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COVID MONETARY EXPANSION: ARE BUSINESS PROFITS TO BE BLAMED FOR THE INFLATION IN 2022?

Abstract. Recent increases in inflation rates around the world has lead to many discussions on the causes of such rapid adjustments, some suggesting that higher profits are responsible driving force behind inflation. Here we will focus on the United States case and demonstrate why quantity theory of money is relevant to explain what has been going on with inflation after 2020 rather than profit based theory of inflation. First section introduces the argument. Second section restates quantity theory of money with relevance to the empirical literature. Third section shows why quantity theory despite some suggestions works to explain the current levels of inflation. Fourth section notices why increases in nominal profits during inflation are part of the natural adjustment path. Last section offers concluding comments.

Keywords: quantity theory of money, inflation, covid-19, profits.

Introduction

During every high inflation there are dissenting views suggesting that majority of the guilt should go to the big business and overall greed for profit. Recently the voices raising such arguments were present from the Marxist Richard Wolff in the media, but also popular press overall pointing out for example to apparent oligopolies in some sectors. Such greed-based inflation theory has a simple explanation for the present situation. Since prices are rising, they had to be raised by someone for their own benefit, so greed is supposed to be the main inflationary factor. Unfortunately such an approach not only ignores the complexity of the economic system, but furthermore it fails completely in offering even a simplified inflationary story. After all, the sellers of goods and services do various things out of greed: they can also keep prices stable because of greed. They can also reduce them out of greed. Henceforth the greed driving factors fails miserably in explaining

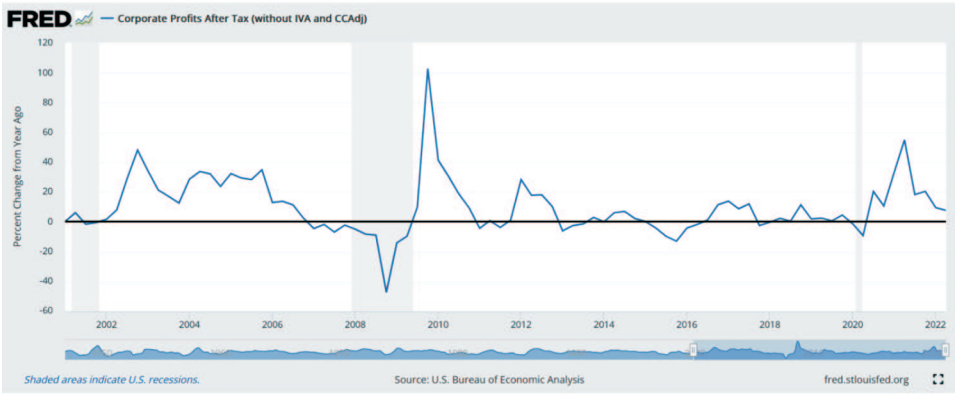
anything other than human adaptation to rising prices, since greed can apparently raise prices, keep them stable or even lower them.

In the United States, claims that inflation was caused by oligopolistic structures allowing for increasing margins (and, consequently, profits) of individual industries, e.g. meat producers, have gained some popularity in the media. Lawrence Summers – hardly a monetarist extremist – rightly called it denialism of science. The so-called oligopolistic structures are not capable of generating such inflations as they are today. Moreover, oligopolistic structures may even allow for counterfactual lowering. The low number of meat producers just allows them to achieve economies of scale and thus reduce costs more than in the case of greater fragmentation of suppliers. In fact, if, for example, someone had come up with the anti-trust idea of breaking them down, he would have found out right away that the prices would be even higher.

Many companies' margins and overheads are indeed rising significantly in the recent times, but that doesn't mean real profits are rising just as much. Corporate profits should be adjusted for the value of inventories and the capital consumed (and also deducted by the tax), with a reminder about declining purchasing power of the monetary unit (Shoven et al., 1975). Let's take a look at the US year to year trends in corporate profits partially adjusted at figure 1.

Figure 1

Percent change of corporate profits



Source: St. Louis FRED

The recent gains in profits do not look significantly impressive, for example when compared against the gains in profits at the beginning of the 21st century. Rather comparatively profits at the time had a similar dy-

namic especially considering area under the curve. Moreover, these increases look average when compared with what happened right after the 2008 crisis and significant government interventions. Profits had even higher dynamic under those circumstances. Yet despite such high growth, there was no record inflation then. At both of those times, that is, after the 2008 and 2001 crises, inflation barely brushed five percent in the US. Right now it is around nine percent (October 2022). There must be something wrong, then, with the greed based theory of inflation that finds rising corporate profits as a source for rising prices. It just does not appear to be the case and diverts the attention from true causes of inflationary spiral of 2022 – increases in the quantity of money as explained by the most established macroeconomic theorem: quantity theory, which for many years has been perceived as irrelevant or perhaps even dead.

The quantity theory of money – a restatement and a reminder of the causes of its apparent death

The quantitative theory is quite simple and intuitive. It says that with increases in the money supply in circulation, there is an inflationary pressure on price increases (see for example Friedman, 1989; Lucas, 1980; Sargent & Surico, 2011). Causal inference is due to the appearance of additional physical monetary units compared to the real stock of goods in the economy, which lowers marginal utility of money, leading in turn to adjustment of nominal cash balances. At the same time, it does not mean that the translation of the money supply into higher prices is simple, automatic and always proportional. This is due to the fact that there are two important factors affecting prices in addition to the money supply: the demand for cash balances and the real stock of goods and services in the economy that are offered for them. Thus, we have three hard factors ultimately affecting the price levels of consumer goods: the supply of money, the demand for it from the holders, and the demand from those who want to buy it (sellers of goods and services). All these things are shown together by the Fisher-Rau tautology, which is sometimes called the "Fisher equation" in macroeconomics jargon, the tautology that money spent equals money received (Bordo, 1989; Spindt, 1985; Humprey, 1984; McLure, 2013).

For decades, empirical research by economists has been unequivocal: with high levels of inflation (double-digit), the dependence of money supply and prices is evident. Increases in supply simply drive price increases (Benati, 2009; Assenmacher-Wesche & Gerlach, 2007; Lucas, 1996; Weber

& McCandless, 1995). This relationship begins to break down at lower inflation levels. However, it breaks down statistically and not causally. This is because at lower increases in the money supply other factors are starting to play a relatively larger role. However, as soon as we take into account the velocity of circulation resulting from the demand for money as a financial asset and adjust the results for the rate of economic growth (real production factor), it turns out that the dependence of money supply and prices is also strong, as it has been perfectly demonstrated by in Teles et al., 2016. After adjusting for growth and money demand the relationship between money supply and prices starts to collapse again as we come to relatively low inflation, closer to the inflation target (less than 4 percent). That breakdown could also easily be explained, for example, with indirect factors related to measurement problems of the variables, or the general intertemporal inflation variability due to market participants expectations and reactions to the monetary policy.

If the money supply clearly determines price levels, why does it not play a role in designing monetary policy? The answer is simple: predicting the demand for money is not easy. Direct inflation targeting through money supply increases requires constant (or controllable) velocity of circulation. Velocity has been significantly fluctuating for some time and it could efficiently be presented only by ex post analysis (dividing nominal income by a chosen monetary aggregate). For this reason, it is a non-operational variable – that is, it is difficult to design rigid rules of monetary policy based on it, especially with regard to the innovativeness of banks. This is why quantitative theory is in a sense "dead" – because it does not live in central banks involved in direct inflation targeting. This is why "Friedman's monetarism" is a thing of the past and has retreated from the main tenets of central banking (Hafer & Wheelock, 2001).

However, inoperability does not eliminate causality and significance. For comparison: in nutrition, the key variable determining body weight is the caloric balance. This is a causal variable, but completely inoperable for targeting a specific weight, because few people meticulous measure calories absorbed, and even more few people sit in the metabolic ward and measure their caloric expenditures. And yet, despite the inoperability, it is difficult to deny the causality of the caloric balance and the influence of certain proxies controlling it. It is simply impossible to increase mass without a caloric surplus, even if some complex hormonal-metabolic relations are involved in the causal process. The same applies to the quantitative theory of money: it is impossible to increase price levels without a surplus of nominal expenditure over real resources in the economy, even if some complex underlying

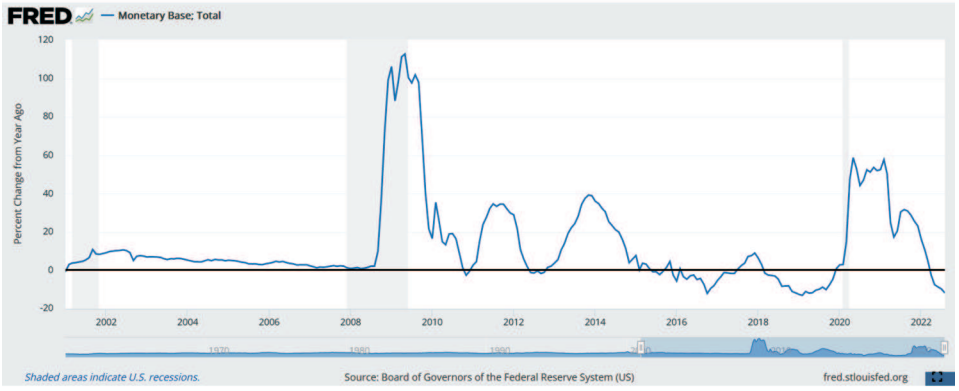
economic process is involved. It is difficult to implement this relationship as an effective planning project, but at the same time we know that there are some indirect proxies that determine its impact on reality. And these proxies are the actions of government agencies, such as the expansionary policies of central banks.

Quantity theory – why the 2008 episode is not relevant for the 2022 case

Monetarist fall was not the only reason of why quantity theory has been buried in the modern central banking era. Another one was the challenge after the 2008 crisis, when the money supply increased significantly and the double-digit inflation did not take place. The case is presented at figure 2 and as the chart clearly shows the increases in monetary base were much higher than during 2020 and 2021. And hence the natural suggestion: if there was such a huge monetary stimulus in 2008 and no high inflation followed, why would then a much smaller monetary stimulus 12 years later lead to high inflation?

Figure 2

Percent change in monetary base in the US



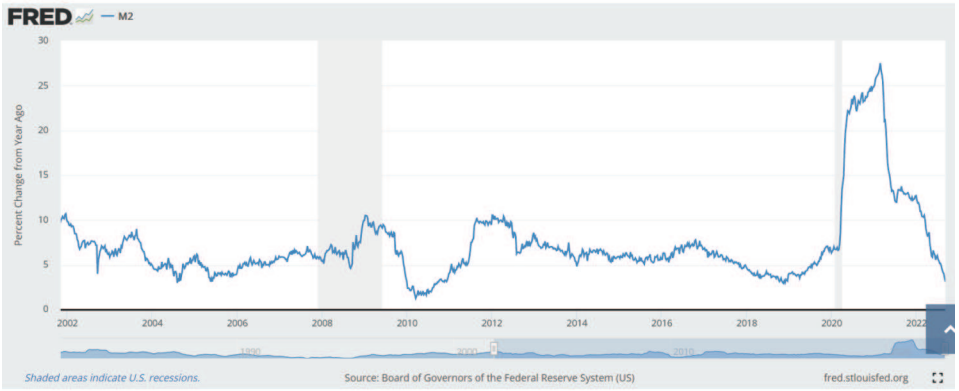
Source: St. Louis FRED

The problem is that the case represents percentage increases in the monetary base, i.e. a narrow money supply, part of which is only a small fraction of the total supply used for spending purposes in the economy (part of it are, for example, commercial bank reserves deposited with the central bank). The idea that only monetary base consists of proper money supply

has been dropped in the first half of the XX century, so coins and banknotes are definitely not the only money. We know today that the money supply that supports transactions in the economy is something broader. It may not be known which broader definition captures the monetary economy better, but even without knowing this fully at least we can be sure that monetary base is too narrow. Henceforth, even if we do not know how to define it exactly, it is definitely not only banknotes and coins. Without choosing any particular measure we may look at two of them for the US economy, much wider definitions of money, M2 and M3. Both are presented consecutively at figures 3 and 4.

Figure 3

Percent change in money aggregate M2 in the US



Source: St. Louis FRED

Figure 4

Percent change in money aggregate M3 in the US



Source: St. Louis FRED

Regardless of how we assess money supply measurements, or whether we consider suitability of any possible index reflecting it, the trend remains evident: after 2008 crisis we certainly did not have such huge increases in money supply are it happened during covid-19 era. There is nothing surprising, therefore, that highest monetary impulse of the century has led to the highest inflation in that century.

If the 2008 case falsified anything, it was not the quantitative theory of money, but the multiplier theory of the monetary transmission mechanism – the belief that increases in the monetary base lead to proportional increases in the broader money aggregate. For example, an increase in the monetary base by 20% would (according to the simple multiplier theory) translate into an increase in the total money supply by approximately 20%. Indeed, there may have been economists and commentators who believed such would happen post-2008 and made erroneous hyperinflationary predictions. In monetary theory it is generally an established theme that monetary transmission mechanism based on a simple multiplier theory simply does not hold empirically (Carpenter & Demiralp, 2012; Seghezza & Morelli, 2020). Multiple studies on the issue has been published in the last 40 years.

However, as it was the case with Friedman's policy rule for monetary growth, rejecting the automatic multiplier perspective does not mean that the money supply does not play a role in generating inflation. These are two completely different creatures. Incidentally, we can add that, as the time goes by more researched will be published on the current inflationary era. Since the past econometric data clearly show that at high inflation levels the relationship between money supply and price levels is evident, we will probably have scientific publications again in the next dozen or so months, which will clearly show this for the recent period, since inflation in many countries exceeded the double-digit barrier. Therefore, at the suggestion of Summers, the denial of this phenomenon is likely soon to be seen as scientific denialism.

Profits and economic adaptation to high inflation

Finally, it is important to properly capture the relationship between profits and inflation in general, especially in consumer industries, when changes in prices are a natural adaptation and even required in equilibrating processes. Although the root cause behind them is unfavorable (a high increase in the money supply), the adjustment already allows to move to-

wards a new equilibrium point. Stopping this, for example with price controls or regulatory policies, will be counterproductive (Scheuttinger & Butler Eamonn F., 1979). Although, for example, the president of Belarus is already conducting a natural experiment and wants to ban inflation by law, it may be worth leaving this experiment on a single country scale for the time being.

At the same time there is a recognizable relationship between profits and prices as it is in fact with any prices in the economy at different times (including wages and government spending). Profits rose where inflation increased the most. Growing profits in the inflationary environment allow standard adjustments to be made to the growing relative scarcity of final goods and services and in circulating capital (on why this matters see Terborgh, 1974). If the bread rises sharply (due to inflation in the money supply), the increase in bakery profits allows the adjustment process to start: bakeries are to make more bread and invest more in delivering it to customers, especially in fixed and circulating capital that has to be replaced at higher prices. Among other things, so that, on the one hand, these prices do not increase even more, and, on the other hand, that there is no shortage of necessary products in the market. If bakeries are able to do this without proportional cost increases (to the same extent as revenues), they can go through this adaptation process and survive thanks to profits relatively higher than in alternative sectors. If, however, costs hit them by far more than the benefits of profits from increased revenues, it would be with bankruptcies. Although the final effect will be the same: entities with negative profitability will fall out of the market until the supply effect causes a further increase in prices to a new equilibrium level. In both cases, there is a price adaptation to the inflation impulse. However, this is often done with signals in the form of increased profits, and sometimes in the form of increased losses.

Such is the logic of the market process that adjusts the economy to changing conditions. Even the sudden and unfavorable ones caused by the government's inflationary policy. These are certainly not black swan circumstances. However, it is difficult to blame the market adjustment responding to the printing press. Hardly anyone prefers inflation rising, but once inflationary impulses are triggered, the belief in the possibility of a regulatory stopping them is already an ex post dream that will do more harm than good.

Conclusions

The focus on rises in profits as a cause of high inflation levels in 2022 is missing the crucial causal mechanism of what has been happening. Just because nominal profits were temporary raised to some extent does not make them a causal explanation. Many other things increased by several dozen percent in the same period. Public debt has increased. Budget expenditure has increased. Consumer spending has increased. Why grab one of the increasing quantities and not the others? Especially without additional considerations to the others. Perhaps as Schumpeter wrote, the price system "stands its trial before judges who have the sentence of death in their pockets". The greedy theory of inflation is well suited to such an unjustified attack as it diverts attention from price distorters to price creators. Unfortunately, the diversion is purely rhetorical and not substantive.

Current inflation is surely caused by several factors at once, including the pandemic heritage and the armed conflict in the background. Despite so, one key factor does not fall out of sight: the monetary impulses from central banks. Especially since the real production has already exceeded the levels from the end of 2019, i.e. before the epidemic.

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