

July 31, 2020

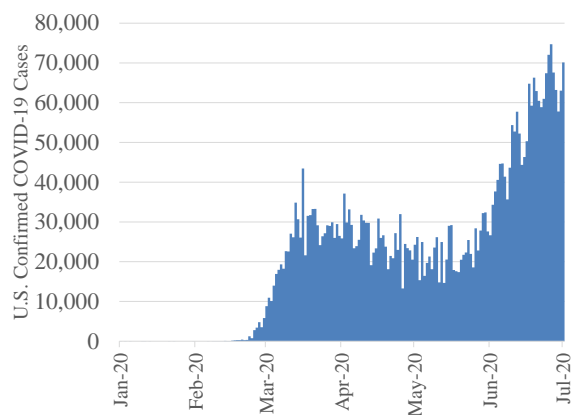
Wall Street vs Main Street: Is the Decoupling of the Economy & the Stock Market Sustainable?

The U.S. economy contracted dramatically with the first wave of COVID-19 related shut downs across broad swaths of the country beginning in March. As the number of cases began to decline, individual states commenced their re-opening plans, most aggressively in some of those least affected by the initial outbreak—states located in the South and West. As a result, the economy began to rebound in May, though output and jobs may take years to reach prior levels. More recently, as COVID case numbers spiked, led by some southern and western states, we have observed signs that the economy may be softening again as re-opening plans are reversed in some places. However, risk assets bottomed in the last week of March and the U.S. equity market has rebounded to levels seen at the beginning of the year--and this despite a significant decline in earnings. Why is there such a disconnect between what is going on in the real economy and the performance of the stock market--and can this decoupling persist?

As the COVID-19 Pandemic has abated (for the time being) in the earliest-affected urban areas of New York and surrounding states, its spread has accelerated in Southern and Western states. One explanation is the re-opening and relaxation of stay-at-home orders in states such as Arizona, California, Texas, and Florida—beginning with the Memorial Day holiday weekend.

In late July, total new reported cases have exceeded 70,000 per day, nearly double the new case count at the height of the New York/Northeast wave back in early April. In the last two weeks, we have seen the growth rate in new cases in key hot spots such as Arizona and Florida begin to fall, and then the actual number of new cases level off and decline, which is reflected in the national numbers.

U.S. Daily Confirmed COVID-19 Cases



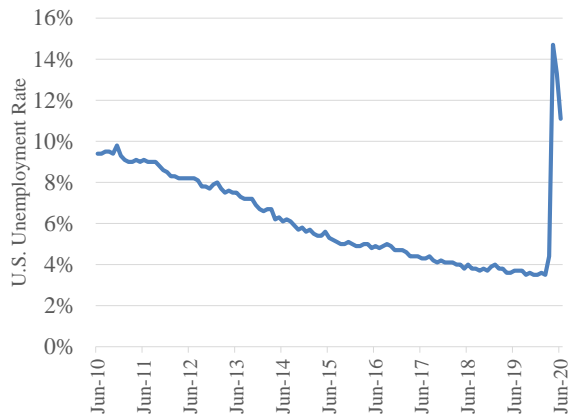
Source: Centers for Disease Control and Prevention.

The reason for the improvement in new cases in those states is a reversal of re-opening policies—for example, reinstated restrictions on large gatherings, mask mandates, and closing orders for bars and restaurants. Similar measures helped to bring the spread under control in the communities first affected by the virus. However, these kinds of actions also have adverse consequences for the economy, which had begun to rebound in May after the first round of shut-downs.

Unemployment, which was at a historically low rate of 3.5% in February prior to the COVID crisis, spiked to 14.7% in April. U.S. Non-farm payrolls shed a truly astonishing 22.2 million jobs in those two months. By comparison, during the Global Financial Crisis, the U.S. economy lost a total of 8.7 million jobs over 26 months from peak to trough before job growth resumed. In what was a surprise at the time,

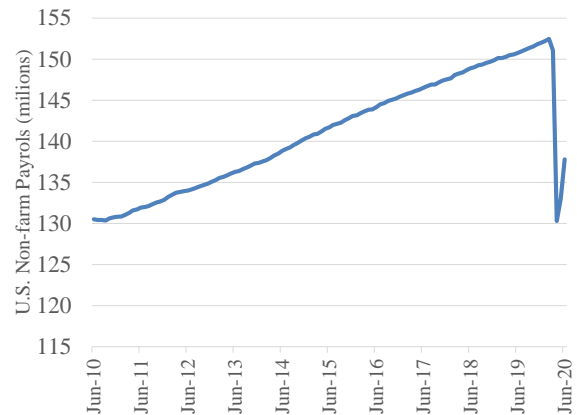
the economy added 2.7 million jobs in May and then added another 4.8 million in June, bringing the unemployment rate down to 11.1%.

U.S. Unemployment Rate, June 2010-June 2020



Source: U.S. Bureau of Labor Statistics, Unemployment Rate [UNRATE], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/UNRATE>, July 23, 2020.

U.S. Non-farm Payrolls, June 2010-June 2020

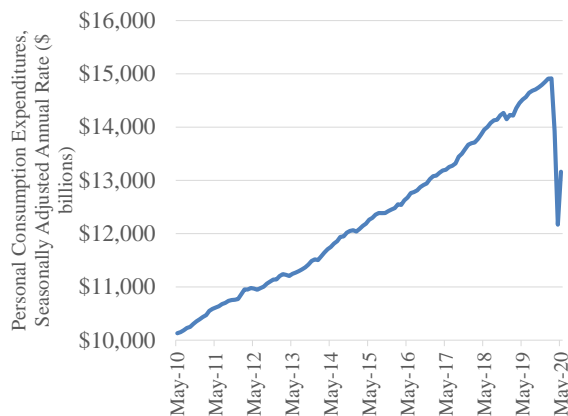


Source: U.S. Bureau of Labor Statistics, All Employees, Total Nonfarm [PAYEMS], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/PAYEMS>, July 23, 2020.

Troubles in the labor market were reflected in Personal Consumption Expenditures (PCE), the Bureau of Economic Analysis’s (BEA’s) broadest measure of consumer activity. PCE includes goods and services and totals around two-thirds of U.S. gross domestic product (GDP). The combination of lost wages, uncertainty, and the closure of many of the businesses where consumers would otherwise spend money contributed to an 18% fall in PCE in March and April. More pointedly, domestic auto production came nearly to a halt, dropping from 223,000 units in February to a mere 1,800 in April.

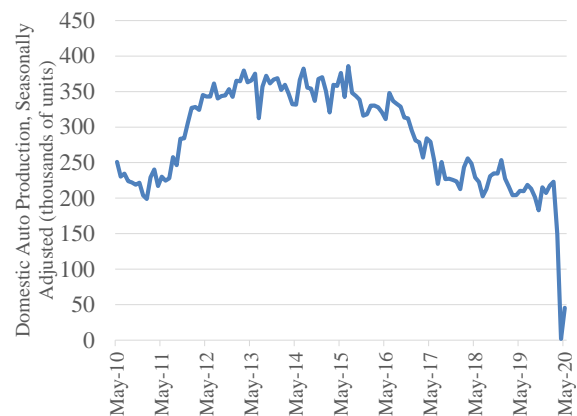
While personal consumption and auto production both bounced back significantly beginning in May, it is clear that neither measure indicates that the economy has recovered to pre-COVID levels.

Personal Consumption Expenditures



Source: U.S. Bureau of Economic Analysis, Personal Consumption Expenditures [PCE], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/PCE>, July 23, 2020.

Domestic Auto Production



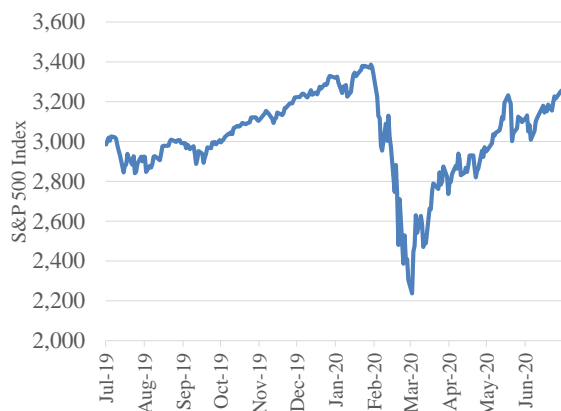
Source: U.S. Bureau of Economic Analysis, Domestic Auto Production [DAUPSA], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/DAUPSA>, July 23, 2020.

So, the economy has begun to rebound and there is evidence that the recession that began at the end of February (according to the National Bureau of Economic Research) may have moved into a recovery in May, making this the shortest recession in U.S. history. We expect a prolonged recovery and perhaps a

near-term pause associated with rolling shut-downs in the communities most effected by COVID's second wave.

Despite the economic uncertainty, equity markets and other risk assets have not hesitated to come roaring back. Indeed, at the time of this writing at the end of July, the S&P 500 Index is higher than it was at the end of 2019. High yield bond spreads, while not as low as they were in 2019, have fallen dramatically from their high of nearly 1,100 basis points on March 23rd and are now approaching 500 basis points.

S&P 500 Index



Source: S&P Dow Jones Indices LLC, S&P 500 [SP500], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/SP500>, July 23, 2020.

U.S. High Yield Option-Adjusted Spread



Source: Ice Data Indices, LLC, ICE BofA US High Yield Index Option-Adjusted Spread [BAMLH0A0HYM2], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/BAMLH0A0HYM2>, July 23, 2020.

We have begun calling this seeming contradiction between the struggling real economy and the rallying stock market a *decoupling*. While we think it can persist for some time, perhaps even years, we ultimately believe that it is not sustainable indefinitely. There are a number of possible reasons for decoupling but we believe there are two primary explanations:

- I. The fiscal policy response which targeted the real economy, in the form of relief payments, has been smaller and more diffuse than the monetary policy response, which had an immediate and direct effect on asset prices.**

The BEA announced its first estimate of second quarter U.S. real GDP growth on July 30th. The economy contracted by 32.9% annualized, an unprecedented rate of decline.¹ It is worth noting that this decline does not incorporate much of the government stimulus which began in the last week of March. Enhanced federal unemployment benefits and stimulus payments are not included in the GDP calculation as government spending (they are considered transfer payments and contribute to GDP only once spent on goods or services).

The fiscal policy response to the COVID-19 pandemic in the United States thus far has consisted of four legislative acts passed in March and April. Together, they totaled \$2.59 trillion, which represented 11.9% of 2019 GDP.² We would characterize these measures as “relief” more than “stimulus,” as they are meant to replace the value of lost economic activity during the stay-at-home period. Government spending can stabilize the overall economy by offsetting decreases in earnings and consumption, but only for a finite period because each bill entails a finite amount of funding. Analogous to the “burn rate” at a loss-making start-up, additional funding is required until the underlying problem in the economy is solved.

The other dynamic associated with this particular recession is a crisis of consumer confidence. States of emergency declared around the country shut down large portions of the goods and services economy, but perhaps worse and certainly more lasting was the change in consumer preferences. Even before stay-at-home orders were imposed and after they were lifted, consumers elected to stay home out of fear of exposure to the coronavirus, which has been additionally damaging to the economic recovery.

In contrast, the monetary response to the crisis has been large and decisive. At an unscheduled meeting on Sunday, March 15th, the Fed cut interest rates by 100 bps to near zero.³ At the same time the Fed also announced it would expand its balance sheet by purchasing *at least* \$500 billion of Treasury securities and \$200 billion in agency-backed mortgage securities across maturities.⁴

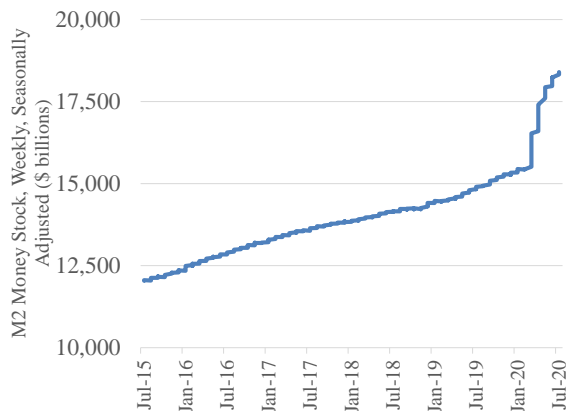
A decrease in the Fed Funds rate and benchmark Treasury interest rates stimulates the real economy by reducing borrowing costs for businesses, consumers, and home buyers. This will take effect over multiple months or years. However, that same drop in rates has an instantaneous effect on asset prices. A lower risk-free rate supports higher valuations on risk assets by pushing the net present value of a set of future cash flows immediately higher.

Said another way, lower interest rates on savings instruments and bonds make investors more likely to purchase risk assets in order to meet their required return targets. Here's an example: a stream of \$100 annual payments over the next 10 years has a present value of \$772 at a discount rate of 5%. At a discount rate of 2% the present value is \$898—a valuation increase of 16% despite no change in the stream of cash flows. This phenomenon at least partially explains the rally in asset prices. In contrast, incremental borrowing due to persistent low interest rates could take many years to add 16% to GDP.

On March 23rd the Fed announced an expansion of its bond purchase program, as well as several other initiatives designed to provide credit directly to businesses and municipalities.⁵ Notably, the Secondary Market Corporate Credit Facility (SMCCF) was established to provide liquidity by purchasing individual investment grade bonds and ETFs holding those bonds. This catalyzed the rebound in the credit and equity markets by directly bidding up securities prices and, perhaps more importantly, improving investor sentiment. The idea that the Fed would do whatever it takes to support financial markets was a powerful endorsement for reallocating into risk assets beginning in the final week of March.

While the size of the Fed's action is less obvious to quantify, one metric is the increase in the money supply (specifically M2⁶).

M2 Money Stock



Source: Board of Governors of the Federal Reserve System (US), M2 Money Stock [M2], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/M2>, July 24, 2020.

As shown above, the money stock began to increase rapidly beginning in early March and continues to expand in July faster than its pre-COVID pace. The total increase between February 24th and July 13th was \$2.96 trillion, a 19% increase in less than five months. The increase in M2 alone exceeded the sum total of fiscal policy measures by \$376 billion and captures just one component of the Fed's monetary policy response which, in total, has been much larger than the fiscal policy actions taken to date.

II. The stock market is not the economy.

Is there some rule requiring the stock market to reflect the composition of the economy?

We could easily imagine a simplistic economy entirely comprised of two goods, Widget A and Widget B, produced and consumed in equal amounts. If the production of Widget B was twice as profitable as Widget A, it would be logical for the value of Company B to be twice that of Company A. GDP is what economists call a flow variable, in that it measures activity *during a specific window of time*—in this case GDP would be attributed equally to A and B. The enterprise value of a business which is reflected in its share price is a stock variable, meaning it is a snapshot of the value of an asset *at a point in time*.

It may seem counter-intuitive, but economic growth is not the sole determinant of stock market performance across countries and time periods. Equity markets tend to be forward-looking and anticipate future earnings, whereas economic data is reported looking backward at a historical period. At this particular time the U.S. stock market appears to be less representative of the broad economy than it typically has in the past, which at least partially explains the recent divergence between Wall Street and Main Street.

Over the past two decades, the U.S. stock market has become considerably shallower. The total number of listed companies varies over time, but in general has been on a downtrend since 1998, as take-privates, bankruptcies, and M&A events have outnumbered IPOs. The Wilshire 5000 Index, which was designed to capture the vast majority of traded public equities in the U.S., was so-named because, at its inception in mid-1974, it contained just under 5,000 stocks. The number of constituents has varied over the years but generally rose after the index was created until it peaked at 7,562 in July of 1998, at the height of the dot-com bubble. Since then, the number has declined and stood at 3,415 as of June 30, 2020.⁷ Together with historic levels of share buybacks, the narrowing of the public equity market by 55% over the last 22 years has undoubtedly made it less representative of the overall economy.

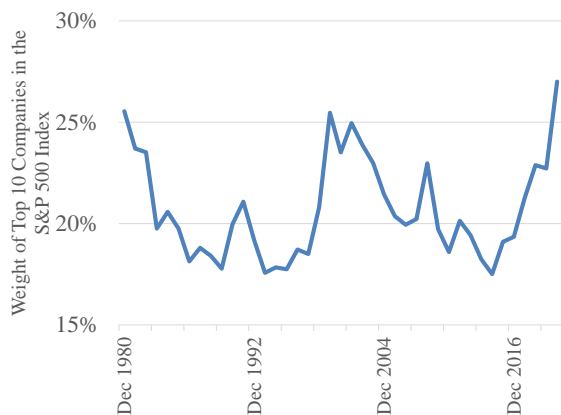
Similarly, over the last decade, the bull market has been led by large cap growth companies which have come to dominate the composition of equity market benchmarks. Over the trailing 10-year period ending June 30th, the Russell Top 200 mega-cap index returned 14.6% per year, while the Russell 2000 small cap index returned 10.5%. Likewise, the Russell 3000 Growth Index returned 16.9%, outperforming the Russell 3000 Value by 669 bps *per year*.⁸

Concentration of market-cap weighted indices in a smaller number of high-performing names in turn has been fueled by the steady growth of passive investing in index funds among retail, retirement, and institutional investors. As of the end of March, 48% of U.S. equities held by mutual funds and ETFs were in passively managed index funds, up from below 5% in 1995.⁹ Index funds can create a feedback loop whereby companies appreciate in value and become a larger position within the index, which means more index fund dollars are invested in those names, causing them to appreciate further.

This concentration is a by-product of narrow leadership within the cap-weighted equity indices. The composition of the S&P 500, which—as a reminder—is a market-cap weighted index of 500 large cap

U.S. stocks that covers around 80% of the total equity market, illustrates this point.¹⁰ Historically, between 1980 and June of 2020, the top 10 companies in the S&P 500 Index have comprised, on average, 20.7% of the index. As of June 30th of this year, the top ten comprised 27% of the index—the highest point in 40 years of available data and 30% higher than the average.

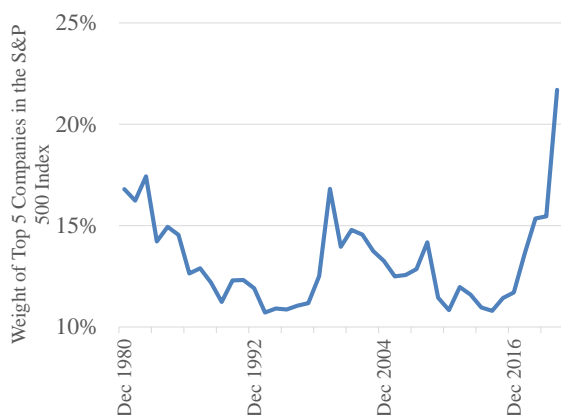
Weighting of Top 10 Positions in the S&P 500, 1980-2020



Source: Standard and Poor's.

But wait, there's more! The index is actually more concentrated than the top 10 reveal. The *top 5* companies in the S&P 500 have averaged 13.2% of the index over the same 40 year period. As of the end of June, the top 5 issuers were, in descending order: Microsoft, Apple, Amazon, Facebook, and Alphabet (the index holds both Class A and Class C shares of Alphabet and the sum of those two would actually rank it above Facebook). Those five companies together comprised 21.7% of the entire index. This is not only the high point for a top 5 during the 40 year period, it is 64% above the average level of top 5 concentration. It is also higher than the average weight of the top 10 holdings between 1980 and 2019.

Weighting of Top 5 Positions in the S&P 500, 1980-2020

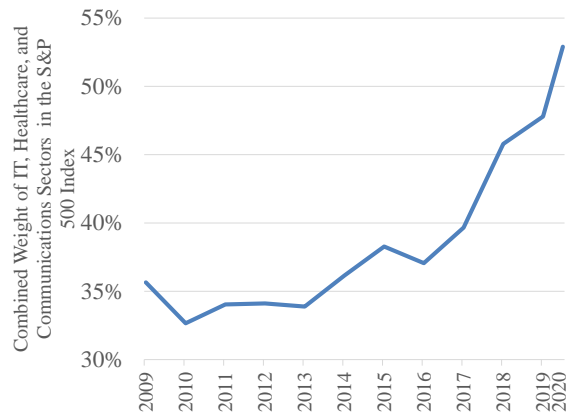


Source: Standard and Poor's.

Furthermore, the top 5 companies are all technology companies (Amazon is technically classified in the Consumer Discretionary category, but in many ways it is a technology company). The Information Technology sector weight has grown steadily over the last decade, and that has accelerated during the pandemic. The combined weight of three COVID-resistant sectors—IT, Healthcare, and

Communications Services—now represent 52.9% of the S&P 500. Over the last decade these sectors have averaged less than 40% of the index.¹⁰

Combined Weight of IT, Healthcare, and Communications Sectors in the S&P 500, 2009-2020



Source: Standard and Poor's

The Information Technology, Healthcare, and Communications Services sectors are a considerably smaller portion of the U.S. economy, as measured by GDP.

Is the decoupling of the stock market and the real economy sustainable? In theory, the answer is yes, particularly over an intermediate period of time (perhaps years). However, there are important forces that moderate the divergence, and our conclusion is that the discrepancy between Wall Street and Main Street is at an extreme level and likely to move back towards historic norms.

Let us return to our earlier example of Widgets A and B. In a competitive market, the excess profits associated with producing Widget B would attract new entrants to compete with Company B, which would drive down their widget price and reduce their profitability. Eventually this lower profitability would erode Company B's stock price, bringing the relative market caps of A and B more in keeping with their share of GDP.

We believe decoupling could persist but not indefinitely at these levels. Conversion implies that the economy will look more like the market (or vice versa) as the dynamics of capitalism and/or regulation take hold. The market could be predictive, in which case the stronger-than-expected economic recovery will bring the earnings of risk assets back into line with stock prices. Alternatively, and particularly if the economic recovery falters and government support isn't sustained, convergence could take the form of a correction in the market for risk assets which makes the market more reflective of the broader U.S. economy.

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Notes:

1. Bureau of Economic Analysis Gross Domestic Product, 2nd Quarter 2020 (Advance Estimate) and Annual Update released July 30, 2020: <https://www.bea.gov/news/2020/gross-domestic-product-2nd-quarter-2020-advance-estimate-and-annual-update>.
2. On March 4th the Coronavirus Preparedness and Supplemental Appropriations Act included \$8.3 billion of funding for public health agencies for personal protective equipment, vaccine development, and small business loans. The Family First Coronavirus Response Act, enacted on March 18th, provided \$97.7 billion for free coronavirus testing, paid leave, enhanced unemployment insurance, expanded food security initiatives, and increased federal Medicaid funding. The Coronavirus Aid, Relief, and Economic Security (CARES) Act of March 27th contained \$2 trillion of funding for direct stimulus payments, a \$600 weekly unemployment augmentation program, the Paycheck Protection Program (PPP), and various other support to targeted industries and public health programs. On April 24th an additional \$484 billion was allocated to replenish PPP loan funds and fund additional public health initiatives via the Paycheck Protection Program and Health Care Enhancement Act. Source: www.govtrack.us/covid-19. Nominal GDP of \$21.729 trillion as of Q4 2019, source: U.S. Bureau of Economic Analysis, Gross Domestic Product [GDP], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/GDP>, July 26, 2020.
3. Source: <https://apps.newyorkfed.org/markets/autorates/fed%20funds>.
4. Details on the Federal Reserve's monetary policies through the month of June can be found here: <https://www.federalreserve.gov/monetarypolicy/2020-06-mpr-part2.htm#xsubsection-1433-1068219f>.
5. The Fed's March 23rd announcement can be found here: <https://www.federalreserve.gov/newsevents/pressreleases/monetary20200323b.htm>.
6. M2 and M1 are measures of the money supply. M2 consists of M1 plus: (1) savings deposits (which include money market deposit accounts, or MMDAs); (2) small-denomination time deposits (time deposits in amounts of less than \$100,000); and (3) balances in retail money market mutual funds (MMMFs). Seasonally adjusted M2 is computed by summing savings deposits, small-denomination time deposits, and retail MMMFs, each seasonally adjusted separately, and adding this result to seasonally adjusted M1. M1 includes funds that are readily accessible for spending. M1 consists of: (1) currency outside the U.S. Treasury, Federal Reserve Banks, and the vaults of depository institutions; (2) traveler's checks of nonbank issuers; (3) demand deposits; and (4) other checkable deposits (OCDs), which consist primarily of negotiable order of withdrawal (NOW) accounts at depository institutions and credit union share draft accounts. The Fed increases the money supply by using Open Market Operations—essentially creating new bank reserves electronically and using them to purchase securities in the market.
7. Information on the history of the Wilshire 5000 Index can be found in Robert J. Waid's *Wilshire 5000®: Myths and Misconceptions*, published in November of 2014. Current index composition is found on the Wilshire 5000 Fact Sheet. Both of those documents, as well as other detail on the index, were referenced from Wilshire's Wilshire 5000 Index website: <https://wilshire.com/indexes/wilshire-5000-family/wilshire-5000-total-market-index>.
8. Index total returns are sourced from Factset via AJO Partners: http://www.ajopartners.com/wp-content/uploads/2020/07/20_06.pdf.
9. See Federal Reserve Bank of Boston Working Paper SRA 18-04 dated August 27, 2018/last revised: May 15, 2020 *The Shift from Active to Passive Investing: Risks to Financial Stability?* Authored by Kenechukwu Anadu, Mathias Kruttli, Patrick McCabe, and Emilio Osambela. <https://www.bostonfed.org/-/media/Documents/Workingpapers/PDF/2018/rpa1804.pdf>
10. S&P 500 Index composition data can be found on the S&P website: (<https://www.spglobal.com/spdji/en/indices/equity/sp-500/#overview>). This analysis made use of the June 30, 2020 S&P 500 Month-End Factsheet and Top Index Market Value spreadsheet, both located at that site.