An Analysis of the Price Rebound Effect on Publicly Traded Stocks that have Precipitously Dropped in Price

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Strategists have been trying to quantify and predict the behavior of stock market traders for many years. Sometimes a pattern emerges in various areas of stock market activity. Whether random or not, a researcher will begin to study this pattern. There is a pattern to be considered concerning the activity of stocks that have precipitously dropped in price. At first glance one will notice that three out of four of the stocks whose prices have fallen so much that they are considered among the "biggest losers" for the day[1], will advance at least five percent from its new low price within eight weeks. Obviously, if one could predict which stocks would advance in price then it would be very easy to earn a 30 percent return on an initial investment in one year[2].

Although research in this area is uncommon, stock strategist Rick Munarriz (1998) makes mention of the predictability of a stock’s price whose company is showing signs of trouble . He notes that the cause of the stock losing much of its value can be observed before the stock actually loses value. To illustrate this, consider a company that has experienced a drop in stock price as a result of its recent release to the press that it is entering bankruptcy proceedings. The telltale signs of bankruptcy can be seen months before the press release.

It can be assumed that a stock that is losing value might rebound in price if the reason for the initial drop in price was of a certain nature. One example might be a stock dropping in price because its company is restructuring, but quickly rebounds because its restructuring efforts proved to be successful in the eyes of investors.

The concept that a stock’s price can be expected to rebound if the initial drop was of a certain nature is consistent with literature from other researchers in similar fields. One such similar theory is the "Dogs of the Dow" approach. This theory postulates that a strong company (preferably a member of the Dow Jones Industrial Average or Standard & Poor 500) whose stock is under-performing, would be a good investment (David Goldman, 1998). The company may simply exhibit the ominous signs of a forthcoming precipitous drop in price, but otherwise be a wise investment. Even the most novice investor can recall a member of the Dow making headlines because of its drop in price.

This study will attempt to measure what causes the price of a stock to rebound after a precipitous drop in price. Other researchers have formulated stock purchase strategies based on quantifiable data and ignore what many consider to be the single most influential determinant of short-term price fluctuations in the stock market. That determinant is panic or irrationality. This illusive, immeasurable human component could be similar to tastes and preferences. Many economists would argue that tastes and preferences do not change very quickly, but no one can offer a reason as to why many stock prices fluctuate so violently. The notion that panic is a determinant of price fluctuations could be regarded as a shock to consumer tastes and preferences and a shock to seller expectations.

The company that issued the stock is probably not very different now than it was yesterday. If this is the case, then what causes a stock price to plummet from yesterday’s closing price? Many stocks that receive the stigma of being a big loser are losers because of some quantifiable reason, like bankruptcy (losing money and customers is quantifiable). However, some stocks experience a drop in price because of immeasurable variables like rumors or the harmful effects of ambiguous news (sometimes the news of a merger is ambiguous). Therefore, it is hypothesized that stocks that have precipitously dropped in price have done so because of panic in the market and not because of random events.

There are contrasting opinions, however. Peter Lincoln (1998), a staff reporter and stock strategist from The Motley Fool[3], succinctly summarizes a major problem with this type of study. His position is that stock market traders have always been and will always be irrational, and any attempt to quantify their behavior is folly. In his opinion, any explanatory variable is a proxy at best.

An in-depth description of the model is forthcoming, including a discussion of the construction of the variables. Following that are the results and interpretations of the regression. Finally, a conclusion is presented.

I. Model

The variables that will drive the price up in the next few weeks should be quantifiable since stock traders will begin to act more rationally as time progresses following an irrational act. The two most important influences on whether or not a stock will rebound in price after a precipitous drop are the determinants of the demand for the stock and the determinants of the supply of the stock.

The relevant determinants of demand for this study were considered to be; the change in tastes and preferences of the buyer, the change in the number of consumers, and the change in the buyer's expectations of the future price. An important determinant of demand that is excluded is the change in the price of related goods. It is immeasurable because one would have to know which stocks each consumer purchased after they sold the undesirable stock.

The relevant determinants of supply were considered to be the change in the number of suppliers, and the change in the seller's expectations of the future price. A change in technology and a change in resource prices ought to have an indirect impact on the price of the stock since the company that issued the stock will supply its good based on these determinants. But in a secondary market, stock suppliers are also stock demanders. This negates the importance of resource prices and technology changes since the stock seller does not add to the value of the stock.

The model is as follows. The ratio of the day 56 stock price divided by the day one price is a function of the stock's percent change in price from day zero to day one, price earnings ratio, beta value, and the percent change in volume on day one from its 50-day moving average. The ratio of the day 56 stock price divided by the day one price (D56CHG) was chosen as the dependent variable because it is hypothesized that this will be a long enough time period for traders to recover from their panic and begin to act rationally and a short enough time period to prevent any serial correlation. The descriptions of the variables are in Table 2 and the summary statistics are in Table 3.

Table 2: Variable Descriptions

Name	Type	Expected Sign	Definition
D56CHG	DV		day 56 stock price divided by the day one price
PERSCHG	IV	negative	percent change in price from day 0 to day 1
PERATIO	IV	negative	stock price on day 0 divided by earnings per share
BETA	IV	negative	volatility measurement; higher beta is more volatile
VPCHG	IV	negative	percent difference between volume of shares traded on day one and 50-day moving average volume

Table 3: Summary Statistics

Name	Minimum	Maximum	Mean
D56CHG	0.189	1.756	0.905
PERSCHG	-0.444	-0.034	-0.120
PERATIO	-343.75	2207.0	43.979
BETA	-0.62	2.78	1.070
VPCHG	-13.617	383.528	27.222

The percent change in price from day zero to day one (PERSCHG) is expected to have a negative influence on the dependent variable. This is because a small negative change, like -3.3 percent, should be a result of rational behavior from the trader and not from any panic that might occur in the market. A large negative percent change, like -44.4 percent, should reflect the existence of irrational or panic-stricken behavior in the market. That is, a very large drop in price is expected to be because of panic and a very small drop in price is expected to be a normal random occurrence. Furthermore, panic that produces a drop in price is expected to dissipate quickly and result in the price of the stock rebounding within 56 days.

The price earnings ratio (PERATIO) is calculated by dividing the price of the stock on day zero by the company's earnings per share. Frequently, upward pressure on the price of a stock exists in the market. If this happens as a result of a change in the tastes and preferences of the buyers or a change in the expectations of buyers and sellers, then the PERATIO would rise above the long run stable level that the market tolerates. The tolerated stable PERATIO is widely considered to be an accurate measurement of the stock's value. This is similar in theory to a natural upper price limit. An excessive PERATIO commonly occurs over a short time period; therefore it could be the motivating factor for the downward turn of the stock's price. In other words, sellers may want to get out from under an overvalued stock. Therefore a smaller PERATIO (relative to the industry to which the stock belongs) would be a more desirable trait to buyers. Consequently, PERATIO should have a negative effect on D56CHG.

The beta value (BETA) is a measure of the stock's volatility and is calculated by stock strategists and brokers (The Motley Fool, 1998). A beta value shows how volatile the stock is in relation to the market as a whole. A beta of one means that the stock's price moves in tandem with the market, whereas a beta of 2 means that the stock price moves twice as much as the market. That is, when the market moves up, the stock's price moves up twice as far, when the market moves down, the stock price moves down twice as far. It is anticipated that this variable will be a good proxy for the change in the relevant determinants of supply and demand, since price fluctuations are chiefly the result of shifts in the supply or demand curve. A higher beta means more shifts in the curves and therefore less price predictability (D56CHG). As an investment tool, stocks are expected to rise in value, so a stock that cannot be relied upon to rise in value will be undesirable. Therefore, this variable should have a negative effect on the regressand.

The last variable included in this study is the percent change in volume of shares traded as measured by the deviation of volume on day one from the stock's 50-day moving average volume (VPCHG). This is a good proxy for the change in the number of traders, but more importantly, it directly reflects a change in the traders' expectations of the stock's future price. That is, the increased activity, and hence the abrupt drop in price, is largely the result of traders expecting the price of the stock to fall in the near future. The assumption here is that an outward shift in the supply curve, and by implication an increase in the number of sellers, is caused by traders expecting the price of the stock to precipitously drop in the near future. If the VPCHG is high then it might take longer than eight weeks for the price of the stock to rebound, because more people expected the stock to drop in price and will therefore be unwilling to purchase the stock in the near future. Consequently, this variable should have a negative effect.

II. Data

A cross-sectional design was chosen with the ratio of the day 56 stock price divided by the day one price (D56CHG) as the dependent variable. The frequency of this variable emerged with a rather leptokurtic appearance but is otherwise evenly distributed (n=111, see Figure 1). The range was -3.3 percent to -44.4 percent (see Table 3).

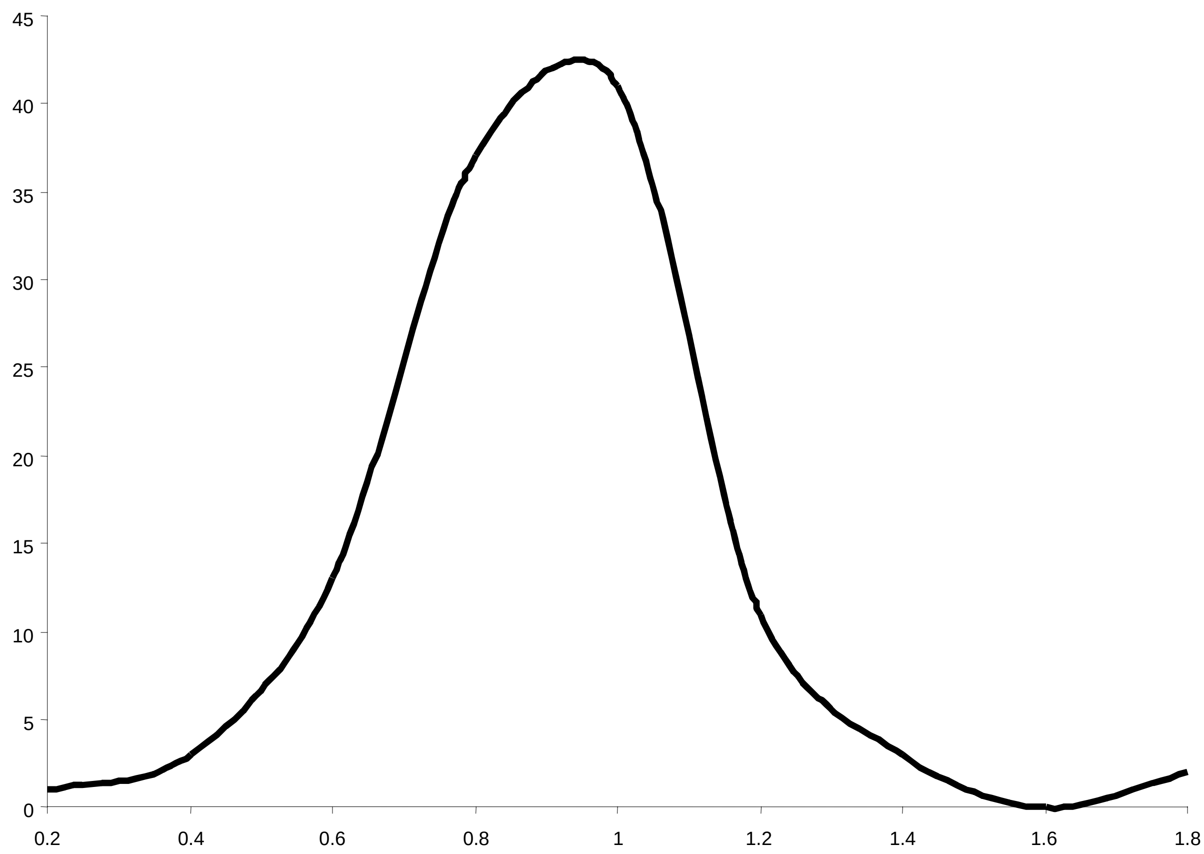

Figure 1: D56CHG Frequency Distribution

The collection of data that are considered in this study spanned a time period from March to July 1998, and about four weeks separated each collection. The data were found among the stocks whose drastic drop in price caused them to be included in the list of "biggest losers" for the day. That is, only stocks whose prices lost at least 3.3 percent of their value from the previous day are considered (found on the "biggest losers" list). Any loss smaller than 3.3 percent was thought to be the result of randomness in the market and not the result of a change in the determinants of supply and demand. The lower limit of 3.3 percent was arbitrary but was chosen because the list of biggest losers rarely contained a change smaller than this percentage.

The data used for this study were gathered from the Holt Report, an online daily market summary periodical published by George Holt. There were five collection dates, and each collection produced approximately 30 observations, totaling 150. Only stocks with complete data were used, so 39 observations were deleted because of insufficient data (n = 111). No stocks were counted more than once even if they repeatedly appeared on the list of "biggest losers".

Microsoft Investor (1998) was the source for other stock price data, including prices for stocks on day zero, one and 56. Earnings per share, volume, and beta values were collected from The Motley Fool (1998).

The model only includes data that are easily available to amateur investors to test the hypothesis that the behavior of these amateurs determines the direction of a stock's price, especially stocks that are precipitously dropping in price. More specifically, it is hypothesized that a stock whose price has dropped more than 3.3 percent from the previous day's price has done so because of panic in the market for the particular stock. Therefore, it is assumed that after the panic subsides and the value of the stock in question is quantified objectively rather than emotionally, then the stock will experience an increase in its price within the next eight weeks.

III. Results

Ordinary Least Squares was conducted and the resulting regression equation and the respective t-values can be seen in Table 4. Adjusted R^2 was 0.1172, indicating that after adjusting for degrees of freedom, the model can predict 11.72 percent of the variation in the ratio of the day 56 stock price divided by the day one price. The standard error of the regression was found to be 0.22116 (D56CHG mean = 0.9055). Every variable in the study had the correct signs for the direction of effect, and proved to be statistically significant at the 5 percent level (α =0.05). The model is not misspecified according to Ramsey's Regression Specification Error Test. The condition indices, Pearson Correlation Coefficients, tolerances or the variance inflation factors detected no multicollinearity. The plots of the residuals and the Park test did not reveal any heteroskedasticity.

Table 4: Regression Results

Variable	Coefficient	t-value*
INTERCEPT	0.880754	16.096
PERSCHG	-1.117435	-3.117
PERATIO	-0.000219	-2.357
BETA	-0.071168	-2.125
VPCHG	-0.000868	-2.208
F = 4.652	adjusted R^2 = 0.1172	
n = 111		

*All t-values are significant at the 5 percent level

The sign and expected effect of PERSCHG on the regressand was consistent with the hypothesis that a large drop in price will dissipate quickly and result in the price of the stock rebounding. An attempt was made with this variable to distinguish between panic-stricken behavior and normal random behavior. Judging by the strong t-value it appears that this objective has been met. Furthermore, this regressor is somewhat elastic, since a one percent increase in PERSCHG will decrease D56CHG by 1.11 percent.

PERATIO has the expected sign but proved to be very inelastic. A one unit increase in PERATIO will decrease D56CHG by 0.000219. However, this number is misleading because PERATIO is a ratio and is therefore a form of a percent. To get a one unit increase in PERATIO, say from five to six, is a 20 percent jump in PERATIO. This means that the price on day zero jumps 20 percent[4]. An inspection of smaller increments would be prudent. Consider the ticker PWN (observation 84). The regression predicts a D56CHG value of 1.045063906. Add one percent to PERATIO (35.42 + 0.3542), which is essentially adding one percent to price on day zero, while holding all else constant and the predicted value of D56CHG becomes 1.044986336; a difference of 0.00007757. Since D56CHG is a ratio as well then this value is highly inelastic.

The coefficient for beta can also be misunderstood. A one unit increase in beta means that the stock is 100 percent more volatile than before. Consider instead what adding 0.01 to beta will do to D56CHG. This results in decreasing D56CHG by 0.000711. Again, since D56CHG is a ratio then this means that the stock price on day 56 will be 0.0711 percent lower than its price on day one.

The sign for the regressor VPCHG was as expected, which supports the hypothesis that a higher percent change in volume reflects the sellers expectation that the stock price will fall in the near future. The model predicts that a one percent increase in VPCHG will decrease

D56CHG by 0.000868; which is a day 56 price that is 0.0868 percent lower than its day one price.

It is interesting to note that two of the three observations with the largest residuals precisely delimit the range of the ratio of the day 56 stock price divided by the day one price (D56CHG). That is, one observation (ticker: ADVH) sets the lower limit at 0.1892, and another observation (ticker: AMLN) sets the upper limit at 1.7556. The first observation also has a very large percent change in volume on day one from its 50 day moving average (215.7, mean = 27.2). Furthermore, the second observation sets the lower limit of PERSCHG at -44.4 percent (see Table 3).

IV. Conclusion

One obvious problem with the data is that PERATIO was used in its original form rather than the deviation of the PERATIO from the stock's long term average. Different industries have different standards for a stable PERATIO, so a high PERATIO in one industry may be perfectly acceptable in another industry. Also, PERATIO had many observations about zero, with few outliers. One possible alternative is to transform the variable in such a way that it reflects the individual stock's deviation of PERATIO from its own moving average, rather than the real value for PERATIO. Furthermore, after considering that PERATIO has the largest standard deviation (234), it is clear that a transformation of this variable in future studies is appropriate.

The last weakness of the data is that all the data are gathered from a relatively short time period. Therefore the results might only be applicable to stocks from the same phase of the business cycle as the one measured. A more accurate study might be to gather data over more than one business cycle.

Originally, the model contained several additional variables, but these were removed because no sound economic theory could substantiate their presence. Furthermore, when they were removed adjusted R^2 increased, indicating that the influence these variables had on D56CHG proved to be negligible. The variables that were removed were market capitalization, dividend per share, and the percent change in the Dow Jones Industrial Average from day zero to day 56.

The realization that these variables were irrelevant is perplexing since this kind of information is what many investors look at in order to make a decision as to which stocks to buy and when to buy them. Even though there is no statistical reason to include these variables, it would seem that they should be relevant since many investors base their decisions on them.

Although this is a good start, there is still much to be learned before this strategy can be used to invest. The problem lies in the measurement of what the author considers to be panic in the market. Corey Means (1998), a financial advisor, suggested a particular formula to measure aggregate panic in the stock market. He suggested that if the volume of all the stocks traded in one day is greater than 1.5 times the one year moving average volume and if the aggregate prices of all the stocks traded fall more than four percent, then there is panic in the market.

This formula may prove to be useful in quantifying panic in the market, but it still does not address the problem of identifying when the owners of one particular stock will begin to act irrationally. It seems that this can only be measured by a dummy variable that accounts for news releases or any unfavorable information about a company that becomes available to stock traders. If panic could be measured then it would be easy to distinguish between the stocks that are on the biggest losers' list for a quantifiable reason, and the stocks that are on the list as a result of panic stricken traders.

Many stock strategists would agree that news and rumors, whether factual or unfounded, are the sparks that quickly overtake the market in a flame of frenzied buying and selling. Only after the smoke has cleared can one begin to quantify behavior. Almost 90 percent of the variation in the regressand is still unexplained. It seems clear that an attempt to quantify panic as a variable would certainly account for much of the remaining variation in the regressand.

APPENDIX: DATA

Observation	TICKER	D56CHG	PERSCHG	PERATIO	BETA	VPCHG
1	AAII	1.18474	-0.1149	92.385	2.13	1.712
2	ADPT	0.79747	-0.16623	67.679	0.82	60.38
3	ADVH	0.18919	-0.18214	-13	1.38	215.7
4	AHG	0.81077	-0.11778	-1.037	0.24	10.61
5	AIZ	1.03939	-0.0625	11.765	0.47	8.252
6	AMLN	1.75556	-0.44444	-2.506	1.77	31.51
7	AXC	1.02439	-0.06818	9.483	1.91	1.105
8	AXR	0.83893	-0.06289	6.949	1.64	8.412
9	BCP	0.54217	-0.05682	38.596	0.85	-0.43
10	BCX	0.91886	-0.06173	108.482	0.72	0.039
11	BET	0.96429	-0.125	25	0.12	5.284
12	BFX	1	-0.07692	1.434	0.09	1.031
13	BGL	0.65726	-0.06767	-4.22	0.96	7.23
14	BKE	0.99741	-0.04939	27	1.44	-1
15	BNT	0.95238	-0.08696	-4.423	1.85	-5.93
16	CFW	0.72093	-0.08511	-3.338	0.84	1.345
17	CKE	1.00245	-0.06628	21.675	0.62	3.109
18	CME	1.22619	-0.06667	16.071	1.11	5.828
19	CMI	0.48529	-0.1291	-2.313	0.91	-1.99
20	CNS	0.93056	-0.05885	49.063	0.61	-8.56
21	COB	0.66176	-0.05556	900	2.57	1.848
22	CPU	0.74702	-0.19617	79.167	1.54	96.43
23	CPY	1.01042	-0.0747	21.087	0.59	3.888
24	CVR	1.03125	-0.06569	10.538	0.76	1.121
25	CXI	1.21667	-0.07692	-5.642	0.43	-3.59
26	CYGN	0.80769	-0.21212	-4.867	1.58	72.97
27	DBT	1.05172	-0.10177	78.472	1.17	3.79
28	DIMD	0.71338	-0.15591	-25.833	2.52	95.08
29	DPTR	0.96667	-0.15493	-24.653	0.38	-0.54
30	DS	0.86804	-0.06061	21.711	0.69	25.87
31	DUSA	0.68884	-0.24236	-12.275	1.54	122.3
32	EAGL	1.07634	-0.14935	17.5	0.65	210.5
33	ECO	0.71154	-0.08772	-1.25	0.82	3.513
34	EDS	0.97097	-0.09884	23.118	0.56	11.16
35	EDUC	0.90125	-0.16492	14.148	0.68	3.314
36	ETEC	0.74282	-0.15639	27.683	1.64	181.4
37	ETZ	0.96774	-0.07518	-7.162	1.05	0.504
38	FACO	0.94796	-0.28869	11.39	0.23	122.7
39	FARL	0.68421	-0.22449	25.521	0.7	4.377
40	FEI	0.70098	-0.06456	-136.3	0.83	3.532
41	FFD	1.09524	-0.06145	36.68	0.66	4.486
42	FHRI	0.8	-0.13793	36.25	1.12	-0.77
43	FTG	0.86364	-0.08333	-14.286	1.13	-3.68

44	GDC	0.78652	-0.06316	-3.142	1.62	3.296
45	GES	0.81111	-0.05263	11.203	0.15	28.22
46	GFI	0.79167	-0.0625	-5.479	1.47	13.64
47	GLO	0.69048	-0.08696	4.713	0.87	-0.99
48	GSH	0.76133	-0.09603	6.851	1.54	0.272
49	GSR	0.61818	-0.05172	-5.577	1.41	-1.88
50	HHCA	0.83175	-0.11448	-1.112	1.3	9.898
51	HHHH	1.11009	-0.14844	-61.538	0.45	18.7
52	HIV	1.19403	-0.09459	-8.409	1.89	14.32
53	HL	0.85567	-0.04902	-57.955	1.48	6.715
54	HNV	0.98	-0.09091	-343.75	2.06	0.024
55	HPP	0.76744	-0.06522	-2.212	0.47	2.193
56	II	0.91019	-0.05936	21.9	0.86	-4.87
57	IKN	0.5081	-0.31445	2207	1.64	43.02
58	INS	0.96667	-0.0625	-12.9	0.62	-1.65
59	IRI	1	-0.15966	-29.75	1.52	5.325
60	KCS	0.88433	-0.05634	-3.56	1.46	7.437
61	KFI	0.61901	-0.07396	-9.94	1.79	-2.68
62	KIN	1.38095	-0.10638	24.48	-0.04	0.59
63	KNIC	0.73529	-0.19048	-26.73	2.33	-1.11
64	LVCI	1.02107	-0.1621	-73.05	1.23	75.17
65	LXR	0.68421	-0.06557	-8.66	1.35	1.544
66	MEDC	0.63934	-0.15278	-7.89	1.72	0
67	MICG	0.70175	-0.14925	-17.82	1.73	-4.41
68	MSS	1.06667	-0.0625	400	0.9	-0.56
69	NOVI	1.2605	-0.17361	32	0.68	9.379
70	NOW	0.89394	-0.10811	-4.36	1.56	0.282
71	NR	0.4517	-0.08571	34.87	1.09	25.02
72	NRD	0.725	-0.06977	-3.45	1.32	2.283
73	NVIC	1.37143	-0.14634	25.63	0.52	17.39
74	NWRE	0.90196	-0.15	-4.36	1.75	63.9
75	OCN	0.94802	-0.09009	59.04	0.93	14.27
76	OMI	1.0051	-0.20968	28.7	0.52	34.88
77	OMX	1.14394	-0.05714	23.65	1.2	-1.11
78	OXGN	1.05263	-0.20168	-17.3	1.72	26.77
79	PBYP	0.85227	-0.20302	11.13	1.1	97.57
80	PMB	0.98832	-0.08936	34.56	0.73	9.912
81	POCI	1.15	-0.16667	-9.38	2.78	0.449
82	PRST	0.86219	-0.23514	68.01	1.38	95.18
83	PRX	1.02941	-0.06849	152.08	1.68	14.53
84	PWN	0.91571	-0.22585	35.42	0.66	38.46
85	PZM	0.86538	-0.11864	-61.46	0.58	8.701
86	QLGC	1.72963	-0.09711	18.6	0.65	-13.6
87	RADIF	1.02703	-0.15909	-5.85	2.49	15.41
88	RC	0.78846	-0.07143	77.78	2.04	-1.68
89	RFH	0.81876	-0.08398	28.32	0.57	1.825

90	RHCI	1.22041	-0.155	-0.39	0.36	-0.91
91	RLCO	0.94444	-0.14286	-17.5	0.6	1.444
92	SCY	1.00826	-0.06202	28.79	0.93	-0.07
93	SNA	0.87857	-0.08949	101.16	0.99	11.67
94	SNRZ	0.89483	-0.19107	77.26	1.18	223.9
95	SOS	0.76596	-0.09615	216.67	0.53	0.98
96	STBI	1.14943	-0.24017	15.39	1.25	374.8
97	STC	1.25959	-0.07507	9.56	0.2	1.373
98	SWD	0.96094	-0.07472	17.64	0.21	1.356
99	SYPR	1.32759	-0.25641	15.73	0.45	2.119
100	TLZ	0.7395	-0.07752	-13.9	0.29	1.427
101	TRU	1.06087	-0.07258	4.97	0.45	2.093
102	UAH	0.8	-0.09091	-0.53	0.34	4.559
103	UNI	1.03333	-0.09091	-6.76	0.3	0.292
104	UNI2	0.86088	-0.06443	-6.36	0.3	0.437
105	VIFL	0.95455	-0.19512	-42.71	-0.62	11.51
106	VNTV	0.50625	-0.17729	303.88	1.52	10.78
107	VOX	0.45	-0.03351	16.87	1.35	16.4
108	VST	1.04545	-0.06161	31.4	1.45	8.393
109	VTS	0.62875	-0.06209	18.57	1.92	-10.9
110	WSO	0.70952	-0.05618	38.1	1.79	0.691
111	YSII	0.94929	-0.42294	37.78	0.92	383.5

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[1] Biggest Losers is a connotation given to stocks whose prices have fallen greater than any other stocks. A list is generated by the Wall Street Journal and several other sources (too numerous to mention) that contains the ten stocks whose prices have fallen greater than any other stocks. This list is called the "Biggest Losers" list. Keep in mind that all stocks have either fallen in price, held the same price, or risen in price; so this list is just the extreme left portion of that continuum.

[2] To determine this percent return the author used the formula $(1 + i)^t$ where (i) is the return on the investment per cycle, and (t) is the number of cycles the investment will go through. A five percent return every eight weeks at the end of one year will be $(1.05)^6 = 1.34$. There are six complete eight-week cycles in one year so this means the return will be the investment (1) plus 34 percent of the investment (0.34).

[3] The Motley Fool is a finance and investment consulting forum published and maintained on the internet. http://www.fool.com

[4] PERATIO is equal to price on day zero divided by earnings per share (P/EPS), so price is the numerator.