A Brief History of Money

How We Got Here and What's Next

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Chapter 6:
The Illegitimate Child: Lender of Last Resort

"It is well enough that people of the nation do not understand our banking and monetary system, for if they did, I believe there would be a revolution before tomorrow morning."

—Henry Ford

If there is one thing that shaped the nancial world we live in today it is fractional-reserve banking. We shall therefore make a quick leap forward from 17th-century Stockholm to 20th-century USA and follow how this invention led to the creation and operation of the most powerful nancial institution in the world, the Federal Reserve. As we saw in the previous chapter, fractional-reserve banking became a big hit among bankers and depositors alike. We also saw that it inevitably led to bank runs when concerned depositors tried to be rst in line to access the relatively small cash reserves banks had in their vaults. As the practice of fractional-reserve banking grew, so did bank runs in terms of both size and frequency. Furthermore, bank runs wreaked havoc on the economy at large due to their ripple e ects and disruptions of nancial systems since, by this point, banks had already become the veins through which the blood of the economy—money—circulated.

For the bankers, however, bank runs did not make sense. If they had reliable long-term assets—loans owed to them—backed by good collateral that covered their entire outstanding obligation to their depositors, why would banks be vulnerable

to the public's random and rare irrational panics? After all, it is just a time gap between the short-term obligations payable on demand to depositors and the long-term obligations from the debtors. is confusion on the part of the bankers, called by them a liquidity problem, brings us to the next chapter in our story, the birth of the Federal Reserve.

e Federal Reserve was one of the last central banks to be set up in the West. e Bank of England already had a 300-year headstart! Nevertheless, within 30-something years of its inception, the Federal Reserve had secured its throne as the most powerful central bank in the world. Our story of how this newcomer became king will begin in New Jersey.

On a dark November evening in 1910, a handful of Wall Street bankers and a prominent US senator quietly gathered at an isolated rail station in New Jersey. Cloaked in anonymity, they boarded private train cars heading south. After two days of travel they arrived at a small beautiful island o the Atlantic shores called Jekyll Island, near the border of Georgia and Florida. ere they gathered at a private club frequented by some of the world's wealthiest people. is lavish and secluded club was partially owned by none other than banker J. P. Morgan. In a club cottage on Jekyll Island, the group spent over a week working on a bill that would bring into being the most powerful nancial institution in the world and one of the two most powerful institutions in the US. But who were these people? And why did they travel in secrecy by train from New Jersey all the way to southern Georgia to draft a bill that would serve as the foundation of the Federal Reserve?

e meeting's chair, and the person who had summoned the attendees, was a prominent US senator from Rhode Island. Nelson Aldrich (1841 –1915) was for some time the leader of the Republican Party in the Senate, where he served for 30 long years. Aldrich also served on the House Committee of Transportation and Infrastructure and on the Senate Committee on Finance. From his position within the Finance Committee, Aldrich helped create an extensive system of tari s and taxes that sheltered American manufactures and farmers from overseas

competition. He also served as chairman of the National Monetary Commission between 1908 and 1912. While serving in Congress, he became rich from well-made investments in the railroads, rubber and banking. His good fortune was further compounded when his daughter married John D. Rockefeller, Jr., John D. Rockefeller's only son.

Another one of this clandestine gathering's participants was Paul Warburg, a Hamburg native born into a family of bankers. Warburg had married Nina Loeb, the daughter of Solomon Loeb, founder of New York investment rm of Kuhn, Loeb & Co. In 1907, the *New York Times* published Warburg's article "Defects and Needs of Our Banking System." In this article he passionately claimed, " e United States is in fact at about the same point that had been reached by Europe at the time of the Medicis"[1]. He argued for a central banking institution that would make it easier for the excess reserves of one bank to bolster the insu cient reserves of another. Warburg concluded the article with this call: "I think we are greatly mistaken if we believe that our country is so entirely di erent from all others that we should be obliged to continue to do the opposite of what is done by them, while the system of all other important nations has proved to be excellent."

Frank Vanderlip, president of the National City Bank and the previous assistant secretary of the Treasury, was part of the ensemble. Vanderlip's National City Bank, founded in 1812, was one of the rst banks in New York and is today known as Citibank, one of the top three largest banks in the US. In 2008, Citibank was, ironically enough, saved from collapse by the Federal Reserve Vanderlip had helped establish nearly a hundred years prior. Henry Davison, too, was part of the group. In 1909, Davidson became a senior partner at J.P. Morgan & Company, a banking partnership founded in New York in 1871. A mere century later, J.P. Morgan would merge with Chase Bank to form JPMorgan Chase & Co., one of the world's largest banks.

  ere is something about this meeting that sounds inherently o to almost any listener. Negative sentiments towards banks and central banking run deep in American history and culture.

It was no less a gure than omas Je erson who said, "I believe that banking institutions are more dangerous to our liberties than standing armies." Later presidents shared Je erson's sentiments. Two prior attempts at establishing a central bank in the United States ended in dissolution. e second was the Second Bank of the United States, which existed for twenty years but whose charter President Andrew Jackson refused to renew when the time came to do so. In his veto, Jackson addressed Congress and stated:

> One Congress, in 1791, decided in favor of a bank; another, in 1811, decided against it. One Congress, in 1815, decided against a bank; another, in 1816, decided in its favor. Prior to the present Congress, therefore, the precedents drawn from that source were equal. If we resort to the States, the expressions of legislative, judicial, and executive opinions against the bank have been probably to those in its favor as 4 to 1. ere is nothing in precedent, therefore, which, if its authority were admitted, ought to weigh in favor of the act before me…. It is to be regretted that the rich and powerful too often bend the acts of government to their sel sh purposes. Distinctions in society will always exist under every just government. Equality of talents, of education, or of wealth cannot be produced by human institutions.... but when the laws undertake to add to these natural and just advantages arti cial distinctions, to grant titles, gratuities, and exclusive privileges, to make the rich richer and the potent more powerful, the humble members of society-the farmers, mechanics, and laborers-who have neither the time nor the means of securing like favors to themselves, have a right to complain of the injustice of their Government. ere are no necessary evils in government. Its evils exist only in its abuses. If it would con ne itself to equal protection, and, as Heaven does its rains, shower its favors alike on the high and the low, the rich and the poor, it would be an unquali ed blessing. In the act before me there seems to be a wide and unnecessary departure from these just principles."[2]

Despite the prevailing hostility towards banks and a central banking system, the bankers and their supporters found the matter of setting up a central bank of utmost importance and urgency. As we previously saw, fractional-reserve banking has one big aw: the seldom yet irrational behavior (in the eyes of bankers) of panicked depositors demanding their money all at once, causing bank runs and market-wide banking crises. One crisis in particular led to the meeting on Jekyll Island and to the US's third central banking initiative.

 e crisis, known as the Panic of 1907, threatened to bring Wall Street to its knees. It all began with a benign and seemingly insigni cant event unrelated to banking. e story begins with an attempt by a few marginal stock market players at manipulating one copper company's share price.

In the hills of Montana, a gentleman by the name Fritz Heinze had made himself a little fortune from mining copper. In 1907, Heinze felt he could do better and moved to New York with the hope of entering the nancial markets. Heinze was smart and charismatic and he quickly opened his company's o ce, United Copper, not far from Wall Street, where his company's shares were traded. While in New York, Heinze formed a close relationship with a notorious Wall Street businessman and speculator named Charles Morse. Morse owned, controlled, and sat on the board of quite a few banks and insurance companies. ese institutions included the National Bank of North America, the New Amsterdam National Bank, and the Mercantile National Bank. At the same time, Heinze's two brothers, Otto and Arthur, established a brokerage rm. Together, they came up with an audacious idea that would unwittingly trigger the massive nancial collapse known as the Panic of 1907, and in turn lead to the meeting at Jekyll Island three years later.

 e idea was much simpler to understand than to execute. In the stock market, people buy and sell stocks. On top of this, people can also sell stock they don't really have. is action is called a "short" wherein the seller "borrows" the stock he doesn't own but wants to sell from another player in the market who

does own such stock. Then, the seller sells the stock at the market's current price. After a certain period of time, the seller needs to "return" the stock he borrowed and thus goes to the market and buys back the stock so he can "cover his short." If the price of the stock goes down between when he sells the (borrowed) stock and when he buys it from the market, then he makes a profit. His profit is the balance between what he sold the "borrowed" stock for (let's say 4 weeks ago at the price of $50/share) and what he buys the stock at now to cover that short (let's say today at a dropped price of $45/share). So, if the price of the stock goes down, he makes a profit (in this example $5/share) and if it goes up he loses, since he would need to buy back the stock at a higher price than he sold it for.

Otto Heinze, the broker, came up with an idea to make some quick money. To start off, he believed that there was a sizable amount of short positions on the market for their United Copper Company. His idea was simple: push the price of the shares up rapidly and thereby force those holding short positions to buy shares frantically in order to cover their shorts, fearful that the rising price will make their short losses even greater. This is known as a *short squeeze*. This rush to buy stocks further drives up the cost of the shares. But because the Heinze family owns the majority of the company stock, the traders in the short positions will be forced to come to the Heinze brothers to purchase shares to cover their shorts. These shares will of course be sold at the new much higher price and the brothers will make a big profit.

In order to finance their plot, the Heinze brothers needed money to create demand and drive up the initial price. So the brothers and Charles Morse met with Charles Barney, one of Morse's old business colleagues. Barney, who had financed some of Morse's previous financial ventures, was the president of one of New York's largest trust companies, the Knickerbocker Trust, which held large individual and corporation deposits.

On Monday, October 14, Otto Heinze started aggressively buying shares of United Copper. As planned, the price shot up 25% from its beginning price of $30 a share. The next day the

price moved up an additional 20%, eventually reaching $60 a share at its peak. e ploy, however, wasn't working; apparently there was enough supply in the market for the interested short positions. By Wednesday, only three days later, the share price fell down to $10. is drop triggered a chain reaction: by the end of the week, Otto's brokerage rm went bankrupt and his trading license was revoked. e value of United Copper shares dropped to almost nothing, causing the collapse of the State Savings Bank of Butte, Montana, which used United Copper stock as collateral against large loans to the company. Once the connection between the plotters and Mercantile National Bank came to light, depositors feared that the collapse would spread to this institution as well.

is fear spawned one of those "irrational" moments in a big way. Since every depositor wanted to be rst at the bank to access the limited cash on hand at the Mercantile National Bank, a run on the bank was unfolding. e panic spread quickly to other banks associated with Morse such as the National Bank of North America and the New Amsterdam National. By Monday, October 21, just a week after it all began, the board of the Knickerbocker Trust demanded Charles Barney's resignation. e pressure from depositors was mounting from every direction. On the following day, this pressure turned into a ood. At the time, the *New York Times* described it as such: "as fast as a depositor went out of the place ten people and more came asking for their money." One more day passed and the Knickerbocker Trust was forced to suspend its operations. e panic started to spread across the nancial market. Before another week could pass, over a dozen of the largest trusts and banks closed. It seemed that nothing could stop the total collapse of Wall Street and of all major US nancial institutions.

Just when all seemed lost there was still one last card up history's sleeve. Mr. John Pierpont, "J.P." Morgan. Born in 1837, J. P. Morgan spent all his adult life in banking and business. He specialized in turnarounds and mergers. e biggest of them was the creation of U.S. Steel, the rst billion-dollar company

in the world. In 1892, he oversaw the merger of Edison General Electric and the omson-Houston Electric Company into what would be known as General Electric, or GE. By 1907, Morgan was New York's most prominent banker, and the president of J.P. Morgan. He was also one of the city's wealthiest and most connected individuals. When pressure started to mount at the door steps of the Trust Company of America, he decided to draw a line in the sand. Morgan brought together bankers and industrialists who could assure the Trust Company of America's liquidity in the face of ongoing and mounting pressure from depositors. To his dismay, even the bankers' and industrialists massive deposits did not manage to calm the public.

On October 24th, just 10 days after Otto Heinze initiated his scheme, the panic reached the doorstep of the New York Stock Exchange. ere was now a prominent danger threatening the existence of brokerage rms and other nancial institutions. e market plummeted by 40%, and two frantic days passed during which J. P. Morgan raised funds to keep the exchange a oat. e money reserves Morgan managed to collect were not bottomless; so on the critical weekend of October 27, 1907, God was called upon to help. e bankers asked the clergy to calm their communities during the Sunday mass. ey also tried to enlist the press to help calm the public. Furthermore, the New York Clearing House issued $100 million in certi cates for use in interbank trading that Monday. ese certi cates created more money to meet depositors' requests at the institutions facing the greatest pressure. With the help of the press, the clergy, and the newly created money, the city started to calm down.

But the crisis was far from over. It also required an all-night conference in J. P. Morgan's home where more than 100 bankers and trust company managers had to be persuaded to contribute funds. e bankers' contributions together with Morgan's connections with U.S. Steel allowed for the nalization of a deal that would enable liquidity for the trust companies and save one of the major exchange's brokerage rms from collapsing. e following day barely an hour before the stock market opened, President

eodore Roosevelt met J. P. Morgan's con dants in the White House and agreed to put aside the Sherman Antitrust Act in order to allow one aspect of the complex deal to go through (U.S. Steel bought the iron and railroad companies, whose shares served as collateral in the major exchange's brokerage rms). With this, things calmed down and calamity was narrowly avoided.

Following the Panic of 1907, Congress formed the National Monetary Commission whose purpose was the investigation of the causes and suggesting prospective solutions for the nancial crisis. At the head of this commission sat Senator Nelson Aldrich. e Commission issued more than 30 reports. Its nal report was published on January 11, 1911. Considering Senator Aldrich's background, con dants, a liation, and advisors, it should come as no surprise that the commission never seriously considered a solution to the problem of bank liquidity that would move away from fractional-banking practices. Excessive lending, after all, was the heart and soul of modern banking and the source of most of its revenue.

Keep in mind that although bankers like to claim that fractional banking is a necessary source of liquidity for the market in general, this idea should not be blindly accepted and endorsed. Leaving aside any transition period from the current system, there is no proof that the economy necessarily needs a set amount of money to operate. Of course, if gold is money and there is only one ounce of gold in the entire world, or if paper is money and there is only one bill in the entire world, then it would be practically impossible to operate any money-based system because there would not be enough of it to physically distribute the currency so it could function as a means of exchange. If money is, however, a xed and unchangeable quantity of papers, then it does not really matter if there are a billion or a trillion of them in circulation. As long as the papers are a simple measure of account with enough units (notes) available, their value will always and only be determined by the amount of goods these papers are representing and not by the actual physical quantity of those papers.

e liquidity claim made by bankers and supporters of fractional-reserve banking assumes that the economy demands constant money creation in the shape of bank loans in order to advance. But this money, borrowed from the future and created by issuing loans for more money than currently exists, has to be returned. us the reigning assumption is that the returns earned on such money—the investments—will generally create more wealth than the combination of the loans, the interest, and cost of managing the loaning activities and process, i.e. the cost to the banks. Furthermore, the idea that the economy needs fractional-reserve banking loans also assumes no setbacks that would o set whatever possible value that such borrowing from the future might generate. ese two assumptions are questionable when calculating broad long-term averages. eir soundness also comes into question when closely examining the damages resulting from bank runs and the devastation created by boom-and-bust cycles, both of which are direct results of fractional-reserve banking and of its attending demand for the creation of money through loans. Keep in mind that, as we saw in previous chapters, the practice of loaning signi cantly predates fractional-reserve banking so what is in question here is not the loaning as an institution but the acceleration thereof via fractional-reserve banking.

Given what we have learned, it should also come as no surprise that bankers' conclusion from the Panic of 1907 was that the US needed to create a government-backed bank which could provide funds to private banks when they come under pressure from depositors. e establishment of a permanent government institution legitimated and rei ed J. P. Morgan's ad hoc solution to the 1907 crisis. Knowing Americans' healthy distrust of elected o cials and their long-standing disdain for the banking industry in general and the idea of a central bank in particular, the bankers had to craft a masterful plan to accomplish their goal. It would take more than a very sympathetic political ally, in the form of Senator Aldrich, to get this initiative— which was as much self-serving as it was unwanted by

the public—passed. e bankers would have to build support, manipulate information and education, and carefully persuade the members of Congress to vote as desired.

e National Monetary Commission was one platform for such education. is government initiative slowly built the case for a central bank by engaging in studies, events, and public speeches, and recruiting the support of the *Wall Street Journal* to spread the message. e e orts seemed to be successful and the time seemed right to put a bill before Congress. Senator Aldrich, however, wanted the help and assurance of Wall Street before drafting an actual detailed bill and formulating the institution. is desire brings us back to the strange trip to Jekyll Island in the winter of 1910. At the club on Jekyll Island, after nine days of deliberation, the group of top bankers and Senator Aldrich had put together a "reform plan" for the creation of a government-sponsored central bank. e plan was to be entered into the National Monetary Commission's conclusions regarding the Panic of 1907. Years later, Jekyll Island participant Frank Vanderlip, president of the National City Bank at the time, proudly recalled:

> Since it would be fatal to Senator Aldrich's plan to have it known that he was calling on anybody from Wall Street to help him […] precautions were taken. […] Discovery, we knew, simply must not happen, or else all our time and e orts would be wasted. If it were to be exposed publicly that our particular group had got together and written a banking bill, that bill would have no chance whatever of passage by Congress[3].

Given the unpopularity of bankers and general public's wariness, the name of the institution would have to avoid the word *bank* altogether. *Federal Reserve System* sounded much more innocent, a system created and funded "by the banks and for the banks." In the words of the National Monetary Commission: "It is not a bank, but a cooperative union of all the banks in the

country for de nite purposes and with very limited and clearly de ned functions." Hence through lies and deception would the most powerful institution in the US economy be born.

However, the proposal's wording was changed over the course of its transition from proposal to law. In the end, in spite of its name or ownership (originally o cially owned by the banks), the Federal Reserve was an institution which functioned almost exactly like a central bank, with signi cant control over the nation's monetary issues and under the pervasive in uence of private nancial institutions. Furthermore, for the Fed's rst fourteen years, the organization's de facto governor was none other than J. P. Morgan's representative at Jekyll Island, Benjamin *Strong*.

It took three years for the Federal Reserve Act to pass in Congress, but not before one last twist. During the November 1912 elections, the Democratic Party was strongly opposed to the "so-called Aldrich bill for the establishment of a central bank." Once Democrat Woodrow Wilson won the presidency and the party gained majorities in both chambers of Congress, however, it seemed to forget its staunch resistance. e politicians now in power settled for a few changes to the original bill mainly surrounding the position and manner of election to the Federal Reserve Board. Finally, on December 23, 1913, the Federal Reserve Act became law and brought a fourth branch of government into existence, one arguably second in power only to the executive branch.

e new law established a Federal Reserve System and its accompanying 12 regional branches. All large national banks were required to join and deposit a de ned amount of money, interest free, at the local reserve branch. is money—the reserve—was intended for transfer and use in case of an emergency run on a member bank. e system was headed by the Federal Reserve Board appointed by the president and con rmed by the Senate. Under section 11 of the law, the Federal Reserve would receive a long list of authorizations including control over the banking system and far-reaching rights over

member banks (initially, local small banks were not forced to join). ese rights included control over interest rates for transactions between member banks, which translated to de facto control of national interest rates.

ough it was formed as a result of the Panic of 1907 and though its main objective was the prevention of similar crises, the Federal Reserve System failed miserably less than two decades later. Between 1930 and 1933, some 2,359 national banks, some 45% of such banks, all of which were members of the Federal Reserve System—closed their doors. In addition, about 7,000 state banks were forced to close[4], adding to the agony and escalating the Great Depression[5]. Ben Bernanke, future chairman of the Board of Governors of the Federal Reserve, also acknowledged in late 2002, "Let me end my talk by abusing slightly my status as an o cial representative of the Federal Reserve. I would like to say to Milton and Anna: Regarding the Great Depression. You're right, we did it. (e two had made the claim that the Federal Reserve's inaction had a signi cant role in the escalation of the Great Depression). We're very sorry. But thanks to you, we won't do it again"[6]. Little did Bernanke know that just six short years later he would be called upon to honor this commitment by pulling multiple trillions of dollars out of thin air.

As the years went on, the power of the Federal Reserve (hereafter referred to as the Fed) shifted away from the hands of the bankers and into the hands of the government. is outcome was, in fact, planned: the banks were free to continue taking huge risks with fractional-reserve banking and other leveraged activities while the government (and, in turn, taxpayers) absorbed more and more of this risk by setting up safety nets for the banks, which made taking even bigger risks even more tempting. In 1933, complementary legislation was put in place.

e Banking Act set up the Federal Deposit Insurance Corporation (FDIC), a government-owned-and-run agency which ensures the return of deposits in cases of bank bankruptcy. is government guarantee is capped at a certain amount, one that

is periodically updated by the government. As of 2013, this cap is set at $250,000 per account per bank. e creation of the FDIC signaled a signi cant change in the relationship between banks and the general public, transferring a sizable portion of the risks of and responsibility for fractional-reserve banking from the pro ting banks to taxpayers' pockets.

Given the removal of signi cant barriers to risk-taking behavior with the establishment of the Fed and the FDIC, it should come as no surprise that banks went on to drop the reserve ratio even lower. In 1893, when banks were actually held accountable for their lending risks, the reserve ratio in the US and Canada was typically between 22-25%. In the UK, on the other hand, where a "lender of last resort" was already in place, the Bank of England, the reserve ratio was around 15%. By 1923, after the establishment of the Federal Reserve System, the US reserve ratios had already shrunk to half their size, settling at around 13%. By 1953, this number dropped to around 7% and by 1993 sank down to a mere 5%[7]. On the eve of the 2008 crisis, the reserve ratio of nancial institutions in the mortgage market was as low as 1.5% (Freddie Mac), 3% (Brokers/hedge funds) and 4.6% (Fanny Mae)[8]. In November 2014, the FDIC set the reserve ratio requirement to be between 4% to 10% depends on the size and type of bank[9].

e Federal Reserve Act has been amended many times since 1913, granting the Fed even more powers and responsibilities including "maximum employment" and "stable prices"[10]. e Fed's control of the money supply functions as its main tool for achieving these goals. Until 2009, the Fed's main instrument for executing monetary policy was its ability to control interest rates.

To understand the money supply mechanism and the process of setting interest rates, we need to dive a little deeper into the Fed's inner workings and its balance sheet. It is much simpler than it may seem. When the Fed was set up in 1913, the US was using the gold standard which meant that dollar notes issued by the Federal Reserve were convertible upon demand into gold. us these dollar bills were booked in the Fed's balance sheet as

liabilities, because of its commitment to pay holders of the notes in gold. e amount of dollars the Fed could print was limited by the fact that it had to keep a gold reserve equal to 40% of the money in circulation. In 1946, the reserve percentage fell to 25%. At the same time, all banks are required by the law to maintain a certain percentage of their overall assets as cash reserves at the Fed. ese reserves deposited at local Fed branches were also booked as Fed liabilities as they belonged to the banks. e combination of dollars bills, banks' reserve deposits, and coins issued to the Treasury constituted the monetary base. When a member bank would request Federal Reserve notes (i.e. dollars) for its customers, the Fed would ship them and debit that institution's Fed account for those dollar notes. e Fed's balance sheet would re ect this transaction: the notes (dollars) were a Fed liability—to the holders of the notes—and the same amount was deducted from the Fed's liabilities as recorded on that institution's Fed account, corresponding to the money in bills the bank received.

When, in 1968, the US abandoned entirely any linkage to gold, the recording of transactions on the Fed's balance sheet did not change, even though the Fed's liabilities became meaningless as there was no longer any conversion commitment to maintain. As strange as it may seem, from then on, the Fed's "liability" would be to pay for dollars bills with dollars bills. Dollar bills, are recorded as liabilities on the Fed's balance sheet to this day. After the enactment of the *Gold Reserve Requirements Elimination Act* of 1968, there were no limits on the Fed's ability to increase the monetary base, which grew from $69 billion in November 1968 to $873 billion on the eve of the 2008 crisis. Up to then, the notes the Fed issued were the largest liability line on the Fed's balance sheet[11]. is monetary base growth and increased the money supply in the market signi cantly and also expanded the Fed's balance sheet.

Over time, the Fed started to use the money it received for the dollar notes to buy treasury bonds, i.e. IOUs by the federal government. ese too became assets on the Fed's balance sheet.

But unlike any other balance sheet, this one's assets are created at will when the Fed prints bills and "charges" member banks for them, or when it lends money to bank members by crediting their reserve accounts with a simple book entry. On the eve of the 2008 crisis, the Fed's balance sheet comprised: total Assets numbering $869 billion, of which Treasury securities $791 billion; and total liabilities $836 billion of which $775 billion Federal Reserve notes (i.e. dollars in circulation)[12].

Due to the way the Fed's money creation mechanism works, there is no limit to how much this balance sheet can expand and the amount of money the Fed can create practically from thin air. is became very clear in 2009 when the Fed increased its balance sheet from less than $1 trillion to more than $4 trillion by 2014, via its QE—Quantity Easing—programs.

When the Fed wants to lower interest rates by increasing the money supply it "buys" assets, i.e. bonds or other securities, from the Treasury or member banks, or to be more precise, it lends the Treasury or member banks money. When the Fed wants to reduce the money supply, it sells those assets typically to member banks, thus sucking money out of the market.

is buying and selling is called an open market operation (OMO) and its goal is to reduce or increase the money supply, thereby impacting short-term interest. e Fed has other tools to impact the money supply and interest rates, mainly increasing or reducing the reserve requirement for member banks; changing the discount rate—the rate it charges for loans it issues to member banks; changing the federal fund rate—the rate at which member banks lend overnight balances. e bottom line is pretty simple: since 1968 the Fed can easily increase the amount of money in the economy. Its balance sheet has little real meaning: its liabilities are not really liabilities and its assets are not really assets, they are just means of increasing or theoretically decreasing the money supply, and a face of such increases.

Keep in mind, all money supply increases are created via debt instruments, and all such increases expand via the

fractional-reserve banking mechanism and thus constantly increase the economy's debt load. As newly created money comes in the form of debt instruments—generated by the banks and issued to people and organizations taking on debt—the interest rate e ectively controls the volume of new money created. When the interest rate is low, more people or organizations nd debt attractive which leads to an increase in the money supply. Conversely, when the interest rate is high, people are less willing to take on debt, which leads to a slowdown in money creation.

In its century of existence, the Federal Reserve has become more powerful and signi cantly more in uential than Congress, at least when it comes to the US economy. Keep in mind that no member of the Fed is elected and none of its actions are subject to policy hearings, accountability reviews, or audits. is is the state of a airs despite the fact that in Article 1, Section 8 of the US constitution, all money-related powers are speci cally granted to Congress, including: "To coin money, regulate the value thereof." Yet today, so mammoth is the Federal Reserve's clout that even one of the House leaders, Democratic Whip Steny Hoyer, willingly relinquished even the mere idea of Congressional oversight of this branch of government, stating "I agree with Chairman Bernanke that Congressional review of the Fed's monetary policy decisions would be a 'nightmarish' scenario"[13].

In 2008, excessive and reckless lending practices caused the largest nancial crisis since the Great Depression. Almost all of the US's large nancial institutions were on the verge of collapse. As a result, the Federal Reserve issued over a $1.5 trillion bailout of Wall Street via various assistance programs. e Fed's behavior in the wake of the 2008 crisis e ectively forced the public to take on all the risks of fractional-reserve banking yet left the bankers with their notoriously excessive nancial compensation. Andrew Huszar—the man responsible for the management of the rst Fed's Quantitative Easing program, which ran from 2009 to 2010—shared some re ections on the program:

> I can only say: I'm sorry, America. As a former Federal Reserve o cial, I was responsible for executing the centerpiece program of the Fed's rst plunge into the bond-buying experiment known as quantitative easing.
>
> e central bank continues to spin QE as a tool for helping Main Street. But I've come to recognize the program for what it really is: the greatest backdoor Wall Street bailout of all time.[14]

us, a century later, the gathering in Jekyll Island achieved its ultimate goal: the public holds the risks, and the bankers the bonuses. In 2011, the Government Accountability O ce published the rst ever review of the Federal Reserve[15]. In a 239-page report that is as hard to follow as it is soft in tone, some facts came to light. One such fact was that the Federal Reserve had been providing billions of dollars in nancial assistance to foreign banks and corporations for years. One bene ciary was the Arab Bank Corporation, an entity partly owned by the Libyan Central Bank. Another interesting discovery was that the Federal Reserve had provided con ict of interest waivers to its employees and private contractors so the Federal Reserve could continue making emergency loans to institutions connected to these insiders. For example, the CEO of JP Morgan Chase served on the board of directors of the New York Fed at the same time that his bank received more than $390 billion in nancial assistance from the Fed. Furthermore, a press release issued by Vermont Senator Bernie Sanders's o ce in July 21, 2011 noted:

> e Fed outsourced virtually all of the operations of their emergency lending program to private contractors like JP Morgan Chase, Morgan Stanley, and Wells Fargo. ese same rms also received billions of dollars in Fed loans at near-zero interest rates. Altogether, some two-thirds of the contracts that the Fed awarded to manage its emergency lending programs were no-bid contracts.

In July 2012, Congressman Ron Paul (R) introduced a bill requiring a full audit of the Board of Governors of the Federal Reserve System and the Federal Reserve banks by the Controller General of the United States before the end of 2012. e bill passed the House of Representatives with bipartisan majority of more than two thirds (327:98). e Senate majority leader Harry Reid (D) vowed that the bill would not be put up to vote in the Senate, and, indeed, it never was.

In the aftermaths of the nancial crises of 2008 the Fed has presided over the greatest exercise of money creation in history. rough its three QE programs, the Fed has orchestrated the creation of almost $4 trillion. is ood of money was largely the result of two Fed actions: the purchase of treasury securities and of mortgage-backed securities. e purchase of treasury securities entails creating money and "lending" it to the federal government. As of late 2014, the Fed has lent around $2.4 trillion to the government in this way. Buying mortgage-backed securities means basically buying mortgages from banks. As of late 2014, the Fed has purchased around $1.6 trillion worth of such securities[16].

e Fed's policy of purchasing government debt with money created by the Fed—since, after all, the Fed has no money, only the power to create it—has pushed down interest rates dramatically. (Technically, the Fed "paid" for those securities by crediting member banks' reserve accounts, as explained in detail above when reviewing the Fed's balance sheet). In fact, the interest on government debt (treasury bills and bonds) has sunk to literally zero. As of November 2014, the rate on 12-month treasury bills was 0.1%, and the yield, i.e. interest on 10-year *Treasury* notes (government bonds of 10 years) had hit a 200-year low.

From 2009 through most of 2014 the Federal Reserve has been committed to the continued creation of billions of dollars every month, fueling some increases in housing prices and signi cant stock market activity in some segments of the tech market in particular, making 1999's infamous tech bubble pale in comparison. is dramatic increase in stock market prices

was not merely an expected consequence but rather one of the goals of the Fed's post-2008 program. In a 2014 speech, Fed Vice Chairman Stanley Fischer said, "While the Fed's asset purchases were composed wholly of Treasury [...] securities, the program also aimed to boost the prices of riskier assets"[17].

Following the Fed's money creation programs other central banks rushed to print money, devaluing their currencies and hoping to ignite some economic activity. Since 2008, the major central banks in the world have created some $10 trillion under the pretense that money creation would reignite their respective economies and prevent unemployment and economic slowdown. As we saw in previous chapters and will examine in detail later, money creation, especially in the form of government spending, has positive economic e ects only in the short term while in icting longer term damages and exacting a social price. So although stock prices have almost tripled since 2009, this growth has overwhelmingly bene ted Wall Street and the top 1%. Main Street meanwhile has not experienced the same economic prosperity: high unemployment and a drop in labor participation are ongoing, salary incomes are eroding, and prices are rising. Food prices alone have grown by at least 20% since 2008[18]. It should therefore come as no surprise that as of November 2014 an average of 7 national polls show that a record number of Americans—more than 66%—feel that the country is on the "wrong track."

We will get back to the events of 2008 and to the Federal Reserve's part in its creation and aftermath. For now, we will return to where we left o in chapter 5: the 1800s and the days after the creation of paper money.