Intrinsic Value vs. Market Price: The Excess Return Period And That Elusive "Margin Of Safety"

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Abstract

The principle of convergence is well understood and most accept that in the long-term, market price and intrinsic value will converge. At any point in time, however, one may expect to see significant divergence between price and value. This analysis features a cross-sectional examination of 460 of the S&P 500 companies at a time when the market is under extreme duress. Of interest is the extent to which the market prices and intrinsic values of these firms are convergent, the "value drivers" responsible for the convergence/divergence, and the extent to which changes in the excess return period may influence valuations and, in turn, an investor's "margin of safety." A discriminant analysis provides a basis for distinguishing between those firms priced above and those priced below their respective intrinsic values and for identifying those variables that account for most of the between-group separation. Subsequently, intrinsic values are derived using different excess return periods and the resulting effect on the margin of safety is observed. Intrinsic values for the sample firms are derived from an estimate of free cash flow to the firm using Rappaport's (1998) model.

Introduction

Since April of 2000 the financial markets have experienced a variety of shocks resulting in a precipitous decline in the various indices. At the time of this analysis the Dow Jones Industrial Average (DJIA) was at 9243.26, 30 percent below its January 2000 high, the Nasdaq Composite was at 1463.21, 80 percent below its March 2000 high, and the Standard and Poor's 500 Index (S&P 500) was at 989.82, 30 percent below its March 2000 high. What this kind of sell off may suggest about the future direction of the markets is, of course, subject to considerable debate and speculation. What is not subject to debate and speculation, however, is the sobering effect this has had on investor sentiment and the extent to which closely watched measures of financial performance have "regressed toward the mean." With this backdrop in mind, the following analysis tests the strength of the relationship between price and value among S&P 500 firms and attempts to account for any price/value discrepancies. It also examines the nature of the relationship between the excess return period and intrinsic value and the extent to which a "margin of safety" may exist for investors in a market under extreme duress.

Firms included in this analysis were priced over the second quarter of 2002 during a period when the S&P 500 ranged from a high of 1146.54 to a low of 989.52. Intrinsic values and market prices were determined simultaneously, with intrinsic value derived from expected free cash flows to the firm. While a 10-year excess return period was used as a baseline for the statistical analyses, the consequence of using a shorter/longer excess return period was subsequently considered. In this regard, Rappaport (2001) points out:

Readers with comments or questions are encouraged to contact the author via email.

> *Analysts typically choose a forecast period that is too short when they perform discounted cash-flow valuations. If you believe that a forecast beyond two or three years smacks of sheer speculation, then you're missing the point. Market prices do reflect long-term cash flow expectations. In fact, prices in the stock market suggest a market-implied forecast period of between ten and fifteen years (p. 32)*

While there tends to be a lack of consensus regarding a proper definition of free cash flow (Mills, Bible and Mason, 2002), this analysis relies on a broadly accepted definition (Rappaport, 1998; Copeland, Koller and Murrin, 2000) where free cash flow is defined as earnings before interest and taxes minus taxes and any incremental investment in working capital and fixed assets. Correspondingly, intrinsic value, defined as the present value of a firm's forecasted annual free cash flows plus the residual value of all cash flows beyond the forecast period, was calculated as follows:

$$V_O = FCFF_1/(1 + k_o) + FCFF_2/(1 + k_o)^2 \cdots\cdots\cdots + RV_t/(1 + k_o)^t$$

where:

$$FCFF_t = Sales(1 + g)(EBIT\ margin)(1 - t) - Sales(g)(WCRR + P\&ERR_{NET})$$

$$RV_t = Sales(1 + g)(EBIT\ margin)(1 - t)/(1 + k)^t$$

and:

g = expected rate of growth in sales

EBIT margin = expected operating profit margin

t = cash rate of taxation

WCRR = incremental working capital investment rate ($\Delta NWC/\Delta NS$)

P&ERR = incremental fixed capital investment rate ($\Delta P\&E_{NET}/\Delta NS$)

k_o = weighted average marginal cost of capital

Of course, it is one thing to define what one means by intrinsic value and quite another to "accurately" estimate what that value is. The process is confounded by, among other things, a number of judgment calls that an analyst or investor must make, any one of which can have a significant impact on the resulting estimate. For example, the value-creation period (i.e., the period of time during which a firm is able to earn a return on invested capital that exceeds the cost of that capital) can vary significantly among firms. And there is the issue of whether to treat a firm's residual value as a straight perpetuity or as a perpetuity with growth—to say nothing of treating it as a function of some earnings or asset based multiple. Finally, there is the matter of judgment in estimating rates of growth, profitability, taxation, and investment, as well as in specifying a firm's expected cost of capital. Again, this analysis utilized a 10-year excess return period, but also tested the consequences of using shorter and longer periods. Residual value was treated as a straight perpetuity and the value drivers were derived from historical precedent or analysts' estimates.

Fundamental to this analysis is the premise that the extent to which a stock's price may vary from its intrinsic value is in part, perhaps in large part, a function of market inefficiencies. Correspondingly, in a less efficient market the process by which market price accurately reflects underlying economic value requires time and is more variable in nature. Under such conditions, "a more realistic depiction of the relationship between price and value is one of continuous convergence rather than static equality" (Lee, Myers, and Swaminathan, 1999). But even here there is considerable evidence to suggest that "continuous" should not be taken to mean a relatively smooth

progression, even when viewed over an extended period of time. Stock prices are by nature highly variable relative to intrinsic value, due principally to market inefficiency and behavior characterized by no less an authority on markets than Federal Reserve Chairman Alan Greenspan as "irrational exuberance." In their original discussion of the relationship of intrinsic value to price, Graham and Dodd (1934) are unambiguous regarding their view of how market prices are determined:

> *The general question of the relation of intrinsic value to the market quotation may be made clearer by the appended chart (chart not included), which traces the various steps culminating in market price. It will be evident from the chart that the influence of what we call analytical factors over the market price is both partial and indirect—partial, because it frequently competes with purely speculative factors which influence the price in the opposite direction; and indirect, because it acts through the intermediary of people's sentiments and decisions. In other words, the market is not a weighting machine, on which the value of each issue is recorded by an exact and impersonal mechanism, in accordance with its specific qualities. Rather should we say that the market is a voting machine, whereon countless individuals register choices, which are the product partly of reason and partly of emotion.*

In a subsequent assessment, John Burr Williams (1938) further underscored the arbitrary and capricious nature of the relationship between market price and underlying economic value:

> *Since market price depends on popular opinion, and since the public is more emotional than logical, it is foolish to expect a relentless convergence of market price toward investment value. Corroboration of estimates [of intrinsic economic value] by subsequent market action, therefore, ought not to be expected. After all, investment value and market price are two quite different things.*

In fact, the extent to which market price accurately reflects intrinsic value is highly variable among companies and time periods. The efficient markets hypothesis in whatever form describes how markets should perform under ideal (with respect to information flows) conditions, not how markets do perform under actual conditions. Whatever the version, the efficient markets hypothesis is based on the flawed assumption that all market participants have access to the same information at the same time. Clearly this is not the case, as recent stock market events and revelations have shown. Even competitive, well regulated markets, characterized by high levels of transparency, good corporate governance, and active investors are bound to be less than efficient in accurately measuring the relationship of market price to intrinsic value. In fact, taking advantage of intrinsic value is predicated on the assumption that a less than efficient market, having under priced a valuable asset, will come to its senses over a reasonable period of time (a period of time sufficient for a reassessment and upward revision of expected free cash flow) and bid up market price until it converges on a higher underlying economic value. The likelihood of this occurring goes up in the presence of a greater "margin of safety," which is a measure of the extent to which intrinsic value exceeds market price.

Graham and Dodd (1934) introduced the concept of margin of safety and argued that a margin of at least 20 percent is desirable. A margin of safety assumes that the market price is low relative to intrinsic value in absolute terms rather than just in terms of the market as a whole. This analysis first considers which determinants of intrinsic value (value drivers) account for most of the under/over valuation among firms in the sample and, second, the extent to which changes in an investor's assumptions regarding the excess return period (i.e., the period of time over which a firm's return on invested capital can be expected to exceed its cost of capital) might affect the margin of safety among S&P 500 firms in a market characterized by heavy selling pressure.

Sample Design and Statistical Methodology

The sample included 460 of the S&P 500 firms. Like similar empirical studies of the relationship between market price and intrinsic value (Frankel and Lee, 1998; Penman, 1997; and Botosan, 1997), the analysis relied on cross-sectional data. Insurance companies were excluded and Berkshire Hathaway was dropped from the analysis

because of the confounding effect of its extraordinarily high stock price. Once again, intrinsic values were derived using Rappaport's (1998) model with free cash flow being treated as a function of a firm's expected rate of growth in sales, EBIT margin, marginal cash rate of taxation, incremental rate of investment in working capital, incremental fixed capital investment rate net of depreciation, weighted average cost of capital, and excess return period. Imbedded in the cost of capital calculation was a risk-free rate based on the 10-year Treasury bill rate. This is a significant consideration because value estimates based on short-term T-bill rates tend to outperform value estimates based on long-term (30 year) Treasury bond rates (Lee, Myers, and Swaminathan, 1999).

A three dimensional analytical design was employed. First, descriptive statistics were calculated for the value drivers and for financial measures indirectly related to the value drivers and to free cash flow. Second, a two-group step-wise discriminant analysis was conducted between overvalued firms and undervalued firms. Of interest here was the extent to which each of the value drivers accounted for a significant amount of group separation and the underlying differences between over and undervalued firms in the sample. Finally, the extent to which changes in the excess return period might affect intrinsic value estimates was considered.

Empirical Results

Table 1 presents the descriptive statistics for market price, intrinsic value, the value drivers, and financial measures related to the value drivers derived from the sample of S&P 500 firms. On average, firms in the sample were undervalued by approximately 34.5 percent, a result that tends to be historically consistent with the sample's implied PE multiple of 14. Average revenue was $14.9 billion. With respect to the value drivers, the average rate of growth in revenue was 11.8 percent; the average EBIT margin was approximately 14.5 percent; earnings were taxed on a cash basis at an average rate of nearly 36 percent and only slightly above the statutory rate of 35 percent; the average incremental working capital investment rate was 12.38 percent (i.e., each dollar of sales required an additional 12.38 cents in working capital); the average incremental capital investment rate was 7.71 percent (i.e., each dollar of sales required and additional 7.71 cents in fixed assets); and the mean weighted average cost of capital for firms in the sample was 7.74 percent.

Table 1: Descriptive Statistics

Variable	Mean	Standard error	Std. deviation
Market price ($)	34.60	.9805	21.03
Intrinsic value ($)	46.56	2.8737	61.63
Revenue ($)	14.908B	1079.10	23.144B
Growth rate (%)	11.81	.37	8.01
EBIT margin (%)	14.48	1.3941	29.90
Cash tax rate (%)	35.99	.451	9.68
Shares outstanding (#)	557.17M	49.14	1.054B
Depreciation percentage	4.86	.283	6.06
WC investment rate (%)	12.38	1.5268	32.74
Capital investment rate (%)	7.71	.673	14.44
Current asset ($)	8.093B	1629.12	34.941B
Current liabilities ($)	6.265B	1165.13	24.989B
Beta coefficient (#)	1.078	.0146	.3133
Debt ($)	7.177B	1155.12	24.774B
Preferred stock ($)	193.37M	55.35	1.187B
WACC (%)	7.74	.0819	1.75

Additionally, sample firms had an average current ratio of approximately 1.3, were only slightly more risky as a group than the market with an average beta-coefficient of 1.078, carried debt in all forms of approximately $7.2 billion and an average debt to total capitalization ratio of 37.4 percent, and, not surprisingly, were very modest users of preferred equity with average preferred stock of $193.4 million.

Of particular interest here is the relationship between the average market price and the average intrinsic value of the sample firms. If one accepts the generally held view among investors and analysts that market price is the best available empirical proxy for intrinsic value, then the market clearly expects a future characterized by more modest rates of revenue growth, lower levels of profitability, higher investment related cash outflows, a higher cost of capital, or some combination of these conditions. The market may also be thinking in terms of a shorter excess return period than was used as a baseline in this study. Again, this consideration is addressed later in the analysis.

Table 2 presents the results of the step-wise discriminant analysis of the free cash-flow model used to estimate the intrinsic values of the sample firms. The focus here was on the extent to which value drivers with demonstrated long-term predictive power (Rappaport 1998) would retain their potency in a declining market. If the market were indeed driven by a strong free cash-flow orientation, one would expect the value drivers, as determinants of free cash flow, to retain their potency even in a rapidly declining market. If on the other hand the market's focus on free cash-flow is more ephemeral, especially under conditions of adversity, one might expect to see some discontinuity, perhaps even a complete "disconnect," in the extent to which the value drivers are consistent predictors of shareholder value. In this regard, Williams (1938) offered the following thoughts:

> *If opinion were not founded in part on current dividends and changes therein, there would be nothing to prevent price and value from drifting miles apart… Since market price depends on popular opinion, and since the public is more emotional than logical, it is foolish to expect a relentless convergence of market price toward investment value. Corroboration of estimates of intrinsic economic value by subsequent market action, therefore, ought not to be expected. After all, investment value and market price are two quite different things.*

Correspondingly, a market ruled by a long-term investment perspective should assure a consistently strong relationship between the value drivers and higher market prices. Where this is not the case, one might rightfully argue that price is being driven by something other than generally accepted determinants of economic value.

Table 2: Determinants of Value Under Conditions of Market Duress:
A Two-Group Step-wise Discriminant Analysis (1)

Function 1 / **Variables**	**Standardized discriminant coefficients**	**Wilks' Lambda**	**Chi-square**	**df**	**Sig.**
Overall		.952	22.307	2	.000
Investment rate	.805	.982		1	.000
Growth rate	-.660	.972		2	.000

(1) Variables excluded from the analysis through the step-wise procedure: EBIT margin, cash rate of taxation, working capital investment rate, and the cost of capital.

The two-group step-wise procedure produced n-1 discriminant functions and variables were selected for inclusion based on their contribution to the minimization of Wilks' Lambda. The resulting discriminant model produced a Wilks' Lambda statistic of .952 with an accompanying Chi-square statistic of 22.307, which with two degrees of freedom was significant well beyond the .01 level. This outcome suggests that whether a S&P 500 firm is under/overvalued relative to current market prices is largely explained by investor expectations regarding sales growth and investment in working capital. Undervalued firms in the sample were expected to grow at an average rate of 12.86 percent and have an average working capital investment rate of 5.34 percent, while overvalued firms were expected to grow at an average rate of 10.74 percent and have an average working capital investment rate of 10.13 percent. Or, in other words, undervalued firms were projected to be significantly better in utilizing their working capital to grow sales. Correspondingly, while group means were virtually identical for the other value drivers, within-group variance was much higher for the overvalued firms. Table 3 summarizes the resulting group-

wise descriptive statistics and highlights the means and standard deviations of the statistically significant discriminant value drivers.

Table 3: Group Means

Value Drivers	Group 1 (Undervalued)		Group 2 (Overvalued)	
	Mean	*Std. Deviation*	*Mean*	*Std. Deviation*
Growth	**12.86**	**7.03**	**10.74**	**8.79**
EBIT margin	14.43	23.49	14.54	35.30
Cash rate of taxation	35.38	7.29	36.60	11.59
WC investment rate	**5.34**	**8.16**	**10.13**	**18.50**
Capital investment rate	11.71	25.46	13.07	38.83
WACC	7.77	1.69	7.70	1.83

While the resulting Wilks' Lambda statistic clearly suggests the presence of significant differences between under/overvalued firms from the sample of S&P 500 companies, perhaps the most meaningful test of group separation is the extent to which the resulting discriminant model can effectively predict group membership on a cross-validated basis. In cross-validation, each case is classified by the functions derived from all cases other than that case, thus creating what is in effect an independent sample as a test medium for the discriminant model. In addition, prior probabilities were employed (50.4 percent of the firms in the sample were undervalued; 49.6 percent of the firms in the sample were overvalued) so that cases used in the classification process were adjusted for actual group size in the sample. Table 4 presents the results of the cross-validation process.

The "hit-ratio" or percentage of cross-validated cases correctly classified [(167 + 117)/460] was 61.7 percent, a level of classification effectiveness significantly above what one would expect by chance based on a proportional chance criterion (C_{pro}) of approximately 50 percent (Morrison, 1969), where:

$$C_{pro.} = p\alpha + (1 - p)(1 - \alpha)$$

and:

p = true proportion of undervalued firms

α = proportion classified as undervalued firms

Table 4: Classification Matrix for Under/Overvalued S&P 500 Companies

Actual Group Membership	Predicted Group Membership		Total/%
	Undervalued/%	Overvalued/%	
Undervalued	167/72.0	65/28.0	232
Overvalued	111/48.7	117/51.3	228
Total	278	182	

This result is consistent with what one would expect given a Wilks' Lambda statistic that is significant well beyond the .01 level. As the values on the diagonal of the classification matrix indicate, the model was more effective in identifying and classifying undervalued firms than overvalued firms, but in both instances performed better than one would have expected by chance given prior probabilities of 50.4 percent undervalued and 49.6 percent overvalued.

At this point it might well be argued that these results tend to reflect the thinking of a growing number of investors. As the market has become progressively more bearish, investors have become more skeptical of reported earnings, more critical of frivolous investment in pursuit of what in so many instances has turned out to be elusive synergies, and put-off by arcane off-balance sheet financing schemes that hide debt and obscure the firm's true cost of capital. More investors appear to be focusing on top-line growth-because revenue is more difficult to "fudge" than earnings, and on selective investment and the enhanced liquidity it can bring. Undervalued firms in the sample project significantly higher rates of growth and significantly lower working capital investment rates. It might also be argued that these results provide evidence of diminished potency among some of the value drivers in the face of heightened investor anxiety and, correspondingly, what Williams (1938) described above as a public that on occasion is more emotional than logical, where it is foolish to expect a relentless convergence of market price toward investment value.

Finally, the study looked at the extent to which assumptions regarding the length of the excess return period might influence estimates of intrinsic value and, in turn, an investor's margin of safety. Table 5 presents intrinsic value estimates and rates of change for the sample of firms using excess return periods of one to 15 years and holding the value drivers constant. The "baseline" excess return period of 10 years is highlighted.

The average stock price of firms in the sample was $34.59, which coincides with an excess return period of approximately three years and an intrinsic value of $34.06. When the sample was split into under and overvalued firms, the average stock price of overvalued firms was $32.51 and the average price of undervalued firms was $36.64. Correspondingly, the intrinsic value of overvalued firms was $16.22 and the intrinsic value of undervalued firms was $76.37. In other words, undervalued companies were worth more on average to begin with and had a higher intrinsic value than overvalued firms. If one treats the excess return period as a proxy for the market's average holding period, the typical investor would appear to be basing estimates of underlying economic value on cash flow projections of approximately three years. In this regard, a shorter excess return period would be consistent with greater investor skepticism as short-term consequences throw long-term expectations into doubt. Rappaport (2001) is very clear about this process of reassessment within and among industries: "Furthermore, implied forecast periods for companies cluster within an industry, although these periods can change over time." He also points out "most companies need over ten years of value-creating cash flows to justify their stock price…the key thing to remember is that the stock market takes a long-term view."

With convergence, overvalued sample firms could expect to see their market price decline on average by approximately 50 percent (i.e., from an average price of $32.51 to an average price of $16.22. Under valued sample firms had an excess return period of approximately 13 years and could expect to see their market price increase on average by over 200 percent (i.e., from an average price of $36.64 to an average price of $76.37), implying a compounded annual rate of return of approximately six percent.

Results of the analysis of the relationship between changes in the excess return period and the number of sample firms satisfying the Graham and Dodd margin of safety criterion of 20 percent are presented in Table 6. The "baseline" excess return period of 10 years is again highlighted. The focus here is on the distinction between the potential to earn an excess return and the probability that an excess return is likely. Rappaport (2001) puts the proposition thusly:

> *Your decision depends on two factors. The first is the stock price's percentage discount to expected value, or its margin of safety. The greater the discount to expected value, the higher the prospective excess return-and the more attractive a stock is for purchase. Inversely, the higher a stock's price premium to its expected value, the more compelling she selling opportunity.*

Table 5: The Excess Return Period and Intrinsic Value

Excess Return Period (years)	Intrinsic Value ($)	Δ in Intrinsic Value ($)	%Δ in Intrinsic Value
1	27.78		
2	30.85	3.07	11.05
3	34.06	3.21	10.41
4	37.40	3.34	9.80
5	40.89	3.49	9.03
6	44.54	3.65	8.09
7	48.34	3.80	8.53
8	52.31	3.97	8.21
9	56.45	4.14	7.91
10	**60.77**	**4.32**	**7.65**
11	65.28	4.51	7.42
12	69.99	4.71	7.22
13	74.90	4.91	7.02
14	80.03	5.13	6.85
15	85.38	5.35	6.68

As the excess return period increases, intrinsic value increases (assuming again that the value drivers remain constant) and the number of firms priced at least 20 percent below intrinsic value increases accordingly. Assuming an excess return period of three years, intrinsic value is $34.06 per share; the margin of safety price, assuming a margin of safety of 20 percent, is $27.25; and 185 (40.2 percent) of the firms in the sample traded at a price below $27.25. At the baseline excess return period of 10 years, 364 (79.2 percent) of the firms in the sample traded at prices below the criterion margin of safety of $48.62. Finally, when the excess return period is extended to fifteen years, still within the market implied forecast period of 10 to 15 years suggested by the stock market (Rappaport, (2001), 436 (94.7 percent) of the firms in the sample traded at prices below the criterion margin of safety price of $68.30.

Table 6: Changes in the Excess Return Period and Its Impact on the Margin of Safety Criterion

Excess Return Period (years)	Intrinsic Value	Margin of Safety Price	Number of Firms Above Criterion	Percentage of Firms Above Criterion
1	27.78	22.22	130	28.4
2	30.85	24.67	161	35.0
3	34.06	27.25	185	40.2
4	37.40	29.92	216	47.2
5	40.89	32.71	240	52.1
6	44.54	35.63	269	58.6
7	48.34	38.67	294	64.0
8	52.31	41.85	312	67.9
9	56.45	45.16	342	74.3
10	**60.77**	**48.62**	**364**	**79.2**
11	65.28	52.22	389	84.6
12	69.99	55.99	405	88.0
13	74.90	59.92	418	90.8
14	80.03	64.02	427	92.9
15	85.38	68.30	436	94.7

Summary

This study was based on a cross-sectional analysis of 460 of the S&P 500 firms. The sample was taken during the first and second quarters of 2002 at a time when the equity markets were under considerable duress. The analysis focused on (1) examining the extent to which market prices and intrinsic values were convergent/divergent among sample firms, (2) identifying the "value drivers" responsible for any convergence/divergence, and (3) determining the extent to which changes in the excess return period might influence valuations and, in turn, an investor's "margin of safety." Rappaport's (1998) model for calculating free cash flow to the firm was used, assuming a baseline excess return period of 10 years. A two-group step-wise discriminant analysis was subsequently conducted to identify over/undervalued firms and those value drivers responsible for any statistically significant group separation. Of additional interest here was the extent to which the value drivers might retain their potency in accounting for cash flow under severe market conditions. As it turned out, most of the difference between under and overvalued firms was explained by significantly higher rates of growth and significantly lower working capital investment rates among undervalued firms. Overvalued firms were distinguished by slower growth and higher working capital requirements than under valued firms. The two groups were virtually identical in terms of their EBIT margins, cash rates of taxation, working capital investment rates, and costs of capital.

In addition to testing for the statistical significance of the difference between the two groups of firms, the resulting discriminant model was used to classify sample firms on a cross-validated basis. The classification result confirmed the presence of significant differences between the two groups attributable largely to different growth and capital investment rates. Here, one might reasonably expect a market, fed up with the manipulation of earnings and frivolous investment financed by too much debt, to be attracted to more easily understood and harder to manipulate numbers like sales and the rate of growth in sales. Correspondingly, one way to reduce working capital intensity and the financing that goes with it is to invest more selectively and to get more out of the assets in terms of sales-another characteristic of the undervalued firms in the sample. It might also be argued that these results do indeed provide evidence of diminished potency in the face of heightened investor anxiety among those value drivers excluded by the step-wise process and, correspondingly, evidence of what Williams (1938) described as a public that on occasion is more emotional than logical, where it is foolish to expect a relentless convergence of market price toward investment value.

Finally, the study looked at the extent to which assumptions regarding the length of the excess return period might affect estimates of intrinsic value and, in turn, an investor's margin of safety. If one treats the excess return period as a proxy for the market's average holding period, the results of this analysis suggest that the average investor is basing estimates of underlying economic value on cash flow projections of approximately three years, the point in time where the average intrinsic value and average market price of sample firms tended to converge. In this regard, a shorter excess return period would be consistent with a market under duress. The results of this analysis suggest that whether a stock appears to be under or overvalued depends to a very great extent on the assumed excess return period, perhaps to a greater extent, in fact, than on assumptions regarding any of those measures that frequently are more prominently identified as value drivers. Furthermore, a shorter excess return period would appear to be entirely consistent with a market ruled more by emotion than logic, a market made skittish by an uncommon level of uncertainty, a market under prolonged and extreme selling pressure. 🕮

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Notes