MONETARY AND FISCAL POLICY

MONETARY POLICY

WHERE DOES MONEY COME FROM

Where does money come from?

- No one knows for sure as money predates writing (http://www.levyinstitute.org/publications/introduction-to-an-alternative-history-of-money)
- Hint: It wasn't barter, gold, or gold certificates
  - These may be used as mediums of exchange but that didn't qualify them as money
- Different views of money:
  - Metalist: Money is given value based on the purchasing poser of the commodity (metal) on which it is based
  - Chartalist: Money is created by the state in order to buy things and is given value by the state as the means of paying taxes

WHERE DOES MONEY COME FROM

Where does the money supply come from in the U.S.?

- The first fiat currency can be traced back to 1690 when the Massachusetts Bay Colony issued "bills of credit" to pay for military action during King William's war in French Quebec and was given value by being deemed acceptable for the payment of taxes
  - Not always successful as was learned during the Revolutionary War when so much money was printed that it became worthless ("not worth a continental")

27.1 What is Money? (10 of 17)

Official Measures of Money: M1 and M2

M1 consists of currency by individuals and businesses, traveler's checks, and checkable deposits owned by individuals and businesses.

M2 consists of M1 *plus* savings deposits and small time deposits, money market funds, and other deposits.

Effective May 2020, savings deposits became part of M1.

27.1 What is Money? (7 of 17)

Currency

The notes (dollar bills) and coins that we use in the United States today are known as **currency.**

Notes are money because the government declares them to be with the words printed on every dollar bill:

“Federal Reserve Note”

“This note is legal tender for all debts, public and private.”

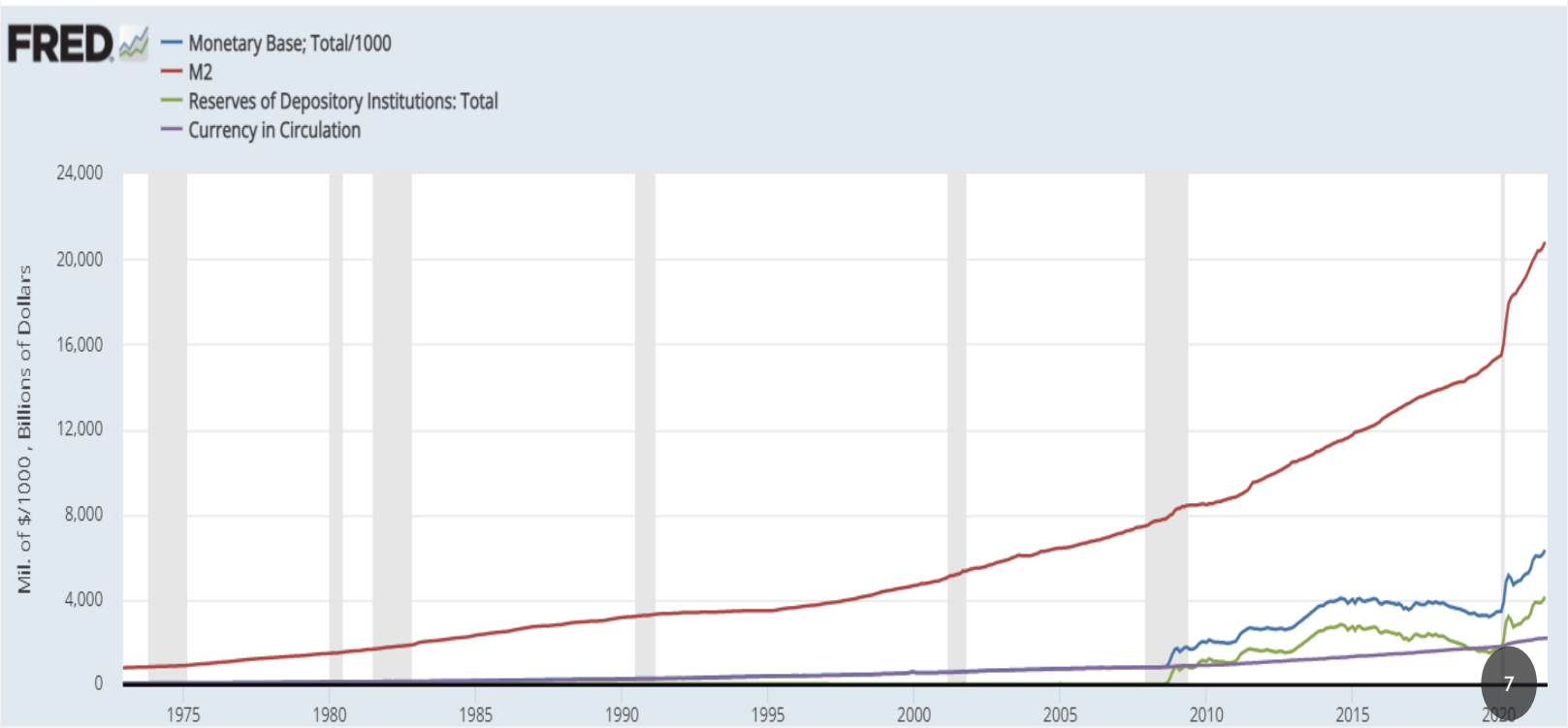
Deposits

Deposits at banks, credit unions, savings banks, and savings and loan associations are also money.

WHERE DOES MONEY COME FROM

<u>There's more than one kind of money</u>

- Monetary aggregates
  - The monetary base: currency in circulation (Federal Reserve notes) plus "bank reserves"
  - The money supply: currency in circulation plus checking accounts plus small time deposits plus balances in money market funds (MMFs), commonly called M2 (or, now, M1)



WHERE DOES MONEY COME FROM

<u>Bank reserves</u>

- Bank reserves are used for:
  - Interbank transfers: movement of deposits among banks
  - Reserves are created and destroyed by the Federal Reserve as part of monetary and fiscal policy
    - Managing interest rates at their most basic level (monetary policy)
      - By controlling supply of reserves, the Fed manages its "policy rate," the federal funds rate, FFR (the rate used for interbank borrowing of reserves)
    - Taxing and spending (fiscal policy)
  - The Fed requires the banks and other financial institutions to hold a minimum percentage of deposits as reserves, called the *required reserve ratio*.
  - The level of bank reserves in the aggregate is determined by the Federal Reserve as part of monetary policy.

WHERE DOES MONEY COME FROM

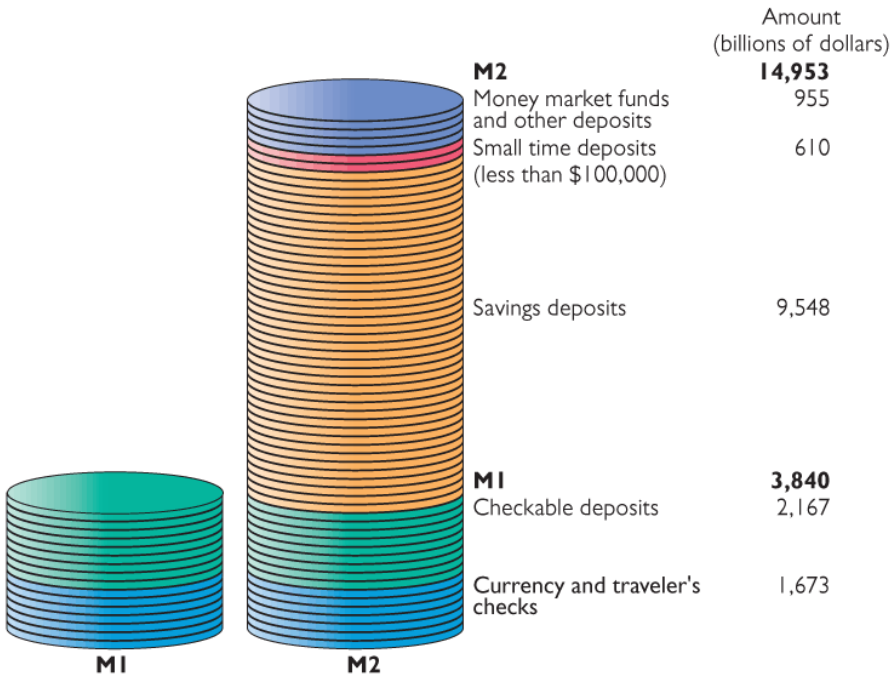
<u>The money supply (M2)</u>

- Combination of cash (Federal Reserve notes in circulation), bank deposits and MMFs
- Used to purchase good, services and investments
- Used to pay taxes

27.1 What is Money? (12 of 17)

M2

- M1
- Savings deposits (eff. 5/2020, part of M1)
- Small time deposits
- Money market funds and other deposits



27.1 What is Money? (13 of 17)

Are M1 and M2 Means of Payment?

The test of whether something is money is whether it is generally accepted as a means of payment. (Actually, the test is whether the federal government will accept it as a means of paying taxes.)

M1 passes this test and is money.

Some savings deposits in M2 (now M1) are just as much a means of payment as the checkable deposits.

Other savings deposits, time deposits, and money market funds are *not* instantly convertible and are *not* a means of payment.

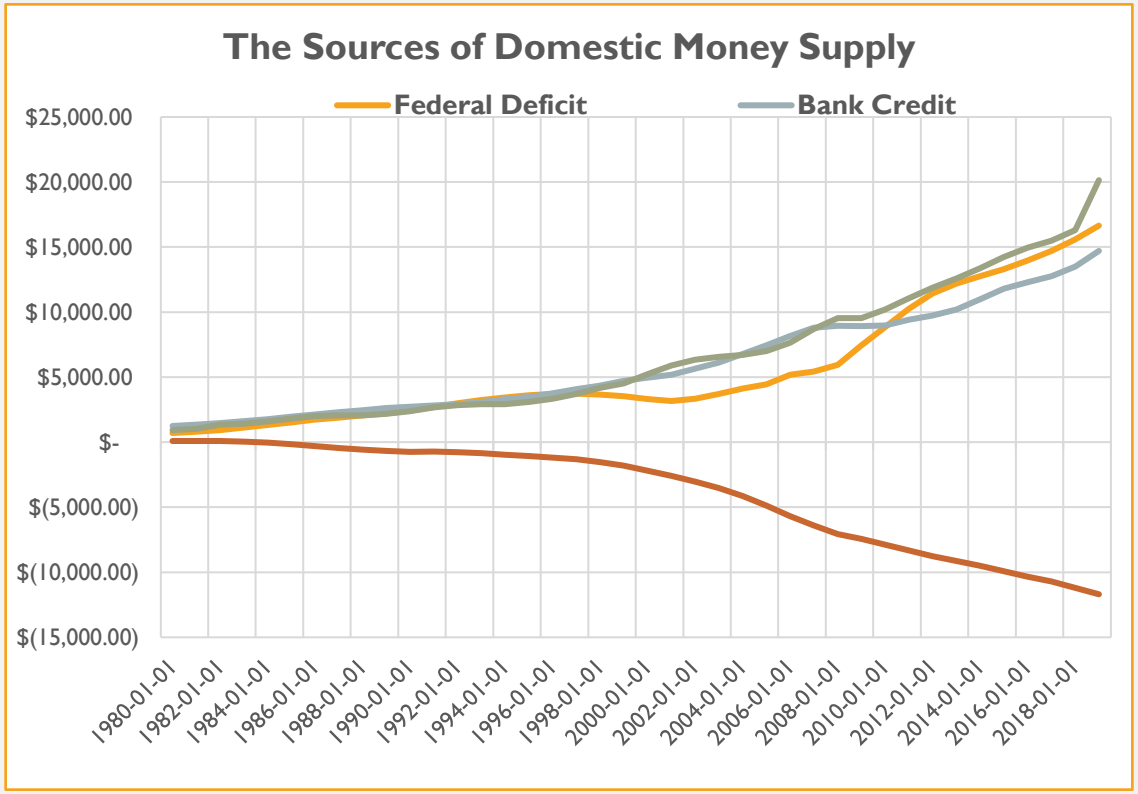
Where does money come from

Where does the money supply come from in the U.S.?

- The “money supply” is created by banks out of thin air:
  - When loans are made
  - When the government spends (fiscal policy)
- The “money supply” is destroyed when:
  - When loans are repaid
  - When taxes are paid
- The money supply also increases during a period when there is a trade surplus (actually a return of money once owned domestically) and decreases when there is a trade deficit

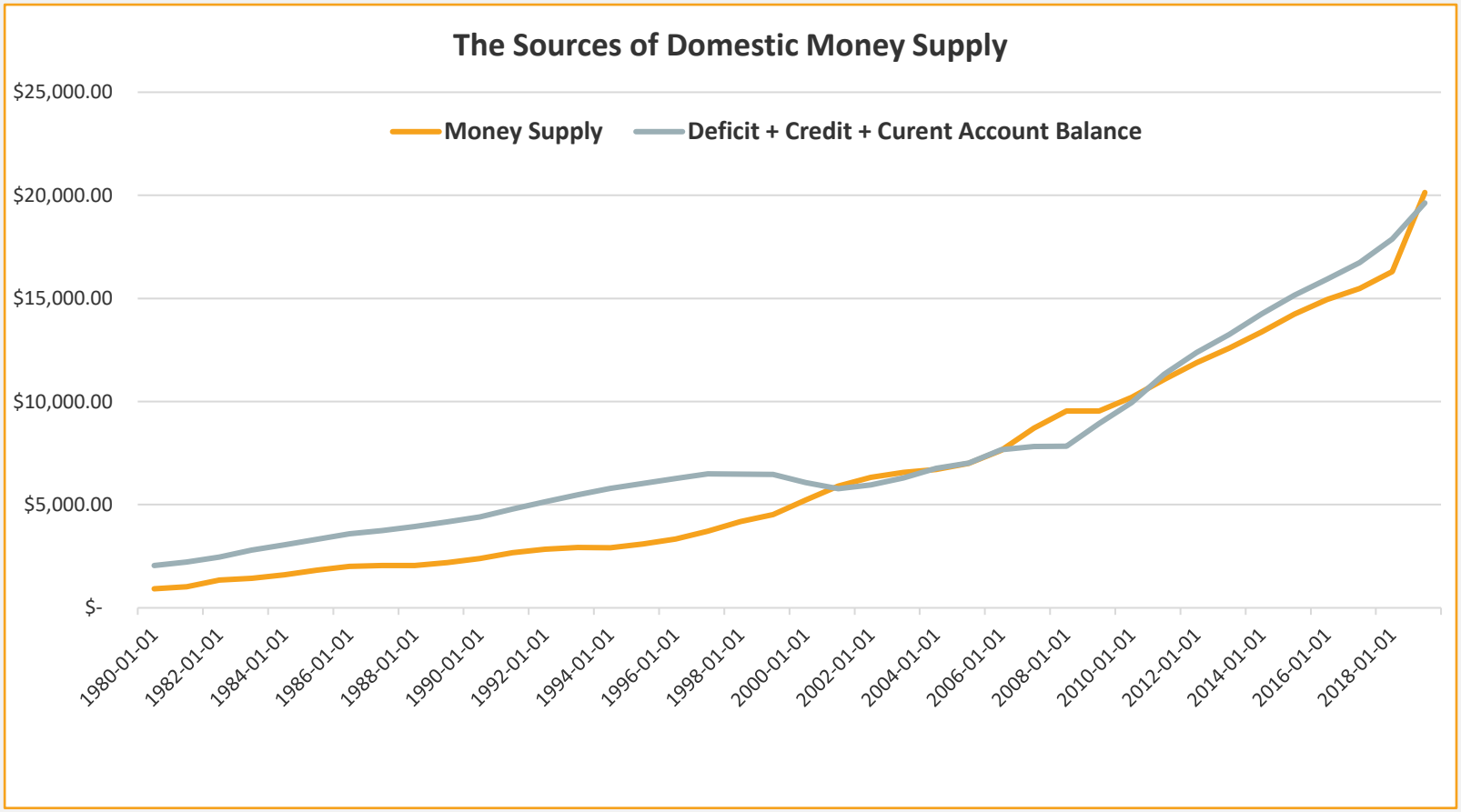
WHERE DOES MONEY COME FROM

- Growth in the money supply (currency plus deposits plus MMF) can occur in only one of 3 ways:
  - Deficit spending by the government
  - Bank credit
    - Limited only by demand and credit worthiness of borrowers (in contrast with the "loanable funds" theory)
  - A positive trade balance
    - Possible but unlikely



WHERE DOES MONEY COME FROM

Growth in the money supply (currency plus deposits plus MMF):



THE FEDERAL RESERVE

<u>The importance of balance sheets</u>

- We all have one: You and I, enterprises, banks, the Fed, and the Treasury
- Balance sheets must balance: assets = liabilities plus net worth
- All financial transactions result in changes to balance sheets
- Understanding the financial system from the perspective of balance sheets helps to explain how the money supply is created and destroyed, the process of taxation and spending, and the process of government borrowing

THE FEDERAL RESERVE

Federal Reserve Balance Sheet

https://www.federalreserve.gov/releases/h41/current/

Millions of dollars

Assets, liabilities, and capital	Eliminations from consolidation	Wednesday Oct 13, 2021	Change since Wednesday Oct 6, 2021	Change since Wednesday Oct 14, 2020
Assets				
Gold certificate account		11,037	0	0
Special drawing rights certificate account		5,200	0	0
Coin		1,200	- 8	- 283
Securities, unamortized premiums and discounts, repurchase agreements, and loans		8,357,206	+ 13,789	+1,414,401
Securities held outright[1]		7,963,030	+ 16,657	+1,428,866
U.S. Treasury securities		5,465,924	+ 16,647	+ 980,946
Bills[2]		326,044	0	0
Notes and bonds, nominal[2]		4,707,171	+ 15,203	+ 880,315
Notes and bonds, inflation-indexed[2]		367,642	+ 1,201	+ 76,483
Inflation compensation[3]		65,067	+ 243	+ 24,148
Federal agency debt securities[2]		2,347	0	0
Mortgage-backed securities[4]		2,494,759	+ 10	+ 447,920
Unamortized premiums on securities held outright[5]		354,617	- 190	+ 17,049
Unamortized discounts on securities held outright[5]		-15,877	+ 14	- 11,280
Repurchase agreements[6]		0	0	- 1,000
Loans[7]		55,436	- 2,692	- 19,234
Net portfolio holdings of Commercial Paper Funding Facility II LLC[8]		0	0	- 8,559
Net portfolio holdings of Corporate Credit Facilities LLC[8]		515	0	- 44,785
Net portfolio holdings of MS Facilities LLC (Main Street Lending Program)[8]		30,465	+ 8	- 10,082
Net portfolio holdings of Municipal Liquidity Facility LLC[8]		9,779	+ 2	- 6,770
Net portfolio holdings of TALF II LLC[8]		4,495	0	- 7,221
Items in process of collection	(0)	125	+ 69	+ 24
Bank premises		1,547	+ 8	- 647
Central bank liquidity swaps[9]		333	+ 5	- 7,145
Foreign currency denominated assets[10]		20,709	- 137	- 905
Other assets[11]		38,332	+ 3,175	+ 1,489
Total assets	(0)	8,480,942	+ 16,910	+1,329,516

THE FEDERAL RESERVE

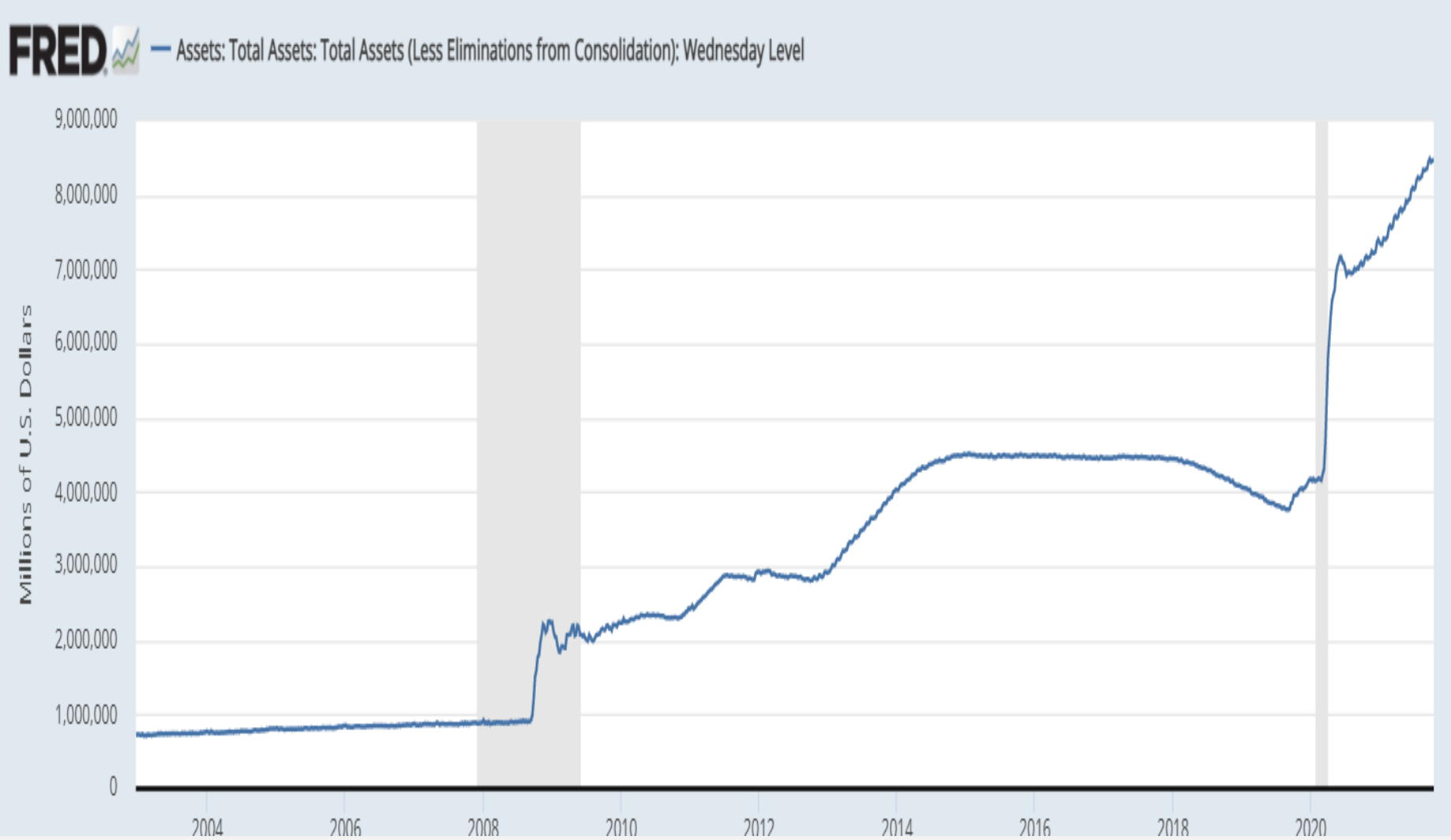
Federal Reserve Balance Sheet

https://www.federalreserve.gov/releases/h41/current/

Millions of dollars

Assets, liabilities, and capital	Eliminations from consolidation	Wednesday Oct 13, 2021	Change since Wednesday Oct 6, 2021	Change since Wednesday Oct 14, 2020
Liabilities				
Federal Reserve notes, net of F.R. Bank holdings		2,155,233	+ 3,735	+ 161,381
Reverse repurchase agreements[12]		1,657,622	- 80,168	+1,461,794
Deposits	(0)	4,593,187	+ 92,701	- 198,254
Term deposits held by depository institutions		0	0	0
Other deposits held by depository institutions		4,204,510	+ 36,966	+1,296,776
U.S. Treasury, General Account		72,460	- 23,394	-1,575,477
Foreign official		5,264	- 1,199	- 13,638
Other[13]	(0)	310,954	+ 80,330	+ 94,086
Deferred availability cash items	(0)	240	+ 68	- 363
Treasury contributions to credit facilities[14]		26,397	0	- 87,603
Other liabilities and accrued dividends[15]		8,401	+ 564	- 8,078
Total liabilities	(0)	8,441,079	+ 16,899	+1,328,875
Capital accounts				
Capital paid in		33,078	+ 11	+ 681
Surplus		6,785	0	- 40
Other capital accounts		0	0	0
Total capital		39,863	+ 11	+ 641

THE FEDERAL RESERVE



Treasury Balance Sheet (2020)

Note that the Treasury's balance sheet does not reflect the assets and liabilities of the departments of the government (DOD, etc.)

Assets:	
Cash and other monetary assets (Note 2)	1,926.9
Accounts receivable, net (Note 3)	321.2
Direct loans and loan guarantees receivable, net (Note 4)	1,577.4
Inventories and related property, net (Note 5)	379.7
General property, plant and equipment, net (Note 6)	1,145.0
Securities and investments (Note 7)	121.9
Investments in special purpose vehicles (Note 8)	108.4
Investments in government-sponsored enterprises (Note 9)	108.9
Other assets (Note 10)	261.3
Total assets	5,950.7
Stewardship property, plant and equipment (Note 25)	

Liabilities:	
Accounts payable (Note 11)	105.1
Federal debt and interest payable (Note 12)	21,082.9
Federal employee and veteran benefits payable (Note 13)	9,409.3
Environmental and disposal liabilities (Note 14)	602.7
Benefits due and payable (Note 15)	256.3
Loan guarantees liability (Note 4)	520.1
Insurance and guarantee program liabilities (Note 16)	199.3
Other liabilities (Note 17)	568.2
Total liabilities	32,743.9
Commitments (Note 19) and Contingencies (Note 20)	
Unmatched transactions and balances (Note 1.S)	3.1
Net position:	
Funds from Dedicated Collections (Note 21)	3,474.4
Funds other than those from Dedicated Collections	(30,270.7)
Total net position	(26,796.3)
Total liabilities and net position*	5,950.7

"Funds other than those from dedicated collections" are financed by receipts not dedicated by law for specific purposes and by the proceeds of general borrowing.

https://www.fiscal.treasury.gov/reports-statements/financial-report/balance-sheets.html

27.3 The Federal Reserve System (7 of 16)

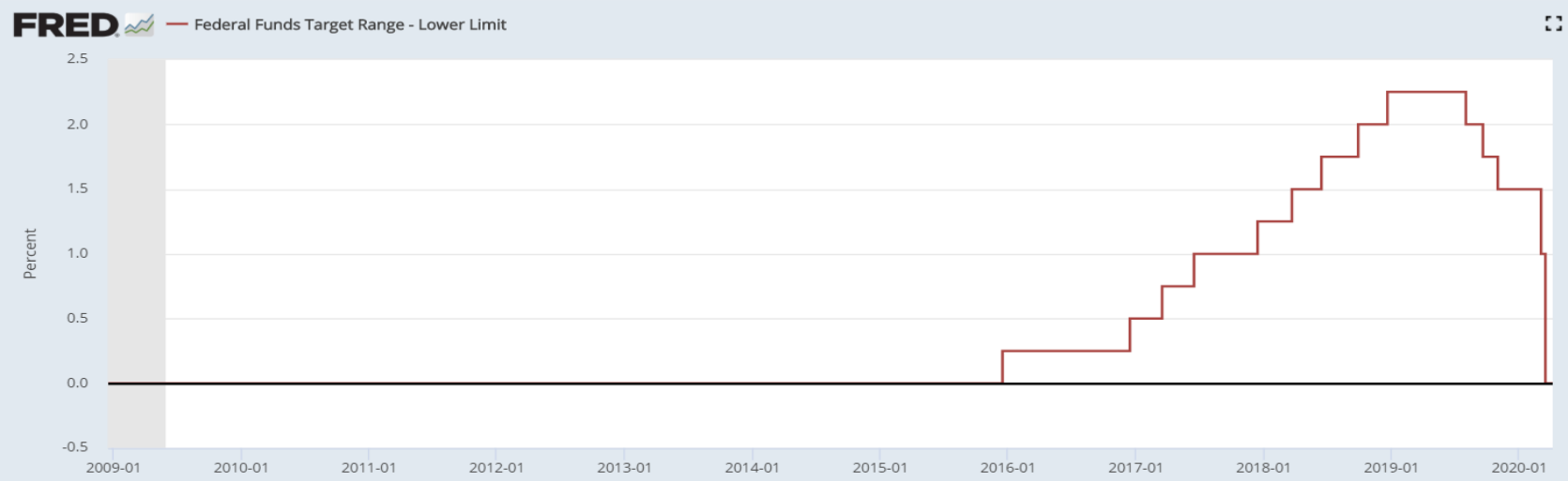
The Fed's Monetary Policy Tools

The Fed uses five main policy tools:

- Required reserve ratios
- Discount rate
  - This is the rate charged by the Fed to member banks and other depository institutions for borrowing funds from their district Federal Reserve in order to replenish reserves
  - It comes in the form of a primary rate for most banks, a secondary rate for banks that don't meet certain requirements, and a seasonal rate for small community banks
  - The primary discount rate today is .25%
- Open market operations (to manage the Fed Funds Rate)
- Extraordinary crisis measures
- Repo and reverse repo rates

The Federal Reserve System

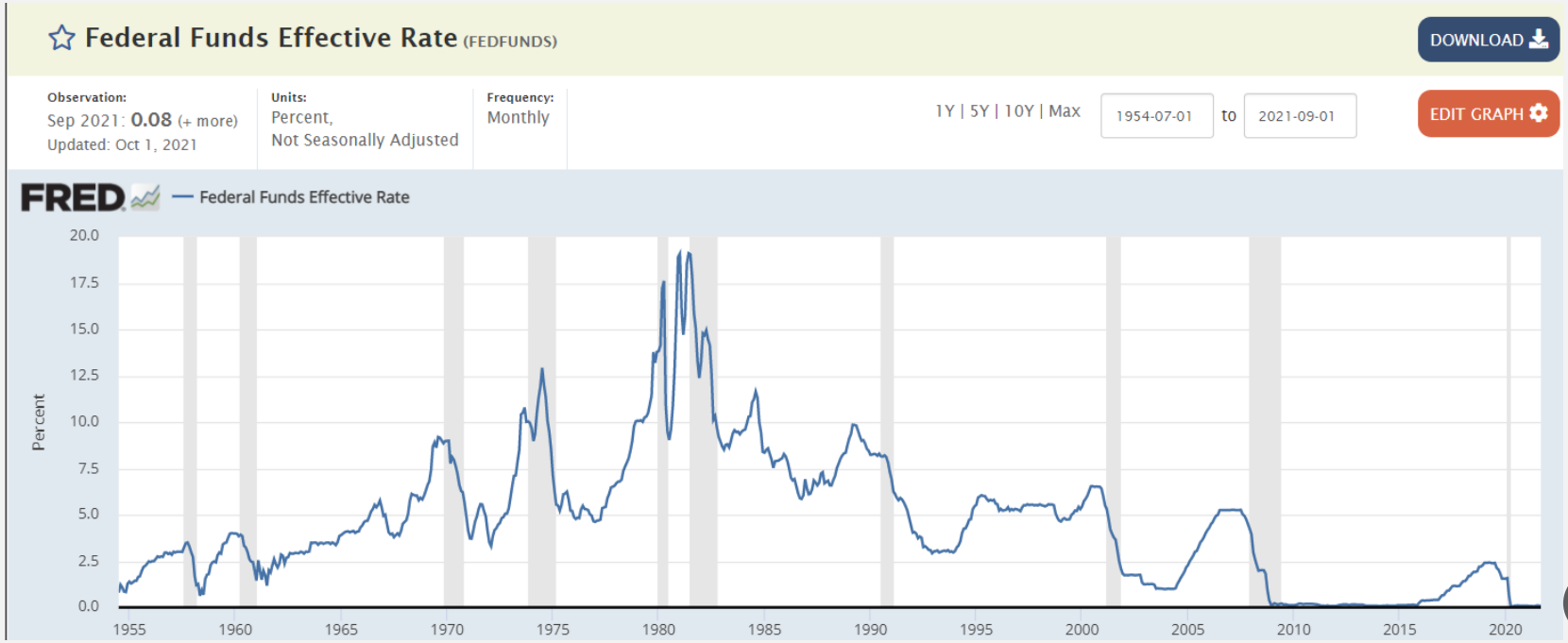
- The most recognized Fed monetary management tool are system open market operations to manage the Fed Funds Rate (FFR). It works like this:
  - The FFR drives the interest rate used by the banks to borrow and lend overnight to one another to satisfy the Fed's reserve requirements and, thereby, influences financial operations throughout the system
  - The FOMC, the policy-making body of the Fed, decides on a range (usually a quarter percentage point) for the FFR and instructs the New York Fed to buy and sell short term Treasury securities until the "effective" FFR is within the target range. These are known as System Open Market Operations, or SOMA
  - The range for the FFR was recently reduced and is now 0% to 0.25%



THE FEDERAL RESERVE SYSTEM

Interest Rates

- Federal funds rate (FFR)
  - This is the key policy rate for the federal reserve upon which other rates are implicitly based
  - The FFR is an overnight rate used by banks to borrow and lend reserves to one another in order to support changes in deposits and meet minimum reserve requirements (currently zero)



The Federal Reserve System

- SOMA (System Open Market Account) Operations
  - SOMA Operations have been the primary tool used by the Fed to manage interest rates
  - When the Treasury issues bonds, "primary dealers" (banks or financial institutions approved to trade with the Treasury) are required to purchase and may do so with their own reserves or funds provided by the Fed through "repo" arrangements
  - SOMA takes the form of purchases and sales of government securities from primary dealers and other banks; securities include primarily Treasury bonds but also bonds of government supported enterprises (GSEs), like Fannie May
    - Different durations are bought and sold depending on where the Fed wants interest rates to end up with a preference to have longer duration rates higher than short duration as a healthier environment for business expansion

The Federal Reserve System

- SOMA (System Open Market Account) Operations
  - Bonds may also be "repo'd" to manage the FFR and/or to provide reserves to banks
    - A repo operation is one in which the Fed lends reserves collateralized by Treasury securities on a short term basis
    - The repo rate is always less than the FFR because there is no collateral backing the FFR
    - Repo's may and often are rolled over so that the reserves remain in the banking system for an indefinite period

Monetary policy

- SOMA (System Open Market Account) Operations
  - Where does the Fed get the money to conduct SOMA operations (purchases and repo's)?
    - In 2002, as a tool to combat deflation, Ben Bernanke made this statement: "*The US government has a technology, called a printing press, that allows it to produce as many dollars as it wishes at essentially no cost." "Under a paper-money system, a determined government can always generate higher spending and, hence, positive inflation."*
    - When presenting in his semi-annual testimony before the House Committee on Financial Services, in 2013 this exchange took place:
      - "Where does the Fed get the money to buy [assets]," Congressman Keith Rothfus asked the Chairman. "Do you create the reserves," he queried in a follow up, receiving a simple "yes" from Bernanke. And finally, the money shot: are you printing money? "Not literally," the Fed Chairman surprisingly responded.
  - The Fed, through simple keystrokes, creates the electronic credits in the accounts of the sellers, for example banks, in exchange for its holdings of Treasury securities (or anything else the Fed choses to own)
    - The Fed's balance sheet then expands to include the securities purchased as assets and the deposits in the accounts of the sellers as liabilities (these deposits represent reserves at the Fed)

MONETARY POLICY

So, how does the government avoid "running out of money?"

Step		Assets	Liabilities	Net Worth	Explanation
1a	Treasury	+ Funds other than those from Dedicated Collections	+ Federal debt payable (Treasury bonds)		Treasury auctions new issue of bonds
1b	Fed		+ Treasury General Account - Reserves		Treasury General account increases as reserves being held for benefit of the Primary Dealer are removed in step 2
1c	Primary Dealer	- Reserves + Treasury bonds			Primary Dealer buys bonds with reserves; reserves become "Funds other than from Dedicated Collections" on Treasury balance sheet
2a	Fed	+ Treasury bonds	+ Reserves		Fed creates reserves to buy bonds via open market operations from Primary Dealer
2b	Primary Dealer	- Treasury bonds + Reserves			Primary Dealer sells bonds to Fed in exchange for reserves that were created in step 3a

Note: None of these steps affect the money supply as defined. For that, see "government spending."

MONETARY POLICY

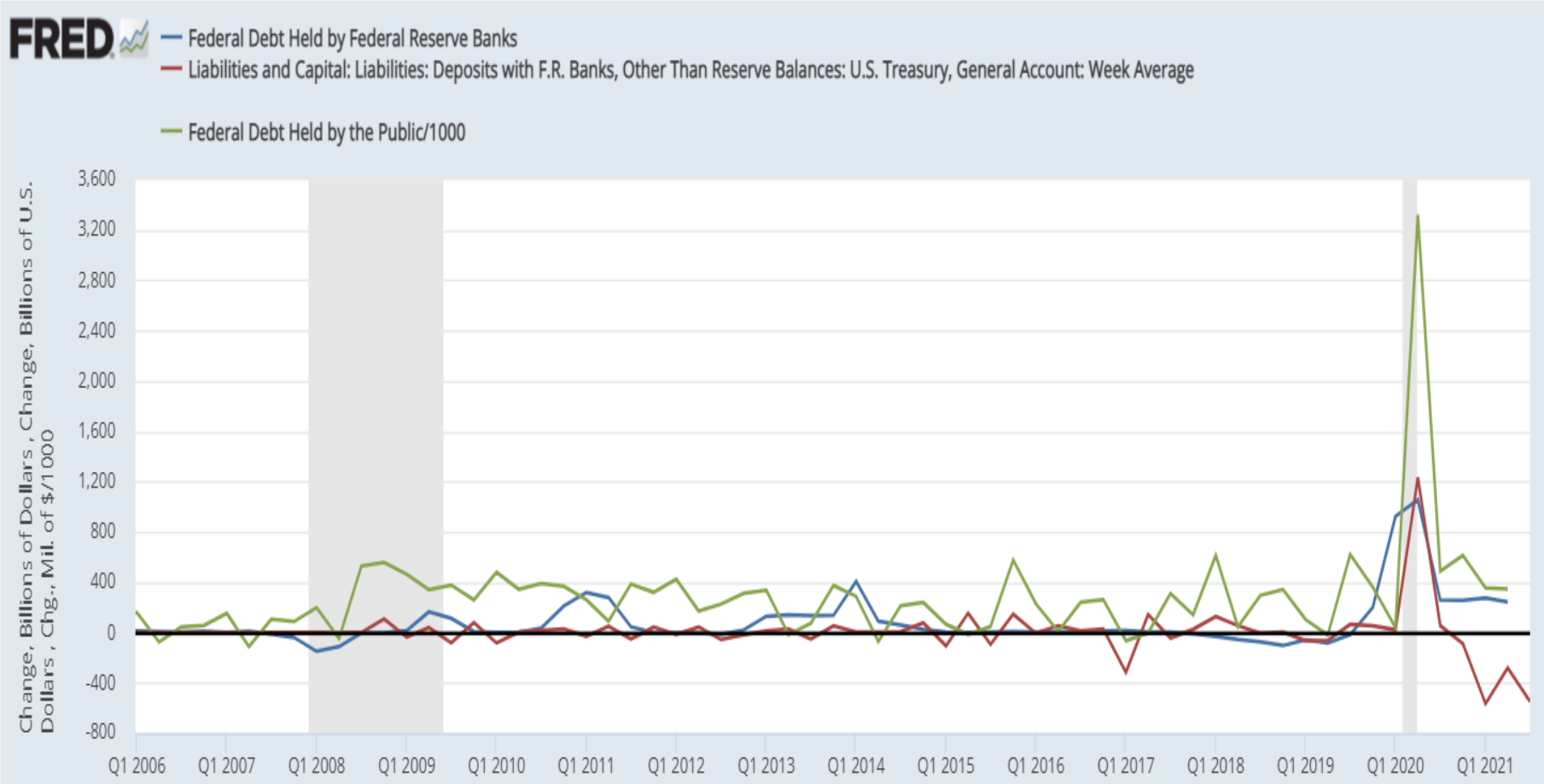
So, how does the government avoid "running out of money?"

3a	Fed	- Treasury bonds + Other assets			Bonds mature and Treasury redeems from Fed using Funds other than those from Dedicated Collections; Federal debt payable declines
			- Treasury General Account + Surplus		
3b	Treasury	- Funds other than those from Dedicated Collections	- Federal debt payable		
4a	Fed		- Surplus + Treasury General Account		Fed transfers cash to Treasury since it cannot make a profit; government's net worth increases
4b	Treasury	+ Funds other than those from Dedicated Collections		+ Net worth	

Note: None of these steps affect the money supply as defined. For that, see "government spending."

MONETARY POLICY

This chart shows the increase in the Treasury's General Account roughly corresponding to the increase in the federal debt held by the Fed…until it doesn't



MONETARY POLICY

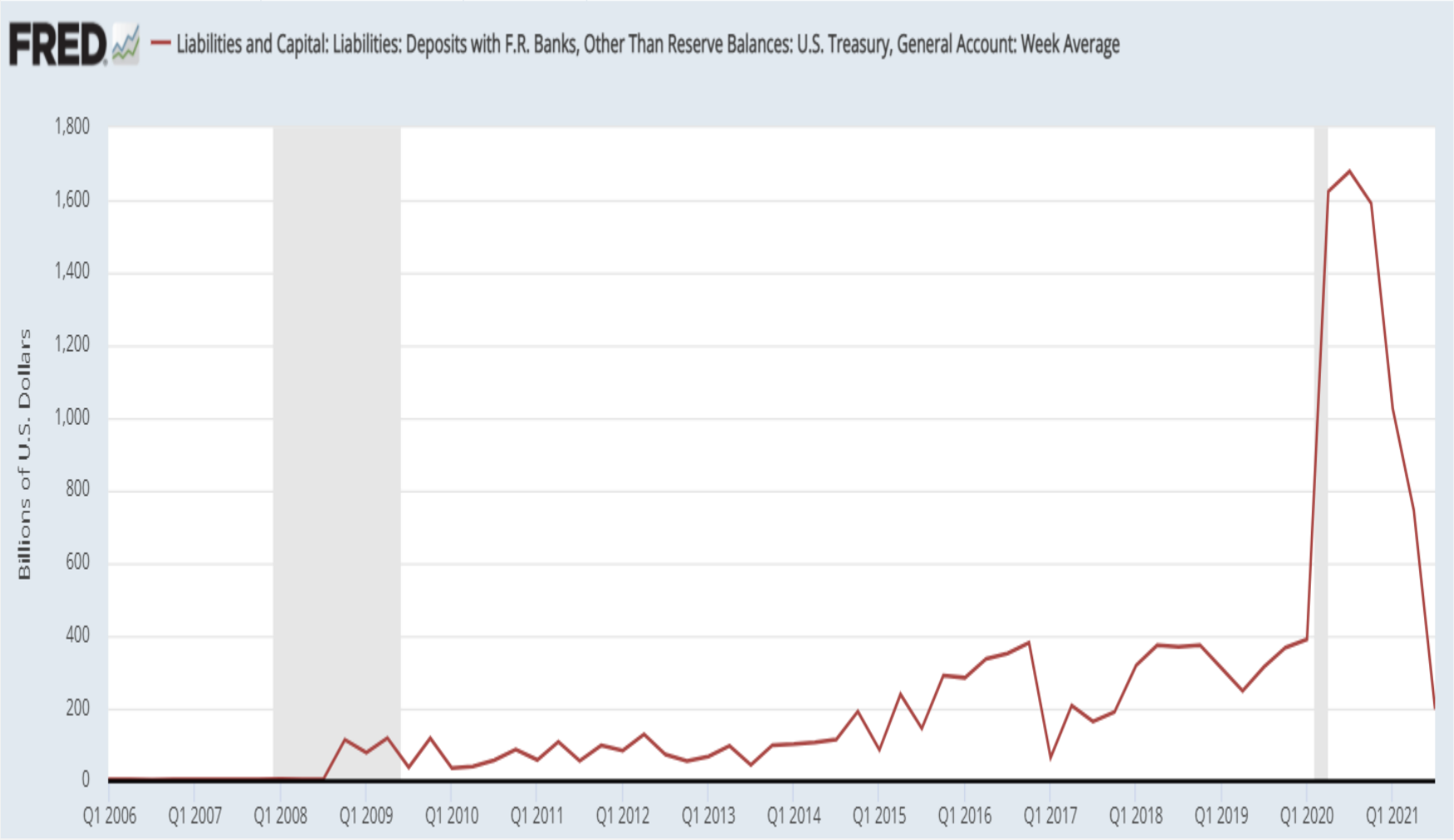
If there's no shortage of money, why does the Treasury sell bonds (government debt)?

- The decision to issue debt is made by the Office of Debt Management (ODM) within the Treasury Department
  - Our Debt Management Objectives
    - **Regular and predictable**
    - **Least expected cost over time**
    - Managing interest rate risk
    - Supporting market functioning and liquidity
    - Maintaining a broad investor base

- Selling government bonds serves two other important purposes:
  - To withdraw purchasing power (demand) from the economy, thus reducing the potential inflationary impact of government spending (e.g., war bonds)
  - To meet the requirements of Congressional appropriation bills (discussed in fiscal policy)

MONETARY POLICY

- To meet the requirements of Congressional appropriation bills (discussed in fiscal policy)



Monetary policy

- Monetary Policy during the Great Financial Crisis (2008-2009)
  - The Fed provided support of three kinds during the GFC:
    - In keeping with its role as lender of last resort, the Fed provided funds through various credit facilities to primary dealers and others
      - One report said that under the Troubled Asset Relief Program, upwards of $29 *trillion* in loans were provided to financial firms (disclosed under FOIA)
    - The second set of tools provided funds to borrowers and investors in key credit markets in commercial paper, mutual funds and money markets
    - The third set of tools are the best known and were comprised of three tranches of so-called Quantitative Easing (QE) which were SOMA operations that began in August 2008 and extended into 2012
      - Prior to QE1, total assets held by the Fed were about $900 billion
      - By the time they maxed out in January 2015, Fed assets had grown to about $4.5 trillion
  - After all is said and done, however, the Fed's ability to support an economic crisis can only provide a backstop to solvency and liquidity issues
    - Unlike fiscal policy, monetary policy by the Fed cannot stimulate consumer demand

MONETARY POLICY

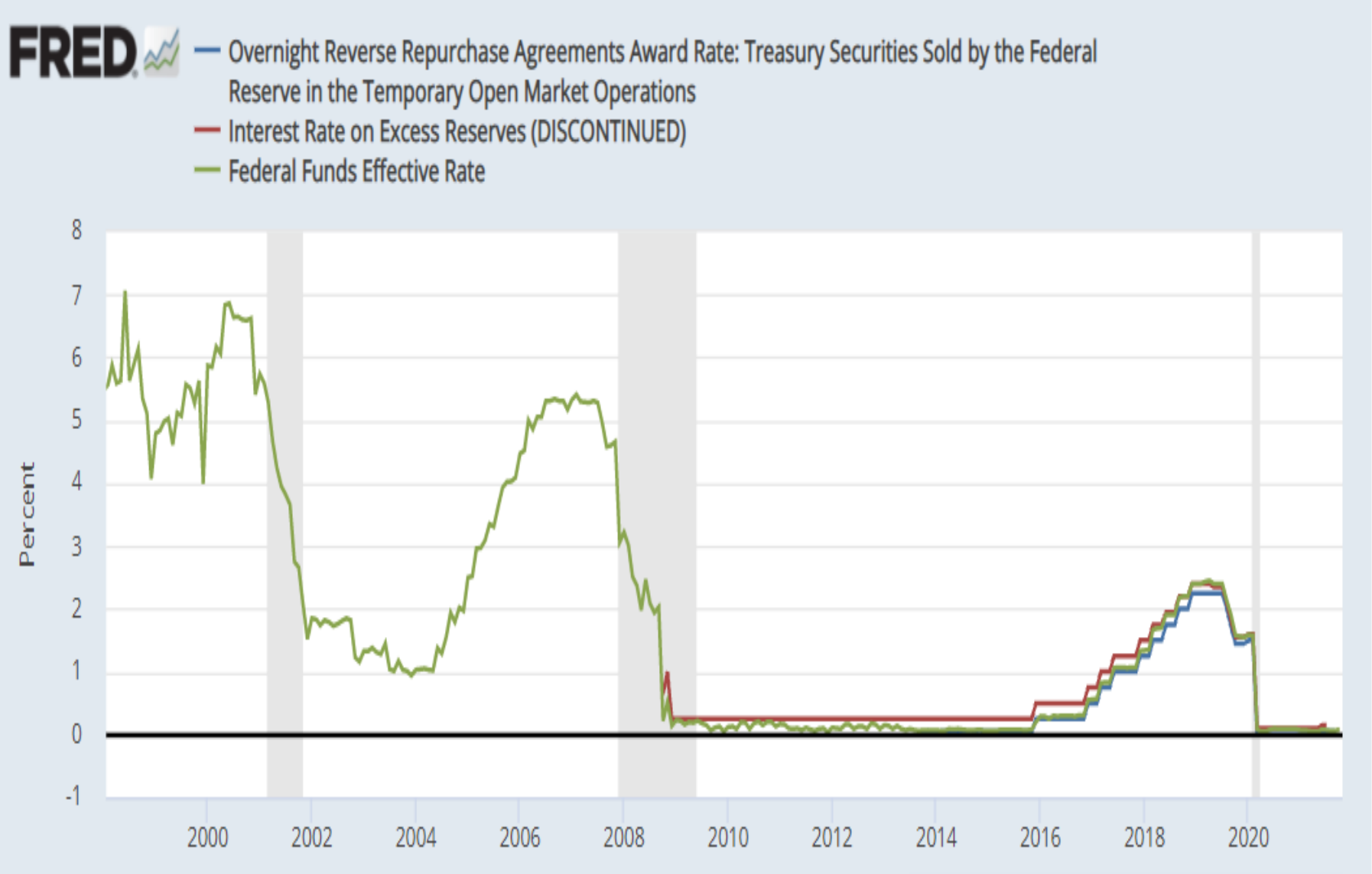
- Monetary Policy during the COVID-19 Crisis (2020-)
- The Fed pulled out all the stops to address the coronavirus crisis with a list of programs too long to list here
  - The initial response was a quick lowering of the FFR target range to what is now 0.0% - 0.25% and the suspension of reserve requirements
  - In terms of SOMA operations, unlimited purchases of Treasury securities and mortgage-backed securities has grown the Fed's balance sheet to about $6.5 trillion on April 16th from about $4.2 trillion before the crisis began
    - On March 23rd, the Fed removed any existing caps to the amount of it purchasing of not only government securities but also corporate and municipal bonds

MONETARY POLICY

What happens when banks are flooded with reserves?

- At one point, interest was paid on "excess" reserve balances maintained at the Fed
- When reserve requirements were eliminated, this rate was discontinued
- The Fed now engages in reverse repo operations where banks "lend" their reserves to the Fed and the Fed pays a small amount of interest called the overnight reverse repo rate or ON RRP in order to maintain the FFR in the target range

MONETARY POLICY



MONETARY POLICY

What Monetary Policy Cannot Do

- Unlike fiscal policy, traditional monetary policy cannot prevent a recession or a bear market
  - Easing financial conditions does not force companies to hire nor consumers to spend nor asset prices to rise. This is the essence of behavioral economics
  - It is important to note that banks do not lend out reserves no matter how high they become as a result of SOMA operations
    - Reserves exist to support inter-bank settlements among themselves
    - Borrowing occurs when there is demand from credit-worthy borrowers and a willingness on the part of banks to lend

MONETARY POLICY

What Monetary Policy Can Do

- Policy can be decided and acted upon more quickly than fiscal policy
- Now, as a result of COVID-19 interventions, the Fed has found a way to circumvent legal restrictions on purchasing non-federal-government-guaranteed securities (bonds)
  - Through purchases of debt securities, now not only federal government-related debt but also municipal and corporate debt, the Fed can keep the price of debt from plummeting and, therefore, interest rates from skyrocketing
  - Purchasing debt directly from issuers supplies capital to address liquidity and even solvency shortfalls

FISCAL POLICY

FISCAL POLICY

- Fiscal policy is the sum of spending and taxing actions taken by Congress and the Administration to manage the nation's economy
  - Once budgets are agreed between the Administration and Congress, Congress authorizes expenditures subject to certain constraints which themselves are established by law
  - Likewise, tax policy is established by law defining what taxes to levy, in what amounts and on whom
  - The Treasury, as part of the Executive branch, is the funnel through which spending and taxation occurs
    - The Treasury issues (sells) debt securities to fulfill legislative requirements in appropriations bills
    - There is no technical reason why this legislative requirement in appropriations bills needs to exist. It is purely a policy decision by lawmakers.
    - The government spends before it issues debt.

FISCAL POLICY

- How does spending come about?
  - In the normal course, the President submits a detailed spending budget proposal to Congress
  - Congress develops its own budget resolution which passes by majority vote and cannot be filibustered nor vetoed by the President
    - If no resolution, the previous year's resolution stays in effect
  - Congressional budget authorization does not proceed if a "budget constraint" is in effect, including:
    - The Budget Control Act (the so-called "debt limit"); extended, as needed to meet Congressional spending agreements
    - PAYGO rules (tax cuts and/or increases in mandatory spending must be offset by tax increases and/or cuts in other spending; suspended several times, including for Trump's 2017 tax cuts
    - Not really a constraint, but changes to tax law resulting in more than $160 billion/year require 2/3rds supermajority to pass
  - Once the budget constraint hurdle has been crossed, Congress passes a bill authorizing the expenditure (1st step)
  - Congress then enacts an appropriations bill (2nd step) to provide the funding necessary to meet the authorized expenditure
    - When enacted, bills read: *"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the following sums are appropriated, **out of any money in the Treasury not otherwise appropriated**, for Agriculture, Rural Development, Food and Drug Administration,…"

FISCAL POLICY

- How does spending come about?
  - Funds that are appropriated become a budget (spending) authority for the respective government agencies
  - Expenditures or "outlays" represent the actual funds in the form of electronic debits that flow out of the Treasury's accounts at the Fed in a given year with electronic credits to the accounts of the suppliers (sellers)
    - The credits in suppliers' accounts are liabilities for the bank and are offset by "reserves" on the asset side of the bank's balance sheet that are created by (and, for the moment, maintained at) the Fed (thus keeping the commercial bank's balance sheet balanced
    - Note that taxation does not need to preceded expenditures
  - These actions result in a fiscal deficit if the outlays exceed receipts (taxes, fees, etc.) in a given period
    - This is known as the "primary deficit" and is what has been represented in future graphs unless otherwise indicated
    - The gross deficit includes interest on the outstanding government securities
  - Treasury overdrafts at the Fed can and do occur when outlays exceed "money in the Treasury not otherwise appropriated", but are usually resolved by additional funds from bond sales in short order

FISCAL POLICY

The process of taxation

Step		Assets	Liabilities	Net Worth	Explanation
1	Treasury	+ Accounts receivable	+ Appropriation	A/R minus appropriation	New taxes become due in respect of a new spending requirement (appropriation)
2a	Taxpayer		+ Tax liability	- Tax liability	Tax imposed
2b		- Deposit	- Tax liability		Tax paid
3	Taxpayer's Bank	- Reserve	- Taxpayer's Deposit		Bank remits taxes to Treasury which reduces the money supply and the monetary base
4	Treasury	+ "Funds Other Than…" -Accounts reveivable			Treasury's "Funds other than those from Dedicated Collections" increase as funds are credited
5a	Fed		- Reserves held for taxpayer's bank		Fed destroys reserve held on account of taxpayer's bank while additional Fed liabilities (reserves) are created for the Treasury's General Account
5b			+ Deposits held in the Treasury's General Account		

FISCAL POLICY

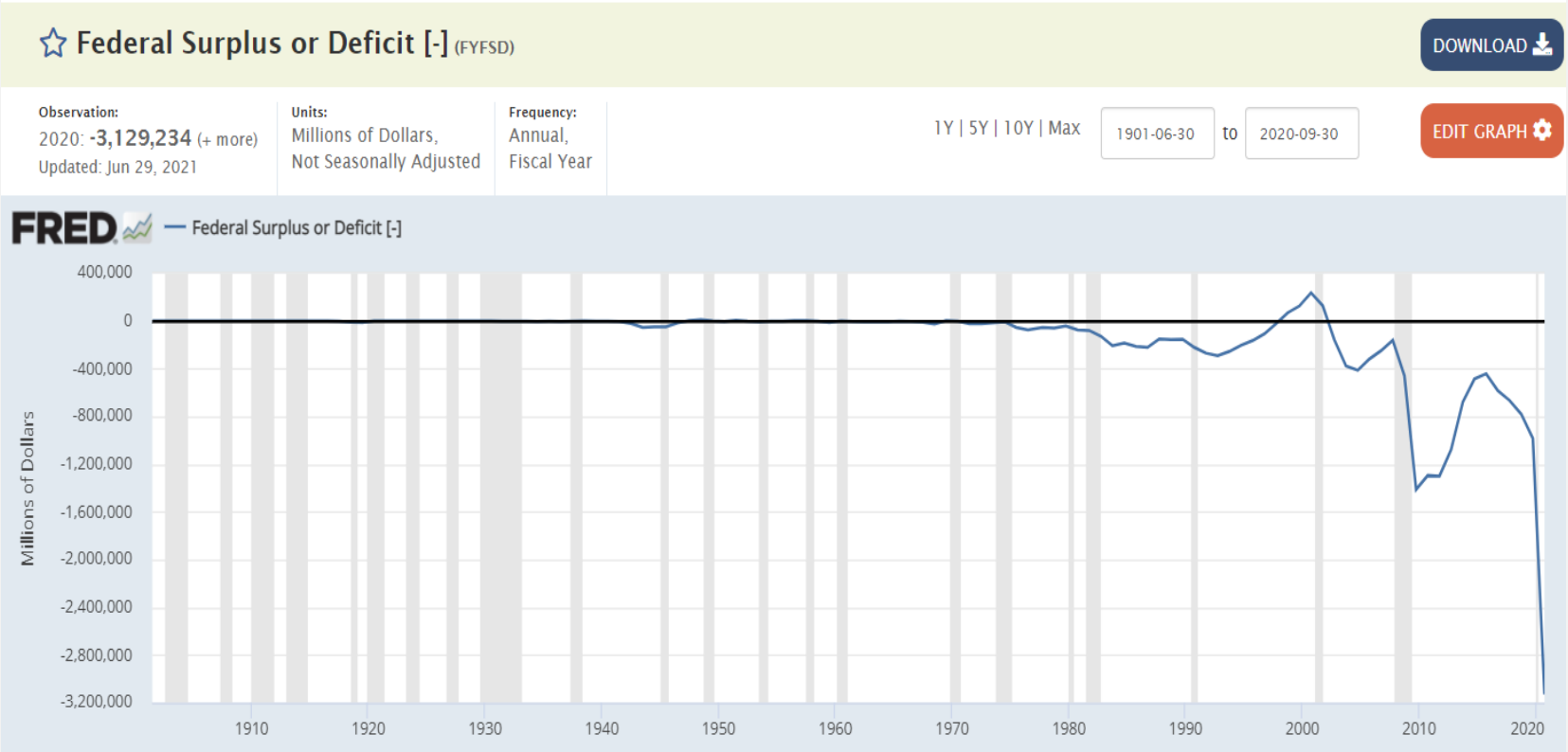
The process of government spending

Step		Assets	Liabilities	Net Worth	Explanation
1	Treasury/ Government	- Cash or "funds other than…"		- Amount of payment equal to price paid for jet	Payment is made and net worth is temporarily reduced
2	The Fed		- Treasury General Account		Payment is made
			+ Reserves from Seller's Bank		Reserves are created in the seller's bank, increasing the monetary base
3	Seller's Bank	+ Reserve	+ Taxpayer's Deposit		The bank creates the deposit in the seller's account equal to the increase in reserves, increasing the money supply
4	Seller	- Jet			Seller gives up jet and receives payment
		+ Bank deposit			
5	Treasury/ Government	+ Jet		+ Value of jet	The value of the jet is not reflected on the Treasury's balance sheet

FISCAL POLICY

- Fiscal policy has an advantage that monetary policy does not, at least up to now, namely, the ability to direct spending and spending cuts, taxation and tax cuts, to exactly the targeted entities. For example:
  - Writing off legal expenses even if you are found guilty of a crime
  - Writing off interest on your yacht if used as a second home

FISCAL POLICY



FISCAL POLICY

The "sectoral balance" equates financial flows between the government sector with the sum of the private sector and the foreign sector (trade deficit).