Easy Lending: How the Federal Reserve's Response to Covid Helped Cause America's High Inflation

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On April 1, 2008 in the midst of rising inflation a secret rule went into effect in Saudi Arabia – Banks' Reserve Requirements were raised from 10% to 12% to slow the growth of money supply and curb inflation (Reuters, 2008). Monetary policy memos are typically kept secret in Saudi Arabia, but that didn't stop people from talking about the change coming through. So, what exactly are these bank reserve requirements? In short, it's your money that you think is in the bank, but isn't.

Banks maintain their ledgers in two columns: Liabilities, which are deposits the bank is liable for, and Assets, which are loans the bank makes money on. Both come from the same pot of money. Different countries and/or central banks have different "reserve requirements" on how much of deposited money a bank is required to keep in reserve and not loan out – in case everyone decides to withdraw at once in a "run on the bank." The interest you make in your account is your share of what the bank is actually doing with your money – lending it out for profit. The issue is, if a bank lends out 90% of your $100 (assuming there is a 10% reserve requirement) then your account has $100 and whoever that loanee paid now has $90. From there the bank can then theoretically loan out another $81 from what has just been deposited, and so on, and so on. This looks like:

$$\text{Total Money Supply} = \frac{\text{Deposits}}{\text{Reserve Requirement}} = \frac{\$100}{0.1} = \$1000$$

Of course, there are other "safety" requirements that banks must meet as well, such as capital requirements stemming from the Basel III agreements, that have lower requirements for "safe" investments such as mortgages, but higher requirements for riskier investments. These capital requirements can also be manipulated though when Central Banks (such as the Federal Reserve) take actions to buy those assets with newly created cash (called quantitative easing). This a twofold effect of increasing cash-on-hand that is used to meet the requirements, and having less assets on hand that have to be covered. Both reserve requirements and quantitative easing have historically had impacts on money supply and inflation, and in March 2020 there were major changes to both.

So, what were the changes and how do they relate to high inflation in the United States?

During the Covid-19 pandemic, specifically on March 26, 2020, the Federal Reserve reduced the reserve requirement to zero while interest rates concurrently dropped, and quantitative easing was expanded (Federal Reserve, 2024).

For the reserve requirements, this was a change from the "tranche" system that was in effect previously which had a maximum of 10% reserve requirement. In essence, the formula above is not even possible because you cannot divide deposits by zero – the total possible money supply just becomes exponentially larger and larger (outside of capital requirements for large banks on assets alone). Further, the quantitative easing created money (this was a literal creation of money by the Fed) to buy assets from banks. In essence there was a push encouraging lending in a system that essentially created

money, causing inflation in a manner similar in a way (albeit much smaller) to the overprinting that ravaged 1920's Germany and modern-day Zimbabwe.

Not surprisingly, shortly after these policy changes we saw inflation rates start to rise in the United States, up to 4.7% annual inflation in 2021 then further to an astounding 8% in 2022. To curb these, the Federal Reserve controls Fed fund interest rates with the idea that this will curb borrowing because in theory higher interest rates disincentivize borrowing (the opposite of what happened in March, when they were lowered to incentivize borrowing). These interest rate hikes went in increments of 0.25% at a time to a maximum of 5.5%, a far cry from the 10% change in reserve requirements, and even further from the average credit card rates Americans have become accustomed to at 24.2%. At those interest rates it seems it would be more effective to discourage lending (by raising reserve requirements and start quantitative tightening) than to discourage borrowing (by raising interest rates), but the opposite happened.

With that said, how then do we know that money was created and therefore led to inflation?

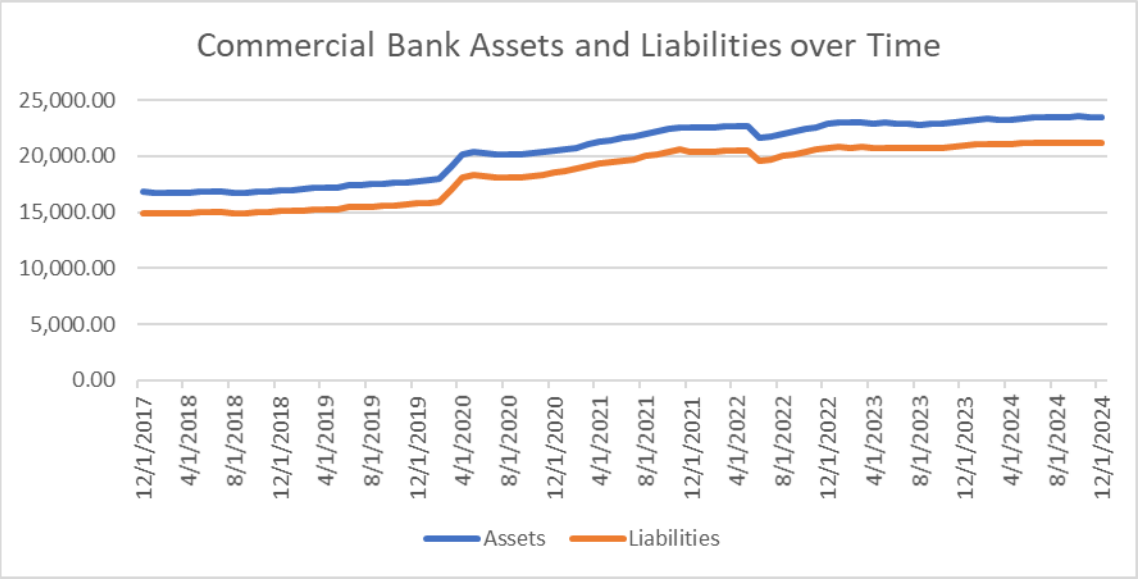
The truth lives in the data. I took it upon myself to pull the Assets and Liabilities of Commercial Banks from the Federal Reserve releases (Federal Reserve, 2024). Because of the timing of the data and the format the Fed releases in, I chose to pull the assets and liabilities of every May and every November from 2017 to 2024 (six-month periods). What we would expect, if these reserve requirement and quantitative easing changes did increase loans and therefore money supply, would be a sharp increase in both liabilities (loans) and assets (deposits). Sure enough, the data showed that for the period between November 2019 and May 2020 commercial bank assets increased to 114.95% of the previous period and commercial bank liabilities increased to 116.66% of the previous period.

To put this into perspective the average increase for the pulled data is 102.56% (with a 3.71% standard deviation) for assets and 102.67% (with a 4.23% standard deviation) for liabilities – meaning the increase from the reserve requirement and quantitative easing change was three times the standard deviation increase from average. Translation: that's a big jump in the amount of money in existence.

Assets and Liabilities of Commercial Baks (Federal Reserve Data Releases)

	May-17	Nov-17	May-18	Nov-18	May-19	Nov-19	May-20	Nov-20	May-21	Nov-21	May-22	Nov-22	May-23	Nov-23	May-24	Nov-24	Averages	Std Dev
Total Assets	16,231.80	16,699.50	16,748.00	16,854.40	17,224.60	17,656.70	20,297.00	20,361.00	21,509.10	22,604.80	22,638.70	22,828.60	22,935.40	22,978.50	23,327.90	23,500.50		
Total Liabilities	14,453.60	14,852.00	14,912.50	14,979.30	15,297.40	15,692.20	18,306.00	18,321.90	19,520.00	20,609.80	20,512.00	20,742.30	20,693.90	20,781.20	21,150.50	21,189.20		
Assets % Change		102.88%	100.29%	100.64%	102.20%	102.51%	114.95%	100.32%	105.64%	105.09%	100.15%	100.84%	100.47%	100.19%	101.52%	100.74%	102.56%	3.71%
Liabilities % Change		102.76%	100.41%	100.45%	102.12%	102.58%	116.66%	100.09%	106.54%	105.58%	99.53%	101.12%	99.77%	100.42%	101.78%	100.18%	102.67%	4.23%

https://www.federalreserve.gov/releases/h8/



It should be noted again that at the same time reserve requirements were being dropped and quantitative easing was being expanded, Fed interest rates were experiencing sharp drops, making the problem worse (both lending and borrowing were simultaneously being encouraged). What differentiates the two is that when rates were raised in both 2017-2018 and 2022-2023, we didn't see assets and liabilities slowing below that same standard deviation.

All of this together, there are still some compelling counter arguments to these changes contributing to inflation: 1. The argument that stimulus money was the biggest contributor to inflation. 2. The argument that capital requirements (another form of bank safety net) outweigh the need for reserve requirements. In terms of stimulus money, it certainly doesn't help that the first round came at the same exact time as these Fed policy changes. That considered though, we didn't see large jumps in liabilities (deposits from these checks) when the next rounds came out in 2021.

As for capital requirements, let me first explain further what these are. Out of the Basel Accords in 2010, there were requirements put in place to ensure banks have enough equity (essentially collateral) to absorb losses from loans and other investments. This capital does not have to be in the form of cash, and in fact it can sometimes be in the form of stock holdings bought with cash and/or "subordinated debt" which is something like bonds with the lowest tier of repayment. While that ends up being 8%-10.5% capital requirements, that is on risk weighted assets of which mortgages and retail loans are weighted down below 100%. What does this mean? Capital requirements don't limit money supply because the capital reserves (which can in reality be as low as 3.7% of actual assets after de-weighting) can be bought with cash that can then be re-deposited elsewhere. This would explain why, with Basel Capital Requirements not changing we still saw the large increase in both assets and liabilities in 2020.

It gets worse though – because the capital requirements are on risky assets, what happens when the Fed buys those assets through quantitative easing? 1. There are less assets in the bank needing to be covered by capital requirements (thus allowing lending) 2. The cash used to buy those assets can then be lent out (further encouraging lending). All in all, both lending (assets) and deposits (liabilities) grew for a greater overall money supply.

What do we learn from this and who do we blame?

For blame, I would very honestly say no one directly. In the grand scheme of monetary policy, the Federal Reserve Bank is still relatively new. It went into effect in 1913, with major changes such as the establishment of the Federal Deposit Insurance Corporation (FDIC) not occurring until 1933. In fact, quantitative easing as a policy did not even exist until 2001 (albeit similar practices were used in the 1930's). With the amount of time it takes to see large swings in money supply, 100 years is a short period. Secondly, a pandemic like Covid-19 had no precedent. The chairman himself was brought in through bipartisan involvement being added to the Board of Governors by a Democratic President and elevated to Chairman by a Republican President. There is more opportunity to learn and develop a stronger monetary policy than anything.

Looking at other countries actions with reserve requirements we see similar points of data. In Saudi Arabia, which we had discussed first, the rise in reserve requirements led to inflation finally peaking 6.12% and subsequently dropping back down to 3.7%. Similarly, Brazil has used reserve requirements as a tool for monetary policy. From 1998 to 2001 Brazil steadily decreased their reserve requirements from 75% to 45%, in that same time period, inflation started creeping up from 3.2% in 1998 to 8.45% in 2002, then up to 14.71% in 2003 when a temporary bump in reserve requirement to 60% led to inflation decreasing back down quickly to 6.6% in 2004.

As for Quantitative Easing, the policy was actually created to counter deflation in Japan in the early 2000s. It likewise has been used by Sweden's Riksbank in 2015 to ease deflation. As a policy tool, it has been used specifically for its ability to increase money supply and thus stop deflation/start inflation. Both actions have precedent in their ability to influence inflation.

Overall, when all is said and done, we can take this opportunity to learn. Quick reactionary actions such as quantitative easing, dropping reserve requirements, and lowering interest rates simultaneously creates a huge influx of money supply, inflation, and encourages lending. The public stimulus on the other hand, did not have the same inflationary impact, as we see from the 2021 data where it did not go outside of standard deviation. Aside from increasing quantitative tightening that is taking place currently to improve the Fed's balance sheet, by introducing monetary policy to discourage lending and increase reserves we have the opportunity to slow inflation with creative monetary policy. The Federal Reserve, while resistant to the idea of slowing liquidity, has an obligation to create a stable economy and allow for its progressive growth rather than short term growth. This moment offers policymakers a rare chance to refine monetary tools, ensuring that future responses balance economic stability with long-term growth. Learning from past missteps will be key to preventing similar inflationary surges. Without a shift in how monetary policy is implemented in times of crisis, we risk repeating the same cycles of inflation and instability.

Saudi Bank Reserve requirements raised - traders. Reuters. (2008, April 7). https://www.reuters.com/article/inflation-saudi-idINL0743869820080407

Policy Tools - Reserve Requirements. Board of Governors of the Federal Reserve System. (2024, November 24). https://www.federalreserve.gov/monetarypolicy/reservereq.htm

Assets and Liabilities of Commercial Banks in the United States. Board Governors of the Federal Reserve System. (2025, February 14). https://www.federalreserve.gov/releases/h8/

Appendix: Full monthly data with averages and standard deviation, Dec 2017 – Dec 2024 (shrunk to fit). Compares March 2020 increases to stimulus increases in 2021.

	Dec-17	Jan-18	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Mar-21	Apr-21	Dec-24	Averages	Std Dev
Assets	16,785.00	16,737.50	17955.6	18956.4	20121.1	20353.9	20,207.80	20,102.50	20,096.40	21,017.30	21,325.90	23,517.70		
Liabilities	14896.1	14879.2	15945.9	16930.4	18069.5	18327.3	18,179.80	18,043.30	18,043.80	19,077.10	19,337.40	21,161.30		
Monthly Increase (Assets)		0.99717	1.006683	1.055737	1.061441	1.01157	0.992822	0.994789	0.999697	1.012443	1.014683	1.000736	**1.0041**	**0.0111**
Monthly Increase (Liabilities)		0.998865	1.006997	1.06174	1.067281	1.014267	0.991952	0.992492	1.000028	1.012703	1.013645	0.998683	**1.0043**	**0.0120**
Bi-Monthly Increase (Assets)			1.009837	1.062793	1.120603	1.073722	1.004309	0.987649	0.994487	1.019436	1.027309	0.999074	**1.0084**	**0.0190**
Bi-Monthly Increase (Liabilities)			1.009745	1.069169	1.133175	1.082508	1.006104	0.984504	0.992519	1.022221	1.026521	0.997657	**1.0087**	**0.0207**
Z Score, Monthly Assets		-0.62342	0.234381	4.65778	5.172083	0.675055	-1.0155	-0.83812	-0.39561	0.753763	0.955782	-0.30186		
Z Score, Monthly Liabilities		-0.44799	0.227391	4.77409	5.234329	0.831206	-1.0222	-0.97737	-0.35146	0.701311	0.779504	-0.46312		
Z Score, Bi-Monthly Assets			0.077862	2.871073	5.920293	3.447521	-0.21369	-1.09245	-0.73174	0.584181	0.999438	-0.48982		
Z Score, Bi-Monthly Liabilities			0.049066	2.924514	6.021704	3.569987	-0.12713	-1.17234	-0.78449	0.652752	0.860824	-0.53589		