

“Slump? I ain’t in no slump! I just ain’t hitting!”

Yogi Berra (1925 -)

SOLAR BLINDNESS

OUTLINE

This newsletter has three sections beginning with a discussion of the roles of the “Buy-Side” and the “Sell-Side”, followed by an analysis of the performance of Sell-Side analysts, and the performance of a portfolio using a single economic indicator.

THE BUY-SIDE & THE SELL-SIDE

Buy-Side Analysts

Stocks and bonds are sold every day. For the most part, the people that actually buy and sell these instruments reside in hedge fund firms, within mutual funds, or managing foundations or trusts. As a group, they are informally referred to as the “Buy-Side”. Generally speaking, they make their living, and get their bonuses, by increasing the value of their investments, in the same way that an individual investor benefits when their investment portfolio increases. These firms often have their own internal analysts. The work of these analysts is proprietary to the firm that employs them, and the analysts’ compensation packages are designed to reward analysts for accurate predictions.

Key point: *Buy-Side analysts are rewarded when their analyses and recommendations are correct, but their work is not in the public domain.*

Sell-Side Analysts

There are many ways that firms associated with the financial markets make money. Some facilitate trade transactions, making a small amount of money on each and every trade. Other firms serve companies by helping them with equity and strategic activities, such as, initial public offerings (IPOs), secondary offerings, private investments in public equities (PIPE’s), and merger and acquisition (M & A) activities. At times, these firms manage the money of wealthy individuals. These firms are called the “Sell-Side”.

Most Sell-Side companies employ analysts to support their businesses. However, it is important to realize that Sell-Side companies thrive when people are trading stocks and when the firm generates large revenues from providing services to their clients. Sell-Side companies create internal compensation practices to maximize this profit.

The recommendations and reports of Sell-Side analysts are partially in the public domain. Recommendations are not standardized, but are generally reported in the press. The collection of over 500 recommendations studied for this newsletter involved pulling data from StreetInsider, The Wall Street Journal, and a variety of other public sources. While we

have done substantial work collecting and verifying this data, the lack of standardization and formal filing requirements make this data set less robust than financial data obtained from the SEC.

Key point: *Sell-Side analysts work for and are compensated by firms that thrive by encouraging trading of securities and by providing services to the companies they cover.*

Key Point: *The work of Sell-Side analysts is only partially in the public domain, their ratings are not standardized, and there is no central repository that aids investor study of these recommendations.*

BIASES AND ANALYST PERFORMANCE

There are many factors that influence a Sell-Side analyst’s willingness to change rating recommendations on a particular stock. We won’t detail many of those here, but refer you to an excellent paper, [“Wall Street’s Credibility Problem: Misaligned Incentives and Dubious Fixes”](#) by Boni and Womack of The Wharton School.

We would like to briefly consider one particular bias that has a serious impact on analysts’ calls: The Optimism Bias.

Optimism Bias

Sell-Side analysts face many challenges to issuing a “Sell” recommendation. The company that receives a “Sell” recommendation has little incentive to use the firm’s investment banking services, potentially hurting the overall profitability of the investment firm, and by extension the analyst’s personal compensation. In addition, investing clients of the firm are less likely to execute trades based upon a dour “Sell” recommendation than on an upbeat “Buy”, resulting in fewer transactions fees. Table 1 below shows the magnitude of this optimism bias on the part of analysts. Over 80% of the ratings were Buys. Of the approximately 40 analysts studied, 39% had *never* issued a “Sell”.

Ratio of “Buy”/”Sell”	4.5
Analysts never issuing a “Sell”	39%
Large banks never issuing “Sell”	33%
Boutique banks never issuing “Sell”	41%

Table 1 A summary of the “Buy” and “Sell” recommendations.

Portfolio Results

Next, we created market cap-weighted portfolios based upon the recommendations of these analysts. The portfolios were rebalanced every time an analyst changed a recommendation. As expected from the bias described above, the analyst group did not perform well. Of the analysts studied, only 29% had positive returns, despite a very robust

run-up throughout 2006-2008. However, their reluctance to issue Sell ratings would result in their clients giving back much of the gain when stocks turned down. Those analysts that never issued a Sell rating performed worse than analysts willing to issue Sell ratings.

Population	Annualized Return
All Institutions	-16.9%
Willing to Issue "Sell"	-13.7%
Never Issue a "Sell"	-21.6%

Table 2 The average returns of the analyst group. Those analysts willing to issue "Sell" recommendations fared better.

To study the perception that the analysts were generally optimistic, but otherwise accurate, the portfolios were modeled by treating a Hold recommendation as a Sell. This did not change the returns significantly.

In general, larger investment banks did perform better than boutique banks. However, the top two firms in this analysis were, in fact, boutique firms. The top performing firm, ThinkEquity, with a 39% annual return, beat the best performance of the large firms, such as Goldman Sachs' 18% annual return, by more than 20 points.

Accuracy of Analysts

We also studied the accuracy of individual calls made by analysts. A "Buy" was considered accurate if the stock value rose after the call, a "Hold" was considered accurate if the stock traded within a +/- 10% price window following the call, and a "Sell" was considered accurate if the stock price fell after the call. As expected from the optimism bias and the rather modest returns, analyst accuracy is also low, coming in at only about 40%.

Analysts' predictions for larger companies based in the United States have the best ratings accuracy, where the analysts' accuracy record is nearly as good as flipping a coin. Additional biases exist in the coverage of analysts of foreign companies. We will discuss some of these bias results in the next InSite newsletter.

Key Point: *The accuracy of analyst ratings is about 40%.*

Timing of Recommendations

Looking at the timing of their calls also shows the effectiveness of analysts. The calls made for Canadian Solar are shown against the ratings of the thirteen analysts now covering the company. In general, as the price of this stock goes up, the analysts get more bullish. Shortly after the stock price peaks in the summer of 2008, the analysts all place a "buy". The analysts should have been issuing that "buy" call about nine months earlier.

As the stock goes down, the analysts become increasingly willing to sell the stock. In fact, the "sell sentiment" peaks when the stock is at minimum values. The analysts should have been advising to sell at the peak, again about nine months earlier.

Key Point: *In the solar industry, analysts are lagging indicators of share prices.*

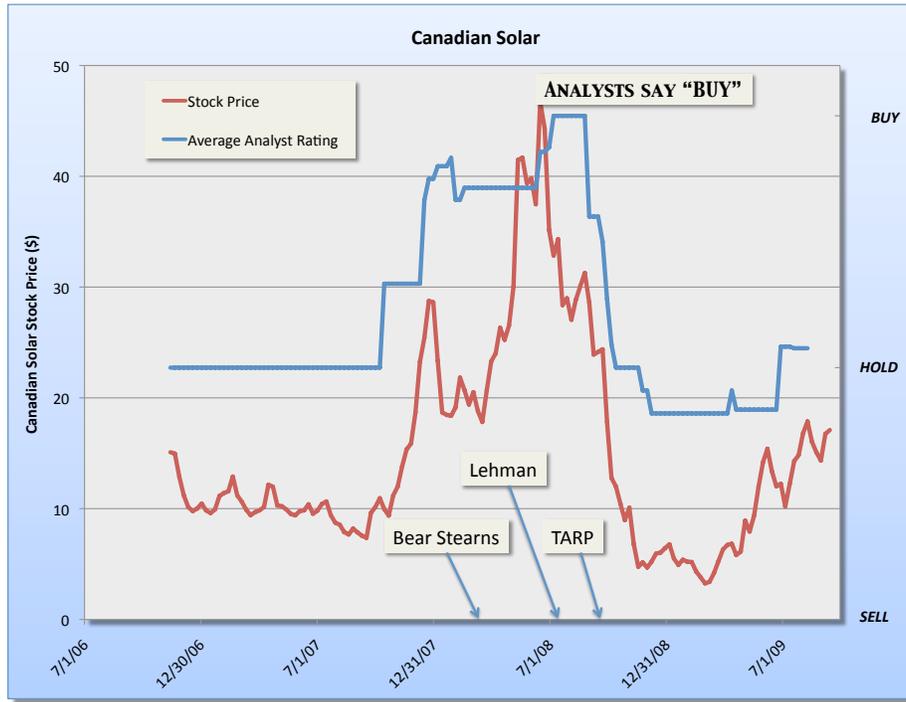


Figure 1 The composite analyst recommendation for Canadian Solar.

Ratings in Context of Macroeconomic Indicators

The solar industry depends upon the availability of debt. This is true for residential customers, who look to borrow money to finance a remodeling or construction project, or commercial customers who use debt to fund large capital projects, such as power plants. In addition, these projects are of long duration. Taken together, this means that the industry slows down when available credit is tight, but there is a supply chain delay between the decrease in credit availability and the decline in performance of the sector.

The Bear Stearns collapse of March 2008 certainly gave notice that the credit market was tightening. The sudden collapse of Lehman in September 2008 was a dramatic indication of the lack of credit liquidity. Investors began pulling stock prices down in the back half of 2008.

It has to be noted that after a 400% run-up in price, and with Bear Stearns and Lehman vividly showing a lack of available credit (that the solar industry needs to thrive) all thirteen analysts declared Canadian Solar a “Buy”. The analyst community started downgrading this industry only after stocks began a rapid decline, about the same time that the United States government decided to intervene in the financial markets with the TARP program.

Stated very simply, the analysts advised buying high, even when the sector was valued very highly and the financial sector was in turmoil, and then analysts advised selling low. In all

but one of the companies studied, the composite analyst showed this tendency of giving buy ratings when stocks were high and hold or sell ratings when the stocks were low.

Key Point: *Analysts of the Solar PV companies studied tended to issue “Buys” at stock peaks, and “Sells” at stock minimums.*

Analysts and Cyclical Markets

From the perspective of the price of stock, it should be noted that the market does respond to the views of the analyst community, particularly those of the larger firms, such as Goldman Sachs. As an example, on September 7, 2007, Goldman downgraded both First Solar and SunPower, resulting in both stocks falling sharply on this rating change.

It should be noted that this linkage, of analysts’ “Buy” ratings increasing as stock prices increase, and stock prices rising with analysts’ positive ratings creates a powerful momentum on upward stock trajectories. Of course, the same effect is mirrored with downward trajectories, making the highs higher and the lows lower. “Momentum” traders often exploit this behavior, and the human factors that drive it are studied in the field of behavioral finance. In mathematics, this forms a non-linear system with a positive feedback loop.

Key Point: *In the solar sector, the behavior of analysts tends to magnify stock peaks and stock minimums, exaggerating the volatility of the stock.*

Key Point: *The bias of analysts, and the fact that ratings lag sector performance, means that their recommendations are not useful indicators of future stock prices*

INDUSTRIAL ECOSYSTEMS

In developing a set of leading indicators for a business sector, we propose a different approach. A solar company sits in a ecosystem full of thousands of potential indicators, including the cost of raw materials; inventory levels; the financials of the solar companies; the financial health of both suppliers and customers of the solar companies; country taxation rates; regional incentives; prevailing sentiment about the severity of global warming; the cost of alternative electrical energy; interest rates; stock values; the performance of other companies in the ecosystem; and the availability of capital throughout the business system. Attempting to digest all of these indicators is a pretty daunting task, in large part, because a correlation between metrics does not mean that there is any causal relationship between them. However, by looking at how capital and products flow throughout this network of participants, key indicators, their causal and temporal relationships can be predicted and tested.

To illustrate our point, we note that customers, both consumers and utilities, of the solar industry often use credit to finance projects. We developed a measure of credit availability, and applied a constant time delay that approximated the natural delay of the aggregate supply chain. We used a simplistic trading heuristic of issuing “buys” or “sells” based on movement of this index. The resulting two buy and two sell signals yielded an annualized return of 45% on the portfolio, to be compared to the average analyst return of -17%. Overall, the analyst community produced returns ranging from -59% to 39%. The accuracy of our simple trading program was 67%, compared to the average analyst’s at only 40%.

Of course, the construction of a leading indicator after the battle is over should be viewed with a fair amount of skepticism. However, that misses the central point of the use of leading indicators: by looking at the actual structure of the ecosystem of a business sector, we can find a set of causal leading indicators that provides a reasonable prediction of the potential outcomes of the sector.

Several other leading indicators improve the prediction of sector performance; however, describing the full set is outside of the scope of this brief newsletter.

Key Point: *By understanding the ecosystem within which a company resides, it is possible to find leading indicators of future performance.*

CONCLUSION

We studied the accuracy, timing, and profitability of Sell-Side recommendations of analysts following the solar PV sector. We concluded that analyst recommendations are trailing indicators of the industry, with recommendations resulting in an average *accuracy* rating



of only 40%. Portfolios constructed with Sell-Side recommendations fare poorly, with an average *return* of -17%.

An alternative approach of developing a model based on metrics relevant to the solar sector was briefly described. This approach considers a company as operating in an ecosystem with factors that influence decisions throughout the companies' supply chains and the time delays between the components in that system. To illustrate the effectiveness of this approach, we modeled an investment strategy based on just one leading indicator. This simple trading paradigm generated a portfolio with an annual return of 45%, with calls that were correct 67% of the time.

It is clear that the development of a set of valid leading indicators can help both companies and investors make significantly better risk-adjusted decisions relative to major capital and investment opportunities.

Cheers,

The InSite Newsletter Staff

For information on how your company can use InSite's team to drive better decisions and increased profitability by comparing companies to their peers, understanding the overall health of an industry, or developing industry-specific leading indicators, please contact us [here](#).