Macro-implied earnings

Key Insights

- A "soft landing" for the economy might not guarantee robust earnings growth in the coming year.

- The Multi-Asset team has put together a model that shows how earnings historically have responded to changes in the economy, and it's not as intuitive as you might think.

- For example, the narrative du jour is that inflation is bad for stocks, but inflation actually turns out to be good for earnings.

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We need to cut economists some slack.

Yes, most of them have been wrong of late. The most anticipated recession in history has become the most delayed recession in history. Forecasts that linked rate hikes with higher unemployment have spectacularly missed the mark. For example, back in December 2022, the Fed's Summary of Economic Projections predicted that the unemployment rate would be 4.6% in the fourth quarter of 2023. As of November, we were at 3.9%.

And here's a whopper: The consensus forecast for 2023 third-quarter real gross domestic product growth was about 0.5%[1] (annualized) at the beginning of the quarter. Growth came in at 4.9%, a 4.4% miss.

But it's hard to imagine a period in history during which macroeconomic data were as distorted as they've been over the last

two years. The macroeconomic shock waves of the pandemic continue to reverberate. Conventional economic models have failed because conditions have been decidedly unconventional. It's time to rewrite the playbooks.

Where do we go from here? As the economy continues to normalize, I believe inflation and unemployment will become more predictable again. Let's continue to listen to talented economists.

Of course, even if you could forecast macroeconomic data perfectly, to the nth decimal (say, with a crystal ball), you could still get bad investment results. The link between the economy and markets is tenuous. Markets are prediction machines. They react mostly to unanticipated information.

Hence, forecasting stock returns with macro data is difficult. Over a year ago, in July 2022, as I was preparing for an Asset Allocation Committee meeting, I asked my colleague Grace Zheng to try something slightly easier: to forecast earnings. The results surprised me.

We explored different data and models. (That's a polite way to say that we data-mined a little.) We found that we could explain changes in overall S&P 500 Index earnings based on a simple two-factor model with remarkable accuracy. Here's the model:

S&P 500 earnings is a function of inflation and unemployment
or:
S&P 500 earnings = ƒ(inflation, unemployment)

and more specifically:

Year-over-year (YoY) change in 12-month forward EPS = 5.6 + 3.4 x YoY change in inflation rate - 5.6 x YoY change in unemployment

We chose forward earnings per share (EPS) because the data are smoother and better behaved than trailing EPS. Also, forward EPS approximates what's priced in; hence, they should explain stock returns better than other earnings measures.

And we used changes in the variables instead of levels, because doing so produced a better fit.[2]

You can use this model yourself on the back of an envelope. It's plug and play: Insert your forecasts for inflation and unemployment, and you will obtain a macro-implied forecast for S&P 500 Index earnings.

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[2] Besides, when I use changes instead of levels, I catch less flak from the econometrics police. I still catch some, but it tends to be related to minor statistical infractions rather than criminal offenses, such as regressing levels on levels.

Results

Macro factors explain changes in forward earnings quite well. The model's R-square is 71%, and both coefficients are statistically significant.[3] The fit is excellent:

Macro-implied YoY changes in forward earnings, fitted versus realized
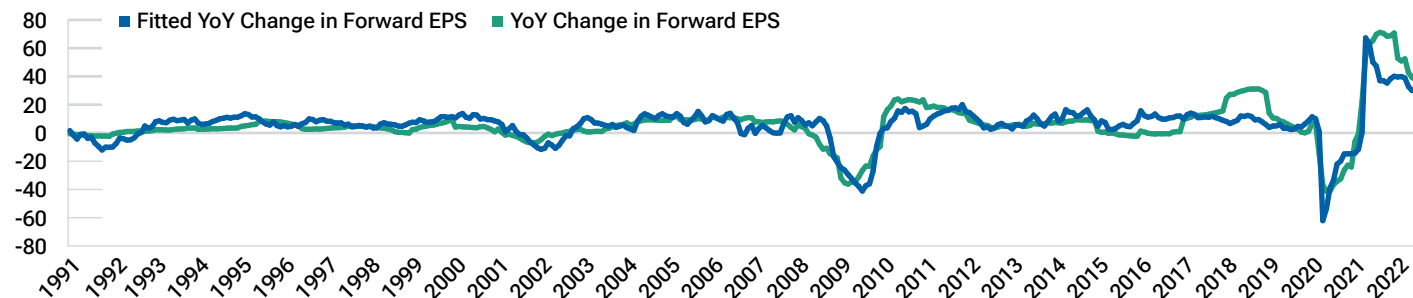
January 1991 to July 2022.
Sources: Bloomberg Finance, L.P. Analysis by T. Rowe Price.

The intercept is 5.6, which means that in a typical year—keeping the changes in inflation and unemployment at 0—forward EPS grows by $5.60 (earnings are estimated in dollar changes).

The coefficient on inflation is positive (+3.4). This result is important because it contradicts the narrative du jour that inflation is bad for stocks. Inflation is good for earnings. S&P 500 companies have pricing power. They can pass higher costs to consumers. Besides, mathematically, if sales and input costs both grow at the rate of inflation, then earnings grow at the rate of inflation too.

Does this sound counterintuitive? Go ahead, check the math. It works, as long as earnings are positive. (Some commentators point out that nominal Gross domestic product (GDP) is more predictive of corporate earnings than is real GDP. That's the same idea. Earnings are a nominal number.)

If you believe inflation will continue to come down, you should adjust your earnings forecast down—that's what our simple yet powerful model is suggesting.

Yet markets often rally on softer inflation prints, because softer inflation could mean a more accommodative Fed. Perhaps. But if so, our results show that the market may be underestimating the negative impact of disinflation on earnings.

The coefficient on unemployment is intuitive. As expected, it's negative (-5.6). Rising unemployment corresponds to drops in earnings. If you've renewed your faith in economists and you think one of them gave you a credible unemployment forecast for the next 12 months, then you can use it in our model to infer a forecast of earnings. Currently, most economists expect rising unemployment, which means bad news for earnings. Unemployment is a powerful proxy for the business cycle.

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> Inflation is good for earnings.

[3] R-square is a measure of accuracy ranging from 0% to 100%. Statistical significance was assessed using so-called p-values.

How did the model perform over the past 12 months?

The performance of our model depends on two things: the accuracy of the inflation and unemployment forecasts and the accuracy of the model itself—i.e., how it maps these variables to earnings.

Back in July 2022, the consensus inflation forecast, looking forward 12 months, was around 2.0% to 2.5%, while consensus unemployment was 4.4%.

Of note, one member of our Asset Allocation Committee was so firmly in the "sticky inflation" camp that he exclaimed, "If, 12 months from now, YoY inflation prints at 2%, I will eat my hat, live, in front of this committee."

I wrote his comment in our official meeting notes, for posterity. A year later, inflation printed at 3.2%. He didn't have to eat his hat. And unemployment turned out to be much more robust than expected, printing at 3.9%.[4]

Based on these prints, our model would have predicted a 5.5% drop in S&P earnings from the second quarter of 2022 to the second quarter of 2023. The realized drop was 5%. The model was off by $1.13 (forecast of $214.33 versus realized of $215.46). Not bad, and in line with the model's historical performance.

Where do we go from here?

Below are four scenarios for inflation and unemployment, and the corresponding model-based forecasts for YoY changes in 12-month forward EPS.

2024 scenarios

	Soft Landing	Sticky Inflation	Hard Landing	Reflationary No Landing
October 2024 Inflation	1.9	3.5	2.0	5.0
October 2024 Unemployment	4.2	4.0	7.0	3.9
YoY EPS	-0.4%	2.7%	-8.0%	5.3%

For illustrative purposes only. Actual outcomes may differ materially from the scenarios shown.
Data sources: Bloomberg Finance L.P., University of Michigan. We define the soft landing scenario by using US 1 Year Breakeven Inflation (Ticker: USGGBE01 Index) and University of Michigan unemployment forecast (https://news.umich.edu/u-m-economic-forecast-modest-growth-expected-soft-landing-likely-as-inflation-eases-but-no-guarantees/). The other three scenarios are our own and they are hypothetical.

As of November 16, one-year inflation breakevens (a rough measure of market pricing for inflation) are at 1.93%, and the University of Michigan unemployment forecast is at 4.2%.
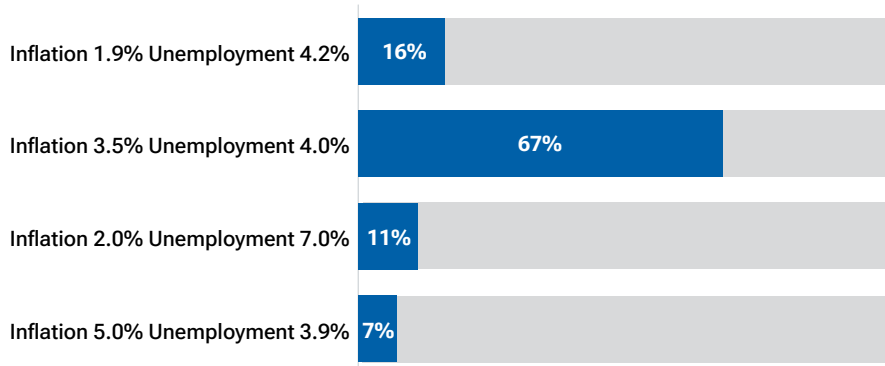
Hence, the consensus for a so-called soft landing. At the same time, 12-month forward earnings growth expectations remain strong at +9%, according to Bloomberg data. Wall Street analysts are an optimistic bunch, and our model forecasts the change in forward

[4] Bloomberg L.P. U-3 US Unemployment Rate Total in Labor Force Seasonality Adjusted (Ticker: USURTOT Index) as of October 31, 2023.

earnings, not earnings growth per se—but still, our model suggests that if this soft landing scenario is realized, forward earnings should drop by 0.4%. "Soft landing" is a soothing term that sounds positive for stock returns. But declining inflation and rising unemployment are both bad for earnings. I can't reconcile the soft landing macro forecast with the positive earnings forecast. Something has to give.

Besides, there's a wide range of views around this macro "consensus." It also changes about every two weeks, based on the latest data point. That's what a data-dependent Fed does to markets—it increases volatility. The Bloomberg Surveillance team calls this the "narrative roulette."

Not long ago, I ran a poll on LinkedIn, where I asked which of the scenarios below was most likely. After 1,009 votes, 67% of respondents chose the sticky inflation scenario as most likely. Only 16% chose soft landing. "Consensus" is an elusive concept.

Inflation 1.9% Unemployment 4.2%	16%
Inflation 3.5% Unemployment 4.0%	67%
Inflation 2.0% Unemployment 7.0%	11%
Inflation 5.0% Unemployment 3.9%	7%

Source: LinkedIn poll as of November 15, 2023.

If we get sticky inflation, our model suggests that forward earnings should grow at 2.7%; and, perhaps, expectations for realized earnings growth aren't too far off. I believe markets may have overreacted to the latest data points on inflation and unemployment. Markets are rallying on the soft landing narrative. But I agree with my LinkedIn survey respondents that the probability of the sticky inflation scenario is higher than for the soft landing scenario.

The wild card is the Fed. Stock returns depend on valuation changes, not just earnings. The Fed drives the discount rate. There are several rate cuts priced in for 2024. If we get sticky inflation, will these rate cuts need to be priced out? If so, higher rates should hurt the S&P's price/earnings ratio.

The unsatisfying but prudent conclusion is that the Asset Allocation Committee is neutral between stocks and bonds. There's room for upside surprises in inflation and rates, especially after the recent, rapid 60-basis-points drop in the 10-year yield. Sticky inflation isn't necessarily bad for earnings, especially if growth continues to surprise on the upside and unemployment remains low. But in that case, we need to worry about a Fed turning more hawkish than expected, which could force the market to rethink valuation levels, especially in large-cap stocks.

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