reserve will be used as a basis to establish the following argument: U.S Equity markets will not finish better than the unprecedented highs it has set so far this year, as it will begin to taper off from the effects of the expansionary policies passed after the crash of 2020. The theoretical frameworks upon which this paper will be based off are the Vector Autoregressive Models created by Willem Thorbecke (1997) and Christiano, Eichenbaum, and Evans (2005).

The Impacts of Monetary Policy on U.S Equity Markets:

After the market crash of 2020, the Federal Reserve had announced the use of expansionary monetary policies in their March press release, starting with repurchasing $500 billion in Treasury stock and lowering the Federal Fund Reserve Rate to 0.00%-0.25%[i]. Through open market operations the Fed increased the M0 monetary base considerably in the following months while simultaneously lowering the discount rate.

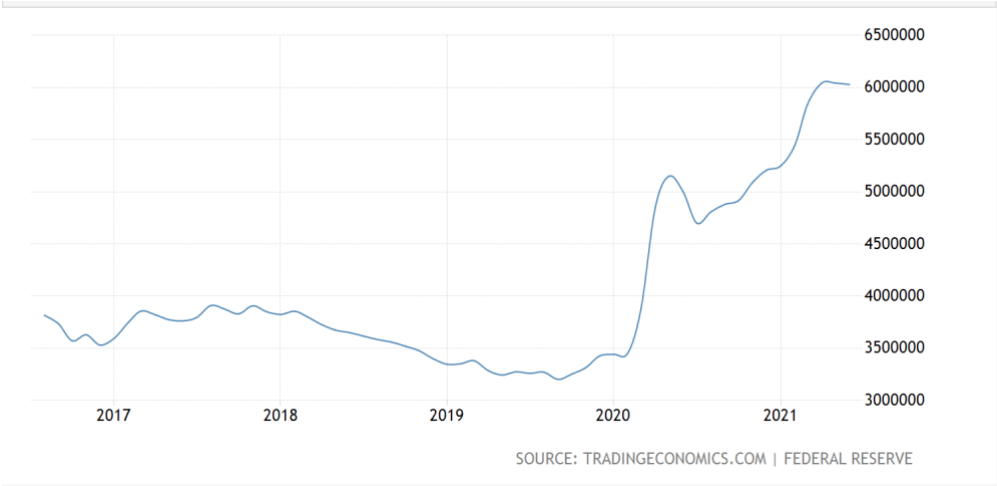


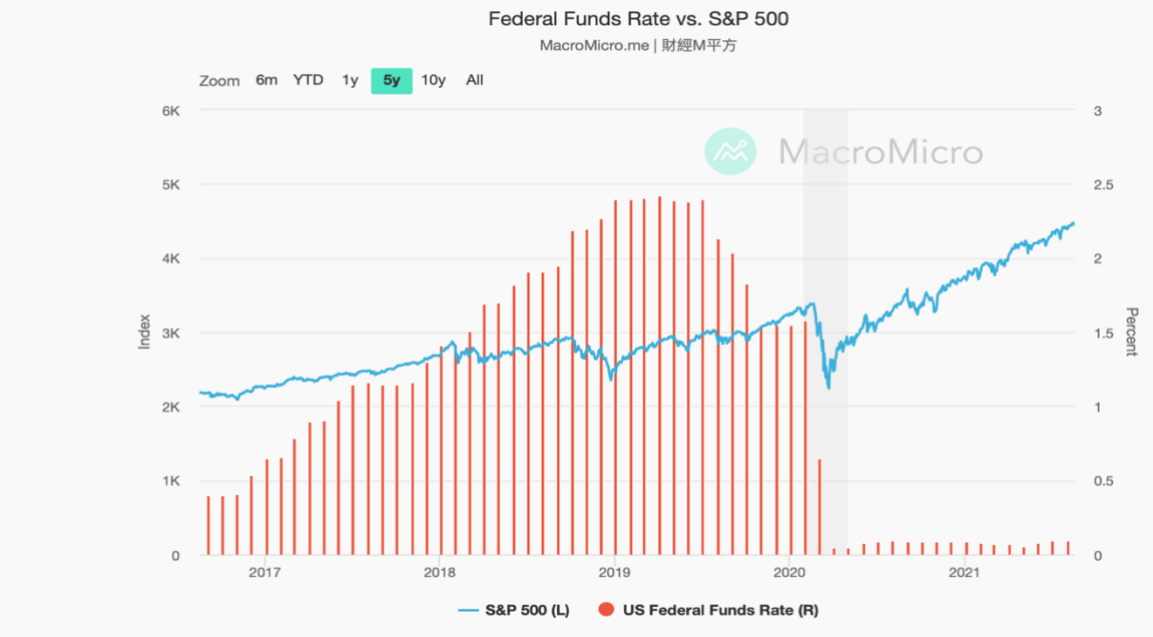
Figure 1: Increase in the Monetary Base

Through the framework provided by Willem Thorbecke, it can be interpreted that these sudden changes in monetary policy would create what are known as monetary shocks. Thorbecke's VAR model establishes quantifiable evidence to substantiate that monetary shocks impact stock prices as they are equal to the present value of their forecasted future

cash flows, and monetary policy changes create tangible changes to these future cash flows. With a decrease in interest rates, it is assumed that the present value of future cash flow increases in response. Based off the Boschen and Mills index, the VAR found that alterations in monetary policy by a single unit increase to the index resulted in a 10.4% increase to annual stock returns.

The Impacts of Policy Changes:

The impulse shock in stock returns, as a result of the monetary shock, can be observed through the graph plotting the S&P 500 against the Federal Funds Rate. After March of 2020 in which the Fed announced a shift in the FFR, the ex-post return growth of the S&P 500 is exponential. In fact, it has hit 4,480.26 with analysts at Goldman Sachs predicting an all-time high target of 4,700 before the end of the year, suggesting over 25% growth this year alone.



However, the issue with increasing the monetary base during the occurrence of extreme events such as the Covid-19 pandemic is the risk of falling into a liquidity trap. With fears of the delta variant increasing late into 2021, the probability of market participants increasing cash holdings and reducing the velocity of currency circulation appears to be growing rapidly. This is based on the precautionary motive of the liquidity preference theory, coupled with the announcements of the July 27th Federal Reserve meeting where it was made clear that FOMC members were willing to taper down the rate of asset purchases within the near future. Additionally, according to CNBC reports, “Futures contracts tied to the fed’s

benchmark interest rate are pricing in about […] a 69% chance of an increase the next month". This indicates that there is a large amount of speculation that the Fed plans to enact contractionary policies in the near future, which may create ex-ante changes to stock returns before actual changes are made. Speculation has driven the S&P 500 down 1.32% in the last 5 days, contingent to policy tightening and tapering that may occur later in the year.

The importance of establishing the impact monetary policy has on stock returns is that it elucidates the effect of monetary shocks on U.S equity markets. Furthermore, it establishes the strategy the Fed has put in place to recover the economy from the crash of 2020. It was evident early on that quantitative easing was their primary focus and as a result US equity markets have bounced back to set all-time highs throughout 2021. However, the target inflation rate has been passed by a significant margin and with the news of tapering asset purchases, a case for contractionary policies being implemented soon can be made. This has already caused ex-ante declines to begin while ex-post impacts will only be noticed after a few lags that could take weeks or even months. That being said, it is more than likely that the FOMC meeting in September will reveal contractionary policies being put in place via changes to the FFR and interest rates, to return US equity markets to pre-covid levels of price equilibrium.[1]

The Impacts of High Inflation:

The Federal Reserve targeted an inflation rate growth of 2.0% with 2.8% growth being the cut-off for considering tapering Quantitative Easing policies, according to James Knightly of the ING. As per the one-month PCE inflation rate data, this cut-off has been crossed as early as March of 2021, with the peak of inflation growth coming in April. According to Jim Paulsen, of the. Leuthold Group, the tapering had already begun around these peaks in April with noticeable impacts such as yield-curves flattening, sideways movement of commodities prices, and slight decreases in the market-based inflation measures. However, the ex-post impacts on equity markets will be observed after numerous lags which is most likely to be before the end of the year. Given that the news created ex-ante declines and that ex-post declines will be noticed shortly, it would be logical to forecast U.S

[1] This is based on the Christiano, Eichenbaum, and Evans (2005) model which is further explored in the next section

equity markets finishing marginally lower than the all-time highs they recorded earlier this year.

However, the current plan of the Federal Reserve, as of their last meeting, is to continue stimulating growth to achieve employment targets while keeping their interest rates consistent at the .25% mark. Therefore, artificially keeping interest rates stable while increasing the M0 monetary base is furthering inflation as the level of real output does not change with the price level and new level of equilibrium along the LRAS curve. It should be noted that M2 growth-according to Paulsen- has slowed down after this peak in April suggesting the impact of repurchasing bonds has started to diminish as well.

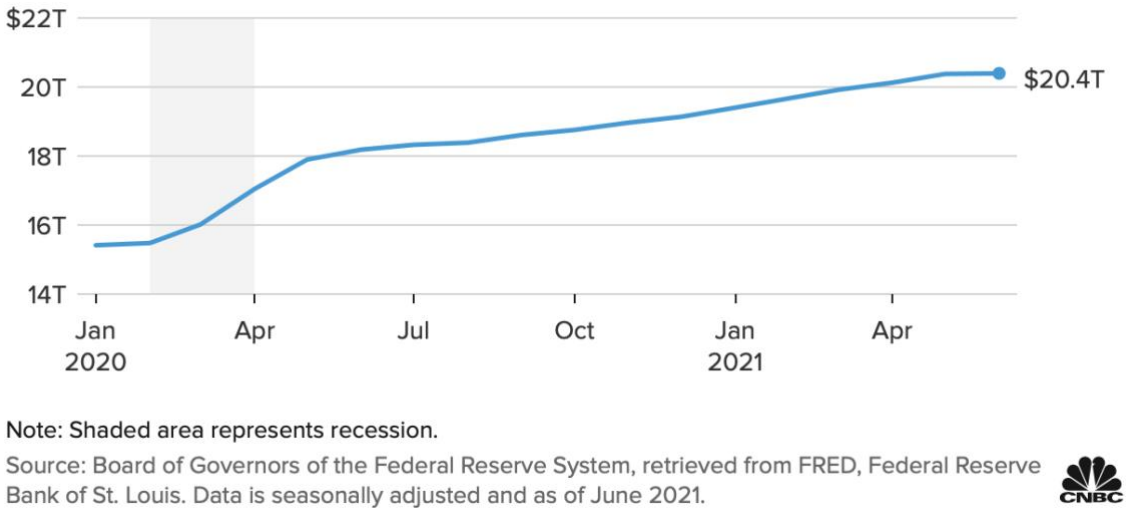


Figure 3 M2 Growth

It should be noted that Thorbecke theorized that during periods of high inflation, large value firms will continue to flourish while low market cap firms will begin to notice losses. As large composite indexes continue to perform excellently, they often don't reflect the performance of smaller cap firms which are unable to meet the criteria to be included in the index. The main index to reflect the internal health of the U.S equity market is the Russell 2000, which indexes the smallest 2000 stocks of its larger stock the Russell 3000. Both indexes have faced heavy losses with the Russell 2000 dropping 5.27% in the last 5 months after inflation peaked. This is more indicative of the strength of U.S equity markets while indexes like the S&P 500 are being carried by large tech stocks like Microsoft and Apple.

However, performance by sector is still evident in that Energy and Materials have noticed the biggest losses in the last quarter. Signs that production and output levels are beginning to decline while inflation continually rises hints that large market cap firms will also incur significant losses before the end of this year.

The Time Frame:

The inability of Thorbecke's VAR model to define the time frame in which these negative impulses would be observed is where the dynamic general equilibrium model of Christiano, Eichenbaum, and Evans will be used. They found that in response to expansionary shock the following outcomes occur[ii]:

"Output, consumption, and investment respond in a hump-shape fashion, peaking after about one and a half years and returning to pre-shock levels after about three years". Empirically, this observation holds true in 2021 after the expansionary shock implemented in March 2020. Roughly one and a half years later the peak of output, consumption, and investment, have been reached- and will gradually [2]decline to pre-shock levels only by early 2023. This furthers the argument for U.S equity markets finishing marginally lower than the all-time highs it has set this year as mid-August would signal the peak or "hump" described by the model, with the remaining few months to bear the initiation of a gradual decline. This also lines up with Paulsen's suggestion that tapering has already begun and that the peak of inflation has already passed, and now the effects will be observed after a lag of a few months. It also coincides with the recent trends found in the S&P 500 sectors (energy and manufacturing [output]) incurring losses for roughly three months now.

The next outcome predicted by the model was that interest rates would fall for about a year. Given that the Federal Reserve has maintained the discount rate at .25% from March of last year, this also holds true. Especially when considering that the Fed will likely make policy changes regarding the discount rate by the September FOMC meeting.

[2] The decline of U.S equity markets won't be drastic as the Fed will looked to avoid repeats of the 2013 taper tantrum caused by Bernanke.

Another outcome predicted by the model was that "real profits[iii], real wages, and labour productivity rise while the growth rate of money[iv] rises immediately". This was discernibly true after the initial expansionary shocks were felt by a lag of a few months.

What it Means:

The implications of this model for U.S equity markets is that by all indications the market has peaked and reached its all-time highs for the year already. Empirically the market is seeing slow decreases to the DJIA, NASDAQ, and S&P500, all losing roughly 1.5% or more in the last week. As smaller firms continue to face hefty losses and large cap firms generate better returns, the markets will only decrease incrementally. Once the monetary impulses create ex-post losses for larger cap firms, then the market will appear to have incurred drastic losses. However, that point in time may not occur until very late into 2021 or even early into 2022, as the Federal Reserve is adamant to reach their target employment rate. Nevertheless, the losses of small cap firms is enough to drag U.S equity markets below the all-time highs achieved so far this year.

The Global Economy:

One very important deciding factor on where U.S equity markets will finish this year is the overall performance of the global markets. Due to the high level of interlinking and financial contagion, it's evident that heteroskedasticity is present to an extent where the performance of markets such as China will influence the performance of the U.S. This is in part due to the listing of many international stocks on major U.S stock exchanges like Infosys, Alibaba and many others. Currently, world indices indicate that Chinese composite indices like the Hang Seng China Enterprises Index or the Taiwan Weighted Index have incurred major losses in the preceding weeks. This comes as a result of rising tensions between China and Taiwan after military demonstrations were conducted in proximity to Taiwanese borders. The U.S has guaranteed to provide defence for Taiwan in the circumstance that they are attacked, and the USA also heavily relies on Taiwanese semiconductors and even more so now, considering that the top performing stocks at the moment are from the Tech sector. The U.S clearly has vested interests in Taiwan as they also concluded a deal with them to sell $750 billion worth of self-propelled Howitzers. The issue arises where the energy sector has started to underperform with the price of crude oil skyrocketing. While more companies are looking to shift to renewable energy, China has

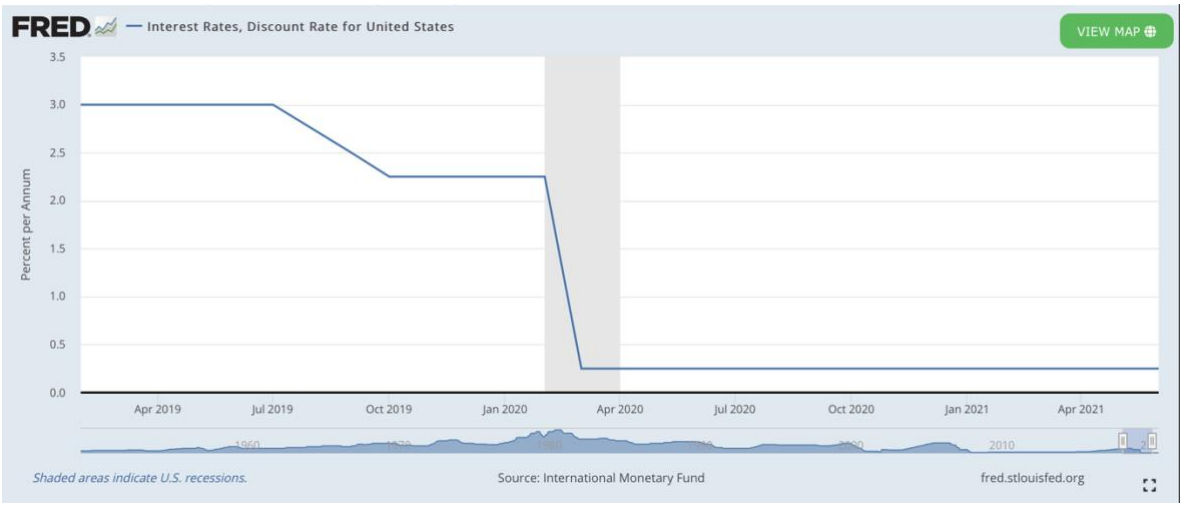
almost monopolized the production of most forms of renewable energy, putting U.S markets in a tense position.

In addition, the dollar appears to increase in value during times of economic down turn but decreases in value during recovery phases. This is negative news in a global context as the value of the dollar has continued to drop from August of last year. When the purchasing power of the dollar decreases, U.S based manufacturing tends to decline as well, in fact the correlation coefficient between the USDX and the Nasdaq is nearly .4, indicating a marginal level of association. Another downside to the tensions between China and the U.S is the interlinking of import and export trade. While the dollar devalues the cost of import goes up, causing lower returns on equities. Additionally, according to Forbes, while the U.S increased imports by roughly 34%, only 6.9% of it was accounted for from China. Increased tensions brought on by support for Taiwan would appear to create additional strain on trade relations. The impact of these tensions would be minimal losses to the renewable energy sector, but overall Taiwan holds the largest influence on U.S equity markets at the moment. With a reliance for the production of semiconductors for its Tech sector -which is currently carrying U.S equity markets through the losses incurred by lower cap firms of other sectors- this relationship appears to be much more crucial. The impacts of more conflict later in the year is still unpredictable.

Citations:

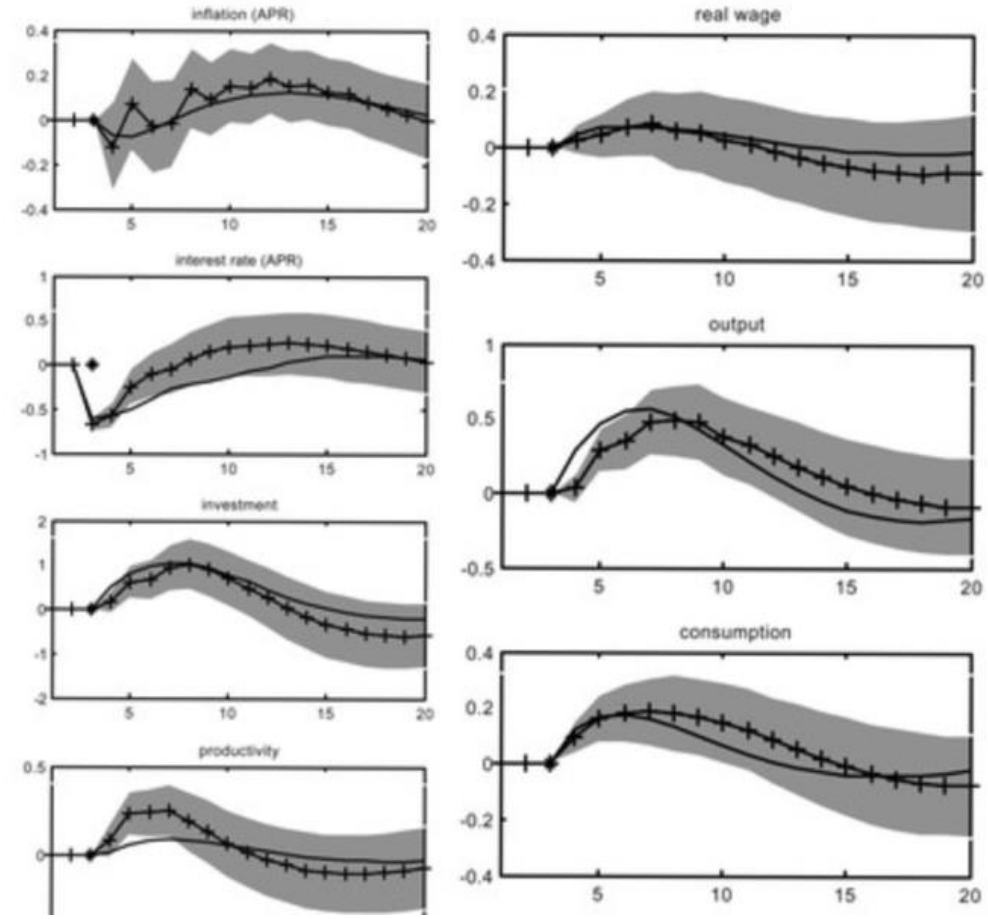
- FRED Dallas, 2021. Interest rates, discount rate for United States. *FRED*. Available at: https://fred.stlouisfed.org/series/INTDSRUSM193N [Accessed August 1, 2021].
- Staff, R., 2021. [online] Available at: <https://www.reuters.com/article/us-goldmansachs-markets-research/sp-500-> [Accessed 14 August 2021].
- THORBECKE, W.I.L.L.E.M., 1997. On stock market returns and monetary policy. *The Journal of Finance*, 52(2), pp.635–654.
- MARSHALL, D.A.V.I.D.A., 1992. Inflation and asset returns in a monetary economy. *The Journal of Finance*, 47(4), pp.1315–1342.
- Christiano, L.J., Eichenbaum, M. & Evans, C.L., 2005. Nominal rigidities and the dynamic effects of a shock to monetary policy. *Journal of Political Economy*, 113(1), pp.1–45.
- Galaoucho, K., 2021. *Bloomberg*. [online] Bloomberg.com. Available at: <https://www.bloomberg.com/news/articles/2021-08-05/goldman-becomes-s-p-500-s-biggest-bull-after-a-target-upgrade> [Accessed 19 August 2021].
- JeffCoxCNBCcom, 2021. Markets already have started adjusting to the FED'S expected policy tightening. *CNBC*. Available at: https://www.cnbc.com/2021/08/18/markets-are-adjusting-to-the-feds-expected-policy-tightening.html [Accessed August 20, 2021].
- Sarkar, S., 2021. Fed's core PCE inflation concern threshold is 2.8% - economists. *Reuters*. Available at: https://www.reuters.com/business/feds-core-pce-inflation-concern-threshold-is-28-economists-2021-05-14/ [Accessed August 20, 2021].
- Dallas FED Trimmed mean pce inflation rate. *Dallasfed.org*. Available at: https://www.dallasfed.org/research/pce [Accessed August 20, 2021].
- Ezrati, M., 2021. Though few seem willing to admit it, u.s.-china trade is improving. *Forbes*. Available at: https://www.forbes.com/sites/miltonezrati/2021/06/15/though-few-seem-willing-to-admit-it-us-china-trade-is-improving/?sh=3a1392232f5a [Accessed August 20, 2021].

- Anon, 2021. Taiwan: The biggest threat to financial markets. - *Insurance & Investing Insights*. Available at: https://www.iansbnr.com/taiwan-the-biggest-threat-to-financial-markets/ [Accessed August 20, 2021].

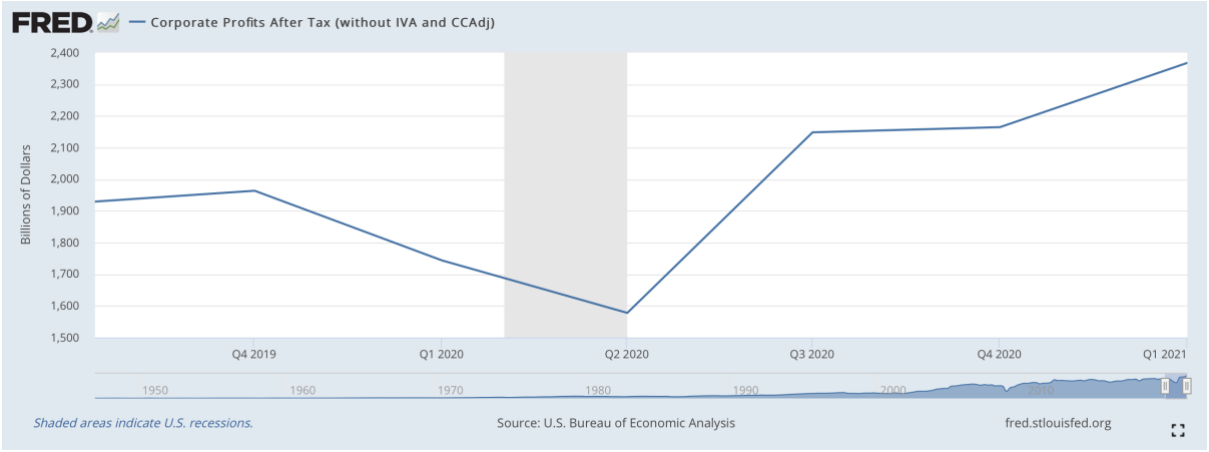


i

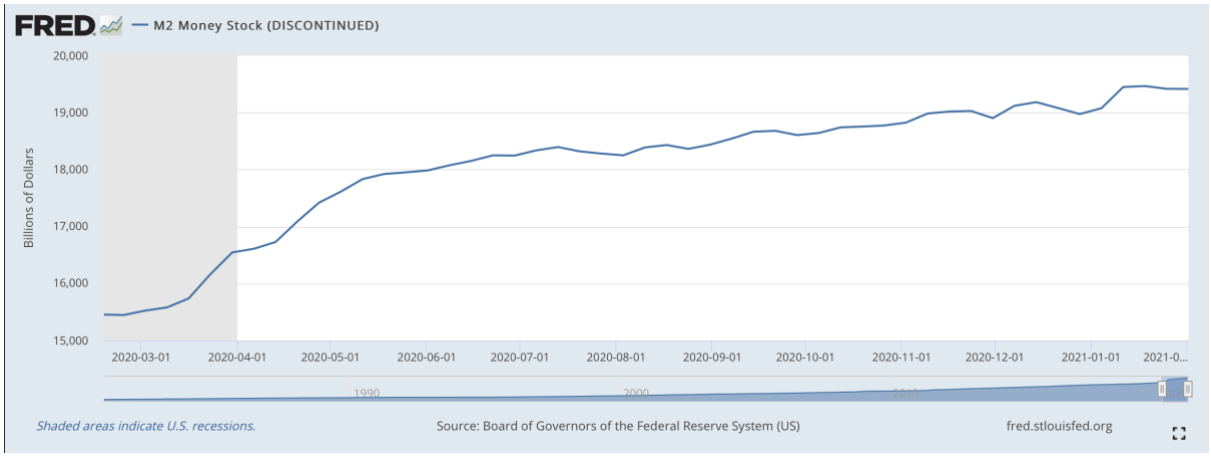
ii


inflation (APR)
real wage
interest rate (APR)
output
investment
consumption
productivity

iii


FRED
Corporate Profits After Tax (without IVA and CCAdj)
Billions of Dollars
2,400
2,300
2,200
2,100
2,000
1,900
1,800
1,700
1,600
1,500
Q4 2019
Q1 2020
Q2 2020
Q3 2020
Q4 2020
Q1 2021
1950
1960
1970
1980
1990
2000
2010
Shaded areas indicate U.S. recessions.
Source: U.S. Bureau of Economic Analysis
fred.stlouisfed.org

iv


FRED
M2 Money Stock (DISCONTINUED)
Billions of Dollars
20,000
19,000
18,000
17,000
16,000
15,000
2020-03-01
2020-04-01
2020-05-01
2020-06-01
2020-07-01
2020-08-01
2020-09-01
2020-10-01
2020-11-01
2020-12-01
2021-01-01
1990
2000
Shaded areas indicate U.S. recessions.
Source: Board of Governors of the Federal Reserve System (US)
fred.stlouisfed.org