



Q4 2019 Masonry All Cap Select Commentary

February 2020

"Prices go up on an escalator and down on an elevator"

To Our Client Partners:

The aim of our quarterly updates is to provide insight into the current portfolio and how we are positioned going forward. Please reach out with any questions or comments you may have after reading the letter.

We are beginning to sense this has become a 'Wiley E. Coyote' market where many stock prices have become detached from their underlying economics. It reminds us of the standard scene in the cartoon *Roadrunner* where the coyote continues his chase of the Roadrunner well after he has run off a cliff. The return of the S&P 500 (driven by a handful of the largest stocks) and the stock prices of certain ecommerce stocks and other story stocks (Tesla, Wayfair, Uber, Lyft), have 'run' far ahead of what the fundamentals justify. We have seen this movie before – spoiler alert – it doesn't end well.

We are acutely aware of the allure that attracts investors into thinking, 'just buy the stuff that goes up! How hard can it be?' It's particularly challenging when the money being used to fuel the excesses is coming from the undervalued securities we own despite their improving operational metrics.

Rest assured, we believe we are well-positioned at present to both protect and grow your capital. There are securities on sale in the stock market currently but they aren't the ones that are talked about tirelessly on the financial news every day.

Overview of the Masonry All Cap Select Portfolio

As of December 31, 2019 we were approximately 92% in stocks and the rest of the portfolio was in cash and fixed income instruments. The largest exposures were the common stocks of Discovery, Liberty Sirius, and Dish Network shares. The largest positive contributors to performance for the quarter were Discovery, Liberty Sirius and Apple. The largest negative contributors were Viasat, Brighthouse and Range Resources.

Portfolio Highlights

- Our core positions include several cash generative companies with great management teams and enviable competitive advantages. Most importantly, they trade at incredibly cheap valuations based on our analysis of the long-term economics of their respective businesses. It is our view that over time these securities should significantly appreciate in value due to the combination of increasing earnings and higher multiples afforded to those earnings.
- The special situations section of the portfolio includes positions in small and mid-cap stocks in various industries including shipping, community and regional banks, natural gas, and oil services. This seemingly disparate basket of securities all share the common trait of trading at deeply discounted prices to our estimate of their intrinsic values based on the future earnings potential, book value or a combination of both.
- Viewed in its entirety, the portfolio remains extraordinarily undervalued. The vast majority of stocks have price-to-earnings (P/E) or price-to-free cash flow multiples (P/FCF) under 7x. In today's environment cheap stocks (low P/E's) are being ignored in favor of expensive stocks (high P/E's). As shown below, owning low P/E stocks like ours at a time when they have underperformed relative to high P/E stocks bodes very well for future returns. The current dynamic is cyclical and has its limits (Chart 1). Simply put, we believe the prospective returns for our strategy may never be better.

Chart 1



Portfolio Details

Shipping Basket

Our shipping investments are centered on the following themes:

- The order book for new ships, specifically tankers, is at a multi-decade low heading into 2020.
- Access to capital to build ships has become more limited as banks have reduced their loan books and the alternative lenders are more expensive.
- Uncertainty over IMO 2030 (the next IMO iteration) should serve to limit the overbuilding of ships in the coming years as there are real concerns over the propulsion systems of the future. Ships can be a 25+ year investment and the new regulations that will be proposed in 2030 create significant uncertainties.
- Public shipping companies have generally shifted their focus to de-risking their balance sheets, having more shareholder friendly management, and employing disciplined capital allocation strategies to return money to shareholders.

We have established positions in a number of shipping companies involved in the transport of crude oil and oil products (Frontline, Scorpio Tankers, Euronav) as well as a position in a dry bulk carrier (Star Bulk). We constructed a basket of well-researched companies where each differs in the quality of their management, balance sheet strength, category of their ships and age of their fleet. The one characteristic they all share are deeply discounted share prices that are detached from their earnings power in 2020 and beyond.

Importantly, any investment in cyclical industries can be volatile over given periods of time. As long as the secular trend remains in place we will maintain our exposure but make adjustments depending on the forces in play (which includes the world's current fight against the Coronavirus).

Dish Network

The first quarter of 2020 should be a defining moment in the long and storied history of Dish Network. Testimony ended on Friday, December 20, 2019 in a federal lawsuit by a group of states led by New York and California seeking to block the merger of Sprint Corp. and T-Mobile US. What is so odd about this is that the merger has already been approved by both the Federal Communications Commission and the Department of Justice. If a ruling is obtained in this federal lawsuit allowing the merger to proceed, Dish will be a large beneficiary as the recipient of multiple concessions given to them by both Sprint and T-Mobile. These would, in effect, make Dish a viable wireless player in the US in the blink of an eye and would catapult them on their way to building out a stand-alone 5G wireless network utilizing the mass of spectrum they have accumulated over the years. Dish founder, Charlie Ergen, laid out a powerful vision of the future consisting of Boost Mobile (from Sprint), extended access to T-Mobile's network to function as a MVNO (Mobile Virtual Network Operator) and a \$10 billion financing commitment

from 3 large US financial institutions to fund the buildout of full 5G coverage in more than 100 cities by 2022.

We originally made the investment case for Dish based on a sum-of-the parts valuation in a presentation we did in May of 2019 (please contact us if you would like a copy). A lot has changed since we formed our original investment thesis. However, most of the basic elements remain the same. We list below some of the highlights of our past investment case that still holds true:

- Dish is an asset play (spectrum) supported by a profitable business (Satellite TV) that is in secular decline but grossly mispriced.
- We are betting on the jockey, Charlie Ergen, who created the satellite TV business and is now intent on creating a 5G wireless network from scratch.
- There exists a highly asymmetric risk / reward profile with extremely unlikely downside of almost 50% and upside of 165%+.
- Having a “clean slate” with regard to building out their 5G wireless network provides a sustainable long-term advantage for Dish over the incumbent wireless carriers.

We are anxiously awaiting the verdict with regard to the recent court case and will adjust our investment thesis in Dish based on the outcome.

[Note: a federal judge approved T-Mobile’s merger with Sprint on 2/11/20]

Market Thoughts and Observations

We spend almost all of our time researching and conducting fundamental analysis on individual securities. However, when analyzing a company we have learned from past experience that it is important to have a sense of what factors might impact our investment on a macro level.

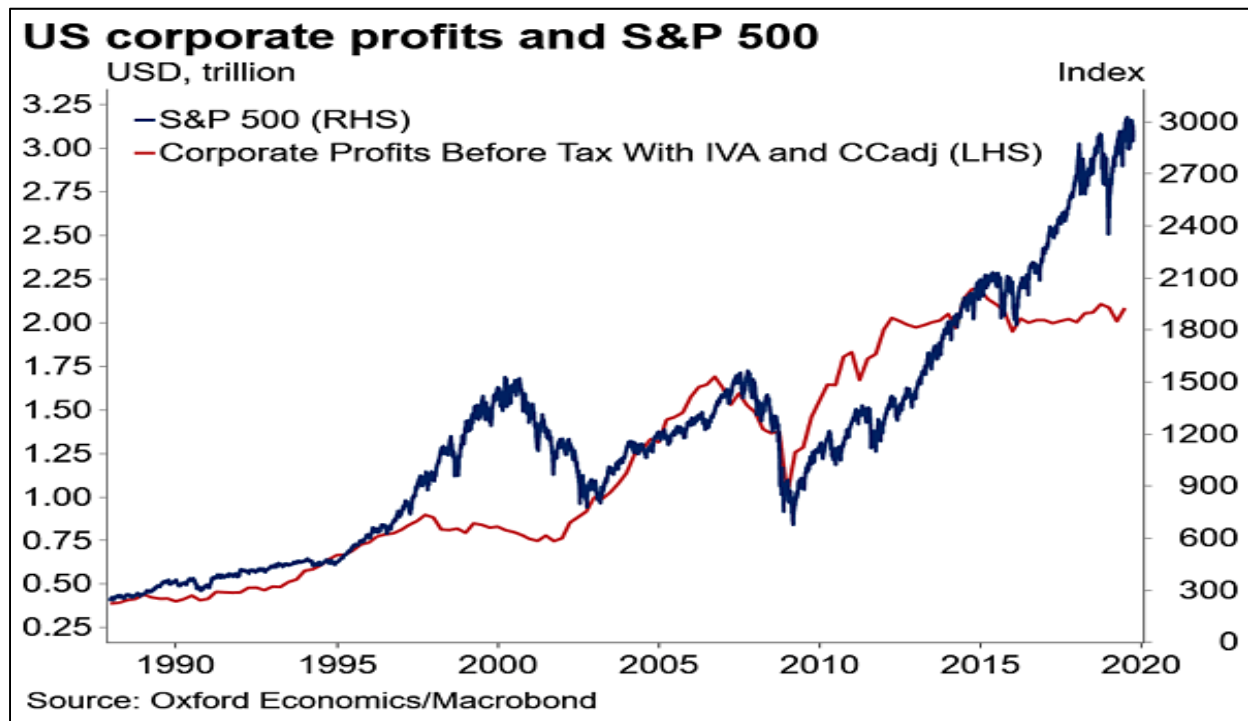
Over the long-term the investment results should reflect the merits of the securities in the portfolio, but there are certain points in time when the macro environment (recessions, bubbles, inflation shocks, etc.) deserves more attention. We believe this is one of those times. This next section is heavy on charts and visual displays. As is often said, sometimes a picture is worth a thousand words. We have listed below the overarching themes you will encounter as you make your way through this section:

1. The price of the S&P 500 has risen dramatically while the earnings produced by companies that form it have remained flat.
2. Monetary policy has been distorting the price of securities since at least 2012.
3. The Fed intervention that started in September of 2019 was due to alarming structural problems bubbling just below the surface.
4. The return of the S&P 500 has become highly correlated with the Fed’s balance sheet over the last few years.

5. The S&P 500 has also become very expensive historically and on par with the extremes seen in 1999-2000.
6. Owning Blue Chips stocks (like Microsoft, Apple, Google, and Amazon today) offers no respite from declines in the overall market.
7. Inverted yield curves lead to bad economic outcomes.
8. Employment and Confidence levels can be indicative of where we are in the economic cycle.
9. It seems evident central bank interventions have blown yet another bubble in the financial markets.
10. Echoes of the dot.com bubble haunt the present day.

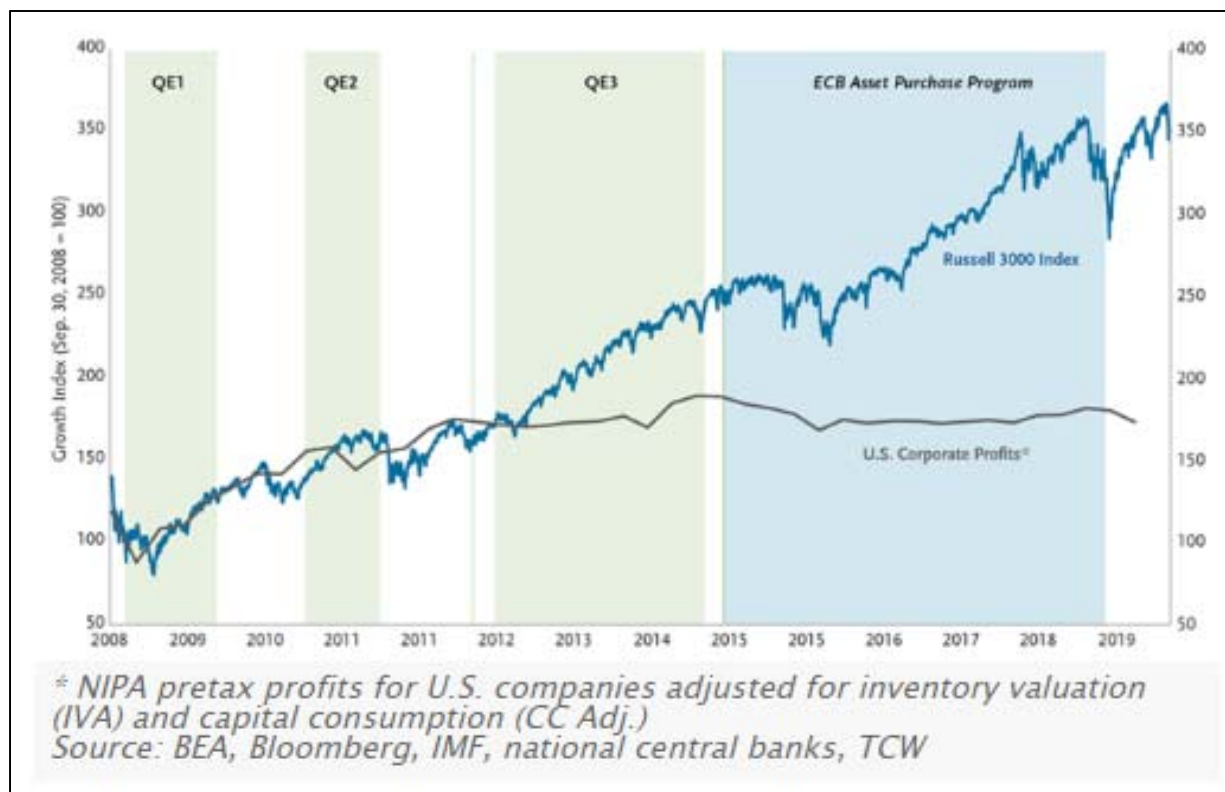
The return for the S&P 500 in 2019 was all due to multiple expansion as there was no corresponding earnings growth. Unfortunately, something has to give longer term in response to this dynamic. For index investors the risks increase dramatically when a rising index level becomes untethered from the earnings of the underlying securities. The last episode when this occurred was the late 90's and into early 2000 (Chart 2).

Chart 2



Worldwide monetary policy has seemingly had the effect of increasing stock prices but not doing anything to help overall US Corporate Profits which have remained flat for many years (Chart 3).

Chart 3

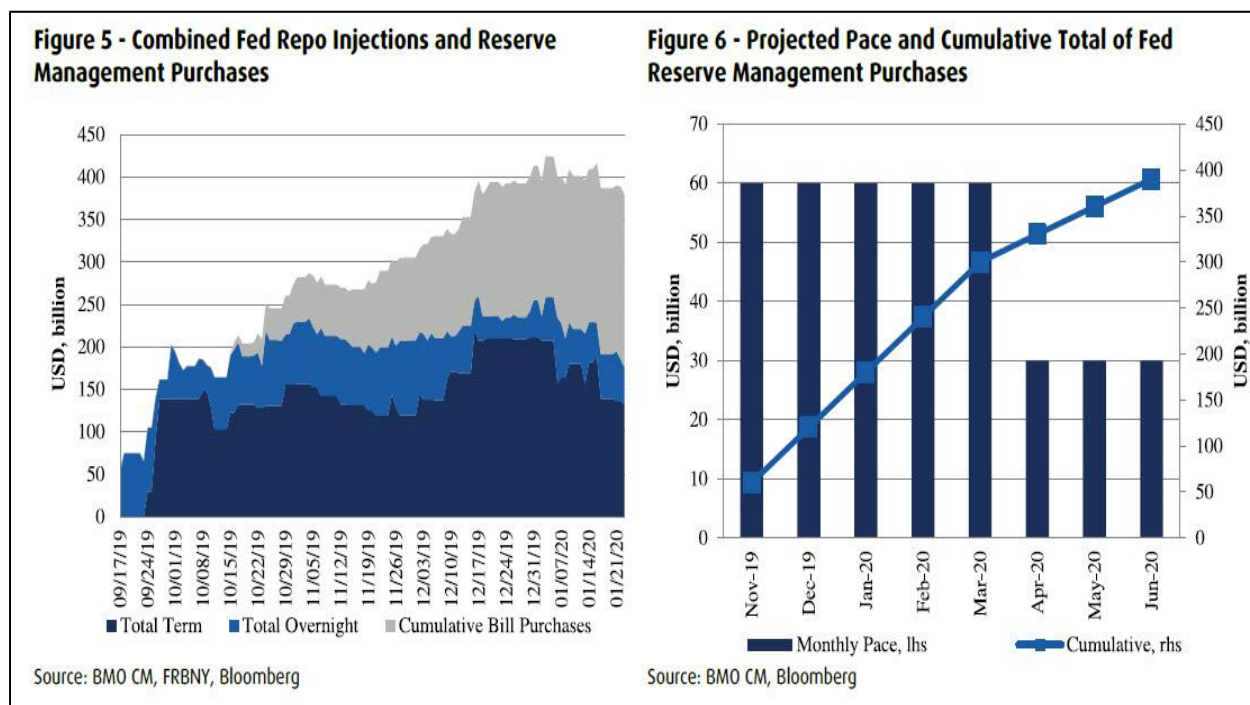


An interesting twist regarding Chart 3 is that the earnings per share of the companies in the S&P 500 have gone up substantially over the last 5 years while the overall level of profits has remained flat. The numbers bear out that this dynamic was due to companies buying back their own shares with many funding those purchases with cheap debt.

The Fed and the Stock Market

The Fed has been buying \$60bn of Treasury bills a month (Chart 4) since September which happens to coincide with the recent booming stock market. It is commonly believed that the Fed Funds rate is set and controlled by the Federal Reserve. Well, there was a sudden and vicious spike in the overnight funding rate (repo market) in September which led the Fed Funds rate to stray out of the target range. The liquidity created by the Fed's T-bill purchases 'fixed' the problem. However, the unintended consequences might eventually create issues that are worse than the temporary cure.

Chart 4



Roberto Perlie, a former Fed economist and partner at Cornerstone Macro LLC in Washington, recently said this with regard to the Fed's T-bill purchases.

"Bill purchases are not technically QE, but the Fed has lost that communication battle. Most investors think bill purchases are indeed QE and are acting as if they were. The result is that equity valuations are being boosted beyond what's justified by current earnings forecasts and economic conditions."

As such, the evidence suggests the performance of the S&P 500 (SPX in Chart 5) has become highly correlated with the Fed's balance sheet the last few years and less correlated with the underlying economics of the index constituents. We agree with Mr. Perlie that the general stock market seems entirely disconnected from the earnings of the underlying companies. It is hard to imagine a scenario where this can last in perpetuity.

Chart 5



Over the long term, we believe investment returns will be correlated to profits and not to the Fed's balance sheet. On this front, the valuation of the S&P 500 seems very frothy to say the least (Chart 6) and at the levels of past S&P peaks.

Chart 6



It's also important to remember that although today's market leaders seem impervious to any share price declines, the same was thought near the end of the last two lengthy bull markets (Chart 7).

Chart 7

Blue Chip Performance	2000 - 2002	Blue Chip Performance	2007 - 2009
Cisco Systems	-89.3%	Google	-65.3%
Microsoft	-65.2%	B of A	-94.0%
JP Morgan	-76.5%	Microsoft	-50.3%
Intel	-82.3%	Merck	-65.5%
McDonalds	-74.4%	Coca-Cola	-42.3%
EMC	-96.2%	JP Morgan	-68.5%
Disney	-68.4%	Intel	-56.8%
Oracle	-84.2%	AT&T	-49.3%
Merck	-58.8%	Cisco Systems	-60.0%
Boeing	-58.6%	Boeing	-72.6%
IBM	-58.8%	Apple	-60.9%
Amgen	-66.9%	Citigroup	-98.1%
Apple	-81.1%		

The Inverted Yield Curve (3-Month US Treasury yielding more than the 10-Year US Treasury)

We found these comments regarding the yield curve inversion that occurred in the summer of 2019 very interesting and informative:

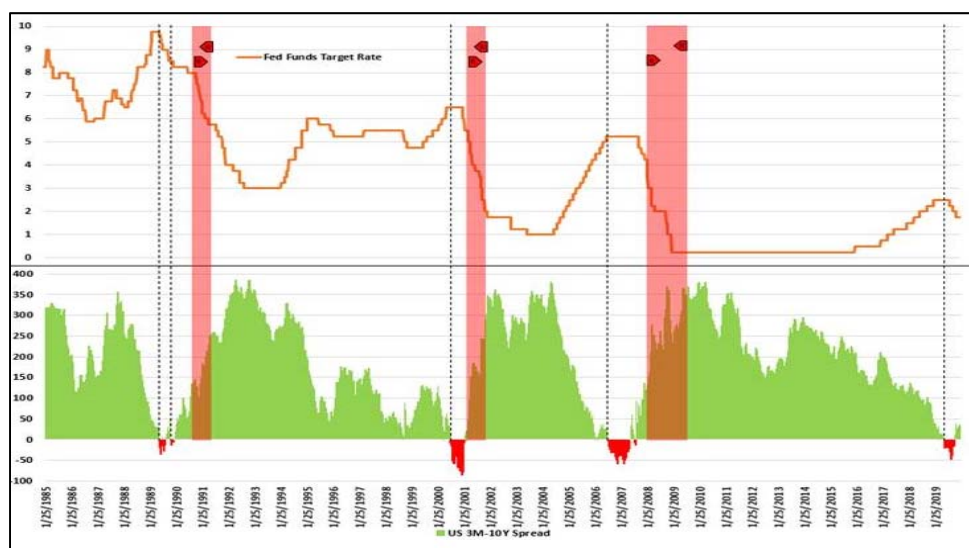
"From the commentary surrounding the bond market over the final four months of last year, it sounded as if the thing had had a complete change of heart. It had earlier warned of a recession, instead changed its mind and sounded the all-clear to everyone's great relief. The NYSE and Jay Powell most of all.

That's not really what happened. The mainstream came in, as usual, late to the story and from its conventional view grounded in academic scholarship exposed to huge gaps in its framework misread the situation; a situation, it must be pointed out, that today isn't all that much different. As January 2020 drags on, it seems less different by the session. Despite trade deals and, yes, three rate cuts. The curve continues to be distorted and twisted even if it isn't "the" inversion anymore."

Jeffrey Snider, Chief Investment Strategist of Alhambra Investment Partners

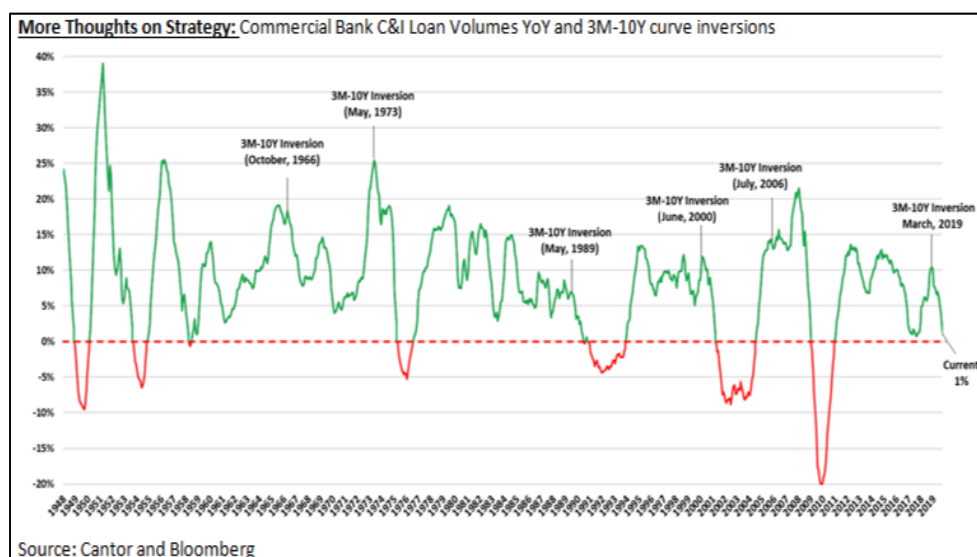
Historically, in simple terms, the Fed tightens by increasing rates, and once the 3-Month US Treasury and 10-Year US Treasury curve inverts, the Fed starts to loosen by reducing rates but it's always too late. A recession follows. As Jim Bianco of Bianco Research recently stated, "Every day the curve is inverted, high rates are damaging the economy. Cumulate enough damage and we have a recession. So, the yield curve does not predict a recession, it causes it." Chart 8 displays the cycle.

Chart 8



We too believe there are very real consequences to the inversion of the yield curve. Chart 9 maps yield curve inversions of the 3-Month US Treasury and the 10-Year US Treasury together with the level commercial and industrial loans. This matters because an inverted curve leads to less profitable lending, which then reduces the desire of banks to lend. Lending standards then tighten and loan growth falls as a consequence.

Chart 9



Cyclicality in both Employment and Consumer and CEO Confidence Levels

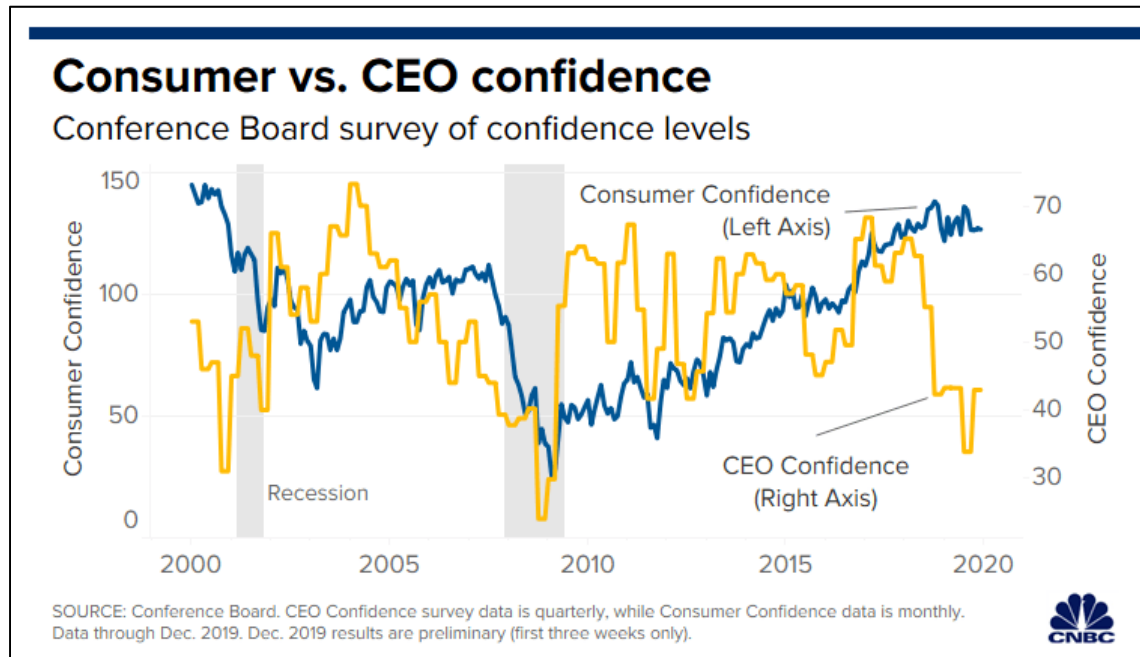
Although some have recently lost the belief that the economy is still cyclical, the hard evidence from the past suggests otherwise. The natural ebb and flow of the employment cycle is on full display in Chart 10. Unfortunately, the next step is to travel down to the trough from whatever peak we reach which eventually means a recession.

Chart 10



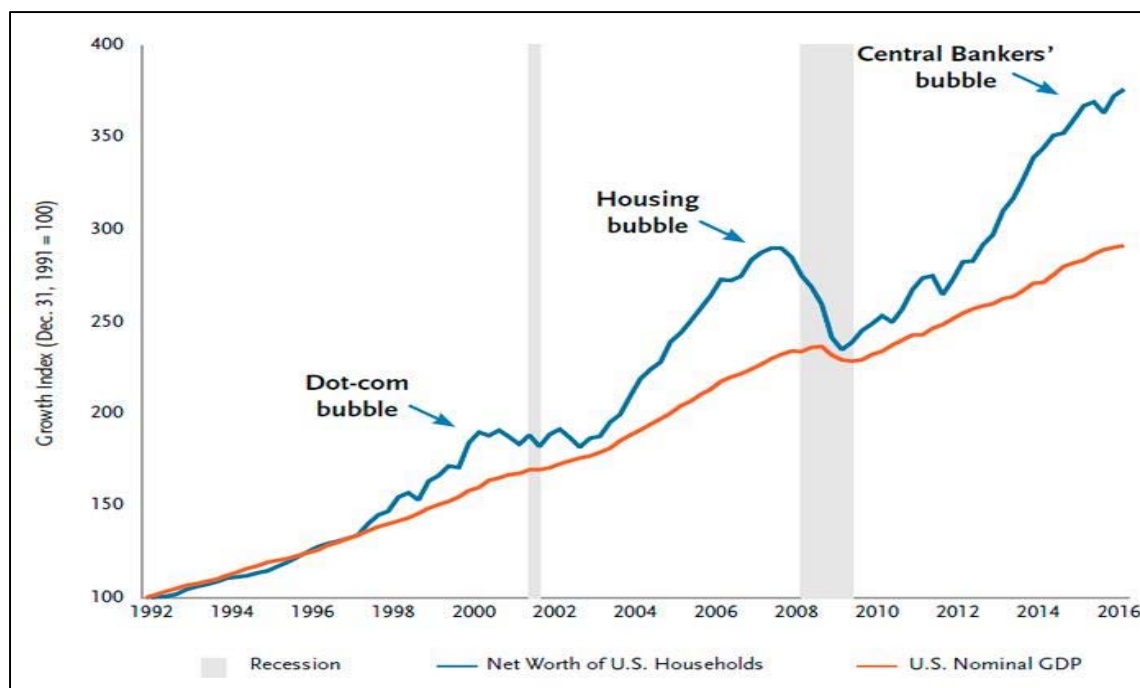
We can also see in Chart 11 the cyclical nature of the economy through the lens of Consumer Confidence which reaches its apex at economic peaks and just prior to oncoming recessions. Consumer Confidence is measured against the CEO Confidence survey. CEO's make strategic business decisions including capital expenditures and staffing levels which ultimately drive economic growth – or economic declines. When CEO's lack confidence they close the purse strings.

Chart 11



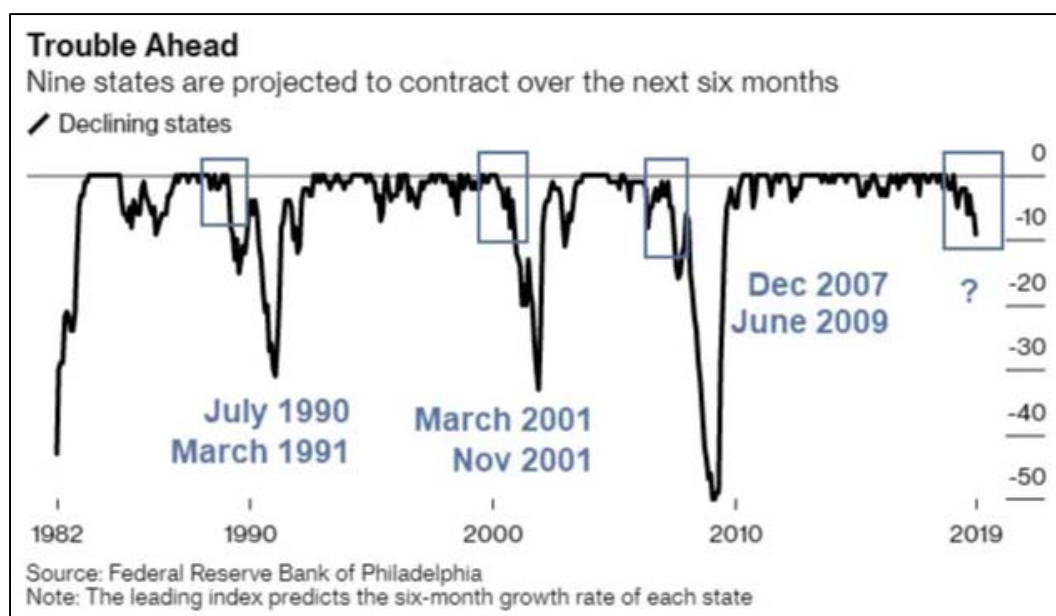
Over the long-term the collective Net Worth of U.S. Households should be roughly in line with the growth in U.S. Nominal GDP. As seen in Chart 12, the corrective measure that brought balance back to this equation has been a recession.

Chart 12



And because of this fact and its potential impact on the portfolio, we remain vigilant in looking for signs that the U.S. economy is rolling over. For example, we are paying attention to the number of states in the U.S. that are projected to contract economically over the next 6 months. As depicted in Chart 13, an increase to the current levels has preceded the last 3 recessions in the U.S.

Chart 13



We end this section with a clip of a speech Alan Greenspan gave to the New York Economics Club on January 13, 2000 as it sounds eerily familiar to the refrain we are hearing now.

Remarks by Chairman Alan Greenspan

Technology and the economy

Before the Economic Club of New York, New York, New York

January 13, 2000

When we look back at the 1990s, from the perspective of say 2010, the nature of the forces currently in train will have presumably become clearer. We may conceivably conclude from that vantage point that, at the turn of the millennium, the American economy was experiencing a once-in-a-century acceleration of innovation, which propelled forward productivity, output, corporate profits, and stock prices at a pace not seen in generations, if ever.

Alternatively, that 2010 retrospective might well conclude that a good deal of what we are currently experiencing was just one of the many euphoric speculative bubbles that have dotted human history.

As an appendix to this letter, we have included the Wikipedia summary of the dot-com bubble. We highlighted in yellow the elements that we believe are strikingly similar to today's environment.

Last, we have listed some ‘fun facts’ as we head into 2020.

- On the day TSLA hit its new all-time high (Jan. 14, 2020), a headline came across my desk that read, “Elon Musk’s Backtrack of the Tesla Robotaxi Claim is Blatant Securities Fraud.”
- Tesla has lost an inordinate number of employees in their legal and accounting departments in the last few years – for almost all companies this is a very bad sign.
- Millennials are getting licensed to drive at the highest rate in 40 years and licensed drivers reached a record 227.5 million in 2018 - well, so much for the idea that the bulk of Millennials won’t ever get their driver’s license or that they will all be driven around in autonomous cars.
- Goldman Sachs, the money making machine of Wall Street, sold its entire position in Uber in Q4 2019 after the IPO lockup expired – we are guessing they **didn’t** do this because they thought the future looked bright for Uber.
- For the first time in the last 30-40 years, both US monetary and fiscal policies are pro-inflation yet the “pro-inflation” asset classes and securities are being largely ignored. As of this writing the energy sector is at a 20-year low as a percent of the S&P 500 – the contrarian in us is drawn to market dynamics like this.

Firm Update

We continue to believe the opportunity at hand is extraordinary – we own a portfolio of securities that are as deeply discounted from our estimates of fair value as we have ever experienced. Importantly, a substantial portion of our net worth is invested in these securities alongside yours.

Please feel free to contact members of our team with any comments, questions or potential investment ideas.

Last, on an annual basis we are required to offer to send our clients our updated ADV Part 2 brochure once it has been completed. If you would like a copy sent to you, please contact us at info@masonrycap.com and we will happily do so.

Best Regards,

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Important Disclosures Follow

DISCLOSURES:

REFERENCE TO THE S&P 500 IS FOR COMPARATIVE PURPOSES ONLY. THE S&P 500 IS AN UNMANAGED CAPITALIZATION-WEIGHTED INDEX OF 500 STOCKS, DESIGNED TO MEASURE PERFORMANCE OF THE BROAD DOMESTIC ECONOMY THROUGH CHANGES IN THE AGGREGATE MARKET VALUE OF 500 STOCKS REPRESENTING ALL MAJOR INDUSTRIES. THE INDEX TRACKS THE CAPITAL GAINS OF THE STOCKS OVER TIME, ASSUMING THAT ANY CASH DISTRIBUTIONS, SUCH AS DIVIDENDS, ARE REINVESTED BACK INTO THE INDEX. THE S&P 500 MAY BE MORE DIVERSIFIED THAN THE FUND/YOUR ACCOUNT AND MAY NOT REPRESENT AN APPROPRIATE BENCHMARK. HOLDINGS MAY VARY SIGNIFICANTLY FROM THE SECURITIES THAT COMPRISE THE S&P 500. PAST PERFORMANCE OF THE INDEX SHOULD NOT BE CONSTRUED AS AN INDICATOR OF FUTURE PERFORMANCE OF THE FUND OR YOUR ACCOUNT.

FORWARD LOOKING STATEMENTS:

CERTAIN INFORMATION CONTAINED IN THIS MATERIAL CONSTITUTES FORWARD-LOOKING STATEMENTS, WHICH CAN BE IDENTIFIED BY THE USE OF FORWARD-LOOKING TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE," OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. SUCH STATEMENTS ARE NOT GUARANTEES OF FUTURE PERFORMANCE OR ACTIVITIES. DUE TO VARIOUS RISKS AND UNCERTAINTIES, ACTUAL EVENTS OR RESULTS OR THE ACTUAL PERFORMANCE OF THE FUND MAY DIFFER MATERIALLY FROM THOSE REFLECTED OR CONTEMPLATED IN SUCH FORWARD-LOOKING STATEMENTS.

INVESTMENT PERFORMANCE:

THE PERFORMANCE REPRESENTATIONS CONTAINED HEREIN ARE NOT REPRESENTATIONS THAT SUCH PERFORMANCE WILL CONTINUE IN THE FUTURE OR THAT ANY INVESTMENT SCENARIO OR PERFORMANCE WILL EVEN BE SIMILAR TO SUCH DESCRIPTION. ANY INVESTMENT DESCRIBED HEREIN IS AN EXAMPLE ONLY AND IS NOT A REPRESENTATION THAT THE SAME OR EVEN SIMILAR INVESTMENT SCENARIOS WILL ARISE IN THE FUTURE OR THAT INVESTMENTS MADE WILL BE PROFITABLE. NO REPRESENTATION IS BEING MADE THAT ANY INVESTMENT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN PRIOR PERFORMANCE RESULTS AND ACTUAL RESULTS ACHIEVED BY A PARTICULAR TRADING PROGRAM.

PERFORMANCE DEPICTED HEREIN IS UNAUDITED. PERFORMANCE SHOWN IS ALSO NET OF ALL FEES AND EXPENSES AND REFLECTS THE REINVESTMENT OF DIVIDENDS AND OTHER EARNINGS. THE FEE STRUCTURE APPLIED TO THE PERFORMANCE WAS THAT OF A TYPICAL INVESTOR: PERFORMANCE SHOWN IS FOR NEW ISSUE-ELIGIBLE INVESTORS PAYING THE STANDARD FEES (AS APPLICABLE), AS DISCLOSED IN THE PERTINENT OFFERING DOCUMENTS. YTD PERFORMANCE ASSUMES AN INVESTMENT HAS BEEN HELD SINCE JANUARY 1, OF THE RELEVANT YEAR. BECAUSE SOME INVESTORS MAY HAVE DIFFERENT FEE ARRANGEMENTS AND DEPENDING UPON THE TIMING OF A SPECIFIC INVESTMENT, NET PERFORMANCE FOR AN INDIVIDUAL INVESTOR MAY VARY FROM THE NET PERFORMANCE STATED HEREIN. ACTUAL RETURNS WILL VARY AMONG INVESTORS IN ACCORDANCE WITH THE TERMS OF THE PERTINENT OFFERING DOCUMENT. INVESTMENT RETURNS AND THE PRINCIPAL VALUE OF AN INVESTMENT WILL FLUCTUATE AND MAY BE QUITE VOLATILE. IN ADDITION TO EXPOSURE TO ADVERSE MARKET CONDITIONS, INVESTMENTS MAY ALSO BE EXPOSED TO CHANGES IN REGULATIONS, CHANGE IN PROVIDERS OF CAPITAL AND OTHER SERVICE PROVIDERS. INVESTORS RISK LOSS OF THEIR ENTIRE INVESTMENT.

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Appendix:

The following is a reproduction of the “dot-com bubble” from Wikipedia (highlights are ours)

The bubble

As a result of these factors, many investors were eager to invest, at any valuation, in any [dot-com company](#), especially if it had one of the [Internet-related prefixes](#) or a “.com” [suffix](#) in its name.^[15] [Venture capital](#) was easy to raise. [Investment banks](#), which profited significantly from [initial public offerings](#) (IPO), fueled speculation and encouraged investment in technology.^[16] A combination of rapidly increasing stock prices in the [quaternary sector of the economy](#) and confidence that the companies would turn future profits created an environment in which many investors were willing to overlook traditional metrics, such as the [price–earnings ratio](#), and base confidence on technological advancements, leading to a [stock market bubble](#).^[11] Between 1995 and 2000, the Nasdaq Composite stock market index rose 400%.^[15] It reached a price–earnings ratio of 200, dwarfing the peak price–earnings ratio of 80 for the Japanese [Nikkei 225](#) during the [Japanese asset price bubble](#) of 1991.^[11] In 1999, shares of [Qualcomm](#) rose in value by 2,619%, 12 other large-cap stocks each rose over 1,000% value, and seven additional large-cap stocks each rose over 900% in value. Even though the Nasdaq Composite rose 85.6% and the [S&P 500 Index](#) rose 19.5% in 1999, more stocks fell in value than rose in value as investors sold stocks in slower growing companies to invest in Internet stocks.^[17]

An unprecedented amount of personal investing occurred during the boom and stories of people quitting their jobs to engage in full-time [day trading](#) were common.^[18] The [news media](#) took advantage of the public's desire to invest in the stock market; an article in *The Wall Street Journal* suggested that investors “re-think” the “quaint idea” of profits, and [CNBC](#) reported on the stock market with the same level of suspense as many networks provided to the [broadcasting of sports events](#).^{[11][19]}

At the height of the boom, it was possible for a promising dot-com company to become a [public company](#) via an IPO and raise a substantial amount of money even if it had never made a profit—or, in some cases, realized any material revenue. People who received [employee stock options](#) became instant paper millionaires when their companies executed IPOs; however, most employees were barred from selling shares immediately due to [lock-up periods](#).^{[16][page needed]} The most successful entrepreneurs, such as [Mark Cuban](#), sold their shares or entered into [hedges](#) to protect their gains.

Spending tendencies of dot-com companies^[edit]

Most dot-com companies incurred [net operating losses](#) as they spent heavily on advertising and promotions to harness [network effects](#) to build [market share](#) or [mind share](#) as fast as possible, using the mottos “get big fast” and “get large or get lost”. These companies offered their services or products for free or at a discount with the expectation that they could build enough [brand awareness](#) to charge profitable rates for their services in the future.^{[20][21][22]} In January 2000, there were 16 [dot-com commercials during Super Bowl XXXIV](#), each costing \$2 million for a 30-second spot.

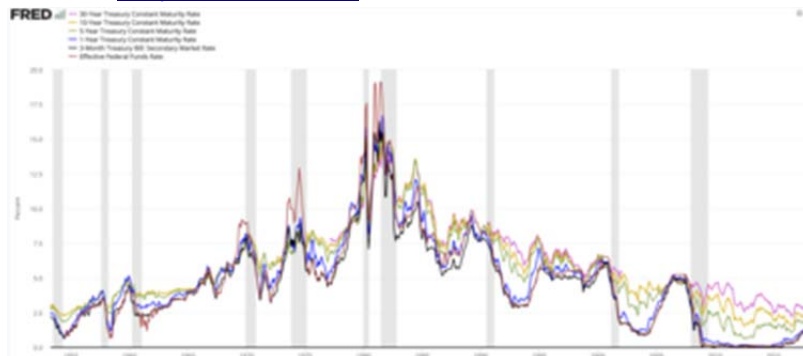
The “growth over profits” mentality and the aura of “[new economy](#)” invincibility led some companies to engage in lavish spending on elaborate business facilities and luxury vacations for employees. Upon the launch of a new product or website, a company would organize an expensive event called a [dot com party](#).^{[23][24]}

Bubble in telecom

[Telecommunications equipment](#) providers, convinced that the future economy would require ubiquitous [broadband access](#), went deeply into debt to improve their networks with high-speed equipment and [fiber optic](#) cables. In many areas, such as the [Dulles Technology Corridor](#) in Virginia, governments funded technology infrastructure and created favorable business and tax law to encourage companies to expand.^[25] In Europe, [mobile phone](#) companies overspent on [3G](#) licenses, which led them deep into debt. The investments in infrastructure were far out of proportion to [cash flow](#). The high levels of investment led to a heightened competition for customers, leading many telecoms providers to slash prices for services, especially in the hyper-competitive European marketplace. These were major factors that led to the [telecoms crash](#).^[12]

Bursting of the bubble^[edit]

See also: [Early 2000s recession](#)



Historical government interest rates in the United States

Around the turn of the millennium, spending on technology was volatile as companies prepared for the [Year 2000 problem](#). There were concerns that computer systems would have trouble changing their clock and calendar systems from 1999 to 2000 which might trigger wider social or economic problems, but in reality there was virtually no impact or disruption.

On January 10, 2000, [America Online](#), led by [Steve Case](#) and [Ted Leonsis](#), announced a [merger](#) with [Time Warner](#), led by [Gerald M. Levin](#). The merger was the largest to date and was questioned by many analysts.^[26]

In February 2000, with the Year 2000 problem no longer a worry, [Alan Greenspan](#) announced plans to aggressively raise interest rates, which led to significant stock market volatility as analysts disagreed as to whether or not technology companies would be affected by higher borrowing costs.

On March 10, 2000, the NASDAQ Composite stock market index peaked at 5,048.62.^[27]

On March 13, 2000, news that [Japan](#) had once again entered a [recession](#) triggered a global sell off that disproportionately affected technology stocks.^[28]

On March 15, 2000, [Yahoo!](#) and [eBay](#) ended merger talks and the Nasdaq fell 2.6% but the S&P 500 Index rose 2.4% as investors shifted from strong performing technology stocks to poor performing established stocks.^[29]

The dot com bubble was not just a US phenomenon. On March 17, 2000, the Netherlands-based [World Online](#) (WOL) was floated, with a €12 billion valuation. WOL was the largest ever IPO for the Amsterdam exchange, and the largest IPO of any European Internet company.

On March 20, 2000, [Barron's](#) featured a cover article titled "Burning Up; Warning: Internet companies are running out of cash—fast", which predicted the imminent bankruptcy of many Internet companies.^[30] This led many people to rethink their investments. That same day, [MicroStrategy](#) announced a revenue restatement due to aggressive accounting practices. Its stock price, which had risen from \$7 per share to as high as \$333 per share in a year, fell \$140 per share, or 62%, in a day.^[31] The next day, the Federal Reserve raised interest rates, leading to an [inverted yield curve](#), although stocks rallied temporarily.^[32]

On April 3, 2000, judge [Thomas Penfield Jackson](#) issued his *conclusions of law* in the case of [United States v. Microsoft Corp. \(2001\)](#) and ruled that Microsoft was guilty of [monopolization](#) and [tying](#) in violation of the [Sherman Antitrust Act](#). This led to a one-day 15% decline in the value of shares in Microsoft and a 350-point, or 8%, drop in the value of the Nasdaq. Many people saw the legal actions as bad for technology in general.^[33] That same day, Bloomberg published a widely read article that stated: "It's time, at last, to pay attention to the numbers".^[34]

On Friday, April 14, 2000, the Nasdaq Composite index fell 9%, ending a week in which it fell 25%. Investors were forced to sell stocks ahead of [Tax Day](#), the due date to pay taxes on gains realized in the previous year.^[35]

By June 2000, dot-com companies were forced to rethink their advertising campaigns.^[36]

On November 9, 2000, [Pets.com](#), a much-hyped company that had backing from Amazon.com, went out of business only nine months after completing its IPO.^{[37][38]} By that time, most Internet stocks had declined in value by 75% from their highs, wiping out \$1.755 trillion in value.^[39]

In January 2001, just three dot-com companies bought advertising spots during [Super Bowl XXXV: E-Trade, Monster.com](#), and [Yahoo! HotJobs](#).^[40] The [September 11 attacks](#) accelerated the stock-market drop later that year.^[41]

Investor confidence was further eroded by several [accounting scandals](#) and the resulting bankruptcies, including the [Enron scandal](#) in October 2001, the [Worldcom scandal](#) in June 2002,^[42] and the [Adelphia Communications Corporation](#) scandal in July 2002.

By the end of the [stock market downturn of 2002](#), stocks had lost \$5 trillion in [market capitalization](#) since the peak.^[43] At its trough on October 9, 2002, the NASDAQ-100 had dropped to 1,114, down 78% from its peak.^{[44][45]}

Aftermath

After venture capital was no longer available, the operational mentality of executives and investors completely changed. A dot-com company's lifespan was measured by its [burn rate](#), the rate at which it spent its existing capital. Many dot-com companies ran out of capital and went through [liquidation](#). Supporting industries, such as advertising and shipping, scaled back their operations as demand for services fell. However, many companies were able to endure the crash; 48% of dot-com companies survived through 2004, albeit at lower valuations.^[21]

Several companies and their executives^[who?] were accused or convicted of [fraud](#) for misusing shareholders' money, and the [U.S. Securities and Exchange Commission](#) levied large fines against investment firms including [Citigroup](#) and [Merrill Lynch](#) for misleading investors.

After suffering losses, retail investors transitioned their investment portfolios to more cautious positions.^[46] Popular [Internet forums](#) that focused on [high tech](#) stocks, such as [Silicon Investor](#), [RagingBull.com](#), [Yahoo! Finance](#), and [The Motley Fool](#) declined in use significantly.^[47]

Job market and office equipment glut

Layoffs of programmers resulted in a general glut in the job market. University enrollment for computer-related degrees dropped noticeably.^{[48][49]} Anecdotes of unemployed programmers going back to school to become accountants or lawyers were common.

Failed startups liquidated all of their computer office equipment.