ZACKS | Our Research. Your Success.

Harnessing the Power of Earnings Estimate Revisions

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Zacks and the Zacks Rank

In 1978, Zacks Investment Research, Inc. ("ZIR") was formed to compile and analyze brokerage research for both institutional and individual investors.

Today, ZIR processes this information from roughly 3,000 analysts at over 150 different brokerage firms. At any given point in time, ZIR is monitoring well over 200,000 earnings estimates and other related data looking for any change. ZIR's ability to gather, analyze and distribute this information on a timely basis makes ZIR research among the most widely used investment research on the web.

The Creation of the Zacks Rank

The Zacks Rank was created by the founder of ZIR whose research led to the discovery:

> *"Earnings estimate revisions are the most powerful force impacting stock prices."*
>
> \- Founder and CEO

His findings were first published in 1979 in the Financial Analysts Journal and entitled "EPS Forecasts — Accuracy Is Not Enough". From this seminal work emerged the Zacks Rank, which harnesses the power of earnings estimate revisions. And so began a long tradition of innovation at ZIR.

The Zacks Rank uses four factors related to earnings estimates to classify stocks into five groups, ranging from 1 to 5.

The Influence of Institutional Investors

People who trade stocks are broadly defined into one of two groups: institutional investors and individual investors. Institutional investors are the professionals who manage the trillions of dollars invested in mutual funds, investment banks, hedge funds, etc. Individual investors, also referred to as "retail investors," are people who independently invest for their own private accounts.

Studies have shown that institutional investors can move the market due to the large amounts of money they invest with. Because of this, the market has a tendency to move in the same direction as these institutional investors.

ZIR understands the power of the institutional investor.

How Institutional Investors Use Earnings Estimate Revisions

Many institutional investors utilize financial models, designed to calculate the fair value of a company and of its shares. Almost without exception, these valuation models focus on earnings and earnings estimates. Stated simply, if the earnings estimates used in the model increase, so may the fair value for the company and its stock price.

Institutional investors then act on these changes in earnings estimates, typically buying those with rising earnings estimates and selling those with falling earnings estimates. An increase in the earnings estimates can translate into a higher price for the stock.

Institutional investors may take longer to build a position (given their size), whereas an individual may be able to act more quickly based on upward earnings estimate revisions (e.g., new Zacks Rank #1s). This ability to act quickly can provide an advantage to the retail investor.

Example:
If an analyst believes a stock is worth 20 times next year's earnings (P/E of 20), with an earnings estimate of $1.00 per share ($1.00 Estimated EPS), then it would be under its fair value at any price below $20. (20 P/E x $1.00 Est. EPS = $20).

If the analyst changes his forecast and believes the company will instead earn $1.10 per share, the fair value would then be $22. (20 P/E x $1.10 Est. EPS = $22.)

Where Do Earnings Estimates Come From?

The most widely used source of earnings estimates are the brokerage analysts who track these publicly traded firms. These analysts work with company management, and independently, to analyze events that may affect future earnings.

Consensus Estimates

From these individual analyst estimates, ZIR creates a consensus Earnings Per Share ("EPS") estimate, which is the average of all estimates made within the last 120 days (older estimates are not included).

ZIR calculates this consensus estimate for each of the next four quarters, each of the next three years, and as a growth rate over the next five years. These consensus estimates are a benchmark by which the company will be judged by the investment community.

Earnings Estimate Revisions

When trying to determine the future direction of a stock's price move, ZIR looks at what a company may earn in the future. These are Earnings Estimates. And it's the change in the earnings estimates (earnings estimate revisions) that have proven to be the most important.

This is because upward earnings estimate revisions may indicate that a stock will receive additional upward earnings estimate revisions. Analysts may revise their earnings estimates slowly and incrementally.

Since stock prices respond to earnings estimate revisions, many investors buy stocks whose earnings estimates have been raised.

Zacks Rank Performance

Given the sheer number of earnings estimate revisions made on a daily basis, it can be very difficult to determine which stocks to buy and which ones to avoid. The Zacks Rank helps investors harness the power of earnings estimate revisions to make more informed investment choices.

The Zacks Rank is a proprietary stock-rating model that uses trends in earnings estimate revisions and EPS surprises to classify stocks into five groups:

1 **The top 5% of stocks get this rating.**

2 **The next 15% of stocks get this rating.**

3 **Most stocks (60%) fall into this category.**

4 **Stocks with this rating (15%) may underperform compared to the market.**

5 **The bottom 5% of all stocks get this rating.**

For the last 33 years, ZIR has maintained hypothetical model portfolios holding Zacks Rank #1 stocks. A hypothetical portfolio of Zacks Rank #1 stocks has beaten the market in 27 of the last 33 years with an average annual return* of +24.63% a year; more than double that of the S&P 500's +10.82%. These returns cover a period from 1988 to 08/01/2022.

The universe of stocks for which Zacks Rank is calculated changes from year to year as the number of stocks followed by brokerage analysts changes. On average, the Zacks Rank is provided for a universe of approximately 4,000 US and Canadian public companies.

The portfolio of stocks with Zacks Rank = 1 consists of the top 5 % of these companies, or about 200 companies; the portfolio of stocks with Zacks Rank = 2 consists of 15 % of the universe, or about 600 companies; the portfolio of stocks with Zacks Rank = 3 consists of 60 % of the universe or about 2,400 companies; the portfolio of stocks with Zacks Rank = 4 consists of 15 % of the universe or about 600 companies; while the portfolio of stocks with Zacks Rank = 5 consists of 5 % of the universe or about 200 companies.

* Annualized returns are for January 1, 1988 through August 31, 2022. Comparable annualized returns for the S&P 500 are +10.82%

Year	#1 Rank	#2 Rank	#3 Rank	#4 Rank	#5 Rank	S&P 500
1988	+39.18%	+29.69%	+20.79%	+19.13%	+18.39%	+16.20%
1989	+39.58%	+26.84%	+15.85%	+9.55%	-5.10%	+31.70%
1990	-2.64%	-13.69%	-21.32%	-23.85%	-34.71%	-3.10%
1991	+81.36%	+56.80%	+45.98%	+36.60%	+34.35%	+30.40%
1992	+40.97%	+29.63%	+18.04%	+12.24%	+17.31%	+7.51%
1993	+45.26%	+26.86%	+14.78%	+8.59%	+9.54%	+10.07%
1994	+12.73%	+5.15%	-3.56%	-11.14%	-10.90%	+0.59%
1995	+52.56%	+46.84%	+30.63%	+17.35%	+9.11%	+36.31%
1996	+40.93%	+28.60%	+16.07%	+7.71%	+8.02%	+22.36%
1997	+43.91%	+33.87%	+22.93%	+10.17%	+3.05%	+33.25%
1998	+19.52%	+12.92%	-3.47%	-8.77%	-14.84%	+28.57%
1999	+45.92%	+35.53%	+31.02%	+18.46%	+17.69%	+21.03%
2000	+14.31%	-1.47%	-17.75%	-19.52%	-3.95%	-9.10%
2001	+24.27%	+11.70%	+14.09%	+17.93%	+20.20%	-11.88%
2002	+1.22%	-13.50%	-17.75%	-24.03%	-15.85%	-22.10%
2003	+67.03%	+69.52%	+64.91%	+54.96%	+54.38%	+28.69%
2004	+28.71%	+23.74%	+15.75%	+11.47%	+14.58%	+10.87%
2005	+18.80%	+12.57%	+6.75%	-0.51%	-5.95%	+4.90%
2006	+27.31%	+26.26%	+16.85%	+15.01%	+18.18%	+15.80%
2007	+19.71%	+5.37%	-4.31%	-13.07%	-24.04%	+5.49%
2008	-40.41%	-43.48%	-48.70%	-45.75%	-50.95%	-37.00%
2009	+65.85%	+84.19%	+78.79%	+60.36%	+49.41%	+26.46%
2010	+28.98%	+35.17%	+27.87%	+29.28%	+27.22%	+15.06%
2011	-3.79%	-4.89%	-13.47%	-18.58%	-21.37%	+2.11%
2012	+24.95%	+19.06%	+16.42%	+6.53%	+8.08%	+16.00%
2013	+47.48%	+37.24%	+30.56%	+23.89%	+17.99%	+32.39%
2014	+14.95%	+10.26%	1.20%	-3.97%	-14.36%	+12.88%
2015	0.00%	-0.94%	-11.01%	-13.78%	-19.01%	+0.23%
2016	+27.43%	+27.15%	+27.17%	+21.00%	+39.44%	+14.78%
2017	+28.31%	+23.17%	+15.11%	+16.28%	+13.00%	+21.44%
2018	-7.40%	-6.68%	-10.23%	-14.19%	-15.94%	-3.83%
2019	+23.82%	+27.13%	+17.43%	+20.07%	+17.11%	+29.36%
2020	+33.86%	+39.71%	+34.35%	+30.43%	+19.77%	+19.27%
2021	+41.10%	+30.90%	+16.00%	+8.90%	+10.30%	+28.70%
2022 YTD*	-7.13%	-14.84%	-19.13%	-20.73%	-16.54%	-13.44%
Annual Average**	**+24.63%**	**+18.00%**	**+9.55%**	**+5.25%**	**+2.32%**	**+10.82%**

*2022 Results measured from January 1, 2022 to August 31, 2022.

** Annualized returns are for January 1, 1988 through August 31, 2022. Comparable annualized returns for the S&P 500 are +10.82%

These rankings change frequently. No commissions or fees were used in calculating the Zacks Rank performance.

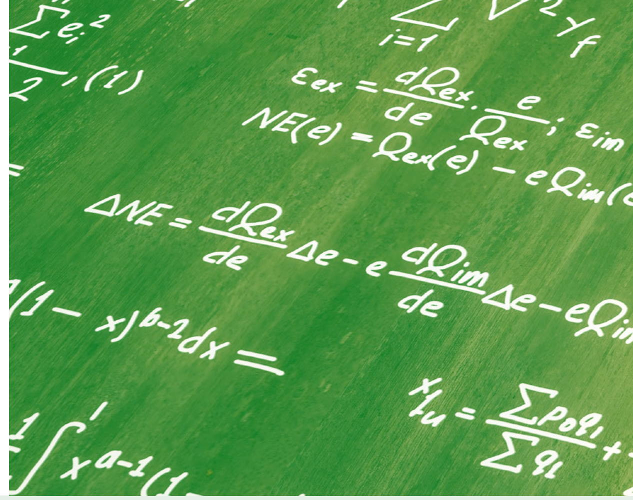
The Zacks #1 Rank Performance has been examined and attested by Baker Tilly Virchow Krause, LLP for each of the years in the period beginning on January 1, 1988 through Monday's open on April 2, 2018. These returns are from hypothetical portfolios consisting of stocks with Zacks Rank # 1 that were rebalanced monthly (see additional details regarding rebalancing below) through 12/31/13 and weekly rebalance from 12/31/13 through Monday's open on April 2, 2018 with zero transaction costs. These are not the returns of actual portfolios of stocks. Zacks Rank #1 stock-rating system returns are computed monthly based on the beginning of the month and end of the month or weekly based on each week's open and next week's open Zacks Rank #1 stock prices plus any dividends received during that particular month or week. A simple, equally-weighted average return of all Zacks Rank #1 stocks is calculated to determine the monthly return. The monthly and weekly returns are then compounded to arrive at the annual return. Only Zacks Rank #1 stocks included in Zacks hypothetical portfolios at the beginning of each month or week are included in the return calculations. Zack Rank #1 stocks can, and often do, change throughout the month or week. Certain Zacks Rank #1 stocks for which no month-end price or weekly open price was available, pricing information was not collected, or for certain other reasons have been excluded from these return calculations. The S&P 500 is an unmanaged index.

The Zacks Rank Performance Summary returns examined herein are returns from a hypothetical portfolio consisting of Zacks Rank 1 stocks selected as described above, these returns are not based on a backtest. These returns are higher than the returns an investor would achieve investing real money in a portfolio of Zacks Rank 1 stocks because the returns of the hypothetical portfolio exclude commissions incurred for trading, the average bid ask spread, the price impact of the trading and, prior to 2013, in those months when the end of the month fell on Friday, Saturday or Sunday, the overnight return from the month end close to the open on the next trading day.

The universe of companies for which Zacks Rank performance is reported has changed over time. The portfolios of Zacks #1 Ranked stocks created monthly from 1988 through 1995 exclude ADRs, exclude Canadian companies trading only on Canadian Exchanges, exclude companies trading on the OTC Bulletin Board and exclude companies followed by only one analyst. From 1996 through 2007 the portfolios exclude ADRs, exclude Canadian companies trading only on Canadian exchanges and exclude companies trading on the OTC Bulletin Board, but include companies followed by only one analyst. From 2008 and going forward the portfolios are comprised of all stocks with the indicated Zacks Rank which is more reflective of the list of stocks that customers will find on the Zacks web sites.

The annual S&P 500 returns in this table for the years 2016, 17, 18 differ by +2.8%, -.4% and +.6% from the S&P 500 returns shown on other web sites. The S&P 500 returns shown for these periods are total returns of the IVV S&P 500 Index Fund and the returns are shown for 364 day periods that begin at the first Monday open of each year for years 2016, 17 and 18. Similarly the S&P 500 returns for the months are IVV returns for the 28 or 35 day periods that begin at the open on the first Monday of each month.

Four Factors Behind the Zacks Rank



So how does ZIR use earnings estimates and earnings estimate revisions in the Zacks Rank? The Zacks Rank is calculated from four primary inputs: Agreement, Magnitude, Upside and Surprise.

Agreement

This is the extent to which all brokerage analysts are revising their earnings estimates in the same direction. The greater the percentage of analysts that are revising their estimates higher, the better the score will be for this component.
If 40% of the analysts are increasing their earnings estimates for a stock, whereas only 10% are increasing it for another stock, the higher the percentage of analysts making upward estimate revisions the better.

Magnitude

This is the size of the recent change in the current consensus estimate for the fiscal year and the next fiscal year.
A 5% increase in the earnings estimate revision is better than a 2% increase in the earnings estimate revision and will thus get a better score for this component.

Upside

This is the difference between the most accurate estimate as calculated by ZIR and the consensus estimate.
A bigger difference between the most accurate estimate and the consensus estimate is better.

Surprise

The Zacks Rank factors in the last few quarters' earnings per share (EPS) surprise as well.
Companies with a positive earnings surprise are more likely to surprise again in the future.

Each one of these components is given a raw score and it is recalculated every night. These raw scores are then compiled into the Zacks Rank and is made available to investors every day.

Integrating the Zacks Rank Into Your Investment Strategies

Aggressive Growth Traders

Aggressive Growth Traders are primarily focused on stocks with aggressive earnings growth (or at least the potential for aggressive growth), which should propel their stock price higher in the future. You'll often find smaller-cap stocks in this category because these are typically newer companies that are in the early part of their growth cycle. But you'll also find plenty of mid-caps and large-caps too.

By concentrating on Zacks Rank #1 stocks, growth investors can screen for companies exhibiting these growth rates

Many growth investors, however, make the mistake of looking for those with the highest growth rates possible. Unfortunately, many such companies underperform in spite of their outsized growth rates. A company with a 500% growth rate, that just received a downward estimate revision and now 'only' has a 400% growth rate, may still look good on the surface, but the growth rate was just reduced by a significant amount and therefore could see a price correction.

Value Investors

Value Investors are looking for good stocks at great prices. This does not mean they have to be cheap stocks in price however. The key is the belief that they are undervalued and that they are trading under their, i.e., 'fair value'. And the value investor hopes to get in before the market corrects the price, or in other words, goes higher. Many institutional investors focus on this very thing.

Typical value investors will look at valuations like P/E ratios, Price/Earnings Growth ratios, Price to Book ratios, etc. Many 'value' stocks, however, have low valuations because they don't have compelling

> Zacks Rank #1s and #2s signal that earnings estimates are on the rise, prompting investors to view the stock as being undervalued relative to its future earnings prospects, and in turn, drive prices even higher.

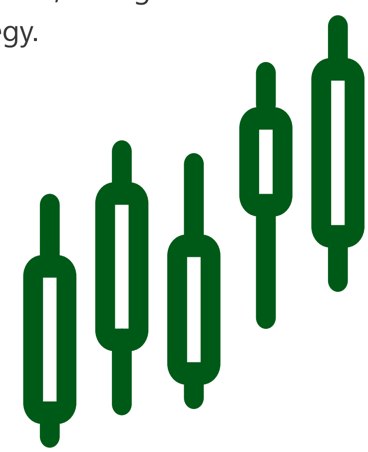
enough earnings or growth rates. The key for value investors is really earnings, which are the basis of most valuation models. When the Zacks Rank signals a "Strong Buy" or "Buy" (Zacks Rank #1 or #2), that means earnings estimates for a stock are rising. Given this new information, other investors may view the stock as being undervalued relative to its future prospects.

Growth and Income Investors

Growth and Income Investors are generally looking for companies with solid revenue and that pay dividends. Oftentimes, these companies are more mature, larger-cap companies that pass along a portion of their earnings to their shareholders in the form of a dividend.

Some of these companies may not have the kinds of growth rates that some of the younger or smaller companies have (or like these companies had when they were younger and earlier in their growth cycle).
Many of these companies are generating cash, but because of their size, may not have the growth opportunities they once had. The key ingredients, however, for a growth & income investor, are the fundamentals such as earnings growth, strong management/leadership, excellent products and a competitive strategy.

The most tangible proof that a company may be worth holding for the long term is earnings and earnings growth. Not necessarily explosive growth, but steady and consistent growth. A company that has strong management and excellent products should be producing a steady stream of positive earnings estimate revisions. Here again earnings estimate revisions are the cornerstone of the Zacks Rank. Whenever there are positive earnings revisions, there generally will be a company moving in the right direction, and that company may be a candidate for long-term ownership.



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Our Research.
Your Success.