# Q3 2022 Mills Wealth Update

**"The key to making money in stocks is not to get scared out of them."**
***-Peter Lynch***

Mike Mills
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I hope the end of the 3rd quarter finds you and your family well. I don't know if it is my age or the heat radiating off my beautiful wife, but I thought this summer was never going to end. I'm excited about the cooler temps that October and November are sure to bring. Unfortunately, the markets are not quite as hot as the Texas summer. They have been as cold as Wyoming ice with stocks, bonds, and real estate all posting losses across the most widely followed indexes. The only real bright spots have been commodities and being short the market. Unfortunately, commodities are hard to own, because they tend to lose, lose, lose, lose, win, lose, and I don't have the guts to try and time shorting markets. Shorting stocks can be effective in market declines, but it is just not a reliable enough strategy for something as important as retiring and educating children, where you can't afford to be wrong, and there are no second chances.

As I have told many of you, this has been the hardest year of my investment career, even among the great recession and dot-com bubble. Our Investment Committee expected rates would eventually rise, and we attempted to position the portfolio to be ready for what might lie ahead if markets eventually cooled off, but this has been one of those corrections where very few assets survived unscathed. We shortened our bond portfolio to the shortest it has ever been, and we added a few new alternative assets to further increase diversification. In the end, the moves we made helped portfolios a little bit, but we are still down, so it doesn't feel like winning. Finding a reliable place to hide out in this broad-based sell-off has been very difficult indeed. Equally as difficult has been determining whether market declines are close to over. I think the main message I would like for you to take away from this update, is that, even though investments and investment tactics change, we have not deviated from the time-tested core principles that make up MWA's CORE+ investment method.

I love this analogy: investing is like playing with a yo-yo while riding an escalator. You can focus on the yo-yo or the escalator, but like Peter Lynch points out above, jumping off is the only way to truly get hurt when investing.

Finally, there is a lot of good information in the pictures below, but before you dive into this update, I would like to highlight our **Around the Office Section**. I am very proud of our team and the accomplishments of our advisors who are living our core value of "continuous growth". Please take a look at all that's going on in the MWA office as we strive for better ways to serve you.

## Section I: Around the MWA Office

We hired TWO experienced CPAs to help continue to add depth to our financial advisor team and to strengthen our tax expertise. Matt has officially become a CERTIFIED FINANCIAL PLANNING PROFESSIONAL™ and Stephen was awarded the ACCREDITED INVESTMENT FIDUCIARY® designation.

In our July newsletter we introduced you to Chelsea Gonzales, CPA who joined us from Cain & Watters and attended Texas A&M. Soon after we hired her, we realized that one of her former colleagues would also be a great addition to the team, so we also brought on Emily Rickman, CPA. They are both working towards their CFP® and will be Private Wealth Advisors at Mills Wealth. We are excited to showcase their extensive tax knowledge and believe their tax background will help us deepen our collaboration with your tax team.  Minimizing taxes is a key component of our wealth-building strategy and we think you will enjoy working with these two talented advisors.

Emily graduated from Texas A&M University in 2018, where she earned both her Bachelor of Business Administration in Accounting and her Master of Financial Management. Emily is a Certified Public Accountant with over four years of experience in the financial services industry, including public accounting and financial planning. She has helped clients of all ages and life stages, but her expertise is in business analysis, tax planning, and exit planning strategies.

“Money and finances are one of the biggest stressors in everyday life for most Americans. Helping clients mitigate this stress by building a sound financial plan that can lead to financial freedom is beyond rewarding. Not only am I dedicated to helping people achieve their financial goals, but more importantly, I am passionate about building lifelong, meaningful relationships with my clients."

Outside of work, Emily loves spending time with family and friends (especially her 1-year-old niece), traveling, cooking, and attending as many Texas A&M sporting events as she can.  Whoop!

In August, Matt was awarded the CERTIFIED FINANCIAL PLANNING PROFESSIONAL™ (CFP®) designation. This was the culmination of a lot of hard work and dedication to the financial planning profession. We are proud of his commitment to earning this certification. We are proud to announce that we now have three CFPs® and two CPAs both working on their CFP® certification.

The Final bit of news is that Stephen was awarded the ACCREDITED INVESTMENT FIDUCIARY® (AIF®) designation. This was not an easy task, with a high workload and four kiddos at home, but we are proud that Stephen added this specialized designation.  The AIF® is focused on fiduciary duty both at the advisor and the firm level. This coursework will help Stephen further systematize our 401k business as he continues to grow our retirement planning division. To learn more about this designation, please take a look at some of our most recent articles, “5 Reasons You Should Hire An Advisor With Their Accredited Investment Fiduciary® (AIF®) Designation.” Or “IN THE NEWS – STEPHEN NELSON AWARDED THE ACCREDITED INVESTMENT FIDUCIARY® (AIF®).”

## Section II: 3rd Quarter Market Review Slide Deck

**In MWA's 3rd Quarter Market Review** (link) **slide deck:** You'll notice that ALL Equity, Real Estate Markets, AND Bonds were down, again. This is the second quarter in a row that the Quarter, YTD, and 1-year returns for ALL markets are negative. There has been no place to find safety.

## Section III: MWA Market Commentary & Recent Questions

Going into 2022, our investment committee felt US interest rates would eventually rise, which would typically lower the value of risk assets like stock, bonds, and real estate. We attempted to position portfolios to be more defensive for what might lie ahead if equity markets eventually declined. Despite being more "defensive", this has been one of those corrections where very few assets survived unscathed. Let me begin by answering a few questions we have received from clients.

***"Are we at the bottom yet?"*** As I write this, markets have just retested the lows that were set in June. The Nasdaq is down 33%, the S&P 500 is down nearly 25%, and intermediate bonds are off about 15%, all with inflation close to 10%, making the effective declines negative 43%, 35%, and 25% to reflect "real" inflation-adjusted returns. So far, this is not the -50% type of selloffs we have experienced in the four most recent market collapses (73-74 Inflation, Tech Meltdown, the Financial Crisis, and COVID) but it is a large retracement in prices relative to the financial health of the US consumer and the banking system coming on the back of the recent stimulus.

When it comes to future prices, I don't believe it is possible to know with certainty where prices will end up in the short run, markets are just too complex. However, as you extend your time horizon longer into the future, predicting prices in aggregate gets easier. Markets will eventually rise again. The more markets fall today, the higher future returns will ultimately be, so if you can continue to save while markets are down, you will be rewarded with higher interest, rents, and dividends than months ago, plus the inevitable gains that will once again return to patient investors.

What has been missing from this selloff is a final wave of selling, scary to short-term market participants, it feels like market participants are saying, "get me out of the market at any cost". You know the kind of selling I'm talking about. A correction so painful, many swear they will never invest again. Whenever we have that kind of selling, it is easier to know that you must be a buyer at those times in history. But with that missing, **are we at the bottom?** becomes much more difficult to answer and, at the end of the day, I'm really not sure it is the best question.

The reason we keep both offense and defense in portfolios is so we can deploy defense when most investors are giving up and market prices are close to being pessimistically priced. We think investing this way makes staying invested over market cycles more endurable. If investors stick to their plan, continuing to save if working, or deploying defense near market lows if retired, markets will recover, and investors will be rewarded. A better question might be, **Do I have enough reserves to wait for markets to rise?** If you are unsure of this answer or you would like to revisit your specific cash flow situation resulting from recent changes, please let us know and our team can discuss this topic and illustrate your projected cash flows from expected sources.

**I have seen a few trades in my accounts, what is MWA doing to my portfolio?** Since we have not had the "capitulation" type selling described above, we are methodically **rebalancing** your portfolio's positions a little at a time. **Rebalancing** is a strategy where you reduce winning positions and add to losing positions to bring the portfolio back to its targeted weightings.

**Tax Loss Selling** One thing we can control in market declines is realizing tax losses (and rotating to an equivalent position) so that tax losses can be "banked" for the future to offset tomorrow's portfolio gains. This proactive strategy helps lower your portfolio's tax bill.

I am writing this update on the way back from a study group I am in with eight other investment firms where discuss best practices. We had the head of Dimensional Funds bond strategy group present to our group, and I feel that the worst of the bond declines are behind us. We are treating our bond portfolio like a barbell (choosing town-owned short-term bonds which pay the most today and longer-term bonds which pay slightly less but will rise if rates fall in the future). We are beginning to add back some longer-dated bonds to the portfolio when yields approach 4% or more.

It has been said that Inflation is a lot like toothpaste, once it is out of the bottle it is hard to put it back in. The current FED policy of high short-term interest rates combined with reducing the size of the FED's balance sheet continues to invert the interest rate curve, making short-term borrowing much more expensive than it has been in a long time. This cost will deter spending and eventually push the US (and most of the international markets) into a recession. Should a recession occur, (and many think we may already be in a recession) having longer-dated bonds should profit as interest rates eventually fall from today's prices. I know I probably sound like a broken record, because I have mentioned this in the past, but markets are working well to price assets. Markets are always forward-looking and incorporate everyone's best guess of what the future price should be given today's information. Today's inverted yield curve is telling us that the market thinks today's policies of higher rates and a stronger dollar will slow growth. I like to remind investors that while inflation is the topic of today, debt and technology and population trends are all deflationary, so I would bet that at some point in the future this narrative will resurface, and rates will stop rising.

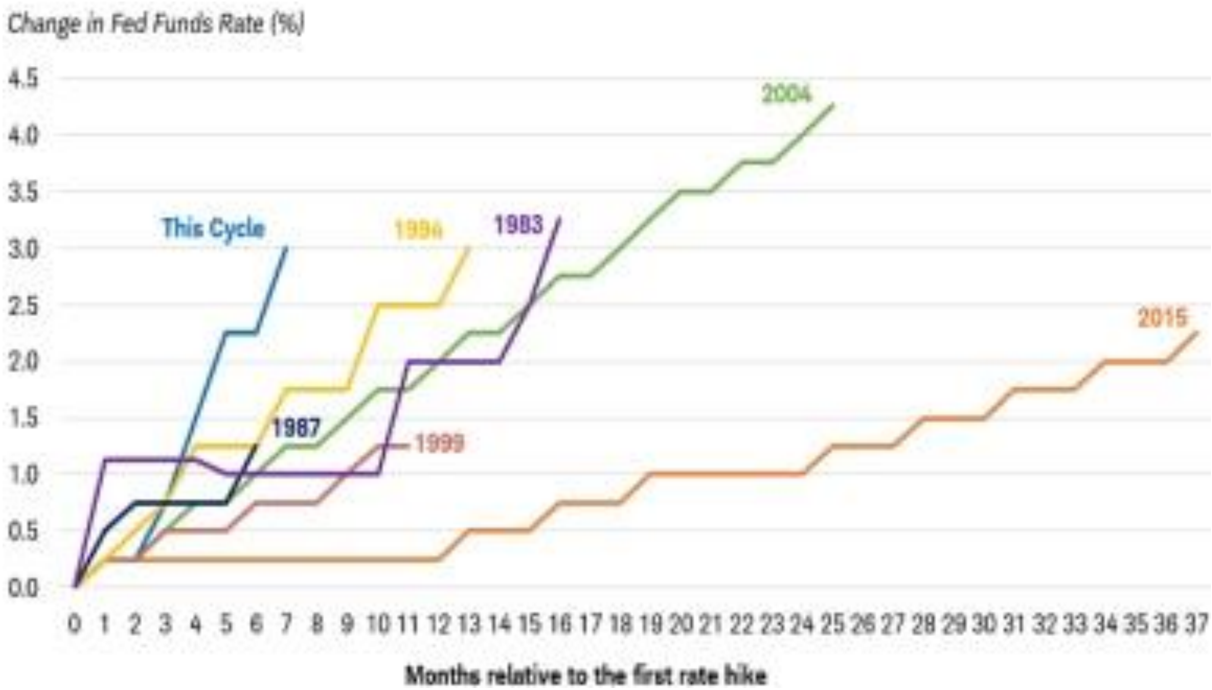
**Risk and return are still related.** Higher perceived risk assets will need to pay investors more than safer assets. I don't know where the market is headed next week, but I do know where it is headed in 10-20 years. Money added after 20-30-40% corrections have historically produced attractive returns on capital. Money added to undervalued areas of the market or more risky areas of the market should continue to produce higher returns than less risky areas. We think high-profit companies will continue to pay a premium relative to less profitable companies globally, so we will continue to give these areas greater weight within your portfolio.

Finally, when emotional selloffs occur, we will continue to stick to the strategy of tax-efficient rebalancing and tax-loss harvesting that we outlined in your financial plan. Buying low and selling high works. We will continue to keep frictional portfolio costs low, so you keep more of the returns you make. Our strategy may be boring, but it has been shown to work, so we will keep plugging away buying unloved undervalued assets and utilizing the power of diversification. Luckily, yields have returned to markets. One of our international funds is paying over 5.25% in dividend yield, so if you subscribe to our 5-year rule, this position will provide nearly 25% of protection to the portfolio over the next five years, even if prices don't rise at all. Those 4% bonds will provide nearly 20% of protection over the next five years, so even though the short-term future may look a bit cloudy, now is not the time to sit in cash at the bank earning low yields on money. Safe fixed income investments are now paying close to 5% returns and our team can match highly rated fixed income to your cash flow needs and to your timeline to lock in yields that match your need for funds. If you are worried, please don't hesitate to give us a call that's why we are here. Remember, protection comes from diversification, and you are diversified.

**"I thought my Account was conservatively invested. Why are my bond funds down more than in past market declines?"**

The short answer is with rapidly rising interest rates, bond prices have fallen because new bonds can be purchased with higher interest rates. This causes older bonds to fall in price to make their yield equal to the market's new higher yield. At the end of last year, **Short-Term Fixed Income**, shorter-dated **Intermediate Fixed Income,** and **Alternative Assets** made up the bulk of the defensive side of our portfolio. When interest rates rose, our bond prices fell, much like a seesaw. In most market declines, assets flee risk assets, like stocks, and usually move to safer assets, like bonds and money markets, which can make bond prices rise as stocks fall; thus, lessening the impact of market declines.

**This is the fastest rate hiking cycle since the early 1980s.**

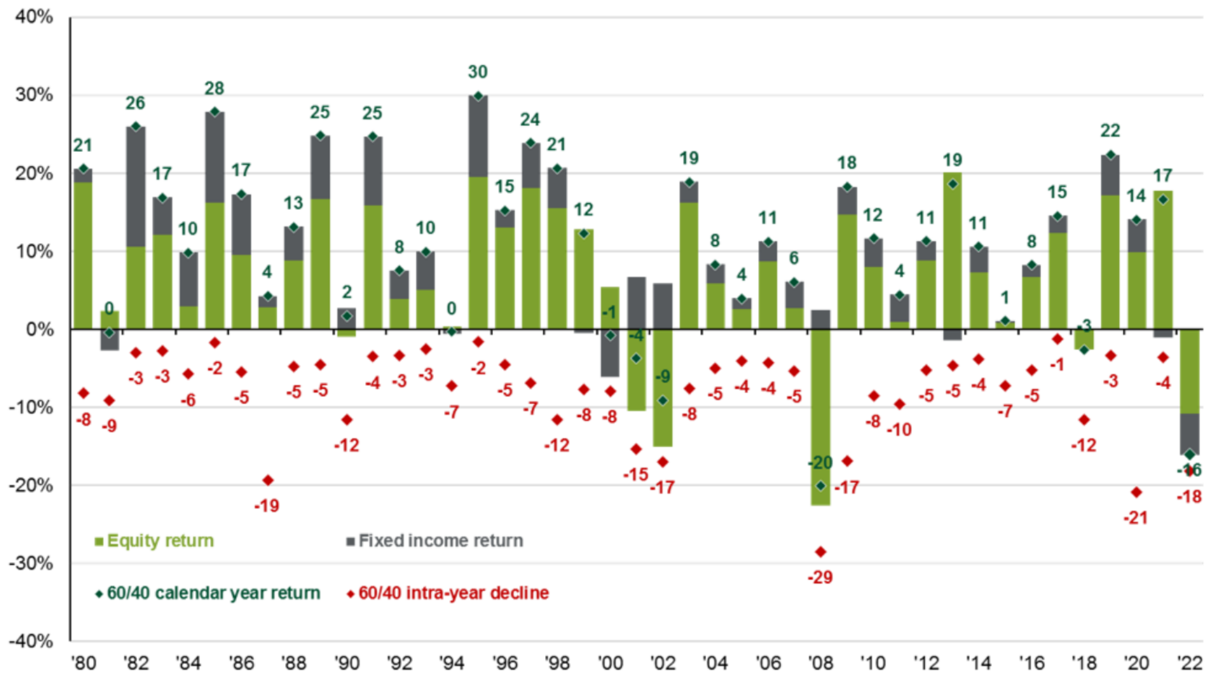



Note: Lines represent the cumulative change in the Fed funds target rate from the start of each rate hike cycle shown. For the current cycle, the Fed funds target rate has risen 3%, from a 0.25% to 3.25%.
Source: Bloomberg. Federal Funds Target Rate - Upper Bound (FDTR Index), using monthly data. **Past performance is no guarantee of future results.**

At the end of last year, with interest rates hovering near all-time lows, we searched for defensive places to hide. We made the length of our bonds very short and used a hedged fund that sold short expensive stocks and owned less expensive stocks as another form of defense. While the length of our bonds was short, it wasn't in cash. In hindsight, that would have been a better hiding spot. We discussed this, but, since bonds had higher yields than cash and with inflation hovering near 8%, we did not think cash was a "safe" enough hiding spot, so we opted for diversification.

As you may have seen on TV and social media, 2022 has been one of the worst years on record for a 60/40 portfolio, which is pretty close to our firm's overall allocation. In the chart below, you can see why a 60/40 portfolio is a popular allocation. It has long-term returns slightly below an all-equity portfolio, but it has quite a bit less risk than all-equities. In rolling 1-year periods, it has produced positive gains about 83% of the time, and when it does decline, the bonds have helped mitigate declines losing on average -7.7%. The red dots show the intra-year worst top to bottom decline of a 60/40 portfolio.

60/40 Portfolio: Despite average intra-year drops of -7.7%, annual returns were positive in 35 of 42 years




Source: FactSet, Standard & Poor's, Bloomberg, J.P. Morgan Asset Management. Intra-year drops refers to the largest market drops from a peak to a trough during the year. For illustrative purposes only. The 60/40 portfolio is 60% invested in S&P 500 Total Return Index and 40% invested in Bloomberg U.S. Aggregate Total Return Index. The portfolio is rebalanced annually. Returns shown are calendar year returns from 1980 to 2021, over which time period the average annual return was 10.6%. Guide to the Markets – U.S. Data are as of June 30, 2022.

Despite their recent short-term performance, bonds are still one of the best defensive tools in the toolbox. Bonds will continue to provide a zig to the market's zag (also called negative correlation) which is very difficult to find in most assets. While we hate losing money, **when we buy stocks, we have a 5-year minimum time horizon.** For intermediate-term bonds, we have a 3-year horizon. For uses less than three years, we like ladders that match the time the money will be needed as this reduces the risk of price fluctuations. With yields approaching 5% in many types of bonds, returns over the next three years will regain much of what seemed to disappear and will likely result in positive rolling returns, despite the pain of loss that occurs right when interest rates rise.

The rapid pace of tightening raises the risk of a more significant downturn in economic activity in the future. Interest rates are a blunt instrument and do not work immediately. The effects of rising interest rates can take time to trickle through the economy (often a year or so). As you can see from the picture titled *Change in Fed Funds Rate (%)* above, this has been one of the fastest increases in interest rates in history. This hawkish stance by the Fed should take the wind out of the sails of stock, bond, and real estate markets because borrowing cost has risen dramatically from where it was a year ago.

At its last meeting, the Fed disclosed it will continue to raise rates at its next meeting by another 75 bps. It is important to remember that the market doesn't wait for these rates to rise for them to take effect. Market prices move instantaneously in anticipation of what the Fed Will do. Unless something changes in the future that is different from what is currently expected, today's market interest rates are already priced into security prices, which is why you have seen stock and bond markets fall.

We have not placed portfolio-wide rebalancing trades yet, since we have not seen a noticeable wave of fear-based selling described earlier. Without this type of selling, we will continue to systematically rebalance portfolios, a little at a time, as opposed to doing it all at once. This will reduce the chance of deploying all of your defensive ammunition at the wrong time. Ideally, we will deploy defensive assets when fear peaks (we monitor this by client calls, what we see in the media, and in indexes like the VIX.) I think it is worth remembering, to generate attractive returns on capital, investors do not need to time the markets, much more return is earned by sticking to your investment plan allowing compounding to work its magic. It has been said that market bottomers are when stocks are returned to their rightful owners.

This is the first time since 1994 that both stocks and bonds are down at the same time. We think a 4% yield on the 10-year Treasury is an attractive place to put some money to work in fixed income. Thank you for allowing us to guide you through these volatile times. We continue to interview managers, strategists, vendors, and review their best ideas to confirm we are taking advantage of the best methods available to get you to your stated destination with the highest chance of success.

Thank you for placing your trust in our team, it is not something we take lightly.

--Mike

## Section IV: Pictures Worth Looking At

## Global Central Bank Policy Rates

| Country | Rate | Central Bank Rate (Today) | CPI YoY | Real Central Bank Rate | Last Move |
|---|---|---|---|---|---|
| Japan | Policy Rate Bal | -0.10% | 3.0% | -3.1% | Cut |
| Switzerland | Target Rate | 0.50% | 3.3% | -2.8% | Hike |
| Denmark | Deposit Rate | 0.65% | 10.0% | -9.4% | Hike |
| Eurozone | Deposit Rate | 0.75% | 10.0% | -9.3% | Hike |
| Thailand | Policy Rate | 1.00% | 6.4% | -5.4% | Hike |
| Taiwan | Discount Rate | 1.63% | 2.8% | -1.1% | Hike |
| Sweden | Repo Rate | 1.75% | 10.8% | -9.1% | Hike |
| Norway | Deposit Rate | 2.25% | 6.9% | -4.7% | Hike |
| UK | Bank Rate | 2.25% | 9.9% | -7.7% | Hike |
| Malaysia | Policy Rate | 2.50% | 4.7% | -2.2% | Hike |
| Australia | Cash Rate | 2.60% | 6.8% | -4.2% | Hike |
| South Korea | Repo Rate | 3.00% | 5.6% | -2.6% | Hike |
| US | Fed Funds | 3.13% | 8.2% | -5.1% | Hike |
| Canada | Overnight | 3.25% | 7.0% | -3.8% | Hike |
| New Zealand | Cash Rate | 3.50% | 7.3% | -3.8% | Hike |
| Hong Kong | Base Rate | 3.50% | 1.9% | 1.6% | Hike |
| China | Loan Prime Rate | 3.65% | 2.5% | 1.2% | Cut |
| Saudi Arabia | Repo Rate | 3.75% | 3.1% | 0.7% | Hike |
| Indonesia | Repo Rate | 4.25% | 6.0% | -1.7% | Hike |
| Philippines | Key Policy Rate | 4.25% | 6.9% | -2.7% | Hike |
| India | Repo Rate | 5.90% | 7.4% | -1.5% | Hike |
| South Africa | Repo Rate | 6.25% | 7.6% | -1.4% | Hike |
| Poland | Repo Rate | 6.75% | 17.2% | -10.5% | Hike |
| Peru | Policy Rate | 7.00% | 8.5% | -1.5% | Hike |
| Czech Republic | Repo Rate | 7.00% | 18.0% | -11.0% | Hike |
| Russia | Key Policy Rate | 7.50% | 13.7% | -6.2% | Cut |
| Mexico | Overnight Rate | 9.25% | 8.7% | 0.6% | Hike |
| Colombia | Repo Rate | 10.00% | 11.4% | -1.4% | Hike |
| Chile | Base Rate | 11.25% | 13.7% | -2.5% | Hike |
| Turkey | Repo Rate | 12.00% | 83.5% | -71.5% | Cut |
| Brazil | Target Rate | 13.75% | 7.2% | 6.6% | Hike |
| Argentina | Benchmark Rate | 75.00% | 78.5% | -3.5% | Hike |

## Global Inflation Rates

| Country/Region | CPI Inflation (YoY %) |
|---|---|
| CHINA | 2.5% |
| TAIWAN | 2.8% |
| JAPAN | 3.0% |
| SAUDI ARABIA | 3.1% |
| SWITZERLAND | 3.3% |
| SOUTH KOREA | 5.6% |
| FRANCE | 5.6% |
| INDONESIA | 6.0% |
| THAILAND | 6.4% |
| AUSTRALIA | 6.8% |
| PHILIPPINES | 6.9% |
| CANADA | 7.0% |
| BRAZIL | 7.2% |
| NEW ZEALAND | 7.3% |
| INDIA | 7.4% |
| SINGAPORE | 7.5% |
| FINLAND | 7.6% |
| SOUTH AFRICA | 7.6% |
| US | 8.2% |
| IRELAND | 8.2% |
| MEXICO | 8.7% |
| ITALY | 8.9% |
| SPAIN | 9.0% |
| PORTUGAL | 9.3% |
| UK | 9.9% |
| GERMANY | 10.0% |
| EUROZONE | 10.0% |
| SWEDEN | 10.8% |
| RUSSIA | 13.7% |
| NETHERLANDS | 14.5% |
| POLAND | 17.2% |
| ARGENTINA | 78.5% |
| TURKEY | 83.5% |
| VENEZUELA | 114% |

@CharlieBilello

**S&P 500, US 10-Year Treasury, and 60/40 Portfolio (Total Returns, 1928 - 2022)**

| Year | S&P | 10-Yr | 60/40 | Year | S&P | 10-Yr | 60/40 | Year | S&P | 10-Yr | 60/40 | Year | S&P | 10-Yr | 60/40 | Year | S&P | 10-Yr | 60/40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1928 | 43.8% | 0.8% | 26.6% | 1947 | 5.2% | 0.9% | 3.5% | 1966 | -10.0% | 2.9% | -4.8% | 1985 | 31.2% | 25.7% | 29.0% | 2004 | 10.9% | 4.5% | 8.2% |
| 1929 | -8.3% | 4.2% | -3.3% | 1948 | 5.7% | 2.0% | 4.2% | 1967 | 23.8% | -1.6% | 13.6% | 1986 | 18.5% | 24.3% | 20.8% | 2005 | 4.9% | 2.9% | 4.0% |
| 1930 | -25.1% | 4.5% | -13.3% | 1949 | 18.3% | 4.7% | 12.8% | 1968 | 10.8% | 3.3% | 7.8% | 1987 | 5.8% | -5.0% | 1.5% | 2006 | 15.8% | 2.0% | 10.2% |
| 1931 | -43.8% | -2.6% | -27.3% | 1950 | 30.8% | 0.4% | 18.7% | 1969 | -8.2% | -5.0% | -7.0% | 1988 | 16.6% | 8.2% | 13.2% | 2007 | 5.5% | 10.2% | 7.4% |
| 1932 | -8.6% | 8.8% | -1.7% | 1951 | 23.7% | -0.3% | 14.1% | 1970 | 3.6% | 16.8% | 8.8% | 1989 | 31.7% | 17.7% | 26.0% | 2008 | -37.0% | 20.1% | -13.9% |
| 1933 | 50.0% | 1.9% | 30.7% | 1952 | 18.2% | 2.3% | 11.8% | 1971 | 14.2% | 9.8% | 12.4% | 1990 | -3.1% | 6.2% | 0.7% | 2009 | 26.5% | -11.1% | 11.1% |
| 1934 | -1.2% | 8.0% | 2.5% | 1953 | -1.2% | 4.1% | 0.9% | 1972 | 18.8% | 2.8% | 12.4% | 1991 | 30.5% | 15.0% | 24.1% | 2010 | 15.1% | 8.5% | 12.3% |
| 1935 | 46.7% | 4.5% | 29.8% | 1954 | 52.6% | 3.3% | 32.9% | 1973 | -14.3% | 3.7% | -7.1% | 1992 | 7.6% | 9.4% | 8.2% | 2011 | 2.1% | 16.0% | 7.7% |
| 1936 | 31.9% | 5.0% | 21.2% | 1955 | 32.6% | -1.3% | 19.0% | 1974 | -25.9% | 2.0% | -14.7% | 1993 | 10.1% | 14.2% | 11.7% | 2012 | 16.0% | 3.0% | 10.7% |
| 1937 | -35.3% | 1.4% | -20.7% | 1956 | 7.4% | -2.3% | 3.6% | 1975 | 37.0% | 3.6% | 23.6% | 1994 | 1.3% | -8.0% | -2.4% | 2013 | 32.4% | -9.1% | 15.6% |
| 1938 | 29.3% | 4.2% | 19.3% | 1957 | -10.5% | 6.8% | -3.6% | 1976 | 23.8% | 16.0% | 20.7% | 1995 | 37.6% | 23.5% | 31.7% | 2014 | 13.7% | 10.7% | 12.4% |
| 1939 | -1.1% | 4.4% | 1.1% | 1958 | 43.7% | -2.1% | 25.4% | 1977 | -7.0% | 1.3% | -3.7% | 1996 | 23.0% | 1.4% | 14.2% | 2015 | 1.4% | 1.3% | 1.3% |
| 1940 | -10.7% | 5.4% | -4.2% | 1959 | 12.1% | -2.6% | 6.2% | 1978 | 6.5% | -0.8% | 3.6% | 1997 | 33.4% | 9.9% | 23.8% | 2016 | 12.0% | 0.7% | 7.3% |
| 1941 | -12.8% | -2.0% | -8.5% | 1960 | 0.3% | 11.6% | 4.9% | 1979 | 18.5% | 0.7% | 11.4% | 1998 | 28.6% | 14.9% | 23.0% | 2017 | 21.8% | 2.8% | 14.1% |
| 1942 | 19.2% | 2.3% | 12.4% | 1961 | 26.6% | 2.1% | 16.8% | 1980 | 31.7% | -3.0% | 17.8% | 1999 | 21.0% | -8.3% | 9.2% | 2018 | -4.4% | 0.0% | -2.5% |
| 1943 | 25.1% | 2.5% | 16.0% | 1962 | -8.8% | 5.7% | -3.0% | 1981 | -4.7% | 8.2% | 0.5% | 2000 | -9.1% | 16.7% | 1.2% | 2019 | 31.5% | 9.6% | 22.6% |
| 1944 | 19.0% | 2.6% | 12.4% | 1963 | 22.6% | 1.7% | 14.2% | 1982 | 20.4% | 32.8% | 25.4% | 2001 | -11.9% | 5.6% | -4.9% | 2020 | 18.4% | 11.3% | 15.3% |
| 1945 | 35.8% | 3.8% | 23.0% | 1964 | 16.4% | 3.7% | 11.3% | 1983 | 22.3% | 3.2% | 14.7% | 2002 | -22.1% | 15.1% | -7.1% | 2021 | 28.7% | -4.4% | 15.3% |
| 1946 | -8.4% | 3.1% | -3.8% | 1965 | 12.4% | 0.7% | 7.7% | 1984 | 6.1% | 13.7% | 9.2% | 2003 | 28.7% | 0.4% | 17.2% | 2022* | -23.9% | -16.7% | -21.0% |

COMPOUND @CharlieBilello *As of 9/30/22

| | CTA Average | Bloomberg Commodity Index | Bonds |
|---|---|---|---|
| Total Return | 168% | 64% | 150% |
| Compound ROR | 4.58% | 2.30% | 4.28% |
| Ann. Volatility | 11.00% | 17.97% | 5.37% |
| Downside Vol | 5.95% | 13.31% | 3.31% |
| Maximum DD | -17.86% | -74.53% | -10.08% |
| Sharpe (rfr=0) | 0.42 | 0.13 | 0.80 |
| MAR | 0.26 | 0.03 | 0.42 |
| Max Months of DD | 70 | 161 | 23 |
| Worst 1Yr RoR | -13.34% | -49% | -7% |
| Worst 3Yr RoR | -16.81% | -55% | -6% |
| Avg. Down Month | -2.37% | -3.75% | -1.08% |

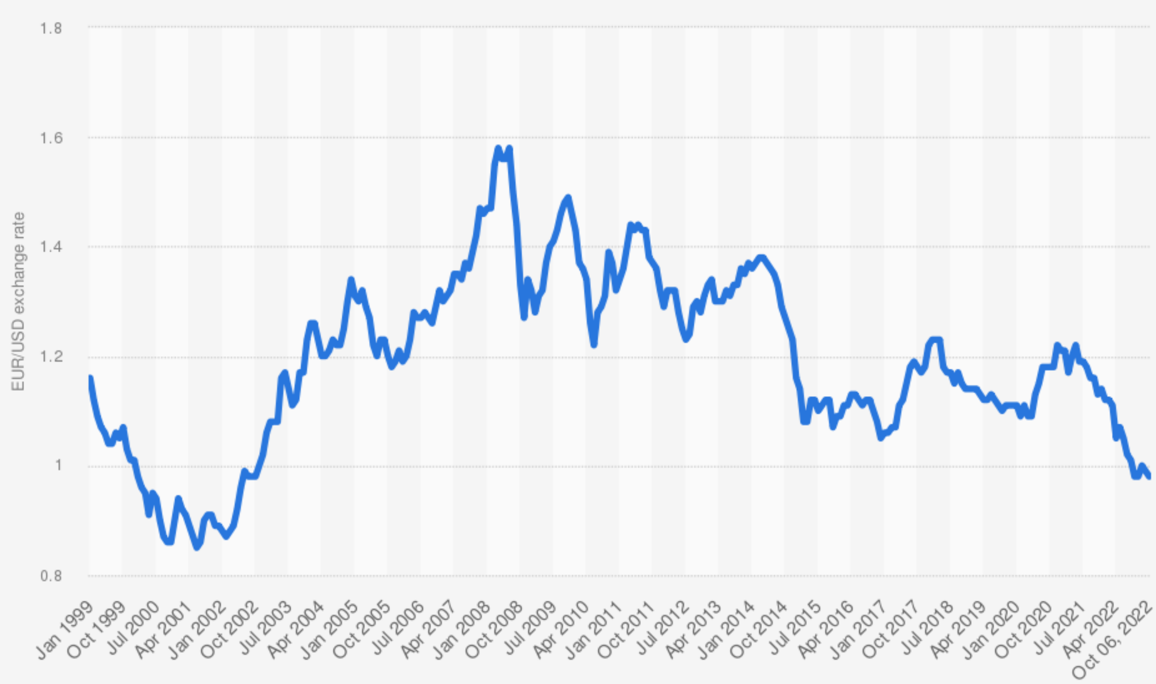
## Pound hits a record low against the dollar

Dollar to Sterling rate 1971 to 2022


Source: Bloomberg, 09:00 26 Sept

BBC

### Euro (EUR) to U.S. dollar (USD) exchange rate from January 1999 to October 6, 2022




Sources
Refinitiv; Wall Street Journal
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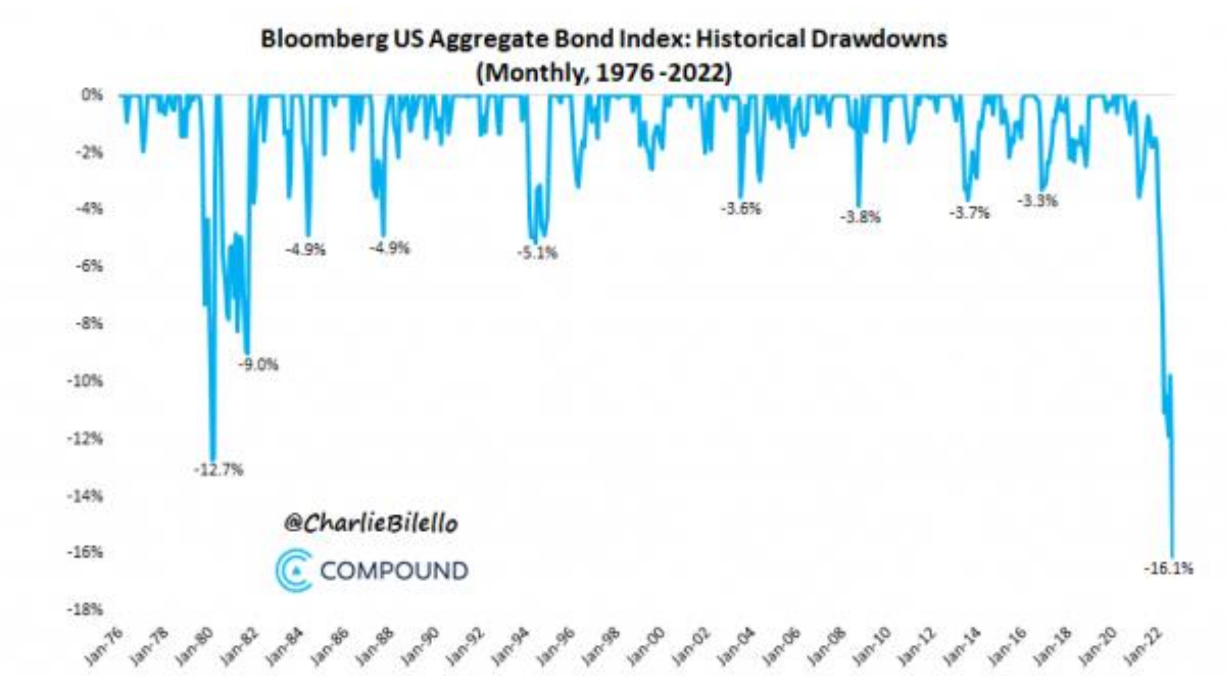
Additional Information:
Europe; January 1999 to October 6, 2022; Units of USD per euro; Monthly figures are as of the end of that particular mont

| @CharlieBilello | S&P 500 Corrections >5% since March 2009 Low | | | | |
|---|---|---|---|---|---|
| Correction Period | # Days | S&P High | S&P Low | % Decline | "Stocks Fall On…" |
| 2022: Jan 4 - Sep 30 | 269 | 4819 | 3584 | -25.6% | Inflation, Rising Rates/Fed Tighening, Russia/Ukraine War, Recession Fears |
| 2021: Nov 22 - Dec 3 | 11 | 4744 | 4495 | -5.2% | Covid Omicron Variant, Fed Taper Fears |
| 2021: Sep 2 - Oct 4 | 32 | 4546 | 4279 | -5.9% | China Contagion Fears, Fed Taper Fears, Covid Delta Variant |
| 2021: Feb 16 - Mar 4 | 16 | 3950 | 3723 | -5.7% | Inflation Fears, Rising Rates |
| 2020: Sep 2 - Sep 24 | 22 | 3588 | 3209 | -10.6% | Coronavirus, No New Stimulus Deal, Election Fears |
| 2020: Feb 19 - Mar 23 | 33 | 3394 | 2192 | -35.4% | Coronavirus, Global Depression Fears |
| 2019: Jul 26 - Aug 5 | 10 | 3028 | 2822 | -6.8% | Trade War, Tariffs, Yuan Devaluation, Recession Fears |
| 2019: May 1 - Jun 3 | 33 | 2954 | 2729 | -7.6% | Trade War, Tariffs, Inverted Yield Curve, Global Slowdown/Recession Fears |
| 2018: Sep 21 - Dec 26 | 96 | 2941 | 2347 | -20.2% | Rising Rates, China Slowdown, Trade War/Tariffs, Housing Slowdown |
| 2018: Jan 26 - Feb 9 | 14 | 2873 | 2533 | -11.8% | Inflation Fears, Rising Rates |
| 2016: Aug 15 - Nov 4 | 81 | 2194 | 2084 | -5.0% | Election Fears/Concerns/Jitters |
| 2015/16: May 20 - Feb 11 | 267 | 2135 | 1810 | -15.2% | Greece Default, China Stock Crash, EM Currencies, Falling Oil, North Korea |
| 2014/15: Dec 29 - Feb 2 | 35 | 2094 | 1981 | -5.4% | Falling Oil, Strong Dollar, Weak Earnings |
| 2014: Dec 5 - Dec 16 | 11 | 2079 | 1973 | -5.1% | Falling Oil, Strong Dollar |
| 2014: Sep 19 - Oct 15 | 26 | 2019 | 1821 | -9.8% | Ebola, Global Growth Fears, Falling Oil |
| 2014: Jan 15 - Feb 5 | 21 | 1851 | 1738 | -6.1% | Fed Taper, European Deflation Fears, EM Currency Turmoil |
| 2013: May 22 - Jun 24 | 33 | 1687 | 1560 | -7.5% | Fed Taper Fears |
| 2012: Sep 14 - Nov 16 | 63 | 1475 | 1343 | -8.9% | Fiscal Cliff Concerns, Obama's Re-Election |
| 2012: Apr 2 - Jun 4 | 63 | 1422 | 1267 | -10.9% | Europe's Debt Crisis |
| 2011: May 2 - Oct 4 | 155 | 1371 | 1075 | -21.6% | Europe's Debt Crisis, Double-Dip Recession Fears, US Debt Downgrade |
| 2011: Feb 18 - Mar 16 | 26 | 1344 | 1249 | -7.1% | Libyan Civil War, Japan Earthquake/Nuclear Disaster |
| 2010: Apr 26 - Jul 1 | 66 | 1220 | 1011 | -17.1% | Europe's Debt Crisis, Flash Crash, Growth Concerns |
| 2010: Jan 19 - Feb 5 | 17 | 1150 | 1045 | -9.2% | China's Lending Curbs, Obama Bank Regulation Plan |
| 2009: Oct 21 - Nov 2 | 12 | 1101 | 1029 | -6.5% | Worries About The Recovery |
| 2009: Sep 23 - Oct 2 | 9 | 1080 | 1020 | -5.6% | Worries About The Recovery |
| 2009: Jun 11 - Jul 7 | 26 | 956 | 869 | -9.1% | World Bank Neg Growth Forecast; Fears Market Is Ahead Of Recovery |
| 2009: May 8 - 15 | 7 | 930 | 879 | -5.5% | Worries That Market Has Gotten Ahead Of Itself |
| **Median** | **26** | | | **-7.6%** | COMPOUND |

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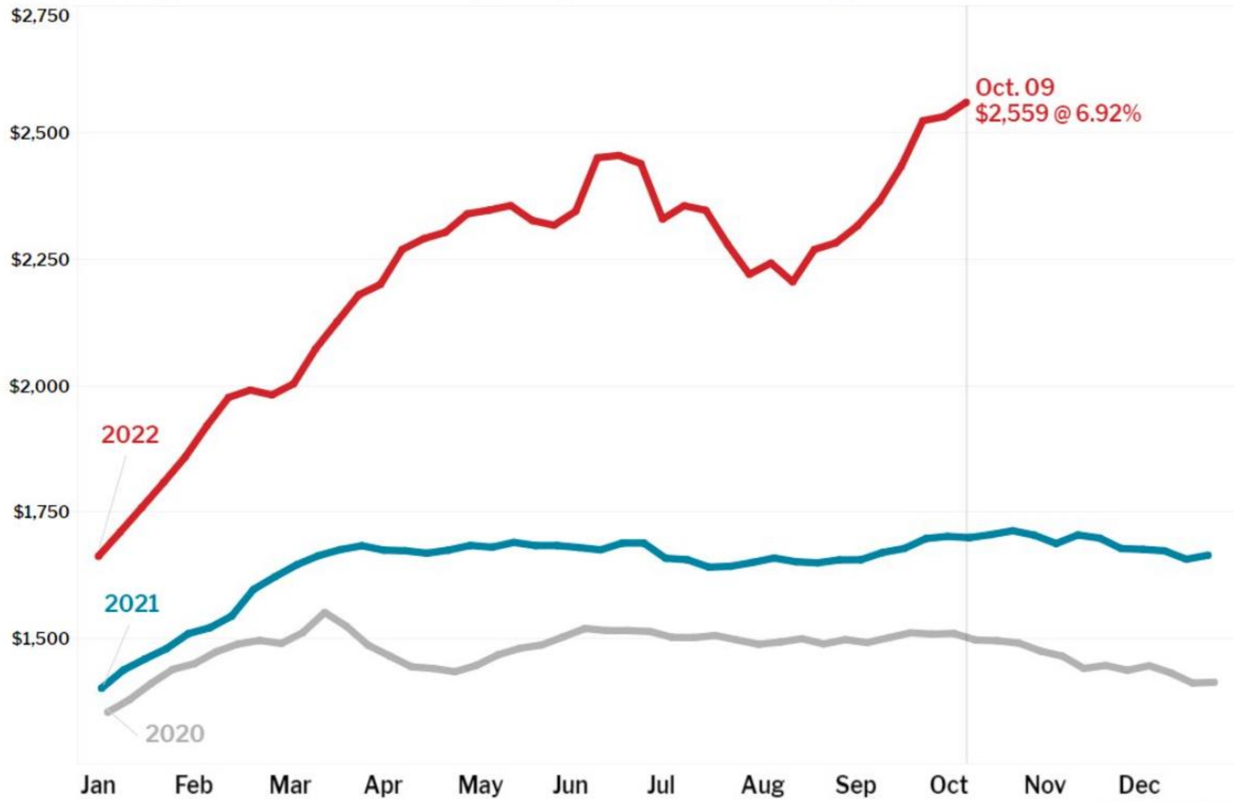
| Bloomberg US Aggregate Bond Index: Drawdowns >3% (Monthly Data, 1976 - 2022) | | | | | |
|---|---|---|---|---|---|
| Start Month | End Month | # Months | Max Drawdown (Monthly) | New High Month | # Months: Low to New High |
| Aug-20 | Sep-22 | 26 | -16.1% | ? | ? |
| Aug-16 | Nov-16 | 3 | -3.3% | Aug-17 | 9 |
| May-13 | Aug-13 | 3 | -3.7% | May-14 | 9 |
| Apr-08 | Oct-08 | 6 | -3.8% | Dec-08 | 2 |
| Jun-03 | Jul-03 | 1 | -3.6% | Dec-03 | 5 |
| Feb-96 | May-96 | 3 | -3.2% | Oct-96 | 5 |
| Feb-94 | Jun-94 | 4 | -5.1% | Feb-95 | 8 |
| Mar-87 | Sep-87 | 6 | -4.9% | Dec-87 | 3 |
| Feb-84 | May-84 | 3 | -4.9% | Jul-84 | 2 |
| May-83 | Jul-83 | 2 | -3.5% | Sep-83 | 2 |
| Jul-80 | Sep-81 | 14 | -9.0% | Nov-81 | 2 |
| Aug-79 | Feb-80 | 6 | -12.7% | May-80 | 3 |
| COMPOUND | | @CharlieBilello | | (As of 9/30/22) | |

| S&P 500 Bear Markets (defined by 20% Peak to Trough Decline): 1929 - Present | | | | | | |
|---|---|---|---|---|---|---|
| Bear Market Period | Length of Bear Market (Months) | NBER Recession | Length of Recession (Months) | S&P Start | S&P End | % Change |
| Jan 2022 to Sep 2022 | 8 | ? | | 4819 | 3584 | -26% |
| Feb 2020 to Mar 2020 | 1 | Feb 2020 to Apr 2020 | 2 | 3394 | 2192 | -35% |
| Sep 2018 to Dec 2018 | 3 | | | 2941 | 2347 | -20% |
| May 2011 to Oct 2011 | 5 | | | 1371 | 1075 | -22% |
| Oct 2007 to Mar 2009 | 17 | Dec 2007 to Jun 2009 | 18 | 1576 | 667 | -58% |
| Mar 2000 to Oct 2002 | 31 | Mar 2001 to Nov 2001 | 8 | 1553 | 769 | -51% |
| Jul 1998 to Oct 1998 | 3 | | | 1191 | 923 | -22% |
| Jul 1990 to Oct 1990 | 3 | Jul 1990 to Mar 1991 | 8 | 370 | 295 | -20% |
| Aug 1987 to Oct 1987 | 2 | | | 338 | 216 | -36% |
| Nov 1980 to Aug 1982 | 22 | Jul 1981 to Nov 1982 | 16 | 142 | 102 | -28% |
| Sep 1976 to Mar 1978 | 18 | | | 109 | 86 | -20% |
| Jan 1973 to Oct 1974 | 21 | Nov 1973 to Mar 1975 | 16 | 122 | 61 | -50% |
| Dec 1968 to May 1970 | 17 | Dec 1969 to Nov 1970 | 11 | 109 | 69 | -37% |
| Feb 1966 to Oct 1966 | 8 | | | 95 | 72 | -24% |
| Dec 1961 to Jun 1962 | 6 | | | 73 | 51 | -29% |
| Aug 1956 to Oct 1957 | 14 | Aug 1957 to Apr 1958 | 8 | 50 | 39 | -21% |
| Jun 1948 to Jun 1949 | 12 | Nov 1948 to Oct 1949 | 11 | 17 | 14 | -21% |
| May 1946 to May 1947 | 12 | | | 19 | 14 | -28% |
| Nov 1938 to Apr 1942 | 36 | | | 14 | 7 | -46% |
| Mar 1937 to Mar 1938 | 12 | May 1937 to Jun 1938 | 13 | 19 | 9 | -54% |
| Jul 1933 to Mar 1935 | 20 | | | 12 | 8 | -34% |
| Sep 1932 to Feb 1933 | 5 | Aug 1929 to Mar 1933 | 43 | 9 | 6 | -41% |
| Sep 1929 to Jun 1932 | 33 | Aug 1929 to Mar 1933 | 43 | 32 | 4 | -86% |
| **Average With No Recession** | **12** | | | | | -29% |
| **Average With Recession** | **16** | | | | | -42% |
| **Average All** | **14** | | | | | -36% |
| **Median With No Recession** | **7** | | | | | -26% |
| **Median With Recession** | **16** | | | | | -39% |
| **Median All** | **12** | | | | | -29% |
| COMPOUND | | | | | | @CharlieBilello |

## Homebuyer Mortgage Payments +50.6% Year Over Year

Mortgage payment on the 4-week rolling average of the median asking price




**Source:** Redfin analysis of MLS data, Freddie Mac Primary Mortgage Market Survey

REDFIN