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Inflation in the US During Covid-19 Crisis: Cause, Current Status, and Moving Forward

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ABSTRACT

This paper makes a through-out interpretation of the inflation hikes witnessed in the United States during the Covid-19 pandemic crisis. This paper incorporated economic theories and data in explaining the economic phenomenon during the pandemic crisis and predicting the future trend of inflation. The analysis of the cause of the inflation included the relationship of inflation with the domestic demand and the world supply. An interpretation of the current moves made by the central bank and the government, including the repo rate and the government messages, is provided. The examination indicates that changes in the repo rate might have been effective in contracting the creation of new loans, but the effectiveness of the government talks remained ungrounded. This paper also highlights the pros and cons of the current inflation level throughout this paper. The prediction of the future trend of inflation acknowledges various possibilities, including the recovery of the global supply, the change in foreign trade policies, and the opinion of the market. As the situation of the Covid crisis is still evolving, I can hardly make a precise call on the future trend but analyze and acknowledge all the possible scenarios listed, but the analysis may provide a comprehensive and critical assessment of the current inflation in the US and may reveal the critical conditions on which the future trend of inflation depends.

Keywords: *Inflation, Covid-19, the US, Interest rates, global supply chain*

1. INTRODUCTION

This paper sets out to perform an analysis of inflation in the US in terms of its causes, current status, and future trend. Though a great amount of scholarly attention has been gathered on the topic of the coronavirus crisis and its connections to the inflation witnessed in the US, opinions about the future trend of inflation have yet been divergent. Moreover, while the topic of inflation during the Covid crisis may have been well explained by previous research, a systematically arranged interpretation of this event, from the causes to the current and the future trends, may have been insufficient. Thus, I aim to provide a through-out interpretation of inflation; moreover, I aim not to make a conclusive call on the future trend of inflation, but to propose and acknowledge the factors that moves the future trend of inflation. This paper may be value-added for addressing certain economic and monetary challenges in the presence and for shedding light on the possible directions in assessing the future inflation status.

This paper has focused on the US, as it is the largest economy in the world; its central bank, the Federal Reserve (Fed), may be seen as the center of other central banks around the world because of the dominant position that the USD holds in the global economic and financial system. Since the domestic inflation in the US can influence factors, such as the monetary policies, the value of the USD, etc., that have crucial meanings to the countries that use the USD as their reserve currency. Moreover, some factors affecting the US economy or financial system might have also been evident in other countries. Thus, I argue that understanding and projecting the inflation in the US can be an important step in understanding the economic challenges and financial risks that the Covid-19 crisis brought to the world.

Previous research may have focused on analyzing the components of inflation and changes in its intrinsic dynamics, but there might have been insufficient interpretation on the causes and the current status of the inflation. Blundell, Griffith, Levell, and O'Connell [12] proposed possible changes in the component weights of the Consumer Price Index (CPI) during the Covid crisis.

It suggests a possible misrepresentation of the actual inflation level with the current measure of CPI. Moreover, similar conclusions were proposed by Cavallo [13], claiming that the actual inflation level, adapting the "Covid basket" with different component weight assignments, would be higher than the official CPI. Hottman and Monarch [17] found strong evidence supporting a disparity between the proportions of import price inflation that low-income group experiences and high-income groups experience. This may have suggested that the current CPI may have been inadequate in representing a consistent and accurate living standard across all income groups. Though I believe that understanding the dynamics and accuracy of the inflation measurements is a crucial aspect of the current economic trend, yet, I also emphasize the value of an analysis of the causes and current status of inflation, as it can enhance the overall understanding of inflation during the Covid crisis and help us navigate the possible scenarios regarding the inflation trend in the future.

The main body of this paper is divided into three sections: In the first section, the causes of inflation in the US are discussed; in the second section, the current status of inflation in the US is interpreted; in the third section, an analysis of the possible scenarios regarding the inflation in the future is presented.

2. CAUSES OF THE INFLATION IN THE US

First, in this section causes of the current inflation level have been assessed from the factors that influenced the supply of goods and services during the crisis:

(1) Global supply: Frist, during the crisis, the lockdown policies had largely damaged the global supply chain. The upstream, midstream, and downstream of an industry can be located in different countries. The Covid shutdowns in one nation may be able to impair the functioning of an entire global supply chain.

Second, disruptions in the commodity market also contributed to the decrease in global supply. As can be witnessed from Figure 1, the commodity market had stayed stable during the previous years but had seen fast increases during the Covid crisis time (though the price saw a sharp decline at the beginning of Covid due to a large decrease in demand).

This instability of the commodity market would have posed price risks for the suppliers around the world, especially the Small and Medium-sized Enterprises (SMEs) because their trade volumes are usually not large enough for them to hedge price risks like large firms do. According to Kalemli-Ozcan, Gourinchas, Penciakova [19], SMEs' failure rate during the Covid crisis was substantially higher than other business categories, and this result is empirical both across sectors and across countries. Thus, a decrease in supply from the SMEs would contribute to the decrease in the world export, and a sharp decline in world export (Refer to Figure 2) would have contributed to the rising inflation in the US.

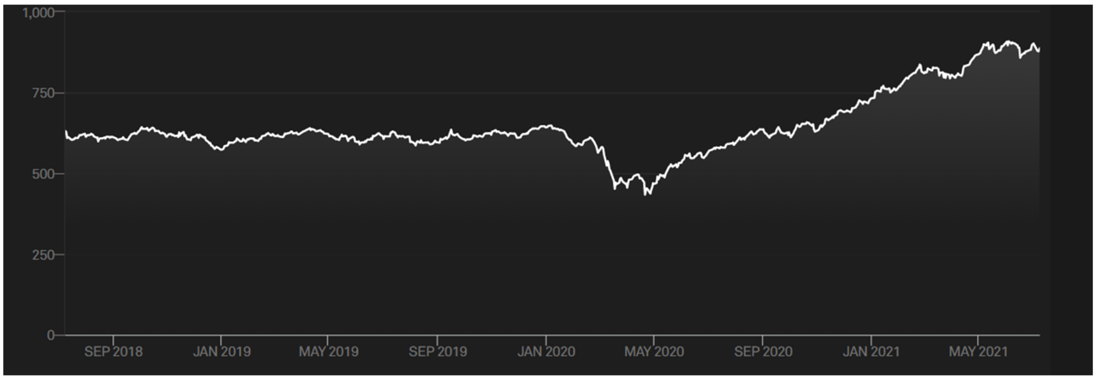

Figure 1 Commodity Index [1]

Adapted from "Dow Jones Commodity Index", by S&P Dow Jones Indices. 2021, S&P Dow Jones Indices. Retrieved on July 12, 2021, from https://www.spglobal.com/spdji/en/indices/commodities/dow-jones-commodity-index/#overview

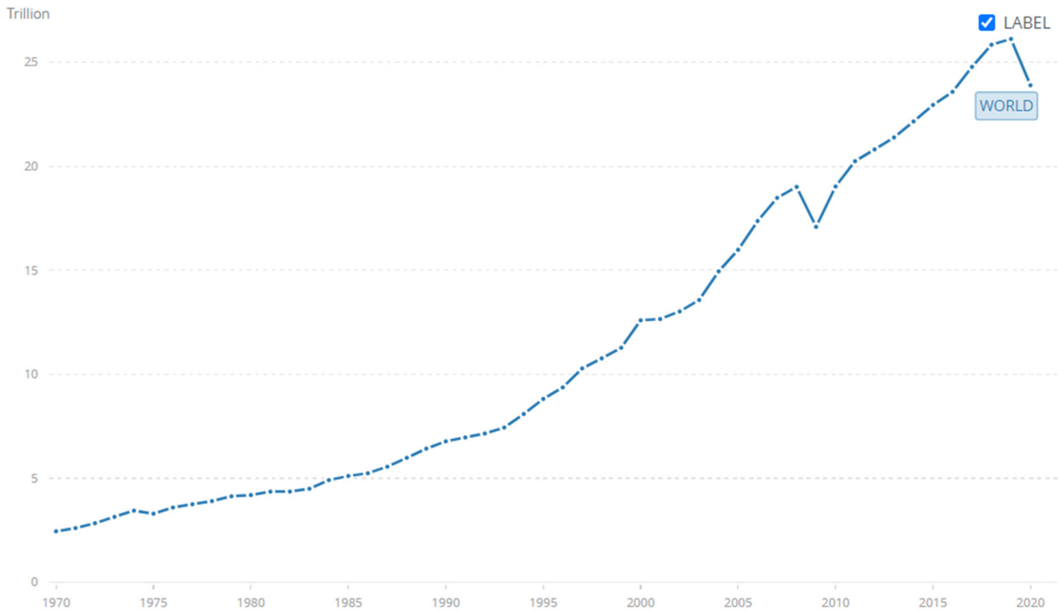

Figure 2 World Export in US$ [2]

Adapted from "Exports of goods and services (constant 2010 US$)", by The World Bank & OECD National Accounts. 2021, The World Bank. Retrieved on July 14, 2021, from https://data.worldbank.org/indicator/NE.EXP.GNFS.KD

(2) Foreign trade policy and foreign currency: Major trade partners' policies and currencies can have a large influence on domestic inflation in the US. For example, China, as a major steel exporter in the world, had cut the export tax rebate on its steel exports, which means that steel exporters would have to pay more for taxes. Thus, the suppliers in China may either increase their export price or reduce their supply of steel. Foreign policies as such would accelerate inflation in the US. Moreover, the Chinese government had increased the level of liberalization in the financial sector, the RMB was able to appreciate against the USD under high foreign demand for Chinese goods and a surge of foreign capital entering China during the coronavirus crisis. Such appreciation of the RMB would have made the imports from China more expensive to the US households, thus give upward pressure to the inflation level in the US.

(3) Certain regulations in some sectors: For some sectors of the economy, such as the food industry. According to Deconinck, Avery, and Jackson [15], the restriction on air freights might have affected the high-value perishable foods. Thus, we may witness decreased supply of those categories of foods. Moreover, the new inspections for imported foods (especially the cold-chain foods because there were cases of Covid virus tested out from them) would have increased the friction for cross-border trade. Hobbs [16] has highlighted the importance of maintaining a frictionless trade in ensuring the global supply chain. Similar situations were faced by other industries as well, and such new regulations would decrease the import supply, thus making the price inflation worse for those industries.

The causes of the current inflation level have also been assessed from the factors that influenced the demand for goods and services during the crisis:

(1) Fiscal policy: The fiscal stimulus packages carried out in the US would have boosted the disposable income of the households, thus being conducive to the recovery of the demand.

(2) Commodity market: As large infrastructure building plans are announced in the US, it had not only increased the demand and expected demand for commodities but also increased the expectation on the price of commodities and gave rise to speculations in the commodity market. The rise in price for most commodities had drastically increased the cost of manufacturing both in the US domestically and around the world, thus increased the prices of goods.

(3) Borrowing: The convenience of low interest rates and high inflation might have promoted the increase in borrowing (Refer to Figure 9). Since the borrowers usually use a larger proportion of their income on spending, I may argue that increases in borrowing may support the increase in the demand trend and thus the inflation growth.

(4) Inflation expectation: If people expect the price level to increase substantially in the future, they are likely to make purchases sooner than later. Thus, increasing

inflation expectation (Refer to Figure 3) would have influenced the nominal inflation level.

Figure 3 5-Year, 5-Year Forward Inflation Expectation Rate, USA [3]

Adapted from "5-Year, 5-Year Forward Inflation Expectation Rate", by U.S. Office of Management and Budget and Federal Reserve Bank of St. Louis. 2021, FRED, Federal Reserve Bank of St. Louis. Retrieved on July 17, 2021, from https://fred.stlouisfed.org/series/T5YIFR

3. CURRENT STATUS

In this section, I go from examining the difficulties in managing the current inflation level, to the policies being proceeded currently, and lastly, I evaluate the current inflation with critical thinking and address both the potential risks and the upsides of the current inflation.

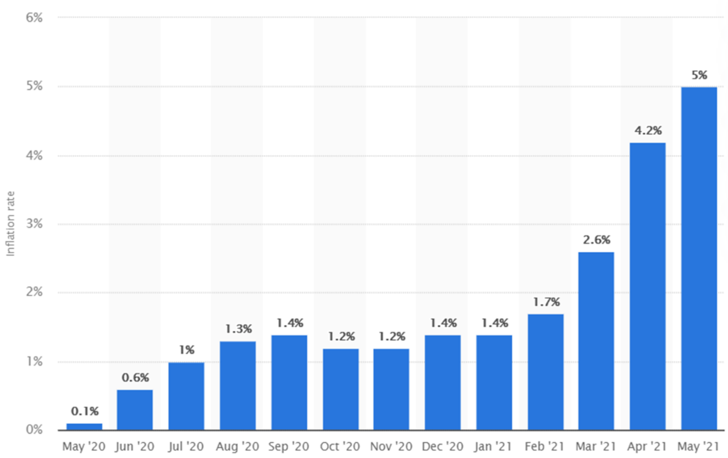

Figure 4 Percentage Change of Consumer Price Index, USA [4]

Adapted from "Monthly 12-month inflation rate in the United States from May 2020 to May 2021", by Statista. 2021, Statista. Retrieved on July 8, 2021, from https://www.statista.com/statistics/273418/unadjusted-monthly-inflation-rate-in-the-us/

Currently, inflation (as measured in the CPI) in the US has risen to 5% [4]. The US government and the Fed have taken policies to try to temper this inflation hike. First, the policymakers may be facing a trade-off under a high-inflation context: raising the federal funds rate may be able to halt the inflation spikes but it would bring large uncertainty to the stock market and the borrowers, yet, not raising the federal funds rate may leave the inflation rising and damage the credibility of the USD and the USD denominated assets. Thus, more temperate methods might have been taken to alleviate the hikes in inflation:

First, the officials had sent out messages to manage people's expectations on the price level and to reduce the money supply in the market; the officials had commented about inflation being "transitory", they had also claimed for tightening in the future. Some might have considered the governments' messages as a tightening tool to reduce the loans made by the commercial banks and to reduce the increases in the inflation expectation, but such messages may not have worked as expected.

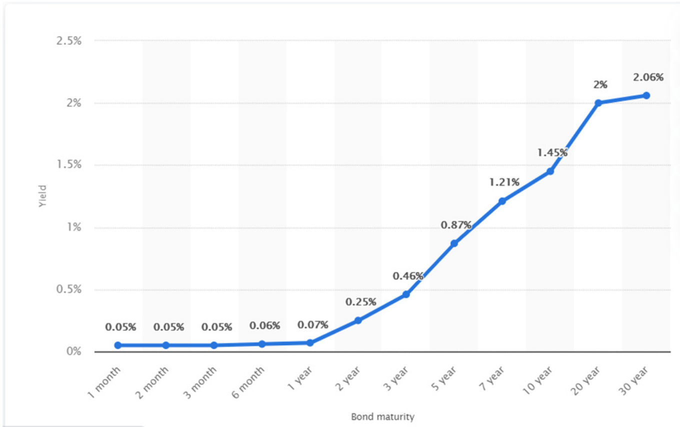

Figure 5 Treasury Yield Curve, USA [5]

Adapted from "Treasury yield curve in the United States as of June 2021", by Statista. 2021, Statista. Retrieved on July 3, 2021, from https://www.statista.com/statistics/1058454/yield-curve-usa/

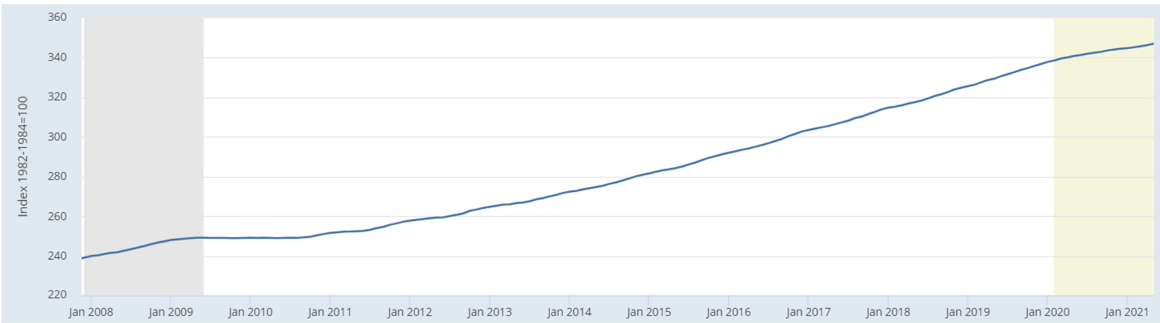

Figure 6 Rent Index, USA [6]

Adapted from "Consumer Price Index for All Urban Consumers: Rent of Primary Residence in U.S. City Average", by U.S. Bureau of Labor Statistics. 2021, FRED, Federal Reserve Bank of St. Louis. Retrieved on July 14, 2021, from https://fred.stlouisfed.org/series/CUUR0000SEHA

According to expectation theory, since the yield curve in the US has demonstrated a flat trend within the 1 year period (Refer to Figure 5), it can be argued that people expect no substantial change in yield is likely to happen within 1 year period. Moreover, people's expectations on the price levels may be rationalized if some prices have already increased for the longer term; for example, contractual prices had increased. As can be observed from Figure 6, the sticky prices in the US such as the rent may have already increased during the inflation hikes. Such change in long-term prices may have impacts on the duration of the inflation and people's expectation of the price level. If people's expectations on the interest rates and the inflation had not been influenced by the announcements of the officials, they may not reduce borrowing and spending, thus a future tightening may cause great turbulence in the market.

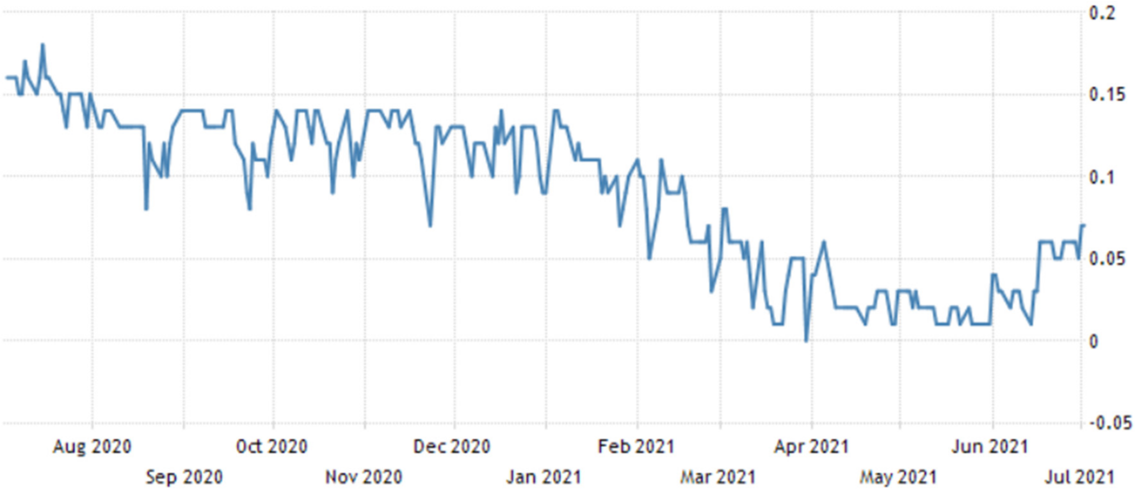

Figure 7 Overnight Repo Rate, USA [7]

Adapted from "United States Overnight Repo Rate", by Trading Economics. 2021, Trading Economics. Retrieved on July 3, 2021, from https://tradingeconomics.com/united-states/repo-rate

Second, another temperate method that the officials had taken to alleviate the money supply in the market is increasing the repo rate. An increase in the repo rate can be observed in Figure 7. The increase in the repo rate would likely help curtail the number of loans the commercial banks borrow from the Fed, this would work to reduce the loans the commercial banks make to borrowers. It is possible that such alleviation strategies can work to stabilize the money circulating in the system and improve the inflation level without largely damaging the financial market.

Though the current hikes in the inflation level might have entailed drawbacks over the living standards (Refer to the literature review), the risks in the stock market, and the stability of the USD's value, I would still like to highlight some of the potential upsides of the current inflation:

Figure 8 Total Business: Inventories to Sales Ratio, USA [8]

Adapted from "Total Business: Inventories to Sales Ratio", by U.S. Census Bureau. 2021, FRED, Federal Reserve Bank of St. Louis. Retrieved on July 17, 2021, from https://fred.stlouisfed.org/series/ISRATIO

(1) There might be concerns over whether the households had overspent. As can be seen from Figure 8, a sharp decline in the inventory to sales ratio, still decreasing to reach a historic low, may have indicated an overheated demand. If so, we may face deflation in the future where the households may have a stronger desire for saving and less for spending. The current inflation level of 5% may be a much-needed cushion to alleviate any possible deflation in the future.

Figure 9 Private Sector Debt as Percentage of GDP, USA [9]

Adapted from "Household Debt to GDP for the United States", by International Monetary Fund. 2021, FRED, Federal Reserve Bank of St. Louis. Retrieved on July 13, 2021, from https://fred.stlouisfed.org/series/HDTGPDUSQ163N

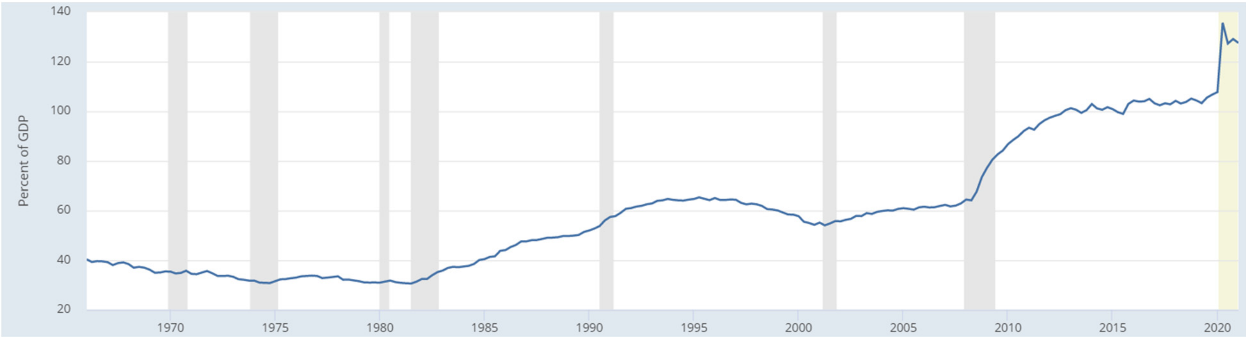

Figure 10 Public Sector Debt as Percentage of GDP, USA [10]

Adapted from "Federal Debt: Total Public Debt as Percent of Gross Domestic Product", by U.S. Office of Management and Budget and Federal Reserve Bank of St. Louis. 2021, FRED, Federal Reserve Bank of St. Louis. Retrieved on July 13, 2021, from https://fred.stlouisfed.org/series/GFDEGDQ188S

(2) High inflation levels may have largely benefitted borrowers in the private sector and the public sector. As can be seen from Figures 9 and 10, the public sector debt as a percentage of GDP had drastically increased during the crisis. Although the private sector had been in a de-leveraging phase since the subprime crisis, it has seen a radical increase during the Covid crisis. I believe the current inflation level of 5% and the current low interest rates policy would largely alleviate the financial pressure of the borrowers in the US. However, as I mentioned in the previous section, such convenience of low interest rates and high inflation might have promoted the borrowing, and increases in borrowing may support the robust demand trend and thus the inflation growth.

I have interpreted the current moves that the government made to manage the inflation level and the difficulties in raising rates to control the inflation level. However, the analysis also indicates that the current inflation may have entailed certain virtues. The reasoning for whether the current inflation needs to be strictly tamed is provided in the next section.

4. MOVING FORWARD

According to the causes and the current status of inflation in the US, I would like to present some predictions of the future directions of inflation. If some of the factors that caused the inflation are to be changed in the future, then we may witness changes in the trend of inflation. Therefore, some of the following predictions are made based on the causes of the inflation:

(1) The supply around the world: As the Covid crisis is still developing, the decay of the supply around the world is elongated by new variants of the coronavirus, many major exporting countries are still floundering in this pandemic crisis. The inflation in the US may not get alleviated if the disruption in the global supply is here to stay.

(2) Major trading partners' policies: We may see alleviation in the inflation level in the US if major trade partners of the US, for example, China, carry out favorable trading policies such as reducing the exporting tax, stabilize the RMB's value, etc. However, I argue that it may not be likely to see China doing so in the future because China also faces certain difficulties in making such decisions: If they are to increase the money supply alongside the Fed and intervene to depreciate the RMB, the domestic market would face the risk of inflation, and citizens' assets would be depreciated. Moreover, China had reached the turning point in its labor supply: according to Cui, Meng, and Lu's (2018) previous research about China's labor market, wage increases and

labor shortages in the urban areas were observed in China; it means the current labor force and labor cost in China may not be able to achieve the previous low price level again with or without the occurrence of the Covid crisis. If we do not witness policy changes from the major trading partners of the US and we do not witness a fast recovering world supply, the inflation in the US may hardly get alleviated in the future.

From these two points above, I want to highlight the importance of the recovery of the global supply in managing the inflation level in the US; and the recovery of the global supply strongly depends on the regional cooperation and the global value chain (Kimura, Thangavelu, Shandre, Narjoko, & Findlay 2020) [20]. Though I may not be able to make a precise call on exactly when the global supply chain would recover because the Covid crisis is still evolving, I may argue that the increasing trend of inflation may get alleviated if countries can enhance the regional corporation in vaccines and other procedures such as cross-border transportation and quarantine policies, etc. Regional corporations as such may benefit the existing supply chain.

However, whether some aspects of the global supply chain have changed for the longer term remains debatable, for example, China's labor supply. Therefore, I also want to highlight the fact that such changes may not be because of the Covid crisis, and they may not change back as the Covid crisis passes. What Cui, Meng, and Lu [14] proposed may also indicate that the inflation growth in the US may not be entirely due to the Covid crisis.

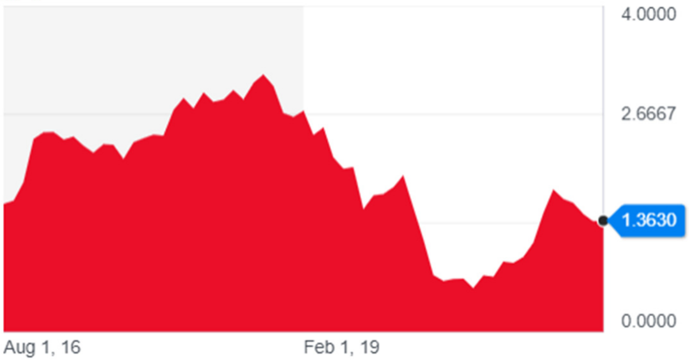

Figure 11 10-year Treasury Yield, USA [11]

Adapted from "Treasury Yield 10 Years (^TNX)", by Yahoo Finance. 2021, Yahoo. Retrieved on July 13, 2021, from https://finance.yahoo.com/quote/%5ETNX/

To answer the question from the last section, whether a tightening will be needed soon would be depending on not only the policymakers' opinions but also the opinion of the market. For example, the current 5% inflation may be a historical high, but it may still not be high enough to pose a substantial threat to the credibility of the USD as a quality investment and a safe haven currency. According to the 10-year treasury yield in the US (Refer to Figure 11), we can observe a growth in the 10-year yield happened from January 2021 to March 2021. As Joshua [18] reported in March 2021, a rising inflation expectation and an expectation that the Fed may need to tighten shortly have triggered a sell-off of government bonds. However, we can observe a reversed trend later on in Figure 11: it has stayed a decreasing trend ever since the peak in March. A decreasing yield in 10-years Treasury yield may indicate an increasing demand for the US treasury bonds, thus may be interpreted as a sign of confidence in the US economy and the future inflation trend.

Since the US treasury bond is a safe asset, we cannot be sure whether the decreasing trend of 10-years treasury yield indicated that people were mostly buying in to avoid the risks or indicated that people were mostly confident in the future trend. The current interpretations remain one of the possible assumptions for now, and more data needs to be considered and analyzed in making a more precise call on the incentives of the treasury buyers.

The current inflation level may be a historical number, but we are not yet sure if it is at an emergent level. According to the analysis, there may still be room for inflation to grow higher in the future, it depends on the opinions of the market and the officials. The analysis also argues for the importance of global supply and foreign trade policy in alleviating inflation in the future.

5. CONCLUSION

This paper assessed the current inflation level in the US from three perspectives: the cause, the current status, and the future trajectory. I addressed the current moves made by the officials in managing the inflation level, and the implications of the inflation; the pros and cons of the current inflation level to the economy and society are highlighted. Based on the cause analysis, salient factors in determining the future trend of inflation are also pointed out, such factors are the global supply chain, foreign trade policies, and market opinions. The results may have provided an internally consistent review of the current inflation level in the US and may have shed light on the factors that can be considered in predicting the future trend of inflation.

Yet, the definition of inflation in this paper may have stayed on a general level, I have not broken down and delved into the components of the CPI basket to make an analysis of the trends of the components. In future research, attempts may be expanded to more aspects of inflation rather than keeping it as CPI alone.

AUTHORS' CONTRIBUTIONS

This paper is independently accomplished by the author.

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