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Fiscal Inflation
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From its inflection point in February 2021 to November 2021, the CPI rose 6 percent (278.88/263.161), an 8 percent annualized rate. Why?

Starting in March 2020, in response to the disruptions of Covid-19, the U.S. government created about $3 trillion of new bank reserves, equivalent to cash, and sent checks to people and businesses. (Mechanically, the Treasury issued $3 trillion of new debt, which the Fed quickly bought in return for $3 trillion of new reserves. The Treasury sent out checks, transferring the reserves to people's banks. See Table 1.) The Treasury then borrowed another $2 trillion or so and sent more checks. Overall federal debt rose nearly 30 percent. Is it at all a surprise that a year later inflation breaks out? It is hard to ask for a clearer demonstration of fiscal inflation, an immense fiscal helicopter drop, exhibit A for the fiscal theory of the price level (Cochrane 2022a, 2022b).

What Dropped from the Helicopter?

From December 2019 to September 2021, the M2 money stock also increased by $5.6 trillion. This looks like a monetary, not a fiscal intervention, Milton Friedman's (1969) classic tale that if you want inflation, drop money from helicopters. But is it monetary or fiscal policy? Ask yourself: Suppose the expansion of M2 had been entirely

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TABLE 1
Federal Debt, Reserves, and M2, 2019–2021
(Billions of Dollars)

	Q4 /Dec 2019	Q3 /Sep 2021	Difference
Federal debt held by Federal Reserve Banks	$2,637	$5,644	$3,007
Federal debt held by public	$17,187	$22,353	$5,166
Reserves of depository institutions	$1,698	$4,193	$2,495
M2	$15,460	$21,209	$5,749
CPI	258.6	274.1	6.0%

Sources: Federal Reserve Bank of St. Louis, FRED.

financed by purchasing Treasury securities. Imagine Treasury debt had declined $5 trillion while M2 and reserves rose $5 trillion. Imagine that there had been no deficit at all, or even a surplus during this period. The monetary theory of inflation, MV=PY, states that we would see the same inflation. Really? Similarly, ask yourself: Suppose that the Federal Reserve had refused to go along. Suppose that the Treasury had sent people Treasury bills directly, accounts at Treasury.gov, along with directions how to sell them if people wished to do so. Better, suppose that the Treasury had created new mutual funds that hold Treasury securities and sent people mutual fund shares. (I write mutual fund as money market funds are counted in M2.) The monetary theory of inflation says again that this would have had no effect. These would be a debt issue, causing no inflation, not a monetary expansion. Really?

Clearly, overall debt matters, not the split of government debt between interest-paying reserves or monetary base and Treasury securities. The Federal Reserve itself is nothing more than an immense money market fund, offering shares that are pegged at $1 each, pay interest, and are backed by a portfolio of Treasury and mortgage-backed securities. (Plus, an army of regulators and a huge staff of economists who are supposed to help forecast inflation.)

Milton Friedman's (1969) helicopter drop is a powerful parable. But a helicopter drop is a *fiscal* policy, not a monetary policy.

The U.S. Federal Reserve may not legally drop money from helicopters; it may not write checks to voters. The Fed may even less vacuum up money; it may not tax people. Helicopter drops and money vacuums are fiscal operations. The Fed may only lend money, or buy and sell assets. To accomplish a helicopter drop in the United States, the Treasury must issue debt, the Fed must buy it with newly printed money, and then the Treasury must drop that money from helicopters, writing it down as a transfer payment. And that is pretty much exactly what happened.

Ask yourself: If, as Friedman's helicopter is dropping $1,000 on each household, the Fed sends burglars who remove $1,000 of Treasury securities from the same households, would we still see inflation? That's monetary policy. If Friedman's helicopter were followed by the Treasury secretary with a bullhorn, shouting "Enjoy your $1,000 in helicopter money. Taxes are going up $1,000 tomorrow," would we still see inflation?

Friedman's helicopters are not a monetary change, a substitution of money for debt, an increase in the liquidity of a given set of household assets. They are a "wealth effect" of government debt. Dropping debt from helicopters is a brilliant psychological device for convincing people that the government debt raining down on them will not be repaid by future taxes or spending restraint. It will be left outstanding, so they had better spend it now. Indeed, we just witnessed a "helicopter drop." But a helicopter drop is fiscal policy.

Why did fiscal inflation not happen sooner? The government has been borrowing money like the proverbial drunken sailor, for decades. The Fed has been buying Treasury securities and turning the debt into reserves for a decade. Why now?

Inflation comes when government debt increases, *relative* to people's expectations of what the government will repay. If the Treasury borrows, but everyone understands it will later raise tax revenues or cut spending to repay the debt, that debt does not cause inflation. It is a good investment and people are happy to hold on to it. If the Fed prints up a lot of money, buys Treasury debt, and the Treasury hands out the money, as happened, but everyone understands the Treasury will pay back the debt with future surpluses, the extra money causes no inflation. The Fed can always soak up the money by selling its Treasury securities, and the Treasury repays those securities with surpluses (i.e., taxes less spending).

The 2020–2021 borrowing and money episode was distinctive because, evidently, it came without a corresponding increase in expectations that the government would, someday, raise surpluses by $5 trillion in present value to repay the debt. Looking into people's heads is hard, but why? We can at least find some plausible speculations.

One may look to politicians' statements. Even in the Obama-era "stimulus" spending, the administration emphasized promises of eventual debt reduction. One may chuckle and sneer at promises to repay debts decades after an administration leaves office, but at least they went through the motions to make that promise! Nobody went through any motions about long-run fiscal planning, long-run deficit reduction, and entitlement and tax reform in 2020–2021. It was the era of modern monetary theory (MMT), of costless "fiscal expansion" made possible, or so it was claimed, by the manna from heaven that interest rates would stay low forever.

The manner of fiscal expansion matters too. When the Treasury borrows in the usual manner, it borrows from established long-term investors, who view Treasury debt as debt that will be repaid and not defaulted or inflated. They view it as a savings or investment vehicle, not as cash to be spent. They save, or invest, based on long and so far mostly successful experience. This time, following canary-in-the-coal-mine disruptions in Treasury markets during March 2020, the Federal Reserve immediately bought new Treasury debt with newly created money, before it even touched these investor's portfolios. The effect of the operation was to print new money and send people checks, so the debt issue is now held as bank deposits flowing into reserves, rather than as Treasury securities. People holding this new money are likely to spend it rather than regard it as a long-term investment. In our simplest economic models, it does not matter who holds the debt. But in just a little more nuanced view, who holds the debt matters.

In our simplest economic models, interest-paying reserves and Treasuries are equivalent securities. But people likely do see a difference between reserves and short-run Treasuries. Treasuries may well carry a reputation that they will be repaid, while people assume reserves will not be repaid by larger surpluses. Then issuing lots of reserves rather than Treasuries is inflationary, but not because the reserves are "money," but rather because they convey a different set of fiscal expectations, just as dropping money or debt

from helicopters sends a different signal about repayment than issuing debt at a Treasury auction.

Most of the previous operations financed government spending or government worker salaries, counting on higher incomes to slowly filter through the economy. This one sent checks directly to people.

Finally, this fiscal stimulus was enormous, and carried out on a deep misdiagnosis of the state of the economy. Even in simplistic hydraulic Keynesian terms, $5 trillion times any multiplier is much larger than any plausible GDP gap. And the Covid recession was not due to a demand deficiency in the first place. A pandemic is, to the economy, like a huge snowstorm. Sending people money will not get them to go out to closed bars, restaurants, airlines, and businesses.

"Stimulus," "accommodation," "easing" was the point. This method finally worked, where previous stimulus efforts failed. One can see several suggestive differences, which amount to important economic lessons.

What about "supply shocks"? What about a shift of demand from services to durables? Much analysis misses the difference between relative prices and inflation, in which all prices and wages rise together. A supply shock makes one good more expensive than others. Only demand makes all goods rise together. There wouldn't be "supply chain" problems if people were not trying to buy things like mad! A shift in demand from services to durables can make durables prices go up. But it would make services prices go down. And let us not even go down the ridiculous path of blaming inflation on a sudden contagious outbreak of "greed" and "collusion" by businesses from oil companies to turkey farmers, needing the administration to send the FTC out to investigate.

It is telling that inflation was a complete surprise to the Federal Reserve. The Federal Reserve's job is supposed to be to monitor the supply capacity of the economy and to make sure demand does not outstrip it. The Fed failed twice. First, the economy did not need demand-side stimulus. Insurance was wise, and forestalling a financial crisis was necessary. But sending money to every citizen to stoke demand was not. Second, the Fed being surprised by supply shocks is as excusable as the Army losing a battle because its leaders are surprised that the enemy might attack. As we see by the outcome, the Fed's understanding of supply, largely based on statistical analysis of labor markets, is rudimentary.

Will Inflation Continue?

If the government borrows or prints $5 trillion, with no change in its plan to repay debt, on top of $17 trillion outstanding debt, then the price level will rise a cumulative 30 percent, so that the $22 trillion of debt is worth in real terms what the $17 trillion was before. In essence, absent a credible increase in future surpluses, the deficit is financed by defaulting on $5 trillion of outstanding debt, via inflation. By this calculation, the 6 percent or so cumulative inflation we have seen so far leaves a way to go. But people may think some of the debt will be repaid. If they think half will eventually be repaid, then the price level need only rise 15 percent overall.

But then it stops. A one-time unbacked debt increase leads to a one-time price-level increase, not continuing inflation. Whether inflation continues or not depends on future monetary policy, future fiscal policy, and whether people change their minds about overall debt repayment.

Fiscal policy may not be done with us yet. If unbacked fiscal expansions continue—that is, borrowing when people do not expect additional repayment—then additional bouts of fiscal inflation will occur. Untold trillions of spending, including new entitlements, with no realistic hope of raising tax revenues commensurately to cover them are certainly high on the Biden administration's agenda. (Higher tax rates do not necessarily mean higher revenues, if economic growth falters; and even so, the proposed taxes do not cover the proposed spending increases even with static scoring.) The mentality that borrowed money need never be repaid, because the MMT fairy or $r<g$ magic makes debt free, remains strong in Washington. But the failure of the so-called Build Back Better plan may augur well for budget seriousness and a limit to ill-constructed social policies with strong supply disincentives.

The most troublesome question remains: Do people, having decided that at least some of our government's new debt will not be repaid, so they should spend it now and inflate it away, now think that the government is less likely to repay its existing debts, or less likely to repay future borrowing? If so, even more inflation can break out, seemingly (as always) out of nowhere.

Fiscal Constraints on Monetary Policy

Fiscal and monetary policies are always intertwined in causing or curing inflation. Even in a pure fiscal theory of the price level, monetary policy (setting interest rates) can control the path of expected future inflation. Thus, whether inflation continues or not also depends on how monetary policy reacts to this fiscal shock and its consequences.

Whether the Fed *will* do something about it is an obvious concern. The Fed's habits and new operating procedures, formed before 2019 in a Maginot Line against perpetual below-target inflation, look remarkably like the Fed of about 1971: let inflation blow hot to march down the Phillips curve to greater employment, wait for inflation to exceed target for a while before doing anything about it, talk about "transitory" and "supply" shocks to excuse each error. The Fed understands "expectations" now, unlike in 1971, but seems to view them as a third force amenable to management by "forward guidance" speeches rather than formed by a hardy and skeptical experience with the Fed's concrete actions. The Fed likes to say it has the tools to contain inflation, but never dares to say just what those tools are. In recent U.S. historical experience, the Fed's tool is to replay 1980: 20 percent interest rates, a bruising recession hurting the disadvantaged especially, and the medicine applied for as long as it takes. Will our Fed really do that? Will our Congress let our Fed do that? Can you deter an enemy without revealing what's in your arsenal and whether you will use it?

If the Fed needs to fight inflation, fiscal constraints on monetary policy will play a large and unexpected role. In 1980, the debt-to-GDP ratio was 25 percent. Today it is 100 percent, and rising swiftly. Fiscal constraints on monetary policy are four times larger today—and counting.

For a rise in interest rates to lower inflation, fiscal policy must tighten as well. Without that fiscal cooperation, monetary policy cannot lower inflation. There are two important channels of this interconnection.

First, the rise in interest rates raises interest costs on the debt. The government must pay those higher interest costs, by raising tax revenues and cutting spending, or by credibly promising to do so in the future. At 100 percent debt to GDP, 5 percent higher interest rates

mean an additional deficit of 5 percent of GDP or $1 trillion, for every year that high interest rates continue.

This consideration is especially relevant if the underlying cause of the inflation is fiscal policy. If we are having inflation because people don't believe that the government can pay off the deficits it is running to send people checks, and it will not reform the looming larger entitlement promises, then people will not believe that the government can pay off an additional $1 trillion deficit to pay interest costs on the debt. In a fiscally driven inflation, it can happen that the central bank raises rates to fight inflation, which raises the deficit via interest costs, and thereby only makes inflation worse. This has, for example, been an analysis of several episodes in Brazil.

Second, if monetary policy lowers inflation, then bondholders earn a real windfall. Fiscal policy must tighten to pay this windfall. People who bought 10-year Treasury bonds in September of 1981 got a 15.84 percent yield, as markets expected inflation to continue. From September 1981 to September 1991, the CPI grew at a 3.9 percent average rate. By this back-of-the-envelope calculation, those bondholders got an amazing 12 percent annual real return. That return came completely and entirely courtesy of U.S. taxpayers. The 1986 tax reform and deregulation, which allowed the United States to grow strongly for 20 years, eventually did produce fiscal surpluses that nearly repaid U.S. federal debt. At 100 percent debt-to-GDP ratio, each 5 percentage point reduction in the price level requires another 5 percent of GDP fiscal surplus.

Ask yourself, if inflation gets built into bond yields, and the Fed tries to lower inflation, will our Congress really raise tax revenues or cut spending in order to finance an unexpected (by definition) and undeserved (it will surely be argued) windfall profit to wealthy investors, foreign central bankers, and fat cats on Wall Street? If it does not do so, the monetary attempt at disinflation fails.

We state too casually that the United States will always repay its debts and prioritize that repayment over all else. We should not take such probity for granted. For example, in the 2021 debt ceiling discussion, it stated as fact by all concerned, from the Treasury to Congress to the White House, that hitting the debt ceiling must trigger a formal default. That is untrue. The United States could easily prioritize its tax revenues to repaying interest and principal on outstanding debt, by cutting other spending instead. Painful, yes. Impossible, no. That the U.S. contingency plan for a binding debt

ceiling is formal default tells you that the spirit of Alexander Hamilton, preaching the sanctity of debt repayment to build reputation so we can borrow in the future, is truly dead. And with inflation, we are not even talking about formal default. The question is, will the United States undertake sharp fiscal austerity to support monetary policy in the fight against inflation, by paying higher interest costs on the debt and by repaying bondholders in more valuable money? Or will the government just repay as promised, but in dollars that are worth more than expected? If the government does the latter, monetary policy fails.

There is a third troublesome requirement for higher nominal interest rates to produce lower inflation. One needs an economic model in which this is true, that model needs to be correct, and its preconditions need to be met. It's not as easy as it sounds, because in the long run, when real interest rates settle down, higher nominal interest rates must come with higher, not lower inflation. So you need an understanding of how and when things work the other direction in the short run.

In standard new-Keynesian models, used by all central banks, for example, higher interest rates only produce lower inflation if the higher interest rate is unexpected—that is, a shock to the economy—and if there is a sharp contemporaneous fiscal contraction, for the above reasons.[1] A widely expected rise in nominal interest rates *raises* inflation. A rise in interest rates without the corresponding "austerity" *raises* inflation. Both preconditions are questionable today. More complex ingredients, such as long-term debt or financial frictions, can allow a higher nominal rate to temporarily lower inflation. But reliance on more complex ingredients and frictions is also dangerous.

The Future

The future is not hopeless. Inflation control simply requires our government, including the central bank, to understand classic lessons of history. Forestalling inflation is a joint task of fiscal, monetary, and microeconomic policy. Stabilizing inflation once it gets out

[1]See Cochrane (2022b: chap. 17), "The Fiscal Underpinnings of new-Keynesian Models," for analysis.

of control is a joint task of fiscal, monetary, and microeconomic policy. Expectations are "anchored" if people believe such policy is in place, and politicians and Fed officials are ready to act if needed.

I add "microeconomic," as it is perhaps the most frequently overlooked adjective. Fiscal surpluses do not result from sharply higher tax rates, especially of a tax system so riven with economic distortions as ours. Fiscal surpluses can come from spending restraint, but that too is difficult. The best road to fiscal surpluses is strong economic growth, which increases the tax base and lowers the need for social spending.

In the conundrum between taxes and spending, there is a way out: raise long-term economic growth. And there is only one way to do that: increase the supply-side capacity of the economy. That is, however, just as politically controversial as the first two options. Most of the job is to get out of the way. Most economic regulation is designed to transfer incomes, to protect various interests, or to push on the scales of bilateral negotiation, to undo the harsh siren of economic incentives, in a way that stifles economic growth. Many interests hate progrowth legislation and regulation just as much as they hate taxes and spending cuts. The $r<g$ crowd has a point, but increasing g is the answer.

Much of the "supply shocks" of 2021 come down to the "great resignation"—that is, the puzzling decline in labor force participation despite a labor shortage. The work disincentives of social programs—paying people not to work, bluntly—are laid bare.

All successful inflation stabilizations have combined monetary, fiscal, and microeconomic reforms. I emphasize *reforms*. In most cases the tax *system* is reformed to provide more revenue with less distortion. The *structure* of spending programs is reformed to help people in need more efficiently without work disincentives. Regulations are *reformed*, though they hurt the profits of incumbents, to increase entry, competition, and innovation. The policy *regime* is changed, durably. Reversible decisions and pie-crust promises do not do much to change the present value of surpluses, to raise the government's ability to pledge a long stream of surpluses to support debt.

The United States did not succeed in 1980 from monetary toughness only. Supply-side deregulation took place and was quickly followed by tax reforms in 1982 and 1986. The economy took off, so by the late 1990s, economists were seriously writing papers about what to do when the federal debt had all been repaid.

Many monetary stabilizations have been tried without fiscal and microeconomic reform. They typically fail after a year or two. The history of Latin America is littered with them (Kehoe and Nicolini 2021). The high interest rates of the early 1980s likely represented a fear that the United States would suffer the same fate. The 1970s were not just a failure of monetary policy. The deficits of the great society and Vietnam War contributed, while the supply shocks and productivity slowdown did their part.

These points are especially important if the 2021 inflation turns into a sustained 2020s inflation, as the 1971 inflation turned into a sustained 1970s inflation. For this time, the roots of inflation will most likely be fiscal, a broad change of view that our government really will not eventually reform and repay its debt. The only fundamental answer to that question will be, to reform and set in place a durable structure that will repay debt. Monetary machination will be pointless.

A small bout of inflation may be useful to our body politic. Inflation is where dreams of costless fiscal expansion, flooding the country with borrowed money to address every perceived problem, hit a hard brick wall of reality. A small bout of inflation and debt problems may reteach our politicians, officials, and commentariat the classic lessons that there are fiscal limits, fiscal and monetary policy are intertwined, and that a country with solid long-term institutions can borrow, but a country without them is in trouble, and one must allow the golden goose to thrive if one wants to tax her eggs. A small bout of inflation may reteach the same classes that supply matters, incentives matter, and sand in the gears matters. The 1980s reforms only happened because the 1970s were so painful.

In the meantime, however, there is one technical thing the Fed and Treasury can do to forestall a larger crisis: borrow long. Interest costs feed into the budget as debt rolls over. U.S. debt is shockingly short maturity, rolled over on average about every two years. If the United States borrows long term, then higher interest rates do not raise interest costs on existing debt at all. Shifting to long-term debt would remove one of the main fiscal constraints on monetary policy. The Federal Reserve has not helped this fiscal constraint, by transforming a fifth of the federal debt to overnight, floating-rate debt. The 30-year Treasury rate is, as I write, 2 percent, about negative 1 percent in real terms. Okay, the 1-year rate is 0.13 percent. As long as this lasts, the government seems to pay lower interest costs. But a

1.87 percent insurance premium to wipe out the danger of a sovereign debt crisis and to buy huge fiscal space to fight inflation seems like a pretty cheap insurance policy. The window of opportunity will not last long, however, as interest rates are already creeping up.

References

Cochrane, J. H. (2022a) "The Fiscal Theory of the Price Level: An Introduction and Overview." Manuscript, in preparation for *Journal of Economic Perspectives.* Available at www.johnhcochrane.com/research-all/fiscal-theory-jep-article.

_____ (2022b) *The Fiscal Theory of the Price Level*. Princeton, N.J.: Princeton University Press. Manuscript available until publication at www.johnhcochrane.com/research-all/the-fiscal-theory-of-the-price-level-1.

Friedman, M. (1969) "The Optimum Quantity of Money." In M. Friedman, *The Optimum Quantity of Money and Other Essays*, 1–50. Chicago: Aldine.

Kehoe, T. J., and Nicolini, J. P. (2021) *A Monetary and Fiscal History of Latin America, 1960–2017.* Minneapolis: University of Minnesota Press.