

What would happen if you only invested at stock market peaks? Let's find out. I'm David Stein. This is Money for the Rest of Us. This is a personal finance show on money, how it works, how to invest it, and how to live without worrying about it. Today we're looking at what actually happens if you catch the very, very top of the stock market or the very, very bottom of the stock market after bear market and start investing, what is the return difference?

What about if you invest when stock valuations are very, very high like they are today? How do those returns differ from when you invest when stock market valuations are low? We're going to take a look at the numbers.

Investing at the Peak

Let's first look at what happens when you invest at the absolute peak. Now keep in mind nobody knows ahead of time what the peak of the stock market will be or when the bottom is hit. But if we could see beforehand when those periods occur, what would the returns be? Well, not surprisingly, if you can catch the bottom or if you unfortunately catch the top, the return differences are pretty substantial, especially over five year periods.

For U.S. market, the difference is 16.9% annualized compared to all months investing in the U.S. stock market going back to 1970, 10.2% annualized. You would have earned zero over the five year period if you if you caught the market at the top.

But we go out ten years. The difference isn't quite as big if you caught the bottom 13.6% annualized, and if you caught the top 5.7% annualized. And then if we go out 20 years, the return differential is even smaller. Catch the bottom 11.4% annualized for the U.S. market 7.6% annualized. If you caught the the top. And so about a four percentage point annualized difference, we'll have a slide deck. You can see here on the video. But if you're listening via audio, we'll include a slide deck in the show notes.

And you can look at what about world markets including U.S. and non-U.S. and just non-U.S. And again, in both of those situations, had you caught the top and happened to invest, get a big lump sum and invested it at the top of the market, your returns would be substantially lower than had you invested that lump sum at the bottom.

Valuations and Future Returns

Well, again, very, very difficult to do because you don't know when the top is. But what we can do is look at valuations. What are investors paying for stocks. What are they paying for earnings growth for the dividend yields. And fortunately, that's something we can look at ahead of time and see how stock markets returned based on different valuations, how expensive or how cheap is the stock market. Our first data set just looks at the S&P 500. This is data from Robert Shiller. It goes back to 1950.

Keep in mind these are real returns. So backing out the impact of inflation. And we break out the valuation of the U.S. stock market into quintiles. We have the cheapest bucket and we have the priciest bucket. And we have three middle buckets. And so right now based on the Shiller P/E and the Shiller P/E is the price divided by earnings over the previous decade. And those earnings are inflation adjusted. Right now we're at 40.7 the super super high. So the priciest quintile.

What has been the real return over the next ten years when we're at the priciest that we've been? Well, it's been flat or zero over ten years annualized, over 20 years. It's been 4.9% real. So even if you buy when it's most expensive over time, because of the dividends, because of the earnings growth, we can kind of work out some of the downsides of the market being that expensive. Now if we invest when it's cheapest and again, we haven't been there, that would be a CAPE ratio or a CAPE P/E cyclically adjusted price to earnings ratio between 6.6 and 12.4.

The real returns over a ten and 20 year period has been over 10% annualized. And then you have the middle again. You can obviously see it in the video. You'll have the slide deck via the audio. But but right now we're at the priciest point. So our expectations for stock market returns going forward.

Again this is U.S. stocks. We'll look at non-U.S. in a minute. They should be lower. Now stocks aren't just driven by valuation changes. There is the cash flow in terms of dividends. There's how quickly is that cash flow growing in terms of the earnings per share growth. We'll see that that actually also that's a primary driver of the return. But valuations matter. And we can see that in this data.

Non-U.S. and Global Valuations

Now if we look at non-U.S. stocks real returns again we break it into five quintiles. The priciest periods where the cyclically adjusted P/E ratio is between 27 and 38. Real returns over ten and 20 year periods been around 2% annualized. That's not where we are today. Right now we're in the middle quintile with a CAPE ratio currently at 20.4 non-U.S. stocks half that of U.S. stocks. The real returns over ten and 20 year periods has been 4% annualized.

And so that's why in our strategy report and our model portfolios we're recommending underweight the U.S. not not completely get out of the U.S. but to overweight non-U.S. because valuations are less expensive. And historically at these levels the real return and the nominal return for non-U.S. stocks has been higher than U.S. stocks. Now if we look at world stocks overall including U.S. and non-U.S. we're also in the most expensive quintile. Because U.S. market makes up over 60% of the global stock market right now.

And again with that that being the priciest area, we're at a cyclically adjusted price to earnings ratio of 30 and the ten year real annualized return when valuations have been this high for global stocks is 0.8% annualized over a ten year period and 3.4% annualized over a 20 year period. Again, real returns after inflation.

The Building Blocks of Return

At Money for the Rest of Us, we spend a lot of time thinking about what is the future returns for different asset categories stocks, bonds, income strategies. In fact, we model out the expected return on 37 different asset categories, including their risk. And we use a building blocks approach. So we care about what the cash flow is. In this case dividend yields for stocks. What's the earnings per share growth and what has been the valuation change. We look at it on a forward looking basis.

But we also look backwards because we can decompose historical returns into those return drivers. And so when we look at ten year annualized returns over the past decade through September 2026, returns

have been phenomenal. Double digit returns almost 15% annualized for U.S. stocks. What drove those returns? Well, 1.6 percentage points was from dividends. Earnings growth was 12.4% annualized, so by far the largest contributor earnings per share growth and U.S. stocks got more expensive. And that added about 0.9% annualized. Now if we compare that to the non-U.S. stocks, it's returned 9.3% annualized over the past decade.

So it did. It underperformed the U.S. What were the components. The drivers 3% or three percentage points was due to dividends. Earnings also grew great 8.5% annualized. Not as not as high as the U.S. And again these are nominal returns again but valuations for non-U.S. stocks have gotten cheaper over the past decade. And that cost a percent. And so if we just ignore the valuation changes the returns for U.S. and non-U.S. would have been fairly close.

U.S. still would have outperformed because the earnings per share growth was so high. And we're going to look at well why is earnings per share growth been so high for the U.S. And and that's really important when we think about well what should reasonable return expectations be going forward. Looking over the next ten years. Now we can use this same analysis comparing the taking the ten year annualized nominal return and breaking it down into the components of dividends contribution, earnings growth contribution and valuation change.

And so this chart goes back to 1901. It's rolling ten year periods. And there are times when everything's going great. Like like we have today. We have very strong earnings per share growth. Dividend yields are very low, and we've had positive valuation change over the past ten years. Now there's the ten year period ending 2008, where we've had lower earnings per share growth and we had valuations fall.

And so the return a ten year return for some of those periods was was negative. And so it does go in cycles in terms of kind of rolling ten year periods. But over the long term those are the building blocks and the math works. It makes sense. Now the the mathematical component very much is the dividend yield and the earnings per share growth and the emotion. What are investors willing to pay for that that shows up in the valuations. There are times when investors don't want to pay that much for earnings per share growth. They're they're they're they're afraid. And so valuations fall. That's not where we're at today.

Dividend Yields Today

Now as you look historically, the dividend yield component has been a much greater share of the returns, often three four percentage points per year contribution from the dividends. That's not where we are today. Let's take a look at current dividend yields. Currently, dividend yields for the U.S. stock market is 1.1%. That compares to its long term average of 2.7% back in in 1980, the dividend yield for U.S. stocks was over 5%. And dividend yields have been very, very low for for a long time now.

Now non-U.S. dividend yields is 2.4%. And then world including U.S. and non-U.S. is 1.6%. And so with lower dividend yields, as we try to plan out expected returns, that's sort of the starting point. We should start with current dividend yield.

Just like when we're estimating bond returns, we should start with the current cash flow being paid in terms of the yield to maturity. And that's the approach that we use at Money for the Rest of Us. And I'll share example of how this plays into what we could earn in our investment in terms of compounding based on different return assumptions.

Productivity, Wages, and Profit Margins

But before we do that, there's an important thing that has happened over really kind of the past 25 years that is dramatically contributing to very strong earnings per share growth, especially in the U.S. Economies grow over time because the population, the working population is growing and the productivity of those workers, they're just getting more efficient often by using technology. And we're going through one of those periods.

Now, hopefully, as we look at how businesses use AI historically, as businesses become more productive, as workers become more productive, wages increase. But if we look at over the past 25 years that you're starting to see that break away, productivity is increasing, but real wages are not keeping up. And what that means is if productivity is growing faster than real wages, that cash flow is falling to the bottom line of companies. They're becoming more profitable.

We can see that here. U.S. profit margins are at its highest level since 1966, at an 18.8% profit margin. At the same time, employee compensation as a percent of the value being added, the value being created by workers using technology their labor share is at a record low.

And that's why there's discussions on inequality and things of that sort. But when we look at the numbers, it shows up in higher profit margins, which then shows up in higher earnings per share growth, which then shows up in higher returns for the stock market. And so that's just how it's all connected. And so slowing real wage growth has boosted stock returns, which obviously helps the workers that have invested through their 401(k) plan. But it's all connected.

And right now we have the highest profit margins since since 1966. And that is one of the main drivers driving the high earnings per share growth. We're getting that productivity increases, and it's flowing to the bottom lines of publicly traded companies. And it's helping to boost their stock returns.

Starting to Save for Retirement

Now, I wanted to give an example based on an experience I had yesterday. I got my hair cut, if you can't tell. And I was talking to the stylist. She's in her mid 40s and cutting hair for decades and and very savvy business person in terms of her understanding of business, her understanding of, of urban planning, a lot of talent. She has emergency savings, but she's never saved for retirement and she's feeling like she should start.

And so we, we had a conversation and I suggested, well, open an account at Vanguard and start investing in a target date mutual fund, something, for example, if you want to retire in 20 years, one that expires or that matures in sort of 20, 2045.

Now, she said, do you have anything else besides Vanguard? And I don't know what she has against Vanguard, but Fidelity, Schwab, but just start. And she thought that she could start at \$50 a week. And

we kind of want to take what we've done here today and look at, okay, if an investor invested \$50 a week invested in a Vanguard target date fund, what return assumptions should we use? Should we use what volatility. And and how much could that grow.

And we're going to use some tools that we've been developing at Money for the Rest of Us that we're going to be testing out in our November retirement investing cohort. This is a live workshop we do with ten individuals. And if you're listening today, you can learn more about that. It's very hands on. We're going to use these tools, but more information at moneyfortherestofus.com/cohort, C-O-H-O-R-T. But we're going to use the tools, come up with some expected returns, and we're going to do a simulation analysis to see, well, how much could this portfolio grow.

Expected Returns for a Target Date Fund

Now I suggested to my stylist the Vanguard Target Date fund. So I just chose one. I didn't recommend a specific fund to her, but the Vanguard Target Retirement 2045 fund tickers VTIVX.

And this is how it's invested. 80% in stocks, 20% in bonds and cash. It has U.S. It has non-U.S. It has a small cap equity allocation has a little bit in global bonds. And for each of those we have an expected return and a volatility assumption. And we'll I'll explain volatility more in a minute. But it basically it's how much could the market fall. The volatility in terms of standard deviation measures the range of return around that expected return.

And if you look at our expectation for non-U.S. stocks including emerging markets we're at 6.1% annualized. For U.S. large and mid cap. We're at 5.6% annualized over the next ten years. We're going to use those same returns essentially for 21 years. When you think about that, that's significantly less than what the stock market has done over the past decade. And so the assumption there is that profit margins will start to shrink. They're not going to remain at record highs.

That labor will start to get a larger share of value added, and that we'll go through an earnings cycle that will have a recession. We don't know. But we're trying to have reasonable expectations using that building blocks approach. It's unusual to have an extended period where earnings per share growth is growing faster than the economy. Because again, all the cash flow is created by the public and private sector.

But if we're talking about the overall stock market overall, it becomes very difficult to grow faster than the economy, especially if there's new companies being formed all the time. Our expectation for the Vanguard Target Retirement 2045 fund is 5.8% annualized, with the volatility of just about 13%. Let's look at what could happen then with that level of volatility and expected return. But before we do that, let me let me just talk a little bit about, well, we had this 5.8% expected return for that Vanguard target date fund.

And we again, we use a building blocks approach. So here are what we are assuming. We start with the current dividend yield for stocks. And we start with a yield to maturity for bonds. Right now U.S. bonds the U.S. Aggregate's yielding 5.6% annualized. And so think about that. U.S. bonds we're essentially

assuming the same return for U.S. bonds compared to the U.S. stock market. For U.S. stocks, we assume the dividend yield of 1.1% earnings per share growth of 5.4%.

But then we assume that valuations are going to fall. And that's going to cost 1% per year to 5.6%. Again, these are just baseline assumptions. We have an upper range and a lower range than we do, but we also model it out. And we want to kind of just see, well, what could happen based on these assumptions. Now we can you might disagree with the assumptions.

You might think or decide that earnings per share growth is going to continue to grow at double digits annualized. I think that's an aggressive assumption. We compare our assumptions to other practitioners out there. And ours are reasonable. We just don't want to look backwards. But we do our homework and we come up with something reasonable and then we're going to model it out.

How Much Could It Fall?

So again here, here's our assumptions for VTIVX. An expected annualized return of 5.8% about 3.3% real after inflation a range of 2.3% to 9.2 and a volatility as measured by standard deviation of 12.9%. Now, if we just use those standard deviations, a two standard deviation type of event would lead to a loss of 20%. And it could take four years to recover. If you're if you lose 20% and then you're just earning back at 5.8% per year, that takes four years.

If it three standard deviation event would be about a 33% decline, and it could take 86 months to recover. Because again, we're assuming just in this exercise, you're earning 5.8% per year as you recover. Now oftentimes recoveries happen faster. And that's why we give some other examples. And again, these are some tools that we're going to be using in our retirement workshop and hopefully rolling out to Plus members by year end. But this investment so VTIVX, given how it's allocated sort of 80/20 in 2008 would have lost 45% from October 2007 to February 2009, and it would have taken about 43 months to recover that during the COVID shock.

Pretty quick December 2019 to March 2020. The decline would have been about 18% and it recovered very quickly in four months. And then the rate shock with the big spike in interest rates in 2022. So just looking at December 2021 through September 2022, this portfolio would have lost 23.4%. You know, in our retirement workshop, we're kind of modeling how what's your loss capacity? How much can you afford to lose and how much can how much loss aversion you have?

How emotional does it make you feel when you lose money? And so that's kind of why we go through these analysis to kind of quantify our risk tolerance, both in terms of aversion and our capacity. Now, in this particular instance, the stylist would be investing \$50 a week, \$2,600 a year that her loss aversion or loss capacity is pretty high because it's such a small amount becomes more important once you have more.

Simulating \$50 a Week

So we ran the simulation using our portfolio tools, and somebody that invests \$2,600 a year, \$50 per week, we ran it for 21 years because we were assuming the investment occurred at the end of the year instead of each week. So we adjusted for that. We went an extra year and the total amount invested

was \$54,600. The median outcome? We ran 10,000 scenarios based on that 5.8% expected return and our level of volatility of around 13%.

The median was 94,000. So after 21 years, invest \$50 a week, put it in a target date fund like this median is 94,000. Now there are some scenarios where it just doesn't work out in the. You get poor two decades. Then you could. You'd end up with \$59,000. Or it could be strong. If earnings per share growth comes in double digits. Then we're looking at \$155,000. But this shows the impact of compounding. And here's what's interesting.

Look at how if you look at the slide deck or you can look on the video, you see a graphical analysis of positive skewness. The average outcome is going to be higher than the median outcome because you get these long tails when the market does very, very well. And good things happen in terms of this compounding higher expected return is that compounding. So you get you get some of these small tail events that it does very well. 90th percentile \$155,000. Now it had this stylist.

If she puts \$100 a week, then she would have \$200,000, the median outcome. And then you can just sort of see and, and that's kind of why we're building these tools and doing a simulation. So people can kind of see, well, how much could they have? And we do a similar thing in our retirement workshop where we're modeling different spending rates to see how long the money would last.

And finally, we show the odds of reaching certain milestones. So given where we're at 43% chance of reaching \$100,000 based on our assumptions, but there's a, you know, 67% chance of achieving \$80,000 and then about a 15% probability of achieving \$140,000, just investing \$50 a week using a 5.8% expected return.

Reasonable Expectations

But this is this is one this is sort of one analysis, really when we think about investing, this simulation analysis coming up with reasonable expected returns, measuring our loss capacity and loss aversion. That's the real nuts and bolts of investing. We're not going to be able to catch the market top and the market bottom. We can adjust our allocation based on valuations. So I think it's prudent to overweight non-U.S. right now. It has a higher expected ten year return based on those building blocks.

But still keep an allocation to the U.S. We don't know what's going to happen. And that's why we want to make sure that we're grounded in reasonable assumptions just not using historical returns. And and one of the things we'll do an episode here in the next few months is I is I've worked with a lot of the retirement planning software, such as Boldin and ProjectionLab and, and they're very, very helpful. But one of the key things is to know what your expected return is based on your current portfolio.

And so we're building a tool and we're going to use it and test it in this workshop where we've already built the tool. We're testing it now where you can just upload your statements or a spreadsheet from your broker and it'll categorize it by the expected return. And then you can figure out the volatility. And then you can do the simulation analysis. And I think this is important work. I mean that's what financial planners do and ought to do.

But start with your current portfolio and recognize that as part of rebalancing, we can rebalance to areas that have a higher expected return. And that's why we've I've always been grounded in figuring out what's a reasonable expected return. It's what I did as an institutional investment advisor, working with university endowments, foundations, as well as very high net worth individuals. So now you know what stocks could return if you happen to catch the top or the bottom.

But more importantly, you have some reasonable return expectations for stocks and bonds now, based on where we are in terms of the cash flow, expected cash flow growth and valuations.

This is episode 566. Thanks for listening. To learn more about everything we do at moneyfortherestofus.com. Everything I've shared with you in this episode has been for general education. I've not considered your specific risk situation. I've not provided investment advice. This is simply general education on money, investing, and the economy. Have a great week.