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The Dawn of Quantitative Easing, and the Boom and Bust at Rue Quincampoix

The end of the month of December, 1719, was the term of this delusion of three months. A certain number of stockjobbers, better advised than others, or more impatient to enter upon the enjoyment of their riches, combined to dispose of their shares. They took advantage of the rage which led so many to sell their estates – they purchased them, and thus obtained the real for the imaginary.

They established themselves in splendid mansions, upon magnificent domains, and made a display of their fortunes of thirty or forty millions. They possessed themselves of precious stones and jewels, which were still eagerly offered, and secured solid value in exchange for the semblance of it, which had become so prized by the crowd of dupes. The first effect of this desire to realize was a general increase in the price of everything...

- Adolphe Thiers

In the late summer of 1719, John Law finally achieved what he had long been striving for. With the creation of a flexible currency through the *Banque Royale*, and its widespread acceptance by the public, he had sparked an explosion of economic opportunity in France and its territories in the New World. Expanding industry and trade, along with the blooming prosperity spreading through the streets of Paris, was precisely the result Law had foreseen when he first proposed the idea of removing the monetary shackles of gold and silver fifteen years earlier, in his native Scotland.

In December 1704, after years of poor harvests and trade deficits with England, the fledgling Bank of Scotland had run out of gold and silver to redeem its paper notes — and was forced to close its doors. After the bank remained closed through the following spring, leaving farms and workers idle, the Scottish Parliament considered a proposal from Law which would create banknotes based on the value of land, so the Scottish economy would no longer be dependent on the supply of gold and silver in the bank's vaults. Since gold and silver were prone to unpredictable fits of migration across Scotland's borders, Law felt the value of Scotland's land would prove a far more stable asset base for trade and commerce, a view he outlined in a book published that year, *Money and Trade Considered*.

Yet members of the Scottish Parliament were skeptical about basing the value of currency on anything other than gold and silver,

which had for centuries been a reliable store of value. Any other foundation for money seemed speculative. After debating the proposal, they rejected Law's plan.

In the years that followed, Law crossed the English Channel and roamed throughout the Continent, searching for a government more receptive to his monetary ideas. He lived in Brussels for a time, traveled throughout the Netherlands, Germany and France, and then eventually settled in Genoa, Italy. There he earned his living in gaming rooms not far from the esteemed Genoese banking houses, and he proposed plans for new banking institutions to many he met. However, despite Law's claims about the prosperity that awaited those who unleashed their economies from the monetary governor of gold and silver, none of the princes and kings he spoke with throughout Europe were interested in abandoning the stable foundation of their money.

Then, in September 1715, King Louis XIV died, and the new regent of France found himself in charge of a government that was effectively bankrupt after the king's opulent 72-year reign: Louis XIV left France with 2,818 million livres (mL) of debt. The debt was composed of 1,068mL of perpetual annuities, 830mL of official offices that had been purchased by the nobility, and 920mL of floating rate debt. The annuities and sold offices required 86.5mL a year in payments, and the floating rate debt required another 40mL per year — for a total of 126.5mL a year in interest payments. However, the government was only taking in 166mL in taxes, and 71mL of that income was consumed by other spending — leaving a primary surplus of only 95mL to cover 126.5mL in annual interest payments.

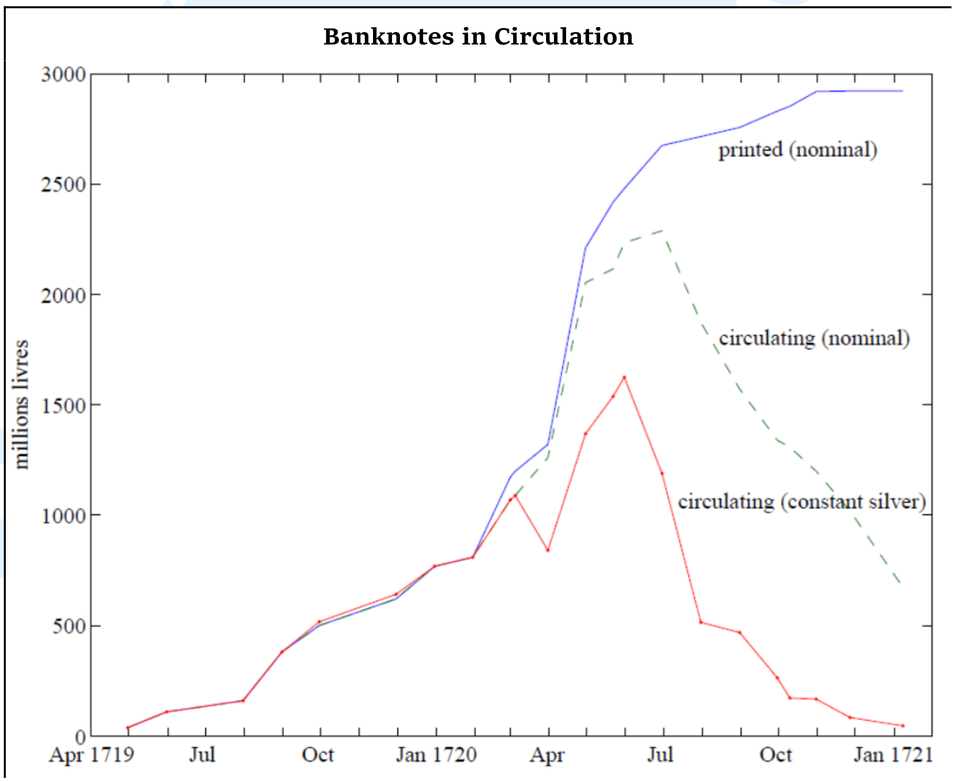
It was clearly an unsustainable and precarious fiscal situation, and there were no readily apparent solutions. Raising taxes or cutting spending in the amounts required to close the 31.5mL annual deficit would likely result in unmitigated chaos throughout France, and a default would likely result in an open revolt by the nobility, to whom most of France's debt was owed. Memories were still fresh of the nobles' revolt decades before during La Frondé, which had been sparked by an increase in taxes on the nobles' privileged interests.

John Law's monetary ideas had evolved since his appearance before the Scottish Parliament in 1704, and the regent was aware of Law's banking proposals floating around Genoa; the regent and Law had first met years before, when the regent was still the duc de Chartres. By 1715, Law wanted to establish a bank, modeled on the Bank of Amsterdam, which would issue currency backed by gold and silver while also handling the government's debt service. Louis XIV had rejected the idea before his death, as he felt any currency in place of gold and silver coin to be questionable. But the regent, desperate for creative solutions, summoned Law to court again — and this time Law found a receptive audience.

The regent permitted Law to establish a private bank in May 1716, the *Banque Générale*. The bank would take in gold and silver as deposits, and issue paper notes which would be redeemable in coin on demand. The notes would be 100% backed by the gold and silver in the bank's vaults. The bank would be initially capitalized by selling 1200 shares at 5000 livres each, which could be purchased by investors with a combination of cash and government debt. Law bought a quarter of the shares, and the regent bought nearly a quarter in the name of the young king, which established the bank with capital of 75% government bonds and 25% gold and silver coin.

Since the bank's notes represented a legal claim on gold livres held securely in the bank, those who accepted the notes in public transactions no longer had to worry whether coins they accepted as payment were counterfeit — which was always a risk with coin transactions. As a result of this key advantage, which had been at the foundation of the Bank of Amsterdam's success over the prior century, the notes quickly became a preferred method of payment.

Along with the security of being fully backed by gold and silver, the bank's notes and shares were also made more attractive by the regent's actions. He ordered a recoinage, which reduced the amount of gold in every livre-denominated coin by 20%. Then, in a series of partial defaults, the regent reduced the value of certain government bonds in October 1715, reduced the payments to sold offices in January 1716, on floating rate debt in April, and on annuities in June. This reduced the government's debt service payments by 7mL a year. The regent then converted the government's floating rate debt to bearer notes (*billets d'État*), which came with a 4% interest rate, no defined redemption date, and no specific backing. The bearer notes traded at 36% of their face value in mid-1716 after they were issued with such weak backing — but they could be used to purchase shares of the Banque Générale at par value. As a result, the bank's 1200 shares



were quickly subscribed, and gold and silver coin, along with billets d'État, flooded into the Banque Générale's vaults and were exchanged for bank notes and shares.

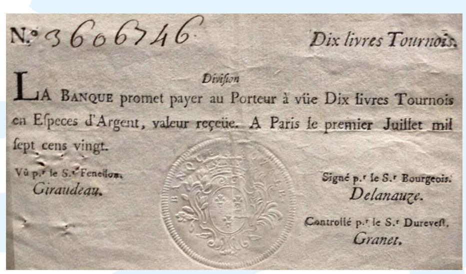
As the bank's deposits increased, so did the volume of paper livres circulating throughout France. The Banque Générale issued 40–50 million livres of bank notes annually between 1716 and 1718, and they quickly began to displace coin for official business. In October 1716, tax collectors were required to take the notes as payment, and in April 1717 the notes became required to pay all taxes. Then in September 1717, the royal accountants began keeping all government records and receipts, and made all payments, in paper livres issued by the bank.

By 1718, the bank had been so successful in transforming France's financial infrastructure that the regent and Law decided to nationalize it by buying out all shareholders in the name of the king. Existing shareholders were bought out at the par value of 5000L per share. For shareholders who paid for their shares with gold and discounted billets d'État in 1715, their total return, including dividends, came to 115% on their investment in only three years — a rate of return almost unheard of at the time. This established Law's reputation as someone to bet on.

When all the outstanding shares had been purchased in the name of the king by December 1718, the Banque Générale officially became the *Banque Royale*. For the first time, the regent found himself with a printing press at the government's disposal, and the presses set to work almost immediately. While the Banque Générale had issued banknotes at a rate of 40–50mL per year leading up to 1719, the Banque Royale began by issuing that many banknotes in its first month — and the pace accelerated from there.

In April 1719, the Banque Royale issued 28mL in 1000L denominated notes, along with 10mL in 100L notes — for a total of 38mL. The following month, the bank issued 109.9mL in notes. By September, the rate of new note issuance had reached 500.6mL, and in December the bank issued 769mL in new notes, including 332.9mL in new 10,000-livre denominated notes. By the end of 1719, the value of paper banknotes circulating throughout France had climbed twenty-fold to nearly one billion livres.

There was a critical, but little noticed change which allowed the expansion of the supply of paper banknotes in 1719. One of the main reasons the notes of the Banque Générale had gained widespread acceptance was that they could be redeemed for a specified amount of gold or silver livres: printed on every banknote was a guarantee that it could be brought into the bank and converted in coin. For example, a 500L note issued from the Banque Générale in 1718 read "the Bank promises to pay on sight to the bearer 100 écus of the weight and fineness of this day," the écu being a specific amount of silver. With that guarantee, the public confidently deposited their gold and silver into the vaults of the Banque Générale, knowing the notes they received in exchange were convertible any time they chose.



The notes of the Banque Royale, however, contained a guarantee that they were legal tender for their denominated number of livres, but there was no guarantee that they could be converted into a specific amount of gold or silver. Those holding the notes were thus in possession of a commitment from the king that they would be accepted as payment, but no guarantee of their real value in gold and silver.

The public hardly noticed. By 1719, banknotes had replaced coins in nearly all everyday transactions, from buying bread to paying taxes. In addition, the value of shares in Law's newest venture were traded in banknotes as well — and the public was clamoring for part of the action.

In the wake of the successful launch of the Banque Générale, Law had formed a private trading company in 1717, the *Compagnie d'Occident* (Company of the West), to develop the Mississippi territory in North America. The French colony of Louisiana, representing 41% of the present-day continental United States and named after the late Louis XIV, had been a French colony for forty years. Yet in 1717 only 500 Europeans lived in the entire territory, and it had never been developed enough to return any profit to France. Law acquired a monopoly for the Company of the West to develop and trade with the territory, and he set to work putting his plan into action.

An IPO was opened on September 14, 1717, to attract capital for the development of Louisiana and other ventures Law wanted the Company to pursue. Unlike the launch of the Banque Générale, investors could buy shares solely with government debt, billets d'État. Subscriptions for the shares were slow, however, and over the first two weeks only 28mL of the 100mL IPO was purchased — and 13.3mL had been purchased by Law himself. In June 1718, a payment option was introduced where investors could put 20% down and pay the rest within five months, and this stimulated just enough demand to sell all 100mL of the shares by the end of 1718.

However, the tepid initial demand for the shares in 1718 surged dramatically in 1719. In the spring and early summer, Law had announced a series of mergers and new businesses for the Company of the West. He first moved to combine the trading operations with two other existing French trading companies, the Compagnie des Indes Orientales and the Compagnie de Chine. He set an additional share offering to recapitalize those companies under the Company of the West and to begin building a fleet of long-haul, 500-ton vessels. The initial shares of the Company of the West were offered at 490 livres throughout 1718, but Law offered the new shares at 550 livres in May of 1719, and the new offering was not only fully subscribed, but the shares were immediately bid up to 600 livres on *rue Quincampoix*.

In the early months of 1719, a secondary market for Company of the West shares had spung up on rue Quincampoix, a short, narrow street on the right bank in Paris, where the Banque Royale was headquartered. Traders had begun inundating the street during the day while waiting for news to come out of the bank, buying or selling their Company shares in response to any perceived change in the Company's fortunes. Rents for space along the street soared as merchants established trading houses, shops and cafes to capitalize on the traders' growing exuberance.

Yet the growing frenzy for the shares was not fueled primarily by Law's acquisition announcements that spring, but by the growing monetary flood from the Banque Royale. There had been four banknote issues in the first four months of the year, on January 10, February 15, and the 1st and 28th of April; a total of 110 livres of new banknotes had been issued by the Banque Royale in just four months. Then on May 7, Law announced another devaluation of the gold livre coin, which induced a new surge in demand for more banknotes, and the Banque Royale's printing press responded.

Yet the monetary-fueled rise to 600 livres a share in May was just the beginning. In July, Law announced the Company of the West was taking over trade with Africa, and also operation of the Royal Mints. These announcements were coupled with 50mL of new banknotes from the Banque Royale in July, and the shares of the Company of the West surged above 1000 livres on July 21. The bank then issued another 220mL in new banknotes in August, 120mL in September, 120mL in October and November, and 148mL in December. As the new notes flooded out into the rue Quincampoix, Company of the West shares soared. By the end of 1719, the Banque Royale had issued 810mL in banknotes, and the Company of the West was valued more highly than the entire French economy.

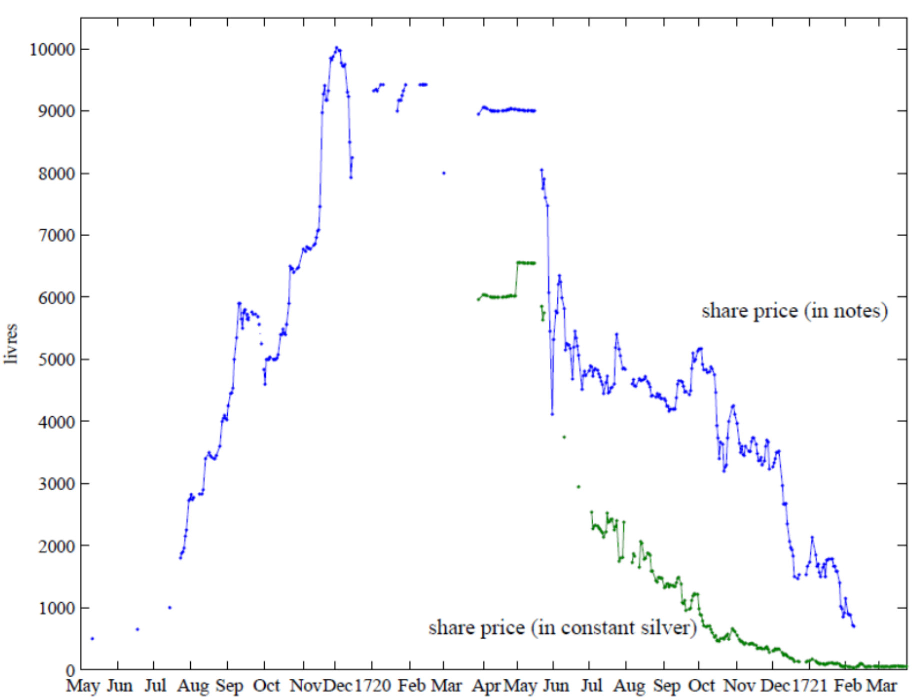
The twenty-fold surge of Company of the West shares to 10,000 livres in 1719 was fueled by a twenty-fold increase in the supply of Banque Royale notes, and the shares were not the only price rising in France. Property prices had risen so high that rental yields in Paris fell to just 2%, and even wealthy citizens in Paris and throughout the rest of France found themselves no longer able to afford a home. The cost of basic commodities was rising as well. The price of meat and grain surged, and the exchange rate of the livre with other currencies throughout Europe began to decline — making foreign imports more expensive. Throughout France it was becoming increasingly difficult to meet daily expenses.

* * *

The end of the boom arrived when the first trickle out of banknotes back to gold and silver began.

Law had announced a series of decrees in 1719 that progressively restricted the use of gold and silver to small transactions, and by December 1719 it was illegal to make a payment larger than 300 livres in gold or 10 livres in silver. In February 1720, as the supply of banknotes reached 1 billion livres, it was made illegal to own more than 500L in gold, in any form. Then in April, when the money supply had doubled again to 2 billion livres, all gold and silver clauses in contracts were voided by royal decree.

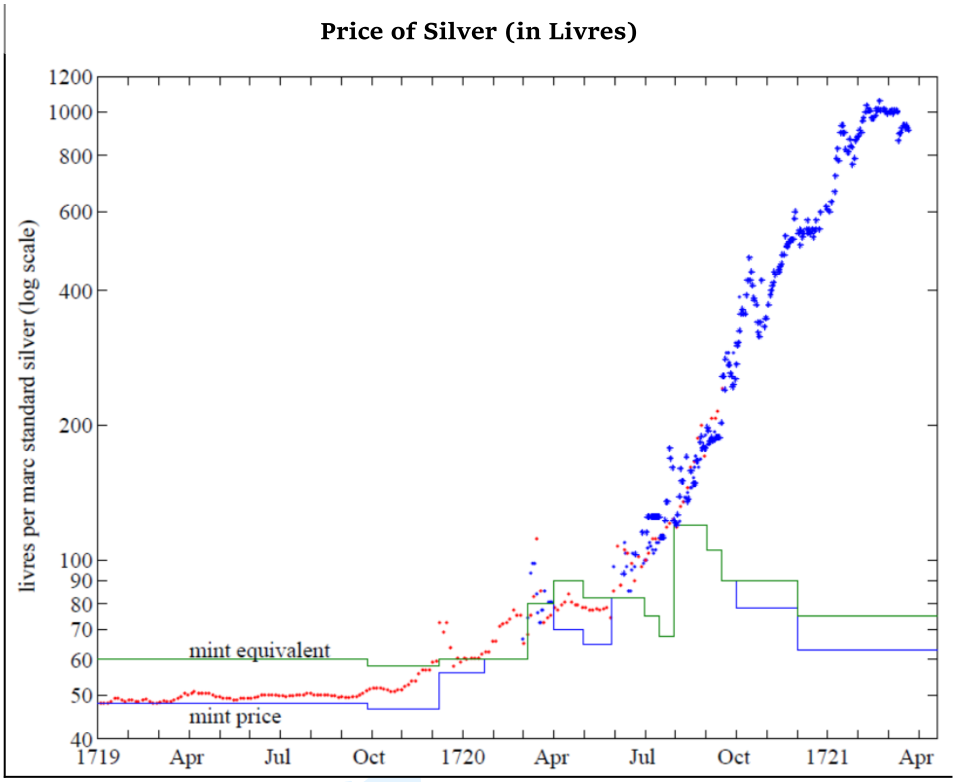
Company of the West Share Price, 1719-1721



By that time, however, the price of gold and silver had begun rising as Parisians began to sell their Company of the West shares and banknotes for any portable real asset. Law found himself having to issue more and more banknotes just to keep the share price of the Company of the West aloft and confidence in the notes intact, but once the first cracks in sentiment began to widen, no amount of new banknotes or decrees was enough stem the exodus back into real assets.

There was a run on the Banque Royale on the last day of November 1719, and the next day Law was forced to issue a decree that all public payments were to be made in banknotes — not gold and silver. This ended the run on the bank on December 1st, but the event proved to be an awakening. The price of gold and silver continued to trend higher through early 1720, with a marc of silver reaching 80 livres. This was only a modest increase from the 50 livres a marc of silver had traded at throughout the twenty-fold expansion of the Banque Royale's money supply in 1719, but as panic set in, the price of gold and silver began to rapidly catch up to the expanded supply of paper livres.

Law then realized that in order to restore confidence in the notes of the Banque Royale, he would have to shrink the supply of banknotes and devalue the shares of the Company of the West to bring them in line with the supply of gold and silver. When the supply of notes from the Banque Royale had climbed to 2.2 billion livres in May, it was more than twice Law's estimate of the value of gold and silver in France. He issued a decree on May 21, 1720, announcing a steady reduction in the value of the Company of the West shares from the then current 9000 livres a share to 5000 livres by the end of the year, along with a concurrent reduction in the supply of Banque Royale notes. In Law's rational mind, this would restore the balance between paper assets and



real assets to a more sustainable equilibrium.

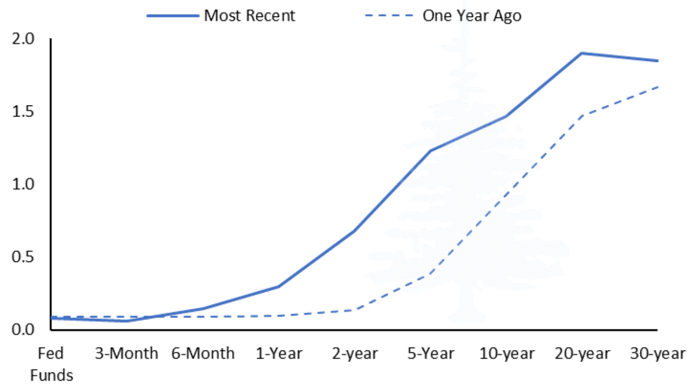
The impact of the decree on the rue Quincampoix, however, was anything but rational or stable. Panicked Parisians rushed to convert their banknotes into gold and silver, and they sold every asset that was denominated in banknotes to do so, including Company of West shares.

When the Banque Royale was slow to open a few days later on May 25th, an angry mob threw stones at the windows of the bank until it did. There were few bids for Company of the West shares on rue Quincampoix, but what transactions did take place occurred at prices below 5000 livres a share — half what they had traded at prior to May 21. Shareholders were furious at losing half their wealth. Rumors then abounded that the Banque Royale did not have any more gold and silver to exchange for banknotes, and the bank was closed on May 31 so an inspector could examine the books. The inspector assured the public that the bank was in decent shape and that there was "plenty" of gold and silver to continue redemptions of banknotes, but when the bank was reopened, the panicked redemptions resumed.

To quell the panic, a new edict was issued on June 1st that permitted citizens to own as much gold and silver as they desired, reversing the restrictions that had been put in place beginning in 1719. Over the next six months, banknotes were abandoned wholesale for the safety and security of gold and silver, and assets denominated in banknotes lost nearly all of their real value; the price of a marc of silver climbed from 80 livres in April to over 1000 livres in early 1721, and shares of the Company of the West fell back below 1000 livres per share.

By the end of 1721, rue Quincampoix had returned to the quiet street it was before the boom, as the traders outside the Banque Royale had all but disappeared. Law had fled back to Italy. In Louisiana, another 500 settlers had arrived at the end of 1720, some of them against their will, which brought the total number of Europeans in the territory to 1000. However, the Company of the West never realized a profit from Louisiana before the boom in the shares had turned into a bust.

Treasury Yield Curve



Yields Over the Past Year

Monetary Aggregates & Debt

	Recent	1 Quarter Ago	1 Year Ago	Growth Rates:	1-Year	3-Year	10-Year	Since 1971
M1	20,538.70	19,880.00	17,850.90		15.06%	77.95%	25.20%	9.55%
M2	21,624.10	20,992.70	19,190.00		12.68%	14.60%	8.37%	7.34%
GDP	23,202.34	22,740.96	21,138.57		9.76%	3.95%	4.02%	6.31%
Velocity	1.12	1.12	1.15		-2.79%	-8.51%	-3.88%	-0.92%
Federal Debt	28,426.92	28,529.44	26,945.39		5.50%	9.73%	6.75%	8.96%
Federal Debt to GDP	122.52%	125.45%	127.47%		-3.89%	5.56%	2.63%	2.50%

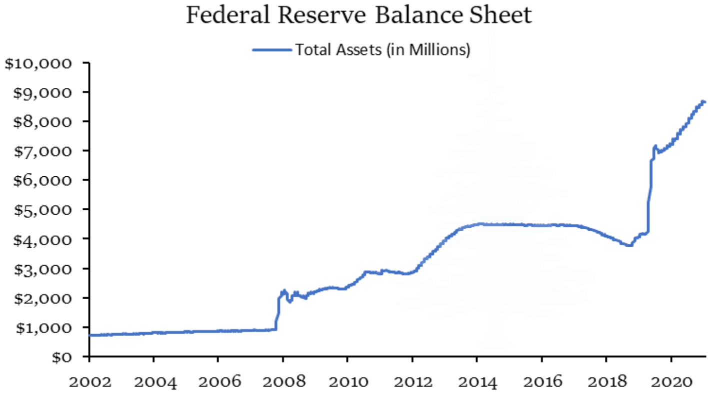
Federal Reserve Assets & Liabilities

	Recent	Prior	1 Year Ago	Growth Rates:	1-Year	3-Year	10-Year	Since 1971
Currency	2,223.99	2,211.67	2,070.53		7.41%	9.22%	7.63%	7.60%
Monetary Base	6,394.80	6,331.00	5,093.00		25.56%	22.53%	9.39%	9.13%
Treasury Securities	5,911.60	5,644.35	4,872.97		21.31%	29.89%	13.51%	9.54%
Mortgage Securities	2,686.26	2,628.13	2,099.85		27.93%	18.05%	12.23%	n/a
Total Balance Sheet	8,867.83	8,790.50	7,414.94		19.59%	28.54%	11.75%	9.75%

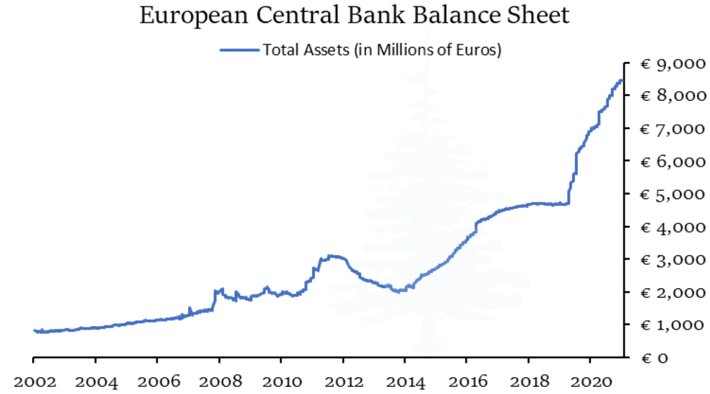
Nominal Rates & Yields

	Recent	Prior	1 Year Ago		Recent	Prior	1 Year Ago
Federal Funds	0.08%	0.08%	0.09%	3-Month CD	0.17%	0.14%	0.17%
3-Month Treasury Yield	0.06%	0.05%	0.09%	3-Month Commercial Paper	0.14%	0.07%	0.08%
2-Year Treasury Yield	0.68%	0.51%	0.14%	Municipal Bond Yield	1.06%	1.07%	0.76%
5-Year Treasury Yield	1.23%	1.20%	0.39%	AAA Corporate Yield	2.71%	2.57%	2.23%
10-Year Treasury Yield	1.47%	1.56%	0.93%	Junk Bond Yield	3.40%	3.81%	3.32%
30-Year Treasury Yield	1.85%	1.94%	1.67%	30-Year Mortgage Rate	3.11%	3.10%	2.67%

Federal Reserve Balance Sheet



European Central Bank Balance Sheet



An Exuberance All Too Familiar Amid a Modern Monetary Bubble

Go long a company that sounds like something Elon Musk mentioned in a tweet (but wasn't)? Signal Advance Inc. just soared 12-fold. Lend money to a software maker to buy Bitcoin? A Microstrategy Inc. convertible bond is up 50% in four weeks. Back up the truck on bullish options after the Nasdaq 100 doubled in 24 months? Wednesday was the fourth-busiest day ever for call trading in the U.S. (the other three were last year).

Throw a dart, hit a winner, so it has lately seemed. Emboldened by Federal Reserve stimulus, vaccines and the psychological conditioning that arises when no bad patch lasts, everyone from retail newbies to institutional managers is rushing to cash in…

- Bloomberg, January 2021

The amount of financial assets relative to real assets is dangerously high, which could lead to a 'bank run'-type move from financial assets to real assets.

- Ray Dalio, January 2022

The preceding account of the Mississippi Bubble, related from the perspective of the Banque Royale, should sound all too familiar today. The speculative fervor that had been building in recent years reached a truly fever pitch in 2021 as the Federal Reserve expanded its balance sheet at the fastest pace in its history. However, as was the case in early 1720, not-so-subtle signs of erosion in the sentiment fueling the bubble were in plain sight as 2021 drew to a close.

Not all financial bubbles have been fueled entirely by monetary expansion — some have been genuine speculative manias. During the Tulip Mania a century before the Mississippi Bubble, the Bank of Amsterdam did not increase Holland's money supply like the Banque Royale did in 1719, but tulip bulb prices soared astronomically for other reasons. Similarly, while the Federal Reserve did play a role in fomenting the 1929 bubble and the tech bubble in the 1990s, those periods were fueled primarily by intense speculation surrounding new-era technologies. Monetary policy added fuel to the exuberance, but there was much more to those episodes.

Yet speculative periods which are primarily the result of large increases in the money supply tend to follow a regular progression, one that has been repeating for over three centuries, right up to the present day. Initially, the increase in the money supply fuels a genuine expansion of business and economic activity. This can have a tremendous impact on sentiment, which can then have a genuinely positive impact on real economic opportunity and growth. The positive feedback loop that takes hold can make it seem as though all that was ever needed was more money and more credit in order to increase everyone's prosperity.

It especially feels this way as risk assets boom in response to the increased money supply, but before the lagged effects of a large monetary inflation begin to take hold throughout the rest of the economy. If the story only ended right there . . .

One aspect of the Mississippi Bubble left out of the account above was how and why it became critical to keep Company of the West shares trading at a high price in late 1719. Large monetary expansions are not events that unfold in a vacuum — there are usually strong economic and/or political motives for expanding the money supply, and this was certainly the case in 1719.

On August 17, 1719, with Company of the West shares having climbed above 3000 livres, Law proposed lending the regent enough livres to buy out all remaining government debt. The proposal was initially made in the form of a loan: the Company of the West would lend the regent 1600mL at 3%, and the regent would retire the rest of the government's debt that remained after the partial defaults in 1715 and 1716. It was a bold idea, with one small problem — the Company of the West did not have 1600mL to lend.

As the proposal reached rue Quincampoix, the shares soared on the news that the Company was in a strong enough position to make such an offer to the regent. By September 9, the shares traded at 5350 livres, and Law decided on a plan. He would issue enough new Company of the West shares to raise the funds needed to lend to the regent so the government's debt could be retired. This required the price of the shares to remain aloft until enough shares could be sold, and it was during this time that the Banque Royale's issuance of banknotes rapidly accelerated.

A total of 300,000 shares were offered at 5000L each. Subscribers to the offering could purchase the shares by making ten monthly payments, and the terms specified that if a payment was missed, the subscriber would forfeit the shares as well as all previous payments. This made it critical that the Company of the West shares not only remain above the 5000L offering price, but that they remain well above that level over the following year. Otherwise, if the shares fell, subscribers would simply balk at continuing their payments, and the king's debt could not be retired.

Between the summer of 1719 and the summer of 1720, the Banque Royale expanded the money supply fourteen-fold, and the former debt holders found themselves gleefully holding Company of the West shares that soared to over 10,000 livres. For a brief moment, it seemed as though this massive debt-for-equity swap had left nearly everyone on the profit side of the ledger: the king was no longer in debt, and former debt holders were growing wealthier at a previously unimaginable rate with their shares. This financial Eden lasted until the lagged effects of the monetary expansion began to rise above the surface outside rue Quincampoix, and confidence in the banknotes, and everything denominated in them, began to dissolve.

By the time the Federal Reserve winds up its balance sheet response to the pandemic this spring, it will have more than doubled the base money supply of the U.S. in just two years. That expansion is not nearly on the same scale as what happened three centuries ago in France, but since the financial crisis, the U.S. base money supply has expanded by 7.7 times — a scale inching ever closer to that of the Banque Royale.

The primary reasons the Federal Reserve has engaged in such a large monetary expansion over the past twelve years are some of the same reasons the regent was receptive to John Law's proposals in 1715 — unsustainable debts. The credit crisis in 2008 represented a moment when the buildup of mortgage debt threatened to derail the growth prospects of the entire economy, which would have had dire long-term consequences. Similarly, the buildup of corporate debt led the Fed to backstop the entire corporate debt market when the pandemic hit in March 2020. In his press conference this past September, Fed Chair Jerome Powell candidly admitted how the buildup of corporate debt impacted their decision-making in early 2020:

Corporate leverage built up over the course of the long expansion that ended with the pandemic. We were concerned in the last year or so, and then I'd say very concerned at the beginning of the pandemic that, if you've got a highly leveraged company and your revenue stops for an uncertain period, as things happened at the beginning of the crisis, we were very concerned that there would be a wave of defaults. It didn't happen to a significant extent because of the Cares Act and the response that we undertook and all that. It was a much stronger response than we've ever had.

- Fed Chair Jerome Powell,
September 22, 2021

It is important to recognize that these are the words of a central bank that has ceded control of the money supply in order to mitigate the effects of debt on economic growth. This has effectively been the case for twelve years, and there are few signs the Fed will be able to re-prioritize managing money supply growth any time soon: with the increase over the past two years, the amount of debt in the U.S. reached 370% of GDP in the third quarter of 2021, which is down only slightly since the peak of 380% of GDP in 2008. This loss of control due to high indebtedness, which monetary policy over the past thirty-five years has encouraged and enabled, will likely become known as the Federal Reserve's Third Great Mistake.

The market response to the money supply growth since the financial crisis has followed a progression uncannily similar to what unfolded on rue Quincampoix in 1719 and 1720, only spread over the course of a decade. By the time shares reached their peak, the Company of the West was worth more than the entire gross domestic product of all of France. Although this valuation was fueled entirely by the monetary output of the Banque Royale, investors at the time justified it to themselves by imagining all the profits that would flow in from abroad once the Mississippi territory was developed and the trade routes to Africa and Asia were expanded. It seemed as though France was destined to become a center of global profits, and so the higher the shares went, the more intensely investors, validated in their views by the actions of the Banque Royale, clamored for them.

Today, the U.S. equity market is trading at twice the value of the U.S. economy, and the largest stocks in the market are valued more than the domestic equity markets of many other first world economies. The value of all stocks and bonds based in the U.S. is now at 350% of U.S. GDP. It is in this environment of a record amount of financial assets relative to the size of the economy that investors have taken on as much leverage to bet on a continued upward trajectory as at the peaks of the housing bubble in 2007 and the tech bubble in 2000.

Without a doubt, there is more real profit flowing to U.S. corporations than ever flowed to the Company of the West, but just as investors did three centuries ago in France, investors today have conflated the impact on market prices from a vast monetary expansion with the brightness of future prospects.

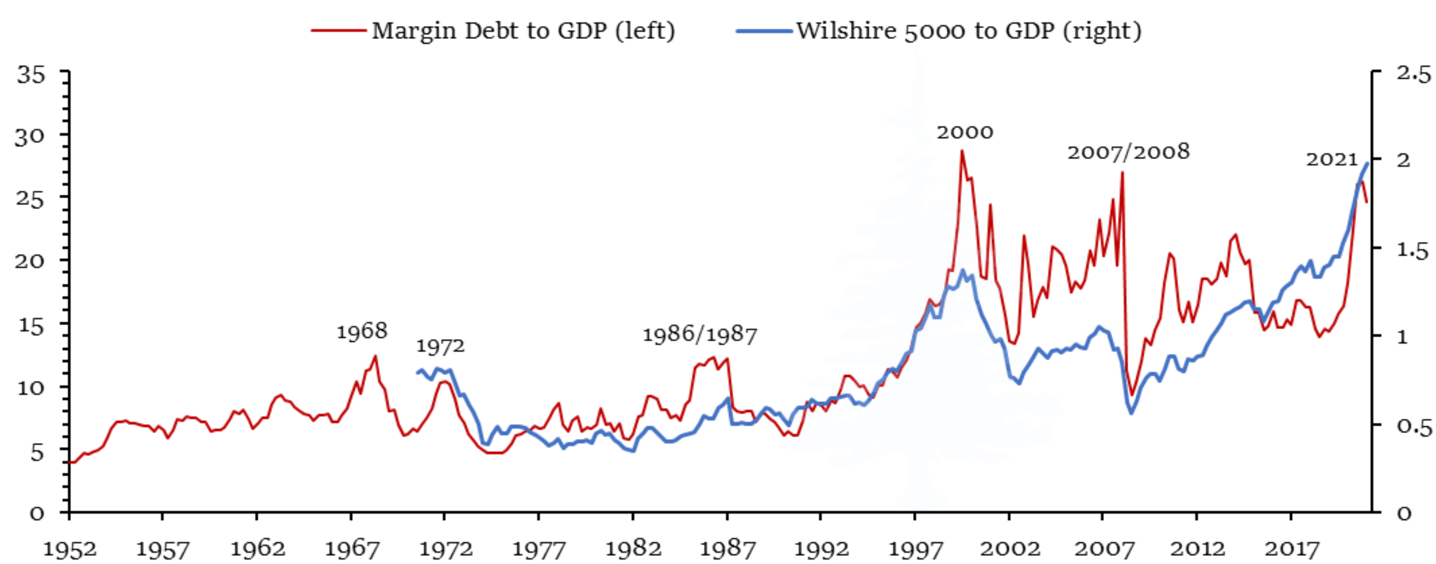
A few simple statistics will suffice to illustrate the exuberance over the past year. In 2021, the largest ten members of the S&P 500 Index traded at a price-to-earnings ratio as high as 43, which is just shy of the peak reached in 2000 of 47. For context, these largest companies of the index traded at P/E ratios near 15 as recently as 2015. In addition, the largest five companies in the S&P 500 had grown to represent 23% of the index in 2021, which is far above the 16.8% the top five companies represented at the peak of the tech bubble. This shows that the U.S. equity market this past year was more dependent than ever on just a handful of profitable, but wildly expensive companies.

Just beneath the calm veneer of the S&P 500 Index, dominated as it was in 2021 by just five large companies, was a picture of technical erosion and deterioration similar to what unfolded at the very peak of the tech bubble two decades ago. Back then, the most speculative core of the market bubble peaked in spectacular fashion in March of 2000, and subsequently collapsed into April. This marked the top for large technology companies, a high-water mark that many would never revisit again. However, the broader market quickly recovered from the volatility in March and April, and by August and September, the S&P 500 Index was back at its March high, and the broader NYSE Composite was trading at a new high — a recovery which convinced many that the worst had passed.

Over the past year, an almost identical progression between some of the most speculative areas of the market in recent years and the broader market unfolded. While the broader market managed to maintain its footing through the end of 2021, participation deteriorated significantly enough to sound some of the same technical alarm bells that were ringing as the year 2000 came to a close. Remarkably, this deterioration unfolded despite the Federal Reserve continuing to expand the money supply throughout the year.

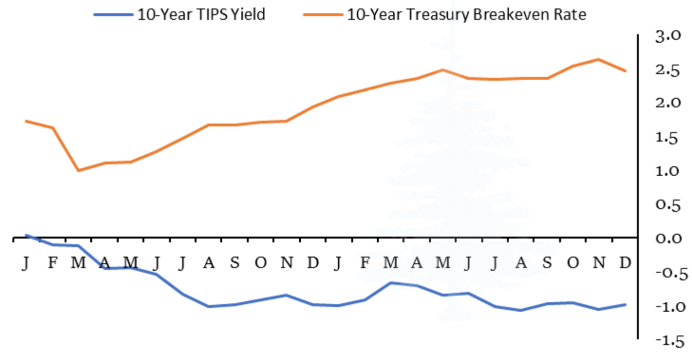
At the end of a bubble, exuberant sentiment is all that remains to fuel the market higher, and once that sentiment begins to erode, there is little left to support prices. Between the end of 1719 and the following April, Law and the Banque Royale more than doubled the supply of banknotes circulating in France from under 1 billion livres to over 2 billion livres. This was a greater monetary expansion than occurred in all of 1719, and it was completed in just four months — yet the price of Company of the West shares had stagnated near 9000 livres.

Unnoticed by most traders on rue Quincampoix in early 1720, the bubble in Company of the West shares had already peaked, and the return to real assets had already begun. The price of gold and silver was slowly rising, but the value of real assets would not begin to catch up to the full expansion of the money supply until the bubble sentiment surrounding the Company of the West finally broke. Once that happened in May of 1720, the trickle into real assets turned into a flood.



Silver Price

Real Yields & Breakevens



Price Indexes

	Most Recent	Prior	1 Year Ago	Valuation (Percentile)
PCE	118.20	117.49	111.79	
Consumer Prices	280.19	278.88	261.56	
Producer Prices	231.12	232.25	205.60	
Commodities	241.02	243.17	200.50	
Gold Relative to Base	87.99%	85.37%	107.81%	12th
Gold Relative to M2	8.46%	8.27%	9.61%	8th
Gold Relative to CPI	656.29%	639.15%	711.40%	73rd

Real Rates & Yields

	Most Recent	Prior	1 Year Ago
Real Fed Funds	-7.04%	-6.80%	-1.21%
Real 2-Year Treasury	-6.44%	-6.37%	-0.97%
Real 10-Year Treasury	-5.65%	-5.32%	-0.37%
5-Year TIPS	-1.52%	-1.78%	-1.48%
7-Year TIPS	-1.24%	-1.39%	-1.24%
10-Year TIPS	-0.99%	-1.06%	-0.98%
30-Year TIPS	-0.42%	-0.44%	-0.33%

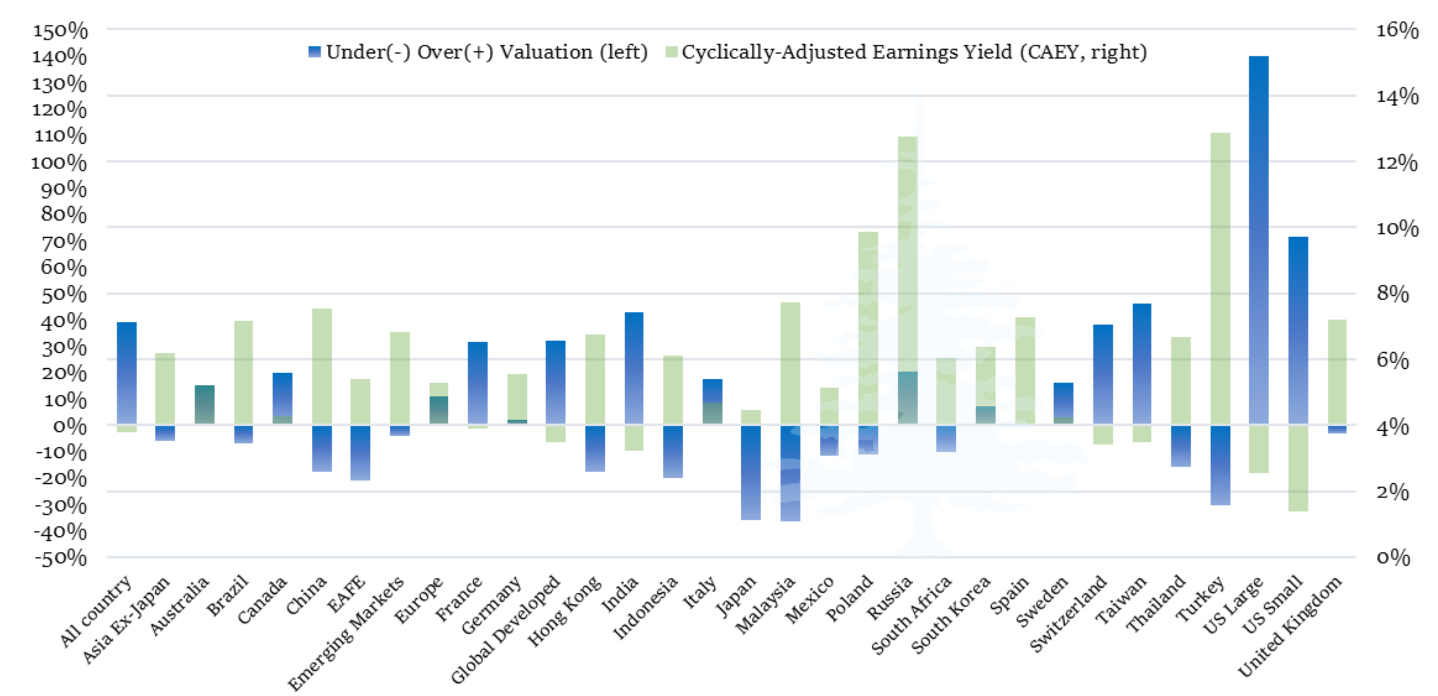
Real Asset Prices

	Most Recent	Prior	1 Year Ago	Growth Rates: 1-Year	3-Year	10-Year	Since 1971
Gold	$1,816.50	$1,764.50	$1,855.30	-2.09%	12.05%	1.02%	7.91%
Silver	$22.92	$21.55	$25.80	-11.18%	13.47%	-2.57%	5.23%
Platinum	$964.60	$910.90	$1,126.40	-14.36%	6.43%	-4.30%	4.39%
Copper	$4.42	$4.26	$3.66	20.63%	18.82%	1.94%	3.96%
Corn	$242.67	$232.25	$151.70	59.97%	18.40%	-0.51%	10.69%
Wheat	$262.47	$254.48	$165.50	58.59%	20.24%	3.42%	10.61%
Lumber	$352.09	$303.22	$297.30	18.43%	17.94%	6.93%	4.53%
Oil (WTI)	$71.71	$79.15	$47.02	52.51%	13.14%	-3.13%	6.31%
Home Prices	273.05	270.26	229.33	19.07%	10.03%	7.07%	5.23%
Farm Land	$2,296,689	$2,292,954	$2,255,727	1.82%	2.00%	3.92%	5.28%

Gold Relative to the U.S. Monetary Base

Global Equity Market Monitor

Equity Market	Under(-) Over(+) Valuation	CAEY	Inflation Rate	Bond Yield	Equity ETF	Price	Dividend	P/E	P/B	Holdings
Malaysia	-36.58%	7.74%	3.3%	3.7%	EWM	$24.77	3.82%	16.54	1.60	35
Japan	-36.03%	4.44%	0.6%	0.1%	EWJ	$66.12	1.37%	17.28	1.55	259
Turkey	-30.48%	12.86%	36.1%	22.0%	TUR	$19.78	2.12%	11.91	1.64	49
EAFE	-20.94%	5.40%	5.4%	3.8%	EFA	$77.76	1.91%	21.35	2.03	833
Indonesia	-20.28%	6.10%	1.9%	6.4%	EIDO	$23.21	1.22%	23.19	2.32	80
Hong Kong	-17.60%	6.73%	1.8%	1.7%	EWH	$23.71	2.52%	20.51	1.25	35
China	-17.53%	7.55%	1.5%	2.7%	MCHI	$62.68	1.10%	16.67	1.89	626
Thailand	-15.83%	6.66%	2.2%	2.2%	THD	$75.95	2.70%	24.07	2.24	126
Mexico	-11.42%	5.13%	7.4%	7.7%	EWW	$50.57	1.66%	20.56	2.22	46
Poland	-11.01%	9.88%	8.6%	4.1%	EPOL	$21.85	1.43%	19.92	1.36	38
South Africa	-9.98%	6.03%	5.9%	9.4%	EZA	$48.27	2.38%	12.27	2.02	38
Brazil	-6.83%	7.15%	10.1%	11.6%	EWZ	$28.89	6.93%	16.72	1.82	50
Asia Ex-Japan	-5.94%	6.17%	3.9%	3.2%	AAXJ	$83.09	1.05%	19.30	2.04	1060
Emerging Markets	-4.12%	6.83%	7.1%	6.8%	VWO	$49.97	1.98%	12.70	2.20	5306
United Kingdom	-3.03%	7.22%	5.4%	1.3%	EWU	$34.38	3.15%	19.24	1.98	85
Spain	-0.09%	7.27%	6.5%	0.7%	EWP	$26.83	0.82%	19.11	1.35	20
Germany	1.92%	5.56%	5.3%	0.0%	EWG	$32.70	1.45%	21.03	1.98	61
South Korea	7.10%	6.38%	3.7%	2.5%	EWY	$75.49	0.89%	17.91	1.26	111
Europe	11.11%	5.28%	6.5%	5.1%	VGK	$67.59	3.05%	17.30	2.10	1357
Australia	15.36%	5.22%	3.0%	5.0%	EWA	$24.22	3.55%	18.23	2.40	64
Sweden	16.26%	4.24%	3.9%	0.4%	EWD	$43.36	1.31%	21.55	2.73	44
Italy	17.35%	4.68%	3.9%	1.4%	EWI	$33.05	1.55%	18.30	1.53	25
Canada	19.92%	4.27%	4.9%	1.9%	EWC	$39.08	1.65%	18.67	2.39	89
Russia	20.27%	12.75%	8.4%	9.3%	ERUS	$36.46	4.57%	13.53	1.06	26
France	31.43%	3.90%	2.8%	0.4%	EWQ	$38.56	1.27%	29.26	2.24	69
Global Developed	31.86%	3.49%	4.3%	1.5%	VEA	$50.49	2.49%	15.70	1.80	4022
Switzerland	38.04%	3.42%	1.5%	0.0%	EWL	$50.73	1.31%	24.63	3.63	41
All Country	38.98%	3.78%	5.8%	4.1%	ACWI	$102.58	1.27%	26.01	3.18	2331
India	42.99%	3.23%	5.6%	6.6%	INDA	$47.35	0.22%	34.06	4.23	107
Taiwan	46.14%	3.49%	2.6%	0.8%	EWT	$66.88	1.74%	21.96	2.44	88
US Small	71.47%	1.40%	7.0%	1.8%	IWM	$207.84	0.79%	19.67	2.37	2034
US Large	139.69%	2.55%	7.0%	1.8%	SPY	$453.78	1.30%	23.73	4.64	507



Data Sources: FRED; Research Affiliates, LLC ("Research Affiliates") © Research Affiliates 2022; Sitka Pacific Capital Management, LLC

The Newsroom

The Federal Reserve is laying the groundwork for the start of a cycle of interest rate hikes that the bond market warns might be unusually constrained in how far it can go, setting the two on a collision course where one will eventually have to give.

The Treasuries yield curve -- or the spread between short-term and long-term interest rates -- looks set to be the flattest at the beginning of a Fed tightening cycle in a generation if the central bank begins raising its benchmark overnight rate in mid-2022 as now forecast. The two-year, 10-year spread is about 83 basis points, with futures indicating 55 basis points in June.

Both that flatness and the level of longer-term yields suggest investors see the central bank not being able to do too much before having to hit pause, or even reverse course if the economic recovery is in jeopardy.

- Bloomberg, December 15, 2021

The U.S. went on a borrowing binge last year and the hangover could make it harder for the Federal Reserve to fight inflation without crashing the economy. Corporate debt has surged $1.3 trillion since the start of 2020 as borrowers took advantage of emergency Fed action as the pandemic spread, slashing interest rates and backstopping financial markets to keep credit flowing. More debt held by more companies suggests potential risks as borrowing costs rise from currently low levels.

That could create financial stability concerns for Fed Chair Jerome Powell and his colleagues as they debate removing pandemic support in the face of what a report Friday showed were the hottest price rises in almost 40 years. And a tough task: Not since Alan Greenspan's time has the U.S. central bank tried to navigate the economy back to price stability from too-high inflation.

- Bloomberg, December 16, 2021

Federal Reserve regional bank presidents who gain votes in the new year on the central bank's interest-rate-setting committee are likely to strongly support raising borrowing costs to try to combat high inflation. The leaders of the Fed's Kansas City, St. Louis, Cleveland and Boston reserve banks will become voters in 2022 on the Federal Open Market Committee, under the panel's annual rotation system. Giving up voting slots will be the chiefs of the Atlanta, Chicago, San Francisco and Richmond, Va., Fed banks.

The shift is unlikely to significantly alter the course of policy, coming after all Fed officials signaled at their Dec. 15 meeting they are expecting to raise interest rates in 2022. But the changes will draw more public attention to some of the Fed's so called hawks, those officials who tend to favor a more restrictive and less stimulative policy stance than their colleagues.

- Wall Street Journal, December 31, 2021

The stampede out of expensive technology stocks may be far from over as bond yields -- the biggest threat for high-flying growth shares -- mark new post-pandemic highs.

The $1.5 trillion rout in the Nasdaq Composite Index in the first week of 2022 has sent some of the most pricey stocks down 10% or more, but the decline in benchmark indexes from last year's records has yet to reach double digits.

"We've never seen stocks this expensive for the overall market, which means valuations are likely to come down more before we're through with this correction," Morgan Stanley's Michael J. Wilson wrote in a note to clients

- Bloomberg, January 10, 2022

U.S. inflation hit 7% in 2021 as pandemic-related supply and demand imbalances, along with stimulus intended to shore up the economy, put the biggest pressure on prices in nearly four decades. The Labor Department said Wednesday the consumer-price index—which measures what consumers pay for goods and services—rose 7% in December from the same month a year ago, up from 6.8% in November. That was the fastest pace since 1982 and marked the third straight month in which inflation exceeded 6%.

The so-called core price index, which excludes the often-volatile categories of food and energy, climbed 5.5% in December from a year earlier. That was a bigger increase than November's 4.9% rise, and the highest rate since 1991.

Fed Chairman Jerome Powell in congressional testimony Tuesday said he was optimistic supply-chain issues would ease this year and help bring inflation down. However, he also noted that the smaller U.S. labor force "can be an issue going forward for inflation, probably more so than these supply-chain issues," Mr. Powell said.

- Wall Street Journal, January 12, 2022

From the *Ministry of Irony*

As the European Central Bank waits for the spike in euro-area inflation to moderate, its staff is proving less patient. The institution's trade union -- known as the International and European Public Services Organization, or IPSO -- is demanding that this year's general salary adjustments for staff be topped up. The ECB's proposed raise of 1.3% "no longer protects our salaries against inflation," IPSO wrote last week in an email to employees that was obtained by Bloomberg.

While the ECB targets medium-term inflation of 2%, prices in Germany -- where the ECB is based and many of its staff live -- are likely to surge close to 6% this month, the Bundesbank warned this week. IPSO argued that the discrepancy between suggested pay raises and the cost of living will result in a "permanent loss in purchasing power" for staff.

"Even if the rise in inflation could be of a temporary nature -- which we all hope -- we have no guarantee to recoup our losses," the email stated. "The ECB is not able (or willing?) to protect its own staff against the impact of inflation!"

- Bloomberg, November 24, 2021

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