New digital currency (CBDC) monetary policy tool to stop inflation without causing a recession

Lawrence C. Marsh
University of Notre Dame

This version: October 23, 2022

Abstract

Don't repeat our historically dysfunctional approach to stopping excessive price inflation. When the Federal Reserve raises interest rates in New York financial markets, it becomes harder for businesses to borrow, which causes businesses to cut hours, lay off workers and close outlets. This is an indirect and rather brutal way to reduce demand for goods and services that also reduces supply. The effect is to make it harder for firms to increase supply and harder for people working paycheck-to-paycheck to handle medical emergencies, automobile accidents, or afford a mortgage. We don't need to use the stick of a **cost-of-borrowing tool** that punishes the poor to reduce inflation, when a central-bank-digital-currency (CBDC) could offer the carrot of a **return-on-savings tool** to directly reduce consumer demand on Main Street.

Sure, suppressing business to lay off workers to reduce demand will work if you slam on the brakes hard enough. But trashing the economy to stop inflation is not necessary. A more direct, more efficient, and more effective way to stop inflation is possible by creating Federal Reserve digital currency bank accounts offering exceptionally high interest rates. We all have Federal Reserve notes and coins, but only the largest banks have Federal Reserve digital currency accounts. Ledgers for unsupervised digital currencies require blockchains, but private banks and governments provide direct authority and responsibility for issuing digital money. The Federal Reserve issuing a digital currency means allowing anyone and everyone to have an account with the Federal Reserve as long as they have US dollars to create and maintain in their account.

But the danger is that the Fed offering a high enough interest rate on savings to curb inflation could divert enormous amounts of money from private banks and Wall Street. To prevent this and focus on those with the highest marginal propensities to consume, the accounts eligible for the high interest rate would be limited to individuals with incomes less than $100,000 and one per Social Security number with that interest rate only applying to amounts up to $10,000. A similar restriction was in "The Postal Savings Act of 1910" that allowed individuals to have a savings account through a local post office from 1911 until 1966. Bank and nonbank intermediaries could be paid a fee to provide access to CBDC accounts. A negative interest rate could be applied to balances above $10,000 and on accounts without a Social Security number or the accounts of people with incomes above $100,000 to discourage transfers from wealthy people.

The sudden switch in World War II from consumer products to tanks, planes and warships, and the vigorous and aggressive promotion of war bonds, resulted in 50 percent of US families buying war bonds and the suppression of consumer demand to avoid inflation in the face of a dramatic disruption in supply.

Having people save more and spend less, while encouraging business to increase supply, will reduce inflation. But it will also build up the savings of the poor and middle class, which will serve as an **automatic stabilizer** for the economy as a whole. With more savings, people can better ride out economic downturns, making such downturns less frequent and less severe.

JEL Classification: E00, E02, E2 (E20, E21, E24, E25), E3 (E31, E32), E4 (E41, E42, E43, E44), E5 (E51, E52, E58)
Keywords: income, wealth, inequality, instability, inflation, private debt, public debt, monetary policy, Federal Reserve.

Why Punish the Poor to Stop Inflation and Make it Harder for Firms to Increase Supply?

When the Federal Reserve raises interest rates in New York financial markets, it becomes harder for businesses to borrow, which causes businesses to cut hours, lay off workers and close outlets. This is an indirect and rather brutal way to reduce demand for goods and services that also reduces supply. During an inflation, we need more supply, not less. The effect of raising the cost of borrowing is to make it harder for firms to increase supply and harder for people working paycheck-to-paycheck to handle medical emergencies, automobile accidents and other situations where they need a small loan.

But trashing the economy to stop inflation is not necessary. A more direct, more efficient, and more effective way to stop inflation is possible. When the demand for goods and services exceeds the supply, prices rise. Demand can be reduced with either a carrot or stick approach. Why use the stick of a cost-of-borrowing tool to raise interest rates on loans that punishes poor people facing a personal crisis and businesses that want to supply more, and instead use a return-on-savings tool to offer the carrot of higher interest rates on savings to get people to voluntarily put off unnecessary spending and save some money? This would be like during World War II when war materials abruptly replaced consumer products, so a major advertising campaign and celebrity events sold war bonds to over 50 percent of US families and consumer demand was suppressed enough in the face of that dramatic supply disruption to avoid excessive inflation.

In 2018 Senator Kirsten Gillibrand introduced Senate bill S.2755 as "The Postal Banking Act" to use post offices to restore the "The Postal Savings Act" of 1910 which allowed people to cash checks and set up savings accounts in the over 30,000 post offices throughout the United States from 1911 to 1966. Gillibrand and her colleagues sought to use our local post offices as a venue for the poor to get small loans to deal with various crises without becoming prey to loan sharks, pawn shops, payday loan dealers, or "cash now" providers, who typically charge exorbitant interest rates.

The Federal Reserve is already considering creating a central bank digital currency (CBDC) as China and many other countries are planning to do, and several other countries have already done. To encourage innovation the Federal Reserve could pay bank and nonbank financial intermediaries a fee for providing access to CBDC accounts and use post offices as physical locations for people with IRS-certified low incomes to access individual CBDC savings accounts at any of the over 30,000 post offices nationwide. People could also register their smartphones, computers, and other communication devices for more direct and immediate access to their CBDC accounts. When excessive inflation threatens, these CBDC "FedAccounts" could offer a high interest rate on savings with aggressive advertising as with war bonds. Encouraging people to save money and spend less will reduce the excess demand where too much money is chasing too few goods and driving up prices.

Ordinarily, to make a profit a bank must charge a higher interest rate on loans than it pays on savings. But the Federal Reserve is in a unique position. To reduce demand for goods and services, the Fed can offer a high interest rate on savings without making any loans. However, in line with "The Postal Savings Act" of 1910 and to avoid disrupting commercial banking, the Fed will need to set a limit on the size of savings accounts. With one account per Social Security number and a limit of $10,000 per account, the Fed can avoid competing with private banks for the large savings of wealthy investors. A fee could be charged on amounts above $10,000 to further discourage the wealthy from moving large amounts of money into these CBDC accounts. Banks and nonbank financial service apps such as PayPal, Venmo, Zelle, Google Pay, Apple Pay, and others could be paid a fee as intermediaries with some offering physical in addition to online locations to access CBDC accounts.

With sufficient savings people are better able to ride out an economic downturn. Encouraging people to build up their savings will also serve as an **automatic stabilizer** for the individual and for the economy as a whole. Whenever an economic downturn threatens, people with savings do not have to cut their expenditures so dramatically. This avoids a sudden drop in expenditures and would make economic downturns less severe. A larger pool of savings would shorten and lessen the severity of recessions. If we really want to stop inflation without causing a recession, we need to discourage unnecessary consumer spending to reduce demand when too much money is chasing too few goods. With more savings, people can better ride out economic downturns, making such downturns less frequent and less damaging. The result is a more stable economy overall with fewer inflations and recessions.

If everyone had a Federal Reserve CBDC bank account accessible from their computer or smartphone, it would become easier to transfer money. If someone cuts your grass, rakes your leaves, or

shovels your snow, you can pay them easily with a smartphone-to-smartphone transfer between your individual Federal Reserve accounts. This instant clearing would eliminate transaction time and expense.

Alternatively, when inflation is low and unemployment rises, the Federal Reserve could lower the interest rates on both savings and loans to help stimulate the economy. Everyone with a Social Security number could automatically be given a CBDC account so that stimulus money could be injected directly into these accounts in a manner similar to the "helicopter money" drop that Federal Reserve Chair Ben Bernanke proposed for Japan when Japan was in an economic slump. This new tool would give the Federal Reserve much tighter control in meeting its mandate of maintaining full employment with stable prices. Large banks already have bank accounts with the Federal Reserve. There is no reason why the rest of us couldn't also have bank accounts with the Federal Reserve. All the new digital currencies, especially stablecoins and CBDCs around the world, threaten the Federal Reserve's dominance and control over our currency. By setting up digital currency smartphone savings CBDC accounts for every American, the Federal Reserve can reestablish its control over our currency and gain a much better way of dealing with the challenge of excessive inflation on one hand and high levels of unemployment during economic downturns on the other.

CBDC Privacy Protection in Law and Practice

The Panel Study of Income Dynamics at the University of Michigan has made individual level data available for a large number of studies for many years without any known violations of any individual identification information. The Social Security Administration and the Bureau of the Census in coordination with the Internal Revenue Service released an individual level combined data set available to any and all researchers without any known violation of any individual's identify.[1] These exact match tapes were extremely valuable to researchers and led to many important research studies. By law a CBDC could be required to keep any identifying information that could identify any individual entity using a CBDC entirely separate from the restricted and truncated transaction history of that entity. Government authorities who were properly trained and screened to be specifically authorized to look for certain types of illegal transactions could present evidence of such illegal transactions (such as money laundering for illegal drug payments) to a judge at the appropriate level in the judicial system for specific authorization to access that individual's identification for the specific purpose of criminal prosecution.

In addition to concerns about government surveillance, privacy is needed to avoid hackers and scammers from interfering with transactions. Each person could pre-register their smartphone, laptop, or desktop computer at any bank or nonbank intermediary that provides access to one's CBDC account or at any post office (where passports are also issued). People could access their account from their pre-registered smartphone which would use eyeball, face and/or fingerprint recognition and their smartphone id to generate a 60-digit alphanumeric password that would match the password generated by their unique algorithm assigned to their CBDC account. Each transaction would generate a new 60-digit alphanumeric password, so no password could be used more than once. A blockchain across all the account holder's communication devices (smartphone. Laptop computer, desktop computer, etc.) would record each verified transaction in sync with their Federal Reserve CBDC bank account. This would allow for transactions between smartphones, like those used in Kenya's M-Pesa system of smartphone money transfers. If someone raked your leaves or cut your grass, you could pay them instantly in a smartphone-to-smartphone transfer with your transaction history recorded and kept separately from your personal identity.

Loss of United States Global Dominance Without a CBDC

The United States has benefited greatly from the US dollar's status as the world's reserve currency ever since the 1944 Bretton Woods conference. Since then, as many countries have dropped the gold standard (including the United States in 1971), some have pegged their currency's value to the US dollar. One great advantage as the world's reserve currency is as world trade expands the need for more US dollars increases. This provides the United States with two potential valuable benefits – <u>one</u>: the advantage of a stronger dollar in trade, and <u>two</u>: the value of the seigniorage from issuing additional currency. The increasing demand for US dollars drives up the value of the US dollar relative to other currencies. This

---

[1] Kliss, Beth, and Frederick J. Scheuren. "The 1973 CPS-IRS-SSA Exact Match Study." Washington, DC: *Social Security Bulletin*, vol. 51, no. 7, July 1988.

creates a larger trade deficit for the US. But this is not necessarily bad. What a high price for US dollars means is that US products become more expensive for other countries to purchase, and the products of other countries become less expensive for US consumers. As long as we issue enough US dollars and use them appropriately within the United States to compensate workers who are unable to compete effectively with the low-cost labor abroad, we can in theory avoid excessive inflation while maintaining full employment. The high price of the US dollar in foreign exchange markets just ensures that we get to consume products made abroad using the natural resources and labor of other countries and also consume the products made within the United States. Other countries give us their products in exchange for pieces of paper with George Washington's picture on it (US dollars). The US government in particular benefits from the seigniorage of issuing money without having to raise a corresponding amount of tax revenue. Deficit spending is not bad if you can get away with it, because in the end you end up with more goods and services than you would otherwise be able to afford. However, both sides benefit from trade, or it would not take place. Technology transfer plays a role as US companies finance foreign production.

For example, consider our trade with China. China takes its resources, and its people work hard producing lots of products for us. In return, instead of sending lots of our products to China, we send them US dollars. Ordinarily, all those US dollars would find their way into the international currency exchange markets driving down the value of the US dollar and raising the price of the Chinese yuan. That would make Chinese products more expensive for us to purchase and US products cheaper for China to purchase. But the Chinese government intervenes to stop this from happening. It requires that all Chinese companies turn in US dollars for yuan, and then takes those US dollars and purchases US Treasury securities in New York financial markets. Why does China do this? China has an internal political problem. Large numbers of Chinese peasants have been flowing into the cities, and China needs to employ them quickly to avoid unrest. It avoids large scale unemployment through the manufacture of products for export. In other words, China sells us products for US dollars, but then loans us our dollars back again by investing in US Treasury securities. But trade does not take place unless both side benefit. Trade by its very nature is a win-win situation. China gets to employ technology often in manufacturing facilities paid for directly or indirectly by US investors to create jobs for its citizens, many of whom would otherwise be living in poorer circumstances in rural communities. To the extent that we measure people being better off based on gross national product per capita, the Chinese people have clearly benefited enormously from trade with the United States and other countries. Eventually China's middle class will grow large enough to support high enough levels of consumption to benefit more directly from the production of goods and services produced by its own people. At some point, when China's middle class becomes large enough to provide enough consumer demand to fully employ its labor force, China will stop buying more US Treasury securities and instead allow the US dollars it earns from trade to flow into the foreign exchange markets to drive down the value of the US dollar. If this occurs gradually, it will not create a problem. However, if the demand for US dollars drops abruptly because stablecoins and the CBDCs of other countries start providing the liquidity in international markets that would have otherwise been provided by the US dollar, this sudden drop in the value of the US dollar could drive up prices in the United States rather dramatically.

What if the United States fails to offer a CBDC, and other countries such as China go ahead with their own CBDCs? There are many factors that affect whether a currency is used in a transaction or not. One is confidence in the soundness of the currency. In that regard the US dollar has an advantage over many other currencies as long as it develops an effective way of avoiding excessive inflation. However, another factor is convenience. Without a digital currency, the US dollar may not be as convenient to use as one that can readily be stored and easily accessed as a government guaranteed digital currency. How quickly a payment clears is also important. Paying with cash (coins and paper currency) is very satisfying and reassuring, because the transaction is finalized immediately at the time of purchase. There is no waiting time for the credit card bill or other promise to pay to be resolved. Waiting for an extended period for a transaction to clear undermines the confidence that people have in the currency. If everyone with a US Social Security number automatically had an account with the US government, then instantaneous smartphone-to-smartphone transactions would be possible. If someone cuts your grass, rakes your leaves, or shovels your snow, you can pay them in a smartphone-to-smartphone transfer that would clear immediately within a US digital currency system. One's attitude toward financial sanctions the US imposes on other countries might be a factor in the preference to use or not use the US dollar in any form. Some countries such as Iran, Russia and China may push hard to develop alternative digital currencies that

compete directly with the US dollar. Failure of the United States to create its own CBDC would only help these countries in their efforts to discourage the use of the US dollar in international transactions.

CBDC Disruption of Private Commercial Banking

Banks were created to serve as a store of value. Rather than keeping your gold and silver in your tent at your mine site, you could take your precious metals to a bank to guard your valuables for a fee. Initially the banks issued ownership certificates that were specific to the individuals who owned the precious items, but eventually those bank notes were made transferable and specified in units of value such that the mere possession of a bank note would allow the bank to provide the holder of such a bank note with the right to the corresponding amount of gold or silver. Later government interfered with this profitable bank activity to some extent by issuing its own coins and currency. This competition by government to serve as a store of value cut into and reduced the profits that would otherwise have been made by the commercial banks. Some of the seigniorage acquired by private banks in issuing money was usurped by the government when the government began issuing its own money and restricted the creation of money by private banks by setting reserve requirements to limit how much money private banks could create. Conservatives Frank Knight, Henry Simons and Irving Fisher after the Great Depression offered "The Chicago Plan" which would require private banks to hold 100 percent reserves instead of the current requirement of about 10 percent. This would transfer all the power to create money from the private banks to the Federal Reserve and thereby give all the seigniorage to the government. The primary argument in favor of this plan is to make the banking system more secure and less subject to speculative booms and busts where private banks have been prone to issue more money when the economy was booming and less money when the economy is in a contraction, which is the opposite of the needed economic policy of expanding the money supply to fend off economic downturns and contract the money supply when too much money is chasing too few goods. Consequently, our economy would become a lot more stable and secure under "The Chicago Plan."

In August of 1971 President Richard Nixon removed the United States from the gold standard where the government was committed to providing an ounce of gold for $35. When someone decries this loss of a guarantee of gold for dollars, I simply reply that if you don't trust the worth of a United States dollar, don't use it. Similarly, if you object to the reduction in banker's profits brought about by a government's creation of its own CBDC, then don't use that CBDC. Creating a CBDC should not be blocked simply because private commercial banks would lose profits. Creating more competition due to the entry of additional banks or a government acting as a bank subject to appropriate restrictions just introduces more competition for existing banks, which can attract customers with innovative and creative new banking services and applications. Nonbank competitors such as PayPal, Venmo, Apple Pay and Google Pay in the United States and Alipay and WeChat Pay in China have already introduced new convenient banking services for their customers. Bitcoin, Ether, Dogecoin, Diem, and other such private currencies provide even more competition.

According to Adam Smith, introducing more competition is what free enterprise is all about. Such competition reduces, and hopefully, eliminates rent – otherwise known as excessive profit, which is above and beyond the equilibrium level of profit in a free enterprise economy. If a small group of people can create a bank, why should a large group of people (the citizens of the United States) not be allowed to create a bank and issue a CBDC? When competition is limited, introducing more competition reduces excessive noncompetitive profits that are above and beyond the profit level needed for efficient and effective allocation of resources in a free enterprise economy. The question as to whether the government should be allowed to issue a CBDC really boils down to whether government should be allowed to issue a currency to begin with. Should we say "no" and go back to only allowing private banks to issue bank notes in order to preserve and enhance private bank profits? It is also the case that many online private currencies such at Bitcoin and stablecoins along with the planned introduction of Facebook's Diem and many other stores of value and payment systems are going to disrupt the traditional private commercial banking system in any case.

Having said all that, it is still reasonable to avoid unnecessary disruption of the banking system by introducing a situation where depositors immediately sought to switch all their money from private bank deposits to a new CBDC upon its creation. Furthermore, a CBDC would offer a safer, more secure place to store wealth than that provided by any private bank. A United States CBDC may be useful for international transactions as US dollars are today. Consequently, a CBDC could charge a fee (i.e., negative interest rate) that rose as the size of the deposit increased, which would advantage those with smaller deposits.

In times of inflation, it may be especially useful to provide a positive return on savings in the form of interest payments for small deposits by individuals to encourage saving by people with a high marginal propensity to consume (e.g., low- and middle-class Americans) rather than spending money when too much money was chasing too few goods.

Banks often refuse to accept small amounts of money from potential depositors. Some banks require minimum amounts for individual deposit accounts or certificates of deposit sometimes at least $1,000 or even a minimum of $5,000. It would appear rather hypocritical for banks to complain about a CBDC offering interest on small deposits when they refuse to consider working with such small amounts of money themselves. Ironically, banks may be better off with a well-functioning financial system that is able to avoid swings of inflation and recession, or, worse yet, stagflation, than trying to squeeze pennies out of the system by using their political influence to block a more effective monetary policy system that uses interest rates on small savings accounts as a return-on-savings tool to draw money away from spending when excessive demand is driving up prices and causing excessive inflation.

Moreover, the United States government already offers already offers a high interest rate savings vehicle in the form of US Treasury 30-year Series-I bonds. Most people don't even know about these government I-bonds because there is no secondary market for I-bonds, which must be purchased directly from the U.S. Treasury. However, no money can be withdrawn from these 30-year bonds during the first year and there is a three-month interest penalty for withdrawing money from the second through fifth year. These restrictions on early withdrawal make these I-bonds unsuitable for most Americans who need immediate access to their money in the event of an automobile accident, a medical emergency, a cut in work hours, a job loss, a sudden rent increase, or some other unexpected financial difficulty. However, the existence of U.S. Treasury 30-year I-bonds establishes government sponsored savings as a legitimate activity of the federal government in competition with private banks.

One thing about CBDC savings accounts and U.S. Treasury I-bonds needs to be made crystal clear. No matter how high the interest rate offered, if the people with the highest marginal propensities to consume (low-income people) don't know about them, such accounts or bonds will be useless in stopping inflation. Just as war bonds had to be vigorously promoted during World War II, these high interest rate accounts and bonds must be advertised in all the media accessed by those with the highest marginal propensities to consume. Ultimately over 50 percent of Americans purchased World War II war bonds as a result of the widespread promotional activities, which included celebrity performances and advertising during athletic contests in addition to billboard and media advertisements. If we are serious about getting people to save money and cut back on their spending to reduce the inflationary pressure that is driving up prices, while at the same time avoiding a recession, we need to provide an equally vigorous promotional campaign to get especially lower-income Americans to invest money in CBDC accounts instead of using that money to increase consumer demand and further drive up prices during periods of excessive inflation. After all, the temptation is for consumers to respond to inflation by spending their money more quickly before prices rise further. To counter this, the Federal Reserve must offer an interest rate on savings to not only compensate for inflation, but also provide a reward for putting off current consumption in favor of the possibility of greater future consumption, which is the reason for the existence of interest rates in the first place. These CBDC savings accounts will not only provide individuals with a source of funds for emergencies but will also in the aggregate provide the nation as a whole with greater economic stability by providing an **automatic stabilizer**.

Preface

The objective of this research is to develop an alternative theory for understanding how to stop inflation without causing a recession using new central bank digital currency (CBDC) accounts based on the new **money flow paradigm** of how money flows in an economy. Too often we think about economics from the point of view of an individual person, business, or government entity. When we spend the money, it gone! We focus on whether the money was earned or acquired through debt. This analysis is important, but it is a static analysis. It ignores the fact that the money is not gone! It has just moved on. The **money flow paradigm** provides a more dynamic analysis.

This research is designed to serve as a catalyst for generating empirical research to test the hypotheses presented by the money flow paradigm. Previously, the monetarist paradigm developed by Milton Friedman contended that "Inflation is always and everywhere a monetary phenomenon, in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output." The monetarist paradigm assumes that the velocity of money, V, remains constant in the equation M V = P Q so that for prices, P, to remain constant, the money supply, M, must rise at the same rate as output, Q, increases.

The **money flow paradigm** sees dynamic changes in the velocity of money, V, over time, and more importantly, that the velocity of money is different in the different paths it takes through the economy. A healthy economy that is using its resources fully and effectively must maintain appropriate money flows in inner cities and out to rural areas in addition to the money flowing into the New York financial markets. Also, money flows can change systematically over time. In particular, V is seen to decline as a country's population ages with a minimum V when the average age in a population is around 50 years. In other words, as birth rates decline and people live longer, V will decline. In addition, the money flow paradigm contends that V will decline in a country where income inequality is increasing. This assumes that we define V in terms of the purchase of goods and services in the real economy and not the turnover of stocks, bonds and monetary derivatives in the financial markets. In fact, the **money flow paradigm** sees the real economy (Main Street) where goods and services are purchased as distinct from the financial economy (Wall Street).

The results of the analysis show that the current monetary policy tool of raising interest rates in financial markets is primarily a **cost-of-borrowing tool** that is ineffective in stimulating an economy ("pushing on a string") and brutal in slowing an economy to stop inflation. The conclusion of this research is that central banks need to create a **return-on-savings tool** by creating digital currency bank accounts for all citizens. When excessive inflation threatens, the central bank could offer high interest rates in these accounts to induce people to save more and spend less. Conversely, in economic slowdowns the central bank could offer **low interest loans** as recently suggested in bills introduced in the US Congress as "*The Public Banking Act*" and "*The Postal Banking Act*," or even "helicopter money" payments via CBDC accounts if everyone with a Social Security number was automatically given a CBDC account. Empirical evidence using dynamic stochastic general equilibrium (DSGE) models or system dynamics models using Vensim or Stella with simulations and impulse response functions supporting all of the hypotheses implied by the **money flow paradigm** is beyond the scope of this book and is left for future research.

Controlling Supply and Demand in Our Money Flow Economy

In beginning courses in economics such as *Introduction to Economics* or *Principles of Economics*, "changes in demand" are defined as shifts in the demand curve, while "changes in the quantity demanded" are movements along the demand curve that result from changes in supply (i.e., shifts in the supply curve). The Federal Reserve controls the supply of money, but not the demand for money. In other words, the Federal Reserve cannot change the demand for money, but it can change the quantity of money demanded by shifting the supply curve of money.

When the Federal Reserve raises interest rates, it has two effects: (1) businesses face higher loan rates and, therefore, cut back their plans to expand the supply of goods and services. (2) consumers who would have borrowed money to buy a car or purchase a home find the higher interest rates more than they can afford so they drop their plans to purchase the car or home. While (2) reduces demand for goods and services, which helps reduce inflation, (1) discourages businesses from increasing the supply of goods and services, which hurts efforts to stop inflation. Moreover, (2) hurts families that don't have enough money to buy a car or a home without going into debt. It would be much better to avoid both (1) and (2) by getting people to save money to reduce the demand for goods and services. Saving more and spending less is key to stopping inflation when too much money is chasing too few goods and services. Historically, we fully understood this during World War I and World War II and took appropriate measures but seem to have forgotten how to handle the potential of excessive inflation from supply disruptions.

People with a college degree (not to mention an MBA or Ph.D. degree in economics) are generally sufficiently well off to not even have to imagine choosing between investing $100 in a savings account or buying a new pair of shoes. They don't think of this as a realistic constraint or a difficult choice they must make. However, two-thirds of Americans don't have a college degree, and many are living paycheck-to-paycheck. Prices are determined on the margin, and lower middle-class people have the highest marginal propensities to consume (about 94 percent for poorest 20 percent, and about 8 percent for wealthiest 20 percent). It is the marginal purchaser who sets the price. Wealthy people may be constrained by not having enough time to get around to purchasing a new pair of shoes, but the price of most day-to-day items is not a serious constraint. Consequently, the lack of constraint by the well-educated and wealthy doesn't tell the real story of inflation. Ultimately it is the expenditure behavior of lower-income middle-class people that sets prices at the margin that drives inflation up or down. The **money flow paradigm** emphasizes the tough choices that lower-income middle-class people face that is often ignored or forgotten by the well-off.

There are two ways to stop inflation: (A) make borrowing more expensive (higher interest rates on loans), or (B) make saving more rewarding (higher interest rates on savings). Making borrowing more expensive hurts middle-class Americans by making them pay more for borrowing money to buy a car or get a mortgage. Making savings more rewarding helps motivate middle-class Americans (i.e., most Americans) to save more and spend less with the reward of having more money in the future. Inflation occurs when demand is too strong, and supply is too weak. To add another line of production, businesses need to borrow money to expand their plant and equipment. This means that low loan rates can help increase the supply of goods and services, while high savings rates can decrease demand. This two-pronged approach is potentially much

more effective than simply relying on the Federal Reserve's traditional cost-of-borrowing tool that just makes it harder for businesses to increase supply in response to excessive demand.

Money Flow Diverted from the Real Economy to the Financial Economy

Central banks work with a system of large banks in setting interest rates on overnight loans and through the financial markets in influencing market interest rates in buying and selling various forms of debt. But they do not interact directly with working people who have the highest marginal propensities to consume. Consequently, central banks have a direct and immediate impact on the **financial economy** but a very weak, distant, and delayed effect on consumers of goods and services in the **real economy**. It would not even occur to the people on Wall Street to cut back their spending on a new pair of shoes or a fancy meal at an expensive restaurant to save money (e.g., a wealthy Wall Street investment banker). But to the people on Main Street this is a real trade off. On the demand side, the whole purpose of the existence of interest rates is to get people to put off spending now to have more money later. The focus on Wall Street is on decisions about moving money around in the financial markets. The focus on Main Street is in trying to come up with enough money to pay the rent and put food on the table. These are two quite different worlds. Both worlds are affected by changes in interest rates but in very different ways.

The Federal Reserve operates directly with the large banks. In the face of excessive inflation, we need to keep the interest rates that banks charge businesses for loans low, while offering the consumers with the highest marginal propensities to consume high interest rates on savings. To be profitable, banks must charge more on loans than they pay on savings. Only the Federal Reserve can afford to offer high interest rates on savings while leaving the interest rates that banks charge businesses low so that businesses who want to borrow to expand the supply of goods and services in the face of strong consumer demand can afford to do so.

This could be accomplished by having the Federal Reserve create new central bank digital currency (CBDC) savings accounts that would be restricted to one CBDC account per Social Security number and limited to no more than some base amount (e.g., $10,000). This would encourage lower-income middle-class Americans to save more and spend less to reduce the demand for goods and services, without placing an unnecessary burden on businesses that want to borrow more to increase supply or Americans that are living paycheck to paycheck and need to borrow money just to get by. By setting an upper limit (e.g., $10,000 or less) per Social Security number on the size of these Federal Reserve savings accounts, the Federal Reserve can target lower-income middle-class Americans who have a relatively high marginal propensity to consume goods and services and not the wealthy who have a low marginal propensity to consume goods and services (and a high propensity to purchase stocks and bonds in financial markets). Access to these CBDC savings accounts (also known in the law literature as "FedAccounts") could also be limited to people with incomes less than $100,000.[2]

[2] Some people have suggested even tighter constraints with an upper limit of $5,000 and restricted these accounts to people with incomes below $50,000. An optimal value for these parameters could be determined through econometric estimation and simulations in future research on this topic.

Distorted Money Flow Creates an Unbalanced Economy

Economic analysis often uses static concepts such as dividing up a pie, or comparative statics where the unemployment rate in one period is compared with that in the next period. An entirely different picture and understanding of our economic system can be obtained with dynamic analysis using the **money flow paradigm** with money flowing through the economy just as blood flows through the body. Moreover, instead of moving from one equilibrium state to another, we can obtain a much better understanding of our economy when we view it as in disequilibrium with some forces moving toward equilibrium and other, disruptive forces, moving the economy away from equilibrium. The **money flow paradigm** views our economy is in a constant struggle between conflicting forces and never actually achieves equilibrium in any real sense. In other words, equilibrium should be viewed as an unlikely, uncommon state in most markets and in the economy as a whole, and a significant degree of disequilibrium should be viewed as the normal, natural state of affairs. Sometimes this disequilibrium can be exploited by arbitrage or anticipation of a movement toward equilibrium, but all too frequently at other times so-called "Black Swan" events[3] derail such attempts, such as demonstrated back in October 1998 when Long Term Capital Management (LTCM) led by two Nobel prize winning economists collapsed and was temporarily supported through government intervention before ending in bankruptcy.

At the microeconomic level, a consumer, a business, or a government official may think that when they spend the money it's gone. But from a macroeconomic perspective it's not gone. It just moves on. The very nature of money flow can change over time with money that used to be flowing primarily to labor and capital now flowing to profits as industry becomes more concentrated as start-ups and small firms are taken over or run out of business by larger firms as "creative" destruction is replaced with *competition* destruction. Money that used to flow to Main Street is now flowing to Wall Street, to the financial economy instead of the real economy.

Money flows around our economy with a good deal of it passing through government hands at the national, state, and local levels. The dictates of government taxation, regulation and expenditure can greatly influence the flow of money through our economy. As government policy changes, the money flow changes in terms of the amount and velocity of the money flowing through different sectors and entities in our economy. We like to think of our economy as an arena where the free market forces of supply and demand operate independently of the government, but the very nature of those supply and demand curves are inherently shaped by government laws, policies, and procedures. The special interests who finance the political campaigns of our elected officials and who often influence and sometimes write those laws, policies and procedures want us to ignore their influence on supply and demand and pretend that market forces are natural and immutable. This distorted money flow can be corrected with proper fiscal and monetary policies to produce a healthier, faster growing, dynamic economy for everyone, including with the use of new Federal Reserve CBDC smartphone postal bank "FedAccounts."

[3] Taleb, Nassim Nicholas. *The Black Swan: The Impact of The Highly Improbable*. New York: Random House Publishing Group, 2007.

The ***money flow paradigm*** addresses the following issues:

1. How fundamental change from supply-side to demand-side economics flipped Say's Law in response to the sudden increase in the supply of cheap labor as communism collapsed but could flip back again as populations age and the supply of cheap labor dries up unless labor saving technologies more than make up for the loss of cheap labor.
2. The velocity of money, V, can vary dramatically in the different paths that money flows through our economy but generally is falling in the equation $M V = P Q$, because V falls as the population ages and economic inequality becomes more extreme as well as when an excess of global supply over domestic demand brings lower prices and deflation, which violates Milton Friedman's assumption of constant velocity in his monetary paradigm.
3. The diversion of income and wealth from Main Street to Wall Street under the maximization of shareholder value mantra and as fixed costs replace variable costs and technology moves us toward a "zero marginal cost society."
4. What wealthy individuals and corporations do with their ever-increasing wealth.
5. The distortions in financial markets and the economy that are caused by this enormous diversion of wealth where workers can no longer buy back the value they are producing.
6. How financialization that often involves cutting costs by reducing product quality favors short-run shareholder profits over labor and real capital investments and long-term growth.
7. Why ever-increasing private and public debts have been necessary to make up for the loss of consumer purchasing power with investor profits favored over labor and capital.
8. Why government expenditures often crowd-in rather than crowd-out private expenditures in moving toward full employment while avoiding excessive inflation.
9. Why monetary policy is ineffective in stimulating the economy and too brutal in stopping inflation by throwing the economy into recession, and why we need to replace the Federal Reserve's cost-of-borrowing tool with a return-on-savings tool in the form of CBDC savings accounts (aka "FedAccounts").

I. Introduction

Understanding Distorted Money Flow

In economics we have a natural tendency to think in static terms. An individual, a business or even the government thinks that "when we spend the money it's gone." But it's not gone. It just moves on to the next person, business, or other economic entity. Money flows through our economy the way blood flows through our body.[4] Money may flow rapidly through some parts of the economy and more slowly through others. It may get to the financial centers of our economy, but by-pass other areas such as the inner cities or rural areas leaving them to economic decay. A distorted money flow away from inner city neighborhoods and rural regions has led to racial unrest in the inner cities and a "tea party" populist rebellion in rural areas. If we are serious about wanting to reunite our country, we need to get the money flowing again to all parts of our nation.

The ***money flow paradigm*** explains that power will always tend to concentrate at the top of the wealth pyramid with less and less money flowing down toward the middle and bottom.[5] Eventually so much money flows to the already wealthy on Wall Street that the financial economy becomes separated from the real economy where our goods and services are produced. In recent decades the wealth distortion has become so great that the people on Main Street have been unable to buy back the value of what they produce and have had to go deep into debt and the federal government under both Republican (unpaid for tax cuts) and Democratic (unpaid for expenditures) administrations has had to engage in deficit spending to attain and maintain full employment. However, since the wealthy put the excess money that they acquire into the financial markets on Wall Street by purchasing stocks and bonds, interest rates are kept extraordinarily low which discourages people on Main Street from saving money and, instead, encourages them to go deep into debt. This contributes to overall financial instability.

Without savings, people have no financial resources to fall back on in the face of a job loss, medical emergency, storm damage or other disruption. Exceptionally low interest rates discourage people from saving any of the stimulus money they receive, which can contribute to a sudden shift from insufficient consumer demand to excessive consumer demand in short order. The solution is not to make it harder to borrow to punish the poor and inhibit suppliers from trying to add another line of production, but instead to offer higher interest rates on small CBDC savings accounts aimed at lower-income middle-class people who are not already saving much, if any, money.

Clearly, the high interest rates used to stop excessive price inflation hurt poor and middle-class people while benefiting the wealthy. Karen Petrou has explained and documented this money flow problem in her book: *Engine of Inequality*.[6] When interest rates rise, poor people say:

---

[4] Cooper, George. *Money, Blood and Revolution*. UK: Harriman House, Ltd., 2014.

[5] See George Cooper in this short YouTube video on the impact on the economy of our distorted money flow and the role of government: https://www.youtube.com/watch?v=tw-D9Y8iEOs&t=155s

[6] Petrou, Karen. *Engine of Inequality: The Fed and the Future of Wealth in America*. New York: John Wiley & Sons, 2021. https://www.hoopladigital.com/title/13945007

"Oh, no. Now I am going to have to pay more on my debts" while rich people say: "Oh, great. Now I will be earning more on my savings." Increasing the interest rate simultaneously on both borrowing and saving just makes the poor poorer and the rich richer. Private banks must keep the interest rate they charge on loans higher than the interest rate they pay on savings to make a profit. But since the Federal Reserve can create as much money as it wants, it is not constrained by this requirement. To stop inflation, the Federal Reserve could offer exceptionally high interest rates on small savings accounts for middle class people on Main Street, which would be more effective in stopping excessive inflation than targeting the wealthy on Wall Street who have low marginal propensities to consume. If the CBDC savings accounts are limited to relatively small amounts of money, wealthier people won't even bother with them regardless of how high their interest rates. To a wealthy person, interest earned on $10,000 or less is chump change and not worth their time. But lower-income middle-class people might jump at the chance to get a decent return on their savings and to add more to their savings to take advantage of the higher return.

The past few years with the COVID-19 pandemic have produced an abrupt and temporary deviation from the previous prevailing pattern of excess supply[7] and insufficient consumer demand and deflation. Only lately have prices and wages started rising quickly with supply shortages and job openings unfilled as people sought to avoid catching the coronavirus and temporarily benefited from stimulus payments. But these fiscal policy stimulus payments are essentially "helicopter money" transferred directly from the government to individuals to counter the economic impact of the COVID-19 pandemic and not a normal, fundamental increase in consumer demand coming from some improvement in the nature of the economy. Such a one-off round of payments does not change the fundamental deflationary nature of our distorted money flow and the chronic inadequate level of consumer demand relative to the enormous global supply that has been only briefly interrupted by the COVID-19 pandemic supply disruptions. Moreover, these supply shortages are temporary and evoke the old saying that "the solution to high prices is high prices and the solution to low prices is low prices" which means in this case that the extra profit offered by the higher than usual prices due to the shortages will most likely invoke an increase in supply, especially where wages have failed to rise commensurately with the price increases, to meet demand and bring inflation down or even return to the more chronic deflationary pressures.

In contrast to this recent development, for the past several decades the build-up of wealth for rich people and large corporations has led to inflation in the stock and bond markets and deflation in other parts of the economy including real wage deflation as wages have stagnated or even declined in real purchasing power in the period from 1973 to 2019. Such a decline in purchasing power increases the real debt burden of existing debt further depressing consumer demand and leading to further deflation ultimately threatening to produce a debt-deflation spiral with rising unemployment and a drop in labor force participation as the long-term unemployed drop out of the labor market. This is especially important now that middle-class individuals and families have tried to compensate for this loss of purchasing power by taking on enormous amounts of private debt in recent years. With such a large private debt overhang, even a mild deflation could throw the economy into a powerful downward spiral. The federal government has

---

[7] Alpert, Daniel. *The Age of Oversupply: Overcoming the Greatest Challenge to the Global Economy*. New York: Penguin Group, 2013. https://www.hoopladigital.com/title/11399418

countered this with deficit-financed stimulus spending to supplement private debt to move the economy toward full employment. This temporary reprieve may not last long if additional stimulus money is not provided on an ongoing basis. Too much stimulus leads to inflation while too little stimulus could result in higher levels of unemployment.

The COVID-19 pandemic added to these money flow distortions by shifting demand dramatically from services such as travel and restaurant dining, which require social interaction to products that can be ordered over the internet and delivered directly to one's home. The burst in demand for products from overseas producers in conjunction with the pandemic induced supply shortages including a shortage of truck drivers resulted in a logjam at coastal ports which, in turn, has driven prices upward. Domestic production was handicapped by workers who were unable to do their work from home and were reluctant to return to their workplace in the face of the COVID-19 pandemic. This distorted money flow drove prices and wages upward in the absence of adequate monetary and fiscal policy tools to control consumer demand more tightly.

As indicated by the **money flow paradigm**, the velocity of money, V, varies by who gets the money and what they do with it. Poorer people may use the money immediately to put food on the table or pay the rent, while wealthy people may buy expensive paintings, exclusive properties, or more stocks and bonds with whatever additional money they acquire. Income and wealth inequality leads to distorted money flow whenever greater economic inequality leads to a chronically falling velocity of money. The aging of our population also contributes to a decreasing velocity of money as the elderly demand less in housing and transportation as well as in goods and services although more in health care costs in their final years. Sometimes money moves quickly through the hands of those who directly produce goods and services, and other times money can get caught up in a loop where it moves around financial markets without generating any real product or service.

Currently relatively high interest rates on savings can be obtained by purchasing US Treasury 30-year Series-I bonds, which have been offering an interest rate of about ten percent. However, such bonds can only be purchased in the primary market directly from the US Treasury for a 30-year period with no withdrawal allowed in the first year and a high penalty for any withdrawal between the end of the first year and the end of the fifth year. The US Treasury does not permit a secondary market to buy and sell these I-bonds. Consequently, there is no way to legally purchase these I-bonds through an intermediary. They can only be purchased from U.S. Treasury Direct which does little to advertise their I-bonds. Consumers with the highest marginal propensities to consume are the least likely to know about these bonds, much less take advantage of them. In the extreme case of a consumer with the highest marginal propensity to consume, who must spend every penny to cover food and shelter, that consumer is unlikely to take advantage of the US Treasury I-bonds or any other high interest rates savings opportunity. However, there will be some high marginal propensity to consume consumers who are currently meeting their basic living expenses and could afford to peel off some of their income for savings and still meet their essential needs and would be interested in benefiting from a high interest rate savings opportunity if the interest rate were high enough and the accounts easy to access. There may be other consumers with relatively high marginal propensities to consume who are already saving some money, but not as much as they would if they had convenient access to a high interest rate savings account, as long as it could be withdrawn easily in the event of an

emergency. The withdrawal restrictions on 30-year U.S. Treasury I-bonds may deter many middle-class people from purchasing them. To serve as emergency savings to deal with an automobile accident, a medical emergency, an unexpected increase in rent, a job loss, or even just a cutback in work hours, middle-class people may be very reluctant to put their savings in a 30-year I-bond.

These types of consumers are the targets for the proposed Federal Reserve bank accounts ("FedAccounts"). They can enable the Federal Reserve to get the most bang for the buck by offering these high interest rate savings accounts. Since prices are set by the marginal consumer, and not the average consumer, getting these high-marginal-propensity-to-consume consumers to cut back somewhat on spending will stop inflation much more quickly and much more effectively (without additional taxation or adding to the national debt) than the current Federal Reserve monetary policy of raising interest rates in the New York financial markets through a quantitative tightening (QT) policy which drives up the cost of borrowing for everyone including suppliers, such as farmers who borrow money in the spring to pay for planting, fertilizing, and watering their crops until harvest time in the fall when they pay off their loans and, hopefully, earn a profit, or retail businesses that borrow money to pay bills and maintain inventory at a loss for most of the year but pay back their loans and reap a profit during the busy holiday season at the end of the year. Raising the costs of borrowing suppresses and hurts these businesses.

Of course, the wealthiest consumers who naturally have the lowest marginal propensities to consume are unlikely to cut back any of their spending although they might normally be expected to shift a substantial amount of money to any high interest rate savings opportunity such as the proposed "FedAccounts" should they become available. To discourage this transfer of funds from the private banks, a base limit such as $10,000 is set for the "FedAccounts" with no interest earned on balances above the base limit. Setting a low maximum would discourage very wealthy people from bothering to transfer any of their wealth to such a relatively tiny investment. An income limit of no more than $100,000 annually could also be imposed to focus these "FedAccounts" on middle-class rather than wealthy people. To gain attention and encourage savings, this proposal also includes placing an initial $1,000 in these accounts that could not be withdrawn until after age 70 but would earn interest that could be withdrawn along with any addition savings placed into the account and any and all tax refunds that the IRS would automatically put into the taxpayer's CBDC "FedAccount" each year. All interest earned in these accounts would be tax free to make them even more attractive to potential savers.

When we think in static terms, we like to imagine the economy is in equilibrium where all markets are clearing properly and resources are being allocated efficiently, but in reality, the markets and the economy as a whole can be in disequilibrium with a distorted money flow that leads to high levels of unemployment. Even when unemployment is low and prices are stable, distortions in our economy can gradually cause bubbles to build up leading to irrational exuberance in the stock market followed by a sudden downward spiral upon "Minsky moments" as these sudden reversals have come to be known. Consequently, the government must be constantly on the lookout for serious problems developing in our economy. To avoid economic downturns, Congress should authorize the Federal Reserve to use the most appropriate tools, including new Federal Reserve individual-person "FedAccounts," to quickly and effectively guide the economy back to full employment and maximum sustainable economic growth without excessive inflation.

Introduction to the *Money Flow Paradigm*

Economics is a story about how the economy ought to work in theory versus how it actually works in practice. A key aspect of this story is the role that the government plays in the economy. Various paradigms offer differing explanations of the government's role. The traditional story is that under the free enterprise system the economy has a natural tendency to move toward equilibrium except for temporary unexpected supply shocks or demand shocks such as the disruption caused by the COVID-19 pandemic as opposed to the **money flow paradigm** which sees the economy as in a natural and chronic state of disequilibrium.

Minsky (1986)[8] challenged this benign view of economics arguing that in reality the free enterprise system was prone to naturally occurring, although still largely unexpected, systematic, substantial and dramatic movements away from equilibrium beginning with "Minsky moments". More recently, Dalio (2018)[9] described inherent short-term and long-term financial debt crises. Cooper (2008)[10] extended the Minsky hypothesis in his rejection of the efficient market hypothesis, and Lo (2018)[11] offered his alternative adaptive market hypothesis. Akerlof (1970)[12] won a Nobel prize in economics by revealing inefficiency in markets with asymmetric information, while Kahneman (2011)[13] and Thaler (2015)[14] won Nobel prizes for developing the field of behavioral economics, which rejects the traditional assumption of rational, independent economic decision makers, as explained earlier by Ariely (2008).[15] *Modern Monetary Theory* (MMT), as developed by Kelton (2020)[16] and her colleagues, has provided a more comprehensive understanding of how our economy works with the Federal Reserve and other government entities

[8] Minsky, Hyman P. *Stabilizing an Unstable Market.* Prepared for the Bank Credit Analyst Conference. New York Plaza Hotel, 1986.

[9] Dalio, Ray. *Principles for Navigating Big Debt Crises*. Bridgewater Associates, Westport, CT. 2018.

[10] Cooper, George. *The Origin of Financial Crises: Central Banks, Credit Bubbles and the Efficient Market Fallacy.* New York: Vintage Books. 2008.

[11] Lo, Andrew W. *Adaptive Markets: Financial Evolution at the Speed of Thought.* Princeton University Press. 2018.

[12] Akerlof, George A. "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism." *Quarterly Journal of Economics*, 84(3), pp. 488-500. 1970.

[13] Kahneman, Daniel. *Thinking Fast and Slow*. New York: Farrar, Straus and Giroux. 2011.

[14] Thaler, Richard H. *Misbehaving: The Making of Behavioral Economics*. New York: W. W. Norton & Company, Inc. 2015.

[15] Ariely, Dan. *Predictably Irrational: The Hidden Forces That Shape Our Decisions*. New York: HarperCollins Publishing. 2008.

[16] Kelton, Stephanie. *The Deficit Myth: Modern Monetary Theory and the Birth of the People's Economy.* New York: Hachette Book Group, Inc. 2020.

dominating and controlling the market for US treasuries and other related short-term securities. These scholars and many others have provided the basis for our analysis.

Under the **money flow paradigm** disequilibrium is the natural state of economics (not the equilibrium economics you learned in your Principles of Economics course) and consequently government is an essential player at the heart of the free enterprise system (not an alien, outside force interfering with it). Government sets the laws, rules and regulations that determine the structure of markets and ultimately the supply and demand configurations. Following Piketty,[17] Saez[18] and others, the **money flow paradigm** sees the free enterprise system as inherently moving toward extreme income and wealth inequality that produces a disequilibrium gap between aggregate demand and aggregate supply that must be countered with a combination of pre-distribution and redistribution. Redistribution sometimes undermines incentives while pre-distribution can enhance incentives by allowing employees to participate in the leadership team.

Will Immigration and AI Replace Retiring Workers to Fend Off Excessive Inflation?

One result of this distorted money flow is the dysfunctionality of the Phillips curve, which posits a tradeoff between unemployment and inflation. In earlier decades, economists thought that the lower bound for the non-accelerating inflation rate of unemployment (NAIRU) might be around six percent unemployment. However, prior to the recent pandemic the unemployment rate fell below four percent without triggering excessive inflation. In fact, inflation averaged below the Federal Reserve's target rate of two percent even in recent periods of low unemployment. The pandemic has created supply shortages and shifts in demand away from services and toward products while government stimulus spending has reinforced demand. Russia's invasion of Ukraine has contributed to food and energy shortages. These forces may dissipate as the pandemic recedes, the stimulus ends, and, hopefully, the war in Ukraine concludes. The Federal Reserve may throw the economy into recession by raising the cost of borrowing faced by both suppliers and consumers to further suppress inflation.

The **money flow paradigm** provides an explanation for the earlier period of low inflation and the possibility of chronically rising prices if retiring workers are not replaced with immigrants and artificial intelligence. Low unemployment did not trigger inflation in recent decades until the COVID-19 pandemic because so little money was flowing to workers that even at low unemployment levels, aggregate demand for domestic goods and services was weak relative to aggregate supply. Although many middle-class Americans have relatively small retirement portfolios, most stocks, bonds, and other financial investment products are owned by the wealthiest people, with the top 10 percent wealthiest people owning at least 84 percent of the stock market. The only major groups who have benefited significantly in income and wealth have been doctors, lawyers, bankers, and others with substantial stock market portfolios. The government has been able to temporarily increase aggregate demand in response to the COVID-19 pandemic by providing stimulus payments targeted at lower-income middle-class individuals

[17] Piketty, Thomas. *Capital in the 21st Century*. Harvard University Press. 2013.

[18] Saez, Emmanuel. "Income and Wealth Inequality: Evidence and Policy Implications. *Contemporary Economic Policy*, 35(1), pp. 7-25, January 2017.

and households with the highest marginal propensities to consume. This has created an excessive level of inflation. However, in general, the expansion of the global supply chain and the availability of cheap labor (with workers overseas being paid subsistence wages to produce a wide variety of goods and services) have together created what Alpert (2013)[19] called "*The Age of Oversupply*."

China has been a major contributor to the supply of cheap labor. With wages rising gradually as China builds a middle class, foreign investment in production has begun shifting somewhat to Vietnam, Indonesia, Nicaragua, and other low wage venues. China has itself begun investing in Africa as it has come to recognize the low wage potential there as well. However, many nations including Japan and several European countries are losing population due to low birth rates that have fallen below population replacement rates. The United States would be losing population if it were not for immigration filling in for retiring workers.

First of all, it is important to acknowledge the difference between real inflation and measured inflation.[20] Ideally there would be (or perhaps already is) an online app that will tell you whether your family is experiencing inflation in terms of the goods and services you actually purchase.[21] Any inflation measure that is appropriate for someone else with an entirely different consumption pattern may be entirely useless for you if it doesn't come close to matching your consumption pattern. If you are consistent in what you purchase each month, then you can create your own inflation index quite easily. Just create a list of the services (including entertainment and travel) and products that you typically purchase each month including such things as utilities (water, electricity, etc.) and rent (or implicit rent if you are a homeowner) and the cost of that market basket becomes your own personal price index.

The US Bureau of Labor Statistics creates the consumer price index (CPI) based on a fixed market basket of goods and services. Attempts are made to adjust that market basket somewhat over time, but substitutions within that basket, changes of the quality of goods and services in the basket, and new products outside of that basket make tracking inflation with a fixed market of goods and services quite difficult. Creating a market basket that is representative of the typical family's market basket is even more difficult. The CPI does a poor job of measuring the market basket of wealthy individuals who purchase large quantities of stocks and bonds. Consequently, money flowing into stock and bond markets driving up their prices to extraordinary levels is not well represented in the CPI. Economists often focus on core inflation which excludes energy and food. Core inflation may provide a less volatile measure of inflation, but it leaves out products that are especially important in the lives of most people. The Federal Reserve tends to

---

[19] Alpert, Daniel. *The Age of Oversupply: Overcoming the Greatest Challenge to the Global Economy*. New York: Penguin Group, 2013

[20] Bolhuis, Marijn A.; Judd N. L. Cramer; and Lawrence H. Summers. "Comparing Past and Present Inflation." *National Bureau of Economic Research* paper 30116, June 2022. **DOI** 10.3386/w30116

[21] Online smartphone apps such as *ShopSavvy, PriceGrabber, Red Laser, Flipp, Basket,* and many others may be helpful to you in this regard.

prefer to use personal consumption expenditure (PCE) price index as the most relevant measure of inflation for their purposes.

Although inflation generally hurts low income and rural households the most,[22] inflation can have a positive effect on people with high levels of debt with fixed loan rates such as a fixed rate 30-year mortgage.[23] Fixed debt becomes less of a burden when it remains constant as prices and wages rise. A higher wage makes that fixed debt easier to manage.

When the government spends too much and taxes too little, economists warn of inflation with too much money chasing too few goods driving up prices. But what if the online goods or services we are pursuing with additional cash are practically unlimited in supply? Are we now approaching what Rifkin (2014)[24] called "*The Zero Marginal Cost Society*." As a result of a combination of the COVID-19 pandemic and more mass shootings at public venues and private workplaces, it has been safer to work at home and interact socially online. These concerns and opportunities to cut travel and business rental costs have encouraged online meetings using Zoom and similar online applications. A Russian hacker cyberattack on Colonial Pipeline produced a temporary spike in gasoline prices. This further discouraged travel. President Vladimir Putin of Russia and Crown Prince Mohammed bin Salman Al Saud (MBS) of Saudi Arabia clearly preferred Donald Trump to Joe Biden and are limiting the supply of crude oil to keep gasoline prices high in the United States to create a political liability for President Joe Biden. The war in Ukraine has constrained Ukrainian grain exports while the sanctions that have been imposed on the export of Russian oil and natural gas have further exacerbated energy prices.

Traditionally, it was the younger households which drove up the price of goods and services with their needs for housing, automobiles, clothing and the like. Today, with fewer marriages and lower birth rates, younger people spend more time interacting online. If you are an elderly retired person, most of what you purchased in your younger years involved the physical world -- shoes, shirts, going out to a nice restaurant or attending sports or other entertainment venues. But for younger folks today the world is changing and more of their marginal money is now going to the online world where there is often zero marginal cost to the provider -- access to Netflix, tokens in online games, extra payments for premium level access to online media sites such as Classmates, LinkedIn, Academia, Google Workplace services, and now certain groups in Facebook. Meanwhile, elderly people tend to have accumulated too much stuff and often reduce their purchases as they get older exhibiting a low marginal propensity to consume and slower turnover (i.e., reduced velocity) of their money. All this has reduced the aggregate demand for traditional goods and services that require the employment of labor or additional capital with the exception of increasing health services for the rising number of elderly.

As a result of a combination of the COVID-19 pandemic, more mass shootings at public venues and private workplaces, and opportunities to cut travel and business rental costs, online

---

[22] Franck, Thomas.“ GOP report shows inflation hurts middle-class Americans the most, blames Democrats,” *CNBC*, November 15, 2021.

[23] Morrow, Allison. “Why inflation can actually be good for everyday Americans and bad for rich people,” *CNN Business*, December 1, 2021.

[24] Rifkin, Jeremy. *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons and the Eclipse of Capitalism*. New York: St. Martin’s Press, 2014.

meetings using Zoom and similar applications are increasing rapidly. More often than not, the premium information this extra access provides already exists. Your payments don't create it, but just give you access to it. What do many of these relatively new opportunities to spend your money online have in common? Answer: Zero, or very close to zero marginal costs.

When marginal costs are zero, extra revenue goes straight to the bottom line (profits). As an increasing portion of our marginal expenditures goes into the online world, inflation shows up in profits to investors and stock prices with little, if any, going to drive up prices for offline goods and services. Without government subsidies and transfers, workers get so little of the additional money that they go deeply into debt and the little money they do get goes increasingly into making their interest payments. Consequently, almost all of the marginal money spent online goes to Wall Street with little, if any, going to Main Street. The financial economy has become increasingly separate from the real economy with ever more money being diverted into the financial economy driving up stock and bond prices higher and higher over the long run.

As if lights-out manufacturing was bad enough with machines working throughout the night producing products, we now face self-driving vehicles being automatically loaded and unloaded with little help from workers. These savings will mostly go to the bottom line. A multitude of electric vehicles is poised to hit the market, eventually undermining the market for gasoline. Some services that used to be provided locally are provided by people in other countries such as India, where English is the official language, so that money flows there and reduces the need for such services within the United States.

Another major zero marginal cost product that is currently under development is the artificial intelligence social interaction apps such as iphone's *Siri* and Amazon's Echo Dot *Alexa*. Currently, these devices are underdeveloped, although quite useful as verbal calculators and dictionaries. They can retrieve lots of online information from the internet. But their potential going forward is way underappreciated. These social interaction apps have the potential to act as a person's best friend as they learn how to support people emotionally and encourage them in their work. Their social media potential is especially powerful because they listen to what we say to one another in our homes. They can pick up on my personality and how I interact with my wife. If I die before my wife, they could partially recreate me in interacting with my wife on how I would respond to commentary on television or what I would say to comfort and reassure my wife when she has had a bad day. My name could replace "Siri" or "Alexa" so my wife could interact with me after I am dead. Facebook could "revive" dead people for those who wish to continue interacting with them after they are dead. This may all seem bizarre now, but electronic robot friends are already being developed that may replace some dogs as companions for elderly people. Jeremy Rifkin may have been a bit early in predicting the "*Zero Marginal Cost Society*", but it could produce major changes in how money flows in our economy before long.

In the near term, money from President Biden's stimulus and infrastructure programs has played a role in driving up the prices of some ordinary goods and services. While some prices such as crude oil, gasoline, lumber, and some foods may rise in the short run, there is little prospect of aggressively rising prices for most goods and services in the longer term. With the cost of producing solar and wind energy falling, gaining access to free energy from the sun is rising. A breakthrough in battery or related technologies would spur the transition to electric vehicles to further drive down transportation and other energy related costs. People have gotten

use to home delivery of products and with driverless taxis services, they may reduce their purchase and use of personal automobiles. Panasonic has come up with a new, promising breakthrough lithium battery called “4680,” lithium mining is rapidly expanding in the US, and a new battery based on the process of rusting is also in development. Advances in quick recharging methods for batteries are also under development. All of these factors are likely to further disrupt our current economic system and ultimately reduce costs and prices over the longer term.

Summary, Conclusions and Transition

The purpose of this research is to examine the role of government in directing the flow of money in the economy and to present a proposal for altering the money flow both by changing our fiscal tax transfer system and improving the Federal Reserve’s control of the money supply in response to pandemics such as the COVID-19 crisis and other threats to the health of our economy, and to avoid excessive inflation and maintain full employment while maximizing productivity and sustainable growth. Under the **money flow paradigm**, the government must monitor the quantity and velocity of money as well as the distribution of money in the economy as the economy typically finds itself caught in a chronic disequilibrium between aggregate demand and aggregate supply, which requires that the government make appropriate adjustments to maintain a healthy economy.[25] The goal is to make the most efficient and effective use of the resources available and not unnecessarily waste them with poor economic policy using inadequate and out-of-date cost-of-borrowing policy tools when a new return-on-savings tool could provide a powerful alternative that provides the benefit of suppressing inflation without causing a recession.[26]

This requires that Congress pass legislation by adjusting the proposed “*Public Banking Act*” to provide the Federal Reserve with individual digital cybersecurity CBDC “FedAccounts” as a return-on-savings policy tool so that the Federal Reserve monitor and respond to both short-term business cycles and long-term distortions affecting the national and international economies for extended periods (e.g., decades, or longer). In moving away from introductory economics textbooks toward the real world of economics, we find that *disequilibrium* dominates with the promise of equilibrium in the long run as a distant hope or aspiration that never quite comes about in reality. Breakthroughs in technology persist in creating or adding to such disruptions and may be expected to increase in frequency and intensity in the future.

[25] Everyone with a Social Security number could be given shares in the United States of America (USA). These shares could not be traded on the stock exchange but would pay dividends. When aggregate supply greatly exceeds aggregate demand, the number of shares and/or the dividends per share could be increased. The government would pay the dividends out of a tax on financial transactions and an increase in the capital gains tax. This could complement and build upon the “baby bond” proposal that has become increasingly popular in recent years.

[26] For an alternative approach that provides each American over the age of 18 with access to a Universal Fund, read the book: “*Citizen Capitalism: How a Universal Fund Can Provide Income and Influence to All*” by Lynn A. Stout, Tamara Beinfanti, and Sergio Alberto Gramitto, Berrett-Koehler Publishers, 2019.

II. The Rise and Fall of Say's Law

The Establishment of Say's Law

To understand why monetary policy has been so ineffective in stimulating the economy, relative to fiscal policy, and so brutal and clumsy in slowing the economy to stop inflation, it is necessary to review Say's Law. Economics became widely known as what Thomas Carlyle called "the dismal science" when Thomas Malthus predicted that the population growth rate will always threaten to exceed the food supply growth rate. Therefore, there could never be too much food because the population growth would at least keep up with (subsistence) and at worst exceed (starvation) the available food supply. Demand would always increase to consume whatever could be supplied. This led to what has become known as Say's Law: "Supply creates its own demand" and the basis for supply-side economics. Economic growth, according to the dismal science, was always a supply-side phenomenon. You could take demand for granted and just focus on trying to increase supply.

For centuries we saw humanity spreading out across the continents and populating the far corners of the world. It seemed like humans would eventually overpopulate the world. Eventually, we would need to find another planet to colonize to keep on growing. Population growth was a given, until it wasn't. Almost out of the blue, the unexpected happened. As countries reached higher levels of economic development, their population growth rates dropped.

Early on a Monday morning, I was about to begin my lecture about the international income distribution to my economics class at Notre Dame. But my students were all excited. They were all talking with one another about the great football game on Saturday where Notre Dame won at the last minute with an amazing play. I couldn't get their attention. Finally, I said: "Today we are going to talk about birth control." My students were shocked. "Birth control?" they exclaimed. "The professor is going to talk about birth control. This is a Catholic university. He can't talk about birth control." But I persisted. "What is the most effective birth control method in the world?", I asked. The students continued murmuring in apprehension and concern. Finally, I said: "The most effective birth control method in the world is per capita income. When per capita income rises above $6,000 per capita, birth rates drop like a rock."[27] With rising per capita income, birth rates drop. In rich countries, they have dropped below the replacement rate of an average of 2.1 children for each woman in her reproductive years. According to data from the US Census Bureau,

[27] Historically, having a child was viewed by some people as an investment, especially after the advent of agriculture, and during the industrial revolution with the use of child labor in manufacturing. Eventually, this developed into a slave trade where the costs of raising a child were bypassed with the capture of fully grown slaves from Africa. Entrepreneurs in London could invest in the slave trade where the hard work of others provided a good return on investment. Hard work paid off, but not for the slaves. Their hard work paid off for the investors. This natural product of capitalism and free enterprise was abolished through government intervention when laws and regulations were passed banning child labor and slavery. Even today companies that follow the "I-win-you-lose" mindset treat their employees as just another factor input such as coal or fuel oil and not as team members. On the other hand, most successful companies follow the "win-win" strategy and recognize the dynamic creative potential of their employees.

the population growth rate in the United States in 2021 was just one tenth of one percent, which was the slowest population growth rate since the nation's founding in the eighteenth century. Without immigration our population would be declining.

Japan points the way toward world population decline

Japan is ahead of other countries in the transition to an economy where an aging population is dramatically increasing the ratio of non-working elderly relative to a shrinking active workforce. In the absence of much immigration, Japan must increase its productivity in terms of output per worker to make up for its shrinking number of workers. Japan's population was at its maximum in 2010 with 128 million people, but shrunk to 125 million by 2021, and is expected to fall below 100 million before long. In 2020 Japan's birth rate fell to its lowest level ever and its marriage rate fell to the lowest since World War II. Consequently, with older people living longer than ever, the elderly's share of Japan's population has grown substantially. The elderly generally demand fewer products and services except for health services than young families, but eventually need more personal medical services. Health costs rise while government revenues fall, and aggregate demand is sustained through massive deficit spending necessary to keep the workforce fully employed. Despite the rising deficit and health costs, and in the absence of sustained government stimulus spending over the long run, deflation with falling prices and wages threatens to dominate, rather than the widely feared and reviled inflation, as measured by the typical market basket of goods and services used to calculate the consumer price index. As baby boomers die and the population declines, consumer demand shrinks, while technology expands and speeds up the global supply chain. More can be produced and moved through ever increasing automation and driverless vehicle technology.

Over the long run, in the face of an increasing money flow distortion where a larger and larger proportion of the quantity of money flows to the wealthiest people who have the lowest marginal propensities to consume, aggregate demand threatens to fall short of aggregate supply, because the bottom 90 percent of the population can no longer buy back the value of the goods and services they are producing unless government maintains and expands its flow of stimulus money to them, paid for through deficit spending or the predistribution (more money to Main Street before taxes) and/or redistribution (more money to Main Street after taxes) of wealth.

Over 90 percent of the world's countries currently have a birth rate below the population replacement rate with at least 20 countries expected to cut their native populations in half by 2100 including Japan, Italy, Spain, Portugal, Germany, Thailand, and South Korea, among others. Russia's population peaked at around 147 million and is currently heading down toward 142 million because of an aging population, falling birth rates, relatively higher death rates including military deaths and suicides, and emigration (especially young people) exceeding immigration. China's economy has recently reached a level of per capita income over $10,000 with its population expected to peak in four years and then decline significantly thereafter. Populations are increasing primarily in poor regions of Africa such as Nigeria and Ghana, where the natural resource curse[28] keeps most of the population in poverty with just over $2,000 income per capita.

[28] Ironically, countries with large deposits of natural resources, which can cause an excessive demand for their currencies, are unable to produce and sell other products at competitive prices given the high value of their currency. This has been labeled the "Dutch disease" by *The Economist* magazine in reference to

Around the turn of the millennium, millions of people in China were moving out of poverty into what for many would become what we would call a lower-middle-class lifestyle. This improvement in their economic well-being was quickly changing "the dismal science" into something not quite so dismal. As noted above, Japan had already gone through this transition and had a birth rate well below the 2.1 child per woman of child-bearing age known to be the replacement rate for maintaining a constant population. Japan, Germany, Italy, Russia, and many other developed economies already have shrinking populations. As a result of its one child policy and its rising per capita income, China's population will soon reach a peak and start declining. If it weren't for immigration, the United States would have a falling population as well. To some extent American immigration has enabled the United States to offset its declining birth rate. For a given level of technology and, therefore, productivity, a declining workforce means a decline in gross domestic product (GDP) and less money from the earnings tax which funds the Social Security system. Consequently, elderly people who depend on Social Security have a vested interest in encouraging immigration, especially because they are retired and, therefore, no longer in the workforce to compete for jobs with immigrants. The elderly have a special interest in encouraging immigration into farming such as in picking fruits and vegetables in California farms to keep the cost of food low, where food and medicine constitute a greater portion of the budgets of elderly people relative to younger people who have expanding families needing lots of basic products such as home furnishings, clothing, and cars and trucks. Of course, immigration may tend to keep wages low as well to the extent that they substitute for instead of complement the current workforce.

Darwinian *Natural Selection Paradox*

At first the Darwinian natural selection story seems very comforting where individuals and their offspring adjust to changing environmental conditions to enhance their prospects to multiply and survive as a species. But the reversal from an increasing world population to an expected peak of around ten billion people, followed by an expected continually declining world population, appears to contradict that wonderful Darwinian story. Having more offspring surviving longer to guarantee an ever-increasing population of humans was supposed to ensure the success and survival of humanity. Gronewold (2021)[29] sees this as part of a broader ecology where the birth rates of animals drop as population density increases. In human populations, this is manifested in the movement from the countryside to the city as seen most recently and most intensely in China. But how can we make sense of a world where birth rates and populations continually decline as the world grows richer in physical and intellectual wealth per capita?

The prospect of a progressively shrinking world population creates a Darwinian *natural selection paradox*. Under Darwin's theory of natural selection, the species that prosper do so because they have more surviving offspring, so their populations grow to enable the survival of

---

the high price of the Dutch guilder when Dutch natural gas and oil were in great demand before the Netherlands adopted the Euro as its official currency.

[29] Gronewold, Nathanial. *Anthill Economics: Animal Ecosystems and the Human Economy*. Lanham, Maryland: Prometheus Books, 2021.

the species. However, with humans, as the income and education levels of a country increase, the population of that country tends to decrease. Also, within a country, the wealthier, more educated people tend to have the fewest children. This suggests a human *natural selection paradox*, where the more successful individual countries and the people within those countries are, the less the chance of human survival.

This phenomenon suggests that if birth rates keep dropping at this rate, instead of overpopulating the earth, it appears that we will have to leave a note for the last remaining person to remember to "turn off the lights." In the meantime, global supply has been rapidly expanding to reach unheard-of levels, and we are beginning to face what may well be a continual decline in population and, all else held equal, a chronic deficiency in aggregate demand which suggests in the absence of government stimulus and occasional supply disruption a future more characterized by deflation than inflation. China has already recognized the next source of cheap labor and has been investing in Africa.

The <u>Antithesis</u> of Say's Law is "Demand Creates Its Own Supply"

Say's Law essentially says that if we define a "good" as something that people generally want, then all goods can be sold at some price. This is the foundation of the conservative supply-side argument. Given sufficient confidence, businesses will hire more workers and expand production to increase supply. The workers, in turn, generate more demand and at some price the additional goods supplied will be sold. Incentives that encourage business confidence will result in more jobs with the economy expanding to a higher level of supply and demand. In essence, Say's law says produce it and demand will come as if by magic. Hard-core supply-siders see business confidence as the key to this story of economic growth.

The problem with this supply-side story is the vagueness of the word "confidence" and any convincing explanation of how any such confidence would motivate a company to expand its productive capacity. Most companies are not charities. They are unwilling to set a price lower than the cost of production. Unless the business sees or anticipates an increase in demand for its products, it will have no incentive to add another line of production when it is unable to sell all that it is producing with its current lines of production. Any tax cuts or other confidence building access to additional cash will incentivize the business to invest in the financial economy such as in the stock or bond markets, instead investing in the real economy. Investing in more productive capacity requires a reasonable expectation of increased consumer demand, nothing less. In business "show me the money" translates into "show me the demand." Supply-side economics assumes that there will always be sufficient demand. They mistake the financial economy for the real economy and don't recognize that these are increasingly becoming separate economies. Without sufficient demand for goods and services, real investments in the real economy are unlikely to pay off. Instead, money increasingly flows into the financial economy driving up stock and bond prices and driving down interest rates to encourage both private and public debt.

Supply-side economics emphasizes the role of workers as factor inputs into the production process rather than as consumers. From the supply-side point of view, giving money to unemployed workers just encourages them to remain unemployed. But demand-side economics sees workers differently. From the demand-side point of view, more money going to workers is a good thing, especially if it causes them to hold back on taking a job until a higher wage is offered

and gives them more money to spend to increase consumer demand. An unemployment insurance check helps ensure that a worker will not sell out for too low a wage. Even in the absence of a union, a higher unemployment insurance payment can lead to higher wages at the expense of profits so that consumer demand increases. This means more money flowing to consumer demand on Main Street and less going to the financial markets on Wall Street. Of course, this works only to the extent that companies are unable to pass along higher wage costs to consumers as higher prices and accept lower margins and lower profits. The distorted money flow in our economy has mainly been a story of a lack of real competition in the real economy with a concentration of economic power and political influence leading to the accumulation of wealth on Wall Street and the absence of adequate consumer demand for goods and services on Main Street. The recent inflationary episode with ultimately be seen as an exception to an otherwise chronic deflationary problem that will continue until more money is directed to employees and less to shareholders.

When aggregate demand is too weak relative to aggregate supply, higher unemployment payments paid for by taxing the wealthy will help divert the money flow, from the financial markets where it piles up inflating stock and bond prices and depressing interest rates, to money flowing to workers who have higher marginal propensities to consume than the investors on Wall Street. When demand is weak, Wall Street investors can't find real business projects to invest in and, instead, use the money in an upward spiral of financial derivatives spinning around and around while searching for arbitrage opportunities and increasing monetary velocity, but contributing nothing to employment or real economic growth. In such circumstances diverting profits to worker paychecks helps create real business opportunities by increasing the demand for goods and services. The money already on Wall Street is then readily available to expand production in response to this increase in consumer demand on Main Street. Higher wages with lower margins might not harm total profits if businesses are able to substantially increase sales volume in the face of greater consumer demand for goods and services. To the extent that this happens, it may even contribute to overall economic growth.

Under supply-side economics, Say's Law says: "Don't worry, supply will create its own demand." However, falling prices will only discourage the purchase of durable products and reduce aggregate demand. Why pay more for a new car now when it will be cheaper next year? If you want a great deal on a new car, wait several years! Moreover, with prices falling due to the lack of demand for products, which in turn creates a lower demand for workers to produce those products, which drives down wages, existing debts become harder to pay off. The problem is that nominal debts are unchanged even as nominal wages fall, which makes it harder for people to pay. This just cuts back consumer demand for goods and services even more. Deflation slows the economy, throwing more and more workers out of work. Many economists have warned that deflation may be an even greater threat to our economic well-being than inflation.

A supply-side policy of increasing the money flowing to Wall Street may generate political campaign contributions but is not a recipe for increasing aggregate demand and employment, but just the opposite. Consequently, government intervention is needed to avoid deflation and stimulate consumption when aggregate demand weakens. In effect, the *money flow paradigm* understands that over the long run when we face strong aggregate supply and weak aggregate demand, we have to reverse Say's Law to instead say: "Demand creates its own supply." In the

long run whether deflation wins out over inflation will depend upon whether productivity per worker increases faster than the relative decline in the proportion of workers in an economy.

III. Rising Private Debt and Public Debt

The Ineffectiveness of Monetary Policy

In expounding on the quantity theory of money in the equation M V = P Q, where M is the quantity of money, V is the velocity of money, P is the price level, and Q is the quantity of output, Milton Friedman assumed that the velocity of money, V, was a constant such that increases in the quantity of money, M, would lead to increases in the price level, P, in establishing the **Friedman rule** that *inflation is always and everywhere a monetary phenomenon meaning that inflation is caused by increasing the money supply, M, faster than the expansion of the output of the economy, Q.*[30]

However, our distorted money flow has diverted a larger and larger portion of M to wealthy individuals (who typically have low marginal propensities to consume) and corporations that largely pour that money into the New York financial markets where it sits without affecting the purchase of real goods and services in the real economy. This diversion of the money flow to the financial economy has reduced the effective velocity of money, V, because the money trapped in the financial markets does not turn over in the selling of products and services. It may spin around over and over again in the financial markets, but as far as the real economy is concerned, it is going nowhere and essentially that portion of the money supply has a velocity, V, of zero as far as the real economy is concerned.

Another factor that may lower the marginal propensity to consume and, therefore, lower the velocity of money, V, is the aging of the population. Upon leaving the labor force upon retirement, elderly people's retirement incomes tend to stabilize and often even decline in real terms. Apart from an increase in health care expenditures during one's last years of life, most elderly people spend less on the typical basket of goods and services as measured in the consumer price index, CPI, than younger people. A young family starting out has many initial expenses in acquiring a car, a home, furniture, appliances, clothing, toys for the children, as well as daycare and educational expenses. Older people typically have acquired more clothes and furniture than they need and are more likely to be downsizing. As more people live longer, the proportion of old people in our population increases, which lowers the average marginal propensity to consume which causes a decline in the velocity of money, V. Also, consider the higher birth rates following World War II versus the much lower birth rates today, which has led to an ever increasingly older population and a lower value for the velocity of money, V.

The **money flow paradigm** asserts a *new monetary rule* that because of the very high marginal propensities to consume of poor people and very low marginal propensities to consume of rich and elderly people, *the higher the level of inequality in an economy and the older the average age of people in the economy, the lower the velocity of money, V, in that economy, and vice versa. In the long run it is not the quantity of money, M, that leads to inflation, but the combination of a rapidly rising M and a rapidly rising V relative to a less rapidly rising Q that causes inflation.* If inequality is rising rapidly and the population is aging significantly, then V may be falling precipitously to counter the rising M value. In fact, a rapidly falling V may require a

---

[30] Friedman, Milton. *The Optimum Quantity of Money.* New Brunswick, NJ: Aldine Transaction, 2007.

rapidly rising M to counter deflationary forces driving down consumer demand and potentially both prices and employment. With our rising inequality of income and wealth, the longer-term mission for the Federal Reserve is to counter these deflationary forces with an offsetting rise in the quantity of money, M, even though there are times when short-term inflationary pressures may require the opposite approach.

The Federal Reserve System's method for stimulating supply is to lower the Federal Funds rate and then increase the quantity of money through quantitative easing (QE) by injecting more money into the New York financial markets to lower interest rates and, thus, encourage business investment in the real economy. However, there is a big difference between increasing the quantity of money in the financial markets and increasing bank credits for particular projects committed to expanding productive capacity in the real economy. Making lots of money available to businesses at very low interest rates is not sufficient alone to generate economic growth without adequate demand for goods and services to drive real investments (physical and intellectual) in the real economy. For a more in-depth discussion of the difference between the loanable funds theory and the financing theory see Jakab and Kumhof (2015).[31] Without an increase in demand for goods and services, an increase in money in the New York financial markets just drives up bond and stock prices and drives down interest rates in the financial economy without money trickling down into the real economy as real investment or consumption.

Monetary policy that increases narrow money (M0 or M1) may or may not affect the expansion of broad money (M3 or M4) which is primarily controlled by banks through their extension of credit. The slope of the yield curve tells us something about the effectiveness of current monetary policy in this regard. Relatively low long-term interest rates imply an excess supply of money relative to demand with the insufficient extension of bank credits => plenty of supply but inadequate demand. Low interest rates for treasury securities imply confidence in their risk-free nature. Low interest rates on federal debt implies that the level of such debt is not an immediate problem. But the diversion of money to Wall Street implies a general imbalance in the money flow. Such a distorted money flow makes it harder to fully employ the nation's resources and restrains economic growth.

Injecting additional money into New York financial markets in such circumstances may simply increase prices in the bond and stock markets with no significant effect on either aggregate supply or aggregate demand in the real economy. Even an "operation twist" where the Fed trades its short-term securities for long-term securities may not have any real effect on either aggregate supply or aggregate demand.

Throughout the 1990s and so far in the 2000s, Japan has demonstrated the ineffectiveness of the traditional central bank tools in combating deflation. Japan's repeated attempts to increase aggregate demand through various forms of traditional stimulus as well as its own variations of quantitative easing (QE) has shown the need for an alternative approach to increasing consumer demand to defeat deflation. Even with deficits exceeding 240 percent of GDP, Japan has faced a considerably greater deflationary threat than an inflationary one. While the aging of Japan's population implies an increase in health expenditures for the very oldest citizens, it also implies a reduction in demand for the host of expenditures characteristic of young families, including less demand for home construction, appliances, clothing and the like.

---

[31] Jakab, Zoltan and Michael Kumhof. "Banks Are Not Intermediaries of Loanable Funds – And Why This Matters," *Bank of England Staff Working Paper*, No. 529, May 2015.

Government Comes to the Rescue

It is important to remember that my expenditures are your income, and your expenditures are my income. To keep the economy growing at full potential without deflation or inflation, the money flow must keep up with, but not exceed, the growth potential of the economy. Imagine an economy with a GDP (Y) of $20 trillion growing at 5 percent a year. To pay for that level of production, aggregate demand (C + I + G + Ex-Im) must keep up with that level of production (aggregate supply). If real investment (I) is weak, consumption (C) is inadequate, and exports minus imports is negative (Ex-Im), then government expenditures (G) must make up the difference to keep the economy operating at full capacity.

Higher taxes could further reduce consumption and real investment, unless the money came from unused money that was just sitting around. When workers and businesses are unable to buy back the value of the goods and services they are producing, then the economy will contract unless the government steps in to temporarily fill the gap with unpaid for government expenditures (deficit spending) or expenditures paid for by taxes on wealth that is largely sitting idle and not contributing significantly to aggregate demand.

The large amount of money in financial markets has driven down interest rates so low that people don't see the point of saving money since they earn so little on their savings. The low interest rates are particularly hard on the elderly who have retired and are counting on a good return from secure investments such as the US Treasury securities. In addition, the federal government finds it relatively easy to increase the national debt with low interest rates keeping down the interest payments on the debt. The resulting high levels of private and public debt makes for a very unstable economy with little slack to deal with an economic downturn or an unexpected emergency. It would be hard to argue that too much government debt is undermining faith in government and driving up the interest rates on government bonds as becoming too risky when such rates have remained close to zero even prior to Federal Reserve intervention. In any case, in theory the Fed can always intervene to adjust overall market interest rates.

Evidence from behavioral economics demonstrates that the wealthy, in sharp contrast to the poor, are motivated primarily by their relative wealth position and not so much, if at all, by the absolute value of their wealth. It doesn't take that much wealth to reach the point of saturation in the need for most goods and services. After all, you can only wear one pair of shoes at a time or drive one car at a time. Having lots of cars and many homes can quickly become more of an annoyance rather than a pleasure. At some point a person gaining more and more wealth is more constrained by how much time and mental energy they have than by the amount of money at their disposal. Consequently, the incentives of wealthy people to compete in trying to get ahead of their peers are not significantly affected by absolute, across-the-board reductions in their wealth that apply equally in amount and/or percentage to them and their peers. Increasing a wealthy person's taxes might make them angry, but at the end of the day they tend to be primarily motivated by their relative (not absolute) wealth in trying to keep up with (or get ahead of) "the Jones," who traditionally were the Rockefellers, the Carnegies and the Vanderbilts, but are now the Musks, the Gates's, the Buffetts, the Bezos's and the Zuckerbergs. Helping maintain an adequate money flow to the people on Main Street by taxing the wealthy on Wall Street will not undermine their

incentive to compete intensely with one another for their relative ranking in the Forbes list of wealthiest people.

The Federal Debt Burden

Increases in federal debt have become contentious issues in recent years. Fiscal conservatives have raised concerns both about possible default as well as the transfer of a large debt burden to our children and grandchildren. An analogy with private debt is often invoked to justify this concern. In reply it is often pointed out that unlike private entities, the federal government has the power to print its own money, tax its citizens and use the power of eminent domain, not to mention the power of the police and the military. When the debt collector comes to your door, you cannot run down to the basement to print up some money, but the federal government can. Alternatively, you cannot demand money from your neighbors to pay off your debts, but the federal government has the power to tax all its citizens to pay off its debts. The private debt analogy quickly collapses and falls apart in facing the reality of federal authority and power.

The burden on our children and grandchildren is not the amount of the federal debt, but the failure to provide for an adequate education for our children and grandchildren and to maintain an adequate physical infrastructure as well as adequate federal research programs such as the National Institutes of Health (NIH) and the National Science Foundation (NSF) to facilitate a rapidly growing economy. This includes fully employing the vast majority of those people interested in working to create and maintain a labor shortage that is needed to ensure that business will act to increase worker productivity. With increasing wages, businesses have a greater incentive to employ new labor-saving technologies to greatly increase economic productivity.

Keeping everyone fully employed without triggering excessive inflation should be our paramount concern. Debt accumulation is a result of our distorted money flow that is required to enable the people on Main Street to buy back the value of the goods and services they are producing. Federal debt could be eliminated if we rebalanced our economy to direct more money to Main Street and less money to Wall Street. Redistribution through taxation is one approach. An alternative approach is to use pre-distribution by following the example of Germany and require that corporations above a certain size have employee representation on their corporate boards. With sufficient employee representation on corporate boards enough money may be redirected from maximizing shareholder value to employee compensation to correct our distorted money flow.

But what about freedom? What about free enterprise? Shouldn't companies be free to determine the membership on their own corporate boards? To answer this concern, we should consider the idea of freedom generally. To maintain a reasonably orderly society we already put severe restrictions on human behavior. We don't have to do this. We could instead remove restrictions so that the market is free to sort things out. We could remove the laws against murder, rape, and robbery and leave people free to shoot it out on the streets of a free society. We could get rid of stop signs and traffic lights and let people drive as fast as they want on our roads. But we reject these ideas in favor of restricting human behavior to maintain a society that works reasonably well for everyone. Restricting the corporate boards of large corporations to require employee representation would be another essential law to maintain a reasonable society with a

reasonable money flow by ensuring a longer-term vision for corporations who[32] otherwise have all too often chosen to focus on maximizing shareholder value and CEO pay, instead of rewarding employees for their creativity, ingenuity, and hard work. Motivating employees to do their best for the business and for society generally will lead to a more stable and more productive economy.

Up to now we have been using federal debt as a way of filling in for the shortfall in the money flowing to employees that has been diverted to Wall Street investors. The future federal debt burden is an illusion to some extent because the Federal Reserve could buy up the entire federal debt anytime it wanted. The real issue is how much money is optimal for maximizing economic growth with full employment and without excessive inflation and where is that money flowing. In the short run we are always in a disequilibrium economy where under the *money flow paradigm* it is the responsibility of government to maintain a proper balance between aggregate supply and aggregate demand. For issues such as inflation, unemployment, and economic growth, it is not just the amount of money that the government creates or causes the banking system to create, but where that money flows and the velocity of money in the real economy (as opposed to the turnover of money in the New York financial markets) that matters.

When some people proposed paying off the Federal debt entirely, Alan Greenspan, a fan of conservative Ayn Rand and chair of the Federal Reserve, was quick to point out that the total elimination of the debt would take away one of the primary stabilization tools of the Federal Reserve. If there were no US Treasury securities to purchase (i.e., no Federal debt), the Federal Reserve could not stimulate the economy by purchasing US Treasury securities in the New York financial markets to release money into the economy to expand the money supply

Before 1971 all the various US dollar currency and coin denominations were considered the debt of the US government in that the US owed an ounce of gold for every $35 offered by a foreign government. Under the Bretton Woods agreement other currencies were tied to the US dollar and the US dollar was tied to gold. Surely, it was thought, this was a house of cards that would collapse when President Nixon took the US off the gold standard.

But in 1971 Nixon went ahead anyway and unilaterally announced without consulting with any foreign governments that the US would no longer honor its commitment to provide an ounce of gold for $35. There was no catastrophic collapse in the US economy or other economies when currencies were allowed to float with no repayment of the US dollar debt for gold. At the end of the day, all the federal government owes you for your US treasury securities is US dollars.

But isn't money created out of "thin air" by the Federal Reserve just government debt backed by nothing? The cash in your wallet used to be government debt that was backed by gold. What the government owed you before 1971 was an ounce of gold for $35. But in 1971 President Richard Nixon took the United States off the gold standard. Now the government owes you absolutely nothing for $35 or any amount of money. If you are nervous about using money that is backed by nothing, don't use it.

The ratio of publicly held Federal debt to GDP has risen in recent years to about 80 percent, with an overall debt to GDP ratio of about 107 percent if Federal debt held by such government entities as the Federal Reserve and Social Security Administration are taken into account. The risk of default and/or runaway inflation is tempered by the recent experience of

[32] Remember, corporations are people according to the Supreme Court in its *Citizens United* ruling on January 21, 2010. This implies that shareholders are just investors and not owners.

Japan where debt to GDP has reached about 240 percent without bringing about default or inflation. Japan continues to suffer from deflationary forces that its stimulus spending has been unable to fully defeat. At the end of World War II Germany's debt to GDP ratio had reached about 675 percent. The German debt was written off by the allies, and with the help of the Marshall Plan allowed for the revival of the German economy.

Moreover, the velocity of money differs depending on where it is flowing. Increasing the velocity of money on Wall Street does little good if the money is just flowing around and around without going into productive real investment in production capacity in the real economy. On the other hand, the velocity of money on Main Street is often key to whether consumer demand is too strong relative to supply and threatens to produce excessive inflation, or whether demand is inadequate relative to supply and will lead to unemployment and underutilization of the economy's resources generally.

The bottom line is that giving excessive amounts of money to Wall Street will not increase productivity and economic growth if it is not properly matched with the money flowing to Main Street. The *money flow paradigm* requires a balance that takes into account where the money is flowing and what the velocities of money are in the various realms where it is flowing. To make full and productive use of all of our resources, money must flow to all sectors and regions including the rural heartland and the inner cities. The key is to focus on always maintaining a proper balance and a proper level taking into account both the amount of money flowing to each realm and the velocity of money within each realm. History has repeatedly shown that expecting the "free enterprise system" to do all this on its own with no help from the government is naive at best. History has repeatedly and continually demonstrated that unrestrained free markets do not lead to a balanced, well-functioning economy, and certainly do not lead to the efficient use of all available resources and the maximization of economic growth. There is a natural "winner-take-all" tendency in economics generally, just as there is in sports and entertainment, so it should be no surprise that more and more money would pile up on Wall Street with less and less going to Main Street. See Rosen (1981)[33] for a better understanding of the superstar effect in our economy.

What to do about the Federal Debt

There are basically four ways of dealing with the national debt: (1) increase taxes to pay it off, (2) monetize the debt by having the Federal Reserve Bank "print" money to buy it all up, (3) default on the debt by declaring that the US Treasury would no longer pay the interest on the debt or buy back any of it, or (4) expand or contract the federal debt as necessary to maintain adequate aggregate demand to maintain full employment without triggering excessive inflation. If such a large part of the money flow generated by business continues to go to the wealthy, who have relatively low marginal propensities to consume, the government will need to supplement the incomes of the middle and lower classes to enable them to be able to buy back the value of the goods and services that they are producing and keep the economy from sliding into recession.

Modern Monetary Theory (MMT) recognizes the importance of maintaining adequate aggregate demand through deficit spending as required for needed public investments if that demand is not so excessive as to overwhelm aggregate supply and trigger excessive inflation

[33] Rosen, Sherwin. "The Economics of Superstars." *The American Economic Review*, Vol. 71, No. 5, pp. 845-858, December 1981.

such as in periods of disruption such as with the COVID-19 pandemic. Even calculating the ratio of debt to GDP is distorted by money that the government owes to itself. US Treasury securities owned by government entities such as the Federal Reserve and the Social Security Administration should be subtracted out of the overall government debt before calculating the debt to GDP ratio.

In any case, regardless of the calculation, if the financial markets signal confidence in government debt and a low risk of inflation by maintaining a low interest rate for government debt, then the deficit does not pose an immediate problem. In the late 1970s when there was strong consumer demand and relatively weak aggregate supply along with artificial price increases such as the OPEC cartel rise in the price of crude oil, inflation was a problem. But in recent decades the money has been flowing to Wall Street instead of flowing to Main Street so, until just recently, consumer demand has been quite weak relative to global supply, and the inflation showed up primarily in rising asset prices such as stock and bond prices and not in general consumer prices except for an increase in the prices of crude oil and some food items as well as steel and lumber (housing) that increased in response to former President Trump's tariffs and stimulus spending by the Trump and Biden administrations. The COVID-19 virus has also significantly disrupted global supply chains, which has also contributed to inflation. At the time of this writing inflation appears to be subsiding to some extent.

The idea that at some unspecified point some future generation will have to pay off the government debt is a fundamental misunderstanding of how the financial market for government debt works. If the public loses confidence in government debt, the interest rate on that debt will rise reflecting the public's perception of the degree of risk inherent in US Treasury securities. The "bond vigilantes" will demand a premium in compensation for that higher perceived risk.

Furthermore, selling more debt into the market should drive up the interest rates on government securities if there is a shortage of money willing to invest in such debt. It is certainly possible that too much debt could result in the market demanding a high interest rate for holding such debt, but the low interest rate reflecting the current supply and demand for government debt is not indicating that an excessive amount of government debt has been issued. The introduction of more and more cyber-currencies following Bitcoin, Ether, Litecoin and the like, and their rise in value, provides more evidence of the public's taste for risk, which makes the claim that the federal government's debt may invoke a crisis concerning the public's confidence in the government's ability to pay seem very unrealistic. It is based on a comparison with a person's own personal finances that doesn't hold up at all. Simply put, when the bill collector comes to your door to demand the money you owe, you cannot just run down to your basement to print up some more dollars, but the federal government can. You cannot run over to your neighbor's house and take (tax) money from them to pay your bills, but the government can. You are not the government.

The money in the market for US Treasury securities is primarily from four main sources: (1) Government entities such as the Social Security Trust Fund and the Federal Reserve Bank; (2) The primary dealers who initially purchase the federal debt; (3) Wealthy individuals, corporations and institutional investors such as pension funds; and (4) International entities such as foreign government sovereign wealth funds and foreign private individuals, corporations and institutional investors from abroad. However, Federal Reserve can intervene in the market for US treasuries to adjust the interest rates to whatever level it deems appropriate.

But what would happen if the Federal Reserve were to monetize the entire national debt? Eliminating the entire debt would not be a good idea, as former Federal Reserve chair Alan Greenspan has pointed out, in that it would eliminate the primary tool that the Federal Reserve has to stimulate the economy when the pool of investment funds is low and interest rates are high. However, in the current economic circumstances buying up the national debt might not have as big an inflationary impact as many people fear. After all, the investors who currently own the debt are investing in that debt for their own reasons. More likely than not, they would just purchase other available financial instruments if the Federal debt were no longer available to purchase. Unlike stimulus money given directly to people on Main Street in the real economy, most of the money flowing to Wall Street would most likely stay on Wall Street in the financial economy and not go to drive up prices of goods and services on Main Street in the real economy. Instead, asset values such as stock and bond prices increase on Wall Street, while liabilities in the form of debts from loans flows to the people on Main Street. We paraphrase a modern-day version of Marie Antoinette by saying: "Let them eat plastic" as employees are given credit cards instead of money. The fundamental problem is the lack of representation of employees on corporate boards and the focus on the short-term emphasis on maximizing shareholder value at the expense of both employees and consumers who lose out to financialization as product quality is sacrificed to cut costs to boost short-term profits. For a strategy to maximize long-term profits see Graves (2022).[34]

For many, the bond market is serving as a store of value. With interest rates so low, those seeking a decent return on their investments are more likely to invest in stocks. But foreign governments have a different motivation. Foreign governments may be moving US dollars into US financial markets to keep those dollars from driving down the value of the US dollar in the foreign exchange markets and undermining those foreign governments' exports to the United States by making them too expensive for Americans to purchase. A cheaper dollar makes foreign currencies more expensive, and, therefore, makes imports into the United States more expensive. In other words, foreign governments who export goods to the United States to keep their citizens fully employed will want to keep their US dollar reserves in Wall Street and out of the foreign exchange markets to avoid driving down the value of the U.S. dollar.

When so much money goes into the New York financial markets driving down interest rates very low, any additional money that the Federal Reserve injects into the market for US Treasury securities is unlikely to be spent for either consumption or real investment in the real economy. It is more likely to just circulate around Wall Street driving up stock and bond prices without much effect on Main Street other than driving down interest rates and encouraging debt. In effect, inflation on Wall Street has for many decades served to some extent as an alternative to inflation on Main Street. More recently, direct stimulus payments from federal fiscal policy have to some extent overstimulated the economy and led to inflation on Main Street, partially caused by supply disruptions and consequent shortages as well as the COVID pandemic diverting money that would have gone to services to instead flow to demand for products. Given those circumstances, the government's excessively large stimulus payments also played a role in driving excessive inflation.

[34] Graves, Greg. *Create Amazing: Turning Your Employees into Owners for Explosive Growth*. Dallas, TX: Matt Holt Books, 2022.

The return of profits to shareholders diverts money from labor and capital

In the United States in recent years, the rules and regulations favoring the wealthy, as well as a natural tendency for money to pile up at the top of the income and wealth pyramids, has produced a distorted money flow where a disproportionate amount of money is pouring into the financial markets driving up stock and bond prices and driving down interest rates. This distorted money flow discourages savings, encourages both public and private debt, and hurts elderly dependent upon the return to fixed financial investments such as bonds, certificates of deposit and savings accounts as well as the interest rate returns from annuities and pension funds. In other words, people with fixed asset investments get less return on their money and young people receiving inadequate pay go deeper into debt. Increases in productivity with real investments in physical and intellectual capital is forgone in favor of increases in dividends and share buy-backs. In the past, a 1934 general anti-fraud regulation (Rule 10b-5) of the Securities and Exchange Commission (SEC) was used to block share buy-backs. But in 1982 the SEC created the Safe Harbor rule (Rule 10b-18) which reduced a company's liability for fraudulent manipulation using insider trading when buying back its own shares of stock. This essentially gave companies a more-or-less free hand in manipulating their stock prices by the timely repurchase of their own stock shares. Such insider trading has only served to further artificially inflate stock valuations.

Such financialization undermines the mission of business as described by Adam Smith in competing to produce new and better products and services for consumers. Another important factor is the increasing concentration in many industries due to economies of scale and network effects which has greatly restricted competition.[35] Corporations have acquired too much power relative to consumers and employees. Excessive corporate power and political influence in getting rules and regulations enacted to enforce monopoly power by blocking competition such as manifested in the "Citizens United" Supreme Court decision is the primary reason for our economy's distorted money flow. The fundamental problem is highly concentrated industries focused on maximizing short-term profits at the expense of consumers, employees, and the general public that ends up reducing economic growth and lowering long-term corporate profits.

Motivating employees with incentives is undermined by diverting money to shareholders

Capitalism won't work for you if you don't have any capital. Primitive societies believed that all of nature was owned by God. Later the King was said to have been given dominion over the natural world and all its resources by God. John Locke's (1632-1704) original idea was that you earn the right of property ownership through what today would be called "sweat equity." Taking property or materials from the natural world and imbuing your labor into them established your property ownership. In this way capital or material ownership could be earned through sweat equity.

However, the link between sweat equity and capital ownership broke down when larger projects required more resources than individual workers could obtain through their sweat equity. In England the nobility provided the resources when investments were larger than individuals or

[35] For details on increasing industrial concentration in the United States, see: Tepper, Jonathan with Denise Hearn. *The Myth of Capitalism: Monopolies and the Death of Competition.* Hoboken, NJ: John Wiley & Sons, 2019.

even groups of workers could manage. Workers were not given any ownership in such capital equipment. Subsequently, capital became concentrated in the hands of the capitalists with little trickling down to the workers. Today, hard work pays off. But not for the workers. When the workers work hard and produce lots of goods and services, stock ownership pays off with big increases in shareholder dividends and valuations enhanced through share buy backs. In theory all that money could be used to create big factories to produce lots of products, but the workers can't afford to buy those products because of the inadequate money flow to employees relative to shareholders.

Conservatives like to talk about the importance of incentives. But where is the incentive for a wealthy person to work hard when the value of their stock portfolio keeps rising without any effort on their part? Yes, hard work pays off, but not for the workers doing that work, but for the shareholders who do nothing but watch the money pile up in their stock portfolio. The return to capital is much higher than the return to labor and has to a great extent become a substitute or alternative to rewarding rank-and-file employees for their work. Today, the largest share of the profits in most large corporations goes to the top management and the shareholders with little leftover for most of the company's workers.

Investing in Adobe or Apple in the 1990s and just checking the box that says: "reinvest dividends," provided shareholders with an over seven thousand percent return, when some of that money could have gone to employees to reward their hard work. Sure, investors deserve a reasonable return, but the extreme emphasis on maximizing shareholder value has gone to an extreme at the expense of reducing our economy's efficiency and productivity. It is true that someone retiring with a retirement portfolio of only $100,000 is taking a big risk when investing in internet startups and stocks. But most retirees with that little money avoid taking risks with their limited funds. Most of the money invested in internet startups and individual stocks is from millionaires and billionaires who can afford to lose $100,000 here and there with no effect on their day-to-day lives. After all, how many pairs of shoes can a person wear, how many cars can a person drive, and how many fancy meals can a person eat at expensive restaurants each day? Even buying vacation homes can become a burden after a point. In reality, the wealthiest Americans already have so much money that taking risks with excessive funds is not something that requires great rewards. Most don't know what else to do with all that money anyway.

There is no shortage of money to invest in good ideas, but a shortage of creative entrepreneurs with the ability and willingness to work hard to bring good ideas to the marketplace and to inspire their employees to work hard in carrying through on effectively implementing the plans and programs needed for success. Investors, who have inherited a lot of money and don't know what to do with it other than investing in broadly based index funds or, alternatively, gambling on individual stocks without much understanding of their potential, don't need to be highly rewarded for spending their days at the country club playing golf. Our emphasis on rewarding shareholders, instead of actual entrepreneurs and their employees, undermines incentives in a distorted version of free enterprise.

To be fair there are some firms that are entirely employee owned such as Burns & McDonnell Engineering[36] in Kansas City, Sammons Enterprises in Dallas, Swinerton Builders in

[36] See book by Greg Graves about Burns & McDonnell's employee-owned company:
Graves, Greg. *Create Amazing: Turning Your Employees into Owners for Explosive Growth.* Dallas, TX: Matt Holt Books, 2022.

San Francisco, and Chemonics International Inc. in Washington, DC. There are also many companies that allow for partial employee ownership through various stock option plans and similar arrangements. Government should create ways for all Americans to have some stock ownership that would grow over time and supplement Social Security and other sources of retirement income. In Germany workers are represented directly on corporate boards and incentives are designed to inspire workers to work hard and thoughtfully for their companies.

When the workers cannot afford to buy back the value of the goods and services they are producing and the wealthy dominate the financial markets, the relationship between the stock market and the real economy breaks down. The stock market thrives while the real economy struggles. I do nothing, and my stocks generate more and more money. The workers work hard, while their earnings stagnate. This was not always the case. After World War II the wages of workers kept pace with worker productivity until around 1974 when real wages flattened out even as worker productivity continued to rise. After 1974 the profits from increased productivity were diverted to the shareholders.

The government's attempts to bust the unions such as President Reagan's calling up the national guard to replace the striking air traffic controllers has dramatically altered the money flow in our economy. Unions once provided the balance to counter businesses controlling blocks of jobs with quasi-monopsony or oligopsony power. With about a third of the labor force unionized after World War II, employee pay kept up with employee productivity increases until around 1974 when employee productivity continued to rise but employee compensation flattened out and declined to some extent in real terms when adjusted for inflation. In recent years, the degree of unionization has dropped to ten percent or less. It should be no surprise that so little money ends up in employee paychecks relative to enormous amounts of money given to the ten percent richest people in the United States who own eighty-four percent of the wealth on Wall Street.

Things have only gotten worse and more extreme since then. The top one percent have accumulated enormous wealth while the average worker has gotten nowhere except deeper in debt while living paycheck to paycheck. It is only in recent decades that the emphasis on maximizing shareholder value and CEO pay, and wealth inequality in general, has become so extreme. It is no surprise that workers have rebelled against the elite so forcefully and emphatically. The January 6 attack on our capitol in an attempt to overthrow the 2020 election results with a hangman's noose for Mike Pence reminds one of the French Revolution and all of the disruption and violence that resulted by letting wealth inequality go to such extremes.

To keep the economy from tanking in the face of such a distorted money flow, the federal government has itself gone deep into debt. The more distorted the money flow in favor of the wealthy, the greater has been the rise in the national debt to try to keep the economy from collapsing into a deep recession. The fundamental problem is not the government debt itself, but the distorted money flow that makes deficit spending necessary.

Another concern about government spending in general, but government debt financed spending in particular, is whether the government is "crowding out" private investment. This assumes that the economy could achieve full employment without deficit spending. For many decades, the US economy has had weak, inadequate aggregate demand relative to the

excessively robust global aggregate supply. This soundly rejects the assumption that federal deficit spending is not needed to achieve full employment.

In addition, we find an *a priori* assumption that private investment is always preferable to government investments and that future generations would be better off if there were no debt financed government investments. But this assumption is wrong when common property resource considerations allow for government debt that is judged by voters to provide a better return for future generations than private investments of equal cost. Some investments in education, infrastructure, and basic research, for example, may require government funding to be viable. Major advances in basic research that are unprofitable at the micro level for individual firms can be highly profitable for the nation and the world. Extensive examples of the benefits of government investments in basic research and technology infrastructure can be found in several books by Mariana Mazzucato.[37] [38] [39]

As in any investment, public or private, the costs and benefits of taking on debt should be carefully considered before making the investment. But that fact does not rule out debt-funded public investments if such investments are sufficiently beneficial to future generations. Such investments often offer a higher return to the nation than any alternative private investment projects.

This is particularly true of investments which would never be made by the private sector because their common property nature generates a free rider problem which the private sector cannot overcome by private contracting because of excessive transaction costs but is recognized by the public sector as a public benefit. From this point of view, one might be just as concerned about private investment "crowding out" public investment. When all available resources are fully employed, there will always be a trade-off between public and private investment.

On the other hand, when the economy is stuck at a lower level of capacity utilization with high levels of unemployment, government investment expenditures may more accurately be thought of as "crowding in" private investment expenditures by stimulating demand and increasing the money flow throughout the economy. There are many such investments such as money for infrastructure, education and basic research at the National Science Foundation and National Institutes of Health. In the past America has led the world in taking the initiative in providing and requiring school attendance for its children. But now other countries such as South Korea and China are making advanced education a priority and may ultimately leave the United States behind in educating their citizens.

Pharmaceutical companies will only invest in medicines with patents that can effectively block competition. If a medicine could cure breast cancer using easily accessible household ingredients, don't expect a pharmaceutical company to investigate it, reveal it, or develop it. Pharmaceutical companies are motivated to charge a high price for any medicine to cure an illness that threatens people with severe disability or death. Where the need is greatest, the price

---

[37] Mazzucato, Mariana. *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*. New York: PublicAffairs, 2015.

[38] Mazzucato, Mariana. *The Value of Everything: Making & Taking in the Global Economy*. New York: Hachette Book Group, Inc., 2018.

[39] Mazzucato, Mariana. *Mission Economy: A Moonshot Guide to Changing Capitalism*. New York: HarperCollins Publishers, 2021.

will be set the highest. Only the government through the National Institutes of Health can make the investments needed for the university research needed to find cures in a cost-effective manner that can offer cures at a reasonable price. Concentrated economic power and patent laws have enabled pharmaceutical companies to gain enormous returns on relatively minimal investments in research. Patents were originally designed to encourage innovation by allowing a company time to earn a profit on investments that take a lot of money and time. However, patents have been extended well beyond a reasonable period to recoup costs and earn a reasonable profit. We now have a patent system that suppresses rather than encourages innovative investments.

Infrastructure is clearly another area where public investment in public goods is needed because the incentive structure of private commerce does not lend itself well to building common property resources that benefit everyone without providing a clear path to matching private costs to private benefits. Historically, the benefits of the Eisenhower Interstate Highway System cannot be overstated. The enormous benefit to our economy in general and to individual companies in particular in transporting their products has demonstrated the value of solving a common property resource transportation problem that require public investment. Fortunately, the recent passage of the "*Infrastructure Investment and Jobs Act of 2021"* is a good start toward at least repairing our damaged and deteriorating roads, bridges, tunnels, ports, airports, and rail facilities.

IV. International Trade and Money Flow

The Role of International Trade in the *Money Flow Paradigm*

The money flowing to the New York financial markets on Wall Street is not all coming from wealthy individuals and corporations in the United States. A considerable amount of money is also coming from wealthy individuals from abroad and foreign corporations. In addition, foreign governments have a special interest in keeping US dollars out of the foreign exchange markets. Foreign governments can acquire US dollars from the businesses in their country that get them through trade and investment returns in exchange for the local currency. Some governments then create sovereign wealth funds that use those US dollars to invest in the financial markets in the United States. The role of the US dollar in international transactions allows the United States to benefit by issuing more dollars as international trade expands over time. This seigniorage privilege allows the United States to pump more money into the New York financial markets without causing the value of the US dollar to drop in foreign exchange markets. A US digital dollar (CBDC) would only reinforce this by further facilitating and speeding up international transaction payments in international markets.

The Value of US Dollars in Foreign Exchange Markets

What are the implications of the US importing lots of products from abroad? Does our trade deficit imply that we are getting ripped off and need to impose trade restrictions? For example, consider our trade with China. China takes its resources, and its people work hard producing products for us. In return, instead of sending lots of our products to China, we send them pieces of paper with George Washington's picture on them (US dollars). Ordinarily, all those US dollars would find their way into the international currency exchange markets driving down the value of the US dollar and raising the price of the Chinese yuan (aka renminbi, “the people’s money”). That would make Chinese products more expensive for us to purchase and US products cheaper for China to purchase.

You would think that making US products less expensive for the Chinese people to purchase would be good for China. But China has traditionally had a very small middle class incapable of affording many US products. A more immediate problem for China's government has been the flow of peasants from rural areas into the urban centers where products are produced for export. China needed a way to avoid high levels of unemployment and keep its citizens employed through the manufacture of products for export. Instead of allowing those US dollars to go into the currency exchange markets, China used those US dollars to buy US Treasury securities. In other words, China gave us products, we gave China US dollars, and China gave us our money back again by investing money in US financial markets by buying US Treasury securities. Who is getting ripped off here? (Hint: it is not us.)

However, with a continuing flow of peasants from the countryside and an even stronger demand for Chinese exports, the wages of Chinese workers have been rising. China has greatly benefited from direct foreign investment in building factories to employ Chinese workers and from the transfer of technology to China. As with trade generally, trade with China is a win-win situation, we greatly benefit from high-quality, low-price Chinese products, but China benefits by bringing

its people greater wealth. As China grows its middle class, it will become less dependent on foreign demand for its products and replace that demand with the demand for goods and services of its middle class to maintain full employment.

The flow of US dollars situated abroad into New York financial markets would otherwise drive down the value of the US dollar in international currency exchange markets. This makes it more difficult for the Federal Reserve to tightly control the money supply. Overseas investors, especially sovereign wealth funds, may move US dollars into New York financial markets leaving a stronger US dollar in international currency exchange markets than would otherwise be the case. Japan and China have purchased large quantities of US Treasury securities with US dollars that would otherwise have gone to drive down the value of the dollar, which would have lowered the price of US exports and increased the price of imports into the US helping move toward a better balance in tradable commodities and services.

However, some foreign governments (e.g., China) may have motives for investing in US Treasury securities other than seeking an attractive return on investment in the form of interest payments. China requires that Chinese exporters turn in US dollars to the Chinese government in return for renminbi (yuan) to keep those dollars out of foreign exchange markets. China's return on investment in US Treasury securities may be less in the form of interest payments and more in keeping its population fully employed to maintain both economic and political stability by maintaining either a low value for the yuan in international exchange markets or, somewhat equivalently, a high value for the US dollar.

It is important to consider the underlying cause of trade imbalances, especially those that have kept the US dollar strong. China and several European countries, for example, have highly unequal internal wealth distributions such that an insufficient amount of money is flowing to their average people to sustain full employment without substantial exports. In other words, United States consumers and other foreign consumers make up for the lack of adequate demand by China's domestic consumers. The extreme wealth inequality in China and those European countries mean that the people in those countries cannot afford to buy back the value of the goods and services they are producing, but the wealth of those countries has gone to wealthy elites who are eager to invest their money in the United States financial markets.

Even elites in poor, developing countries are often eager to invest their money in the New York financial markets instead of investing in industrial development in their own country. This phenomenon can be viewed as another form of colonial exploitation, with the development of poorer countries held back in favor of providing more wealth to the already wealthy by driving up prices in the US stock market. The US stock market, and stock markets in general, have become alternatives or substitutes for real investment in the productive capacity of economies throughout the world. Simcha Barkai (2020) published a carefully researched paper that revealed that business revenues were going increasingly to profits (financial capital) as opposed to the cost of labor or real capital (e.g., physical or intellectual capital).[40]

This distorted money flow has created a financial economy that is more and more separated from the real economy. Ironically, it has been restraining and undermining productivity

[40] Barkai, Simcha. "Declining Labor and Capital Shares." *The Journal of Finance*, 75(5), pp. 2421-2463. 2020. https://doi.org/10.1111/jofi.12909

and economic growth rather than supporting and encouraging it. Yes, money is cheap for businesses to borrow, but for many years demand was chronically inadequate without extraordinary stimulus from governments. Businesses have no incentive to expand their operations, but instead they buy up or undercut smaller competitors to increase their market share and prices.

Adam Smith[41] explicitly referred to the invisible hand of competition where businesses seeking to increase their own profits compete in offering higher quality products at lower prices. But he also implicitly referred to a second invisible hand where businesses colluded together to suppress competition and raise prices when he wrote: "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the publick, or in come contrivance to raise prices." These two invisible hands are in a constant struggle with one another. Lately, the second invisible hand appears to be winning as explained in more detail in Teachout (2014),[42] Teachout (2020),[43] and Tepper and Hearn (2019).[44]

Another major reason for the strength of the US dollar in foreign exchange markets is the role of the US dollar as the world's primary reserve currency. To avoid the instability and risk associated with fluctuations in the value of trading one country's currency for another, some major entities purchase imports with US dollars and sell exports denoted in US dollars to avoid the ups and downs of the foreign exchange markets. Trade in crude oil and other major commodities is traditionally done in terms of US dollars. Consequently, as international trade continues to increase over time, the demand for US dollars increases to keep the US dollar highly valued in foreign exchange markets.

In other words, a country whose currency serves as a major reserve currency is in basically the same boat as a country that suffers from the natural resource curse, otherwise known as the Dutch Disease, a term coined by *The Economist* to refer specifically to how the value of the Dutch guilder was driven up when the Netherlands discovered massive amounts of natural gas within its territory, and generally to any country selling large quantities of a natural resource in high demand. A reserve currency country and a country suffering from the natural resource curse have great difficulty selling their exports because of the high price of those exports in that country's currency in the foreign exchange markets. In other words, under these circumstances the exports of the United States and the Netherlands would be basically priced out of international markets. The Dutch escaped the Dutch Disease by dropping the guilder and joining the Euro currency union where their natural gas exports were much less impactful with little effect on the strength of the Euro overall.

---

[41] Smith, Adam. *An Inquiry into The Nature and Causes of The Wealth of Nations*. London: W. Strahan and T. Cadell, 1776.

[42] Teachout, Zephyr. *Corruption in America: From Benjamin Franklin's Snuff Box to Citizens United*. Cambridge, MA: Harvard University Press, 2014.

[43] Teachout, Zephyr. *Break 'Em Up: Recovering Our Freedom from Big Ag, Big Tech, and Big Money*. New York: St. Martin's Publishing Group, 2020.

[44] Tepper, Jonathan with Denise Hearn. *The Myth of Capitalism: Monopolies and the Death of Competition.* Hoboken, NJ: John Wiley & Sons, 2019.

As a reserve currency it is not only desirable, but necessary, for the country with the reserve currency to run a current account deficit to increase the amount of their currency in foreign exchange markets to keep from being completely priced out of the markets for its exports or see its exporting industries shrink as a result of its reserve currency status and the ever-increasing demand for its currency in international markets. Likewise, a country with a rapidly growing economy needs to issue more currency to keep up with the demand for that currency as trading within that country expands in selling more goods and services, *ceteris paribus* (especially regarding the overall effective velocity of money within the economy).

On the other hand, the advantage of a strong currency is low prices for imports which save consumers money and helps make up for extreme income and wealth inequality within the United States. This is particularly helpful for retired elderly people who are on fixed incomes. In real terms the Chinese and other foreign producers are taking their natural resources and working hard to produce products for us, but instead of sending comparable products to them, we are sending them pieces of paper with George Washington's picture on it (US dollars). For the most part, tariffs on Chinese goods entering the United States are not paid by China. Walmart, in competition with other businesses around the world, buys goods in China and ships them to the United States. When those goods arrive in Long Beach, California, the Federal government requires that Walmart pay a tariff on those goods from China. Walmart can compensate itself to some extent by passing along the cost of the tariff to Walmart customers. Since many of the items Walmart buys from China are relatively inexpensive to begin with, the elasticity of demand for those items may be relatively high relative to the elasticity of supply so Walmart is able to get away with passing along most of the cost of the tariff to Walmart customers without suffering a significant drop in demand for those items. When the price of a great pair of Chinese memory foam sneakers rises from $9.98 to $10.58, it is still a great deal relative to alternatives, which can cost over one hundred dollars in high-end shoe stores.

The idea that there are a limited number of jobs in this world, and we must fight over them is what economists call the *Lump of Labor Fallacy*. The number and quality of jobs in the United States is not fixed. Fiscal and monetary policies can create as many jobs as we need. The current shortage of workers is in part due to stimulus policies that have been implemented in response to the COVID-19 pandemic. We should not raise prices in Walmart, Target, Amazon and many other low cost venues by imposing tariffs on imports coming from abroad. A better approach is to gain a tighter control over the number and quality of jobs here in the US to keep our workers fully employed while still enjoying the low prices offered by imports from abroad. In fact, one of the key things we can do to fight excessive inflation is to remove tariffs from most imported items.

The world works for us, and we work for ourselves, yet we are told that we are being exploited by others by importing actual physical goods and services and paying for them with pieces of paper (US dollars). The actual truth is the exact opposite of what those US citizens who see themselves as "victims" tell us, the world is working hard and sacrificing their resources to help keep us fat and happy! In reality, we are the ones in the dominant and exploitative position in foreign trade. The absence of tariffs works to our advantage. The lumber and steel tariffs we placed on Canada only increased the cost of housing, automobiles and appliances in the United States. We need to remove those tariffs so we can get Canadian lumber and steel for less.

Yes, the overseas competition for the dollars of US consumers means that the wages and jobs of US workers are suppressed. Tariffs do not necessarily solve this problem since they would raise prices without guaranteeing that the money from the higher prices would go to workers in the form of higher wages and more jobs. Both the flow of dollars from abroad into US financial markets in New York and the role of the US dollar as a reserve currency in foreign trade have kept the value of the US dollar strong in foreign exchange markets. The high value of the US dollar makes US exports expensive for people in other countries to purchase. A strong dollar means that we export less than we would otherwise do and end up primarily producing our own goods and services for our own citizens. They produce goods for us, and we produce goods for ourselves. Through what economists call seigniorage, as the primary supplier of money to the world economy, you could even argue that we are carrying out what could be seen as a form of colonial exploitation in extracting resources from other countries to our own benefit and not theirs.

Another implication of the US dollar serving as the world's primary reserve currency is that commodities such as oil that are bought and sold in US dollars by-pass the foreign exchange markets so if the US dollar suddenly increased in value or decreased in value it would not have a great effect on the US imports of dollar-traded commodities or US exports of such commodities. Therefore, the United States' reserve currency status insulates it from many of the disruptive fluctuations in relative currency valuations in the foreign exchange markets.

Gross National Product (GNP) measures a country's total amount of consumption while Gross Domestic Product (GDP) measures the country's total amount of production, with the difference being the inclusion of net property income from abroad for GNP. Would you rather live in a country where the ratio of GNP to GDP was two or a country where the ratio was one half? Getting property income from abroad allows you to consume more. A country that injects money into its economy to stimulate consumer demand as needed to maintain full employment, while maximizing its GNP to GDP ratio, is doing better than, if not exploiting, a country whose GNP to GDP ratio is significantly less than one. America has a foreign trade deficit. This means that we are consuming more than we are producing. Surplus countries are being short-changed in that they are producing more than they are consuming. America benefits from our deficit and their surplus.

Okay, I will admit that I feel badly about this, because when I was growing up my father told me to eat everything on my plate because there were little children starving in China. I never did understand how my eating everything on my plate was helping them (since my uneaten food would be thrown away, not exported to China), but I can see that, while in the short run American demand for Chinese goods can help China employ the flood of rural workers coming to China's cities looking for work, in the long run the unusually strong value for the US dollar due to our reserve currency status is enabling us to exploit the Chinese who take their resources and work hard to produce high quality products for us at very low prices. The Chinese government understands this and is (1) working toward growing the Chinese middle class to increase consumer demand within China to substitute for foreign demand, and (2) encouraging the creation of an international reserve currency for the world to replace the reserve currency status of the US dollar which keeps the dollar strong allowing the United States to continue to consume more than it produces. Replacing the dollar with a new world reserve currency would weaken the dollar and reduce or even eliminate America's trade deficit.

John Maynard Keynes recognized the need for an international reserve currency and proposed to call such a currency "Bancor." Although no such currency has yet been introduced, the International Monetary Fund (IMF) uses special drawing rights (SDRs) to help countries reconcile their currency needs when appropriate through the IMFs auspices. In theory these SDRs could be extended to companies involved in international trade to help them reduce the risk associated with fluctuations in currency valuations. Whether this comes about or some other solution to mitigating such risk is yet to be determined.

In the meantime, currency fluctuations and concerns about imbalances in imports and exports as well as a desire to stabilize and encourage employment in infant industries and other considerations have motivated countries to impose tariffs on imports. The higher prices paid by consumers as a result of imposing import tariffs could exacerbate rather than ameliorate wealth inequality within the United States. However, the high value of the US dollar in foreign exchange markets has concerned some people. Policies designed to drive down the dollar's value in a way that more directly helps US workers gain better paying jobs have been proposed in order to make US exports more competitive without raising the prices of imports into the United States too much, which would hurt the elderly and others on fixed incomes. Robert Kuttner lays out the case for a more managed trade to protect US workers from competition with workers getting less pay and working under more harsh conditions abroad in his book: *Can Democracy Survive Global Capitalism*.[45] Hopefully, other more direct means of increasing employment and raising wages will be found as an alternative to imposing tariffs or artificially manipulating currency values.

The Chinese leadership recognizes the danger of being too dependent on overseas demand and is gradually working toward building stronger domestic consumer demand for its products. However, as in Japan and elsewhere in the world, an aging population tends toward a reduction – not an increase – in the demand for goods and services with the notable exception of health care where assisted living can be especially costly. The world-wide deficiency in aggregate demand, and – with the help of technological advances – the global explosion in aggregate supply does not bode well for future economic and political stability in China or elsewhere. The emergence of Africa as another source of cheap labor has yet to be fully exploited implying a continuation and possible expansion of global aggregate supply.

Within the United States some combination of central bank monetary expansion and increased government expenditures will be needed to make up for the ongoing shortfall in aggregate demand. Higher paying jobs require greater consumer demand as well as investment in workforce education. Whether those expenditures are paid for through deficit spending or higher taxes on those with low marginal propensities to consume will be a central issue to debate in coming years. Deficit spending has implications for potential inflation and so-called "crowding out" (or more likely "crowding in" during periods of inadequate demand) and possibly for the value of the US dollar in international currency exchange markets. For a discussion of the effect of deficit spending on the performance of an economy see Kumhof, Laxton, and Leigh (2014).[46]

[45] Kuttner, Robert. *Can Democracy Survive Global Capitalism?* New York: W. W. Norton & Company, 2018.

[46] Kumhof, Michael; Douglas Laxton; Daniel Leigh. "To Starve or not to Starve the Beast?", *Journal of Macroeconomics*, Vol. 39, Part A, pp. 1-23, March 2014.

V. Money Flow Reversals from Strong Demand to Strong Supply

The Federal Reserve and Monetary Expansion

To fully understand how these distortions in aggregate supply and aggregate demand have come about and their implications for government economic policy, we need to examine our economic history more closely. First, consider the flow of money over the past century. The Federal Reserve Act of 1913 was enacted partially in response to the panic of 1907. The primary purpose was to take control of the money supply out of the hands of politicians who naturally would be tempted to use the printing presses to overpromise and overdeliver money to their voters to a degree that would undermine the value of the currency and generate excessive inflation. In other words, the purpose of the Federal Reserve Act of 1913 was to turn control of the money supply over to professionals who would maintain a long-term perspective in regulating the money flow in the national interest. This was particularly important in periods where aggregate demand was strong and aggregate supply was weak, making inflation a serious threat.

Stimulus money and a shift in spending patterns have created a recent surge in demand for products especially from Internet providers and a corresponding reduction in the demand for services that along with the breakdown of supply chains due primarily to the COVID-19 have created a temporary surge in inflation which is unlikely to last unless fundamental changes are made to the money flow in our economy. If we return to the previously prevailing money flow with more money flowing to Wall Street and less money flowing to Main Street, we will see a return to deflationary pressures unless actively countered by changes in government programs, policies, rules and regulations.

The role of the Federal Reserve was further defined by the challenges the American economy faced in responding to World War I and its aftermath. The money supply doubled primarily due to war debts paid by European powers in gold to the United States over this period. Aggregate demand was able to keep up with aggregate supply until the 1929 stock market crash followed by a reluctance to expand the money supply further. The sudden drop in aggregate demand resulted in a dramatic rise in unemployment until New Deal work programs and preparations for World War II eventually moved the economy toward a new equilibrium.

During the 1930s depression, various countries tried to make their exports more competitive by devaluing their currencies through monetary expansion. When one country would try to get an edge on the others, the other countries would then devalue their currencies in response. In theory this works fine until world aggregate demand catches up with aggregate supply potential. Once the supply potential is reached, further devaluations by printing more money only leads to inflation. Europeans recognized the futility of a never-ending cycle of competitive currency devaluations and created the Euro Zone. Trade was greatly enhanced, and competitive devaluations eliminated by the creation of the euro. Competition on quality and price replaced competitive currency devaluations in trade within the Euro Zone. This is just another example of how working together using a win-win strategy works so much better than pursuing an I-win-you-lose strategy. At the core of economics is the fundamental belief that in any free exchange the trading of products and services makes both parties better off.

However, the important point that economists have failed to fully grasp is that the economy does not automatically move toward an equilibrium where aggregate demand matches aggregate supply. As explained in Taleb (2007),[47] the assumption that all markets quickly and automatically converge to an equilibrium is a misrepresentation of reality. Although some local markets for specific goods may adjust to bring supply and demand into equilibrium, there are larger, more diverse markets that stay out of equilibrium for extended periods. Our existing monetary policy tools have not proven adequate to avoid these disruptions and extended disequilibriums. A new monetary policy tool made possible through the creation of a central bank digital currency (CBDC) is needed to provide an alternative to manipulating interest rates in the financial markets in the financial economy and instead operate directly through consumers in the real economy.

Assuming an efficient and timely convergence to equilibrium was the primary mistake of economics Nobel prize winners Myron Scholes and Robert Merton, who were the principal investors in Long Term Capital Management (LTCM). They saw arbitrage opportunities in derivative trading that offered the potential of huge profits. Investors had to pay a minimum of $10 million dollars to get into LTCM. LTCM grew into a massive hedge fund that was worth $126 billion in 1998. The inefficiency of the market for derivatives was revealed in its failure to converge back toward equilibrium in a timely manner. LTCM's highly leveraged position brought it close to collapsing and bringing down the financial system. The Federal Reserve had to make arrangements to bail it out.

As Keynes (1923)[48] once said: "In the long run we are all dead. Economists set themselves too easy, too useless a task if, in tempestuous seasons, they can only tell us that when the storm is long past the ocean is flat again." In other words, economists must stop hoping that aggregate supply and aggregate demand will come into balance or that a temporary intervention supplementing private debt with public debt will patch things up long enough to reach equilibrium, but, instead, at last recognize that the money flow in our economy and in the world economy at large is distorted and will likely remain distorted for an extended period. Although with sufficient collective effort this distortion may be corrected in the long run, it is unlikely to be fixed any time soon, because it is caused by well-entrenched institutional factors, including a tendency for the successful and powerful to exponentially gain greater success and power, while the "ignorables" in the inner-cities and rural flyover country struggle to stay afloat.

Consequently, the Federal Reserve needs a new monetary policy tool to adjust aggregate demand more quickly and more effectively to bring aggregate demand in line with aggregate supply. This should be done in a manner that encourages aggregate supply to grow faster with increased productivity improvements. Businesses are much more likely to employ labor-enhancing productivity improvements when labor is in short supply and wages are rising. In recent years aggregate demand has tended to be chronically weak unless government stimulus payments and inducements artificially and temporarily strengthen it by subsidizing the least well off as was done in response to the COVID-19 pandemic.

[47] Taleb, Nassim Nicholas. *The Black Swan: The Impact of The Highly Improbable*. New York: Random House Publishing Group, 2007.

[48] Keynes, John Maynard. *A Tract on Monetary Reform*. London: Macmillan and Company, LTD., 1923.

Strong Aggregate Demand After World War II

The period following World War II experienced strong aggregate demand with relatively weak aggregate supply. Deprivation and rationing during the war were combined with a vigorous campaign to sell war bonds to the general public. Widespread war bond advertising was combined with celebrity concerts and performances promoting war bonds to get the general public to save money and put off the demand for goods and services as much as possible until the end of the war. This campaign was very effective in bottling up consumer demand, but naturally led to a dramatic rebound in consumer demand after the war. Troops returning from overseas were generally eager to start young families in what became known as the baby boom with a strong demand for new houses along with furniture, appliances, clothes for the kids, bicycles, automobiles, and trucks. The GI Bill supported mortgages and education. Unions were strong with 34.8 percent of workers under union contracts in 1954 giving labor greater power at the bargaining table.[49] Blue-collar employees working under union contracts got a substantial share of the economic pie. Even nonunion workers benefited from the spillover effects of those union contracts.

When US troops entered Germany toward the end of World War II, General Eisenhower was impressed with Germany's ability to rush troops between the eastern front and the western front on wide, limited access autobahns. General Eisenhower's appreciation for these efficient German highways during the war, along with his own experience with the less impressive US highway system, motivated President Eisenhower to initiate the Eisenhower Interstate Highway System (as well as an extensive air traffic control system), which, along with the booming housing and automobile industries, provided good paying jobs. This major improvement in American infrastructure led to a substantial increase in productivity and economic growth. In this case government expenditure did not "crowd out" private investment but provided a common property resource that private enterprise was unable to provide for itself. The interstate highway system facilitated, not inhibited, private commercial activity. In recent years economists have come to realize that public investment is more likely to "crowd in" private investment in the sense of supporting and encouraging it rather than crowding it out. Government infrastructure expenditures can be devised to greatly enhance the performance of free enterprise in improving productivity and generating greater economic growth. Leaving the private economy alone to fend for itself is often a mistake that can lead to economic decay and stagnation. It is important to recognize the common property resource nature of many public investments, especially in health, education, and infrastructure. Historically countries that recognized this prospered, leaving others far behind.

Immediately after the war, with Europe and Japan in rubble and American factories quickly reaching their limited capacity, this strong aggregate demand was met with a relatively weak aggregate supply. Initially there was a shortage of funds available for investment. With strong aggregate demand and weak aggregate supply, Say's Law ("Supply creates its own demand.") and supply-side economics were alive and well. In other words, when demand is exceptionally strong, anything that can be done to significantly increase supply will contribute directly and immediately to rapid economic growth. In that case, Say's Law works. Under those circumstance, supply-side economics makes sense.

[49] Data from Pew Research: American unions membership declines as public support fluctuates

Quantity and Velocity of Money

Interest rates rose, cost-push inflation set in, and eventually, toward the end of the 1945 to 1980 period, oil and other commodity prices rose sharply. The great baby boom eventually pushed aggregate demand to overwhelm aggregate supply to produce an excessive annual inflation rate of 13.5 percent in 1980.[50]

The velocity of money stayed fairly constant during the 1950 to 1980 period causing Milton Friedman to recommend keeping the rate of growth of the money supply equal to the rate of growth of the economy to maximize productivity, employment and growth without inflation. Unfortunately, the velocity of money has been changing since then which greatly complicated the determination and targeting of the appropriate quantity of money needed to establish and maintain maximum employment, productivity and economic growth.

In addition to the need to expand the money supply to accommodate the increase in economic activity within the United States, the role of the US dollar as the world's reserve currency requires an increase in US dollars to keep up with the use of the US dollar in international financial transactions including international trade. The high demand for US dollars kept the value of the US dollar strong, which imposed an export burden or barrier on the United States similar to the natural resource curse that is often associated with oil and natural gas production that dominates some smaller economies and drives up the value of their currencies. However, unlike smaller economies, the economy of the United States is large enough to have a sufficiently large consumer base to support a wide variety of specialized industries. This is not the case in much smaller economies. European countries in the Euro Zone recognized this in creating the euro. Within its own large economy, the United States can benefit greatly from the separation and division of labor in the production process in a wide variety of industries, whereas in smaller economies, this is not feasible.

With any given quantity of money, the velocity of money will be greater when that money is in the hands of those with a high marginal propensity to consume and smaller when in the hands of those with a low marginal propensity to consume. Money turns over much more quickly among poor people than among rich people when consumption is defined in terms of goods and services. Exchanging existing old stocks and bonds is not consumption, but unproductive investment to the extent that it is not financing new productive real investment in physical and intellectual capacity in the real economy. While **arbitrage** can help improve economic efficiency, at some point productive arbitrage is pushed aside by pure speculation that dramatically increases market volatility and instability and turns financial markets into gambling casinos. Claiming that trades taking place in nanoseconds promotes greater economic efficiency that trades requiring seconds to complete is rather unconvincing. Wild speculations and manipulations send stock prices gyrating all around in the financial economy, but do not enhance productivity or economic growth in the real economy. **Stock buybacks** may raise stock prices, but they are not investments in the real economy that would increase the economy's supply of real goods and services. Such buybacks can increase the value of the shares of stock owned by the company's managers and others without increasing the real value of the company. Historically stock buybacks have been

[50] Data from Federal Reserve Bank of St. Louis: https://fred.stlouisfed.org/series/FPCPITOTLZGUSA .

viewed as a form of insider trading and were illegal. An insider can buy the stock when its price is low and then sell it after the price has risen as a result of the share buyback. Initially stock buybacks were outlawed as a form of insider trading. However, in 1982 the Securities and Exchange Commission (SEC) made the mistake of changing the rules to allow stock buybacks. John Locke[51] (1632-1704) argued in favor of gaining ownership of capital through sweat equity, which could be promoted by requiring that companies distribute all stock purchased in the buying back of its own shares to rank-and-file (nonsupervisory) employees based on their productivity and tenure. This would reestablish Locke's concept of imbuing one's labor into capital to establish property ownership. Truck drivers could gain shares in their company through many years and many miles of driving company trucks.

It is unfortunate that words like "capital" and "investment" are used somewhat ambiguously. On one hand, there is real investment in the real economy to increase productive capacity. Real investment can be physical as in factory manufacturing equipment or abstract such as investment in education or increasing intellectual capital to make production more efficient or a product more desirable. In its either concrete or abstract form, real investment employs real resources such as labor and materials or intellectual time and effort. On the other hand, financial investment refers to trading various forms of wealth such as stocks and bonds. Financial capital and real capital are not the same things. Real investment expenditures are used to employ real resources to increase real capital. Financial investment is a form of savings which does not automatically increase consumption or employment. Thus, real investments and financial investments are opposites in that the former involves spending (demand for money) and the latter involves saving (supply of money). It is another example of how the limitations of a language (English, in this case) can inhibit a full understanding of important concepts that need to be fully differentiated to be fully understood.[52]

You could say that financial investment is a necessary but insufficient condition for real investment. When the Federal Reserve buys US Treasury securities in New York financial markets, it is making a financial investment, which only becomes a real investment in the economy if and when those funds are used to obtain and put to use actual physical or intellectual resources.

Excessive Aggregate Demand Relative to Supply Drives 1980 Inflation

With demand already so strong, it made sense during the 1945 to 1980 period to enhance economic growth through supply-side policies. The tools provided by the Federal Reserve Act of 1913 as amended were appropriate for several decades after World War II to provide adequate liquidity for investment in new plant and equipment. In general, the fundamental economic problem throughout most of the 1950s, 1960s and 1970s was exceptionally strong aggregate demand and inadequate aggregate supply.

---

[51] Locke, John. *Two Treatises of Government*. London: Awnsham Churchill, 1689.

[52] In a similar way, in pure mathematics the word "zero" is used both as a place holder between minus one and plus one for interval data, or as the absence of something for ratio data. These two concepts can be seen as conflicting with one another such as in the Moore-Penrose generalized inverse in matrix algebra. For clarity and accuracy, the word "zero" should be replaced by two separate words, one for interval data and the other for ratio data.

By the 1970s aggregate demand had become so strong that inflation became excessive, reaching almost 14.8 percent by March 1980.[53] The Federal Reserve under Paul Volker had to intervene to suppress it. Federal Reserve Chairman Volker raised the federal funds rate to 19.1 percent[54] in June 1981 contributing to the 1981-1982 recession with an unemployment rate of 10.8 percent[55] in November and December of 1982 but helped bring down the inflation rate to 2.5 percent[56] by July of 1983.

With strong aggregate demand, the Federal Reserve could effectively control the money supply with tools that worked primarily through aggregate supply via the New York financial markets. Relatively high tariffs kept foreign competition at bay. At that time, there was no need for direct access to consumers to stimulate their demand for new goods and services. Aggregate demand was already generally quite strong relative to aggregate supply. Inflation was an ongoing threat and interest rates remained high reflecting strong demand for money for investments into increased productive capability to shore up weak aggregate supply in housing, transportation and production and services generally. For a more detailed historical analysis of the interactions between monetary variables, inflation, and asset prices, including residential property prices, see Gattini et al. (2015).[57]

Periods when aggregate demand is very strong and aggregate supply weak are prone to ***stagflation*** where not enough money is going to employ resources to increase productive capacity and economic growth while too much money is going to demand more goods and services than the economy is producing. In response to inflation, the Federal Reserve raises interest rates. But this suppresses both supply and demand in making it more difficult for producers to borrow the money needed to counter excess demand by adding additional lines of production. After all, companies need to borrow money up front to pay for adding a new line of production but are only able to pay that loan off after selling enough products produced with that new productive capacity. This takes time and requires a reasonable rate of return. When the cost of borrowing money goes up, the incentive and capability to add another line of production to meet demand goes down. Demand drops, but so does supply, as the economy falls into a recession.

On the other hand, other periods when aggregate demand is weak and aggregate supply is very strong can be described as periods of ***secular stagnation*** where demand is not adequate to justify adding to productive capacity. The labor force, and other resources, are underemployed with high levels of unemployment and underemployment, and low levels of work force participation. These are periods where there is an insufficient flow of money to consumers leaving

[53] US Inflation Calculator: https://www.usinflationcalculator.com/inflation/historical-inflation-rates/ .

[54] Data from Federal Reserve Bank of St. Louis: https://fred.stlouisfed.org/series/FEDFUNDS .

[55] Data from Federal Reserve Bank of St. Louis: https://fred.stlouisfed.org/series/UNRATE .

[56] US Inflation Calculator: https://www.usinflationcalculator.com/inflation/historical-inflation-rates/ .

[57] Gattini, Luca; Huw Pill; Ludger Schuknecht. "A Global Perspective on Inflation and Propagation Channels," *Journal of Banking and Financial Economics*, vol. 1, no. 3, pp. 50-76, 2015.

demand weak, while financial markets have lots of money, but there is little incentive to invest that money into the real economy in real investments that add to actual productive capacity, given the weak demand and already excessive supply.

Economic growth suffers from these imbalances. With the proper policy tools, the Federal Reserve should be able to make the proper adjustments to avoid the extremes of both ***stagflation*** and ***secular stagnation*** and maximize employment and economic growth without causing a recession.

Modest Money Flow to Aristocracy Becomes Extreme Money Flow to Meritocracy

Prior to 1960 America's large corporations were dominated by an aristocracy that in some ways resembled the old English nobility. In fact, prior to the American Revolution, the King of England granted land in America to certain elite families. Wealthy east coast families dominated in America for a lot longer than most people realize or are willing to admit. Legacy was the key to success. It was legacy, not good grades, that got you accepted into elite colleges and universities. Before 1960 even an average grade of C in your prep school was not a problem in gaining admission to an elite university if your father, grandfather, uncle, or brother had attended.[58]

Graduating from Yale, Harvard, Princeton, or any of the other elite schools was sufficient for finding a reasonably well-paid executive job at a leading American corporation. The *noblesse oblige rules* among the early English settlers were simple: stay out of politics, keep your name out of the news (except for the social register), and don't give yourself an oversized salary. When excessive wealth is not based on merit or hard work, memories of the French revolution can be poignant. We do not want to see the rope over the platform designed for the hanging of Vice-President Mike Pence on January 6 replaced by a guillotine. Most wealthy English settlers understood the need to avoid alienating the masses.

Around 1960 Harvard James Bryant Conant led the way in introducing SAT and ACT scores into admission decisions. Scholarships were introduced to aid applicants to elite prep schools and colleges who were not from wealthy families.[59] Once ability and achievement potential became important and a geographical distribution preference was introduced to discriminate against certain high achieving non-WASP[60] ethnic and cultural groups from the New York City area and the Boston area, the entire nature of the ruling class changed. Discrimination was still present, but a new meritocracy of sorts was allowed to gradually take over.

Business schools and law schools in general, and economics departments in particular, promoted the "greed is good" philosophy, where Adam Smith's invisible hand was said to justify the single-minded pursuit of one's own self-interest even if that ultimately led to resetting the rules (e.g., tax loopholes, etc.) to benefit the *nouveau riche* of the new meritocracy.

---

[58] Brooks, David. *Bobos in Paradise*. New York: Simon and Schuster, 2000.

[59] At prep school and college reunions, it is interesting to note that the scholarship students are more likely to show up driving expensive, prestigious vehicles than their former classmates from wealthier families, who were taught to hide their wealth to some degree, or at least not flaunt their wealth publicly.

[60] WASP = White Anglo-Saxon Protestant.

Underpaid government lawyers were no match for the new business and legal elite whose ability and achievements resulted in an accumulation and concentration of wealth far greater than ever desired or achieved by the old aristocracy. Adam Smith's **left invisible hand** has now been countered with increased economic power which serves as a **right invisible hand** driving up pure profits, as competitive markets have been replaced by monopolistic and oligopolistic ones.

The new meritocratic elite re-rigged the rules in every sphere of life to their own advantage. Rather than lowering the bar for others to follow, they raised the bar to keep others out. This diverted the money flow away from most Americans and toward the top one percent wealthiest elite.[61] The new meritocracy worked in theory to raise all boats, but failed in practice, either because the new elite either didn't understand the implications of their exclusionary tactics or chose to ignore them. Social mobility was suppressed, instead of enhanced, with fewer low socio-economic people able to break out of the middle-class trap. The new elite made sure to give their children the best possible education and the socio-economic connections needed to establish and maintain their comparative advantage. Instead of improving upward socioeconomic mobility, the new meritocracy at best kept it from rising and at worst suppressed it even more than before.

This money flow diversion was a very fundamental and a very important change in the US economy, starting around 1973.[62] Before 1973, labor productivity and wages were highly correlated. After 1973, labor productivity continued its rise, but real, inflation-adjusted, wages flattened out as rising revenues were siphoned off as profits. Such profits piled up in the financial markets as money flowed in a circular loop as stock buybacks, dividends, and interest payments, that the wealthy then just reinvested back into the financial markets where the accumulating pool of money drove interest rates ever lower. In this case, the velocity of money just meant the speed at which these dollars were traveling around and around in the financial markets as market speculators bought and sold new and exotic financial products at ever increasing rates. See Petrou (2021) for more details on the widening wealth gap and its causes including the major role played by the Federal Reserve.[63]

The changes in the money flow, that weakened aggregate demand were due in part to this change in the ruling class and part as a result of focusing on maximizing shareholder value (including profits from dividends and stock buybacks) by increasing financial capital (the value of stocks and bonds, etc.) at the expense of labor and real capital (physical and intellectual investments). For decades inflation ran rampant in the financial markets with little benefit in the real economy where productivity and real economic growth slowed.

Barkai (2020)[64] calculated the capital costs for the US non-financial corporate sector over the period 1984 to 2014 and found that while labor's share has dropped by 11 percent, the share

---

[61] Brill, Steven. *Tailspin: The People and Forces Behind America's Fifty-Year Fall -- And Those Trying to Reverse It.* New York: Alfred F. Knopf, 2018.

[62] Data from Economic Policy Institute: https://www.epi.org/productivity-pay-gap/

[63] Petrou, Karen. *Engine of Inequality: The Fed and the Future of Wealth in America*. New York: John Wiley & Sons, 2021.

[64] Barkai, Simcha. "Declining Labor and Capital Shares," *Journal of Finance*, 2020, vol. 75, issue 5, pp. 2421-2463.

of real capital has declined 22 percent. Neither labor nor real capital were rewarded, as most of the money flowed to pure profits. As the wealthy grew wealthier, the rest got by with an ever-increasing private debt burden, reinforced with an ever-greater federal debt burden, both being enabled and encouraged by low interest rates. In the absence of adequate aggregate demand to employ all available American workers, politicians called for tariffs to block low-priced imports that compete with American products and take jobs away from Americans. However, tariffs block competition and raise prices for everyone including elderly living on limited Social Security payments. A better approach is to redirect the money flow from Wall Street back to Main Street so that there would be enough consumer demand on Main Street to employ both international workers making products for Americans as well as all Americans who are willing and able to work at good wages. Trade can be and should be a win-win situation where everyone is made better off. Getting high quality, low-priced products from abroad should not in any way prevent Americans from getting good jobs that pay well. Tariffs are just an excuse for not properly addressing the money flow diversion from Main Street to Wall Street within the United States.

Blocking overseas competition is associated with a dramatic increase in industrial concentration where one-by-one competitive industries have been turning into duopolies or monopolistic competition where one firm or a handful of firms controls the market. Keynesian and Austrian economists recognized the inevitability of economic downturns, but the Austrians saw such downturns as a cleansing process where weak and inefficient firms were driven out of the market in what Austrian economist Joseph Schumpeter called “creative” destruction, but with larger firms undercutting or buying up weaker ones should more accurately be called “competition” destruction. Firms that survive economic downturns are not necessarily more efficient, but just have more cash reserves to ride out a downturn. A popular and efficient local restaurant may not survive an economic downturn such as the one associated with the COVID-19 pandemic while a larger company with lots of cash on hand may be able to get away with running some aspects of its business inefficiently in both good times and bad. When Amazon started up, it ran in the red for an extended period without facing bankruptcy, because it had lots of cash on hand. Tepper and Hearn (2019) reveal the surprising number of noncompetitive industries and quasi-duopolies in the United States in their book *The Myth of Capitalism* which could have been more specifically titled *The Myth of Competition*.[65]

For example, consider the market for eyeglasses. Glass and plastic should be very cheap. After all, we throw a lot of glass and plastic into recycling bins every week. But instead of two or three dollars, eyeglasses typically cost about one-hundred and thirty dollars or more. In reality eyeglass manufacturing is basically a duopoly with only two eyeglass manufacturers dominating the market. In the eyeglass market, Adam Smith's first invisible hand of competition has been suppressed by Adam Smith's second invisible hand of market power where he said: "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the publick, or in some contrivance to raise prices."

Government is often dismissed as inefficient, partly because it may have goals other than profit maximization, and also because, unlike private businesses, the government’s operations

---

[65] Tepper, Jonathan with Denise Hearn. *The Myth of Capitalism: Monopolies and the Death of Competition.* Hoboken, NJ: John Wiley & Sons, 2019.

are subject to close public scrutiny such as under the Freedom of Information Act and the Open Meetings Act. But large businesses can be and often are even more inefficient than government. For example, Saluto Pizza started as a small pizza place in St. Joseph, Michigan. Its pizzas were so popular it started freezing them to sell to people to take home to reheat for consumption later. The frozen Saluto Pizzas became so popular that a frozen pizza manufacturing plant was created to produce them to sell to grocery chains around the nearby region. Their popularity was such that another factory for making the frozen Saluto Pizzas was created in Birmingham, Alabama. Then General Mills bought out Saluto Pizza. But following the financialization strategy of cutting costs, the Saluto Pizzas were then made with cheaper ingredients which made them unpopular. Before long the Saluto Pizza brand was discontinued. Such cost cutting and removal of unpopular products is then described as enforcing efficiency in private business, in contrast to alleged government waste and inefficiency. The executives who cut costs and cut out unprofitable products were probably rewarded and promoted. By contrast, so-called government "bureaucrats" who serve the public are seen as unproductive and wasting the taxpayer's money.

America thrives when entrepreneurs such as Steve Jobs and Elon Musk focus on creating new products. But productivity and economic growth are suppressed when companies focus on financialization by excessive cost cutting and shareholder payouts, instead of investing in new products that capture the imagination and desires of both their existing customers and potential new customers. When business fails to generate sufficient economic growth to employ the available workforce, government has to step in and increase the national debt using tax cuts and expenditures to generate enough demand for goods and services to avoid recessions.

John Locke's original conception of gaining ownership of land and other forms of capital through the sweat equity of labor quickly reverted back to ownership of capital by an elite class (i.e., the nobility). Labor saving technologies such as automated vehicle production and mountaintop removal in coal extraction have dominated over labor augmenting technological change provided by computers generating a need for computer programmers or Amazon's need for delivery drivers (soon to be replaced by driverless vehicles). Future economic prospects remain bleak for unskilled and semi-skilled labor. However, it is important to note that real capital has not won. As Barkai (2020) has revealed, the ultimate winner is profits (especially profits in the form of financial capital in the stock and bond markets). The shares of labor and real capital have declined significantly while that of profits has increased substantially. Kumhof et al. (2021) have proposed reducing tax on labor and capital incomes and raising taxes on the asset value of land.[66]

Today the huge pile up of wealth at the top of the wealth pyramid has flooded the financial markets with money and has driven interest rates down toward zero. But this money has not primarily gone into productive investment in real capital, but instead has driven up stock and bond prices as alternatives to investment in the real economy. Why invest in improvements in real productivity when you can make a lot more money in the financial economy? Ultimately the financialization of our economy has become a drag on productivity and not a catalyst for it.

Baby boomers are now at the opposite end of the life cycle. Whereas, in their productive years they contributed strongly to aggregate demand and provided the government with revenue

---

[66] Kumhof, Michael; Nicolaus Tideman; Michael Hudson; Charles Goodhart. "Post-Corona Balanced-Budget Super-Stimulus: The Case for Shifting Taxes onto Land." *CEPR* Discussion Paper DP16652, Oct. 2021.

through income and earnings taxes, now they are retiring. Boomers are in the downsizing cycle of life, while reducing their overall aggregate demand and contribution to government revenues, their need for government support through Social Security and Medicare has increased.

Baby boomers hoping for a well-financed retirement found that the interest rates on their savings accounts and certificates of deposit (CDs) were generating very little money. Given the low interest rates the shift in retirement from portfolios that emphasize stock gains to portfolios more highly focused on fixed income investments such as bonds did not help. Nor did the shift over the years from defined benefit retirements programs to defined contribution programs which just shifted the investment risk over from employer to employees. Consequently, in the several decades up to 2020, aggregate demand was generally weak relative to aggregate supply.

Union membership has fallen from 35 percent after World War II to less than 10 percent of the workforce today. Labor substituting technology has reduced labor's share of the money flow. Apple, Google and Facebook use much less labor relative to capital than industrial age firms such as General Motors, Whirlpool and Kodak have used in the past. Moreover, a greater proportion of the wage bill in today's high-tech firms goes to highly paid computer engineers, who along with doctors, lawyers and bankers, capture the greatest amount of labor income in our economy. Such high paid workers put a greater proportion of their money flow into the financial markets and a much smaller proportion into consumption of newly produced goods and services. Bidding up the price of exclusive real estate or expensive paintings and other rare artifacts does little to stimulate production in the real economy.

Unskilled and less-skilled workers, along with workers whose skills have or are becoming outdated (to be joined by drivers who will soon be replaced by driverless vehicles), are unable to buy back the value of the goods and services that they are capable of producing at full employment. For many years, deflation with many prices falling has been masked by rising prices in health care and education, which provide additional money flow to already highly educated and wealthy individuals and institutions. Consequently, with little money flow going to those with limited resources, we have seen a dramatic drop in aggregate demand in recent decades. Only an occasional round of government stimulus spending has temporarily strengthened demand to avoid sliding into an economic downturn and recession.

While the introduction of disruptive innovations can be quite rewarding as in the case of Steve Jobs with Apple Computer and Mark Zuckerberg with Facebook, most such innovative disruption come from outside of the established corporate and political order, but nevertheless tend to contribute to extreme economic inequality rather than mitigating it because of the underlying rules and regulations that favor those both willing and able to contribute large sums of money to the campaigns of our political leaders to rig the system in favor of the financial elite. This further enhances and expands aggregate supply relative to aggregate demand.

Those attempting to defend extreme income and wealth inequality often cite skill-based technical progress as the reason so many are left behind. While it is important to invest a lot more in the education and training of our workforce, the greatest disparity is not between those with or without a college degree, but between an upper echelon of mainly college-degree holders and all others with a college degree. Extreme economic inequality is driven by the winner-take-all structure of our corporate and political institutions and less on education, initiative, innovation and creativity. Those who have caught on early in life to the enormous wealth that can be built over time in the stock market have won out over those who spent most of their years in debt and/or

invested in savings accounts and certificates of deposit. Some have been lucky in investing in particular companies and industries that have done particularly well, but many have gotten quite wealthy just investing in broad market index funds which have followed the extraordinary rise in the stock market. Consequently, the elderly find themselves in two distinct classes: (1) those who put their money in savings accounts and certificate of deposit with low interest rates that have returned very little, and (2) those who have invested in the stock market and have, for the most part, done extremely well. This is because over the last one hundred years, the average annual return from the stock market has been 10 percent.[67]

A very powerful (and often unappreciated) tool in wealth creation is compound interest. In explaining compound interest, many financial advisers refer to the Rule of 72, which simply means dividing the number 72 by the annual percentage yield (APY) to get the number of years to double your money. For example, if the APY is 10 percent, the years to double your money is 72 divided by 10 or 7.2 years. However, the Rule of 72 is only roughly accurate within a narrow range of interest rates. For an interest rate of 10 percent, the Rule of 72 should be called the Rule of 72.7254. For an interest rate of 8 percent, the Rule of 72 should be called the Rule of 72.0517467. For an interest rate of 3 percent, the Rule of 72 should be called the Rule of 70.34831675.

A more precise formula for determining the number of years needed to double your money is given as follow: Number of years = ln(2) / ln(1+(APY/100)) where "ln" refers to the natural logarithm and "APY" is the annual percentage yield of your investment including the value of the additional shares you obtained by reinvesting your dividends. For example, if APY=10 percent, then APY/100 = 0.10 so the number of years to double your money = ln(2)/ln(1.10) = 7.27254 or about seven and a quarter years. This formula is exactly accurate and precise, and good for all interest rates.

To calculate how many years it would take at 10 percent APY to grow your investment by a multiple of 10 use the formula: Number of years = ln(10)/ln(1.10) = 24.1588579 or just over twenty-four years before your investment reaches ten times its initial value. An investment of $10,000 becomes $100,000 in a little over 24 years, and $1,000,000 in just over 48 years. At that rate, an investment of just $10,000 at age 20 becomes more than $10,000,000 by age 93. Young people who ignore the power of compound interest may be leaving a lot of money on the table.

Some politicians are promoting "Baby Bonds" with allocations of $2,000 for each baby. The important takeaway from the above calculation is that with an APY of 10 percent an investment of just $2,000 at the birth of your child could theoretically produce a return of over one million dollars by age 65 (about $1,024,000) and over $4,000,000 by age 80. "Baby Bonds" sound promising, but "Baby Stocks" might be even better.[68] This might be an approach to mitigating the extreme wealth inequality problem in the United States to some extent.

---

[67] This might be tracked with a broad-market index fund such as Vanguard's VTI, I-Shares' ITOT, or Schwab's SCHB, which rise and fall with the overall market.

[68] The author is not certified as a financial advisor and is not registered or even qualified to serve as anyone's financial advisor and, therefore, assumes no responsibility for anyone's investments. If you want professional financial advice, you may want to seek out someone who is professionally qualified. You can easily lose all your money in the stock market.

VI. The Role of Government in Maintaining a Healthy Economy

Government Response to Excessive Inflation

There are many measures of inflation. Some such as the consumer price index (CPI) are designed to capture the typical value of a basket of goods and services as purchased by the average consumer. The core inflation index removes the effects of food and energy from the CPI because food and energy prices are prone to excessive volatility and their erratic price movements can detract from a more measured understanding of the true state of inflation. The Federal Reserve prefers to focus on the personal consumption expenditure (PCE) price index to avoid being thrown off by issues concerning housing and other major durable goods purchases, et cetera.

The traditional monetary policy approach to dealing with excessive inflation has been to raise interest rates in various realms such in the discount window, the federal funds rate for overnight loans, and, more recently, in quantitative tightening (QT) as a reversal of previous quantitative easing (QE). The intention is to suppress excessive demand for goods and services, but the effect is to also suppress the supply of goods and services and produce an economic downturn that can quickly become a recession.

There are two fundamental problems with raising interest rates to stop inflation. (1) The first problem is that by raising the cost of borrowing, it makes it harder for businesses to increase supply in response to excessive demand for their products. Businesses always must be careful not to get out “ahead of their skis” in borrowing too much money that they are unable to pay back in a timely manner. This is particularly true for businesses that are subject to seasonal or cyclical patterns. For example, farmers may want to expand production in response to higher food prices, but in borrowing a lot of money they are taking a risk that prices might suddenly fall in response to too many farmers expanding production too much in a very favorable crop year, or a weather event that destroys or greatly inhibits their crops such that at harvest time they are unable to pay back high interest rate loans. Many retail businesses run in the red for most of the year and only fully cover their costs and make a profit when the holiday season rolls around. Basically, raising interest rates makes it riskier and more expensive for businesses to borrow to increase supply in response to excessive demand. (2) The people and businesses that are carrying the most debt will be hurt the most by the rise in interest rates. The poorest people and weakest businesses are most likely to suffer from suddenly increasing interest rates. Instead of getting wealthier individuals and businesses to bear the costs of stopping excessive inflation we are putting the burden on those who are least able to handle it. This is not a good policy for maintaining economic and financial stability, not to mention any modicum of equity.

How would a CBDC work to mitigate or even stop the effects of inflation? Imagine a new future where no one carries cash. All dollar bills and coins become collector items or displayed in museums but no longer play any meaningful role in our economy. Instead, a very flexible CBDC completely replaces cash. Everyone will have a CBDC account which acts somewhat like a debit card. Recall that Social Security payments are adjusted when inflation is excessive so that seniors are not unduly hurt by inflation. The same could be accomplished for everyone by raising the interest rate in each person’s CBDC account in response to inflation. If inflation goes up 10 percent, the value of your CBDC account goes up by 10 percent. That would compensate for inflation, but not slow it. However, what if when inflation goes up 10 percent, the interest rate for

your CBDC account goes up by 20 percent but interest payments are delayed on that additional 10 percent. After all the whole point of the existence of interest rates is to delay consumption. You are paying me for putting off my consumption now with the prospect that I will have more money to spend some time in the future. A system dynamics model of the money flow could be developed under the *money flow paradigm* to carefully model and simulate the effects of various time delays on the payment of interest on CBDC accounts to determine the relationship between the time delay in interest payments, the level of delayed interest rate itself, and the reduction in consumer demand generated to slow inflation.[69]

Basically, this calls for several interest rates adjustments. The first immediate adjustment is to counter the need to spend your money now before it loses value. That is what has driven inflation in countries such as Zimbabwe and Venezuela where today's money, or even this morning's money, will be worth a lot less very quickly, so whenever you get money, you need to spend it immediately before it loses more value. Countering that effect immediately with increasing CBDC values will help stabilize prices in real terms. The Bureau of Labor Statistics monthly survey of consumer prices is so 20th century. What is needed is something like GasBuddy that tells gasoline prices recorded in the last few minutes or the last few hours at most. Companies could be required to provide online access to their price lists in real time. ShopSavvy, PriceGrabber, and RedLaser already provide some of this information.

The Federal Reserve would then constantly adjust the value of your CBDC account to keep up with changes in a real time version of the appropriate consumer price index or personal consumption expenditures index. If prices rise 10 percent, then the value of your CBDC money would go up 10 percent to directly and immediately counter the effects of inflation. CBDC money would be stable and secure in real, instead in nominal, terms. The actual general purchasing power of your money would be guaranteed, although individual prices would still fluctuate relative to one another. People would stop using cash in the form of coins and paper currency because it would lose value in the face of inflation whereas the real purchasing power value of your CBDC account money would stay up with inflation. Old-fashioned cash would become a collector's item and be displayed in museums. Since every American would have a CBDC account, you could pay someone to cut your grass, rake your leaves, or shovel your snow with an immediate smartphone-to-smartphone transfer from your CBDC account to their CBDC account.

However, to slow inflation there must be a second interest rate that is paid only after a waiting period. This is designed to motivate people to keep money in their CBDC account longer. Having people hold back on spending to take advantage of the delayed interest payments will help curb excessive inflation when too much money is chasing too few goods and services. Having people pull back on their spending and save more money will not only work to slow inflation but will also provide an automatic stabilizer function for both the individual and the economy.

---

[69] For example, check out the system dynamics software Stella at: https://www.iseesystems.com/store/products/stella-online.aspx

Government Response to Weak Aggregate Demand

In recent decades the government has recognized the need to fill in for inadequate aggregate demand in order to reduce unemployment and avoid political unrest. Various stimulus programs and unpaid-for tax cuts have temporarily provided the additional money needed to make up for the shortfall in the money flowing to workers. While initially seen as temporary, deficit spending is becoming more of a permanent feature of our economy. This was not originally intended or anticipated, but given our distorted money flow, is necessary to avoid what would otherwise be a never-ending recession. This is the primary message of the money flow paradigm which asserts that government plays an essential role in establishing and maintaining our free enterprise economy.

When the economy is at full employment, the government can "crowd out" private consumption and investment directly through taxation or indirectly through deficit spending in financial markets by selling Treasury securities to obtain funding for government expenditures and drive up interest rates. On the other hand, when demand is insufficient to fully employ the economy's resources and money is sitting idle in the financial economy instead of being used in the real economy, the government can "crowd in" private investment by expenditures that stimulate the economy and encourage investment and consumption. For example, government infrastructure expenditures can employ otherwise unemployed workers who spend their wages on the purchase of new goods and services, and thus produce an upward growth spiral. New or renewed roads, bridges and tunnels paid for by the government can reduce the cost of transport for business. Work on these projects generates income and consumption. Thus, government spending can sometimes encourage and enhance both private investment and consumer demand.

Globalization and automation have provided a strong and extensive aggregate supply. With the collapse of the Soviet Union in 1991 and China's shift from state socialism to state capitalism under Chairman Deng, the world-wide supply of labor available for capitalist production expanded enormously. The creation and rapid spread of the Internet and the transportation revolution in expanded air and sea transport has made a wide variety of goods and services available at low prices. The large pool of cheap labor in world-wide production and the ease of international communication and transportation has further undermined the power of workers in the United States. The supply-side problem that existed after World War II was replaced with a chronic demand-side problem. Recently this has been temporarily reversed with the COVID-19 pandemic creating supply shortages and large government stimulus payments temporarily creating excessive demand.

At first, we saw an immediate drop in aggregate demand due to COVID-19 and a chronic shortfall in aggregate demand due to a distorted money flow that has redirected money from workers to the owners of capital. Money that used to flow to Main Street has been redirected to Wall Street. Subsequently, high levels of stimulus spending have enabled consumers to maintain and enhance their demand for goods, even while cutting back on services due to COVID-19 fears. Meanwhile the supply of goods has been disrupted as global networks have failed and transportation subsequently restricted. The result has been an unanticipated bout of excessive inflation. The response by the Federal Reserve of raising the cost-of-borrowing (rather than increasing the return-on-savings by creating digital currency savings accounts aimed at reducing

the consumer demand of Americans with the highest marginal propensities to consume) will most likely push our economy into a recession.

For most of the past century, consumers used cash and checks, and, more recently, credit cards to finance their purchases. Before the Internet, electronic money was not a realistic option for controlling the money flowing directly to consumers. Some money might eventually trickle down to consumers through the financial market, but the Federal Reserve had no direct path to consumers. The Federal Reserve needs a new policy tool to give it direct access to adjust consumer demand to maintain full employment on one hand and avoid excessive inflation on the other.

Some researchers at our Federal Reserve banks have realized that Bitcoin and other cryptocurrencies may not be just another passing fad but could ultimately present a real challenge to the Federal Reserve control over the money supply. Recall that when automobiles were first introduced in the late 1880s and early 1900s, a combination of bad roads, few sources of gasoline, and frequent flat tires convinced people that they were just a passing fad of a few rich people but with little importance for the general population. As with the automobile, cryptocurrencies may very well turn out to be a lot more important than just some passing fad and could become widely used currencies replacing the US dollar to some extent.

With the wealthiest 10 percent owning approximately 84 percent[70] of the assets in the New York financial markets, any money the Federal Reserve injects into the financial markets goes primarily to that top 10 percent. While workers have relatively high marginal propensities to consume new goods and services with money flowing into jobs, the wealthiest people are much more likely to forgo additional consumption and redirect additional money right back into the financial markets in a circular loop.

Even if the Federal Reserve pumps large amounts of money into the financial markets, and enough of that money trickles down to the real economy, there is still the issue of the long lag time required to fully realize the impact on jobs and prices. Imagine that you had a car where there was a significant lag between the time you turn the steering wheel, and the time your car's wheels turn. A deer jumps out in front of your car, and you immediately turn the steering wheel. You are going to hit that deer, or, in this context, generate excessive inflation. A more immediate and less expensive way is needed for the Federal Reserve to keep from inadvertently generating unexpected inflationary episodes and unnecessary avoidable recessions.

[70] Wolff, Edward N. "Household Wealth Trends in the United States, 1962 to 2016: Has Middle Class Wealth Recovered?" National Bureau of Economic Research (NBER) Working Paper 24085, November 2017. DOI 10.3386/w24085.

VII. The Nature of Economic Instability

Distorted Money Flow Undermines Economic Stability

We are now facing an unbalanced money flow with so much money piling up in the financial markets that new productive investments in the real economy are hard to find so companies redirect their earnings into stock buybacks and increased dividends which do not increase productive capacity or real output. What is the point of adding another line of production if you can't sell all that you are producing with your existing lines of production? And when there is strong demand for your products, inflation kicks in and the Federal Reserve raises interest rates to increase the cost of borrowing, making it more difficult to get the money to expand capacity to meet the increased demand. In other words, the Federal Reserve suppresses supply just when it is needed to meet increased demand. And if you did want to add to your productive capacity, why would you do it in the United States where labor is more expensive than many alternative overseas locations? But money flowing abroad to create new production facilities often doesn't get into the foreign exchange markets to drive down the value of the US dollar because countries such as China require that US dollars acquired by Chinese companies in China be turned in to the Chinese government in exchange for yuan so that the Chinese government can send those same US dollars right back into the New York financial markets via their sovereign wealth funds purchasing US Treasury securities. At the end of the day, such money flowing abroad to finance new production facilities just adds to global supply before flowing right back again into the New York financial markets.

Meanwhile workers are unable to buy back the value of the goods and services they are producing. Consumer demand, which traditionally accounted for 70 percent of national output, has fallen as more and more money has flowed to the wealthiest individuals and corporations. To compensate for inadequate consumer demand, government expenditures in the form of unpaid-for tax cuts and expenditures have filled in for the inadequacy of new investments and consumer demand to keep national output from falling in an economic downturn. This is not an occasional problem, but a chronic problem such that as more and more money piles up on Wall Street, the federal government must provide more debt-financed stimulus money in one form or another to compensate, so that Main Street can buy back the value of the goods and services it is producing to keep the economic engine running and avoid a recession. This is the dynamic nature of money flow as revealed by the *money flow paradigm*, which sees government as essential to maintaining an adequate and appropriate money flow in the economy.

Ironically, what is bad news for the real economy is good news for the stock market. As more and more money has flowed to the top of the wealth pyramid, the financial markets in general and the stock market in particular have become more and more separated from the real economy. The Federal Reserve has pumped trillions of dollars into the financial markets.[71] Stocks prices may pause as the Federal Reserve pauses and temporarily reverses some of its money creation, but ultimately prices in the stock market shake off the difficulties in the real economy

[71] Petrou, Karen. *Engine of Inequality: The Fed and the Future of Wealth in America*. New York: John Wiley & Sons, 2021.

caused by the Federal Reserve tightening the money supply to rise higher and higher as money continues to flow into the financial markets.

Not only does the relative amount of money continue rising in the stock market, but the speed of the turnover of money within the stock market is increasing as well. Electronic nanosecond trading has greatly increased the volume of activity and new financial derivatives have increased the number of tradable financial products such as mortgage-backed securities (MBS), collateralized debt obligations (CDO), and credit default swaps (CDS). Leveraged ETFs such as UDOW, SDOW, TQQQ, SQQQ, UPRO, SPXU and the like thrive on quick turnover in an increased volume of buying and selling. New investment brokers such as Robinhood (HOOD) have enticed millennials and young people to get caught up in the stock market mania. With exceptionally low interest rates, bond market investments, certificates of deposit, and savings accounts have become almost equivalent to just holding cash. The role of the stock market as a gambling casino at times seems to have pushed aside, and to some extent replaced, its role as a market for making money available for investing in enhancing productivity and expanding production in the real economy.

The stock market is extremely sensitive to whatever the Federal Reserve says and does, because the tools that the Federal Reserve currently has work through the financial markets, with a rather indirect and limited influence on the real economy. To the 10 percent wealthiest people, the stock market is the economy. That is where they make a great deal of their money. As long as most of the money keeps flowing to the wealthiest people, the laws of supply and demand ensure that the stock market will keep rising, with less and less sensitivity to what is going on in the real economy. Meanwhile, most other people and the government will accumulate more and more debt in the face of near-zero interest rates.

The fundamental problem is that capitalism is not going to work all that well for you if you don't have any capital. Specifically, you need financial capital, such as stocks, mutual funds, exchange traded funds (ETFs), commodity futures, mortgages and their derivatives. Thomas Piketty's book, *Capital in the 21st Century*, provided clear evidence that over most of history the return to financial capital has been higher than the growth rate of the economy. This should be no surprise, because the relative return to labor and to both physical and intellectual capital in the real economy has declined as much of the revenues from both labor and physical/intellectual capital has been extracted as financial capital in the form of profits in an effort to maximize short-term capital gains for shareholders. Labor's share of the economy has fallen but the share of real capital has also fallen, as financial capital in the form of profits has come to dominate. Real capital investment and productivity have stagnated while the return to financial capital in the form of profits has grown to gain a greater and greater share of our economy's overall value. It has become clear that capitalism won't work for you if you don't have any financial capital.

According to John Locke, we are supposed to gain capital through sweat equity. But this hasn't been happening. As an owner of lots of stock, I know that hard work pays off. Except not for the worker who does the hard work. I want my workers to work hard and generate lots of profits, because their hard work pays off for me in generating high profits with big dividend payments and increases in stock valuations. Free enterprise is supposed to maximize worker incentives. But I don't have to do any work at all to get lots of money through my ownership of

financial capital. I can just set my limit orders and stop-loss orders as the stock market opens each day and then go and spend the rest of the day playing golf. What do you do to earn a living?

I have been told that it is all about rewarding risk. But once I have enough money to live comfortably from savings accounts as well as certificates of deposit and bonds, the extra money that I invest in the stock market does not put my well-being at risk in any real sense. Once I have enough money, the absolute amount of money is not relevant and only the relative amount of money matters. It is no longer about my survival or even my comfort, but just about my place in the ranking of rich people such as on the Forbes list of the wealthiest people.

It is all about stock ownership. Invest early and invest often. The whole point of one's career is to make the transition from getting your money from labor to getting your money from financial capital. Once you are getting sufficient money from your investments, you can retire. I can just check my stock valuations from time to time and lounge around all day. The free enterprise system is rewarding me for doing nothing. In fact, most people get the best return on their investments in the stock market by forgetting about it and riding out the ups and downs of the market without trying to make a lot of trades trying to time the market. Instead of rewarding employees for their hard work and dedication, we reduce the tax rate on long-term capital gains, which, in effect, shifts the tax burden onto the employees and diminishes their incentive to work hard. Shares purchased by companies in their stock buybacks should be distributed to the company's rank-and-file employees based on some measure of their productivity and tenure.

Is this the best incentive structure for our free enterprise market economy or is there something wrong here? Does maximizing **shareholder value** instead of maximizing **stakeholder value** just mean focusing on cutting costs to increase margins to inflate the current stock price in the short run and treating employees as just another factor input such as steel or plastic instead of recognizing the role of efficiency wages in driving workers to work harder and smarter. A bonus structure at a McDonald's restaurant can serve as an efficiency wage in recognizing that workers are not just another factor input but can be motivated by incentives to avoid wasting food, pick up trash, keep tables clean, be nice to customers and get along with fellow employees. When CEOs from various companies serve on each other's corporate boards with no labor representation, the focus is on maximizing the short-term share stock price in order to maximize shareholder value and CEO compensation.[72]

For the economy, the problem is not only maintaining the proper quantity of money, but also directing the flow of money to ensure that interest rates do not continue to stay close to zero. This means maintaining a proper balance between aggregate demand and aggregate supply. The *money flow paradigm* recognizes that it is not just the amount of money that matters, but where it is flowing and what the velocity of money is in that particular path of that money flow. Money flowing to workers has a high turnover in the purchase of goods and services and, therefore, a high monetary velocity, while money flowing to wealthy individuals and corporations inflates stock and bond prices but does little to increase consumer demand.

The difference between whether you are part of the poor getting poorer or the rich getting richer depends on which side of the interest rate you are on. If when interest rates rise, you say "Great, I will be earning more money" then you are part of the rich getting richer, but if you say

[72] Clifford, Steven. *The CEO Pay Machine: How It Trashes America and How to Stop It*. New York: Penguin Random House, 2017.

"Oh no, I will now have to pay more on my debt" then you are part of the poor getting poorer. Low interest rates discourage savings and encourage debt. If we want a stable economy, we should be encouraging savings and not debt.

Our distorted money flow will only get worse if we do not redirect money from the financial markets to raise interest rates and get more money to flow into the real economy to increase consumer demand when appropriate. Unlike the 1945 to 1980 period, the problem in the decades since 1980, until 2020, has not been excess demand and insufficient supply, but insufficient demand and excess supply. The fundamental problem, due to both technical and political causes, too much money has been flowing into our financial markets, where it sits idle or spins around in a loop without going to any productive enterprise, with too little money flowing to consumers. We were left with tremendous supply potential but not enough demand to make use of that supply without the use of both enormous private debt and excessive public debt. This trend has been temporarily disrupted by the COVID-19 pandemic with the supply shortages and stimulus payments, but the aging of our population will cause a significant drop in our productive capability as a nation as our baby boomers retire leaving fewer workers to produce goods and services. To avoid a dramatic drop in our productive capacity, we will need a combination of more automation and immigration. This same problem will emerge in many other developed and developing nations as birth rates drop, people live longer, and more people drop out of the labor force. Wages have been rising in China, and its middle class has been growing, but the one-child policy previously imposed will soon result in China reaching an upper limit to its population followed by a dramatic decline in its workforce.

By focusing on maintaining stability and wealth in the stock market and ignoring the huge buildup of debt among middle class Americans, the Federal Reserve has been systematically contributing to income inequality in America without fully realizing it.[73] The fundamental problem is that the Federal Reserve has been trying to control the economy using the supply-side tool of manipulating interest rates in the New York financial markets and lacks a demand-side tool to maintain full employment and stable prices.

[73] Petrou, Karen. *Engine of Inequality: The Fed and the Future of Wealth in America*. New York: John Wiley & Sons, 2021.

VIII. Federal Reserve Monetary Policy

Federal Reserve Needs Demand-Side Policy Tool

In 1913 the responsibility for maintaining an adequate money flow was given to the monetary authorities at the Federal Reserve Board of Governors. However, the policy tools available to the Federal Reserve have proven inadequate to sustain a reasonable balance between aggregate demand and aggregate supply in the face of extreme income and wealth inequality. A central bank digital currency (CBDC) could change this by providing the Federal Reserve with a return-on-savings tool that, if used wisely and targeted only those Americans with the highest marginal propensities to consume, could substantially reduce the excess demand for goods and services that is currently causing inflation along with supply shortages due initially to the COVID-19 pandemic and over-reliance on just-in-time delivery of products.

The problem is that the cost-of-borrowing tools that the Federal Reserve currently use are focused almost exclusively on adding or removing money from the New York financial markets. With the high levels of income and wealth inequality, there is already too much money piling up in the financial markets. Interest rates are already too low. Very little of the money given to Wall Street bankers in exchange for their public or private securities trickles down to the average consumer. Instead of stimulating the economy, the Federal Reserve just pushes up stock and bond prices and contributes to the widening wealth gap. Conversely, when the Federal Reserve raises interest rates, supply is suppressed along with demand and the poor are hurt the most.

When the economy slips into a recession, the Federal Reserve's injection of money into the financial markets on Wall Street has little effect on consumer demand on Main Street and fiscal policy has had to intervene to make up the difference. As a result, it has been necessary to increase the national debt and to keep increasing the debt ceiling to accommodate higher and higher levels of national debt. Any individual or business compiling such a high level of debt would be in danger of default and bankruptcy. However, the Federal government has both the power to print money (through the Federal Reserve) and the power to tax. Not to mention the power of eminent domain and police power. The size of the national debt is not a problem as long as the supply of money doesn't get so large as to drive up consumer demand to the point of generating excessive levels of inflation. See Kelton (2020)[74] for a more extensive treatment of this issue.

Moreover, in spite of the high levels of national debt, the interest rates on the national debt remain exceptionally low and the value of the United States dollar remains strong in foreign exchange markets. The demand for dollars has remained strong partially due to its role as the world's primary reserve currency. If the bond vigilantes were worried about the viability of US Treasury securities, they would demand a higher interest rate of those securities. Since the interest rate of those securities has remained low, the market is not perceiving any increased risk with holding US treasuries. The US dollar and US Treasury securities remain strong.

But in addition, the United States faces a clever strategy by nations wishing to continue to sell a large amount of goods and services to the United States. Ordinarily, a country purchasing a lot from other countries would through such purchases inject a lot of its currency into

[74] Kelton, Stephanie. *The Deficit Myth: Modern Monetary Theory and the Birth of the People's Economy.* New York: Hachette Book Group, Inc. 2020.

international currency exchanges and end up driving down the value of its currency. But, as mentioned above, China and other countries dependent on a strong US demand for their products have bought up those US dollars and invested them right back into the United States by purchasing a large amount of US Treasury securities. This tactic has kept the US dollar strong in international markets while contributing to the excess liquidity in US financial markets that has held down interest rates.

With such a large amount of low-wage labor abroad producing such a substantial supply of inexpensive goods and services, until recently the threat of inflation was low (until the recent supply disruption and excessive stimulus in response to the COVID-19 pandemic) with generally weak demand for new goods and services as most Americans are themselves deep in debt and living paycheck to paycheck due in part to the low interest rates but primarily due to the diversion of the money flow away from the average worker and toward wealthy individuals and corporations who contribute very little to aggregate demand and are not inclined to invest in real productive capacity in face of the supply glut from abroad. Consequently, we continue to see earnings going into stock buybacks, enlarged dividends and investments abroad in low-wage countries instead of into the creation of new plant and equipment within the United States.

Senators Ron Wyden (D-Oregon) and Sherrod Brown (D-Ohio) have introduced a tax on stock buybacks as a small step in addressing this problem. *The Stock Buyback Accountability Act (2021)*[75] levies a two percent excise tax on money spent by companies on buying back shares of their own stock. This proposal should be amended to require that the stock bought back by companies should be given to that company's employees based on their productivity and tenure. Another approach to restoring a balance in our national money flow would be to apply the same tax rates to all money earned in the stock market as is applied to money earned from labor. Why are we giving tax breaks for gambling in companies such as Bitcoin (BTC), Dogecoin (DOGE), and Ethereum (ETH)? In rewarding risky investments are we turning our financial markets into gambling casinos? The current system of charging as little as fifteen percent on long-term capital gains favors people who find themselves with substantial amounts of extra money that they don't really need so they place long-term bets. When we build an aircraft carrier someone must pay for it. Because the people who benefit from the lower tax rates on long-term capital gains pay less, everyone else must pay more in taxes. Average Americans are not fully aware of this disparity, while the wealthy have better tax advisors and lobbyists to ensure that they get every possible break in the tax system. However, more and more wealthy Americans are becoming aware of the damage our distorted money flow is playing in contributing to instability and low economic growth, not to mention excessive inequality, and want to correct this problem and pay their fair share in taxes.

The most important reform to our system would be to follow the example of Germany and other developed countries in requiring employee representation on the corporate boards of large corporations. This would bring employee ideas and concerns directly into the decision-making process and reduce the probability of disruptive strikes with a better money flow to employees

[75] Brown, Sherrod (Senator, D-Ohio) and Ron Wyden (Senator, D-Oregon). *The Stock Buyback Accountability Act.* Washington, DC: The United States Senate, 2021.

and longer-term investments instead of the current emphasis on short-term stock price under the maximization of shareholder value and maximizing CEO compensation.

With the release of over a billion people from relatively unproductive communist regimes in the 1990s and early 2000s, a vast global supply chain developed to provide high quality products at low prices enabled by low wages. Unskilled and semi-skilled workers in the United States and other developed countries could not compete effectively against such a vast global supply of low wage workers. For a more thorough analysis of this problem see Alpert (2013).[76]

The aging of the populations in developed countries also weakened demand for goods and services since the elderly tend to have lower marginal propensities to consume than younger families with comparable levels of income and wealth. This is partially due to the empty nest effect of children leaving to form new households and the accumulation over time of clothing, furniture and other accessories as people get older and no longer feel the need to keep up with the latest fashions and gadgets. Older people tend to move into a downsizing stage in their lives with some off-loading many possessions as they move into smaller quarters or into assisted living.

Consequently, aggregate demand has fallen to unprecedented lows relative to the enormous global aggregate supply. Money that would have normally flowed to Main Street was diverted to Wall Street. Federal government deficit spending became essential to counter potentially high levels of unemployment because with huge amounts of money piling up in financial markets driving down interest rates, the Federal Reserve is impotent in being stuck with tools designed to work through the supply side when the fundamental economic stability problem is poor money flow to the demand side. The recent COVID-19 inflationary period has interrupted this longer-term process which can be expected to continue as long as automation and new sources of cheap labor in Africa and Asia can make up for the shrinking labor force in developed countries as their workers retire. The number of check-out aisles and people using those aisles is increasing substantially to make up for the shortage of workers and reduce costs. Automation in farming and trucking may expand dramatically in the next few decades to increase both the quantity and reliability of supply. Aurora Innovation, Inc. (AUR) is working with FedEx to automate its fleet of trucks. I recently encountered a machine in Sam's Club cleaning the floor and taking inventory electronically at the same time as it moved up and down the aisles. I asked it where I could find a gallon of carpet cleaner, but it did not respond. I am hopeful that it will be more accommodating next time.

Restoring the Money Flow Back to the Demand Side

While more and more money piles up in our financial markets, less and less money is being made available for the common property resource investments that are needed to increase our productivity and economic growth. States have sharply cut back their support of public universities. We are told that additional money will not improve public education while wealthier districts provide substantial funding for their schools through property taxes with many of their students going on to college, while poorer districts with much lower property values are unable to provide adequate funding to provide a comparable education for their children who face much poorer prospects for further education or training. Young people with great teaching potential are

[76] Alpert, Daniel. *The Age of Oversupply: Overcoming the Greatest Challenge to the Global Economy*. New York: Penguin Group, 2013.

being diverted to higher paying occupations in the face of low pay for teachers in public schools. The need to retrain our workers with 21st century skills for new 21st century jobs will become glaringly obvious when 3.5 million truck, bus, taxi, and delivery drivers lose their jobs to autonomous vehicles in the coming decade.

Other common property resource problems include repairing our infrastructure, which has been deteriorating rapidly with unnecessary damage to cars, trucks, and buses, not to mention trains and planes using outdated and poorly maintained facilities. Research funding for the *National Science Foundation* (NSF) and the *National Institutes of Health* (NIH) could enable individual researchers and their research teams to solve problems of a common property resource nature, where private businesses are unable to capture sufficient individual returns to warrant investment. The essential role of government research as the basis for much of the private entrepreneurial progress has been well-established by Mariana Mazzucato in several publications in recent years as referenced earlier.

The fundamental failure of our economic system is the failure to recognize that the free enterprise system is the creation of government and does not and cannot exist apart from government. The rules and regulations that the government sets up are the foundation of the free enterprise system as emphasized by the *money flow paradigm*. Special interests have played a substantial role in determining those rules and regulations that have distorted the money flow in our economy to the extent that workers can no longer afford to buy back the value of the goods and services they have created. Money that should have gone toward innovation and expansion has instead gone to artificially driving up the company's share price in the short run. Corporations have been engaged in redirecting the money flow away from the middle and lower-level employees and toward the top echelon of corporate management. Government then steps in with deficit spending to make up the difference to keep our economy's resources fully employed. We have also had to emphasize exports to get people in other countries to buy our products since our own citizens do not have enough money to purchase them. The *money flow paradigm* requires that to return to a full employment economy with a balanced federal budget requires that the government make the fundamental changes needed to correct the distorted money flow.

The first and foremost reform needed is to require employee representation on corporate boards. Forty percent of corporate board members must be elected by the corporation's rank-and-file (non-supervisory) employees. This will ensure that employee input on how to improve the company's operations and overall profitability is well understood by the corporation's leadership. It will also reduce the number and frequency of strikes and make sure that a reasonable amount of money flows to rank-and-file employees. Any stock repurchased by a company in stock buybacks should be distributed to its employees based on their productivity and tenure. This will focus the employees on working as a team to make sure that the company is more successful.

We must also substantially change our tax code. Clearly dividends and capital appreciation should be taxed at the same rate as employee earnings. A key aspect of reforming the tax code is in understanding the fundamentals of human motivation and incentives. While the absolute amount of money that a poor person has is key to paying the rent, buying food, and arranging for transportation to work, the absolute value of money becomes less and less important as a person acquires greater amounts of money while the relative amount of money becomes more and more important.

Everyone wants a sense of self-worth in some form or another. Feeling "good" about yourself does not necessarily require virtue. After all, a burglar feels good for pulling off a clever burglary. People without much wealth look to other measures of their self-worth. A good pianist may see piano playing ability as a measure of self-worth, whereas a weightlifter may consider the greatest weight lifted as such a measure. The wealthier an individual becomes, the more likely they will consider their wealth as some measure of their self-worth. For the wealthiest individuals, improving their ranking on the Forbes list of wealthiest people may become one of their primary concerns. The motivations and work incentives of the wealthiest people are not reduced in paying their taxes, despite their strong aversion to paying any tax at all, as long as their relative wealth position is not altered. At high income levels it is clearly relative wealth and not absolute wealth that really matters.

One behavioral economics study found that people preferred a situation where they had $1.1 million dollars and their colleague had $1 million dollars over a situation where they had $3 million dollars and their colleague had $4 million dollars. Clearly in this case their relative ranking was more important to them than the absolute amount of money they had. This is reflected in their marginal propensity to consume. When wealthy individuals obtain more money, they do not suddenly decide to buy a new car or go to that fancy restaurant, because they already have as nice a car as they want and are already going to as many fancy restaurants as they want. They cannot drive more than one car at a time or wear more than one pair of shoes at a time, or significantly increase the number of fancy restaurants they eat at in one day. Most of any additional money the wealthy acquire goes into investments in the financial markets and are not used for additional consumption. This is in sharp contrast to middle-class people who have much higher marginal propensities to consume. Lower-class and middle-class people are much more likely to be eager and able to improve both the quality and quantity of their consumption activities than are wealthy people who typically already have so much they don't know what to do with excessive amounts of money other than bid up the price of Picasso paintings and unique estates and exclusive vacation properties.

With this incentive structure in mind, it is important to reconsider our tax system to raise enough revenue to inject money into our economy for important fiscal policy common property resource initiatives such as infrastructure improvements, support for education, and *National Science Foundation* (NSF) and *National Institutes of Health* (NIH) research support.

Diverting money from the wealthiest individuals and corporations will help move money out of our financial markets and into the hands of workers and consumers who will actually spend it to increase overall aggregate demand for goods and services, and, thereby, maximize employment and growth. If enough money can be removed from the financial markets, interest rates will rise to encourage savings and discourage the buildup of excessive debt. With more savings, a job loss or medical issue will not force a family to abruptly reduce their expenditures. In the aggregate this will ensure a more stable level of consumer demand and greater stability for our economy overall. When enough money is flowing to the average consumer to sustain an adequate level of consumer demand, government debt can then be slowly and systematically reduced and eliminated, except for the occasional need to fend off economic downturns.

Probably the least disruptive taxes are our estate and inheritance taxes, as long as we make provision for the continuance of businesses such as family farms, which, if sufficiently large to exceed the lower limit ($12.06 million dollars for the 2022 tax year) required for taxation, could

be converted to family trusts. Estate taxes could be used to extend the Social Security system to future generations because in 2020 Baby Boomers controlled about 53 percent of the nation’s wealth, with Generation X having about 6 percent and Millennials about 4 percent.

Another obvious tax target would be the tax on dividends and both short-term and long-term realized returns on capital. This would remove money directly from the financial markets with the dual purpose of raising interest rates and providing funding for common property resource expenditures and other long-term capital expenditures such as infrastructure repair and improvements.

To the extent that deficit spending generates even a modest level of unexpected inflation, it is essentially a tax on the real value of wealth. When monetary policy helps drive down risk-free interest rates such as those associated with short-term US Treasury bills to below the rate of inflation, conservatives often refer to this situation as one of financial repression. In effect this is just another way of imposing a wealth tax, which, when unexpected, can benefit debtors at the expense of creditors. However, such a wealth tax may benefit the economy if it shifts enough of the money flow to consumers to increase consumer demand when aggregate demand is otherwise inadequate to maintain full employment and maximum economic growth.

As explained in the next chapter, a key role in maintaining a proper balance between aggregate demand and aggregate supply can be better performed with the introduction of a central bank digital currency (CBDC). A CBDC that automatically established digital accounts for everyone with a Social Security number would enable direct injections of stimulus money to turn around an economic downturn or offering high interest rates on savings to get lower-class and middle-class people to save more and spend less when excessive inflation threatened. Thus, a CBDC would enable direct access to consumer demand instead of trying to work indirectly through the New York financial markets.

IX. New Return-on-Savings Federal Reserve Policy Tool

Federal Reserve Bank "FedAccounts" (CBDC) for Everyone[77]

Even without monetizing the national debt, the existence of such debt bypasses the purpose of setting up the Federal Reserve system in the first place. Do we or do we not want the professionals in the Federal Reserve to control the money supply? Do we really want to undermine the system we set up that was intended to avoid giving the overall control of money to the private banks and politicians? If we are serious about separating the taxing and spending functions of our economy from the control of the money supply, then we need to consider providing the Federal Reserve with policy tools that will enable it to carry out its assigned responsibility of maximizing employment while avoiding excessive price inflation.

During periods such as in the decades following World War II when aggregate demand is strong and aggregate supply is weak, monetary policy can be used to ensure that financial markets have adequate funds that can be provided for investment in the real economy. Corporations that want to expand their productive capacity can issue new shares of stock or issue new corporate debt in the New York financial markets.

But as in recent decades when aggregate demand is weak and aggregate supply is strong, corporations have no incentive to expand their productive capacity. Why add another line of production when your existing lines of production are not fully utilized due to inadequate consumer demand? When demand is weak, pumping a lot of money into the financial markets to lower interest rates is ineffective in encouraging the expansion of production. On the other hand, when demand is too strong, such that too much money is chasing too few goods, and productive capacity and employment are already maximized, raising interest rates in New York financial markets does the opposite of what is needed to stop excessive inflation. It suppresses supply in that it discourages businesses wanting a loan to add another line of production, when the real problem is excessively strong demand for the existing inadequate supply of goods and services.

When the Federal Reserve raises interest rates, it suppresses supply for seasonal, cyclical and other businesses that depend on short term liquidity to maintain and establish inventory and cash flow. It suppresses business. For example, farmers borrow money from the financial system to pay for seed, fertilizer and irrigation in the spring and to pay workers to harvest the crop in the fall and pay it back after the harvest is sold. Many retail businesses do not make a profit until the holiday season at the end of the year. With all the fixed costs they must absorb during the year, they only get their head above water in the fourth quarter. If borrowing to cover those fixed costs earlier in the year becomes too expensive, then they must cut back their business operations to reduce those fixed costs enough to survive until the fourth quarter.

But production is cut back when borrowing costs increase as interest rates rise. This traditional approach suppresses both supply and demand as workers find less work and their incomes fall. High interest rates also cause businesses to put off long-term investments in plant and equipment that would increase supply. The economy slides into recession. In addition to

---

[77] Just as behavioral economics was developed with the help of psychology professors Daniel Kahneman and Amos Tversky, lawyers John Crawford, Lev Menand and Morgan Ricks have played a key role in formulating the presenting the idea of establishing "FedAccounts" in response to the proposals for creating a **Central Bank Digital Currency** (CBCD).

causing recessions, the Federal Reserve's traditional policies have led to ever greater levels of income and wealth inequality as explained by Petrou (2021).[78]

Inflation occurs when too much demand for goods and services is chasing too little supply. The financial markets exist to offer liquidity to businesses to maintain or expand the supply of goods and services. Countering the rapidly rising prices requires increasing supply while reducing demand. Current supply shortages call for encouraging supply. *But the traditional Federal Reserve policy approach will do the opposite of what is needed*.

Sure, suppressing business to lay off workers to reduce demand will work if you slam on the brakes hard enough. But trashing our economy to stop inflation is not necessary. What the Federal Reserve is missing is a **return-on-savings tool** to ratchet down demand when markets for new products and services become overheated, instead of relying on the traditional **cost-of-borrowing tool**. A private bank cannot offer a higher interest rate on savings than it is charging for loans, because that would cause it to lose money. But a central bank can.

If everyone was given a Federal Reserve digital currency savings account (FedAccount)[79], then when inflation threatens, the Fed could offer a high interest rate in such accounts when needed to encourage individuals to **save money** and reduce consumer demand when too much money is chasing too few goods causing excessive inflation. After all, the whole point of the existence of interest rates is to entice people to **delay consumption** now in return for having more money later.

To focus on consumers with high marginal propensities to consume and to avoid competing with regular commercial banks, the interest rate in these FedAccounts (CBDC) could be applied to a maximum of some relatively small base amount such as $5,000 or $10,000 depending upon the state of the economy and the need to encourage or discourage consumer demand. Money placed in these FedAccounts (CBDC) above the base amount would not earn interest.

To serve as a true universal digital currency, these FedAccounts (CBDC) would have to be open to anyone in the world with dollars to deposit in a FedAccount (CBDC). However, since monetary policy is aimed primarily at controlling the economy of the United States, only FedAccounts (CBDC) with an associated Social Security number would be allowed to earn interest on the money deposited up to the base amount of $10,000 (or $5,000). Any deposits above that base amount, or deposits by entities without an associated Social Security number, would not only not earn any interest, but instead could be charged a fee (negative interest rate) to discourage making FedAccounts (CBDC) a viable alternative to the private commercial banking system. which, while less secure, would usually at least offer a positive nominal return on deposits. With only one account per Social Security number and possibly even restricted to IRS-certified lower income individuals, who would have the highest marginal propensities to consume, these FedAccounts (CBDC) would provide the greatest bang for the buck for monetary policy.

---

[78] Petrou, Karen. *Engine of Inequality: The Fed and the Future of Wealth in America*. New York: John Wiley & Sons, 2021. https://www.hoopladigital.com/title/13945007?utm_source=MARC

[79] Ricks, Morgan; Crawford, John; Menand, Lev. "FedAccounts: Digital Dollars." *George Washington Law Review*, vol. 89, issue 1, January 2021. https://www.gwlr.org/vol-89-no-1/

Some authors such as Benes and Kumhof (2013)[80] have promoted "The Chicago Plan" which is based on the work of Frank Knight and Henry Simons of the University of Chicago and Irving Fisher of Yale University in the 1930s. This proposal would eliminate the fractional reserve banking system and replace it with one hundred percent reserve banking so that private banks would no longer create money. [81] Money creation would then be the sole responsibility of the central bank. This would eliminate bank runs, boom-bust cycles and greatly reduce government and private debt. In other words, full reserve banking would make our economic system much more stable and reliable. Implementing this may not be as disruptive as it may at first appear, but a politically realistic path to making this historic policy change is yet to be determined. In the meantime, we need to provide the Federal Reserve with a tool to deal with our current system, although a tool that would still be useful under full reserve banking as well.

Under the Postal Savings Act of 1910, our post offices served as banks for 56 years from 1911 through 1966. You could go to any of our 31,000 post offices to cash a check or set up a savings account. The Public Banking Act, which was recently introduced in the Congress to create postal savings accounts, could be modified to provide the Federal Reserve with a **return-on-savings tool** on new central bank digital currency (CBDC) accounts to curb excessive inflation without throwing our economy into a recession. Bank and nonbank intermediaries could be paid a fee for processing CBDC transactions and keeping track of an individual's CBDC account. Unbanked and underbanked lower income individuals could be allowed to access their CBDC accounts directly through any post office, which could check their IRS-certified low-income status and confirm their identity, as post offices routinely do when issuing passports for foreign travel.

Higher interest rates will encourage savings. Saving more and spending less is obviously what is needed when too much money is chasing too few goods. If we offer high enough interest rates to lower income individuals in postal savings accounts dispersed in our over 30,000 post offices around the country, excess demand can be reduced enough to stop inflation without forcing the economy into an unnecessary recession. This approach withdraws money from the economy by offering a return on investment, not by taxation. People will still be able to purchase their necessities but will be motivated to delay or cut back on luxuries until the economy cools off and postal bank interest rates return to normal.

This will especially benefit the elderly who need a good return on their savings to help finance their retirement. Having more people save more money will also serve as an automatic stabilizer by providing people with the savings they need to ride out economic downturns, which, in turn, will make such downturns shorter and less extreme.

In the face of weak demand and strong supply, the Federal Reserve can only carry out its mission of maintaining full employment with reasonably stable prices with a new tool aimed directly at controlling the overall level of consumer demand. Such an effective tool to adjust consumer demand to keep the economy at full employment without excessive inflation is the creation of Federal Reserve personal savings CBDC accounts for everyone who has a Social

---

[80] Benes, Jaromir; Kumhof, Michael. "The Chicago Plan Revisited." *International Monetary Fund*, WP/12/202, revised 2013. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2169748

[81] Fisher, Irving. "100% Money." working paper. https://cdn.mises.org/100%20Percent%20Money_Fisher.pdf

Security number. These Federal Reserve personal savings accounts, set up through the system of post offices throughout the United States, could provide the Federal Reserve with direct and immediate control over consumer demand. Everyone with a Social Security number would get an account with a $1,000 which could not be withdrawn until after age 70. However, any interest earned, and any additional money deposited by the individual or by the government could be withdrawn at any time. Of course, a high interest rate would discourage the withdrawal of money.

The Federal Reserve could then inject money into these accounts and lower the interest rate on savings when the economy slowed, and recession threatened. On the other hand, when excessive inflation threatens, the Federal Reserve could offer exceptionally high interest rates on savings in these accounts. As an alternative to buying and selling securities in financial markets to regulate the money available for Wall Street investments, the Federal Reserve needs to establish these individual bank accounts so that the Federal Reserve can inject money directly into the real economy on Main Street as needed to maintain full employment or offer high interest rates in these accounts when inflation is getting out-of-hand. For more details, see Marsh (2020).[82]

The COVID-19 crisis provides an excellent example of why these Federal Reserve bank accounts are needed. Instead of relying on the politicians in Washington to authorize the US Treasury to send out checks in a rather haphazard and unreliable manner, the Federal Reserve could act quickly and reliably to inject money into these Federal Reserve personal bank accounts after running simulations using stochastic dynamic general equilibrium (SDGE) models or system dynamics models to fine tune the payments to avoid an economic downturn but not trigger excessive inflation. These CBDC bank accounts could be accessed in a highly secure manner with a person's pre-registered smartphone or through any post office or bank.

On the other hand, at some point the federal government may discover that it has overstimulated the economy causing excessive inflation. The whole point of the existence of an interest rate is to delay consumption. By offering high enough interest rates in these accounts, the Federal Reserve could encourage Americans to delay consumption by moving more of their money back into their Federal Reserve savings account rather than spending it.

With the establishment of Federal Reserve individual CBDC savings accounts, the Federal Reserve would finally have a **return-on-savings tool** to directly impact aggregate demand on Main Street and not just a **cost-of-borrowing tool** implemented through the financial markets on Wall Street. This would provide a much tighter and more direct effect on consumer demand, requiring less money than the current trickle-down approach, which works, if at all, with a long delay.

Is Congressional Authorization of Federal Reserve Savings Accounts Realistic?

In 2018 Senator Kirsten Gillibrand (S.2755) and Representative Evette Clarke (H.R.5816) introduced *The Postal Banking Act* which would restore the post office banks that existed under The Postal Savings Act of 1910 for 56 years from 1911 to 1966. In 2020 Representative Rashida Tlaib introduced *The Automatic Boost to Communities Act*, (H.R.6553), 116th Congress and Representative Maxine Waters introduced *The Financial Protections and Assistance for*

[82] Marsh, Lawrence C. *Optimal Money Flow: A New Vision on How a Dynamic-Growth Economy Can Work for Everyone*. Kansas City, MO: Avila University Press, 2020. https://optimal-money-flow.website/

America's Consumers, States, Businesses, and Vulnerable Populations Act, (H.R. 6321) 116th Congress, which provided for safe and reasonable access to financial services.

Their goal was to help the poor and underprivileged (especially racial minorities), otherwise known as the unbanked or underbanked, who are driven deep into debt by loan sharks, pawn shops, payday lending and "cash now" opportunists, when they just need to cash a check, transfer money to a friend or relative, or get a small loan. This was endorsed by the Biden-Sanders Unity Task Force, which calls for "bank accounts and real-time payment systems through the Federal Reserve and easily accessible service locations, including postal banking." Baradaran (2015)[83] extensively examines the plight of the unbanked and underbanked in her book *How the Other Half Banks*.

By combining the concern for concern for poor and disadvantaged people with the need to maintain full employment and stable prices through much tighter control of the demand for goods and services without increasing taxes or the national debt, a sufficient large coalition of senators and representatives could be put together to pass a version of *The Postal Banking Act* that would give the Federal Reserve the needed authority to maintain full employment while maximizing economic growth without excessive inflation.

Remember, postal banking is not a new idea. Under *The Postal Savings Act of 1910* our post offices served as banks for 56 years from 1911 to 1966. The key to fully funding post office pensions is to place the responsibility for the pensions with the Federal Reserve, which would oversee the postal banking services under *The Postal Banking Act*. The Federal Reserve is entirely self-financed with money earned from its investments and fees from its member banks. The Federal Reserve earns so much money it typically donates at least $60 billion to the US Treasury each year.

Ironically, it is the need of middle-class people for money to meet immediate needs that makes them especially useful for macroeconomic stability for the nation as a whole. When the Federal Reserve was established in 1913, it was given monetary stability tools aimed at controlling the economy through the supply of money. By adjusting the supply of money, the Federal Reserve alters the price of money (the interest rate) and, therefore, the amount of money demanded (but not the demand for money curve). This made sense when growing populations and powerful working-class organizations ensured a strong flow of money to enhance consumer demand. In the decades following World War II with the GI bill and baby boom, strong demand for goods and services enabled monetary policy to influence both the unemployment rate on one hand, and the rate of inflation on the other, through manipulation of interest rates in New York financial markets. With strong aggregate demand and weak aggregate supply, supply-side economics was alive and well.

But in recent decades as a result of automation, globalization and the aging of our population, the Fed has become impotent as strong demand and weak supply have given way to weak demand and strong supply, resulting in very low interest rates. With such weak demand, worthwhile investments in the real economy are hard to find with the stock market becoming a separate economy for the wealthy. The huge incomes of the rich drive up stock prices with virtually no trickle down from Wall Street to Main Street.

---

[83] Baradaran, Mehrsa. *How the Other Half Banks: Exclusion, Exploitation, and the Threat to Democracy*. Cambridge, MA: Harvard University Press, 2015. https://www.hoopladigital.com/title/11707111

Growing income inequality has diverted huge quantities of money to the stock market. Too much money is flowing to the wealthy, who have low marginal propensities to consume, and too little to middle-class consumers with their high propensities to consume. Meanwhile, after the release of over a billion people from communist regimes in the 1990s, especially in China, a vast global supply chain has developed. Over several decades aggregate supply has become stronger than ever before as aggregate demand has become weaker. See Alpert (2013)[84]

With so little money flowing to the American people, they can no longer afford to buy back the value of the goods and services they are producing without going deep into debt. But even that is not enough to achieve and maintain full employment. Federal deficit spending is used to make up the difference to keep the workforce fully employed. The aging of the baby boomers, whose demand for goods and services generally drops as they get older, exacerbates this deficiency in aggregate demand. With aggregate supply very strong, the key to controlling the economy has shifted to the weaker demand side, except for the unusual period surrounding the COVID-19 pandemic, when unusually large stimulus payments combined with severe supply shortages created excessive inflation.

Clearly what is needed for better control of aggregate demand is a new tool for the Federal Reserve. To directly influence consumer demand, the Federal Reserve needs to establish a Federal Reserve highly secure digital currency (CBDC) savings account for every American with banking services accessed through the Internet, through private banks and ATMs for a fee, and for lower income individuals through the more than 30,000 post offices nationwide so that the Federal Reserve can inject money directly into the real economy on Main Street as needed to maintain full employment. Since the Federal Reserve can create money out of "thin air," this would not increase taxes or add to the national debt.

On the other hand, when excessive inflation threatens, the Federal Reserve could offer an unusually high interest rate in such accounts when needed to encourage individuals to save money. In other words, a high interest rate on savings in FedAccounts (CBDC) would motivate consumers to cut back on their demand for goods and services and, instead, save more of their money, thereby reducing aggregate demand. This provides the Federal Reserve with the ability to distribute cash when demand is weak and, alternatively, raise interest rates to increase savings -- when demand becomes too strong -- to stop excessive inflation. This would provide the Federal Reserve with a powerful new tool to control the economy is achieving its dual mandate of full employment with stable prices.

The COVID-19 crisis provides an excellent example of why these FedAccounts (CBDC) are needed. Instead of relying on a slow and complicated agreement to authorize the US Treasury to send out checks in a rather haphazard and unreliable manner, the Federal Reserve could act quickly and reliably to inject money into these FedAccounts (CBDC). These accounts could be accessed directly in a highly secure manner using block chain algorithms at any post office, ATM or private bank for a fee, or with a person's smartphone. This would enable you to pay someone for cutting your grass, raking your leaves, or shoveling your snow in an immediate and direct smartphone-to-smartphone transfer.

---

[84] Alpert, Daniel. *The Age of Oversupply: Overcoming the Greatest Challenge to the Global Economy*. New York: Penguin Group, 2013. https://www.hoopladigital.com/title/11399418

Federal Reserve individual FedAccounts (CBDC) would finally give the Federal Reserve a direct way of controlling consumer demand through Main Street and not just manipulating the supply and interest rates through the financial markets on Wall Street. This would give the Federal Reserve a much tighter direct impact on consumer demand, requiring less money than the current trickle-down approach, which works, if at all, with a long delay and little effect. The Federal Reserve would finally have a **return-on-savings tool**.

It is time to face the fact that the tools available to the Federal Reserve are not designed to directly address the problem of inadequate consumer demand on Main Street. Both progressives who want to help middle-class people with banking and conservatives who want greater productivity and strong economic growth without additional taxation, increases in the national debt or the triggering of uncontrolled inflation should support a revised version of *The Public Banking Act* to include the creation of a central bank digital currency (CBDC) and a new return-on-savings monetary policy tool.

X. Summary and Conclusion

Our Distorted Money Flow

Before 1973 worker productivity was matched with worker compensation. After 1973 worker productivity continued to grow but worker compensation flattened out in real terms. After 1973 workers' hard work paid off. But not for the workers. Workers' hard work paid off for the investors who became the primary beneficiaries of the new emphasis on maximizing shareholder value. A combination of increasing shareholder wealth and "pay-to-play" politics diverted money flow from worker pay to the stock market, preventing workers from having enough money to buy back the value of the goods and services they were creating at full employment.

Money flowed into the New York financial markets to drive up stock and bond prices and drive down interest rates. This distorted money flow has led to growing private debt, increasing federal debt, and the Federal Reserve flooding the financial markets with money ultimately leading to inflation and then recession as the Federal Reserve plans to raise interest rates to tank the economy in an attempt to stop too much money chasing too few goods and services. The problem is that the Federal Reserve only has **cost-of-borrowing tools** when what it really needs is a **return-on-savings tool** to directly adjust consumer demand.

Adam Smith's Two Invisible hands

Adam Smith's invisible hand was supposed to ensure competition where businesses competed to provide the best quality products and services at the lowest possible prices. In the labor market individual jobs were supposed to compete for individual workers. If one job offered too low a wage, it would lose out to a competing job that offered a higher wage. If one potential worker demanded too high a wage, that worker would lose out to a worker willing to work for a slightly lower wage. The efficient equilibrium wage would be achieved with each job competing for each worker.

But that invisible hand, the left invisible hand, was soon countered by a second invisible hand, the right invisible hand. The right invisible hand was market power. When jobs conspired together in blocks, they could outcompete the individual workers by forming an oligopsony of jobs offering a block of jobs which refused to compete with one another and conspired together to set a lower wage than the competitive equilibrium wage.

In the 1950s and 1960s these job blocks were countered by workers forming unions and demanded that the old competitive equilibrium wages be restored and maintained. The result in the 1950s and 1960s was a balanced money flow that allowed workers to buy back the value of the goods and services they were producing without having to go into deep, ever-increasing debt to maintain the old equilibrium standard of living.

Later the government would assist the workers with **federal debt** that augmented the workers' **private debt** in achieving an adequate money flow to workers to allow them to buy back the value of the goods and services they were producing. The Federal Reserve has attempted to provide additional help in **pumping money** into the economy from time to time, although much of that money stayed in the financial markets driving up stock and bond prices and driving down interest rates with little showing up to strengthen consumer demand.

Wealth Piles Up on Wall Street

Maximizing shareholder value and rigging the tax system to enable wealthy individuals and corporations to avoid paying much, if any, taxes, shifted the tax burden onto the middle class. The middle class had to make up for the revenues lost through the tax loopholes[85] (e.g., IRC-469, IRC-482, etc.). Except for some overseas investments in production facilities to take advantage of cheap labor, the wealthy could no longer find productive or satisfying ways to spend their money so their money flowed into the New York financial markets driving up stock and bond prices with a corresponding drop in interest rates. The money flowed round and round in the financial markets with a high velocity while the residual money left in the real economy moved more slowly as the population aged and economic inequality became more severe.

To further augment chronic weak demand, the Federal Reserve flooded the financial markets with money while lowering interest rates both directly and indirectly. In desperation to keep demand up to reestablish or maintain full employment, Congress passed stimulus measures and infrastructure spending programs that were not fully paid for by taxes or other possible revenues and instead drove up the national debt. For the elderly and others trying to maintain savings accounts and other FDIC-insured instruments such as certificates of deposit, the extremely low interest rates meant very little return on their meager investments, but also low loan rates that encouraged extremely high levels of borrowing driving middle-class and lower-class individuals deep into debt.

Economists often note with concern the exceptionally low savings of most American families with many unable to come up with as little as $400 in an emergency. But where is the incentive to save money when interest rates are extremely low and sometimes the nominal interest rate falls below the rate of inflation producing a negative real interest rate? It makes more sense to spend the money now before it loses even more value. This behavior increases demand relative to supply even more so that inflation rises even faster. An inflation rate that exceeds the interest rate on savings is, in effect, a tax on savings that just drives people to spend more money more quickly before their money loses value. This upward inflationary spiral can turn an economy experiencing moderately high inflation into an economy experiencing hyper-inflation.

Distorted International Money Flow

Not only has a disproportionate amount of money been flowing to wealthy individuals and corporations, but a disproportionate amount of real wealth has been going to some of the wealthiest nations, especially in the United States. Developing countries, especially China, have been taking their resources and working hard to produce products to sell to the United States and other developed countries. In response China and the other exporting countries have been receiving US dollars and other leading currencies. Instead of selling these excess dollars into the foreign exchange markets to drive down the value of the US dollar, which would drive down the prices of US exports and increase the prices of products and services entering the United States, these excess dollars have been used to purchase treasury securities in US financial markets.

---

[85] Marsh, Lawrence C. *Optimal Money Flow: A New Vision on How a Dynamic-Growth Economy Can Work for Everyone*. Kansas City, MO: Avila University Press, 2020. https://optimal-money-flow.website/

The World in Disequilibrium

Politicians bemoan the fact that the United States is a current account deficit nation with the US trade deficit, in particular, getting worse over time. China and other developing countries tend to be trade surplus countries. But what does this mean in real terms? These developing countries combine their natural resources with the hard work of their people to produce products for export to the United States and other rich countries. Meanwhile, the United States and other trade deficit countries produce relatively less for export to the developed world. What this means in real terms is that the developed countries provide lots of goods and services for the rich countries and the rich countries provide goods and services for themselves and other rich countries. The rich get richer in real terms while the poor continue working hard for the rich. Technically it is not slavery or colonial exploitation, but it has a certain similarity.

This distortion in the flow of US dollars has been reinforced by using the US dollar as the world’s reserve currency. As world trade expands, the demand for US dollars in foreign exchange markets increases making US exports even more expensive and US imports cheaper for the cash-strapped lower and middle classes. Ultimately this has created a new form of colonialism where developing countries with cheap labor supply goods and services for the United States while US workers produce goods and services primarily for US consumers. They make goods for us, and we make goods for us. Who is getting ripped off here? It is not us.

But from the point of view of America's poor and elderly, this is a blessing. The reserve currency status of the US dollar and the tendency for countries obtaining dollars to invest them in US financial markets and especially in US Treasury securities in particular leave fewer US dollars in the foreign exchange markets so the value of the US dollar remains strong. This means that the US can import high quality products and services at very low prices. The poor and the elderly who are on fixed incomes benefit enormously from these low prices in local discount stores.

Losing Good Jobs to Other Countries

We are told that the benefits flowing from the flood of cheap imports come at the expense of US workers who lose their jobs to workers in the developing countries. However, this assumes that the quantity and quality of jobs in the world is fixed, and we must fight over them. This is certainly not true and the recent shortage of workers in the developed countries demonstrates that the quantity of jobs is not fixed. Economists know the idea that there are a fixed number of jobs as the *lump of labor fallacy*. Instead of taking action to create and maintain good jobs in the US, politicians and government authorities try to shift the blame for inadequate jobs onto competitive imports from abroad. Suppressing competition so that monopolies and oligopolies are in a better position to lower quality and raise prices on Americans is not a good solution. The quantity of jobs can be easily increased by increasing the demand for goods and services in the United States.

The quality of jobs is a bit more complicated since it depends on the amount of relevant human capital that people have acquired. But the recent demand for labor is not just for burger flippers in fast food restaurants, but also for truck drivers and others drawing better salaries. With the recent pandemic and the aging of the population, there is a strong demand for nurses and other critical care professionals. Government policies must be directed toward helping people

meet the licensing and other qualification requirements needed to obtain the high-quality jobs that are in high demand. Obtaining a college degree can make a big difference in earnings, but so can the obtaining of technical skills through specialized training and internships.

But a productive and rapidly growing economy requires more than technical education and hard work. It requires a strong sense of rebellion, and yet, at the same time, a very strong sense of responsibility. Every generation finds a way to rebel from the past. As a sixties guy, in recent years I have given out "Question Authority" buttons to my students. We don't need people who just follow the rules, but people who want the rules to make sense. If the rules no longer make sense because they are no longer satisfying the objective for which they were created, we need to change the rules.

The fundamental problem is our limited mental energy. In economics we like to think that it is all about time and money. But there is a third factor – mental energy. Sometimes we have the time and money to do something, but not the mental energy. It is easier to sit on the couch and watch old World War II documentaries or romantic comedies than to expend the time and mental energy to get the job done. We need to push one another to think about what we are doing and why we are doing it. Just following the rules is not enough. Too often people view themselves as "victims" and refuse to take responsibility for the world around them.

In democracies and employee-owned businesses, the whole idea is for the people to take responsibility and take control. In virtually all businesses, employees have some *agency*, which means that they can affect costs and revenues, and ultimately the profitability, of the enterprise. Just welcoming customers with a smile or avoiding waste in production can help improve the bottom line. In general, a person can either play the victim or be a commander. A victim is always looking for things to complain about. A commander is always looking for problems to solve. For our democracy to grow rapidly, prosper and thrive, we need a lot more commanders and a lot fewer victims. Empowering people and encouraging people to empower themselves in a win-win strategy of supporting, helping, and encouraging (SHE) others is the key to ultimate success on this planet. Requiring employee representation on corporate boards is one important way that we can empower employees to take responsibility in helping to grow their companies, while at the same time help reduce strikes and correct the extremely distorted and perverse money flow that has been taking place in recent decades in transferring an enormous amount of money from Main Street to Wall Street causing low interest rates and tremendous levels of both private and public debt. Another helpful step in correcting this problem would be to require that stock shares purchased in corporate share buybacks be distributed to employees on the basis of their productivity and tenure.

The Fundamental Problem of Distorted Money Flow

Before John Locke (1632-1704)[86] all natural resources were said to be owned by God or the Natural Spirits (in the case of some of our native American ancestors). Later the King, Emperor, Pharaoh, or Tsar was said to have been given dominion over the natural resources by God. You could not hunt deer in the forest or catch fish in the stream without permission of the King. But John Locke argued that you owned your own labor and by imbuing your labor into a natural

[86] Locke, John. *Two Treatises of Government*. London: Awnsham Churchill, 1689.

resource such as land, you gained ownership of that natural resource. Farmers and craftsmen made their own tools, which established their ownership of those tools. With "40 acres and a mule" settlers could establish their right to a farmstead on the frontier. Union soldiers who died in battle were said to have "bought the farm" as the government paid off their family mortgage in tribute for their service and sacrifice. A person could gain capital in the form of natural resources through what today might be called "sweat equity." Hard work paid off. This way of acquiring capital provided important incentives for Adam Smith's invisible hand of competition to pay off. In this version of free enterprise, you competed for capital through hard work and sweat equity.

In the 1950s and 1960s smaller companies treated employees like family and kept the same workers for many years while larger companies paid their workers well because of strong labor unions that made those companies share some of their profits with their employees. But starting sometime in the 1970s, maximizing shareholder value began to become the central and only purpose of many large companies. Employees began to be treated as just another factor input with no agency, like plastic, rubber, or steel. Without union and/or government oversight to ensure safety, more workers were killed in coal mine accidents and were quickly replaced from the "reserve army of the unemployed" since companies only "rent" workers. Coal mine safety was treated as just another annoying union demand or just more government regulation overreach.

For many large corporations the new mantra of ***financialization*** meant not trying to produce the best possible product at the lowest possible price, but instead cutting costs to bare bones and letting quality slide while buying up rivals and blocking entry by extending and distorting patents or using other means to restrict competition. This was all rationalized by claiming economies of scale or network effects in dismissing charges of monopolistic exploitation.

But in the late 1990s I bought some company stock with some money I had inherited from my grandfather and checked off the box "reinvest dividends." I discovered that the hard work by the company employees paid off big time! But not for them. I have "earned" a 6,700 percent return because of their hard work. But I hadn't done anything to assist the company in generating those profits over those 30 years, other than initially providing some of the money that I had inherited from my grandfather. For a while I had even forgotten that I owned the stock and certainly was not fixated on the "risk" that I was taking. As one of many shareholders, I was not in a position to even marginally help the company, unlike the company employees who could affect the company's profitability on a day-by-day basis. Instead, should I stuff the money in my mattress?

What about incentives? **Maximizing shareholder value** appears to be an alternative to **maximizing employee incentives** to work hard and earn more money from rising company profits. You drive a truck for forty years but gain no sweat equity or stock ownership for your work (except for UPS and a few other rare cases). Dropping efforts to enhance community and stakeholder value in favor of maximizing shareholder value has undermined the free enterprise

story of free market incentives benefiting us all through free and fair competition. For a more detailed discussion of this issue see Stout (2012),[87] Henderson (2020),[88] and Graves (2022)[89].

Moving On Up vs. Going Nowhere

The United States ranks as one of the lowest in social mobility among the nations of the developed world. The Horatio Alger story of "rags to riches" is the rare exception. If you start out in a poor family, chances are that you will end up in a poor family, and vice-versa for rich kids. As Paul Krugman[90] and others have pointed out, the most important choice you make in life is in choosing your parents. Choosing rich and well-educated parents who are well-invested in the stock market is critical to getting ahead in life. If you fail to choose your parents carefully, you will almost surely fail in life. We celebrate the exceptions where a person from a poor family is successful in life, but this is but a distraction from the reality of the exceptionally little amount of social mobility in the USA. Very few people from poor families in poor neighborhoods with poor schools become rich.

One of the primary reasons for the lack of social mobility in the United States is the absence of equal opportunity in the education of our children. Wealthy parents send their children to pre-school even before kindergarten. Wealthy parents live in wealthy neighborhoods where property taxes provide neighborhood schools with enough money for children get high quality educations or, alternatively, wealthy parents can afford to send their children to expensive private schools. Short-term studies have suggested that how much you pay teachers doesn't affect the quality of education. It the short run this is probably correct because in the past teachers have been paid so little that you had to be either highly dedicated to teaching or be so bad at other possible occupations that you were willing to overlook the exceptionally low salaries that teachers typically receive. It is only through a longer commitment to paying our teachers substantially more that will we be able to attract college students to look to teaching in public schools as a viable alternative to other occupations for college graduates that currently typically pay much more. This would improve public school teaching by, in effect, pushing out the poor-quality teachers and replacing them with much more competent and much better qualified college graduates.

The Mysterious Magical World of Free Enterprise

In theory the free enterprise system is the most wonderful and most productive system in the world. It rewards hard work. Your compensation directly corresponds to your effort and ability. Free enterprise maximizes efficient resource allocation and economic growth. Businesses

---

[87] Stout, Lynn. *The Shareholder Value Myth: How Putting Shareholders First Harms Investors, Corporations, And The Public*. San Francisco: Berrett-Koehler, 2012.

[88] Henderson, Rebecca. *Reimagining Capitalism in a World on Fire*. New York: Hachette Book Group, 2020.

[89] Graves, Greg. *Create Amazing: Turning Your Employees Into Owners For Explosive Growth*. Dallas, TX: Matt Holt Books, 2022.

[90] Krugman, Paul. *Arguing with Zombies: Economic, Politics, and the Fight for a Better Future*. New York: W. W. Norton & Company, 2020.

compete intensely to provide consumers with quality products at very low prices. Consumers do nothing but act as free riders reaping the benefits of all this amazing competition. Adam Smith's story of an invisible hand creating intense competition maximizing quality and available quantity while driving down prices to the lowest possible level all plays out flawlessly. It is also a very democratic system. You can buy most anything without any discrimination based on your race, sex, ethnicity, religion, native origin, sexual preference, or transgender status. I love this world of free enterprise. For a very sincere and enthusiastic (but very naïve) endorsement of free enterprise as an almost religious experience read Hennessey (2022).[91]

The free enterprise story performs gloriously and amazingly until it bumps into the real world. The compensation for your effort and ability in employment is systematically and widely discounted if you are a woman or a person of color, not to mention a host of other discriminatory factors. Competition for your labor services is muted by employers forming jobs in blocks that refuse to compete with one another and fix all wages within those employment blocks.

At the aggregate wholesale level, very few markets are truly and fully competitive as documented by Tepper and Hearn (2019).[92] Many industries are dominated by one, two, or a few giant companies that leave little room for competition. Power companies, water delivery companies, telecommunication companies, and many others form natural monopolies. Pharmaceutical companies block competition through patents that they get extended by various means way beyond the period needed to recoup their investment. In the Internet space, network effects reinforce this concentration in social media outlets. Facebook, LinkedIn, and Nextdoor are dominant in their domains. The provision of highways, tunnels, bridges, and various methods of mass transportation lack much, if any, competition. Surprisingly, the beer industry is dominated by two big conglomerates, as is the supply of eyeglasses, where a product made of plastic and glass is personalized for you for over a hundred dollars. If you think that you are living in a world of intense competition, you are being fooled by a multitude of brands owned by a single company which controls the market. If you think you are getting all the news and true insights into the state of free enterprise in our economy and the proper role of government, make sure you are not just listening to or reading media from the same media conglomerate. See Teachout (2020) for more details on the dominance of powerful companies.[93]

As noted above, there are really two invisible hands. One invisible hand is the invisible hand that turns the greed of individuals into benefits for all. It is the invisible hand of competition that spreads the wealth democratically to all consumers. But Adam Smith mentions another tendency, which may be called the second invisible hand. Smith[94] said: "People of the same trade

[91] Hennessey, Matthew. *Visible Hand: A Wealth of Notions on the Miracle of the Market.* New York: Encounter Books, Inc., 2022.

[92] Tepper, Jonathan with Denise Hearn. *The Myth of Capitalism: Monopolies and the Death of Competition.* Hoboken, NJ: John Wiley & Sons, 2019.

[93] Teachout, Zephyr. *Break 'Em Up: Recovering Our Freedom from Big Ag, Big Tech, and Big Money.* New York: St. Martin's Publishing Group, 2020.

[94] Smith, Adam. *An Inquiry Into The Nature and Causes of The Wealth of Nations*. London: W. Strahan and T. Cadell, 1776.

seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the publick, or in some contrivance to raise prices."

This second invisible hand is the invisible hand of economic power. Whereas the first invisible hand works to spread the wealth, the second invisible hand works to concentrate the wealth in a smaller and smaller group of wealthy corporations and individuals. The power of this second invisible hand turns Schumpeter's "creative" destruction into **competition destruction** where smaller upstarts are bought up by their bigger rivals or crushed in an economic downturn. The key to success is not efficiency, but cash on hand. This second invisible hand reinforces the labor market power of firms controlling **blocks of jobs** and crushes the balancing force of unions attempting to counter the monopsony power of the companies controlling those blocks of jobs.

The first invisible hand attempts to match ability, creativity and hard work with the rewards that emanate from those efforts and abilities. The second invisible hand allows CEOs to bring to their board of directors' other friendly CEOs who are eager to raise the compensation of each of their CEO friends. Instead of rewarding the hard work and ingenuity of their employees, these CEOs focus the company's resources to maximize shareholder value.[95]

Instead of offering incentives to the people who can contribute the most to the company by their hard work and expertise, the company rewards those who offer little except some of their otherwise idle cash. Those who work the hardest, create the most value and need to be rewarded for their hard work take second place to the goal of maximizing CEO and shareholder compensation, including with large stock dividends, and driving up stock prices with large stock buy-back purchases. Clearly, the system rewards those with the power to reward themselves. People who are not able to determine their own compensation are allocated little when Adam Smith's second invisible hand of economic power is able to override Adam Smith's first invisible hand of competition. Companies could move from maximizing short-term share price to maximizing productivity and economic growth by Congress requiring that large corporations have at least 40 percent of the corporation's board of directors elected by the rank-and-file employees.

The Role of Government

Most people realize that the free enterprise cannot operate efficiently without any government participation. Absolute freedom without government would mean that the big guy gets what he wants, and everyone else gets whatever the big guy casts aside. The big guy is free to do what he wants, while you are free to do what the big guy tells you to do. Community-wide freedom involves a tradeoff between more freedom for some (the smaller, weaker ones) and less freedom for others (the bigger, stronger ones). It should be no surprise that companies and individuals who are constrained by government regulation and control will complain about their lack of freedom to do whatever they want. This should be recognized as greater freedom for the majority.

People are generally aware of governments' important role in dealing with negative externalities (e.g., air and water pollution) and positive externalities (e.g., subsidized vaccinations for a contagious disease). In these cases, the marginal costs would not be properly matched with

---

[95] Clifford, Steven. *The CEO Pay Machine: How It Trashes America and How to Stop It.* New York: Penguin Random House, 2017.

the marginal benefits without government intervention. The government's role in dealing with the detrimental effects of monopolies, oligopolies, as well as monopsonies and oligopsonies, by taking anti-trust action to overcome higher prices, lower quantity, and lower quality is also generally understood. Free enterprise in unable to deal with common property resource problems that led, for example, to the federal government creating the Eisenhower Interstate Highway System or the Air Traffic Control System (not to mention national defense, patent laws, and laws enforcing private contracts). Those free market advocates seeking pure free enterprise with no, or even very little, government involvement are seeking a religious experience unrelated to the reality of economics in the real world.

What people often fail to understand is the essential role of government in bringing about overall economic efficiency in dealing with distortions in the flow of money. The **money flow paradigm** sees this as the most important role of government. There is a natural tendency for money to flow to the top of the income and wealth scale. We live in a winner-take-all economy where the superstars take home the lion's share of the income and wealth that leads to less, not more, economic efficiency and economic growth. Unlike the monetary paradigm, the money flow paradigm rejects the Loanable Funds Theory and the rigid assumption that general price inflation in the real (Main Street) economy will automatically result from the injection of more money into the New York financial markets because those markets have become more and more separated from the real economy and the number of financial derivatives such as mortgage-backed securities (MBS), credit default swaps (CDS), collateral debt obligations (CDO), and many, many other financial derivatives have absorbed that money. In addition, the increase in the velocity of money within the financial markets as second-by-second trades are replaced by nanosecond-by-nanosecond trades keep money busy and out of the real economy.

The **money flow paradigm** rejects the monetary paradigm's assumption of a constant velocity of money and breaks the tight connection that the monetary paradigm assumes between money injected into the financial markets and prices in the real economy. As the velocity of money has increased in financial markets, the velocity of money has fallen as interest rates have fallen, as the population has aged, and as economic inequality has become more extreme. These factors along with the rather dramatic rise in financial asset prices over time explain how substantial flows of money into the financial markets have not automatically translated into increases in productive capacity in the real economy or in an automatic increase in prices in the real economy. Prices did not rise significantly in the real economy until a combination of supply shortages driven by the COVID-19 pandemic and a direct injection of money into the real economy through stimulus expenditures affected the real economy directly.

The former chair of the University of Chicago economics department, Sherwin Rosen, revealed the natural tendency for greater and greater economic inequality over time many years ago in his "Superstars" paper.[96] The real reason that the superstar makes so much more money than the runner up placing second is not any enormous difference in the superstar's marginal contribution but in our limited mental energy in being able to process and keep track of so many players in so many realms. According to the pure efficient market theory of free enterprise, every

[96] Rosen, Sherwin. "The Economics of Superstars." *The American Economic Review*, 71(5), 845-858, December 1981.

transaction should at least on average represent a complete analysis of all the possible contributions of all the possible players. The idea that people are paid according to the value of their marginal product covers over and hides the distinction between *perceived* marginal product and *actual* marginal product in many cases in the production of goods and services.

But as Dan Ariely and many others have pointed out, this is impossible in the face of limitations of the human brain as revealed in actual behavior in the real world.[97] Contagion effects and irrational exuberance are well-known to have distorted markets for extended periods. But how can we correct the free enterprise system of this major systematic defect? The key to answering this question is in realizing that the system will ultimately break down unless the government plays the essential role of predistribution and redistribution of income and wealth. The special tax loopholes for the wealthy must go (predistribution) and the wealthy must pay higher taxes (redistribution) if we are to avoid the ultimate collapse of the free enterprise system. Government must be recognized, not as an outside force interfering with free enterprise, but as the very heart of free enterprise that is central to ensuring its longevity. We should not forget that the most important transformation in bringing about predistribution in compensation is requiring employee representation on corporate boards. This reduces the need for redistribution and for disruptive strikes. Strikes are like wars in that avoiding them to get to the same conclusion saves a lot of resources that go into a battle that should be make unnecessary.

The Role of the Federal Reserve Bank

In addition to maintaining financial stability in the banking system, the Federal Reserve is tasked with controlling inflation and keeping unemployment to a minimum. In 1913 this responsibility was transferred to the Federal Reserve, because the politicians in the Congress realized that their own politically motivated interference in the money supply was hard to control. Just printing up lots of money to keep voters happy to avoid increasing taxes was too much of a temptation. Giving the Federal Reserve's responsibility for inflation and unemployment would also give Congress someone else to blame if unemployment rose as the Federal Reserve tightened the money supply to slow price increases.

The Federal Reserve's **cost-of-borrowing tool** employed by manipulating interest rates in New York financial markets works as long as demand is strong and supply relatively weak. When interest rates are relatively high, lowering them can effectively stimulate business activity. However, as John Maynard Keynes and others have pointed out, once nominal interest rates fall below the rate of inflation making real interest rates negative, this **cost-of-borrowing tool** no longer works. Lowering interest rates in that environment is like stepping on the gas when your car's transmission is in neutral. The gears go around and around, but the car goes nowhere.

On the other hand, when excessive inflation is the problem, raising interest rates in New York financial markets reins in business by making it harder to afford a loan to add another line of production, and slows demand for goods and services by bringing about cutbacks in hours worked and increased layoffs and raising the cost of loans, especially for housing, and cars and trucks. When enough workers have lost their jobs, consumer demand falls sufficiently to halt excessive price increases. This brutal approach is not necessary. What the Federal Reserve is

[97] Ariely, Dan. *Predictably Irrational: The Hidden Forces That Shape Our Decisions*. New York: HarperCollins, 2018.

missing is a **return-on-savings tool** to stop inflation when the economy is overheated and to stimulate consumer demand in an economic downturn.

A New Return-on-Savings Tool for the Federal Reserve Under the Public Banking Act

It is time to face the fact that our free enterprise system does not automatically bring aggregate demand and aggregate supply into balance in a reasonable amount of time without government assistance. While in theory and in the long run such a balance between aggregate demand and aggregate supply might be achieved, as John Maynard Keynes famously said: "In the long run, we are all dead." More realistically there are as many forces of disequilibrium generating positive feedback loops as there as equilibrium forces with their negative feedback loops moving us toward stable prices that match the quantity demanded with the quantity supplied. Financial markets are notorious for their irrational exuberance in driving market prices upward and at other times for producing fear and panic in creating downward deflationary asset price spirals.

Don't repeat our historically dysfunctional approach to stopping price inflation. It unnecessarily throws many workers out of work and cuts the hours of many more. Raising interest rates in New York financial markets suppresses supply for seasonal and cyclical businesses that depend on short term liquidity to maintain and establish inventory and cash flow. It suppresses business.

But inflation occurs when too much demand for goods and services is chasing too little supply. The financial markets exist to offer liquidity to businesses to maintain or expand the supply of goods and services. Countering the rapidly rising prices caused by current supply shortages requires encouraging supply. But the Federal Reserve does the opposite of what is needed.

Sure, suppressing business to lay off workers to reduce demand will work if you slam on the brakes hard enough. But trashing our economy to stop inflation is not necessary. What the Fed is missing is a **return-on-savings tool** to ratchet down demand when markets for goods and services become overheated. But House of Representatives bill, H.R.8721, Public Banking Act submitted last year by Rep. Tlaib, Rep. Orcasio-Cortez, and seven other representatives could be easily modified to provide the Federal Reserve with a **return-on-savings tool** to curb excessive inflation without throwing our economy into a recession.

Remember how we successfully suppressed inflation during World War I and World War II with a vigorous and aggressive promotion of war bonds to counter the sudden drop in the supply of consumer goods as our men in their most productive years were sent overseas to fight in Europe and in Asia and as production of consumer goods was replaced with the production of tanks, airplanes, and warships for combat overseas. The sudden drop in the supply of consumer goods and services required an equally sudden drop in the demand for consumer goods and services. War bonds played an important role in carrying out this demanding policy goal.

To enable a more stable economy under much tighter control by the Federal Reserve to keep prices stable while maximizing employment, productivity, and growth, we need to start by automatically giving a Social Security number and a central bank digital currency (CBDC) "FedAccount" with $1,000 in it to each newborn baby. Everyone who already has a Social Security number would also be assigned a "FedAccount" (CBDC) with $1,000 in it. That initial $1,000 may not be withdrawn by the account holder until age 70, but the interest on that money and any

additional money and interest may be withdrawn at any time by the account holder. The interest earned in these accounts will be nontaxable and all tax refunds will be placed in these accounts.

Anyone in the world with US dollars could have a “FedAccount” (CBDC) created, but only USA persons with a Social Security number could earn a positive interest rate and only on amounts up to $10,000 with no minimum requirement to earn interest so anyone with a Social Security number could invest any amount up to $10,000 and earn interest on any such money that they deposited in their “FedAccount” (CBDC). Persons without a Social Security number and amounts above $10,000 would earn a negative interest rate, which would, in effect, serve as a fee for benefiting from a safe and secure place to store US dollars. Unlike US Treasury 30-year Series I bonds, money in these CBDC savings accounts (other than the initial $1,000) could be withdrawn at time without penalty.

These “FedAccounts” (CBDC) would be vigorously and aggressively promoted in targeting people with the highest marginal propensities to consume, which are the Americans with the least wealth and income. For example, all residents of lower income neighborhoods could receive postcards explaining how to access and benefit from their “FedAccounts” (CBDC). Advertising at football games, rock concerts, and celebrity events could promote the benefits of using your “FedAccount” (CBDC). The goal is to target the Americans with the least amount of money and not the already wealthy, who may not bother to move any of their enormous wealth into such small accounts.

A long alphanumeric identity number would be assigned to each account so that the actual name and other identifying information belonging to the account holder can be separated from the transaction history of that account holder. If law enforcement finds account activity suspicious, then authorities would need to present their evidence before a judge to get the authorization to access the account holder’s name and other identifying information, which would otherwise be withheld. This would protect the privacy of the account holder from inappropriate and excessive government interference as well as to some extent from potential predators and scammers.

These “FedAccounts” (CBDC) could be accessed through any bank or nonbank intermediary so that financial innovations and creative applications might be encouraged while allowing lower-income Americans (who have much higher marginal propensities to consume than wealthier people) to access their accounts through any post office as was done under the Postal Savings Act of 1910. When facing excessive inflation, consumer demand could be tamped down and supply encouraged by recreating the postal savings accounts that existed in the United States from 1910 to 1966 and offering high interest rates in those accounts on balances up to some specified limit (e.g., $10,000), while leaving the rates in the New York financial markets relatively low to stimulate, not suppress, supply.

Higher interest rates will encourage savings. Saving more and spending less is obviously what is needed when too much money is chasing too few goods. If we offer high enough interest rates in CBDC “FedAccounts” bank accounts with access through bank and nonbank intermediaries for most people with lower-income people allowed access through our over 30,000 post offices around the country, excess demand can be reduced enough to stop inflation without forcing the economy into an unnecessary recession. This approach withdraws money from the economy by offering a high return on savings, not by taxation. People will still be able to purchase their necessities but will be motivated to delay or cut back on luxuries until the economy cools off and CBDC interest rates return to normal. With reasonable limits on the savings and loan amounts

restricted to one account per Social Security number with interest earned on no more than $10,000 with negative interest rates on any additional money above $10,000 and on accounts without a Social Security number, these Federal Reserve CBDC bank accounts can avoid interfering with the normal functioning of the commercial banking industry.

When the opposite conditions develop with low demand, high unemployment, and the start of a deflationary cycle, CBDC accounts could offer small loans at relatively low interest rates to individuals and small businesses. Such a loan program has already been proposed in bills formulated in both the Senate and the House in the last few years. These bills are aimed at helping people who were living paycheck to paycheck and suddenly faced job loss, a medical emergency, an automobile accident, or some other event that forced them to go to loan sharks, pawn shops, payday loan dealers, or "cash now" providers who typically charge exorbitant interest rates.

Postal bank accounts can reach the unbanked and underbanked, and generally those with the highest marginal propensities to consume. Directly targeting demand through postal bank accounts will be much more cost effective in offering more bang for the buck, using less money and less disruption of our economy than current Federal Reserve stabilization strategies.

Concluding Remarks

The Federal Reserve uses a **cost-of-borrowing tool** to stop inflation by raising interest rates in financial markets causing businesses that rely on loans to cover initial costs each year on farms and retail establishments and pay back those loans only after the harvest comes in or the holiday season finally covers costs to produce a profit, to cut back employee working hours, lay off workers and close outlets. Countering inflation by cutting back supply to reduce demand makes no sense when a **return-on-savings tool** can be created to stop inflation directly and more effectively.

This research is based on the author’s forthcoming book *The Money Flow Paradigm*, which examines the diversion of the flow of money in recent decades from Main Street to Wall Street that has resulted in a buildup of both private debt and public debt without which the people on Main Street would be unable to buy back the value of the goods and services they are able to produce at full employment, and examines a way of achieving much tighter and more immediate control of overall consumer demand by implementing a US dollar based central bank digital currency (CBDC) through individual Federal Reserve bank accounts called “FedAccounts” for every American. A key aspect of the money flow paradigm is the sharp distinction made between financial capital investments in the financial economy and real capital in the form of physical and intellectual capital investments in the real economy. The Loanable Funds Theory and previous economic paradigms failed to make this distinction by assuming that there exists some interest rate that clears the market in putting all disposable income deposits to work as real investments in the production of goods and services. Previous paradigms assumed that the economy has an inherent tendency toward achieving equilibrium while the money flow paradigm sees the economy as in a perpetual state of disequilibrium where the government must constantly adjust its fiscal and monetary policies to avoid periods of extreme instability to keep the economy on the path of optimal economic productivity and growth.

This is achieved by modifying ***The Public Banking Act*** as recently proposed in Congress to create CBDC Federal Reserve smartphone bank accounts. Just as ATMs can be used by competing banks for a fee, private banks and nonbank intermediaries could be offered a fee to host these Federal Reserve bank “FedAccounts” with alternative access through any post office for individuals with IRS-certified incomes below $50,000 who prefer physical rather than direct online computer and smartphone digital banking.

To focus these accounts on consumers with a high marginal propensity to consume and to avoid competing with commercial banks for large accounts, interest-earning accounts could be restricted to one account per Social Security number and interest could be earned only on some maximum amount (e.g., $10,000 or less). Initially, $1,000 would be put into each account, which could not be withdrawn until after age 70. Newborn babies would automatically be assigned a Social Security number and given a “FedAccount” with $1,000 in it. Any and all tax refunds would be deposited into these “FedAccounts”, and no tax would be applied to the interest earned in these accounts. Account holders could add additional money until the total in their account reached the maximum amount. Money above the base amount would be subject to a negative interest rate. Any money above the initial $1,000 could be withdrawn at any time along with interest earned. Post offices could also allow lower-income Americans to access their “FedAccounts” which will be especially important for those without internet access. A fee (negative interest rate) would be applied to accounts without a Social Security number, but any entity in the world with US dollars to deposit would be welcome to establish a “FedAccount” with the US Federal Reserve Bank.

Whenever excessive inflation threatened, the Federal Reserve could set **high interest rates** for the accounts with an associated Social Security number, increase the annual **contribution limit** allowed for that year, and increase the **base amount** to encourage savings and discourage consumer demand, while keeping interest rates somewhat lower in the financial markets to encourage an increase in the supply of goods and services to tightly control inflation.

In the face of an economic downturn, the interest rate on savings could be lowered and the Federal Reserve could inject money into these individual Federal Reserve bank accounts promoting cash withdrawals and spending to stimulate consumer demand as necessary to restore the economy to full employment. Consistent with ***The Public Banking Act*** as recently introduced in Congress, the Federal Reserve bank would be authorized to offer small loans to individuals and small businesses in the United States to further encourage consumer demand and business activity and employment.

Estimating changes in the velocity of money in response to the aging of our population and the increasing economic inequality and calibrating the changes in the amount of money allowed to earn interest in a CBDC “FedAccount” and the appropriate changes in the return-to-savings interest rate in these accounts to have the needed impact on reducing excessive inflation or increasing consumer demand in the face of an economic downturn are all yet to be determined. This book has provided the basic **money flow paradigm** conceptual framework and rationale to motivate econometric research into estimating these and other related parameters to guide future Federal Reserve monetary policy in using CBDC “FedAccounts” to enhance economic stability and promote greater financial inclusion.

INDEX

Adaptive Markets by Andrew W. Lo.........16, 100
Adobe...37
Africa 18, 22, 23, 25, 46, 69
Age of Oversupply by Daniel Alpert.....18, 69, 78
Akerlof, George A..........................16, 94, 96, 98
Alexa 20
Alipay...5
Alpert, Daniel........................... 13, 18, 69, 78, 94
Amazon 20, 44, 55, 56, 94
American Banker...102
American Economic Review 33, 88, 99, 101
American Prospect..99
Anthill Economics
by Nathanial Gronewold....................24, 99
Antoinette, Marie 35
AOC Rep.Alexandria Ocasio-Cortez..............102
Apple 2, 5, 37, 57
arbitrage 10, 26, 48, 50
Arguing with Zombies
by Paul Krugman............................85, 100
Ariely, Dan...16, 89, 98
Atkins, Ralph 98
Aurora Innovation, Inc. (AUR)..........................69
Automatic Boost to CommunitiesAct........76, 102
automatic stabilizer 1, 2, 6, 60, 75, 94
Avila University.................................76, 81, 100
Bancor 46
Bank Credit Analyst.................................16, 101
Bank of England......................................29, 100
Baradaran, Mehrsa 77, 98
Barkai, Simcha 42, 54, 56, 98
Barron's..100
Benes, Jaromir 75, 98
Berentsen, Aleksander.....................................98
birth rates 7, 18-28, 66
Bitcoin..5, 34, 62, 68
Black Swan, The
by Nassim Nicholas Taleb.............10, 48, 102
blockchain 1, 3
Bloomberg..100
Bobos in Paradise
by David Brooks 53, 98
Bolhuis, Marijin A. 18, 98
Break 'Em Up
by Zephyr Teachout 43, 86, 102
Brett, Jason 98
Bretton Woods 3, 32
Bridgewater Associates..............................16, 99
Brill, Steven 54, 98
Brooks, David 53, 98
Brown, Senator Sherrod............................68, 98
Bureau of Labor Statistics..........................18, 60
Burns & McDonnell Engineering......................37
Business Insider...102
Businessweek
Bloomberg..100
Can Democracy Survive Global
Capitalism by Robert Kuttner...............46, 100
Canada 44
Capital in the 21st Century
by Thomas Piketty 17, 64, 101
capitalism ..19, 21, 34, 37, 41, 44, 53, 82, 84, 99, 100, 101
Carlyle,Thomas...22
CEO Pay Machine
by Steven Clifford............................65, 87, 98
CEPR 101
certificates of deposit (CDs).6, 36, 57, 64, 65, 81
Chemonics International Inc. 38
Chicago Law Review 100, 101
Chicago Plan...5, 75, 98
China...2, 4, 5, 16, 22, 23, 24, 37, 39, 40, 42, 43, 44, 59, 61, 64, 66, 76, 79, 80
Citizen Capitalism
by Lynn A. Stout et al...........................21, 102
Clarke, Rep. Evette...76
Clifford, Steven 65, 87, 98
CNBC...19, 99
CNN Business.......................................19, 101
collateralized debt obligations(CDO) 64
Columbia Business Law Review....................101
companies controlling blocks of jobs 38, 87
Conant, James Bryant 53
conservative..................5. 25. 31, 32, 37, 72, 79
consumer price index (CPI) 18, 23, 28, 59, 60
Contemporary Economic Policy...............17, 101
Cooper, George 12, 16, 98
Cornell Law Review 100
corporate board membership..31, 35, 38, 65, 68, 70, 83, 89
Corruption in America
by Zephyr Teachout 43, 102
cost-of-borrowing tool ...1, 2, 7, 9, 11, 67, 74, 76, 80, 89, 92
COVID. 13, 14, 16-19, 31, 32, 42, 45, 46, 53, 59, 64-67, 74, 76, 86
Cramer, Judd N. L....................................18, 98
Crawford, John............................73, 74, 98, 101
Create Amazing
by Greg Graves.........................35, 37, 85, 99
credit default swaps (CDS) 64, 88
Curse of Cash
by Kenneth Rogoff 101
Dalio, Ray 16, 96, 99

DarwinianNatural Selection Paradox 24
Dayen, Dave 99
Deficit Myth
by Stephanie Kelton 16, 67, 100
Demos,Telis 99
Desan, Christine.......................................95, 99
Diem 5
Dogecoin 5, 68
Dutch Disease 23, 43
Dynan, Karen E. 99
Echo Dot..20
Economist
The 23, 43, 99
Edelberg, Wendy..99
Eisenhower, President Dwight D. 40, 49, 88
Engine of Inequality
by Karen Petrou 12, 54, 63, 66, 74, 101
Entrepreneurial State
by Mariana Mazzucato 39, 101
Ethereum 5, 34, 68
Euro Zone...47, 50
European Economic Review 99
Exact Match Study 3, 100
excessive public debt 66
Facebook...................................5, 19, 20, 57, 86
farmers 15, 59, 73, 84
Federal Deposit Insurance
Corporation (FDIC)................................81, 99
Federal Reserve Act of 1913 ....47, 51
Federal Reserve Bank of St. Louis 50, 52, 98
Federal Reserve Board 67, 99
Financial Times 98
Fisher, Irving 5, 75
Forbes 31, 65, 71, 98
Franck, Thomas 19, 99
free enterprise .. 5, 16, 17, 21, 29, 31, 35, 47, 59,
63, 68, 82, 83, 84, 85, 86, 87, 105
free rider problem......................................39, 86
Friedman, Milton 7, 11, 28, 50, 99
Funke, Manuel 99
Gattini, Luca 52, 99
George Washington Law Review.............74, 101
Germany...................... 23, 24, 31, 33, 38, 49, 68
Ghana...23
GI Bill 49, 77
Gillibrand, Senator Kirsten 2, 76, 99
gold standard 3, 5, 32
Google Pay..2, 5
Google Workplace..19
Graham, Frank D. 99
Graves, Greg.................................35, 37, 85, 99
Greenspan, Alan 32, 35
Greenwood, Robin 99
Gronewold, Nathanial................................24, 99
Gross Domestic Product - GDP 24, 29-34, 45
Gruen, Nick 99
Hanson, Samuel G..99
Harvard University 17, 43, 77, 98, 101, 102
Hearn, Denise 36, 43, 55, 86, 96, 102
Henderson, Rebecca 85, 96, 99
Hennessey, Matthew 86, 97, 100
Hockett, Robert C. 100
How the Other Half Banks
by Mehrsa Baradaran 77, 98
I-bonds 6, 14-15
India 20
Infrastructure Investment and Jobs
Act of 2021..40
inheritance taxes...71
innovation.............................2, 40, 57, 69-70, 91
insider trading 36, 51
intermediaries 1, 2, 29, 75, 91-92, 100
International Monetary Fund................46, 75, 98
international trade 41, 43, 46, 50
Interstate Highway System 40, 49, 88
invisible hand 43, 53-55, 80, 84, 86, 87
irrational exuberance 15, 89, 90
Italy 23, 24
Jakab, Zoltan 29, 100
Japan 3,18, 23, 24, 29, 33, 42, 46, 49
Journal of Banking and Financial
Economics 52, 99
Journal of Finance 42, 54, 98, 99
Journal of Macroeconomics.....................46, 100
Kahneman, Daniel 16, 73, 100
Kelton, Stephanie..............................16, 67, 100
Keynes, John Maynard..........46, 48, 55, 90, 100
Klein, Matthew C. 100
Kliss, Beth 3, 100
Krugman, Paul 85, 100
Kumhof, Michael 29, 46, 59, 75, 98, 100
Kuttner, Robert..................................46, 94, 100
Laxton, Douglas.....................................46, 100
Leigh, Daniel 46, 100
Levine, Matt 100
Levitin, Adam J. 100
lights-out manufacturing 20
LinkedIn 19, 86
liquidity 4, 51, 68, 73, 74, 90
lithium battery..21
Lo, Andrew W. 16, 94, 100
loan sharks... 2, 77, 92
Loanable Funds 29, 88, 92, 100
Locke, John......................36, 51, 56, 64, 83, 100
Long Beach, California 44
Long Term Capital Management 10, 48
Look, Carolynn...100
Lump of Labor Fallacy 44, 82
Making Money
by Christine Desan................................98, 99
Malthus, Thomas 22
marginal cost.................. 11, 19, 20, 87, 97, 101

marginal propensity to consume 1, 6, 8, 9, 13-19, 23-33, 46, 50, 62, 67-74, 78, 91
Market for 'Lemons'
by George A. Akerlof 16, 94, 96, 98
Marsh, Alastair 100
Marsh, Lawrence C. 76, 81, 100
maximizing shareholder value 11, 31-38, 54, 65, 69, 80-87
Mazzucato, Mariana 39, 70, 101
McDonald's restaurant 65
Menand, Lev 73, 74, 101
Merton, Robert 48
Mettler, Suzanne 101
Minsky, Hyman P. 15, 16, 101
Misbehaving
by Richard H. Thaler 16, 102
Mission Economy
by Mariana Mazzucato 39, 101
MIT Technology Review................................101
Modern Monetary Theory (MMT) .16, 33, 67, 100
money flow paradigm ...7-19, 25-31, 58-68, 85-86, 90-96
Money, Blood and Revolution
by George Cooper.................................12, 98
Morrow, Allison..19, 101
mortgage 1, 8, 19, 49, 64, 84, 88
Myth of Capitalism, The
by J. Tepper with D. Hearn 36, 43, 55, 86,102
National Bureau of Economic Research................................18, 62, 98, 102
National Institutes of Health 31, 39, 40, 70, 71
National Science Foundation 31, 39, 70, 71
Nature and Causes of The Wealth of Nations, An Inquiry Into the........43, 86, 101
negative interest rate....................1, 5, 74, 91, 93
Nesta..99
Netherlands 24, 43
New Deal..47
New Republic, The..99
Niepelt, Dirk...101
Nigeria 23
Nixon, President Richard 5, 32
non-accelerating inflation rate of unemployment (NAIRU) 17
nonbank intermediaries................ 1-5, 75, 91, 92
Notre Dame Law Review 98
Notre Dame, University of 1, 22, 98
Omarova, Saule T. 100
OPEC oil cartel 34
Optimal Money Flow
by Lawrence C. Marsh 76, 81, 100
Optimum Quantity of Money
by Milton Friedman................................28, 99
Orcasio-Cortez, Rep. Alexandria 90
Orcutt, Mike 101
Origin of Financial Crises
by George Cooper 16, 98
Oxford University 99
Palumbo, Michael G. 99
Panel Study of Income Dynamics......................3
patents for inventions...................... 39-40, 84-88
pawn shops 2, 77, 92
payday loans 2, 92
PayPal..2, 5
Petrou, Karen...................12, 54, 63, 66, 74, 101
Pew Research...49
pharmaceutical...................................39, 40, 86
Picasso paintings 71
Piketty, Thomas 17, 64, 101
Pill, Huw 52, 99
population aging...99
population growth rate 22, 23
Portugal...23
post office............................... 1-3, 75-78, 91-93
Postal Banking Act.......................2, 7, 76, 77, 99
Postal Savings Act 1, 2, 75, 76, 77, 91
Predictably Irrational
by Dan Ariely...................................16, 89, 98
prefer to use personal consumption expenditure (PCE) 18, 59
Princeton University 16, 53, 100, 101
Principles for Navigating Big Debt Crises by Ray Dalio 16, 96, 99
private investment..........................38, 39, 49, 61
Project Syndicate..101
public investment 33, 39, 40, 49
quantitative easing (QE) 29, 59
Quarterly Journal of Economics.................16, 98
Rand, Ayn 32
recession. 1-2, 6-11, 17-21, 33-38, 52-67, 73-80, 90-91, 100
Reimagining Capitalism in a World on Fire by Rebecca Henderson.............85, 99
renminbi 41, 42
Republican 12
return-on-savings tool ... 1, 2, 6-7, 11, 21, 67, 74-80, 89-92
Ricks, Morgan 73, 74, 101
Rifkin, Jeremy 19, 20, 101
Robinhood (HOOD) 64
Rogoff, Kenneth 101
Rosen, Sherwin.................................33, 88, 101
Rule of 72...58
Russia 4, 17, 19, 23, 24
Saez, Emmanuel.....................................17, 101
Safe Harbor Rule 36
Sam's Club..69
Sammons Enterprises 37
Sanders, Senator Bernie 77, 102
Say's Law................................11, 22, 25, 26, 49

Schar, Fabian ... 98
Scheuren, Frederick J. ... 3, 100
Scholes, Myron ... 48
school funding through property
  taxes ... 69, 85
Schuknecht, Ludger ... 52, 99
Schularick, Moritz ... 99
second invisible hand ... 43, 55, 80, 86, 87
secular stagnation ... 52, 53
seigniorage ... 3, 4, 5, 41, 45
Shareholder Value Myth, The
  by Lynn A. Stout ... 85, 102
Simons, Henry ... 5, 75
Siri ... 20
smartphone ... 2-4, 10, 18, 60, 76-78, 92
Smith, Adam ... 5, 36, 43, 53-55, 80, 84-87, 101
social media ... 20, 86
Social Security . 1-9, 21, 24, 32-38, 55-59, 72-76, 90-93, 100
Social Security Bulletin ... 3, 100
Soviet Union ... 61
Spain ... 23
spillover effects ... 49
Spross, Jeff ... 102
Stabilizing an Unstable Market
  by Hyman P. Minsky ... 16, 101
stagflation ... 6, 52, 53
Stein, Jeremy C. ... 99
Stella ... 7, 60
stochastic dynamic general
  equilibrium (SDGE) models ... 76
Stock Buyback Accountability Act ... 68, 98
stock buybacks ... 50, 51, 54, 63, 65, 68, 70
stock dividends .. 21, 36-37, 54, 58, 63-64, 68-72, 84, 87
stock market as a gambling casino 37, 50, 64, 68
stop inflation 1-2, 7-8, 13-15, 22, 59, 74-75, 89-92
Stout, Lynn A. ... 21, 85, 102
Submerged State
  by Suzanne Mettler ... 101
SUERF Policy Notes ... 102
Summers, Lawrence H. ... 18, 98
supply shortages 13-14, 17, 61, 66-67, 74, 78, 88, 90
Supreme Court's Citizens United
  Ruling ... 32, 36, 43, 102
sweat equity ... 36, 51, 56, 64, 84
Swinerton Builders ... 37
system dynamics models ... 7, 60, 76
Tailspin
  by Steven Brill ... 54, 98
Taleb, Nassim Nicholas ... 10, 48, 102
Target ... 44
tariffs ... 34, 44, 45, 46, 52, 55
tax loopholes ... 53, 81, 89
Teachout, Zephyr ... 43, 86, 102
Tepper, Jonathan ... 36, 43, 55, 86, 102
Thaler, Richard H. ... 16, 102
Thinking Fast and Slow
  by Daniel Kahneman ... 16, 100
Tlaib, Rep. Rashida ... 76, 90, 102,
Tobin, James ... 102
Tract on Monetary Reform
  by John Maynard Keynes ... 48, 100
Trebesch, Christoph ... 99
Tucker, Sir Paul ... 102
Two Treatises of Government
  by John Locke ... 51, 83, 100
U.S. Treasury Direct ... 14
Ukraine ... 17, 19
unbanked ... 75, 77, 92
unemployment 3, 5, 10, 13-17, 25-26, 31-32, 38, 40, 46, 51, 59, 68, 77, 89, 91
Unions ... 26, 38, 43, 49, 57, 80, 84, 87
United States Senate ... 2, 68, 92, 98
University of Chicago ... 75, 88, 100, 101
University of Michigan ... 3
US Census Bureau ... 22
US Postal Service ... 102
US Treasury Series-I bonds ... 6, 14, 91
Value of Everything
  by Mariana Mazzucato ... 39, 101
Vanderbilt University ... 102
velocity of money 7, 10-11, 14, 19, 21, 26, 28, 32, 33, 44, 50, 54, 65, 81, 88, 93
Venmo ... 2, 5
Vensim ... 7
Visible Hand
  by Matthew Hennessey ... 86, 100
Volker, Paul ... 52
Vox ... 101, 102
Vulnerable Populations Act ... 77, 102
Wack, Kevin ... 102
Wall Street Journal ... 99
Walmart ... 44
War Bonds ... 1, 2, 6, 49, 90
Waters, Rep. Maxine ... 76, 102
WeChat Pay ... 5
Week, The ... 102
Weir, Melanie ... 102
Wolf, Amy ... 102
Wolff, Edward N. ... 62, 102
World War II 1, 2, 6, 8, 23, 28, 33, 38, 47-51, 57, 61, 73, 77, 83, 90
Wyden, Senator Ron ... 68, 98
Yale University ... 53, 75
Yglesias, Matthew ... 102
YouTube ... 12, 100
yuan ... 4, 41, 42, 63
Zero Marginal Cost Society
  by Jeremy Rifkin ... 11, 19, 20, 101
Zuckerberg, Mark ... 30, 57, 98

Bibliography / References

Akerlof, George A. "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism." *Quarterly Journal of Economics*, 84(3), pp. 488-500. 1970.

Alpert, Daniel. *The Age of Oversupply: Overcoming the Greatest Challenge to the Global Economy*. New York: Penguin Group, 2013. https://www.hoopladigital.com/title/11399418

Ariely, Dan. *Predictably Irrational: The Hidden Forces That Shape Our Decisions*. New York: HarperCollins Publishing. 2008. https://www.hoopladigital.com/title/11586501

Atkins, Ralph. "Swiss Voters Reject 'Sovereign Money' Initiative," *Financial Times*, June 10, 2018. https://www.ft.com/content/686e0342-6c97-11e8-852d-d8b934ff5ffa

Baradaran, Mehrsa. "Banking and the Social Contract," *Notre Dame Law Review*, vol. 89, issue 3, article 6, pages 1283-1342, 2014. https://scholarship.law.nd.edu/ndlr/vol89/iss3/6/

Baradaran, Mehrsa. *How the Other Half Banks*, Cambridge, MA: Harvard University Press, 2015. https://www.hoopladigital.com/title/11707111

Barkai, Simcha. "Declining Labor and Capital Shares." *The Journal of Finance*, 75(5), pp. 2421-2463. 2020. https://doi.org/10.1111/jofi.12909

Benes, Jaromir; Kumhof, Michael. "The Chicago Plan Revisited." *International Monetary Fund*, IMF-WP/12/202, revised 2013. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2169748

Berentsen, Aleksander; Fabian Schar, "The Case for Central Bank Electronic Money and the Non-case for Central Bank Cryptocurrencies," *Federal Reserve Bank of St. Louis Review*, vol.100, no. 2, pp.97-106, Second Quarter 2018.

Bolhuis, Marijn A.; Judd N. L. Cramer; and Lawrence H. Summers. "Comparing Past and Present Inflation." *National Bureau of Economic Research* paper 30116, June 2022. **DOI** 10.3386/w30116

Brett, Jason. "How A US Senator's Digital Dollar Plan Offers Mark Zuckerberg His Crypto Comeuppance," *Forbes*, March 27, 2020.

Brill, Steven. *Tailspin: The People and Forces Behind America's Fifty-Year Fall -- And Those Trying to Reverse It.* New York: Alfred F. Knopf, 2018.

Brooks, David. *Bobos in Paradise*. New York: Simon and Schuster, 2000.

Brown, Sherrod (Senator, D-Ohio) and Ron Wyden (Senator, D-Oregon). *The Stock Buyback Accountability Act.* Washington, DC: The United States Senate, 2021.

Clifford, Steven. *The CEO Pay Machine: How It Trashes America and How to Stop It.* New York: Penguin Random House, 2017.

Cooper, George. *Money, Blood and Revolution*. UK: Harriman House, Ltd., 2014.

Cooper, George. *The Origin of Financial Crises: Central Banks, Credit Bubbles and the Efficient Market Fallacy*. New York: Vintage Books. 2008.

Crawford, John. "Making Money Safe," Notre Dame Law Review Reflection, vol.95, issue 1, article 1, pp.1-14, November 22, 2019. https://scholarship.law.nd.edu/ndlr_online/vol95/iss1/1/

Dalio, Ray. *Principles for Navigating Big Debt Crises.* Westport, CT: Bridgewater Associates. 2018.

Demos, Telis. "Citigroup to Again Be a Nationwide Bank, but in Digital Form," *Wall Street Journal*, March 25, 2018.

Desan, Christine. *Making Money: Coin, Currency, and the Coming of Capitalism*. Oxford, UK: Oxford University Press, 2014.

Dayen, Dave. "Building the People's Banks," *American Prospect*, Jan. 16 2020. https://prospect.org/economy/building-the-people%E2%80%99s-banks/

Dayen, Dave. "Give Everyone Government Bank Accounts," *The New Republic*, June 13, 2018. https://newrepublic.com/article/148998/give-everyone-government-bank-accounts

Dynan, Karen E., Wendy Edelberg, and Michael G. Palumbo. *The Effects of Population Aging on the Relationship between Aggregate Consumption, Saving, and Income*, Division of Research and Statistics, Federal Reserve Board, Washington, DC, 2008. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.209.411&rep=rep1&type=pdf

Economist, The. "What to do if the usual weapons fail," *The Economist*, October 11, 2018.

Federal Deposit Insurance Corporation. "How American Banks: Household Use of Banking and Financial Services," October 19, 2020. https://www.fdic.gov/analysis/household-survey/# 5.4% unb. 7.1mill.hous

Franck, Thomas." GOP report shows inflation hurts middle-class Americans the most, blames Democrats," *CNBC*, November 15, 2021.

Friedman, Milton. *The Optimum Quantity of Money*. New Brunswick, NJ: Aldine Transaction, 2007.

Funke, Manuel; Moritz Schularick; Christoph Trebesch. "Going to extremes: Politics after financial crises, 1870–2014," *European Economic Review*, vol.88, issue C, pp.227-260, 2016.

Gattini, Luca; Huw Pill; Ludger Schuknecht. "A Global Perspective on Inflation and Propagation Channels," *Journal of Banking and Financial Economics*, vol. 1, no. 3, pp. 50-76, 2015.

Gillibrand, Kirsten (Senator, D-New York). *The Postal Banking Act*, S.2755, 115th Congress, 2018.

Graham, Frank D. "Partial Reserve Money and the 100 Per Cent Proposal," *American Economic Review*, vol.26, no.3, pp.428-440, September 1936. https://www.jstor.org/stable/1802723?refreqid=excelsior%3Abbd020cc7bf353c63b99fcd038cefacb

Graves, Greg. *Create Amazing: Turning Your Employees into Owners for Explosive Growth*. Dallas, TX: Matt Holt Books, 2022. https://www.hoopladigital.com/title/14001311

Greenwood, Robin; Samuel G. Hanson; Jeremy C. Stein. "A Comparative-Advantage Approach to Government Debt Maturity," *Journal of Finance*, vol.70, no.4, pp. 1683-1722, August 2015.

Gronewold, Nathanial. *Anthill Economics: Animal Ecosystems and the Human Economy*. Lanham, Maryland: Prometheus Books, 2021. https://www.hoopladigital.com/title/13921725

Gruen, Nick. "Central Banking for All: A Modest Proposal for Radical Change," *Nesta*, 2014. https://www.nesta.org.uk/report/central-banking-for-all-a-modest-case-for-radical-reform/

Henderson, Rebecca. *Reimagining Capitalism in a World on Fire*. New York: Hachette Book Group, 2020.

Hennessey, Matthew. *Visible Hand: A Wealth of Notions on the Miracle of the Market.* New York: Encounter Books, Inc., 2022.

Hockett, Robert C.; Saule T. Omarova. "The Finance Franchise," *Cornell Law Review*, vol.102, pp.1143-1218, 2017. https://scholarship.law.cornell.edu/cgi/viewcontent.cgi?article=2660&context=facpub

Jakab, Zoltan and Michael Kumhof. "Banks Are Not Intermediaries of Loanable Funds – And Why This Matters," *Bank of England Staff Working Paper*, No. 529, May 2015. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2612050

Kahneman, Daniel. *Thinking Fast and Slow.* New York: Farrar, Straus and Giroux. 2011.

Kelton, Stephanie. *The Deficit Myth: Modern Monetary Theory and the Birth of the People's Economy.* New York: Hachette Book Group, Inc. 2020.

Keynes, John Maynard. *A Tract on Monetary Reform*. London: Macmillan and Company, LTD., 1923.

Klein, Matthew C. "Banking with the Federal Reserve," *Barron's*, June 28, 2018. https://www.barrons.com/articles/banking-with-the-federal-reserve1530198578

Kliss, Beth, and Frederick J. Scheuren. "The 1973 CPS-IRS-SSA Exact Match Study." Washington, DC: *Social Security Bulletin*, vol. 51, no. 7, July 1988. https://www.ssa.gov/policy/docs/ssb/v51n7/v51n7p23.pdf

Krugman, Paul. *Arguing with Zombies: Economic, Politics, and the Fight for a Better Future*. New York: W. W. Norton & Company, 2020.

Kumhof, Michael; Douglas Laxton; Daniel Leigh. "To Starve or not to Starve the Beast?", *Journal of Macroeconomics*, Vol. 39, Part A, pp. 1-23, March 2014. https://www.sciencedirect.com/science/article/abs/pii/S0164070413001729

Kumhof, Michael; Nicolaus Tideman; Michael Hudson; Charles Goodhart. "Post-Corona Balanced-Budget Super-Stimulus: The Case for Shifting Taxes onto Land." *CEPR* Discussion Paper DP16652, Oct. 2021.

Kuttner, Robert. *Can Democracy Survive Global Capitalism?* New York: W. W. Norton & Company, 2018. https://www.hoopladigital.com/title/12118269

Levine, Matt. "Maybe Dollars Should Be Digital," *Bloomberg*, June 11, 2018. https://www.bloomberg.com/opinion/%20articles/2018-06-11/maybe-dollars-should-be-digital

Levitin, Adam J. "Safe Banking: Finance and Democracy," *University of Chicago Law Review*, vol.83, issue 1, article 14, pp.357-455, 2016. https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=5929&context=uclrev

Lo, Andrew W. *Adaptive Markets: Financial Evolution at the Speed of Thought*. Princeton, NJ: Princeton University Press. 2018. https://www.hoopladigital.com/title/12032649

Locke, John. *Two Treatises of Government*. London: Awnsham Churchill, 1689.

Marsh, Alastair; Carolynn Look. Why Central Bankers Got Serious About Digital Cash. Bloomberg Businessweek, October 20, 2019.

Marsh, Lawrence C. *Optimal Money Flow: A New Vision on How a Dynamic-Growth Economy Can Work for Everyone*. Kansas City, MO: Avila University Press, 2020. https://www.Optimal-money-flow.website

Mazzucato, Mariana. *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*. New York: PublicAffairs, 2015. https://www.hoopladigital.com/artist/1693478457

Mazzucato, Mariana. *The Value of Everything: Making & Taking in the Global Economy*. New York: Hachette Book Group, Inc., 2018. https://www.hoopladigital.com/artist/1693478457

Mazzucato, Mariana. *Mission Economy: A Moonshot Guide to Changing Capitalism*. New York: HarperCollins Publishers, 2021. https://www.hoopladigital.com/artist/1693478457

Menand, Lev; Morgan Ricks. "Federal Corporate Law and the Business of Banking," *University of Chicago Law Review*, forthcoming. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3663351#

Mettler, Suzanne. *The Submerged State: How Invisible Government Policies Undermine American Democracy*, Chicago, IL: University of Chicago Press, 2011.

Minsky, Hyman P. *Stabilizing an Unstable Market*. Prepared for the Bank Credit Analyst Conference. New York Plaza Hotel, 1986.

Morrow, Allison. "Why inflation can actually be good for everyday Americans and bad for rich people," *CNN Business*, December 1, 2021.

Niepelt, Dirk. "Reserves for Everyone—Towards a New Monetary Regime?," *VoxEU* (CEPR's policy portal), January 21, 2015. https://voxeu.org/article/keep-cash-let-public-hold-central-bank-reserves

Orcutt, Mike."We Just Glimpsed How a "Digital Dollar" Might Work," *MIT Technology Review*, March 2020. https://www.technologyreview.com/2020/03/26/950277/we-justglimpsed-how-a-digital-dollar-might-work-thanks-to-coronavirus/

Petrou, Karen. *Engine of Inequality: The Fed and the Future of Wealth in America*. New York: John Wiley & Sons, 2021. https://www.hoopladigital.com/title/13945007

Piketty, Thomas. *Capital in the 21st Century*. Cambridge, MA: Harvard University Press. 2013.

Ricks, Morgan. "Money as Infrastructure." *Columbia Business Law Review*, vol. 2018, no.3, pp.757-851, February 21, 2019. https://doi.org/10.7916/cblr.v2018i3.1707

Ricks, Morgan; Crawford, John; Lev Menand. "FedAccounts: Digital Dollars." *George Washington Law Review*, vol. 89, issue 1, January 2021. https://www.gwlr.org/vol-89-no-1/

Rifkin, Jeremy. *The Zero Marginal Cost Society*. New York: St. Martin's Press, 2014.

Rogoff, Kenneth. *The Curse of Cash: How Large-Denomination Bills Aid Crime and Tax Evasion and Constrain Monetary Policy*, Princeton, NJ: Princeton University Press, 2016.

Rogoff, Kenneth."The High Stakes of the Coming Digital Currency War." *Project Syndicate*, Nov. 11, 2019. URL link: The High Stakes of the Coming Digital Currency War by Kenneth Rogoff

Rosen, Sherwin. "The Economics of Superstars." *The American Economic Review*, Vol. 71, No. 5, pp. 845-858, December 1981.

Saez, Emmanuel. "Income and Wealth Inequality: Evidence and Policy Implications." *Contemporary Economic Policy*, 35(1), pp. 7-25, January 2017.

Smith, Adam. *An Inquiry into The Nature and Causes of The Wealth of Nations*. London: W. Strahan and T. Cadell, 1776.

Spross, Jeff. "How to make the Federal Reserve the people's bank," *The Week*, July 9, 2018.

Stout, Lynn A. *The Shareholder Value Myth: How Putting Shareholders First Harms Investors, Corporations, And The Public*. San Francisco: Berrett-Koehler, 2012.

Stout, Lynn A.; Tamara Beinfanti; Sergio Alberto Gramitto. *Citizen Capitalism: How a Universal Fund Can Provide Income … to All*, Berrett-Koehler Publishers, 2019. https://www.hoopladigital.com/title/12286307

Taleb, Nassim Nicholas. *The Black Swan: The Impact of The Highly Improbable*. New York: Random House Publishing Group, 2007. https://www.hoopladigital.com/title/13539879

Teachout, Zephyr. *Break 'Em Up: Recovering Our Freedom from Big Ag, Big Tech, and Big Money*. New York: St. Martin's Publishing Group, 2020. https://www.hoopladigital.com/title/12666270

Teachout, Zephyr. *Corruption in America: From Benjamin Franklin's Snuff Box to Citizens United*. Cambridge, MA: Harvard University Press, 2014. https://www.hoopladigital.com/title/11248978

Tepper, Jonathan with Denise Hearn. *The Myth of Capitalism: Monopolies and the Death of Competition.* Hoboken, NJ: John Wiley & Sons, 2019. https://www.hoopladigital.com/title/12348842

Thaler, Richard H. *Misbehaving: The Making of Behavioral Economics*. New York: W. W. Norton & Company, Inc. 2015.

Tlaib, Rashida (US Representative D-Michigan). *Automatic Boost to Communities Act*, H.R. 6553, 116th Congress 2020.

Tobin, James. "The Case for Preserving Regulatory Distinctions," *Restructuring the Financial System: A symposium Sponsored by the Federal Reserve Bank of Kansas City*, Jackson Hole, Wyoming, August 20-22,1987 https://www.kansascityfed.org/documents/3828/1987-S87TOBIN.pdf

Tucker, Sir Paul. "The Political Economy of Central Banking in the Digital Age," *SUERF Policy Notes*, issue 13, June 2017. https://www.suerf.org/policynotes/1105/the-political-economy-of-central-banking-in-the-digital-age

US Postal Service, Office of the Inspector General. "Providing Non-Bank Financial Services for the Underserved," RARC-WP-14- R 007, January 27, 2014.

Wack, Kevin. "When a Small Town Loses Its Only Bank," *American Banker*, February 2, 2020. https://www.americanbanker.com/news/whena-small-town-loses-its-only-bank

Waters, Maxine (US Representative D-California). *Financial Protections and Assistance for America's Consumers, States, Businesses, and Vulnerable Populations Act*, H.R. 6321, 116th Congress, 2020.

Weir, Melanie. "How to Cash Out on Cash App and Transfer Money to Your Bank Account Instantly," *Business Insider*, December 31, 2019.

Wolf, Amy. "Why the Federal Reserve Should Offer Bank Accounts to Everyone," Vanderbilt University, June 20, 2018. https://news.vanderbilt.edu/2018/06/20/federal-reserve-bank-accounts/

Wolff, Edward N. "Household Wealth Trends in the United States, 1962 to 2016: Has Middle Class Wealth Recovered?" National Bureau of Economic Research (NBER) Working Paper 24085, November 2017. DOI 10.3386/w24085.

Yglesias, Matthew. "Bernie Sanders and AOC's Plan to Crack Down on High-Interest Loans," *Vox*, May 16, 2019. https://www.vox.com/policy-andpolitics/2019/5/16/18624041/credit-card-rate-payday-loan-stop-loan-sharks-sanders-ocasio-cortez