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THE WALL STREET TRANSCRIPT
Connecting Market Leaders with Investors

Quantitative Investing with Fundamental Tilt

GEOFFREY GERBER founded TWIN Capital Management, Inc., in 1990 and is the President and Chief Investment Officer. Recognized as a specialist in institutional investment management, he is often quoted in the financial press. Two of his publications appear in *Market Neutral: State-of-the-Art Strategies for Every Market Environment* as a chapter entitled "Using a Nonparametric Approach to Market Neutral Investing" and in *Global Asset Allocation* as a chapter entitled "Equity Style Allocations: Timing Between Growth & Value". Outside of TWIN, he is a faculty member for the Aresty Institute's Wharton Executive Education Program on Investment Strategies and Portfolio Management. He also serves as Chair of the Pittsburgh UJF Foundation Investment Committee. In addition to serving on the Board of Directors of the Burroughs Wellcome Foundation (BWF), he also chairs the BWF Investment Committee. He holds a PhD in Finance and Economics from the University of Pennsylvania, and a BA degree in Economics from the State University of New York at Buffalo where he graduated summa cum laude and was elected to Phi Beta Kappa.

SECTOR – GENERAL INVESTING

TWST: Would you start with an overview of TWIN Capital Management and your investment philosophy there?

Dr. Gerber: TWIN Capital Management is an investment boutique oriented to quantitative research, actively managing the risks of our client portfolios and striving to provide client service beyond expectations. As a smaller long-only and long/short equity manager, TWIN gives clients the ability to speak directly with portfolio managers and senior research staff. When our clients conduct due diligence and on-going monitoring of TWIN's investment process, they find comfort in knowing that they have the unique opportunity to interact directly with the people who actually make their investment and portfolio decisions.

TWIN's clientele primarily consists of institutional investors. We manage money for both corporate and public pension funds, for Taft-Hartley plans and for foundations and endowments. We also act as a subadviser to several mutual funds. TWIN has been in business since I founded the firm in 1990. Before TWIN, I spent seven years developing and managing quantitative equity strategies for large institutional money managers. Prior to joining the "real world" in 1983, I was on the Graduate Faculty at the University of Pennsylvania, Wharton School, where I received my PhD. I am still associated with Wharton as a teacher in their executive education program on Investment Strategies and Portfolio Management.

Having relationships with academia has always been part of TWIN's investment culture. Our philosophy is to generate consistent value added by applying a systematic valuation model and overlaying TWIN's unique "Fundamental Tilt." We actively manage both expected return and expected risk of our clients' portfolios.

TWST: Tell us about the process that you have developed at TWIN Capital, in particular your Fundamental Tilt approach.

Dr. Gerber: You can think of Fundamental Tilt both in terms of tilting the portfolio at the margin toward the style and capitalization segments of the market that we think will outperform and actively managing the risk of the portfolio based on whether the market environment is favorable and whether we think risk levels will be steady, increasing or decreasing.

Our quantitative investment process starts with the application of our stock selection model (TWIN Equity Model), which ranks stocks from the highest expected return to the most negative expected return. We then apply our Fundamental Tilt, which incorporates our more macro perspective or thematic bets.

Our stock selection model produces an overall ranking for each stock based on a variety of factors such as earnings/price, forecast growth and earnings sustainability. The weight on each factor is dynamic — more emphasis is placed on those elements that we expect to be in favor and less importance on those elements that we expect will underperform their longer-term returns.

After looking at the Model's ranking on a stock-by-stock basis, we build our portfolios to incorporate tilts at the portfolio level toward the capitalization and style segments of the market that we expect will outperform.

The final element of TWIN's unique Fundamental Tilt is to dynamically manage the active risk or tracking error of our strategies. We've studied what market environments are more or less favorable for our Model and investment process. If the market environment is more favorable for our approach, and if we're forecasting fairly stable or declining levels of risk, then we would be willing to ratchet up the expected tracking error or active risks in our portfolios. If, however, the expected market environment is not favorable, or if we expect risk to be higher than our risk model is predicting, then we'll lower the expected active risk or tracking error of our portfolios within an allowable range.

HIGHLIGHTS

Geoffrey Gerber is a long-only and long/short equity manager who is oriented toward quantitative research, actively managing the risks of portfolios and providing skilled client services. His philosophy is to generate consistent value added by applying a systematic valuation model and overlaying TWIN's unique "Fundamental Tilt." He actively manages both expected return and expected risk in the portfolios. The Fundamental Tilt approach allows him to analyze at the market-segment level. The result is performance that is more macro because the portfolios can tilt toward what he believes will be the best style and capitalization segments within the benchmark.

TWIN's products fall into three categories. There are five Enhanced Index strategies – low tracking error portfolios managed relative to different benchmarks; a more active Long-Only strategy that includes both large and mid-cap stocks and expects higher tracking error; two Long/Short equity strategies, both equity market-neutral and 130/30. He has recently begun reducing his marginal emphasis on large cap growth stocks and he is no longer underweight in financial stocks. The technology sector remains the largest sector overweight and client portfolios' expected active risks or tracking errors still remain at the low end of the range spectrum because he expects risk to remain high.

TWST: What products do you offer to your clients?

Dr. Gerber: TWIN manages both US large and mid-cap equity portfolios across the risk spectrum. Through our close client relationships, we understand a client's needs and we hone in on a segment of the market where exposure is needed at the appropriate risk level for that particular client. We manage eight strategies: six are Long-Only, and five of those Long-Only strategies are Enhanced Index strategies, while one Long-Only strategy is more active. In addition to our Long-Only strategies, we also manage two Long/Short strategies — a 130/30 strategy and an equity market-neutral strategy.

The common denominator across all of these products is the focus on achieving a high information ratio, which measures the risk-adjusted value added or more specifically, the active return per unit of active risk.

We use both nationally published benchmarks such as the S&P 500 or the Russell Top 200, but we also provide our clients with customized benchmarks such as the Top 50, which represents the 50 mega-cap stocks in the market and a Large Cap quality benchmark.

In addition to our Enhanced Index strategies, we offer a more active Long-Only strategy, TWIN Prime. This strategy has consistently outperformed its Russell 1000 benchmark since its inception over five years ago. Our Enhanced Index strategies are managed with tracking errors or active risks relative to benchmark in the range of 1% to 2%; TWIN Prime strategy targets a 2% to 4% tracking error relative to the benchmark.

Moving into the long/short world, we also offer a 130/30 equity strategy that can be managed either relative to the S&P 500 or the Russell 1000 and takes advantage of TWIN's 19-year history of managing Long/Short equity strategies.

Finally, our Long/Short equity market-neutral Momentum strategy is about to complete 10 years of live performance history. Since its inception, it has produced a positive annualized absolute return uncorrelated with the equity market. The stock market has delivered an annualized loss during this period.

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TWST: How have your strategies performed during this extraordinary downturn in the market and the economy?

Dr. Gerber: The current market difficulty started in the summer of 2007, in August when the dislocations and the deleveraging of hedge funds led to a very difficult time in particular for quantitative strategies. However, TWIN's Long-Only and Long/Short products added value in the third quarter of 2007. Most of our Enhanced Index strategies have outperformed their benchmarks in both 2007 and in 2008. Our Long/Short equity market-neutral Momentum Portfolio, has produced a positive total return over the two-year period of 2007 and 2008.

Our previously mentioned Fundamental Tilt helped TWIN's performance during a period when many of our quantitative peers were less fortunate. Having focused over two years ago on tilting toward larger cap growth stocks while simultaneously bringing down the tracking error and tightening the active risks of our portfolios, a number of our equity strategies were able to outperform the market on a relative basis for the past two calendar years.

TWST: Were you making shifts in emphasis to your strategies as the crises unfolded?

Dr. Gerber: Yes. The first point to make is that TWIN firmly believes that what worked in the past will not necessarily work the same way in the future. As a quantitative manager, we think of our judgment being added at the initial phase to choose what type of models we should be using and how we should actively manage the risk of our portfolios. We start with the notion that the investment process has to be adaptable to reflect varying economic and investment environments. To be more specific, starting in 2007, our Fundamental Tilt and research on style and capitalization segments suggested that we shift our portfolios toward larger cap growth stocks.

At the same time, we also were forecasting that the risk of the market would be going up dramatically. We observed one of the least risky market environments from early 2004 through June 2007. Starting in early 2007, our expectation was that risk was going to break out and break out in a large way. It is often easier to forecast risk than it is to forecast return because levels of risk tend to be more persistent. We were expecting a breakout from the low levels of risk into a higher risk regime and as a result, we lowered the active risk levels of all of our equity strategies to the lower ends of their allowable tracking error ranges.

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We normally do not take very big active sector bets. Typically, a 1% to 2% active sector exposure to the benchmark is the biggest bet we would take for our Enhanced Index strategies and a 2% to 4% active exposure is the largest allowed for our more active Long-Only and Long/Short strategies. For most of 2007 and 2008, we were slightly overweight in technologies and slightly underweight in financials. Those weighting decisions clearly helped many of our client portfolios during the most recent two calendar years.

We moved into larger cap stocks and growth stocks in early 2007. These stocks did not begin to outperform until the summer of 2007 and particularly in 2008. But we were there early, ready to take advantage, while still lowering the risk of our portfolios. More recently, we have begun reducing our marginal emphasis on larger cap growth stocks and we are no longer underweight in financial stocks. The technology sector is still our largest sector overweight and our portfolios' expected active risks or tracking errors still remain at the low end of the range spectrum because we do expect risk to remain high.

"Many quant strategies tend to target a specific level of expected active risk/tracking error even though they know that risk models can underestimate or overestimate realized risks. Their thought process is that over the long term, their actual tracking error should be close to the target level. We take a different approach.We believe it is necessary to use an expected risk range, e.g., 1% to 2%. There are times we will want to be at the low end of the range (near 1%). There are times where we will target the middle or upper end of the allowable tracking error range"

TWST: Give us some idea of how you came to start or stop underweighting financial stocks.

Dr. Gerber: Our Portfolios' exposure to the financial sector was approximately 1% underweight relative to the benchmark. We were underweight in financial stocks starting in 2007 as five of the six industries in the financial sector had average expected returns that were negative based on our Model. The liquidity crunch that began with hedge fund deleveraging in the summer of 2007 also heightened our concerns about many financial stocks. Clearly the events in 2008 made us even more concerned about the health of many financial stocks and comfortable with our underweight position.

At the beginning of 2009, we reduced the underweight to the benchmark's financial sector and moved to a neutral relative to benchmark position. The notion of a model trying to predict returns to financial stocks when government and banking regulations are changing is a very difficult thing to do. It's difficult to predict stock returns at any time, but when you add in the fact that the balance sheets of financial companies may be changing dramatically if the toxic assets are taken off their books, it's monumentally harder. Bringing the financial sector exposure of our portfolios closer to a neutral position was executed from a risk management perspective: we have less confidence in our Model's ability to effectively rank many financial stocks while recognizing that there are a number of financials that became undervalued, given how sharply they fell in the bear market. If the strong bounce back in prices of some beaten-down financial stocks that began on March 10, 2009, continues, we will be happy to have changed our active exposure to the finance sector from underweight to neutral relative to benchmark.

TWST: Tell us about your technology exposure and why the stocks look good to you at this time.

Dr. Gerber: When I entered the business in the early 1980s, tech stocks were high-beta, high-flying stocks and financials were low-beta, high-dividend-yielding stocks. Today many finance stocks are high beta and plenty of tech stocks are low beta. Bank stocks are cutting their dividends while a tech stock like **Oracle** (ORCL) recently instituted a dividend payment.

In 2007, as we began shifting toward larger cap growth stocks, we focused primarily on stocks in the technology sector, which was consistent with our Model's rankings (financials were low-ranked and technologies were ranked higher). This slight overweight has remained in 2009. We believe that as the economy comes out of its recession, technological advances will be made with regard to the environment, construction and our country's infrastructure, leaving technology stocks in a position to prosper during the rebound. Technologies are now low-beta stocks that nicely offset the high-beta financials. Their growth prospects and opportunities for consistent earnings are relatively good compared to many other sectors.

TWST: Tell us about the sell process with your quantitative strategies?

Dr. Gerber: Our sell discipline starts with our stock selection Model. If a stock falls in relative attractiveness, it becomes a signal for us to potentially sell that security. In addition, we're constantly looking for stocks that are attractive on the buy side. Our overarching goal is to expertly balance overweights to the relatively attractive stocks and underweights to the relatively unattractive stocks.

When our Model signals deteriorating prospects for a stock, we approach the sell discipline by asking if we want to be out of that position completely or if we want to hold that stock in an underweighted position. The size of each security in its benchmark can result in slightly different sell decisions. Since our Enhanced Index strategies do not hold active stock exposures (overweights or underweights) in excess of 1%, stocks representing more than 1% in their benchmark will be held (in an underweighted position) even if their expected return is negative. If however, a very negatively ranked stock had a small weight in the benchmark, we would likely not hold it at all.

Our carefully thought-out, multi-step sell discipline is based first on our Model rankings and second on what our Fundamental Tilt is telling us.

TWST: It is this Fundamental Tilt approach combined with your quantitative strategies, I assume, that makes your approach so distinctive compared with other quant managers?

Dr. Gerber: We think that our investment approach has helped us distinguish ourselves from many other quant managers during the last couple of years. The main difference is our Fundamental Tilt. As an example, many quant strategies tend to target a specific level of expected active risk/tracking error even though they know that risk models can underestimate or overestimate realized risks. Their thought process is that over the long term, their actual tracking error should be close to the target level. We take a different approach.

We believe it is necessary to use an expected risk range, e.g., 1% to 2%. There are times we will want to be at the low end of the range (near 1%). There are times where we will target the middle or upper end of the allowable tracking error range.

In general, a more favorable stock market environment for active managers is when stock return dispersion is aligned with the breadth of the market (the percentage of stocks that outperform). In these cases, our Fundamental Tilt might position our portfolios toward the mid- to upper range of allowable tracking errors. If, on the other hand, market breadth and dispersion are not aligned, e.g., if few stocks are beating the market and cross-sectional stock dispersion is very high, then we will look to dampen the expected tracking errors of our portfolios.

TWST: What about diversification? Are you diversified largely over all the products that you offer to your clients?

Dr. Gerber: Yes. Every one of our products is diversified as we have exposure to all sectors in the market. In the case of our Enhanced Index or Long-Only strategies, the weight of the portfolio sector by sector, industry by industry is going to be tied closely to that of the benchmark's weight in that industry or sector. In the case of our Long/Short equity market-neutral strategy, we're attempting to be long-to-short sector neutral and invested in all sectors. However, the sector weights in our Long/Short equity market-neutral strategy will be determined by the largest spreads of expected returns long-to-short rather than using the weight of the sectors in the market portfolio.

TWST: What about the outlook for the rest of this year? What are your quant strategies telling you about the future of the economy and the market? Obviously, you're not a fortuneteller.

Dr. Gerber: It would be wonderful if I had a crystal ball. Even without it, I can tell you that we still expect to see extremely volatile days ahead. Here at TWIN, we conduct an analysis of daily returns on the New York Stock Exchange back to

NYSE Composite Index - Daily Performance (Dividends Omitted)

Best Days				Worst Days			
Rank	Date	Level	Change (%)	Rank	Date	Level	Change (%)
1	**13-Oct-2008**	6401.0	12.2	1	**19-Oct-1987**	1360.0	-19.2
2	**28-Oct-2008**	5733.4	10.3	2	**15-Oct-2008**	5760.0	-9.7
3	**21-Oct-1987**	1533.4	9.0	3	**1-Dec-2008**	5092.7	-9.0
4	**13-Nov-2008**	5715.8	7.4	4	**29-Sep-2008**	7204.0	-8.7
5	**23-Mar-2009**	5185.9	7.3	5	**26-Oct-1987**	1352.2	-8.1
6	**24-Nov-2008**	5313.8	7.1	6	**9-Oct-2008**	5810.0	-7.9
7	**21-Nov-2008**	4959.8	6.6	7	**20-Nov-2008**	4651.2	-7.2
8	**10-Mar-2009**	4499.4	6.5	8	**22-Oct-2008**	5630.5	-7.0
9	**20-Oct-2008**	6287.6	5.7	9	**19-Nov-2008**	5012.0	-6.6
10	**16-Dec-2008**	5805.0	5.6	10	27-Oct-1997	4897.9	-6.6
11	24-Jul-2002	4791.5	5.3	11	31-Aug-1998	5081.7	-6.2
12	**19-Sep-2008**	8187.1	5.3	12	**20-Jan-2009**	5058.1	-6.1
13	27-May-1970	419.3	5.2	13	8-Jan-1988	1448.9	-6.1
14	29-Jul-2002	5125.2	5.2	14	13-Oct-1989	1962.1	-5.8
15	16-Mar-2000	6708.4	4.9	15	**6-Nov-2008**	5667.4	-5.7
16	**4-Nov-2008**	6345.1	4.8	16	**12-Nov-2008**	5320.7	-5.6
17	**29-Oct-1987**	1441.0	4.6	17	**2-Mar-2009**	4361.0	-5.5
18	8-Sep-1998	5377.7	4.6	18	**7-Oct-2008**	6388.4	-5.4
19	**30-Sep-2008**	7532.8	4.6	19	**5-Nov-2008**	6012.2	-5.2
20	**18-Sep-2008**	7775.2	4.5	20	**17-Feb-2009**	4939.1	-5.1

1966, which provides a historical perspective on the market. Since January 1966 there are close to 11,000 days in our constantly updated database. We often look at the table below, which lists the 20 best and 20 worst days for the NYSE Composite Index from January 1966 through March 2009 — the 20 days when the New York Stock Exchange had the biggest percentage increase in prices and the 20 days when the New York Stock Exchange has had its most negative percentage return.

There are 10,883 days in this analysis, so the 20 best and 20 worst days each represent 0.18% of the tail of the daily return distribution. What is amazing is that 27 of these 40 days (13 of the best and 14 of the worst) have occurred since Lehman collapsed on September 15, 2008. In each of the past seven months, there has been at least one of the 20 worst days for the NYSE. In five of those seven months, there has been at least one of the 20 best days for the NYSE. The two months that did not produce a top-20 day for the NYSE during this seven-month run were January and February. The extreme daily returns have continued in March as three new days have been posted on the list.

also evidenced by the dramatic rise in the VIX (options-implied volatility) index. While the VIX isn't at 80 any more, it's certainly a lot higher than it had been for the last couple of years.

TWST: What impact do you think all this talk about regulations such as the restoration of the uptick rule and changes in the mark-to-market accounting will have on the market?

Dr. Gerber: It's hard to predict today what regulations will finally be put into place and how they will impact the market. One of the reasons that we've been having these extreme market days up and down is because there is a tremendous amount of uncertainty about which regulations will be put into place and what the effectiveness or outcomes of those regulations will be. It's interesting that market volatility and stock dispersion started to rise when the uptick rule was abolished in July 2007. While some could argue that there is a correlation between the two events, I do not associate such a relationship. It is hard to believe that the abolishment of the uptick rule generated all of this volatility, especially when major financial institutions were failing due to the real estate bubble bursting and the major failures of

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The bunching of best and worst days is not unprecedented. In the market crash of October 1987, there was also a concentration of two best and two worst extreme days in a single month. Experiencing best and worst extreme daily returns around the same time not only increases market volatility but makes market timing a very difficult exercise.

From an extreme daily return perspective, we're currently in a high-risk regime, and all of our research on risk suggests that this high level of risk will likely persist. We also acknowledge that the market has rebounded sharply since March 10. Only in hindsight will we be able to say whether this current run-up is a bear market rally or the beginning of a new bull market. If it is just a bear market rally, then we may well test the 12-year lows we suffered on March 9. In either case (bear market rally or beginning of bull market), we are predicting that stock dispersion and market volatility will remain high.

As I mentioned earlier, in 2009 we began to bring down our slight emphasis on the larger cap growth side of the market and we think that stock valuations will start to matter once again. Our expectation is the market will get a little broader and mid-cap stocks will likely start outperforming larger cap stocks. However, those shifts are not nearly as important as the fact that the market has shifted into a heightened risk regime, which is

the subprime mortgage market. Nevertheless, on April 8, there'll be a new announcement and likely a new form of the uptick rule will be put into effect and many are hoping that it has the effect of reducing downside market volatility.

Implementing an uptick rule will affect all stocks. The recently announced changes in mark-to-market accounting rules will allow many troubled financial stocks to alter and strengthen their balance sheets, thereby improving their long-term growth prospects.

Too often public sentiment is created and then reversed when people jump to conclusions on issues they don't fully understand — today it's good, tomorrow it's bad. Or today it's bad and tomorrow when we have the chance to think about it some more, it's not so bad. Even President Obama has changed his perspective on the markets and his Administration's attitude toward Wall Street executives has softened in the last few weeks. The government is now looking to partner up with the private sector to help improve the balance sheets and lending position of many financial institutions.

TWST: Would you say that the climate at this time is not for the day traders and the amateur investors, that it really needs professional management?

Dr. Gerber: I think that you could argue it both ways. A day trader could argue that there are a lot of opportunities to make short-term or daily profits in volatile markets. However, when there are such extreme daily price movements, the cost of being wrong is exceptionally high. I believe that when the best and worst days for the market over a 43-year period are within days of each other, it makes day-trading much more difficult to predict trend continuations and trend reversals.

Our approach to investing is to consider the characteristics of the stocks in a portfolio from a longer-term perspective. Our goal is to consistently add value to our clients' portfolios over years rather than over days. If you are looking to produce value-added over a three- to five-year period, trying to be in and out of specific stocks on a daily basis is not the most prudent approach. There is so much noise inherent in monthly returns and even more in daily returns. An advantage of trying to predict a stock's forward return over a quarter or year is that the volatility of annual returns is less than the annualized volatility of daily returns. As you lengthen the time period that you are trying to predict future returns, you benefit from the smoothing of the noise in daily returns.

TWST: Is there anything that you wish to add?

Dr. Gerber: One of the unique aspects of TWIN is that we have built the majority of our own investment systems. Having to manage Long/Short strategies years before tools were commercially available to handle short positions, early in TWIN's history we became adept at developing our own research, portfolio management and trading tools. Our proprietary systems allow us to measure, monitor and manage the active bets in our portfolios. Unlike most commercially available systems today, our tools allow us to use our own Model and proprietary factors in the portfolio management and trading processes. We still employ industry-standard portfolio risk models, primarily as a method of risk management validation, but we think it's really critical to integrate our own valuation model with our own portfolio management risk tools.

Having our own research and portfolio management tools allows us to look at the world from our perspective rather than somebody else's. Of course having the best tools available to portfolio managers is important, but at the same time, managers have to know how to use them effectively. TWIN prides itself not only on building our own portfolio management and trading systems, but also on successfully applying them.

TWST: Thank you. (PS)

Note: Opinions are as of 4/8/09.

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