

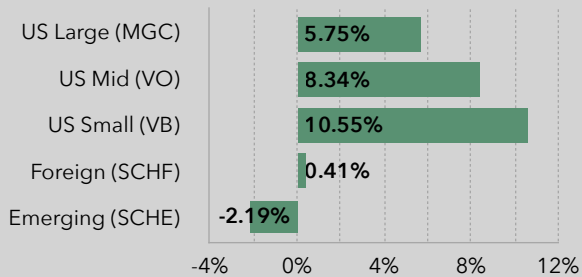
November 2024

Economic Data

- 227,000 jobs were added in November; the unemployment rate edged higher to 4.2%
- Retail sales were up 0.4% in October, with electronics & appliance stores up 2.3%
- Y/y inflation (CPI) accelerated to a 2.6% pace in October, but held back by energy; the core rate (less food and energy) held at 3.3%
- Existing home were up 3.4% in October and are up 2.9% y/y; the median home price rose to \$407,200

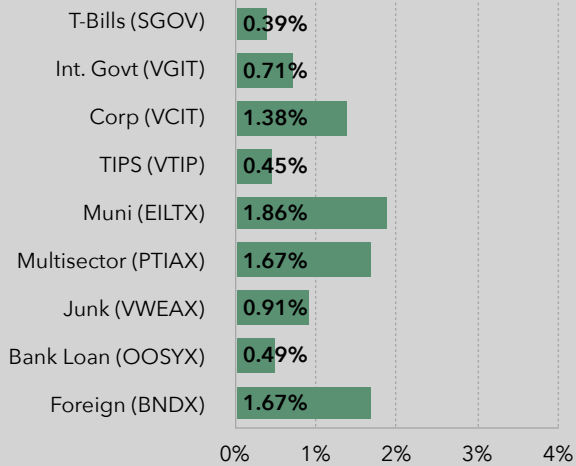
Stocks

November Returns



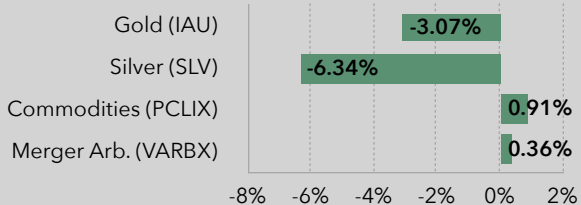
Bonds

November Returns



Alternatives

November Returns



Performance data provided by Morningstar

The brain uses two systems to process information. The first type is intuitive but lazy, rapidly forming judgements with no conscious input. The second system is slow, reflective, and not guided by emotions. It is that second system — type 2 — that we want in control of our investment portfolios.

Leveraging Leveraged Bitcoin with 2x MicroStrategy

Bitcoin has been on a tear since the election, topping \$100,000 as investors anticipate a more friendly approach towards crypto regulation. President-elect Trump recently announced that he intends to nominate cryptocurrency advocate Paul Atkins to chair the Securities and Exchange Commission.

One way to play this was to, you know, buy bitcoin or a bitcoin ETF like iShares Bitcoin Trust (IBIT), in which case you would be up 47% since the election. That's nice, but there is another way people have been playing this, which is by investing in MicroStrategy (MSTR), which is up 77% over the same time period.

MicroStrategy is a boring and unprofitable data analysis software company that has languished at around \$500 million in revenue each year for the past decade. Strangely, this non-growth stock trades for 200 times sales, or a market cap of about \$100 billion. Why? Because for years the company has been taking on debt and issuing new shares, then plowing the money into bitcoin. It has amassed 423,650 coins as of late, which is worth about \$43 billion. To accomplish this, MicroStrategy has borrowed \$7.27 billion via convertible debt securities and doubled its share count over the past five years. So investors are paying three dollars for every dollar of net bitcoin in this leveraged play, and so far so good, I guess.

But why stop there? The Defiance Daily Target 2X Long MSTR ETF (MSTX) is a leveraged ETF that seeks to provide investment results of 200% the daily percentage change in the share price of MicroStrategy. Sounds great, right? Why settle for a 77% return when you can have 154%?

Well, in a single trading day they are very effective at delivering that 2x multiple, as is their stated goal. But what investors often don't understand is that it's not so simple over the long-term. The problem is the return of these leveraged ETFs is path-dependent, meaning the underlying index's return alone does not determine the return for the ETF—the path the index took to get there also factors in. Below is an example that shows a hypothetical underlying index that is up 4% for the week as well as the returns of a hypothetical 3x bull ETF (ignoring fees and trading costs) under five different paths to that 4% return.

	Path #1	Path #2	Path #3	Path #4	Path #5
Monday	0.79%	4.00%	2.00%	-5.00%	11.58%
Tuesday	0.79%	0.00%	-1.50%	2.00%	-20.47%
Wednesday	0.79%	0.00%	2.00%	2.00%	10.79%
Thursday	0.79%	0.00%	-1.00%	2.00%	-2.00%
Friday	0.79%	0.00%	2.51%	3.16%	7.94%
Index Total Return	4.00%	4.00%	4.00%	4.00%	4.00%
Standard Deviation	0.00%	1.79%	1.89%	3.30%	13.45%
3x Bull Return	12.38%	12.00%	11.92%	10.83%	-19.88%

One might assume if the index was up 4% for the week the 3x bull should be up 12%, but this isn't necessarily the case. The first path shows us a perfect even and upward journey, and in this scenario the leverage enhances the benefits of compounding and the return is actually higher than 12%. The second path shows an example where the price only moves one day and is flat all other days, and in this case the leveraged ETF return is the same as three times that of the index. The next two paths include down days and have increasingly higher standard deviations (a measurement of the variability of returns). You'll notice as the volatility increases, the return for the leveraged ETF decreases. Lastly, path #5 is an extreme example that includes both the worst single trading day loss in the history of the S&P 500 (October 19, 1987) as well as the best up day in the index's history (October 13, 2008). This example shows a very large negative return for the 3x bull and highlights the damage extreme swings can have on leveraged ETFs.

This is not to say a leveraged ETF won't give you great returns in a prolonged and steady bull market—it certainly will. You just need to be aware that they are not perfect. In 2012—a volatile but relatively flat year—the S&P 500 returned only 2.11%; basically the equivalent of its dividend. The Direxion Daily S&P 500 Bull 3X Shares (SPXL), on the other hand, lost 14.91%.

Leveraged ETFs do very poorly in volatile, sideways markets like 2012, and they typically capture slightly less than their target multiple in an up market and slightly more than their multiple in a down market (a bad thing). This mathematical phenomenon, known as leveraged decay, gradually erodes the actual return of leveraged ETFs from what would be intuitively expected. Case in point: MSTX has delivered 132% since the election. Sounds good enough, but it's 22% shy of the 154% that would have 2x-ed the underlying.

The allure of big returns can be tempting, but these investments are not designed for most buy-and-hold investors. Bitcoin is very volatile; MicroStrategy even more so and it is currently the most volatile stock in the S&P 500. That's a scary thought for the leveraged ETFs that track it. A sharp and prolonged decline in bitcoin and the whole MicroStrategy scheme comes crashing down.

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Tactical Asset Allocation					
Asset Class	Heavy Under-weight	Under-weight	Neutral	Over-weight	Heavy Over-weight
Fixed Income			●		
Duration		●			
Inflation				●	
Credit	●				
Foreign	●				
Equities		●			
Large Cap		●			
Mid Cap				●	
Small Cap				●	
Developed Intl.	●				
Emerging	●				
Alternatives					●
Commodities					●
Merger Arbitrage					●

Binge Box

The Penguin (HBO)

Colin Farrell is brilliant and unrecognizable under the fat suit, makeup and prosthetics as he reprises the lead role in *The Penguin*. This HBO series starts one week after the events of the 2022 movie *The Batman*. The show moves out of Batman's shadow, though, as he is hardly even mentioned. The show is better for it, as we are left with a compelling crime drama about gangsters, forged by trauma, just trying to make their mark in the gritty city of Gotham. Binge the first season on HBO.

About EmeraldSpark

EmeraldSpark Investments, LLC is a Registered Investment Adviser based in Chicago, IL. We were founded by Ryan P. Layton, CFA in 2015 to provide personalized financial planning and fiduciary investment management services to select clients. Our investment process blends the foundations of Modern Portfolio Theory with the latest research in the field of behavioral finance. We specialize in asset allocation and investment due diligence to help provide our clients with investment strategies personalized to match their specific goals and risk comfort zone.

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