the 9:05 Bailard's Quarterly Review of Economic and Market Developments* Q4 2020

Chat with the CIO: Finding Lessons Learned from the COVID-19 Pandemic



In this quarter's Chat with the CIO, Eric P. Leve speaks with Selena Chaisson, MD and Director of Healthcare Investments, and Matt Johnson, Vice President of Healthcare Investments.

Inside this Edition:

Eric P. Leve, CFA: I've been with Bailard over three decades and never before have I seen such robust attendance at our Monday internal investment briefings, particularly considering we continue to work from home. This weekly meeting between our research staff and investment counselors usually works its way through the asset classes from domestic and international public equities to fixed income and real estate. Yet 2020 brought an unexpected motivation: our life sciences team garnered rapt attention as they offered perspective not just on the healthcare investment landscape, but they also fielded personal (and crucial) questions from our employees about the spread of the coronavirus, safety in a pandemic, and the science behind the vaccine development.

With that in mind, I'm more than pleased to chat with the two leads of our healthcare team, Selena Chaisson, MD and Matt Johnson. At the time of this conversation, we're nine months into the COVID-19 pandemic. Here in the U.S., the number of cases and deaths continue to rise, while in other parts of the world the virus has been better controlled. How does the response model we saw from places like East Asia compare with the challenges and public health failures we've experienced here?

Matt Johnson: Cultural differences have probably been the biggest factor. In many Asian cultures, people are more willing to buy into a collective

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notion of public health. There's a higher degree of trust in government policy around health issues.

Eric: Right, there's more of a communal sense of duty and shared responsibility for not making other people sick.

Matt: There's also more of a pandemic response precedent in Asian countries than in the U.S. They implemented mask-wearing and other measures in response to SARS, MERS, and serious influenza outbreaks over the past few decades.

Eric: What else contributed to the U.S. pandemic response becoming such a public health disaster?

Selena Chaisson, MD: As a nation, we hesitated to embrace strict rules on individual behavior that helped other countries control the virus, but we enforced them at an institutional level where more autonomy could have contributed to a more effective response. Americans place such a high premium on personal liberty and autonomy; people are more receptive to recommendations than to orders. But then, when the Centers for Disease Control and Prevention (CDC) failed to develop effective tests, the government restricted the scientific community's ability to create their own, including at renowned universities, that could have significantly stopped the spread in the early days of the pandemic.

Matt: The CDC's initial failure to develop an effective COVID-19 test was really striking. Some bad test kits created a stunning crisis of confidence and confusion in one of our primary public health institutions. The removal from government agencies of people knowledgeable on matters of pandemic preparedness was a factor, as well. Now the FDA and CDC face the communication challenge of instilling confidence in the vaccines and motivating people to get vaccinated, which seems to be going pretty well so far despite some public bickering of who should be first in line.

> "In advance of a pandemic, anything you say sounds alarmist. After a pandemic starts, everything you've done is inadequate."
>
> *Mike Leavitt, Health and Human Services Secretary under President George W. Bush*

Eric: Speaking of vaccines, what are the market implications for the companies producing them? Will the sheer volume of need for these drugs lead to outsized returns for the likes of Pfizer, Moderna, and others who are leading the way with vaccine development and distribution?

Selena: Not necessarily. We don't yet know how long each vaccine lasts. Based on current valuations, if the vaccine provides long-term immunity (like a measles vaccine), that would be a negative development for the companies manufacturing it. If the vaccine response is shorter and requires repeated doses, those companies will be able to sell more of it. But over time, competition in the marketplace will increase. Moreover, mRNA vaccines like both Pfizer and Moderna are expensive to manufacture, store, and transport, and governments are typically negotiating these contracts with reimbursement rates as low as $1.50 per dose.

Matt: Current vaccines must be stored at sub-zero temperatures, which is not feasible everywhere in the world—particularly in poorer countries. A truly global vaccination effort will require a drug that offers 30-day stability in terms of storage, and possibly a vaccine that can be taken orally as opposed to injected. There will be robust competition to develop new versions of the COVID-19 vaccine, not only among biotech companies here in the U.S. but also abroad in places like China and Russia.

Eric: As these vaccines become more widely distributed, what can we expect in terms of broader economic recovery?

Matt: In the short term, people are unlikely to suddenly return to pre-pandemic levels of activity. Dr. Steven Goodman, an associate dean at Stanford's School of Medicine, said at a recent FDA hearing that Americans have a 1-in-1,000 chance of dying of COVID-19 in the next six months, and a 1-in-200 risk of hospitalization. It will take time for the vaccine to be distributed widely enough that people feel safe going "back to normal." In the meantime, unemployment will likely remain high, especially in service industries.

Eric: That's true. The current COVID-19 spike could be the final straw for many small businesses. Fortunately, the $900 billion relief bill recently passed by Congress is a reasonable compromise and likely about the right scale to support the economy until broad vaccinations allow economic activity to gain some real traction. But, for example, reopening retail storefronts is going to be a big element of restoring supply chains and broad economic growth, and we likely won't see that shift happen until later in 2021.

On the monetary side, the Fed will likely continue with very loose monetary policy. The real (two-part) risk here is inflation: in the short term, the economy could act like it did after World War II, when industries reorienting toward peacetime production failed to supply enough goods to meet consumer demand, leading to inflation (which resolved in a few quarters). Investors might also get spooked by the "appearance" of inflation this Spring, as year-over-year comparisons with last March through May (when prices actually declined) are likely to produce big "headline" inflation.

The longer-term inflation risk is harder to gauge, and there's no magic wand with respect to controlling interest rates. If rates do spike, the recovery could be longer, slower, and more like the aftermath of the 2008 financial crisis, where economic growth remained tepid for several years.

Selena: I don't want to put the cart too far ahead of the horse, because we've been burned by incorrect assumptions about this virus before. If there were no vaccine at all, the pandemic would end once the population reached herd immunity. This has been the case in previous pandemics, after which the economy experienced a "V-shaped recovery." People and markets want to see this kind of straightforward, steady rebound, but our current circumstances don't lend themselves to that outcome. We will recover, but how long it will take and what the shape of the recovery will look like are still in question.

Eric: Exactly. What we're most likely to see is more of a "K-shaped" recovery: some parts of the economy are finding traction, whereas other cohorts are being left behind, and may be left behind for a long time.

While we are nowhere near through this crisis—nor do we know the ultimate outcome—I'd like to turn for a moment to look for any lessons learned thus far. Any silver linings? Will the scientific advances that emerged in response to COVID-19 perhaps be applicable to future pandemics?

Confirmed COVID-19 cases doubled globally to

80M+

from mid-October to December's end

Matt: Not all of the scientific developments around COVID-19 will have utility for health crises ahead. A coronavirus is a relatively simple virus, and other kinds of diseases (such as those caused by bacterial infections, especially antibiotic resistant strains) manifest and spread differently. However, significant advances in biotechnology over the past few decades, plus those prompted by this pandemic, will hopefully help us better understand our immune systems going forward.

Eric: What else should we keep in mind as far as lessons learned to inform our response to pandemics yet to come?

Selena: Assumptions made about this virus—such as the implications of antibodies, how it would behave in warm weather, and the effectiveness of certain treatments—often turned out to be incorrect. We need to rely more on science and less on so-called "conventional wisdom."

Matt: Funding for scientific entities is critical. Since the beginning of the Human Genome Project 20 years ago, the pace at which we can sequence a virus like COVID-19 has allowed for a much more rapid response. Having these newer genomic tools at our disposal allows scientists to develop vaccines more quickly. If the COVID-19 vaccine is as effective as the early data suggest it might be, this technology bodes very well for our ability to manage future pandemics.

Eric: Thanks Matt, and thanks Selena. I can safely say I'm not alone in my appreciation for your time, perspective, and expertise. Reflecting on this at year-end, it comes as no surprise that the Bailard team joined together, supporting each other both professionally and personally.

Multifamily Property Dynamics in a Post-Pandemic World

Jamil Harkness, Research and Performance Associate, Real Estate and Geoffrey Esmail, Real Estate Associate

Multifamily properties are an important part of the real estate landscape. Any institutional investor with private real estate exposure should have multifamily assets in its portfolio to have prudent diversification. One need only look at the property weightings of the NCREIF (National Council of Real Estate Investment Fiduciaries) Property Index, NPI, to get the point: multifamily properties now account for 25% of the NPI (the second largest only behind office at 35%). Household formation growth since the early 80s has driven strong demand for rental apartments. In turn, multifamily properties have offered investors reliable income and solid appreciation potential. As a result, over the past 30 years, institutional investors have continuously increased their allocations to the property type. This, in turn, has created greater levels of liquidity and transaction efficiencies that lower its perceived risks and investor return requirements.

Trends Fueled by the Pandemic

Prior to the COVID-19 pandemic, multifamily fundamentals were exceptionally strong: vacancy was near all-time lows at 4.2%, absorption was in-line with new supply, and rents were at all-time highs (28% higher than the previous market peak in 2008 prior to the Great Financial Crisis). However, over the past nine months the pandemic has caused cities across the U.S. to "shutdown" in an attempt to slow the spread of the virus. As a result, many of the country's largest and most densely populated cities have lost their appeal due to the closure of "urban amenities" such as restaurants, bars, fitness centers, entertainment venues, cultural attractions, and local retailers. This coupled with the flexibility from working from home has resulted in a large exodus of millennials from urban cores to the suburbs and beyond.

As a result of this episodic exodus, urban-centric markets such as San Francisco, New York, and Los Angeles have seen a dramatic increase in apartment vacancies. According to CBRE Econometric Advisors (EA), the average vacancy rate for San Francisco, New York, and Los Angeles increased 110 basis points[1] to 4.6% from pre-pandemic levels in Q1, 2020. Less dense cities such as Phoenix, Dallas/Fort Worth, and Atlanta were less impacted as the average vacancy rate for those three markets actually declined 30 bps to 4.8% during the same period. In addition, suburban sub-markets have held-up quite well compared to urban markets. The average vacancy rate for garden-style apartments, which are a fixture in most suburban markets across the country, witnessed a 40 bps decline from pre-pandemic levels in Q1 2020 to 3.9%, while the vacancy rate for high-rise apartments, which are largely developed in urban cores, increased by 170 bps to 6.4% during the same period.

The appeal of suburban locations rested on a combination of factors: cost competitiveness (i.e., larger living space for the money) vis-à-vis apartments in expensive urban locations; the desire for more space (both inside and outside the apartment); and a greater sense of security than in some urban landscapes. With the help of record low mortgage rates, many millennials looked to trade being a renter for being a homeowner… and here again, the suburbs beckoned. The pandemic has ignited demand for single-family homes. The homeownership rate has surged 210 bps (to 67.4%) since the start of 2020, and the homeownership rate for millennials has hit an all-time high at 40.2% at the close of the year.

Post-Pandemic World: Will the Pandemic Trends Shift Back?

Looking ahead to the post-pandemic world, the lasting effect of some of these trends on the multifamily sector hinges entirely on whether and how quickly pre-pandemic habits and patterns of behavior return. As restrictions are lifted across the country and offices reopen, there will undoubtedly be a pull back to certain pre-pandemic norms. The appeal of urban living will draw renters seeking all the things vibrant

> ...the trend of millennials moving to the suburbs is here to stay...

urban centers have to offer, along with easier commutes. However, the trend of millennials moving to the suburbs is here to stay because it was a secular trend driven by demographics and family formations well before the pandemic. Prior to the pandemic, markets such as Phoenix, Dallas/Fort Worth, and Atlanta were already seeing large in-migration trends from millennials. According to the U.S. Census Bureau, the population of people between the ages of 20 and 34 in Phoenix, Dallas/Fort Worth, and Atlanta increased 7.0% from 2015 to 2019. During the same period, the population of the same age cohort in urban-centric markets of San Francisco, New York, and Los Angeles decreased 4.0%.

If suburban migration tapers-off, homeownership rates will likely head back to historical norms (average of 20 years: 66.5%) or plateau due to the shortage of for-sale supply. For-sale inventory currently averages 2.7 months on the market, which is considerably below the long-term average of 6.2 months, indicating that demand is significantly outpacing supply. In addition, current housing starts which totaled at 1.5 million in 2020 was 31.9% below the previous peak achieved in 2006. A limited supply of for-sale housing, exacerbated by the recent demand for single-family homes, led housing prices to rise 11.0% during 2020, outpacing personal income growth of 7.7%. A shortage of for-sale properties could crimp home sales activity and exacerbate affordability issues for the foreseeable future.

Over the next ten years, millennials (currently 24 to 39 years old) will age into their 30s and 40s and aspire to "settling down" and homeownership. "Gen Zers" are right behind the millennials and will help maintain apartment demand momentum. At roughly 68 million, the Gen Z cohort is comparable in size to both baby boomers and millennials. Gen Zers are just beginning to enter the workforce in substantial numbers and, by extension, forming households. According to the Pew Research Center, there are roughly 24 million Gen Zers between the age of 18 and 23. This means there remains an additional 44 million Gen Zers who will be entering the workforce over the next decade providing demand for millions of new apartments.

Investor Demand: Is Multifamily Still A Good Investment?

As the pandemic subsides and the economy enjoys a more broad-based expansion, job growth and household formations from the growing tide of Gen Zers will trigger a renewed wave of renter demand. While a portion of the millennial demographic may elect for home ownership when the opportunity presents itself, those who leave will be replaced by the next generation of renters.

Population trends, along with the supply/demand and affordability dynamics of single family homes, all point towards continued robust demand for multifamily. This, in turn, will keep apartments at or near the top of investors' preferred property types. In the midst of the pandemic, multifamily investment volume in 2020 totaled over $107 billion, significantly more than the previous recession volume of $29 billion during the Great Financial Crisis, according to CoStar. Better supply and demand fundamentals compared to previous recessions were key to why pricing and transaction volume held-up. The 10-Year U.S. Treasury rate dropped below 1% by early March and has remained there. Debt and equity capital is cheap and plentiful. The low interest rate environment is expected to persist for the foreseeable future. This, coupled with healthy supply/demand fundamentals, will continue to drive strong investor interest in multifamily properties.

The multifamily sector seems to have exceptionally favorable tailwinds from demographic trends, tenant demand, for-sale supply dynamics, and capital markets support. With that said, less expensive and less dense suburban markets, which proved more resilient in 2020, are primed to continue to benefit from longer term secular trends and more flexible work strategies. Urban cores, on the other hand, will likely see a bounce back to some degree, but will face hurdles both near and long-term related to millennial out-migration and potential supply challenges for the more expensive, high-rise residential alternatives.

1 A basis point ("bp") is 0.01%.

The Year No One Saw Coming: A Look at Accelerated Trends and New Changes for Domestic Equities

Thomas J. Mudge III, CFA, Director of Domestic Equity Research

2020 was definitely not the year so nice that they named it twice. In addition to the far-reaching impacts of the COVID-19 pandemic, the U.S. experienced a Presidential impeachment, urban riots, the most active and seventh-costliest Atlantic hurricane season on record, massive wildfires across the western states, and perhaps the worst-ever state-sponsored cyberattack in its history.

On the positive side of the 2020 ledger, several successful COVID-19 vaccines were created in a matter of months, and historic Middle East peace accords were also reached. While not unique to 2020, trends in world poverty, child mortality, chronic hunger, and exposure to a broad range of environmental toxins continued to decline, and global literacy rates continued to rise.

Perhaps surprisingly, stock markets around the world produced positive returns in 2020. The S&P 500 Index, after plunging early in the pandemic, rose to new all-time highs within a few months and finished the year up 18.4%.

Comparing Pandemics

Notably, the U.S. stock market behaved similarly when the last great pandemic, the Spanish flu, swept the globe in 1918. At least so far, the COVID-19 pandemic has proved less deadly than what humanity experienced over 100 years ago, which killed at least 50 million worldwide and—according to the Centers for Disease Control and Prevention—caused an estimated 675,000 American deaths out of a much smaller population of 103 million at the time. Yet through it all, the stock market (as measured by the Dow Jones Industrial Average, or DJIA) rose 10.5% in 1918, and another 30.4% in 1919.

While the end of World War I certainly contributed to the market's rise, the stock market's behavior through this pandemic, and other subsequent less-lethal epidemics, suggests that investors perhaps view these events as different from other causes of economic slowdowns. That is, the crisis is perhaps akin to a natural disaster, like a hurricane, where business is temporarily suspended as opposed to an overarching change in business outlook (e.g., the Great Depression or the Global Financial Crisis). Regardless of the precise motivation, in a year with a shortage of good news, the stock market's success was a welcome positive note.

New and/or Accelerated Trends

As the year progressed, investor thinking evolved in sometimes predictable and other times surprising ways. Tech giants—known as the FAANG stocks, or Facebook, Amazon, Apple, Netflix, and Alphabet (formerly Google)—already made up a significant portion of the S&P 500 Index's overall market cap due to their rapid growth in recent years. Yet in 2020, they became the poster children for the phrase "the rich getting richer." The pandemic forced people to stay at home thereby increasing demand for home delivery (Amazon) and virtual entertainment (Netflix, Facebook, Alphabet, Amazon, and Apple), and also boosting the need for internet/cloud computing access for work (Alphabet, Facebook, Apple, and Amazon). At the start of 2020, the five FAANG stocks made up 13.0% of the total value of the S&P 500 Index. By year-end, that share had increased to 17.3%.

As the U.S. has shifted toward a predominantly service economy in recent decades, the viability of working from home increased, and technology evolved alongside. The pandemic required almost everyone who could do their job remotely to do so, essentially leveling the playing field from a career advancement standpoint, at least in the short term.

The trend toward automation certainly accelerated due to the pandemic, especially in industries that would otherwise require close human contact for long periods. It was also a record year for initial public offerings (IPOs). On the flip side, the popularity of just-in-time inventory management and low-cost foreign outsourcing both faced significant setbacks in 2020. These systems are exceptionally vulnerable to the shipping restrictions and delays that became commonplace during the pandemic.

An Unusual Double Relief Rally

While painful for personal, professional, and financial reasons among many, there can be light at the end of the proverbial tunnel. When market bottoms occur, investors anticipate a coming recovery, and stocks that were previously seen as potentially unable to survive the downturn will often rally strongly if they make it through. These "relief rally" stocks are given a new lease on life and have historically outperformed as a result. When the stock market bottomed on March 23, 2020, relief rally stocks behaved as usual, but this year there was an added twist. On November 9, when Pfizer announced the completion of successful COVID-19 vaccine trials, there was a second relief rally as the uncertainty regarding the future of the pandemic greatly decreased. In retrospect, this second rally seems obvious, but it was very different than what happens in a typical recovery and caught many investors off guard.

Government Stimulus with the Specter of Inflation

Governments' fiscal and monetary responses to the economic consequences of mandated lockdowns resulted in massive borrowing and stimulus spending, as well as accommodative monetary and interest rate policies. The world seems to be experimenting with Modern Monetary Theory, which is the controversial notion that governments can, to a point, pay their bills by essentially printing money and avoiding the (potentially disastrous) inflationary consequences.

Many market participants are rightly skeptical that inflation will remain at bay given these government policies and, as a result, both gold and cryptocurrencies had very strong years in 2020. Gold rose 25.1% and Bitcoin rocketed 307.8% for the year.

The world has changed enormously since the last global pandemic 102 years ago, and it is too early to tell exactly how the aftermath of this one will shake out.

Looking Ahead

There were of course other changes and surprises in 2020, far too many to mention here. Some may have lasting impacts, while others may just be of passing interest. The world has changed enormously since the last global pandemic 102 years ago, and it is too early to tell exactly how the aftermath of this one will shake out.

No one predicted the events of 2020, and very few even correctly guessed how the year would unfold once the impact of the COVID-19 pandemic was apparent. Given that backdrop, let us all hope for a better year ahead in 2021.

Bitcoin, Blockchain & DLT… Oh My!
Understanding the terminology and technology behind cryptocurrency

Eric Greco, Portfolio Associate

The surge in cryptocurrency prices witnessed in the second half of 2020 is not just a flashback to 2017 Bitcoin mania. While a number of cryptocurrencies have seen prices rise past their all-time highs achieved in late-2017, what truly distinguishes this run-up from 2017 is the level of institutional investor participation. Major financial institutions such as JPMorgan, Goldman Sachs, Grayscale, and Guggenheim have either announced large-scale purchases of Bitcoin or come out with more amenable commentary towards cryptocurrencies.

– A QUICK REFERENCE GUIDE –

Distributed Ledger Technology, or DLT
A decentralized database spread across various network participants who authenticate and validate transactions.

Blockchain
A type of DLT, and the technology utilized by cryptocurrency.

Cryptocurrency
A digital and encrypted medium of exchange, stored electronically, typically in a blockchain.

Bitcoin
The name of the best-known cryptocurrency and largest by market capitalization.

DLT: The Machinery Behind it All

While readers might be familiar with the term blockchain, and its association with Bitcoin and other major cryptocurrencies, it represents just one type of distributed ledger technology. Let's take a moment to dive into the lesser-known, but fundamentally important, distributed ledger technology behind cryptocurrency. Also known as "DLT," distributed ledger technology is a decentralized database spread across various network participants (computers referred to as "nodes") who authenticate and validate transactions. This decentralization eliminates the role of a central authority that manages and maintains the value of that currency.

Blockchain Is a Type of DLT

Where blockchain builds on the concept of distributed ledger technology is its use of additional cryptography. It utilizes a proof-of-work consensus algorithm to verify transactions. Select network participants, called miners, compete with one another to solve complex mathematical equations in order to add new transaction data, via a "digital block," to the public ledger. In order to solve the equation, the miner must enter the correct hash, a mathematical function that references the transaction data contained within the new block. It takes exceptional computational power and whoever solves the equation first adds the new block to the end of the existing blockchain. Miners are incentivized to solve the equation by a Bitcoin reward received for adding a new block to the blockchain.

In addition to transaction data, each block contains the hash of the previous block, assuring the integrity of the transactions. Any modifications to the transactions in a block will cause the hash in the next block to be invalidated, and it will also affect the subsequent blocks in the blockchain,[1] alerting network participants of the malicious behavior. At its core blockchain advances solutions, offering enhanced security and speed, and more efficient infrastructure, thereby reducing costs.

Cryptocurrency Is Stored in a Blockchain

The most well-known application of blockchain is cryptocurrency. By creating and storing financial transactions with the encryption techniques described above, network participants play an active role in the generation of units of currency and verification of the transfer of funds. Further, by operating through a decentralized protocol, the currency supply of these cryptocurrencies is not determined by a central bank.

By utilizing DLT, cryptocurrencies function in a way that is, frankly, foreign to our fiat-based systems (that is, currencies based on faith in the issuing government). The four categorical differences from the traditional system include:

1) Decentralization – an ability to operate without a central coordinating body (i.e., a government or business);
2) Transparency – the entire transaction ledger gets broadcasted to all network participants;
3) Security – each transaction is time stamped using a unique cryptographic digital signature;[2] and
4) Speed – operational 24/7 with network participants competing to process transactions as quickly as possible.

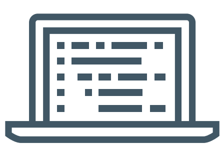
An Immature Market

DLT is key to the appeal of cryptocurrencies such as Bitcoin and Ether, the native currency of Ethereum. Cryptocurrencies remain a very nascent asset class. And, not surprisingly, given their exploding popularity and value, governments aren't ignoring the space. Even as major institutional investors exhibit increased openness to crypto assets such as Bitcoin—and as we gain more clarity around how governments plan to potentially regulate them—any imposed changes have the potential to shock the system and lead to continued volatility in the short term.

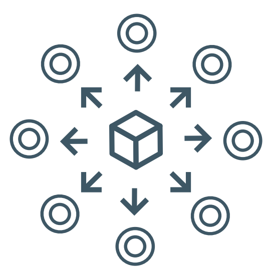
Importantly, blockchain is not singularly useful for Bitcoin and other cryptocurrencies; its applications go well beyond that. The potential use cases are numerous and extend from banking and finance to voting, healthcare, and automotive uses just to name a few. In the words of blockchain's creator, Satoshi Nakamoto, it is "… an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party."[3] At this point, the applications for secure, efficient, and cost-effective exchanges are only limited by our imagination.

Blockchain, Step by Step

1) A transaction is requested

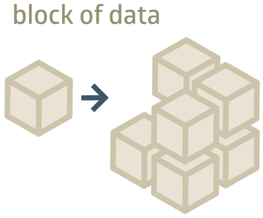


2) The transaction is broadcast to the network of computer "nodes"

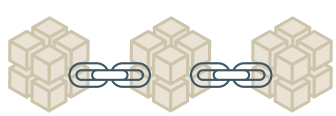


3) Miners compete to solve the algorithm, and authenticate the transaction

4) The verified transaction generates a new digital block of data



5) The new block is added to an existing blockchain, linking them together



6) The transaction is completed, and unalterable

Sources:
1 https://blog.ndcconferences.com/understanding-blockchain/
2 https://www.businessinsider.com/distributed-ledger-technology-blockchain
3 https://bitcoin.org/bitcoin.pdf

Closing Brief - Bailard's View on the Economy: Cloudy with a 95% Chance of Efficacy

Jon Manchester, CFA, CFP®, Senior Vice President and Portfolio Manager - Sustainable, Responsible and Impact Investing

Economics, the so-called "dismal science," may have met its match in 2020. In a year otherwise marked by gloom, a thunderbolt of positivity arrived in November via the highly anticipated Phase III vaccine trials data for COVID-19. Health science—both, broadly-speaking and more specifically Pfizer and Moderna—delivered much-needed hope to a besieged global community and, in doing so, justified decades of faith in synthetic messenger RNA technology. This breakthrough science has the potential to lift the dark clouds that hung over 2020, and appears to be a clear triumph of human ingenuity.

Thanks largely to the innovative gene-based technology, scientists rolled out these vaccines in mere months when previously the fastest we'd developed a new vaccine was four years. In fact, after BioNTech, Pfizer's Germany-based partner, punched the genetic code for the spike protein into its computers in January 2020, their CEO reportedly designed 10 vaccine candidates himself in a single day.[1] As a result, in the not-so-distant future, the armchair epidemiologists among us could (thankfully) be out of a fake job. Perhaps we will even cut back on doomscrolling, a popular "Word of the Year" candidate referring to our propensity to binge on bad news. The overwhelming deluge of data concerning the pandemic prompted the World Health Organization to "flatten the infodemic curve" by offering steps to navigate the wave of COVID-19 information. It has been a lot to process.

Speaking of misinformation, the U.S. presidential election came and sort-of went, leaving a trail of fruitless legal challenges from the incumbent and an unusual focus on the actual Electoral College vote and certification. If nothing else, 2020 affirmed that political theater is alive and well, sadly, while the actual theatrical arts remain on life support. At least initially, equity markets appear sanguine following the early January runoff elections in Georgia that effectively handed full control of Congress to the Democrats, perhaps due to the belief that additional fiscal stimulus will follow. In reality, investors may simply be relieved that the elections are over, and another piece removed from the proverbial "wall of worry" that markets have climbed.

Amidst the rays of hope, we must also acknowledge the enormous toll on humanity that this novel coronavirus continues to impose. Records number of people in the U.S. are currently hospitalized with COVID-19, with the numbers continuing to climb. Globally, the World Bank warns that the pandemic has pushed an additional 88 million people into extreme poverty, defined as living on less than $1.90 per day.[2] It also anticipates lasting impacts on this generation of students, food insecurity, and gender gaps, among other concerns.

> ...in the not-so-distant future, the armchair epidemiologists among us could (thankfully) be out of a fake job.

Easy Street

The economic devastation and upheaval of our social fabric only makes the domestic stock market's stunning rally all the more disconcerting, of course. With the monetary and fiscal spigots turned up, dollars have clearly found their way into risky assets. In the closing days of the year, Bloomberg reported that U.S. companies had raised a record $435 billion via equity sales in 2020, far above the prior high-water mark of $279 billion set in 2014.[3] Some of the equity issuance came from a position of weakness (airlines, for example) but around $100 billion went to traditional Initial Public Offerings (IPOs) including the December debut for DoorDash. The largest U.S. food delivery company soared 86% on its first day of trading and initially carried a market valuation greater than Chipotle and Domino's Pizza combined.[4] This transpired despite DoorDash having lost $149 million over the first nine months of the year in a highly favorable stay-at-home environment where orders and revenue surged.

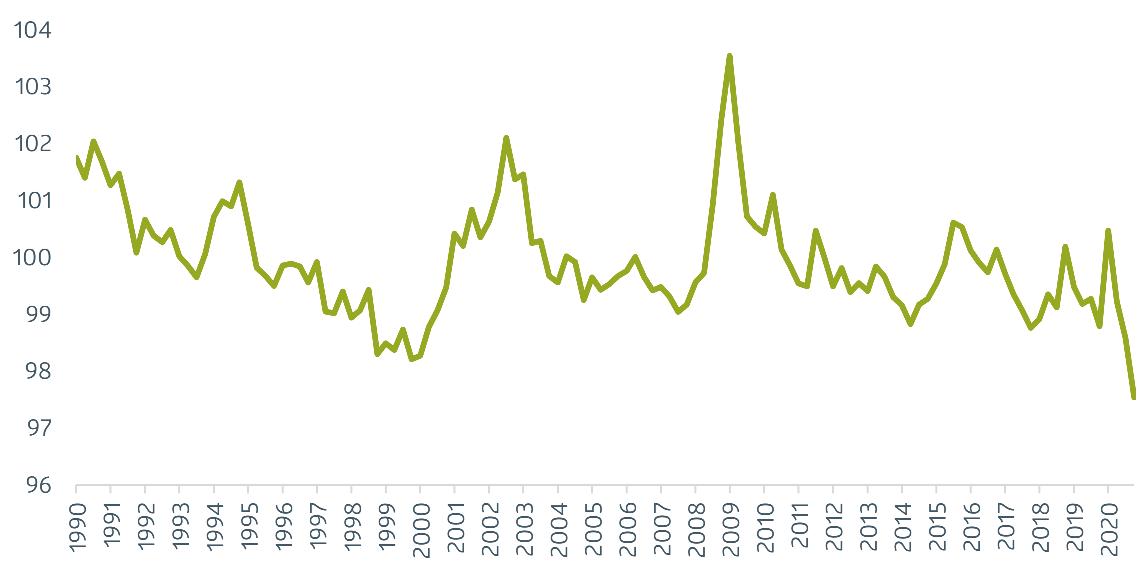
Signs of froth are seemingly everywhere: Bitcoin, junk bonds, and blank-check companies. Shares of Tesla rocketed more than 700% higher in 2020, and the New York Stock Exchange's FANG+ Index of 10 tech giants gained roughly 103% after jumping 40% in 2019. So much for the ongoing threat of Big Tech regulation. Indicators of euphoria are likewise flowing, including a record $722 billion of margin debt in the U.S., meaning investors borrowing against their portfolios.[5] Call options—which provide the right to buy shares at a set price—hit record-high trading volumes in late 2020, another potentially worrisome data point. On the scorecard, market-based gauges suggest some caution heading into the new year.

The effervescence across various markets can be linked to the aforementioned easy money policies. Goldman Sachs maintains a U.S. Financial Conditions Index dating back to 1990, which derives the bulk of its composite score from the 10-Year U.S. Treasury Yield and a corporate bond spread. Reflected in the chart below, that Index reached a new all-time low recently—below its 1998/1999 levels—suggesting that financial conditions are more supportive than at any time in past 30 years. This may help to foster economic growth in 2021, while also running the risk of creating financial market bubbles. Goldman economists are forecasting U.S. Gross Domestic Product (GDP) growth of 5.9%, versus the 3.9% consensus estimate. Their Chief Economist, Jan Hatzius, expects a 2021 "vaccine boost" and a "significant amount of accumulated excess savings" to provide tailwinds.[6]

Relief Spending

With 10.7 million officially unemployed in the U.S. as of December, and the employment-to-population ratio of 57.4%, nearly four points lower than in February, it doesn't quite follow that there would be "significant excess savings" to tap into. However, the Personal Saving Rate calculated by the Bureau of Economic Analysis spiked to 33% in April. While it has normalized somewhat since, the saving rate ended November at roughly 13%, still elevated compared to the 7% to 8% rate seen in recent years. Unfortunately, as you might guess, the savings have accrued predominantly to higher-income households. The pandemic has weighed most heavily, at least financially speaking, on those with the least capacity to absorb the blow. From an inequality and societal perspective, this remains problematic.

Goldman Sachs U.S. Financial Conditions Index



Source: Bloomberg.

The cold calculus of economic growth, however, points to a much healthier U.S. economy in 2021. This is helped by the estimated 3.5% GDP decline in 2020, naturally, as well as the $900 billion COVID-19 relief bill that will boost disposable income in the first quarter. This fiscal aid is sorely needed with the pandemic still raging and disposable income down in three of the last four months. Personal Consumption Expenditures (PCE) fell in November for the first time since April, strengthening the case for more stimulus.

Other economic markers in the U.S. are largely pointing north. The S&P CoreLogic Case-Shiller 20-City Home Price Index advanced 8% year-over-year in October, its biggest gain since 2014. West Texas Crude Oil drifted higher during the fourth quarter but, priced at approximately $48 per barrel, it doesn't pose inflationary concerns at this point. The Institute for Supply Management (ISM) indices for Manufacturing and Services remain in growth territory. With low interest rates and tame inflation, plus substantial fiscal and monetary support, the economy appears primed to rebound. This tidy story diminishes, though, if the vaccines' rollout falters in any meaningful way.

Not-So-Graceful Brexit

It only took four-and-a-half years and three Prime Ministers! Brexit is finally a reality, albeit a somewhat incomplete one given that Britain's services sector—which accounts for roughly 80% of the economy—was largely omitted from the 1,246-page deal.[7] Nonetheless, once important details such as which species of fish can be caught were ironed out, Britain and the European Union (EU) have a trade agreement.

Rather unkindly, a Bloomberg Opinion piece referred to it as the "most regressive trade settlement seen between modern democratic nations."[8] On the plus side, the agreement does allow for goods to trade without tariffs or quotas, assuming the United Kingdom (UK) maintains current standards on the environment, labor, and other areas. Moving those goods, however, will involve a considerable amount of red tape. Citizens on both sides won't have freedom of movement either, and the fate of migrants appears muddled at this point.

Equity investors have yet to fully embrace the UK sovereignty story. The FTSE 100 Index declined 14% (price-change only) in 2020, making it one of the worst-performing major markets in the world. Skepticism abounds regarding Britain's ability to pull off this conscious uncoupling, although to be fair the FTSE 100 Index's relatively low weight in technology companies and higher allocation to "old economy" industries played a significant role. For the British pound, it was a split decision in 2020, approximately 3% appreciation versus the U.S. dollar but a 6% decline versus the euro.

History will determine whether Brexit should be viewed as "Cameron's Folly" (former Prime Minister David Cameron) or the dawn of a bright new future. In all likelihood, it will fall somewhere in between, with the UK forced to adapt to its imperfect new reality, just as all of us did in an absolute Zoom bomb of a year.

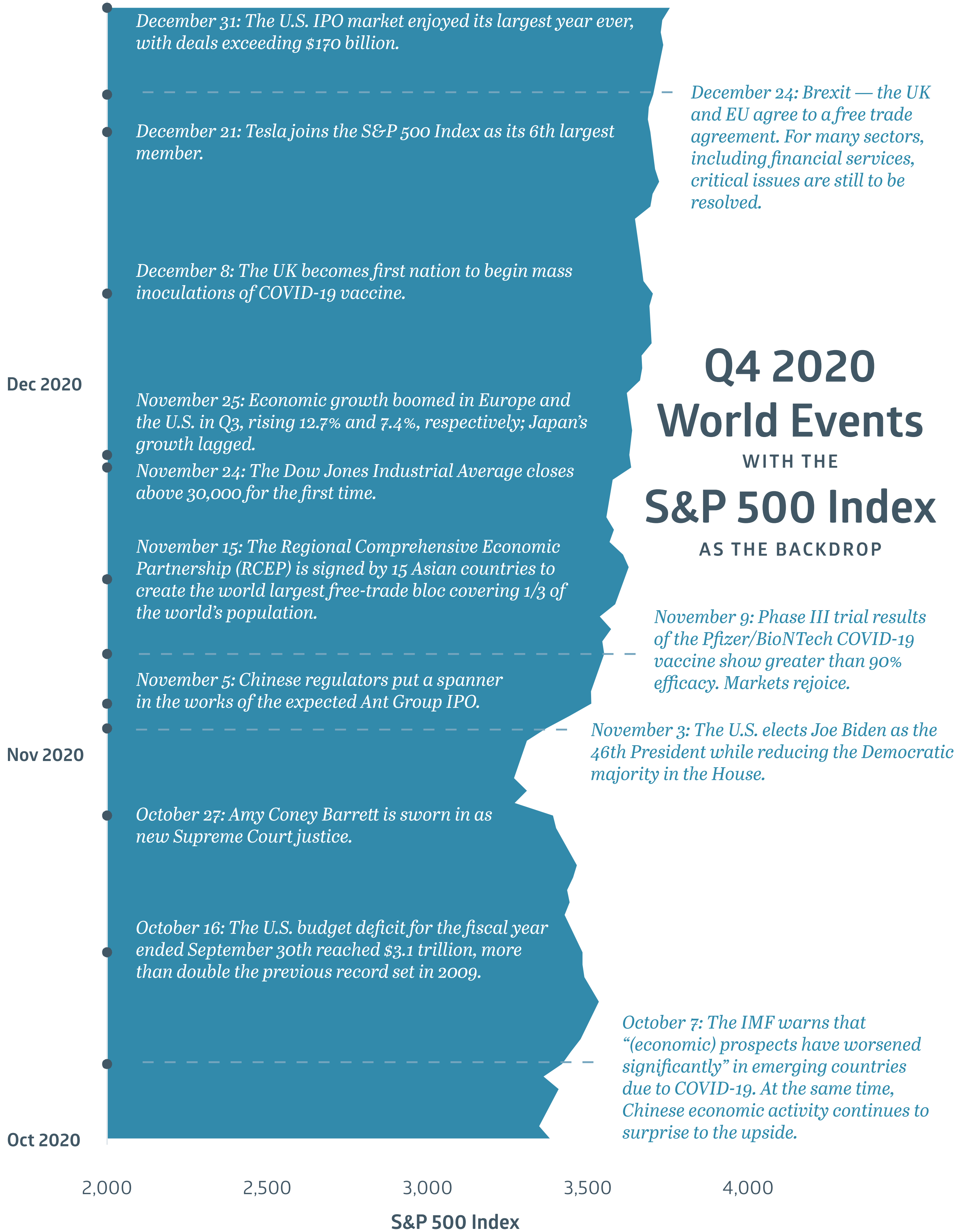
1 *"How Pfizer Delivered a Covid Vaccine in Record Time: Crazy Deadlines, a Pushy CEO," wsj.com, 12/11/20*
2 *"2020 Year in Review: The impact of COVID-19 in 12 charts," blogs.worldbank.org, 12/14/20*
3 *"IPO Euphoria Drives Record $435 Billion in U.S. Stock Sales," Bloomberg.com, 12/21/20*
4 *"DoorDash Soars in First Day of Trading," nytimes.com, 12/9/20*
5 *"Investors Double Down on Stocks, Pushing Margin Debt to Record," wsj.com, 12/27/20*
6 *"Goldman Sachs is even more bullish on the power of a COVID-19 vaccine," yahoo.com, 12/7/20*
7 *"Brexit Deal Done, Britain Now Scrambles to See How It Will Work," nytimes.com, 12/25/20*
8 *"Now We Know How Boris Johnson's Movie Ends," Bloomberg.com, 12/24/20*

Q4 2020 World Events

WITH THE

S&P 500 Index

AS THE BACKDROP



Source: Bloomberg, Bailard. Past performance is no indication of future results. All investments involve the risk of loss.

Market Performance
As of December 31, 2020

U.S. Interest Rates	3/31/2020	6/30/2020	9/30/2020	12/31/2020
Cash Equivalents				
90-Day Treasury Bills	0.09%	0.14%	0.10%	0.07%
Federal Funds Target	0.25%	0.25%	0.25%	0.25%
Bank Prime Rate	3.25%	3.25%	3.25%	3.25%
Money Market Funds	1.08%	0.19%	0.01%	0.01%
Bonds				
10-Year U.S. Treasury	0.67%	0.66%	0.69%	0.92%
10-Year AA Municipal	2.40%	1.25%	1.13%	0.83%

Source: Bloomberg, L.P.

U.S. Bond Market Total Returns (US$) through 12/31/2020	QUARTER	SIX MONTHS	YEAR TO DATE	ONE YEAR
U.S. Bonds				
Bloomberg Barclays U.S. Treasury Index	-0.83%	-0.66%	8.00%	8.00%
Bloomberg Barclays U.S. Corporate Index	3.05%	4.63%	9.89%	9.89%
Bloomberg Barclays U.S. Aggregate Index	0.67%	1.29%	7.51%	7.51%
Bloomberg Barclays U.S. 1-15 Municipal Blend Index	1.33%	2.50%	4.73%	4.73%

Source: Bloomberg, L.P.

Global Stock Market Total Returns (US$) through 12/31/2020	QUARTER	SIX MONTHS	YEAR TO DATE	ONE YEAR
U.S. Stocks				
S&P 500 Index	12.14%	22.16%	18.39%	18.39%
Morningstar U.S. Small Value Index	33.82%	38.27%	2.46%	2.46%
Morningstar U.S. Small Growth Index	28.11%	37.54%	43.52%	43.52%
Morningstar U.S. Large Growth Index	8.89%	23.95%	38.86%	38.86%
Morningstar U.S. Large Value Index	15.09%	18.98%	1.19%	1.19%
International Stocks				
MSCI EAFE (Europe, Australasia, Far East) Index, net dividends	16.05%	21.61%	7.82%	7.82%
MSCI Emerging Markets, net dividends	19.70%	31.14%	18.31%	18.31%

Sources: Bloomberg, L.P. and Morningstar Direct

Alternatives (US$) through 12/31/2020	QUARTER	SIX MONTHS	YEAR TO DATE	ONE YEAR
NFI-ODCE Index*	0.48%	0.96%	0.36%	0.36%
Gold Spot	0.66%	6.59%	25.12%	25.12%
WTI (West Texas Intermediate) Crude Oil	20.64%	23.55%	-20.54%	-20.54%

Sources: Bloomberg, the National Council of Real Estate Investment Fiduciaries
**Q4 data not yet released. The fourth quarter return assumed to be same as the third quarter 2020 return.*

Past performance is no indication of future results. All investments have the risk of loss.

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ABOUT *THE 9:05*

Since 1978, we've held a weekly company-wide meeting during which we talk about the prior week's activities and those anticipated in the week to come. We refer to this meeting, which begins just after nine each Monday morning, as "the 9:05." Just as the 9:05 enables us to share our knowledge and insights with each other, this newsletter provides us with a valuable means of communicating with our clients. Hence its title: *the 9:05*.

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