

# Collected Commentaries and Conundrums Regarding Value Investing

Essays of Murray Stahl

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# ❖ Studies in Absurdity ❖

May 20, 2004

## Reflections on Dell Computer and Other Matters

It is generally believed that Dell Computer pioneered the concept of selling electronic goods directly to the customer without the intervention of a retailer. It may surprise some readers to learn that this is erroneous. The first electronic good firms of this type was known as the Electro Importing Company. It was founded in 1905 by Hugo Gernsback. Its address was 69 West Broadway in New York City.\* The company sold radios by mail order, since the Internet had yet to be invented. Batteries could be obtained from the GeeDee Dry Battery Company that was also owned by Gernsback. In fact, Gernsback was far ahead of his time as he also manufactured a wireless signal device called Telimco Wireless. The device transmitted messages by Morse Code.

Hugo Gernsback might have become a technology baron with a company as important as Dell Computer had he applied himself to the task. However, his interests changed to Science Fiction. Hugo Gernsback is considered to be one of the originators of modern Science Fiction. Moreover, the annual prize awarded in the U.S. for the best science fiction of the year is known as the Hugo Award in honor of Hugo Gernsback. He is best known for his novel entitled “Ralph 124c 41+: A Romance of the Year 2660.”

Of course, it will never be known if Gernsback would have been successful as a technology entrepreneur. In order to achieve success, he would have needed to know much about modern accounting practice. This brings us to our subject of Dell Computers. Let us consider the following facts.

A. During the past five fiscal years Dell recorded net income in the following amounts:

2004	\$2.645 Billion
2003	\$2.122 Billion
2002	\$1.246 Billion
2001	\$2.177 Billion
2000	\$1.666 Billion

This is a total of \$9.856 Billion

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\* *Martin Gardner – On Science, Literature & Religion (N.Y. Prometheus Books 2000 p. 105*

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B. During the past five fiscal years Dell has repurchased its own common stock for the following dollar amounts:

2004	\$2.000 Billion
2003	\$2.290 Billion
2002	\$3.000 Billion
2001	\$2.700 Billion
2000	\$1.061 Billion

This is a total of \$11.051 Billion

C. The share repurchase program resulted in the following Dell share count at various fiscal year-ends on a fully diluted basis.

2004	\$2.619 Billion
2004	\$2.644 Billion
2003	\$2.726 Billion
2002	\$2.746 Billion
2001	\$2.728 Billion
1999	\$2.772 Billion

The total reduction in fully diluted shares outstanding is 153 million shares. This was done at a cost of \$11.051 billion. Simple division would lead one to the erroneous conclusion that the company repurchased 153 million shares at \$72.23 per share. However, this is incorrect since Dell did not trade at that level during the share repurchase program.

Of course, Dell did not repurchase, and could not have repurchased, shares at \$72.23 each. Far more than 153 million shares were repurchased. However, many shares were also issued under the corporate stock option program. Shares issued under the stock option program are not required to be expensed under current accounting regulation. Thus, the question naturally arises as to whether Dell Computer should be considered to have earned \$9.856 billion in the 2000-2004 period of time.

One manner of viewing the situation is to state that the company expended \$11.051 billion on the purchase of 153 million of its own shares at \$72.23 when those shares now trade at \$34 each, for a paper loss of \$5.849 billion. This paper loss is coincidentally not far removed from the current Dell Computer (as of January 30, 2004) shareholders' equity of \$6.28 billion. This would invite the seemingly absurd conclusion that Dell has lost \$5.849 billion of its \$6.28 billion of shareholders' equity so that it currently has very little shareholder equity.

On the other hand, if the company had invested in anything other than its own shares and had sustained a paper loss of \$5.849 billion, it would unquestionably be required to record the loss. Of course, the company would argue, perhaps not without reason, that the shareholders do derive sustained benefit from this activity since this is a means of compensation for employees who would otherwise need to be paid in cash. It is indeed difficult to avoid this conclusion.

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Nonetheless, one cannot necessarily conclude that the employees would have accepted \$5.849 billion of cash compensation in lieu of stock options. It is impossible to know what figure would have satisfied the employees, since those employees have some expectation of a value increase in Dell options. This expectation is incalculable.

The company was not required to repurchase its own shares. If it had not done so it would now possess over \$11 billion of cash over and above its already substantial balances minus cash received from employees due to option exercise. However, it would also have many more shares outstanding. One could make all sorts of calculations about earnings on \$11.051 billion of marginal capital versus the potential dilution from stock option exercise. These would merely be theoretical. It can all be reduced to the observation that \$11.051 billion of the shareholders' funds was used to repurchase shares that currently have a market value of approximately \$5.2 billion. This should not be the road to prosperity.

Yet, in an accounting sense, it is the road to prosperity. On January 28, 2000, Dell Computer recorded shareholders' equity of \$5.3 billion. In fiscal year 2001, it earned \$2.122 billion on that sum for a return on beginning shareholders' equity of 40%. On January 30, 2004, Dell Computer recorded \$6.28 billion of shareholders' equity. This was an advance from the \$4.873 billion of equity on January 31, 2003. The company earned \$2.645 billion for a return on beginning equity of roughly 54.3%. During the course of fiscal 2004, the company expended \$2.0 billion to retire 25 million shares. AS noted previously, it actually repurchased many more of its own shares, but the 25 million share count reduction is net of share issuance. As a pure arithmetical proposition it repurchased 25 million shares at a cost of \$2.0 billion or \$80 per share. In footnote number one to its January 2004 financial statements, Dell does calculate that the options issued during the year cost \$829 million which is not recorded on its financial statements. This calculated amount is based on the Black Scholes option assumptions of a 3.8 year option term to expiration, a 0.99% risk free interest rate and a 43% share price volatility. The \$829 million cost figure is an abstraction based upon these assumptions. Moreover, this figure is calculated net of tax benefits which are calculated by the company to have been \$181 million in fiscal 2004.

If the reader has followed all of these calculations, it is now possible to understand why Hugo Gernsback decided to write "Ralph 124C 41+: A Romance of the Year 2660." This sort of work, as does modern accounting, requires a very well developed sense of imagination.



# ❖ Studies in Absurdity ❖

June 29, 2004

## **Subject: The Logical Consequences of Yahoo!**

### **I – Introduction**

The human fears error to the extent that this fear is only surpassed by the fear of being perceived to be in error by others. This observation is quite relevant with regard to a security such as the Yahoo equity. The believers in the future of the shares must contend with the past collapse of the share price in the aftermath of the Internet bubble subsequent to March 10, 2000. Perhaps the shares will once again collapse in value due to excessive valuation. The risk is that one will be perceived to be in error.

On the other hand, the unbeliever does not dare sell these shares short. The months preceding the Internet bubble peak on March 10, 2000 might be repeated. The valuation of the Yahoo shares might easily exceed anything recently recorded. Consequently, a short seller will risk being perceived to be in error.

The most numerous group is, of course, the agnostics. However, unlike the agnostic in matters of faith, an agnostic in the world of equity investing is not permitted the luxury of indifference or doubt. In fact, the agnostic in the world of investing is not even permitted the luxury of privacy of conscience. This is because investment holdings and investment performance are exposed to observation and critique. The agnostic in Yahoo is revealed as such by the failure to own the shares. In the case of this share, failure to own may well be the difference between outperformance and underperformance of the benchmark S&P 500 index. Naturally, Yahoo is included in the index and now ranks 48<sup>th</sup> within the index in terms of market capitalization. An agnostic will therefore own Yahoo shares within a managed portfolio in proportion to its weight within the index. As is not the case in matters of religion, the investment agnostic attends services regularly and prays fervently.

### **II – The Self-Perpetuating Cycle**

If one agrees that there are investment agnostics and since there are quite obviously equity indices, then if a given firm can issue a sufficient number of shares to create a large market capitalization, that firm is very likely to be included in one or more equity indices. If the shares are part of various indices, then there will certainly be a ready market for those shares among the vast number of agnostics who must purchase these shares to avoid the possibility of being thought to be in error by failure to outperform an index in a given time.



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If there is a ready market for the shares, the issuing firm now effectively has possession of a form of currency. The firm might then decide to issue more shares to its employees in the form of stock options as a means of compensation. Current accounting rules provide that the cost of the options need not be reflected as an expense of the corporate income statement. Since some portion (usually large) of employee compensation expense is not recorded as an expense, earnings are higher than would otherwise be the case and this is adequate grounds for a share price increase which, in turn, makes the issuance of further shares all the more irresistible. As more shares are issued and as the value of these shares increases, the agnostics must further increase purchases in order to maintain the proper portfolio weight. This is a cycle that seems to be rather self-reinforcing.

### **III – The Position of the Believer**

The agnostic has now made the position of the believer very uncomfortable. In religion, the reward of belief is everlasting afterlife. In the world of investments, the only reward is more money to manage. Yet, in order to achieve this, the believer must be distinguished from the agnostic through the process of “adding value”. This is usually done by increasing the proportionate weight of Yahoo shares held in a portfolio to a level well in excess of the index weight. It therefore logically follows of the position and actions of the believer merely reinforces the already self-reinforcing cycle set in motion by the agnostic. In the case of Yahoo, this is an increase in share price.

### **IV – The Aftermath of the Bubble**

Let us place ourselves in a rather uncomfortable position of the agnostic on the evening of March 9, 2000. The agnostic might well have owned shares of firms such as Yahoo, eBay and Amazon.com. At that moment, the valuations of these firms must have seemed to be excessive. The temptation to sell must have been very strong. Of course, sale of these securities can expose the agnostic to the danger of being thought in error. Clients might withdraw allegiance to the agnostic equity manager. The more clever agnostics might have thought it wise to sell Yahoo, eBay and Amazon.com and to reinvest proceeds in “safer” or more mature firms such as Cisco Systems, Intel or Microsoft. The results of such an action are evident in the following table.

#### **Performance of Technology Bubble Stocks from March 10, 2000 to June 18, 2004**

<b><u>Group I</u></b>	<b><u>Compound Annual Return</u></b>
Yahoo	(21.23)%
EBay	14.59%
Amazon.com	(6.74)%

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<u>Group II</u>	<u>Compound Annual Return</u>
Cisco Systems	(22.11)%
Microsoft	(12.62)%
Intel	(16.33)%

It is obvious that the Group 2 or “safer” firms have underperformed the bubble stocks since the collapse after March 10, 2000. This tendency has continued in the one week from June 18, 2004 to June 25, 2004.

<u>Group I</u>	<u>June 18, 2004</u>	<u>June 25, 2004</u>
Yahoo	\$32.07	\$34.91
EBay	\$86.50	\$90.72
Amazon.com	\$49.60	\$51.80
<u>Group II</u>		
Cisco Systems	\$23.42	\$23.43
Microsoft	\$28.35	\$28.57
Intel	\$27.64	\$27.78

The appreciation of the Group 1 shares from October 2002 has been so enormous as to efface the declines of the bubble aftermath period. Yahoo and eBay are now included in the S&P 500 index and rank of 48<sup>th</sup> and 37<sup>th</sup> positions in market capitalization, respectively. The agnostics have evidently purchased shares, and their aggregate purchasing power is quite considerable.

### V – The Economics of a Bubble Share Short Sale

Let us assume that Yahoo were to decline by 90% to a share price of \$3.49. This would not be without historical precedent since Yahoo traded at less than \$5 per share at the end of September 2002. It would also not represent a valuation extreme. Yahoo, according to its own figures, is operating at breakeven levels if due allowance is made for the issuance of stock options. At a share price of \$3.49, Yahoo would trade at roughly 1.2x forecasted revenue while operating at breakeven.

However, the actions of believer and agnostic have set in motion a self-reinforcing trend towards higher share prices. The 2% year-to-date return of the S&P 500 has witnessed a 27 basis point contribution from Yahoo as well as an approximate 27 basis point contribution from eBay. These two equities account for 25% of the year-to-date S&P 500 return. Such shares are therefore indispensable. A short seller might witness a share price increase to a considerably higher level.

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Thus, let us assume that our imaginary short seller waits for a Yahoo share price of \$69.82 or double the current level. Let us further assume that the share collapses afterward to the \$3.49 level. The return to the short seller is 95% or only 500 basis points higher than would be the case if shares were sold short at a much lower price. Similarly, if the shares were to attain the level of \$139.64 or four times the current level and were then sold short, only to decline to \$3.49, the potential return to short seller only increases from 95% to 97.5%.

### **VI – Position within the S&P 500**

Yahoo currently has the 48<sup>th</sup> largest market capitalization within the S&P 500. Since Yahoo trades at 109.1x the anticipated pro-forma earnings for 2004, investors or, more properly expressed, believers expect much growth from Yahoo. The consensus opinion on this subject is that Yahoo should be able to grow its earnings at over 50% per annum for the next several years. The probability that any of the 47 firms in the S&P 500 with a higher market capitalization than Yahoo will grow profits at 50% per annum is essentially zero. Therefore, the belief that Yahoo will grow at 50% per annum is logically equivalent to the belief that it will increase its position in the S&P 500. At a 50% growth rate and no diminution of current valuation metric, Yahoo will have a \$384 billion market capitalization within five years. Of course, this calculation makes no allowances for the almost certain issuance of shares, which would result in an even higher market capitalization. General Electric, the largest company within S&P 500, currently has a market capitalization of \$328 billion. GE plans to spin off its insurance businesses, which might have a market capitalization of perhaps \$50 billion. Thus, post spin-off, the GE market value will be \$278 billion. Given a 12.5% growth rate, GE might attain a \$500 billion a capitalization in five years. If Yahoo merely increases its share count by 5% per annum and grows at the expected rate without diminution of valuation metric, it should also attain a \$500 billion market capitalization. Therefore, the believers effectively but not actually argue that Yahoo will be the largest company in S&P in 60 months.

### **VII – The View of the Employee**

The Yahoo employees are in a curious position. These receive copious amounts of Yahoo stock options as part of compensation. However, it is important to remember that these options have contingent value and not actual value. In order to have value from the perspective of an employee, the share must increase in price. Indeed, as noted previously, the Yahoo shares have substantially increased in price since October 2000. The increase is approximately sevenfold. The employee recipients of future options cannot reasonably expect a sevenfold increase in the shares in the next 20 months. Consequently, if the share does not increase in value at the recent rate, it logically follows that the compensation of the employees is being effectively reduced, albeit not by the actions of the company. It might be argued that the employees understand that options are a form of variable compensation and, as such, compensation will therefore vary.

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However, there is another aspect of this question. The economic value of Yahoo at \$34.91 per share is surely less than the economic value of Yahoo at a price below \$5 per share. The economic value of Yahoo shares at \$69.82 are even lower. Thus, viewed from the perspective of the company, X option grants at a \$69.82 strike price involve far less potential dilution than X option grants at \$34.91 at a \$34.91 strike price. The situation is not very different than paying in depreciating currency except that in the world of equity, as opposed to currencies, an appreciating equity is the mathematical equivalent to a currency where value is being eroded by inflation. The employees who accept this currency as a form of payment are practically engaged in a form of money illusion. If the employees ever become unwilling to accept this currency as a form of payment, the self-reinforcing cycle of share issuance and share appreciation will end.

### **VIII – The Perspective of the Short Seller**

The economics of a bubble stock short sale have already been discussed in section V. The short seller does not improve returns by appreciable amounts if the short sales are undertaken at higher prices. However, if the short sales are not undertaken at extremely high prices, the damage to portfolio return can be very substantial.

A short seller might at any moment have deployed 40% or 50% of total portfolio exposure toward short sales. Surely at 50% short exposure, one must reckon with at least a 10% adverse move in the short book. Arithmetically, this will cost the portfolio 500 basis points or 5%. It seems therefore reasonable to state that a short seller is willing to sacrifice at least 500 basis points per annum in order merely to maintain a short position of 50% magnitude. Realistically, most of the short sale equities will not decline to a price of zero. Also, realistically, these positions will not be covered at the low point. Thus, the expected return even in success mode is well below 100%. Further, this will occur in many instances over the fullness of time so that whatever return is achieved will be diminished on a compound annual basis if achieved in more than one year.

Let us assume that one is willing to sacrifice potentially 500 basis points of return per annum in order to maintain a short exposure of 50%. If the average short were to decline by 80%, the expected contribution to portfolio return would be 40%, or 4,000 basis points. In that case, the following alternative might be of some interest.

If one were to establish a 1.5% position in Yahoo October 2004 30 put options, the most recent price is \$0.95 per contract. If Yahoo were to decline to \$3.49, then the intrinsic value of the option would be \$26.51, for a return of 2.691%. This would add 40 percentage points or 4,000 basis points to portfolio return. Of course, if Yahoo continues its upward trajectory, as seems likely, or even fails to decline below 30 by October 15, 2004, the option would be worthless.

If Yahoo reaches extremely high prices, the strategy becomes rather intriguing. If Yahoo were to rise to roughly \$93 per share, the trading price of a Yahoo put option roughly 15% out of the money can be accurately simulated by an eBay put, since eBay currently trades at a roughly \$93 as these words are being written. The eBay October 75 put options are \$1.15 bid, \$1.25 asked.

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The option is 19.3% out of the money. This is probably where a Yahoo option of similar characteristics would trade. Let us assume that Yahoo is \$93 per share, and that one purchases a 1.5% position in a Yahoo October 75 put option (note that this security has yet to exist, since Yahoo is not yet \$93 per share). Let us further assume that Yahoo declines to \$3.49 per share in one of the periodic bubble deflations that are caused by human dysfunctional behavior. In that case the intrinsic value of the put option would be \$71.51 per contract. The return is 5,620.8%. The contribution to portfolio return would be 84.30 percentage points or 8,430 basis points. If this happens, one has effectively hedged a 92% long exposure, even during a crash, with a 1.5% short or put position.

The math becomes more interesting still if Yahoo ascends to \$140, \$150, \$160, or even \$170 per share. A disciplined investor who buys a Yahoo 15% out of the money put option with only four months to expiration has only to await a bubble burst once in order to achieve a very substantial portfolio impact. It must be noted that one is sacrificing 150 basis points of portfolio return every four months as Yahoo increased in value. However, this is less than would be sacrificed by a 50% short position in an environment of a 4% market increase. It ought to further be observed that the risk of the short positions is at least theoretically infinite. The maximum loss of the position is finite and knowable.

Another alternative is a shorter term put option with far less time value. The Yahoo August 2004 30 put options are \$0.40 bid, \$0.50 asked. In the case of a Yahoo decline to a price of \$3.49, the intrinsic value of the option is \$26.51. The return is 5,202%. Since August is only 2 months away from the current date, as opposed to four months in the prior example, one would establish a 0.75% position in the option as opposed to the prior 1.5% so as to limit the annual loss to 4.5%. There are six periods of two months duration within a year, so that  $6 \times 0.75\%$  equals 4.5%. A return of 5,202% earned by a 0.75% position would contribute 39.02 percentage points to the portfolio return. In order to summarize the perspective of the short seller, one can state that a bubble share affords enormous hedging as well as profit potential if used as a small option position rather than as a short position. Moreover, unlike a short position, the return contribution to the portfolio from a position of constant size increases as Yahoo increases in price.

### Summary and Recommendation

The human mind unjustifiably fears error. Sometimes insight actually emerges from error. For example, there is a very obvious error in the Jules Verne novel 20,000 Leagues Under The Sea. A League is equal to  $1/20^{\text{th}}$  degree of arc. Since the Earth is roughly but not quite spherical, it has  $360^{\circ}$  or 7,200  $20^{\text{th}}$  degrees of arc. If the circumference of the Earth is 24,901.56 miles,  $1/20^{\text{th}}$  degree of arc equals 24,901.56 divided by 7,200, or roughly 3.45 statute miles. In order to be 20,000 leagues under the sea, one would need to be  $20,000 \times 3.45$  miles under the sea or 69,000 miles, which is 2.77x the circumference of the Earth. Therefore, it is quite impossible to actually a 20,000 Leagues Under the Sea. Nonetheless, none of this seems to detract from the delight of this novel. In addition, the novel does accurately predict the modern development of the submarine, among other insights.

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Similarly, it is almost certain that any forecast of the of the Yahoo share price will be in error. This is because there is no model that will successfully and accurately reckon with the human behavioral dimension of the “investment” decision process. Nevertheless, viewed from a mathematical perspective, the only thing that actually matters is that the bubble will one day burst. If much time and many option trade iterations are required, the mathematical consequence is that portfolio return contribution from this trade will increase, with much benefit to the hedge aspect of a portfolio. Therefore, a position in Yahoo put options of a near term character approximately 15% out of the money should prove to be a rewarding investment.



July 1, 2004

## Erratum

### **Subject: The Logical Consequences of Yahoo!**

Only two days ago, a *Devil's Advocate Report* on the subject of Yahoo! was distributed under the heading above. Only one day ago, the following communication was received from one of our readers. His comment was prompt, apt and deserving of the wider attention of all of our readers and, so, is reprinted here along with what is hopefully a suitably apt response.

Tuesday, June 29, 2004 7:45 AM

Just so you know – the "20,000 leagues" in the Jules Verne novel refers to the distance traveled under the sea and not the depth below the sea.

July 1, 2004

You are, of course, quite correct. The voyage of the Nautilus is a distance of 20,000 leagues and not a depth a depth of 20,000 leagues beneath the sea. I should have said that since most people are unfamiliar with a formal definition of a league, it is believed by many that the title refers to a depth and not a distance. However, their pleasure in reading the novel is undiminished even though they realize that their initial impression was not correct.

I certainly did not wish to imply a lack of scientific verisimilitude in the work of Jules Verne. It is my understanding that he insisted upon the highest possible standard of scientific accuracy. I only wished to make a point about Yahoo and, in my haste to do so, I inadvertently maligned Verne. My critical remarks, such as they are, are entirely confined to owners of Yahoo. I do not believe that Jules Verne would be a buyer of Yahoo at current prices.

Thank you for bringing this to my attention. I am at least happy that some people find the essays sufficiently interesting to read to the end.

Regards,

*Murray Stahl*





# ❖ Studies in Absurdity ❖

July 20, 2004

## **Subject: Joseph Stalin's Hedge Fund**

### **I – A Curious Circumstance**

The title of this essay is not a mere literary device to attract the attention of the reader. Joseph Stalin actually had a hedge fund of sorts. More importantly, the story of Joseph Stalin's hedge fund should be of interest to investors.

The story begins in 1930 as Stalin ordered the forced collectivization of Agriculture. Peasant farmers now became collective farms and therefore employees of the state. As such, peasants were given production quotas of farm products that were required to be transferred to state control. Quite frequently, the state would establish a production quota equivalent to everything produced by a peasant. Since this logically implies that a peasant would receive no compensation for very hard labor and incidentally would be left without the means to feed himself or his family, the peasant quite properly lost all interest in production.\* Ultimately, a widespread famine was to follow in the wake of this policy, resulting in widespread misery and death. The state responded to the inevitable decline in production by various punishments, including execution or deportation to Siberia. The modern reader might be astonished that the Soviet bureaucrats can actually have believed that famine, deportation and execution could ever be an effective means of increasing agricultural output. However, viewed from the perspective of the state bureaucrat, it seems no more than reasonable that high production quotas would result in high rates of production.

If Stalin were a humanist, he would have undertaken to buy grain on the world market to feed his now starving agricultural workers. Yet, not only was Stalin no humanist, he was also a dictator lacking hard currency with which to purchase agricultural produce. Therefore, Stalin could not and would not import grain. Obviously, Stalin was in no position to export grain. Yet, none of this prevented Stalin from trading grain.

In the United States and other developed nations grain prices were declining precipitously. If the problem in the Soviet Union was declining productivity, the problem in the United States was increasing productivity. During the 1920s, improvements in agricultural science, increasing use of mechanization, fertilizers and insecticides increased yields per acre. Improvements in roads and railroads resulted in more rapid transportation to market and therefore less spoilage. This is the arithmetical equivalent of increased production, as more produce is available to consume.

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\* The source for this policy is Khrushchev's Memoirs entitled *Khrushchev Remembers: The Last Testament*, translated by Strove Talbot (Boston: Little, Brown & Co., 1974) p. 108

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Increasing electrification made possible increased use of refrigeration which, in turn, reduced spoilage and thereby further increased supply.

Of course the demand for food does not necessarily increase simply because supply increases. Consequently, by the iron law of supply and demand prices declined. Farmers could not sell grain at cost. Agricultural costs are generally fixed and thus the only alternative open to a farmer who wished to save his farm from foreclosure and his family from even worse poverty than was customary was to increase production. Naturally, this further reduced prices.

The Soviet and American examples are circumstances of self reinforcing cycles. Most economic cycles are intrinsically self equilibrating. For instance, lower prices usually stimulate increased demand. Nonetheless, there are cases in which production costs are fixed so that nothing is achieved by decreasing production when confronted with lower prices except decreasing revenue. Agriculture is an obvious example. The primary cost is the cost of land, which can either be expressed in rent or expressed in interest expense if the farmer chooses to own land with debt financing. In the American instance, an indebted farmer can only save the farm by increasing production, which results in more revenue. Unfortunately, increased production will also lower prices and result in less revenue. In the Soviet instance, there is an enormous philosophical distance between a high production quota imposed by the state and a high ratio of debt to land value chosen by the farmer. However, arithmetically these are both high fixed costs.

Although Stalin was a very poor judge of the effects of communism on agricultural production, he appears to have been a much better judge of world commodity markets. He could neither import nor export grain. Yet, the market mechanism enabled him to trade grain. It seemed self evident that grain prices were caught in a downward self reinforcing spiral. Thus, the Soviets undertook to sell grain short on the Chicago Board of Trade.

In 1930, the American President was Herbert Hoover. It is his memoirs that serve as a primary source document of Soviet actions. The following extract from those memoirs relate events that then occurred:

### **Stopping Soviet Short Sales of Wheat**

An interesting but momentarily alarming side issue arose in September 1930. We were informed that the Soviet government had been selling large amounts of wheat short on the Chicago market. Investigation confirms this and I demanded that the Chicago Board of Trade and other markets prohibit transactions by foreign governments. In order to secure this action by them for the protection of our farmers, I was compelled to threaten federal control. Soon thereafter the Communist government began dumping large amounts of wheat upon the European markets and broke the price several cents a bushel. The Soviets, out of the short selling in Chicago, however, took a considerable sum which would otherwise have gone to our American farmer.\*\*

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\*\* Herbert Hoover: The Memoirs of Herbert Hoover: The Great Depression 1929-1941 (New York, Macmillan, 1952) p.52-53

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The irony of this situation is something not even achieved in the best of Greek tragedy or in Shakespeare. This is because the irony functions at multiple levels. In the first instance, Herbert Hoover, one of the more well-intentioned and doctrinaire believers in the market mechanism, threatens government intervention to suspend the market mechanism. In the second instance, Joseph Stalin, the most ruthless and doctrinaire opponent of the market mechanism that ever lived, makes use of the market mechanism to earn, in the words of President Hoover, a considerable sum.

There is a second level of irony. The Soviet agricultural policy could not have been more different than the American agricultural policy. The natural consequence of the Soviet policy was widespread poverty, misery and famine. In the American case there was also widespread poverty, misery and some more than occasional examples of actual starvation.

The third level of the irony is that the reasoned application of the cold science of self interest prompted all market participants, including the communists, to engage in similar sell programs. In substance, the communists accepted capitalism although they offered various philosophical objections to the practice. Since all participants undertook similar actions, those actions became self reinforcing instead of self equilibrating. Self reinforcing cycles are inherently destructive since these ultimately must result in very extreme behavior.

### II – A Possible Curious Circumstance

The basic tenet of all modern economic as well as investment theory is that cycles are inherently self equilibrating. In the sphere of investments, the equilibrating mechanism is the value oriented investor. If prices are too high, the value investor will sell. If prices are too low, the value investor will buy. This is the investment science expression of its former belief in 19<sup>th</sup>-century Marshallian economics. The word former is appropriate, since the late 20<sup>th</sup> century has propagated a refinement known as efficient market theory. Since the market is efficient, investors will not sell at prices that are too low and will not buy prices that are too high. Consequently, errors will be corrected before these have been, properly speaking, created.

A believer in this theory might very reasonably arrive at the conclusion that all investments should be indexed to the market. Indeed, many have arrived at that conclusion.

Unfortunately, such a view would logically entail the obsolescence of the professional money manager. If there were no professional active money managers, there would be very little need for consultants and asset allocators to evaluate such managers. Self interest now requires the application of efficient market logic in one of its most creative forms.

Although the market is efficient and active managers cannot surpass the averages, different stylistic attributes entail different volatility characteristics. Thus, the value oriented manager might be less volatile than a growth manager. A value oriented event driven hedge fund that is always market neutral would be still less volatile. There is now a virtually inexhaustible list of diverse strategies. These strategies can be properly blended in such a manner as to dramatically

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reduce volatility with little and, in some unusual cases, no sacrifice of return. This science in its ultimate refinement will create a portfolio of many managers that will never experience, or perhaps seldom experience, negative returns.

As a science, this is much akin to deconstructing the human body and reassembling it in such a manner as to eliminate aspects of the central nervous system that activate the pain reflex. In economics, loss is the equivalent of pain. A human without a pain reflex might well engage in very self destructive behavior.

One therefore cannot help but wonder whether such an entity that now exists in the marketplace would not engage in the type of self destructive behavior of the Hoover-Stalin era. In theory, different investment styles should produce diverse portfolios. Is it possible that diverse strategies should produce similar portfolios? Fortunately, it is relatively easy to envisage such a circumstance.

### **A – The Curious Position of the Growth Investor**

The Value Line Investment Survey each week publishes an index of those companies in its survey that usually encompasses about 1700 stocks. In the rear of that index, the reader will find a number of screens based upon growth or value criteria. The growth screen is located on page 39 of the July 16, 2004 edition. As noted in the heading of the screen, to be included, a company's annual growth of sales, cash flow, earnings, dividends and book value must have averaged 11% or more over the past 10 years and be expected to average at least 11% in the coming three to five years. The reader will readily observe that 23 of the 100 firms listed are part of the financial services/real estate sector. Another 14 are retail related firms. This is not without some significance, since there is an evident relationship between the willingness of financial service firms to lend money and the ability of consumers to buy real estate and basic consumer products. The names of these firms can be found in the appendix as Tables 1 and 2. As such, there is nothing surprising in the fact that a portfolio of 100 issues should include 23 from the financial services/real estate sector and another 14 from the retail sector.

### **B - The Curious Position of the Income Oriented Investor**

The income oriented equity investment style should, in principle, exhibit a form of exalted inconsistency with the growth investment style. Mature firms pay high dividends. Growing firms reinvest capital. The Value Line screen of high yield non-utility stocks can be found on page 38 of the index for the July 16, 2004 addition. There are 95 equities listed with a dividend yield ranging from 11.6% to 3.7%. The real estate and financial services related firms are 48 in number. The names of these firms can be found in the appendix as Table 3.

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### **C - The Curious Position of the Low P/E Investor**

The low P/E investor should, in theory, display a certain inconsistency with the growth and dividend yield investors. A firm's share will generally trade at a low P/E because its earnings are not growing. The Company may exhibit a problem that prevents it from paying a high dividend. There are cases in which a low P/E share can also be a high dividend yield share. However, these are instances in which the investment community suspects, generally with good reason, that the dividend will be substantially reduced. Therefore, a high yield share does not usually remain on the low P/E list for a very long time. It will either reduce its dividend and therefore cease to be a high dividend yield share or, alternately, it will maintain its dividend and its price would appreciate since the danger of dividend reduction has been eliminated. In this instance, it will cease to be a low P/E high dividend yield share.

In any event, the low P/E screen in the July 16, 2004 edition can be found on page 35 of the index. It lists 100 equities with a P/E ratio range of 4.9x earnings to 11.0x earnings. A total of 41 firms from this list are engaged in real estate or financial services related activity. Another four firms are retail related. It is worthy of observation that very little imagination or ingenuity is required to expand this list beyond the 41 real estate and financial services firms already noted. For instance, Louisiana Pacific might well be included, since its basic product is lumber that is used in home construction. Similarly, an excellent argument can be made for the inclusion of Ford and General Motors as financial services shares, since profits from these activities are critical to the survival of these firms. Nevertheless, the list of Real Estate and Financial services related firms included in the Value Line P/E screen may be found in the Appendix as Table 4. The retail related firms are included in Table 5.

### **D - The Curious Problem of Bargain Basement Stocks**

Value Line includes a "Bargain Basement" screen in its weekly index. In the July 16, 2004 edition, this may be found on page 37. The formal definition of this screen is stocks with current price/earnings multiples and price-to-"net" working capital ratios that are in the bottom quartile of the Value Line universe. Net working capital equals current assets less all liabilities including long-term debt and preferred. This is very much a classical Graham and Dodd screen and is rather interesting. Ben Graham frequently earned profits by purchasing shares at a discount to net working capital.

The first observation that can be made about this screen is that it does not include any shares that trade at a discount to net working capital. The price to net working capital ratios range from 125% of net working capital to 450% of net working capital. Nonetheless, the list, such as it is, includes twelve firms that are engaged in real estate or financial services. The list also includes four companies engaged in retailing. The entire screen includes only 29 firms. The firm in the 29<sup>th</sup> position, which happens to be Borders, trades at 450% of net working capital. The real estate and financial firms to be found in the "Bargain Basement" screen are listed in the Appendix as Table 6. The retail firms are listed as Table 7.

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### **E - Digression on the Curious Problem of the “Bargain Basement” Stocks**

The most interesting aspect of the so-called Bargain Basement stocks is that, according to its own definition, there are not currently any bargain-basement stocks. This is very different than the ordinary market circumstance in which such shares do indeed exist.

Readers of Benjamin Graham’s book called “The Intelligent Investor” will recall the frequent reference made to such shares. For instance, on page 85 of the fourth edition (1973), Graham identifies 85 such firms as of December 31, 1957. In the next two years the subsequent gain for the portfolio was 75% as opposed to the 50% gain of the then referenced S&P 425 industrials.\*\*\*

One might imagine that the absence of such investment opportunities might trouble value oriented investors. The natural rejoinder to the Bargain Basement share famine is that the market itself is not overvalued as it trades at perhaps 18 or 20x operating earnings. It would be conceded that it is somewhat high in light of historical norms but not high when considered in light of currently low rates of interest. Value Line does precisely the same thing when, in its July 16, 2004 index, page one calculates the median price earnings ratio of its universe of 1698 firms to be 18.2x profits. The median P/E calculation excludes 170 firms that are not profitable and therefore have P/E ratios that are not meaningful (or NMF in Value Line terminology).

The problem is that statements of this type are devoid of content insofar as these measure that which does not exist. The calculation is only comparable to a portfolio that will never include a company that will generate a loss. This is undoubtedly a goal that many would wish to achieve but all regard as an attainable.

However, such calculations do provide reckless investors with a powerful rhetorical advantage. Markets can never be excessively valued if it is permissible to exclude from valuation calculations the most excessive elements of valuation. It would seem more reasonable to believe that the most fertile portion of the investment opportunity set is always at the valuation fringe. Thus, if there are no “Bargain Basement” stocks, an important aspect of a normal investment opportunity set is lacking. Therefore, by definition, the situation cannot be normal.

### **F - A Further Digression on the Curious Problem of the Bargain Basement Stocks**

The natural impulse of any observer of equities in the contemporary era is to attribute the absence of “Bargain Basement” stocks to the currently low interest rates that exist. This is undoubtedly a natural impulse. Nonetheless, it does not appear to be supported by the available data. The following table, to be known as Interest Rates: 1957, is taken from the Federal Reserve Historical Interest Rate Database. It is readily available to all those who wish to peruse such data on [www.federalreserve.gov/releases](http://www.federalreserve.gov/releases).

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\*\*\* Benjamin Graham: The Intelligent Investor (New York: Harper and Row, 4<sup>th</sup> Edition, 1973) p.85

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### U.S. Interest Rates: 1957 December

Federal Reserve Discount Rate	3.00%
Prime Rate	4.00%
5 yr. Treasury	3.08%
10 yr. Treasury	3.21%
20 yr. Treasury	3.38%

It is worthy of note that by March 1958, the Discount rate had declined to 2.35%.

In contrast, U.S. Interest Rates on July 16, 2004 were as follows:

Federal Reserve Discount Rate	2.25%
Prime Rate	4.25%
5 yr. Treasury	3.65%
10 yr. Treasury	4.49%
20 yr. Treasury	5.24%

The most substantial difference between the current interest-rate environment and the 1957 environment is that the yield curve is far more steep at present. In general, interest rates are now higher than was the case in 1957. The salient exception, of course, is the discount rate, which is now lower than was the case in December 1957.

Any explanation for the absence of bargain basement stocks at the current time is necessarily conjectural. However, conjectural is not a synonym for unpersuasive or implausible. The most recent investment innovation is the advent of the hedge fund. This is arguably the most dangerous investment weapon ever wielded, since by the use of leverage and short selling it is actually possible to lose more than 100% of the given hedge fund investment. Interestingly, the proponents of hedge funds, which are many, argue that it is a device for the intelligent control of risk. Whether or not such a statement is true remains to be seen. Yet, presented in the manner of a risk mitigation device as opposed to a device with the inherent possibility of limitless loss, one must confess that the hedge fund has a considerable rhetorical advantage over any detractor.

In any case, the ordinary professional investor inadvertently creates a bargain basement stock when a serious problem is made known to the public with regard to a given company. It is usually not obvious that the problem will be rectified in a timely fashion. It is frequently not obvious that it can ever be rectified. Thus, the ordinary investor of the professional variety feels compelled to sell since the continued inclusion of such a share in a managed portfolio can only serve to reduce future return. Yet, no investor is necessarily compelled to buy. Since every share must be owned by someone, the seller must offer the buyer an inducement to purchase. This is the origin of the "Bargain Basement" discount. A company that sells at a discount to net working capital can presumably always be liquidated for at least net working capital and hence the buyer has the prospect of some measure of return.



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The hedge fund manager does not necessarily see a problem with ownership of a company that is problematic. This can be an opportunity. If one owns a company with poor prospects, one simply sells short a company with even worse prospects. The difference in performance between bad and worse is actually a source of positive return. It is the ultimate form of investment recycling. Good products can be made from bad, perhaps thoroughly rotten, raw materials. Thus, the problematic company is not sold.

This is not the only cause of the absence of the “Bargain Basement” stocks. Another explanation is the widespread use of index funds, exchange traded funds (ETF’s), and baskets. Problematic firms simply remain in indices and, as such, must be held to mirror the index. If an asset allocation decision is made to own more of an index, shares of even problematic firms are purchased. Purchase price is irrelevant since any size is equally reflected in both the index and the portfolio that mirrors the index.

Consequently, there exists a dynamic equilibrium. There is no pressure to sell problematic investments and therefore the value oriented investor has no mechanism with which to bargain for a low purchase price from a potential seller. The focus is not even upon the given investment as such. It is upon portfolio standard deviation, hedge ratios, gross and net exposure, beta adjusted net exposure and average drawdown. This might one day prompt a very lively, but ultimately sterile debate about whether this is the classical serenity of the ancient Greek philosophers or merely an arithmetically induced form of complacency. The debate is ultimately sterile because the rhetorical advantage must be conceded to the group that asserts that it practices scientific risk control.

### **G - The Thread of the Argument Resumed or Joseph Stalin’s Hedgy Fund Revisited**

The most curious circumstance of the modern era is that all strategies seem to place a heavy reliance upon investment in financial services and related industries. This does not trouble anyone since financial services represent 20.4% of the S&P 500 as of January 16, 2004. Of course, little reflection is required to see that financial services represent much more of the index. General Electric, General Motors and Ford are not included as financial services firms and yet financial services represent the centerpiece of the profitability of these firms. Other such nomenclature abuses exist in the S&P 500 sectoral definitions.

However, there is nothing objectionable in mere ownership of financial services and related firms. Indeed, there is nothing objectionable in a circumstance in which all managers chose to have large holdings of such firms. The only problem is when all such managers own large holdings of these firms and claim to be different. The managers might one day actually be asked to be different. The most obvious means of becoming different would be to sell the shares of the investments that cause the managers to be similar. The irony is that the managers would all be selling the same financial services related shares. Hence, managers with entirely different philosophies and motivations would undertake an identical action with the objective of being diverse. In economic terms, this is a self reinforcing as opposed to a self equilibrating cycle. In investment terms, it is the return of Joseph Stalin’s hedge fund.

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**Table I: Real Estate and Financial Services Included in the Value Line Growth Screen**

ACE Limited	Lowe's Cos.
AFLAC Inc.	MBNA Corp.
American International Group	Monaco Coach
Brown & Brown	Progressive (Ohio)
Centex Corp	Pulte Homes
Countrywide Financial	Ryland Group
ElkCorp	SEI Investments
Fastenal Co.	SLM Corp.
Home Depot	Standard Pacific Corp.
Hovonian Enterprise A	Thor Inds.
KB Home	Total System Services
Lennar Corp.	

**Table II: Retail Firms Included in the Value Line Growth Screen**

AutoZone Inc.  
Best Buy Co.  
Christopher & Banks  
Claire's Stores  
Dollar General Corp.  
Family Dollar Stores  
Gap (The), Inc.  
Kohl's Corp.  
NBTY, Inc.  
Quiksilver, Inc.  
Ross Stores  
TJX Companies  
Wal-Mart Stores  
Williams-Sonoma

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**Table III: Real Estate and Financial Services Related Firms  
Included in the Value Line High Dividend Non-Utility Yield Screen**

Annaly Mortgage Mgmt.	Weingarten Realty
Allied Capital Corp.	Kimco Realty
Thornburg Mtg.	Avalon Bay Communities
Apartment Investment	Federal Realty Inv. Trust
Equity Office Properties	Trizec Properties
New Plan Excel Realty	Crawford & Co. B
Capitol Fed. Fin'l	Kimball Int'l B
Hospitality Properties	Washington Mutual
Alliance Capital Management	Prologis
Health Care Property	Bank of America
Healthcare Realty Trust	Catellus Develp. R.E.I.T.
Penn. R.E.I.T.	KeyCorp
Crescent Real Est.	AmSouth Bancorp.
Mack-Cali Realty	Bassett Furniture
Archstone-Smith Tr.	First Merit Corp.
Liberty Property	National City Corp.
United Dominion Reality	Rouse Co.
Equity Residential	Unitrin, Inc.
BRE Properties	BBOT Corp.
Duke Realty Corp.	Comerica, Inc.
New York Community	First Horizon National
Regions Financial	PNC Financial Serv.
Washington R.E.I.T.	Can Imperial Bank
Simon Property Group	Hudson United Bancorp

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**Table IV: Real Estate and Financial Services Related Firms In the Value Line Low P/E Screen**

Beazer Homes Usa	Aigon Ins. Group
Sea Containers Ltd. A	Allstate Corp.
Kb Home	Berkley (W.R.)
Hovnanian Enterpr. A	Lehman Bros. Holdings
Standard Pacific Corp.	Bear Stearns
Centex Corp.	Old Republic
Ryland Group	Loews Corp.
Everest Re Group Ltd.	UNUM Provident Corp.
M.D.C. Holdings	Thornbury Mtg.
Horton D.R.	Fidelity National
PartnerRe Ltd.	Amer. Financial Group
Pulte Homes	Greenpoint Fin'l
ACE Limited	Regions Fin'l
Lennar Corp.	MCIAInc.
XL Capital Ltd.	Hartford Fin'l Svcs.
NVR, Inc.	Nat'l Bank of Canada
Annaly Mortgage Mgmt.	National City Corp.
Building Materials	Chubb Corp.
Countrywide Financial	Morgan (J.P.) Chase
Toll Brothers	PNC Financial Serv.
Fannie Mae	

**Table V: Retail Related Firms Included In the Value Line Low P/E Screen**

Group 1 Automotive
Sears, Roebuck
Shopko Stores
Rent-Way Inc.

**Table VI: Real Estate and Financial Services Related Shares Included In the Value Line "Bargain Basement" Screen**

Beazer Homes Usa	KB Home
Toll Brothers	Centex Corp
Standard Pacific Corp.	Ryland Group
M.D.C. Holdings	Bear Sterns
Knight Trading Group	Edwards (A.G.)
Investment Techn.	Herton D.R.

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### Table VII: Retail Related Companies Included In the Value Line “Bargain Basement” Screen

Enesco Group  
Hudson’s Bay Co.  
Hancock Fabrics  
Borders Group

# ❖ Studies in Absurdity ❖

August 10, 2004

## Distressed Utilities from the Short Seller Perspective

Hedging, in its modern usage with regard to equity investing, is known as the scientific control of risk. There seem to exist a virtually limitless array of strategies to extract return from equities and place risk upon someone else. The common denominator of such strategies is to simultaneously be long some equities and short some other equities. It is this seemingly simple idea that has created an investment management industry known as the hedge fund industry. This industry has in turn created other industries that service the hedge funds or, perhaps more properly expressed, act as suppliers. One of these suppliers is that industry known as the credit default swap industry.

The central idea is that one can purchase a bond of a seemingly lower credit quality and swap some or perhaps all of the default risk with a bank. The bank may or may not hold the risk for its own capital account. It may “hedge” its own risk by engaging in an offsetting swap transaction with yet another entity. However, at the end of this chain one will not necessarily find a willing holder or bearer of risk. It is claimed that the default risk can be readily hedged by an appropriate short position in the publicly traded share of the credit.

Readers of this essay will undoubtedly be aware that the *Contrarian Research Report* publication of Horizon Research has frequently recommended the share of various distressed utilities. All of these utilities are currently encumbered by excessive debt. Many of these debt instruments are high yield by the contemporary standard of low interest rates. Consequently many seekers of yield of the hedge fund variety endeavor to “capture” this yield by ownership of bonds and either purchase of credit default swaps or perhaps short sale of the individual equities. The distressed utilities group has the distinct honor to have accumulated remarkably large short interest in relation to trading volumes. The data for July 2004 is tabulated below.

	<b>Current Short Position</b>	<b>Average Daily Volume</b>
1. Calpine	125,006,771	8,462,043
2. El Paso	44,362,355	3,607,510
3. TXU Corp.	27,716,783	3,056,429
4. Sierra Pacific Rs.	26,715,956	1,299,257
5. Allegheny Energy	20,072,811	1,272,876
6. CenterPoint Energy	19,929,058	1,266,029
7. CMS Energy	17,628,843	832,029
8. Reliant Energy	17,408,923	1,861,024
9. Korea Electric Power	17,023,818	766,829
10. PG & E Corp.	15,821,238	1,313,686
11. Williams Cos.	15,779,217	2,517,462
12. Dynegy	24,999,924	2,370,262
13. Duke Energy	30,064,731	2,407,348
14. Teco Energy	20,427,322	1,259,286

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All of these short positions rank among the top 100 short position on the New York Stock Exchange for July 2004. However, this mere fact cannot convey the comparative size of the short positions. This can be properly understood by short position in relation to daily trading volume or days required to cover, this data is tabulated below:

### Utility Short Position on the NYSE July 2004

<u>Days Required to Cover (dtc)</u>	
1. Calpine	14.88
2. El Paso	12.30
3. TXU Corp.	9.07
4. Sierra Pacific Rs.	20.57
5. Allegheny Energy	15.78
6. CenterPoint Energy	15.74
7. CMS Energy	21.19
8. Reliant Energy	9.35
9. Korea Electric Power	22.19
10. PG & e Corp.	12.05
11. Williams Cos.	6.26
12. Dyregy	10.54
13. Duke Energy	12.48
14. Teco Energy	16.22

It is possible that reasonable minds may forecast an eventual bankruptcy filing for Calpine. However, it is certainly not likely that Allegheny Energy or Duke Energy will be bankruptcy candidates. However, since all of these companies are encumbered by debt and since bond investors wish to collect yield without default risk, the bonds are held with an associated short equity position. Incidentally, none of these issuers, with the possible exception of Calpine, are trading at yields that would suggest serious default risk.

For example, CMS Energy 9.875% due October 15, 2007, trade at 111.50 for a yield to maturity of 5.848%. The company is rated B. Similarly, CMS Energy 7.50% due January 15, 2009 trade at 104.75 with a yield to maturity of 6.253%. Allegheny Generating Co. 6.875% bonds due September 1, 2023 trade at 91.75 for a yield to maturity of 7.707%.

If one were to reject the notion that the short interest in the distressed utilities exists as a hedge for bond investors then one must accept an alternative reason for the short position, such as that these firms merely have poor fundamental qualities. In order to compare the magnitude of this short interest to other low quality firms, one should find other low quality firms with similar short interest ratios. Unfortunately, it is difficult to find firms with more than 10 days short coverage on the NYSE.

Among the top 100 short positions one could cite Delta Airlines (16.04 dtc), AMR (12.2 dtc), Xerox (13.99 dtc), General Motors (10.03 dtc), Silicon Graphics (16.05 dtc), Chunghwa Telecom (141 dtc), HCA Healthcare (18.25 dtc), Winn-Dixie Stores (22.82 dtc). Tenet Healthcare (19.03

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dtc), Albertson's (11.48 dtc), Orthodontic Centers of America (63.85 dtc), Krispy Kreme Doughnuts (15.64 dtc), Univision (14.00 dtc), Chico's FAS (17.92 dtc), Lyondell Petrochemical (12.50 dtc), Allied Capital (21.44 dtc), Unumprovident (15.20 dtc), News Corp. (14.30 dtc) and Northfork Bancorp (10.73 dtc).

The most cursory view of the comparable short interest firms would suggest that the common denominator of this group is danger or near danger of insolvency. Thus, one can only conclude that a similar view is held by the community of investors that choose to be short the distressed utility shares. In any case, it is surely evident that an investment in distressed utility equity is a most Contrarian investment.

If the consensus view proves to be correct, as indeed might be the case, then it must follow that many bond investors in these enterprises as well as rating agencies are very misinformed. Of course, if the contrarian view is correct and these companies in the fullness of time repair their debt encumbered balance sheets, this should be the occasion for an interesting short squeeze. If the basis of the short interest is fundamental, then short interest might be gradually covered as the fundamental position improves.

On the other hand, if the short interest is caused by a hedged credit position, then the short interest will be repurchased in a more mechanical manner as debt ratings improve. In any case, many investors remark that the current investing environment lacks volatility. One cannot know the future with any degree of certainty. Yet, it does seem likely that the distressed utilities will be the source of much future volatility irrespective of whatever scenario will unfold.





# ❖ Studies in Absurdity ❖

August 23, 2004

## Utilities From A Buyout Perspective

At times various industries are subject to consolidation activities. The synonym most freely employed for this type of activity is buyout. This type of activity is commonly accompanied by a sort of speculative madness in which investors pay increasingly higher prices for publicly traded firms that are suspected to be candidates for buyout. This is so common a phenomenon that its occurrence is considered to be trivial. If this is so, then surely the absence of such madness should merit observation and notice.

In the past eight months there have been eight utility buyout transactions. These are as follows:

1. In November 2003, Enron agreed to sell Portland General Electric to the Texas Pacific Group.
2. In January 2004, a private equity group organized by AIG Global Investment agreed to buy 25 power plants from El Paso.
3. In March 2004, Unisource (Tucson Electric Power) agreed to be acquired by Kohlberg, Kravis, Roberts.
4. In May 2004, Brascan agreed to acquire 769 megawatts of generating capacity from Reliant Energy for \$100 million. The assets are primarily hydro-electric and are located in upstate New York.
5. In July 2004, TNP Enterprises (Texas New Mexico Power) agreed to be acquired by PNM Resources (Public Service of New Mexico).
6. In July 2004, Centerpoint Energy announced the sale of its interest in Texas Genco to a group composed of The Blackstone Group, Hellman & Friedman LLC, Kohlberg Kravis Roberts, and Texas Pacific Group.
7. In August 2004, Arlight Capital Partners agreed to purchase the West Virginia Natural Gas operations of Allegheny Power.
8. Approximately four weeks prior to this transaction, Arlight Capital Partners raised \$1.6 billion for a power industry investment fund. The original Arlight fund raised \$950 million for a power industry investment vehicle in September 2002. This was at the height of the utility crisis.

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Until very recently, private equity funds did not generally invest in utilities. The inherent complexity of utility deals was sufficient to dissuade such investment. In any case, the presence of other investment opportunities made utility investing unnecessary.

In the current investment environment, it is difficult to find a non-financial services firm that can be leveraged and that trades for less than 20x reliable earnings. Given current interest rates and the need to pay at least the customary 20-25% control premium to undertake an acquisition, many forms of leveraged buyout are not currently practical.

Nonetheless, the leveraged buyout firms have access to enormous amounts of capital. It has been calculated by Carlyle/Riverstone Group (yet another group formed to conduct energy buyouts) that only 2% of private equity funds have as yet been committed to this sort of utility buyout transaction.

It is interesting that at the height of the utility crisis, there were few investors in the utility field. In late 2002, First Reserve Corp., the oldest energy buyout firm, bought 33% of Quanta Services. This latter company is engaged in utility construction and maintenance. In addition, Mid American Energy, a subsidiary of Berkshire Hathaway, was active at this time with purchases of the Kern River Pipeline, the Northern Natural Gas Pipeline and loans to such utilities as TXU as well as a convertible preferred investment in Williams Cos. However, Mid American is somewhat constrained as regards further utility investment by various provisions of the Public Utility Holding Company Act of 1935.

Subsequent to late 2002, the most noteworthy buyout transaction was the purchase of the Williams Cos. general partner interest in Williams Energy Partners by Madison Dearborn Capital Partners and Carlyle/Riverstone. The transaction is not worthy of note because of its size; it is only worthy of note because it represents something of a strategic shift of focus for Madison Dearborn. This latter firm has four funds under management, with nearly \$7.7 billion in assets. The first fund was launched in 1993. This is the first investment of this firm in a regulated business.

Consequently, over a very brief period of time, the focus of a very significant portion of the leveraged buyout community has been tuned toward the field of utilities. If the attention of this group of private equity firms had been directed towards any other industry group, it is reasonable to expect that the customary frenzy would have overtaken the investment community. Yet, the frenzy has not occurred. It is still possible to purchase a utility at a discount to book value. Examples are Aquila Energy, El Paso, Sierra Pacific, Dynergy, CMS Energy, SEMCO Energy, Calpine and Reliant Energy. One might definitely wonder whether the absence of frenzy is not, in itself, a form of frenzy.

## ❖ Studies in Absurdity ❖

### Afterword I

Kohlberg Kravis and Roberts is apparently content to pay 17.4x current earnings for Unisource. This is also equivalent to a purchase price that is 1.5x book value. The Cascade LLC (Bill Gates's investment vehicle) is apparently content to invest in PNM Resources at 15.5x current earnings or 1.12x book value. PNM Resources claims that it will generate \$10 million of pre-tax synergies as well as \$40 million of pre-tax savings as a consequence of refinancing TNP Enterprises debt. The company should have \$68 million shares outstanding on a fully diluted basis subsequent to the merger. This is likely to be an accretive transaction.

The Kohlberg Kravis and Roberts, Blackstone et. al. buyout group for Texas Genco is apparently paying 13.4x current earnings and 1.16x book value. Moreover, the buyout group appears to be content to proceed with the exercise of the Texas Genco right of first refusal to acquire the 25.2% interest in the South Texas Project Electric Generating Station. This is a 2,500 MW *nuclear* power plant. The buyers appear content with their investment. Nonetheless, utility investing has not gained very many enthusiasts in the publicly traded equity community.

### Afterword II

On June 23, 2004, Nevada Power, a wholly owned subsidiary of Sierra Pacific Resources, agreed to buy a partially constructed 1,200 MW power plant from Duke Energy. The purchase price is \$182 million and it is estimated that an additional \$376 million will be required to complete the plant. The plant itself is located in the Moapa Valley, which is 20 miles northeast of Las Vegas. The plant will not be operational until 2006. Sierra Pacific is considered to be in danger of insolvency because of \$336 million in power trading arrangements that Enron claims it is owed.

The state commission (PUCN – Public Utilities Commission of Nevada) is expected to approve the transaction within 60 days. It is apparently satisfied that the utility can carry the construction burden of the yet to be completed plant. The investment community considers Sierra Pacific to be properly valued at 65% of book value.

It should be noted in this connection, although it is not necessarily pertinent to the subject of this report, that the Federal Energy Regulatory Commission may well exert jurisdiction over the Enron-Sierra Pacific Power contract and may decide (unlike the Enron bankruptcy judge) that Enron is not entitled to \$336 million in termination payments. In this case, Sierra Pacific may well trade at a premium to book value.

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### Afterword III

The eight deals listed in the text of the main body of this essay perhaps leave the impression that this is the entirety of all electric power transactions. This is not the case. The main body transaction list was oriented toward the inclusion of leveraged buyout activity. A partial list of other transactions recently announced follows:

1. Ancora Management LLC will purchase the Cleveland Thermal District heating and cooling system that provides steam and chilled water to more than 200 buildings. The transaction was announced in July 2004.
2. Ameren Corp. will purchase Illinois Power from Dynergy for \$500 million. Ameren will also assume \$1.8 billion of debt. The transaction was announced in July 2004.
3. Edison International announced that it will sell 13 power generation plants to the British publicly traded firm International Energy for \$2.2 billion plus the assumption of \$3.2 billion of debt. The plants have an aggregate generation capacity of 5,400 MW. The transaction price is therefore equivalent to \$1,000,000 per MW. The transaction was announced in July 2004.
4. American Electric Power agreed to sell 4 minority interests in Colorado cogeneration plants to a subsidiary of Bear Stearns. The sale price for the four minority interests was of \$156 million. This was equivalent to \$567,000 per megawatt for equity interest only, without consideration of de facto assumption of debt. The transaction was announced in March 2004 and closed in July 2004.
5. American Electric Power completed the sale of 3,813 MW located in Texas to a consortium of Sempra Energy Partners (San Diego Gas & Electric) and Carlyle/Riverstone. This occurred in July 2004. The transfer of the equity interest occurred at 1.62x book value.
6. Fortis, a Canadian utility, agreed to buy the Alberto and British Columbia assets of the U.S. based Aquila Energy for \$1.4 billion. Aquilla originally paid \$600 million for the Alberta assets in 2000. The British Columbia assets are carried on the Aquilla books for \$461 million. Fortis therefore purchased at a premium to book value. The transaction closed in May 2004.
7. Entergy announced that it would sell its Enetegy-Noch trading unit (a buyer has not yet been selected) and that it would spend \$1.5 over the next 24 months to repurchase shares. If Entergy-Koch is not sold as planned, the stock repurchase plan would be reduced to \$1 billion. At current prices, the more aggressive stock repurchase plan would reduce Entergy shares outstanding by over 10%. Entergy would be repurchasing shares of itself at 1.58x book value. Utility share repurchases are very unusual. This was announced on August 2, 2004.

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This is not an exhaustive list. There are many transactions that have not been cited including some by FPL Group, CMS Energy and NRG Energy. This list is sufficiently exhaustive to leave the impression in the mind of the reader that an extraordinary amount of acquisition activity is being undertaken in a fairly short period of time. Most interestingly, it is largely ignored by the participants in the world of publicly traded equities.

### Afterword IV

There is one aspect of utility investing that does not escape the keen scrutiny of the Wall Street community. This is the subject known as BPL. This acronym stands for Broadband Over Power Lines. It seems that until recently the inherent impedance and surge variations present in power lines have been an impediment to the development of high speed communications over power lines. However, modern advance in such things as digital signal processing have made BPL possible.

Consequently, some two dozen utilities are conducting trials of high speed internet access. If high speed internet access is possible, then voice over internet protocol is also possible. Quite obviously, Wall Street is highly intrigued, especially as companies conducting trials are sizeable and respectable. These firms include Cinergy, PPL Progress Energy, PEPCO Holdings, and Consolidated Edison. In fact, it has been learned that these firms are cooperating in this matter with Earthlink. This latter company is threatened by the evolution of high speed access over cable and thus is developing a countervailing strategy in concert with electric utilities.

It is believed by those with knowledge in this field that there are only two vehicles by which one might invest in this new technology. These are publicly traded firms known as TelKonet (TKO) and Ambient (ABTG). However, four companies in this field apparently are planning Initial Public offerings. These are eagerly awaited. The four private firms are known as:

1. Current Technologies
2. Amperion
3. Main.Net
4. Design of Systems on Silicon

Telkonet has a \$97 million market capitalization and \$2,000,000 of revenue. Thus, it trades at 485x revenue. Its P/E ratio is infinite since it has no earnings. Its price to book value ratio is 5.4x. This ratio is likely to increase since the primary component of book value is roughly \$18 million of cash that is being expended at the rate of almost \$5 million per quarter. The company has attracted some institutional ownership.

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Ambient has only a \$36 million market capitalization. Its market capitalization to sales ratio cannot be calculated since it has no sales. Therefore, it cannot have profits and consequently it cannot have a P/E ratio. Its price to book value ratio is 7.3x. This ratio is likely to rise at a more rapid rate than Telkonet since it is spending its limited cash resources at a much more rapid pace. It is currently expending \$4.5 million per quarter and this is roughly equal to the most recently available cash balance.

Its primary investor and apparent source of capital is Consolidated Edison (ED). This latter company trades at 15.4x current earnings and 1.4x book value. Evidently, the management of Con Edison has proven that at least some portion of the assets of a utility can trade at a substantial premium to book value.

August 25, 2004

## **A Reader Responds to “Joseph Stalin’s Hedge Fund”**

Dear Horizon,

While I think your point about growth, value, and income investors all buying financial services/real estate companies is very interesting, I don't think the historical analogy with the 1930's is a good one. First, modern historians have conclusively shown the Ukrainian famine was a deliberate act. Stalin's goal was not greater production, but genocide. He and his henchmen viewed the Ukrainian peasants as class enemies because they had a long tradition of owning private property and they generally favored an independent Ukraine (see Robert Conquest's *Harvest of Sorrow*.) Second, it is a mistake to describe Herbert Hoover as “one of the more...doctrinaire believers in the market mechanism”. Contrary to popular belief, Hoover was a proponent throughout his career of state intervention and many of the New Deal policies championed by FDR were actually just expansions of programs started by Hoover. (The best book on the subject is Murray Rothbard's *America's Great Depression*, but any recent biography of Hoover acknowledges this point.) Finally, the idea that declining prices forced American farmers in the 1930's to increase production, thereby further lowering prices, doesn't make much sense. It is a basic tenet of economics that most people will always maximize their profits and in the case of farmers that usually means maximizing profitable production. Your claim that low commodity prices pushed farmers to ramp up production suggests that in prior years when prices were high farmers purposefully ease up and made less money than they otherwise would have.

Sincerely,

[A *Contrarian Research* Reader]

Dear [Reader],

Thank you for your letter. You raised a number of interesting points. I was not aware that any recent biography regards Hoover as a state interventionist. Certainly President Hoover does not portray himself as a state interventionist in his memoirs. Certainly, President Hoover was severely criticized by the Democratic Party as not sufficiently interventionist. Hoover himself



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devotes the second half of Volume 3 of his memoirs to severe critique of the interventionist policies of President Roosevelt. As an example, one might cite Chapter 35 of Volume 3, which is entitled “Usurpation of Power”. In addition, Chapter 36 of the same volume is entitled “Collectivism Comes to the Currency – and its Consequences”. Chapter 37 is entitled “Fascism Comes to Agriculture”. Chapter 38 is entitled “Fascism Comes to Business – With Dire Consequences”. Chapter 39 is entitled “Fascism Comes to Labor – With Consequences”. Chapter 40 is entitled “Introduction to Socialism through Electrical Power”. This chapter severely criticized the Tennessee Valley Authority. Chapter 42 is entitled “Collectivism by Thought Control and Smear”. In Chapter 43 Hoover does applaud some Roosevelt initiatives such as the Export-Import Bank, Social Security, the Securities and Exchange Commission and the Fair Labor Standards Act. Nonetheless, the thrust of the Hoover memoirs is quite anti-state intervention.

One might readily object that these memoirs, as perhaps all memoirs, are disingenuous. This may be correct. Nevertheless, I have found it difficult to discover any serious Republican contemporary of Hoover who would characterize him as a state interventionist.

I am familiar with the work of Prof. Rothbard that you cite in your letter. It may be the best book on the Great Depression. I leave judgment of such matters to others. Personally, I find the views of that book rather extreme. However, since anything that I have to say on the matter is not likely to be convincing, I would like to defer to the opinion of William F. Buckley on the subject of Rothbard. Mr. Buckley is hardly a proponent of state intervention in business.

There are those – I think of late Murray Rothbard – who cried out against politics of co-existence and liberation, but his perspective was so much the captive of an anti-statist obsession that his eyes squinted, and at the end he was incapable of distinguishing – he loudly professed – between the leaders of the Soviet Union and the leaders of the United States. On this matter, in those frenzied days, I counter-preached that the man who pushes an old lady into the path of an oncoming truck and the man who pushes an old lady out of the path of an oncoming truck, are not to be denounced even handedly as men who push old ladies around.

The aforementioned quotation is from a speech that Mr. Buckley delivered at the Heritage Foundation on October 20, 1999. It is contained in the collected speeches of William F. Buckley in the volume entitled “Let Us Talk of Many Things” (Prime Publishing, © 2000, pg. 470).

The Rothbard criticism of Hoover is thus not entirely surprising. A man who cannot distinguish between Stalin and Hoover is not to be expected to distinguish between Roosevelt and Hoover. Of course, when reading history it is unfortunate that much polemicism interferes with scholarship. Hoover found it rather difficult to distinguish between Mussolini and Roosevelt.

It is worthy of note that President Hoover established the Hoover Institution on the campus of Stanford University as much more than a mere presidential library. It is supposed to be dedicated to the study of social systems based upon private enterprise and personal freedom. Its mission statement supports the view that “...ours is a system where the Federal Government

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should undertake no governmental, social or economic action except where local government, or the people cannot undertake it for themselves...” In any event, surely the scholars of the Hoover Institution would not be equally pleased that their organization should be called the Roosevelt Institution.

Your second point (it is actually your first point) relates to the motivation of Stalin in commencing upon the policy of collectivization. I did consult the work that you cite on the subject by Mr. Robert Conquest. Incidentally, it is one of the unusual ironies that sometimes occur that Mr. Conquest was a scholar at the Hoover Institution at the time that the book was written. The last chapter does indeed attribute such motivations to Stalin.

I myself find Stalin’s motivations on anything to be somewhat inscrutable. It is known that he was one of the most ruthless despots in history. If someone dared to oppose him, or if Stalin merely suspected opposition where there was none, the individual would vanish. Mr. Conquest makes the argument that the Ukrainian peasants were prevented from leaving the Ukraine during famine as a means of eliminating class enemies. It must be rather difficult to starve someone on a working farm in a rural area unless one deploys sufficient well fed police to prevent peasants from a) growing food, b) hunting and fishing, c) stealing food from working farms on which they were employed. Surely it is far more efficient to execute the alleged class enemy in the customary manner. Indeed, Stalin must ultimately have come to this conclusion, since he did have literally countless millions of persons executed in the customary manner.

If Stalin had wished to murder people by means of famine caused by the collectivization of agriculture, he must have been a sufficiently astute student of market economics to predict that the loss of incentive would cause production to fall. In any event, I do not think that a vast gulf separates myself from Mr. Conquest. I think that Stalin was a ruthless despot that murdered people and had no knowledge of market economics. Mr. Conquest seems to think that Stalin was a ruthless despot that murdered people and had profound knowledge of market economics.

Your last point relates to the idea that declining prices forced American farmers to increase production. You state that my claim to this effect is counter to the basic tenets of economics.

First, I am flattered that you use the word claim. It implies that I have seriously studied the subject. If I had studied the subject much more intensively than I have thus far I might be considered to be a dilettante. I am far from being a scholar on this subject as well as many others. I also agree that increasing production during a period of declining prices is counter to the basic tenets of economics. Nonetheless, the statistics produced by U.S. Department of Agriculture do manifest an interesting pattern.

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	<b>Acres Planted</b> <i>(000's acres)</i>	<b>Production</b> <i>(000 bushels)</i>	<b>Price</b> <b>Per Bushel</b>
1926	60,712	832,213	\$ 1.21
1927	65,661	875,059	1.18
1928	71,152	914,373	0.998
1929	67,177	824,183	1.03
1930	67,559	886,522	0.663
1931	66,463	941,540	0.382
1932	66,281	756,307	0.375
1933	69,009	552,215	0.736
1934	64,064	526,052	0.839

As late as 1933, acres planted were actually increasing. Production itself achieved a record amount in 1931 when the price declined to 38¢ per bushel. Afterward, production did decline although acreage planted did not decline. Scholars are rather divided on the causes of this phenomenon. Some believe that unfavorable weather conditions explain production declines. Others believe that it may be attributable to seizure of many farms in mid planting season for mortgage foreclosure or non-payment of property taxes. It was the policies of the Roosevelt Administration, commenced in 1933, that deliberately sought to raise agricultural production.

The statistics presented in this table are from the National Agricultural Statistics Services of the U.S. Department of Agriculture. Internet site reference is at [www.nass.usda.gov](http://www.nass.usda.gov). My own impression of the date is that given weather, taxes, debt and government policies, production and prices are determined by more than merely the decisions of farmers.

Once again, I thank you for your letter. I do not expect that you will accept my view and I imagine that my propensity to error is rather high. Nonetheless, you may find that an explanation of my reasoning at least clarifies my point of view.

Sincerely yours,

Murray Stahl

## The Other Housing Markets

### I. The Optimists Versus the Pessimists

Among the various investment debates between optimists and pessimist, perhaps none is as polemical as the debate over the future course of the housing market. In the case of this essay, the term housing market refers to the shares of various housing related companies such as the homebuilders, home supply retailers such as Lowes, as well as suppliers of credit such as Fannie Mae. Although the ultimate result is not knowable, it does appear that the optimists have exhibited far more creativity with regard to the rhetorical presentation of their argument.

The pessimists are generally content with reference to the cyclical characteristics of the housing industry. The pessimistic argument is that a combination of low-interest rates and high home prices has created a sort of cyclical excess. As housing returns to more normal conditions a veritable collapse of industry profits will occur.

The optimists have rather ingeniously bypassed this type of argumentation and have successfully rendered it rather sterile. The optimistic case may be found in two variants. The first variant states that the average price of a new home sold in the U.S, has only increased by 5.0% per annum since 1980. This is hardly consistent with excess, especially since the 1980 reference point was a period of extraordinarily high interest rates and hence artificially low real estate prices. In fact, the average selling price for a new home only increased by 5.05% per annum since 1994. Moreover, it is asserted with some considerable justification and persuasiveness that the average selling price comparison is not an appropriate measurement since modern housing offers better features and more floor space than was the case historically. Therefore, one must make some adjustment for a quality differential. The National Association of Home Builders calculates a Quality Adjustment Index (QAI). This adjusts for changes in home size as well as amenities over time. Properly adjusted, the average new home price increased at a 2.55% compound annual rate since 1980. The QAI adjusted rate of price increase since 1994 is only 2.71% per annum. (see Appendix 1 for this data). This is a powerful and rather convincing argument.

The second optimistic variant is yet more creative. This elegantly bypasses the macroeconomic or cyclical argument of the pessimistic camp. The view is that the publicly traded homebuilders have gained and will continue to gain market share from smaller, private homebuilding firms. Thus, even in the event that aggregate new home sales should decline, the public group can compensate for the decline to a significant degree by market share increase. The decline in

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profits, if this should occur, is likely to be quite modest. In any case, this decline is fully discounted in the low valuations of publicly traded home builders.

The market share argument is difficult to refute since the available data clearly indicates that the publicly traded firms now have a larger share of the aggregate new home market than was previously the case. Estimates of current market share can be found in Appendix 2. The 19 publicly traded homebuilders listed in Appendix 2 have achieved an approximately 25% national market share. This share is sufficiently low so that it can be envisaged to further increase. The rhetorical force of this argument is that it makes any cyclical argument essentially irrelevant.

### **II. A Different Housing Market**

Investors are accustomed to statements about the current strength of the housing market. It may therefore be rather surprising to learn that one aspect of the national housing market is in a decline of virtually unprecedented magnitudes. This is the manufactured housing market. In 1996, a generally strong year for housing in a historical context, sales of manufactured homes represented a very significant share of new home construction. In that year 363,411 manufactured homes were sold. This is to be compared with 758,000 new homes sold in the same year. In 2003, the last complete year for which there is available data, manufactured home shipments were 130,937. New single family homes sold totaled 1,087,000. The data from 1980-2003 is included in Table 1.

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TABLE 1  
**Manufactured Home Shipments vs. Single  
 Family Homes Sold 1980-2003**

	Manufactured Homes	Single Family Homes
1980	221,091	545,000
1981	240,313	436,000
1982	238,808	412,000
1983	295,079	623,000
1984	294,933	639,000
1985	283,489	688,000
1986	244,660	750,000
1987	232,598	671,000
1988	218,429	676,000
1989	198,254	650,000
1990	188,172	534,000
1991	170,713	507,000
1992	210,787	610,000
1993	254,276	666,000
1994	303,932	670,000
1995	339,601	667,000
1996	363,411	758,000
1997	353,377	801,000
1998	372,843	885,000
1999	348,671	906,000
2000	250,550	877,000
2001	193,229	901,000
2002	168,411	972,000
2003	130,937	1,087,000

Source: National Assn. of Home Builders and  
 Manufactured Housing Institute

The current cycle in manufactured housing is far more severe than the last decline experienced the real estate crisis of 1988-1991. The worst year for manufactured housing was 1991, when 170,713 manufactured homes were sold. In 2003, only 130,937 manufactured homes were sold.

Interestingly, during the previous 1988-1991 real estate crisis, conventional new home sales declined. During the current manufactured housing crisis, new home sales are quite robust. Consequently, one cannot but wonder if the market share gains made by the publicly traded homebuilders are at the expense of the manufactured home builders.

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If the answer to this hypothetical question is no, then one must wonder why manufactured home sales have reached depression levels. If the answer to this hypothetical question is yes, then one must wonder if customers that formerly could only afford a manufactured home are actually able to afford a more conventional home. New single family homes are on average far more expensive than manufactured homes. The comparison of new single family home prices (average) and average sales prices for manufactured homes in a historical context is to be found in Table 2.

TABLE 2  
**Comparison Between Single Family New Home  
 Prices and Manufactured Home Prices (*averages*)**

	Single Family Homes	Manufactured Homes
1980	\$76,400	\$19,800
1981	83,000	19,900
1982	83,900	19,700
1983	89,800	21,000
1984	97,600	21,500
1985	100,800	21,800
1986	111,900	22,400
1987	127,200	23,700
1988	138,300	25,100
1989	148,800	27,200
1990	149,800	27,800
1991	147,200	27,700
1992	144,100	28,400
1993	147,700	30,500
1994	154,400	32,800
1995	158,700	35,300
1996	166,400	37,200
1997	176,200	39,800
1998	181,900	41,600
1999	195,600	43,300
2000	207,000	46,400
2001	213,200	48,400
2002	226,700	51,300
2003	240,000 <sup>est.</sup>	N/A

Source: National Assn. of Home Builders and  
 Manufactured Housing Institute

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One of the many surprising variants of the law of supply and demand is that although manufactured home sales are significantly in decline, the average selling price is still being increased. In any event, if new home sales are capturing market share from manufactured homes, it is extraordinary that the former manufactured home buyer can afford a much more expensive dwelling. According to the Manufactured Housing Institute, the average buyer of a manufactured home earns \$28,900 per annum. It would not be easy for such an individual to carry the monthly payments (mortgage, insurance, property taxes, maintenance, and operating costs) of a \$240,000 home even with a 20% (\$48,000) down payment.

It is, of course, possible that the former buyers of manufactured homes have become far more affluent since 1997. It is also possible that the customary excess liberality of credit extension makes purchase temporarily affordable by virtue of such devices as adjustable rate mortgages and other devices. If the latter is actually the case, then the argument could be made that in the next housing cycle the homebuilders lose share to manufactured homebuilders while aggregate industry single family home sales are in decline. Naturally, such an argument is only a theoretical abstraction since one can only make assertions. Definitive proof is not possible.

### III. Another Housing Market

The consumer is not only offered the choice between a conventional single family home and a manufactured home, the consumer is also offered the choice between home ownership and rental in a multi-family residence. If one cannot accept the proposition that the single family home sales are increasing at the expense of manufactured homes, then one must search for another source of customers. This is because the national home ownership rate has been gradually increasing in recent years.

TABLE 3  
National Home Ownership Rate 1982-2003

1982	64.5%	1993	64.2%
1983	64.4%	1994	64.2%
1984	64.1%	1995	65.1%
1985	63.5%	1996	65.4%
1986	63.9%	1997	65.7%
1987	64.1%	1998	66.4%
1988	63.8%	1999	66.9%
1989	63.8%	2000	67.5%
1990	64.1%	2001	68.0%
1991	64.2%	2002	68.3%
1992	64.4%	2003 E	68.8%

Source –U.S. Census Bureau

It does appear that at least some of the increased demand for new homes has been at the expense of multi-family residences. The evidence for this is the national rental vacancy rate for multi-family housing as tabulated by the U.S. Census Bureau.



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TABLE 4  
**National Multi-Family Rental Vacancy Rate 1982-2003**

1983	5.7%	1993	7.3%
1984	5.9%	1994	7.4%
1985	6.5%	1995	7.6%
1986	7.3%	1996	7.8%
1987	7.7%	1997	7.7%
1988	7.7%	1998	7.9%
1989	7.4%	1999	7.1%
1990	7.2%	2000	7.0%
1991	7.4%	2001	8.4%
1992	7.4%	2002	9.0%

Source –U.S. Census Bureau

The increase in rental vacancy rate has been rather severe in the past several years. Nonetheless, another one of the oddities of the law of supply and demand makes itself manifest. The median asking rent has been steadily increasing. The absorption rate for new multi-family units has been steadily decreasing. The formal definition of absorption is an apartment that is occupied within three months of completion.

**Table 5 – Median Apartment Asking Rent**

1983	\$386	1993	\$573
1984	\$393	1994	\$576
1985	\$432	1995	\$655
1986	\$457	1996	\$699
1987	\$517	1997	\$729
1988	\$564	1998	\$738
1989	\$590	1999	\$790
1990	\$600	2000	\$815
1991	\$614	2001	\$881
1992	\$540	2002	\$905

Source –U.S. Census Bureau

**Table 6 -Multi-Family Absorption Rate**

1983	69%	1993	80%
1984	67%	1994	73%
1985	65%	1995	72%
1986	66%	1996	73%
1987	63%	1997	73%
1988	66%	1998	73%
1989	70%	1999	72%
1990	67%	2000	72%
1991	74%	2001	64%
1992	75%	2002	59%

Source –U.S. Census Bureau

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One must wonder if the declining absorption rate will ultimately result in a decline in either asking rent or the rate of multi-family rental unit construction. Thus far, the declining absorption rate has not impacted the rate of multi-family rental unit construction.

TABLE 7  
**Multi-Family Rental Unit Construction**  
**5 Units or More 1969-2003 (000 units)**

1969	486.0	1987	356.9
1970	490.8	1988	309.5
1971	684.6	1989	278.1
1972	846.8	1990	236.3
1973	853.6	1991	149.2
1974	511.3	1992	122.8
1975	299.4	1993	118.2
1976	304.9	1994	182.5
1977	399.3	1995	207.7
1978	462.2	1996	214.3
1979	423.4	1997	260.2
1980	313.1	1998	282.9
1981	255.3	1999	284.1
1982	278.9	2000	280.7
1983	420.8	2001	292.6
1984	431.0	2002	306.0
1985	468.4	2003	344.2
1986	442.7		

Source –U.S. Census Bureau

The coincidence of increased construction as well as increased vacancy rate is surely not a manifestation of a normally functioning market. Increased rental rate as aforementioned must be considered to be yet another anomaly.

### **IV. Another Investor**

The current housing cycle is most extraordinary, since different aspects such as manufactured housing versus single family housing are normally rather correlated and in the past several years have become negatively correlated. It is difficult to resist the conclusion that the market share gains of the traditional homebuilders have come at the expense of manufactured housing. Moreover, it is difficult to accept that the typical buyer of a manufactured home has suddenly become far more affluent. In addition, the apartment market seems to prosper and yet sacrifice share to the single family housing market. It is difficult to believe that this state of affairs can continue.

Nevertheless, many investors, including many very astute value investors, are attracted by the low p/e ratios of the homebuilder companies. Another notable value investor, the fellow who controls Berkshire Hathaway, appeared to be more attracted to the manufactured home builders. On August 7, 2003 Berkshire Hathaway acquired Clayton Homes, the leading manufactured home builder, for approximately \$1.7 billion. The purchase price represented a p/e ratio of 15.6x trailing earnings. If recent sales of manufactured housing is any guide current conditions, the investment has yet to establish its merit. It will be interesting to see which investor has properly

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assessed the future. It does not appear likely that both sets of investors will prosper. If manufactured homes regain share because easy credit terms or conventional homes cannot continue indefinitely, the conventional home builders might experience a most unusual and serious negative cycle.

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## Appendix 1

	<u>New Average Home Selling Price</u>	<u>Quality Adjustment Index</u>
1980	\$76,400	68.1
1981	83,000	73.5
1982	83,900	75.2
1983	89,800	76.8
1984	97,600	69.8
1985	100,800	70.7
1986	111,900	73.4
1987	127,200	77.4
1988	138,300	80.3
1989	148,800	83.5
1990	149,800	85.1
1991	147,200	86.2
1992	144,100	87.3
1993	147,700	91.1
1994	154,400	95.5
1995	158,700	98.2
1996	166,400	100.0
1997	176,200	102.9
1998	181,900	105.5
1999	195,600	110.7
2000	207,000	115.4
2001	213,200	119.5
2002	226,700	124.8
2003	240,000	N/A

Source: US Census Bureau

It is worthy of note in connection with the Quality Adjustment Index that according to the National Association of Home Builders the medium square footage of a new home has increased as follows in the past 30+ years:

1970	1,385 sq. ft
1990	1,905 sq. ft
2002	2,113 sq. ft.
2003	2,123 sq. ft

Similarly, in 1990, 76% of all new homes had central air conditioning. In 2002, this figure had increased to 87%. Similar figures can be found for the presence of a two car garage, number of bedrooms or number of bathrooms.

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## Appendix 2

### Home Sales of 19 Publicly Traded Firms, Most Recent Annual Figures

It should be noted that the sales figures of the home builders may not precisely correspond to the new home sales figures released by the U.S. government for two reasons. First, the U.S. government calculates home sales. The home builders count home delivered. A home sold might not necessarily be booked as revenue in a given accounting period since it might have a construction defect that is easily correctable and yet will prevent the home owner from occupying the residence until repairs or corrections are completed. Second, the home builders are not all on December fiscal years whereas the government statistics are for years ending December 31. Nonetheless, the individual sales figures should, in aggregate, give a reasonable idea of market share.

Beazer	15,800	MDC	11,225
Centex	42,823	KB Home **	23,404
Horton	37,637	Standard Pacific	7,676
Hovnanian	11,531	Brookfield Homes	1,528
Pulte*	32,693	M/I Homes	4,148
Lennar	32,180	Meritage	5,642
Ryland	14,978	Technical Olympic	6,135
NVR	12,124	WCI***	1,666
Toll Brothers	4,911	William Lyon	2,804
		Orleans	1,753
			270,658
* Domestic only ** Excluding France *** Homebuilding Revenue only; excludes Tower Apartments			

This represents an approximate 25.2% national market share. In reality, this number might be larger since the publicly traded companies tend to be concentrated in those states with the most rapid population growth. These are Nevada, Arizona, Colorado, Utah, Idaho, Florida, Texas, North Carolina, Washington and Georgia. The home builders almost certainly have a much higher than 25.2% in many of these states.

October 13, 2004

## eBay: The Problems Created by Consensus

History reveals that unhappiness and terrible strife frequently result when people differ. One of the ironies of economics and finance as a social science is that problems generally occur when people agree. This is because agreement in finance changes the rate at which future earnings are discounted. The earnings of a company upon which there is much disagreement are discounted at a very high rate. Conversely, the earnings of a company upon which there is no disagreement are discounted at a very low rate. Among those companies with a low future earnings discount rate there exists eBay.

Of course the simple fact that earnings are discounted at a low future rate does not imply that shareholders will necessarily earn only this rate. A sufficiently high rate of profit growth will counterbalance a low discount rate. The consensus eBay forecast is that the future rate of earnings growth will be very high. The critical question is whether such an optimistic consensus is reasonable.

Let us commence with the most wildly optimistic future possible for eBay. Let us presume that 20 years hence, eBay will have annual revenue that is roughly equivalent to the current annual revenue of Wal-Mart. In that case, in 2024, eBay should record \$272 billion of annual revenue. It may not be obvious to the reader that this is a wildly optimistic forecast. This is because the revenue of eBay is a function of the value of the merchandise that is sold on its network. The average fee might be in the region of 8 – 9 % of merchandise value. The eBay fee schedule is reproduced below:

### **Insertion Fees**

<b>Starting or Reserve Price</b>	<b>Insertion Fee</b>
\$0.01 – 0.99	\$0.30
\$1.00 – 9.99	\$0.35
\$10.00 – 24.99	\$0.60
\$25 – 49.99	\$1.20
\$50 – 199.99	\$2.40
\$200 – 499.99	\$3.60
\$500 or more	\$4.80

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### Final Value Fees

#### **Closing Price**

Items Not Sold  
 \$0.01 – 25.00  
 \$25.01 - \$1,000.00

Over \$1,000.01

#### **Final Value Fee**

No Fee  
 5.25% of closing value  
 5.25% until \$25  
 plus \$2.75% of the remaining  
 balance from \$25.01 - \$1,000  
 5.25% of the initial value  
 plus 2.75% of the initial \$25-  
 \$1,000  
 plus 1.5% of the remaining  
 value over \$1,000

Arithmetically inclined readers will perceive that an estimated revenue of 8-9% of merchandise value might be rather excessive. However, the purpose of the exercise is to be optimistic. Thus, if eBay were to record \$272 billion of revenue in the year 2024, it would need to sell through its system 11.76 x this amount (100/8.5%) or roughly \$3.2 trillion. This is equivalent to 29% of the current U.S. GDP.

Revenue figures are devoid of meaning without the application of a theoretical profit margin. The revenue comparison is with Wal-Mart. One might imagine that given this comparison, it might be appropriate to apply the Wal-Mart net profit margin of 3.5% and thereby derive an earnings figure. Although this is certainly reasonable, it is not wildly optimistic. A much more optimistic approach would be to apply to the 2024 revenue estimate the profit margin of Microsoft. This is currently 22.2% on a net basis. Such a figure is rarely, if ever, exceeded by a large enterprise.

Estimated revenue of \$272 billion in 2024, with a net profit margin of 22.2% would result in net income of \$60.384 billion in 2024. The next step would be to calculate an earnings per share figure. Towards this end, it is necessary to estimate the shares outstanding for eBay in 2024. This is rather difficult since eBay is generally increasing its shares outstanding each year. For instance, the eBay shares outstanding for each fiscal year on a fully diluted basis is provided below:

### Estimated Shares Outstanding

#### 1999- 2003 Fully Diluted

1999	546,066,000
2000	560,692,000
2001	561,190,000
2002	585,640,000
2003	656,657,000

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In order to remain optimistic, let us fix the number of shares outstanding in an amount equal to the fully diluted share count as it appears in the June 30, 2004 form 10-Q, which is the last available SEC filing. This is 682,421,000 shares outstanding. Thus, it is assumed that eBay will issue no shares for the next two decades and, therefore, shares outstanding in 2024 will be 682,421,000.

It will be recalled that net income in 2024 was estimated to be \$60.384 billion. Given this net income estimate and estimated 2024 shares outstanding, simple division reveals an estimated \$88.48 earnings per share figure in 2024. This is far in excess of the \$1.60 consensus earnings estimate for 2005. The consensus earnings estimate, it should be noted, does not count as an expense the costs, such as these might be, of options issuance. The optimistic case simply avoids this issue by the unrealistic assumption that options issuance will immediately cease.

There remains the question of the P/E ratio to be applied to profits in 2004. Some might argue that this is best estimated by the Wal-Mart P/E ratio as this currently exists. This is a P/E ratio of merely 19.28x and, as such, too low to be utilized in an exercise in optimism. The Microsoft P/E ratio of 20.29x is not much superior for use as a basis for optimism. Let us therefore arbitrarily apply a P/E ratio of 35x.

The justification of this is that eBay in 2024 would certainly be the largest company in the S&P 500 Index. There does not appear to be much precedent for the largest company in the S&P 500 trading at such a multiple. However, General Electric and Cisco Systems appear to have briefly surpassed this level in 2000 at the bubble peak. Nonetheless, the largest member of the S&P 500 does not generally trade at a 35X P/E ratio. There can be no doubt that eBay will be the largest company in the S&P 500 Index by 2024, since it is already in the 33<sup>rd</sup> position. eBay currently has a market capitalization that is approximately equivalent to 3M (Minnesota Mining and Manufacturing.) If all this were to occur in 2024, then eBay would sell for \$3,096.80 per share in that year. The compound annual rate of return for those shareholders with the wisdom and foresight to buy those shares at the October 8, 2004 closing price of \$92.59 would be 19.19% per annum.

Naturally this is a very optimistic figure. If eBay were merely to trade at 19.28x its 2024 estimated profits, its 2024 trading price would be \$1,705.89. Its compound annual rate of return would be 15.68% per annum. This is rather interesting, since it is immediately apparent that the long term compound annual rate of return is far more sensitive to earnings growth than to P/E ratio.

Let us therefore alter the growth rate of the company. Let us assume that eBay in 2024 will sell through its system a quantity of merchandise equal to that sold by Wal-Mart at the current time. This is \$272 billion. However, since eBay is an intermediary, it will generate as revenue 8.5% of this amount. This equals \$23.12 billion and is 8.5 x the current eBay revenue. We shall assume a Microsoft-like profit margin on a net basis of 22.2%. The current eBay profit margin exclusive of any expense associated with options issuance is 24.57%. In accordance with the estimate here presented, eBay would earn 22.2% of \$23.12 billion of revenue – or \$5.43 billion. This would be equivalent to \$7.52 per share, assuming share issuance were to immediately cease. The application of a 35X P/E ratio in 2024 would generate a share price of \$263.24 in that year. This



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yields a future 20 year compound annual rate of return of 5.36%. Consequently one might say that this is the return available to shareholders if eBay were to become equivalent to the current Wal-Mart with a much higher P/E ratio than Wal-Mart. If eBay were to become equivalent in scale of operations to Wal-Mart with a 22.2% net profit margin (versus the current Wal-Mart 3.5%) and a Wal-Mart P/E ratio of 19.28X, the 2024 share price would be \$144.99. The 20 year compound annual rate of return would be only 2.27%. If eBay were merely to duplicate Wal-Mart, a Wal-Mart profit margin of 3.5% and a Wal-Mart P/E ratio of 19.28X, the 2024 share price of eBay would be calculated as follows:

Merchandise Value through EBAY systems:	\$272 billion
X 8.5% equals EBAY revenue, or:	\$23.12 billion
X Wal-Mart Profit Margin of	3.5%
equals EBAY 2024 net income of	\$809 million
Divided by 682,421,000 shares equals:	\$1.19 per share in 2024
X 19.28 P/E ratio equals:	\$22.86 per share in 2024 as the eBay share price.

The compound annual rate of return equals <6.76%> per annum or a loss of 6.76% every year for 20 years.

It would seem reasonable to conclude that each \$22.86 of the eBay share price equals the forecast of one Wal-Mart success. Therefore, in order to achieve the current \$92.59 eBay price in the future, eBay would need to create 92.59 divided by 22.86 successes of the magnitude of Wal-Mart, or slightly more than four Wal-Marts as these currently exist. A level of success that is less than four times the current Wal-Mart scale results in a negative equity yield curve.

Since most reasonable observers would conclude that eBay, whatever its virtues, is not likely to exceed the scale of four Wal-Marts, one might well ask why it is as widely owned and traded. The daily trading volume of eBay is over 10 million shares, or 4X that of 3M, its current size equivalent in the S&P 500. The answer can only be that investors anticipate large short term profits from eBay whatever might be its long term compound annual rate of return. Consequently, it would appear that the equity yield curve for eBay is inverted.

If the yield curve for eBay is actually inverted, then the critical variable becomes the sell decision, which can be reduced to the search for the point at which the yield curve becomes negative. Yet, unlike the bond yield curve, this point is not readily knowable. One can only be a sound agnostic and confess that one cannot know what one cannot know. Nonetheless, one can know that the point at which the equity yield curve becomes negative is the point, by definition, at which the consensus group will choose to sell. Consensus implies agreement. In finance and economics, when market participants act in agreement problems frequently occur. It seems that participants implicitly agree that the destiny of eBay is to be many times larger than the contemporary Wal-Mart. These forecasts recur with great regularity throughout history. Each reprise shows the same result. Most readers can easily imagine the result.

October 19, 2004

## **Google and Yahoo as Toll Roads**

**(To be viewed as Part III of the Yahoo, eBay and Google Trilogy)  
(Or Humbug and the Internet Made Simple)**

Imagine a situation in which entrepreneurs could build tollgates in front of the retail establishments of the world. In this world the tolls would be assessed not against the shoppers but against the retailers based upon the number of individuals who entered given establishments. One might think, in the absence of other information, that this was a sort of organized crime racket. However, let us say that this was perfectly legal. In that case, one might envisage that the retailers would object. However, let us say that the entrepreneurs that operated the toll gates agreed, as a sort of quid pro quo, to guide potential shoppers to given stores if the stores agreed to pay a toll commensurate to those efforts. Thus, it could be argued that the store would actually benefit from this arrangement as it would receive more traffic than might have been the case without the toll. The owners of the store might nonetheless wonder how it would be possible to generate traffic without the exercise of coercion on the potential customers.

In such a world the toll gate operators would have the right to remove the street signs pointing to a competing retail establishment and, in its place, leave the signage of its new toll gate customer. This would be a fairly lucrative arrangement from the perspective of the toll gate operators. Yet, since this is only an exercise in imagination, let us suppose that the toll gate operators were still not content. The toll gate operators now undertook to produce road maps upon which the only roads labeled would be those where paying customers were located. Moreover, the toll gate operators were so clever that they paid monitors to stand at strategic crossroads and intersections to gently block both foot traffic and vehicular traffic in such a manner that potential shoppers are guided to shopping establishments rather than, let us say, parks where they might take a pleasant but nonetheless commercially useless stroll.

Such an exercise should require very little imagination since these aforementioned toll gates, bizarre road maps and paid monitors are merely “pay for search” engines, and banner ads, particularly of the “pop up” variety. The highway is the Internet. The primary toll gate operators, although there are others, are Google and Yahoo.

One more imaginative effort is required in order to understand the Google/Yahoo circumstance. Let us suppose that in our bizarre world these toll gate operators could monetize their asset by a share listing. Quite obviously, the toll gate rights to the retailers of the world to the end of time would have a nearly infinite value. Indeed, at least some would assert that the actual toll gate operators do have such a value. The aggregate market capitalization of the trilogy suspects is roughly \$153 billion. This is far more than the market value of even the most successful global franchise. PepsiCo has a market capitalization of \$81 billion. Coca-Cola has a market

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capitalization of \$95 billion. WalMart is valued at \$222 billion. The aggregate market capitalization of the trilogy subjects is a mere 45% away from being equal to WalMart.

In the hope that the imagination of the reader has been sufficiently stimulated, it is now possible to proceed to more analytical matters. The first point of interest is the toll gate fee. In modern parlance this is known as the cost per click (CPC). The toll gate CPC mechanism functions in the following manner. A potential seller of merchandise pays for a position in a Google or a Yahoo search. Each position in a search by a given keyword has a different cost per click. For example, if one quickly wished to know the CPC for the keywords “books”, one could visit the Overture.com website (Overture is owned by Yahoo). The specific web address is [www.content.overture.com](http://www.content.overture.com). On the right hand side of the page under the heading “tools” one then selects “View bid tools”. If one were to key in the term “books”, one will discover, perhaps surprisingly, that eBay is the high bid for books, at \$0.64 per click. Amazon.com and Barnes and Noble.com pay \$0.54 per click. It may interest the reader to know that Home Depot has purchased the 10<sup>th</sup> position under the books keyword at \$0.20 per click. WalMart has selected position number thirteen at \$0.19 per click. An interested reader could retrieve the same data from Google Adwords. However, Google requires a \$5.00 account activation fee. The Overture.com bid rate tool is free.

It should be immediately apparent that the exercise of indefatigable industry on the part of Google or Yahoo could result in a very large advertising bill if Google and Yahoo actually obtain a large number of clicks.

For instance, let us make use of a keyword with which the reader is undoubtedly quite conversant. The keyword is “mutual funds”. It is important to observe at this point that the cost per click can vary by date or even time of day. Consequently, on Saturday, October 16, 2004 the cost per click for given position rankings for the keyword mutual funds on Overture.com were as follows:

<u>Position</u>	<u>Advertisers</u>	<u>CPC</u>
1	T. Rowe Price	\$2.07
2	Fidelity	\$2.06
3	Schwab	\$2.05
4	Vanguard	\$1.75
5	American Express	\$1.01

Interestingly, on Sunday, October 17, 2004, the CPC and position rankings had changed as follows:

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<u>Position</u>	<u>Advertisers</u>	<u>CPC</u>
1	American Express	\$2.36
2	Schwab	\$2.34
3	T. Rowe Price	\$2.34
4	Fidelity	\$2.33
5	Vanguard	\$1.75

According to the CIA World Fact book, the United States had 166 million internet users as of the end of 2003. Let us suppose that on each day 100 million such users wished to check either prices of mutual funds owned or some other data element and routinely were guided to this point by a search engine. If the average CPC was \$2.34 (rounded to the nearest penny), as was the case on Sunday October 17, 2004, the resulting daily bill for the industry would be 100 million x \$2.23, or \$223 million. Over the course of a year this would be \$81.395 billion. Of course, this assumes that each user only visits one site. If each user chose to visit five financial sites, the resulting bill would be \$406.98 billion.

In order to place this last number in its proper context it should be sufficient to observe that McCann Erickson, the subsidiary of the advertising agency Interpublic Group calculates that world advertising expenditures in 2003 were \$469.8 billion.

In actuality this circumstance could never happen. This is because it is common practice to place limitations on search engine clicks in the form of daily budgets. Indeed, the search engine tools are sufficiently advanced so that users can control cost per click. For example, Goolge operates an Adwords Discounter that automatically monitors the competition for a given advertiser and reduces the CPC to one cent above competitors in the case where a given advertiser is higher than competitors.

Another automatic way to control cost is by advertisement relevance. If the advertisement has a high position and yet it does not attract clicks, it will by definition have a lower click through rate, Rank is not solely determined by the bid CPC. It is actually an algorithmic combination of CPC and click through rate. Thus, a low click through rate will result in downward movement in rank. This prevents so-called "squatting" in the top positions by irrelevant users.

The most significant way of controlling the cost as well as the effectiveness of Internet advertising is by the use of either negative keywords or negative geography. For example, if a perfume dealer did not carry the Givenchy brand, the term "Givenchy" would be a means of excluding that dealer from search results if the user performed a search for Givenchy perfume. Similarly, a mutual fund group not registered in Oklahoma would not appear in the search results of Oklahoma residents.

The use of negative keywords and restrictive phrases is part of the effort to improve the conversion rate. This is the rate at which clicks become sales. This effort creates an interesting conflict of interest between the search engine firms and the advertisers. In traditional advertising, one pays for audience reach or that which is sometimes known as impressions. One will pay X

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dollars for a 30 second television advertisement that will be viewed by Y people. The concept of conversion rate still exists. In this case, it is known as the response rate. A certain percentage of the people who view the advertisement will buy the product. This can be measured by comparing sales with and without advertising. The cost of advertising or effectiveness can be controlled to a degree by the proper selection of an audience demographic and geography.

In the case of Internet advertising as opposed to television or print advertising, the advertiser can exclude certain Internet users or clicks based upon a variety of criteria. As the advertisers learn more about the audience, these advertisers should, in principle, be able to improve the conversion rate by excluding clicks that are unlikely to result in sales. In contrast with traditional advertising, Internet advertising can be made more effective (a higher conversion rate) by excluding clicks. The exclusion of clicks will reduce revenue to the search engines.

It could be argued that if the advertisers can improve their conversion rates, they should be willing to pay more for each click or pay higher CPC's. This is arithmetically false as is evident from the following theoretical exercise.

Assume the existence of a manufacturer of a product with a unit cost of \$10 and a 10% net profit margin, or a profit of \$1 per each item sold. Further assume a CPC of \$0.10. The conversion rate will be, in this case, assumed to be 10%.

If there were 10,000 clicks, the profit for the manufacturer as well as the return on the Internet advertising investment could be calculated as follows:

### **Cost of Ad Program:**

10,000 clicks at \$0.10 CPC = \$1,000

### **Profit on Sales**

10,000 clicks x 10% conversion rate = 1,000 units sold  
10,000 units sold at \$10/unit = \$10,000 revenue  
\$10,000 revenue x 10% net profit margin = \$1,000 profit

### **Profit on Ad Program**

\$1,000 sales profit minus \$1,000 advertising cost = \$0  
Return on \$1,000 investment = Breakeven, or 0%

Let us now assume that through the use of negative keywords, the manufacturer can increase the conversion rate to 20% by reducing the number of clicks to 5,000. There will still be 1,000 unit sales for a 20% click conversion rate. Therefore the cost of the Internet advertising campaign will decline to \$500 (5,000 clicks x \$0.10 CPC). Return on investment will now be \$1,000 profit in relation to advertising investment of \$500, or 200%. Note that in this case the search engine company simply endures a 50% erosion in revenue. The manufacturer has no incentive to pay more per click since this will not improve the profit position. Thus, if the manufacturer agrees to pay 20¢ per click the return on advertising investment would once again be zero.

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Fertile minds will respond that a competitor will ultimately observe this circumstance and be willing to pay \$0.15 per click once the negative keywords are known. Yet this only restores some lost revenue to the search engine. It does not result in growth. Thus, 5,000 clicks at \$0.15 per click is only \$850, not the \$1,000 previously received.

It is therefore the case that the search engine firms experience two dynamic variables. The first is growth in searches and pay-for-search advertising that increases revenue; the other is conversion rate improvements on the part of advertisers that serve to lower revenue. It must be true that the advertisers first need to engage in advertising by paid search and then gather data for use in ultimately increasing conversion rate and cost of search. Thus, revenue for the search engine companies must grow in order that data be available to be used in efforts to possibly reduce that revenue.

This is only one aspect of the search engine business. Another aspect is known as Traffic Acquisition Cost. This is the payments that Google and Yahoo make to the owners of web sites for directing their users to undertake searches with Google and Yahoo. For example, the Washington Post or Weather.com websites conduct searches powered by Google. Consequently, if one were using the Weather.com site and noticed that it will rain for much of the next 10 days, one might wish to purchase a new raincoat. If the reader were to search for raincoats, the search would be directed by Google software. A click on a given link would then result in revenue for Google which would be shared with Weather.com in this instance.

One of the elements that a buyer of Google or Yahoo shares should seriously consider is the ability of these generators of traffic to demand higher Traffic Acquisition Fees. If the providers of this traffic were to have such an ability, then the profit margin of Google and Yahoo would necessarily decline. In principle, if a given provider of traffic has sufficient volume, it could support a search engine on its website and charge advertisers for paid searches. In this regard, traffic acquisition cost as a percentage of Google revenue has exhibited the following historical trend:

**Google Cost of Revenue as a Percentage of Revenue**  
(Traffic Acquisition Costs are the Primary Cost of Revenue) 1999-2004  
(See Google IPO Prospectus Page 57 Section: Cost of Revenues)

1999	412.7%
2000	31.8%
2001	16.5%
2002	29.9%
2003	42.7%
6 months 2004	47.5%

A high profit margin assumption is critical to a continued high Google share price valuation. Margin erosion caused by the continued demands for a greater share of revenue by traffic providers could ultimately destroy this valuation. The question is whether Google and Yahoo have a proprietary position in the Microsoft sense of the term or whether these firms are merely

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traffic intermediaries in the sense of the distribution terms that exist in all industries. In the latter case, the profit margins will ultimately prove to be very low.

In this connection, one might observe that paid search is actually a form of consumer education. If Fidelity, Schwab and Vanguard continually generate many millions of clicks with regard to Mutual Fund searches, then surely consumers should ultimately learn to “bookmark” these web locations or otherwise learn to access these directly. This would eliminate the need for a search and therefore eliminate the fees that Google and Yahoo generate per click during paid searches. In any case, it is surely unreasonable to believe that consumers will continue to access the most popular websites in each product category by search engine as opposed to direct entry. Consequently, the most popular sites should eventually discover that more traffic is generated outside of the search engines and payment for clicks should not grow or even markedly decline.

None of this is believed by the growing number of Google and Yahoo shareholders. These investors believe, as is evident from the Google and Yahoo valuations, that these two firms have virtually limitless growth possibilities. In order to test this presumption, let us suppose that Google and Yahoo were to grow at only a “conservative” 30% per annum for each of the next 20 years. It should be noted that the Google and Yahoo proponents anticipate higher rates of growth. The logical consequence of such a modest assumption might astonish investors.

As a means of testing the reasonability of such an assumption, one might select as a point of departure the global advertising expenditures as these currently exist and have existed in the past 14 years. The Universal McCann Insider’s Report of McCann Erikson calculates that 2003 global advertising revenue was \$469.8 billion. The compound annual growth rate of advertising spending around the globe has been 4.1% as is evident from the accompanying table:

### **Worldwide Advertising Expenditures 1990-2003 (Source: McCann Erikson)**

1990	\$275.9
1991	282.3
1992	299.2
1993	304.2
1994	332.0
1995	371.0
1996	390.2
1997	401.3
1998	411.9
1999	436.1
2000	474.3
2001	440.9
2002	450.5
2003	469.8

Advertising expenditure is expected to rise to \$489.4 billion in 2004. If compounding continues at the current rate, world advertising expenditure should be \$1.107 trillion in 2024. Google and Yahoo together are expected to record \$6.6 billion of revenue in 2004. If one were to assume that

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these two firms were to collectively grow by 30% per annum for the next 20 years, then the revenue of those two firms in the aggregate would be \$1.254 trillion in 2024. This would be more than the global projected advertising budget. Of course, one could presume that Internet advertising is so effective that global advertising will simply grow at a rate much greater than the historical average. Yet, one might also say that if Internet advertising is indeed so much more productive than conventional advertising, companies will simply shift dollars from conventional advertising to do Internet Advertising.

One interesting way of viewing the estimated \$1.254 trillion Google/Yahoo aggregate revenue for 2024 is that this advertising spending is 4.6x the total volume of merchandise of WalMart as it currently exists. In fact, it is roughly twice as high as the aggregate current revenues of the following companies:

### Revenues of Large Companies That Might Advertise On the Internet

Microsoft	\$36.8	billion
Coca-cola	\$21.9	
Pepsi	\$28.5	
MMM	\$19.3	
Target	\$49.0	
Home Depot	\$69.2	
Lowe's	\$33.7	
Dell	\$45.7	
Hewlett	\$78.4	
Apple	\$8.3	
Disney	\$30.3	
Starbucks	\$4.9	
Heinz	\$8.5	
Coach	\$1.3	
Tiffany	\$2.1	
Sony	\$71.4	
Palm	\$1.1	
Nokia	\$37.2	
NY Times	\$3.3	
MGM Mirage	\$4.1	
Royal Caribbean Cruises	\$4.2	
Procter & Gamble	\$51.4	
LM Ericsson	\$17.5	
Amazon.com	\$6.0	
eBay	\$2.7	
	\$636.5	billion

Readers who do not question the reasonability of a \$1.254 trillion 2024 revenue forecast for Google and Yahoo might try one of the following exercises. First, attempt to compose a list of companies that might currently generate \$1.254 trillion of revenue and might benefit from



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Internet advertising. It is rather difficult. In any case, it is pointless since obviously companies will not spend their entire revenue on advertising.

If the reader still does not question the reasonability of the Google/Yahoo 2024 revenue estimate, the following exercise might promote some healthy agnosticism. Simply access the bid rate tool at [www.content.overture.com](http://www.content.overture.com). Select “view bids tools”. Then have ready a copy of the Oxford English Dictionary. Begin at “A” and type each noun in alphabetical order into the view bid tool as these appear in the dictionary. It will be exceedingly difficult to find very many nouns, if any, that have not attracted a bid rate. If still not convinced, readers are advised to obtain copies of the Larousse French Dictionary, the Langenscheidt German Dictionary, the Mondadori Italian Dictionary, Cassell’s Spanish Dictionary, the Kodansha Furigana Japanese Dictionary, the Oxford Russian Dictionary, the 1,726 page English Chinese Pinyin Dictionary, Ben Yehuda’s Hebrew Dictionary and the Hippocrene Practical Arabic Dictionary. Be patient and type in nouns or key phrases if one is conversant in those languages. Do not doubt that agnosticism will eventually overwhelm the reader.

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November 3, 2004

## Gresham's Law in Corporate Finance

### I – A Curious Transaction

On September 30, 2004, there occurred one of the more bizarre investment banking transactions in recent memory. A company known as Calpine (NYSE-CPN) successfully priced a \$736 million unsecured convertible note issue. The notes were offered at 83.9% of par value. The notes are convertible into common shares at a price of \$3.85 and this represented a 23% conversion premium on the day of pricing. The notes are due in 2014. The interest rate is 6% except that the notes will not pay interest in years three, four and five. As a means of recompense, the accreted value of the notes will rise to par during that period. Upon conversion, or perhaps more properly stated, in the event of conversion, the company will deliver par or accreted value in cash. Share will only be issued to cover value, if any, that exceed par. The yield to maturity of the notes was 6% on pricing date.

The reason that this transaction should be considered to be rather bizarre is that Calpine is a CCC credit. Many believe that Calpine is at serious risk of default. Yet, this is only 197 basis points more than the rate at which the United States Treasury is able to borrow for ten years.

One might be tempted to say that it is evident that the conversion privileges of Calpine have considerable value. This view is undoubtedly correct. Yet the matter is far more complicated than is readily apparent. This is because at the time that the notes were being priced, Calpine entered into a ten year Share Lending Agreement with Deutsche Bank. This latter institution serves as the investment banker of the former entity. Calpine is lending Deutsche Bank 89 million of its own shares. The shares are to be used to facilitate short sales of Calpine stock so that investors in its bonds can hedge their transactions. Generally speaking, companies do not encourage the short sale of their own stock.

In this particular case, Calpine sees fit to depart from tradition, and with good reason, as will be demonstrated shortly. Calpine does not anticipate that the borrowed shares will be considered to be issued and outstanding from an accounting perspective. It is presumed that this is because the borrowed shares will be ultimately returned to the lender.

Thus, shares will be sold short, that don't actually exist, to hedge the purchase of convertible bonds. Yet, viewed from a certain perspective, this is a very reasonable sort of undertaking. One purchases a bond with a low coupon that has considerable risk of default. Simultaneously, one sells short sufficient shares to cover expected losses in the event of default. If the hedge

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ratio is properly established, one can profit in any scenario. For example, if the bonds do indeed default, these might have some value in bankruptcy. Yet the share will be worthless. Consequently, the profit in the stock short sale could exceed the loss in bonds and a profit will be earned. This profit will be enhanced since, until default, the hedge will enjoy interest income on the bonds and a small amount, such as it is, of rebate income on the short sale.

Incidentally, those who are interested in an alternative assessment of the Calpine level of credit worthiness should study the Calpine 4 <sup>3</sup>/<sub>4</sub>% convertible unsecured notes due on November 15, 2023. These are putable to the company at par on November 15, 2009. The yield to put is approximately 16% although the time to put (maturity so to speak) is roughly five years sooner than the 2014 notes. The conversion premium of the 4 <sup>3</sup>/<sub>4</sub>% notes is approximately 61%. In the weeks subsequent to the offering of the 6% 2014 notes, the Calpine stock has substantially declined in value. The conversion premium of the 2014 notes is now roughly 29% and these notes still trade at a price that is slightly above the original offering price of 83.9% of par value.

Given the default risk of Calpine, the clearing price of the 2023 notes reflects a reasonable 16% yield to put. However, irrespective of the poor credit quality of Calpine, if one can find something even worse than Calpine notes (namely Calpine stock) that can be sold short, one would be willing in effect to provide financing to the company on very advantageous terms. It is interesting to observe in this connection that although the company might pay 6% per annum for capital, the provider of that capital might not actually earn 6%. This is because the provider of capital must commit an amount to Calpine upon which 6% will be earned as well as a given amount to be sold short in Calpine shares. This latter sum, pro forma, would only earn the short seller's rebate of, at most, 1%.

Consequently, if a hedge transaction results in the purchase of \$1,000 face amount of bonds and short parity of the stock, the transaction would appear as follows:

\$1,000 face amount of bonds	\$839 cost, earning 6%	=	\$60 income
Parity, or \$682.11, Calpine stock sold short	Earning 1%	=	\$6.82 income
Total capital committed	=	\$1,521.11	
Total income generated	=	\$66.82	
Comprehensive yield	=	4.39%	

Naturally, this does not represent the profit or loss on the actual transaction. The profit or loss is obviously dependent upon the price movement in Calpine bonds and shares. However, Calpine does pay 6% for capital and the provider of capital does receive 4.39%. If Deutsche Bank pays Calpine a rate of interest for the loan of 89 million shares, the Calpine cost of capital will actually be lower than 6%.

The constraint upon Calpine in its capital raising activity was the inability to borrow its shares. Prior to the consummation of this particular transaction, the short interest in Calpine was roughly 130 million shares. As of the most recent reckoning dated October 26, 2004, the short interest on Calpine share has expanded to a total of 197.6 million shares.

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The essential principle in all of this is that one need not offer to the public a company with a good business plan or even favorable prospects. The instrument in question may even be very overvalued. All that is required is that there exist something or anything that can be sold short against this investment so that the risk can be passed to another investor.

One might have thought that there should exist some functional limit to the number of shares that can be borrowed for the purpose of short sale. Apparently the only limitation is the creativity of the human intellect to devise ever newer means of creating capacity. Incidentally, this particular technique of creating capacity in a crowded environment can trace its origins to a technique practiced by the great showman, entrepreneur and deceiver of the public known as P.T. Barnum. Non-American readers of this essay might not readily appreciate or understand this reference. American readers might find the Barnum reference amusing. Limitations of space prohibit the inclusion of more Barnum detail at this point in the essay. Interested readers are referred to the Appendix for more information.

### II – Gresham’s Law

The term Gresham’s Law is attributed to Sir Thomas Gresham (1519 – 1579). The law states that good money is driven from circulation by bad money. In the language of the times good money referred to money that retained its precious metal content. Bad money was money that had been “clipped”. That is to say that some gold or silver had been shaved from the coin. The observation was that people would hoard those coins that had not been clipped and use in exchange those that had been clipped. The concept of Gresham’s Law can also be applied to economies that permit the co-terminus existence of paper or fiat money and gold as currency. The premise is that the bad or paper money will drive the good or gold money from circulation.

Some modern economists have attempted to refute the validity of Gresham’s Law as it is supposedly based upon a false premise. The premise is that the buyer of goods and services has the choice of which currency, good or bad, to present in payment and that either will be accepted. It is argued by the critics that the sellers of goods and services might just as easily refuse to accept bad money in payment so that good money will drive out bad money. This is merely an extension of the efficient market hypothesis that informed traders will insist upon fair value for their money or products. Indeed, there are examples of the reverse of Gresham’s Law in operation in certain periods of history<sup>1</sup>.

The relevance of Gresham’s Law in the current connection is whether or not there exists some sort of mechanism whereby so-called “bad” securities could drive “good” securities from circulation. Let us return to the example of Calpine. If it is possible for Calpine to issue securities at an advantageous cost of capital, certainly it will do so. Investors will make such an activity possible if there is the possibility of profit. That which makes this activity possibly profitable is the belief that the Calpine equity is worse than the Calpine debt. That is to say that the Calpine equity should decline more than the Calpine debt. In order to decline, surely it must have some flaw. The greater this flaw, the more the equity will decline. Naturally, a greater decline potential makes Calpine more desirable for the purposes of this type of transaction.

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<sup>1</sup> Of course, there are also examples of Gresham’s Law in operation.

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Then, if such types of transactions are to be desired, this is logically equivalent to the statement that there is demand. If demand exists, then Calpine can readily provide supply<sup>2</sup>.

### III - Paradoxes

One of the interesting aspects of the Calpine transaction is that it is, at least in principle, a riskless transaction. One is long a convertible bond, one is short stock. If the stock should rise in value, it is almost certain that the bonds will rise in value. Conversely, if the bonds decline in value, it is quite likely that this is because the shares have declined in value. Since the bond is a legal claim, such as it is given the unsecured nature of the claim, and as the share has no such claim, the bonds might retain some value while the share retain no value. Thus, a profit would be earned on a bad company with a bad business plan and the investor would have no risk. If the reader finds this to be somewhat paradoxical, the following element is even more paradoxical.

Calpine is a highly leveraged company. Much of its debt is high cost capital. Yet, all things being equal, if it can raise capital at a lower cost than its existing capital, it can eliminate those securities and replace these with more favorable issues. If it can thus lower its cost of capital, it will improve its interest coverage ratios, its cash flow and ultimately improve its earnings. If it can thus improve its earnings, its stock would then appreciate. Of course, if it was believed that the shares would appreciate investors might not undertake the type of transaction that is described in these pages.

In any case, if Calpine could repeat its transaction for its 6% unsecured Convertible Debentures a sufficient number of times it would not be a bad credit but presumably become a good credit or at least a much better credit than is currently the case.

If the transaction were to be replicated many times, then Calpine would need to lend to Deutsche Bank or some other investment banker many more shares to be shorted so that “riskless” convertible arbitrage transactions could be consummated. None of these shares would actually exist insofar as the Calpine shares outstanding is concerned. Yet, the short interest would dramatically expand beyond the current level of 197.6 million shares. These amount is equivalent to 44.8% of the company share float. It is equivalent to 19 days of trading volume at the current volume rate.

The intriguing aspect of this transaction is, of course, that the company can actually improve its position in a fundamental sense by being perceived as a problematic enterprise. This is surely a paradox. It is an example of that sort of paradox known as the Epimenides Paradox. An example of this sort of paradox is the following:

The following sentence is false.  
The preceding sentence is true.<sup>3</sup>

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<sup>2</sup> Charles Kindleberger – Historical Economics (Los Angeles: University of California Press, 1990) P. 307

<sup>3</sup> More on paradoxes of this type can be found in Douglas Hofstadter – Godel, Esher and Bach: An Eternal Golden Braid (New York: Basic Books 1999 ed.) p. 21

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A bad company can make itself good by being bad. One of the problems with this type of analysis is that concepts such as good and bad or even profit and loss are somewhat subjective. If the company has losses and because of this the shares decline, the hedged purchasers of its convertible bonds would actually have a profit since the short sale component of the trade will have increased in value. Thus, the company should be provided low cost funds to be misused, since investors will profit.

On the surface, this is an example of the so-called “Grellings Paradox”. In the Grellings paradox the problem occurs in categorizing between two terms of that are supposed to embrace all possible types. For example, a term can be either autological (self-descriptive) or heterological (non-self descriptive). Is “heterological” heterological?<sup>4</sup>

Can Calpine improve its capital structure and thereby reduce its risk and simultaneously provide its financiers with a riskless transaction? This is clearly impossible. Although, it is possible that Calpine can reduce its risk and improve its capital structure. It is also possible that the convertible arbitrageurs take little or even no risk. The risk is merely transferred.

It is no more than obvious that if Calpine shares are sold short, these must be purchased by some other party. If Calpine improves its fundamental position, its shares may well increase in value. Conversely, if the short sellers and convertible arbitrageurs profit the long investors must realize losses. Calpine is merely transferring its balance sheet risk into the hands of long investors. Ultimately, as hedge transactions expand, there must be a greater fool. The mechanism is impossible without the existence of this fellow. That this fellow obviously does exist is evident from the fact that Calpine is only one of many bizarre hedge transactions.

The basic principles of the free enterprise system entail that proper utilization of resources is rewarded. If it is possible to reward improper utilization of resources the system loses animating principle. The British writer G.M. Chesterton had a phrase for this state of affairs. He called it the “Utopia of Userers.”

### **EBay, Google, Travelzoo and Much Else**

There exist some misguided analysts, fortunately very few in number, that regard EBay as a preposterously overvalued equity. Nonetheless, it can be purchased with the assurance of profit if one were to simultaneously short the appropriate quantity of the shares of Yahoo. One might well ask why anyone would then undertake to purchase Yahoo, since it should be well understood that its shares are even more ludicrously valued than those of EBay. Such an undertaking can be justified upon rational economic grounds if one were to simultaneously short shares of Amazon.com. Indeed, almost any investment is justifiable, irrespective of the madness of its valuation if only there exist investors yet more mad who would accommodate an offsetting short sale. For instance, Google closed trading on Friday October 28, 2004 at a price of \$190.64. Its market capitalization was at least \$51.6 billion. One must use the qualification of “at least” since current accounting regulations prohibit Google from listing as outstanding shares that have

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<sup>4</sup> Ibid, p. 21

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been already granted to employees but not yet vested. It is reasonable to presume, though, that, in the fullness of time, the Google shares outstanding figure will increase.

In any case, one could purchase Google with confidence if one were equally confident that Ask Jeeves is improperly priced relative to Google. None of this should, in principle, inhibit buyers of Ask Jeeves since it is quite possible that Overstock.com is inflated in valuation in relation to Ask Jeeves. The chain can be continued almost indefinitely with such issues as Stamps.com, 1-800-Flowers.com, Jupiter Media, Novatel Wireless, Viewpoint, SINA, SOHU, Netease, Findwhat.com, Monster.com, Internet Security Systems, CTRIP.com, Web Methods, Digital Insight, Alloy, Roxio, Infospace and Travelzoo.

It can be asserted with justification that the long/short style of trading is merely an example of a free capital market function that will limit valuation extremes. The problem with the technique is that the mere existence of valuation extremes can change the risk profile of companies if these can be exploited to raise capital. A fascinating example of this is the strange case of Travelzoo. This was an internet company with no traffic and therefore no revenue. The company therefore decided to give shares away to approximately 700,000 people who registered on the Travelzoo website. (See Travelzoo Form 10-K 2003). This created traffic which, in turn, created revenue which, in turn, created equity value. Naturally, the company has raised equity capital which, all other things equal, makes the shares less preposterously valued than was previously the case. In the past twelve months, the shares have increased in value by 765%.

Moreover, companies can now improve their fortunes by the issuance of shares directly to employees in lieu of cash payments. Many people believe that the value of this share or option payment is too difficult to calculate and hence no expense for this purpose should be tabulated on the company income statement. Whether or not this is a reasonable position is better left to accounting professionals.

However, it cannot be denied that large companies that issue stock to employees are in a position to command substantial human resources. The following ten firms customarily pay employees in stock or options:

<u>Users of Equity Compensation</u>	
	<u>Market Capitalization</u>
Yahoo	\$ 50 billion
Google	51
EBay	68
Qualcom	68
USA Interactive	15
Amazon.com	14
Cisco	128
Intel	143
Microsoft	304
Dell	88
	<hr style="width: 100px; margin-left: 0;"/> \$ 929 billion

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If these companies were inclined to issue as much as 5% of their aggregate market capitalizations each year to employees, their combined purchasing power would be almost \$46 billion. At the rate of \$80,000 per individual, or twice the annual household income of the typical American family, these firms could collectively employ 575,000 persons or roughly 48% of the current employment of WalMart. Viewed upon a more global scale, the average global per capita income is only \$7,500. Upon this scale, these companies could collectively employ 6,133,333 persons. In China, per capita GDP is only \$4,563 per person according to the CIA World Fact book, so that the labor of 10,081,087 people can be purchased. In India these shares would have far more purchasing power since the average per capita GDP is only \$2,537 according to the CIA World fact book. A figure of 5% of aggregate market capitalization of these ten firms would purchase the services of 18,131,651 persons.

Consequently, pairs trading should, in theory, moderate the valuation extremes created by market inefficiencies. However, if the companies can take advantage of these inefficiencies and either raise the capital or use shares to pay for services, these may ultimately validate what were thought to be inefficiencies. The most overvalued would be those with the cheapest source of capital and therefore the most dangerous short sales. As a result, the companies could effectively transfer risk not to shareholders, but actually to short sellers. The potential liabilities of this latter group are theoretically infinite. Perhaps one day there will be a capital market crisis caused not by fools that are selling but fools that are buying. In any case, if hedge funds wish to exploit the actions of fools in a more or less riskless fashion, it is necessary that the fools ultimately cooperate by realizing that they are fools and sell overvalued shares. Yet, if the greater fool only becomes an even greater fool and continues to purchase overvalued shares, a crisis of a different sort might commence.

### **V - Calpine and Barnum**

The animating principle of the aforementioned Calpine transaction is that profits can be created from poor investments that have perhaps greater return potential and lower risk than profits from good investments. In fact, even if the spread that could be earned from the Calpine transaction were rather low, since the trade theoretically does not involve substantive risk, the return can be appropriately enhanced with leverage, assuming that the Calpine convertible arbitrage spread is greater than the available cost of borrowing.

In history, very few have been successful in changing deficiencies into applause. One of those was P.T. Barnum. His personal technique or an example thereof is revealed in Appendix 2. Barnum himself had numerous techniques that could be used to attract the interest of the public. One of those was to hang a double sided sign from a building with the following inscription facing the street:

PLEASE DO NOT READ THE OTHER SIDE OF THIS SIGN!

Naturally this is exactly what virtually everyone proceeded to do. Therefore, dear reader, please do not read the Appendix.



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## Appendix 1

### *Barnum and Crowds*

American readers will recall P.T. Barnum as the man famous for the quotation of “there’s a sucker born every minute”. According to Barnum himself the actual quotation was that “there is a customer born every minute”. Non-American readers might not be familiar with Barnum.

P.T. Barnum was arguably the most famous American entertainment entrepreneur of the 19<sup>th</sup> century. He operated a museum of curiosities (today these would be regarded as monstrosities) known as the American Museum. It was located in New York City at Broadway and Vesey Street. Later in life it was he that founded the famous Barnum Circus. Among other events, it was Barnum that arranged for the midget Tom Thumb to perform before Queen Victoria of Great Britain.

In order to illustrate the personality of Barnum one might commence with the story of his first exhibit. This was a woman purported to be George Washington’s nurse. The year was 1835 and it was asserted that this nurse was then 161 years old. This did attract a large audience for a time. Yet, the allure of this exhibit did eventually dwindle. However, Barnum was not one to accept defeat in the aftermath of success. Consequently he began to write anonymous letters to the press that denounced his own exhibit as a complete fraud, and indeed, it was actually a fraud. Nonetheless, the accusations did once again attract a crowd. Now people wished to determine whether or not the exhibit was genuine. Barnum made a fortune!

The object of the Calpine transaction that was the subject of this essay was to attract a crowd. The failure to attract the interest of the public is almost always a lost opportunity, as Barnum was to learn. The following excerpt is as it appears in the “complete” two volume 1871 edition of the Barnum memoirs entitled “Struggles and Triumphs”. The autobiography, although quite obviously designed to be self serving is one of the more delightful autobiographies ever to be written by a scoundrel. The author must have greatly enjoyed his life, as the following passage will illustrate.

“On that fourth of July, at one o’clock, p.m., my museum was so densely crowded that we could admit no more visitors, and we were compelled to stop the sale of tickets. I pushed through the throng until I reached the roof of the building, hoping to find room for a few more, but it was in vein. Looking down the street, it was a sad sight to see the thousands of people who stood ready with their money to enter the museum, but who were actually turned away. It was exceedingly harrowing to my feelings. Rushing down stairs, I told my carpenter and his assistants to cut through the partition and floor in the rear and to put in a temporary flight of stairs so as to let out people by that egress into Ann Street. By three o’clock the egress was opened and a few people were passed down the new stairs, while a corresponding number came in at the front. But I lost a large amount of money that day by not having sufficiently estimated the value of my own advertising, and consequently not having provided for the thousands who had read my announcements and seen my outside show, and had taken the first

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leisure day to visit the museum. I had learned one lesson, however, and that was to have the egress ready on future holidays.

Early the following March, I received notice from some of the Irish population that they meant to visit me in great numbers on St. Patrick's Day in the morning. "All right" said I to my carpenter, "get your egress ready for March 17", and I added, to my assistant manager: "If there is much of a crowd, don't let a single person pass out at the front, even if it were St. Patrick himself; put every man out through the egress in the rear". The day came, and before noon we were caught in the same dilemma as we were on the 4<sup>th</sup> of July; the museum was jammed and the sale of tickets was stopped. I went to the egress and asked the sentinel how many hundreds had passed out?

"Hundred," he replied, "why only three persons have gone out by this way and they came back saying that it was a mistake and begging to be let in again".

"What does this mean"? I inquired; "surely thousands of people have been all over the museum sine they came in."

"Certainly," was the reply, "but after they have gone from one saloon to another and have been on every floor, even to the roof, they come down and travel the same route over again".

At this time I espied a tall Irish woman with two good sized children whom I had happened to notice when they came in early in the morning.

"Step this way, Madame," said I politely, "you will never be able to get into the street by the front door without crushing these dear children. We have opened a large egress here and you can pass by these rear stairs into Ann Street and thus avoid all danger".

"Sure," replied the woman, indignantly, "and I'm not going out at all, nor the children either, see, for we have brought our dinner and we are going to stay all day".

Further investigation showed that pretty much all of my visitors had brought dinners with the evident intention of literally "making a day of it".

No one expected to go home till night; the building was overcrowded, and meanwhile hundreds were waiting at the front entrance to get in when they could. In despair I sauntered upon the stage behind the scenes, biting my lips with vexation, when I happened to see a scene painter at work and a happy thought struck me: "here" I exclaimed, "take a piece of canvas four feet square, and paint on it, as soon as you can, in large letters

'TO THE EGRESS'

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Seizing his brush he finished the sign in fifteen minutes, and I directed the carpenter to nail it over the door leading to the back stairs. He did so, and as the crowd, after making the entire tour of the establishment came poring down the main stairs from the third story, they stopped and looked at the new sign, while some of them read audibly: “To the Aigress (*sic*).”

“The Aigress” said others, “sure that’s an animal we haven’t seen,” and the throng began to pour down the back stairs only find that the “aigress” was the elephant, and that the elephant was out o’doors or so much of it as began with Ann Street. Meanwhile, I began to accommodate those who had long been waiting with their money at the Broadway entrance.<sup>5</sup>

Barnum was a very serious student of human behavior. If the reader has reached this point, it may well be because of the success of the Barnum sign trick referenced at the end to the actual essay section. Readers interested in the sign trick and other Barnum devices are advised to consult another of the Barnum books. This is entitled “Dollars and Sense or How to Get On: The Whole Secret In a Nutshell”. The original work was published in 1890.

Another of Barnum’s works is entitled “Humbugs of the World” (1865). It is a veritable encyclopedia of schemes used to defraud the gullible and greedy. Barnum was evidently a student of financial manias. In this work the reader will find descriptions of the Dutch tulipmania of the 17<sup>th</sup> century, the Mississippi Bubble as well as the South Sea Bubble. The books should be required reading for serious investors.

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<sup>5</sup> P.T. Barnum – Struggles and Triumphs edited ed. (NY Penguin Publishers, 1981) p. 13 – P.T. Barnum – Struggles and Triumphs – Reprint of the 1871 edition Volume 1 (Kesseger Publishing Reprint of p. 138-140)

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### Appendix 2

#### *How to Deceive to the Delight of the Audience: Barnum Style*

Barnum relates another adventure in deception of the crowd in his autobiography entitled “Struggles and Triumphs.” This passage relates to Barnum competing with someone who had a rival exhibition in Mesmerism. The passage is as it appears in the reprint of the 1871 edition.

It devolved upon me to open a rival mesmeric performance, and accordingly I engaged a bright little girl who was exceedingly susceptible to such mesmeric influences as I could induce. That is, she learned the lesson thoroughly, and when I had apparently put her to sleep with a few passes and stood behind her, she seemed to be duly “impressed” as I desired; raised her hands as I willed; fell from her chair to the floor; and if I put candy or tobacco into my mouth, she was duly delighted or disgusted. She never failed in these routine performances. Strange to say, believers in mesmerism used to witness the performances with the greatest pleasure and adduce then as positive proofs that there was something in mesmerism, and they applauded tremendously – up to a certain point.

That point was reached, when leaving the girl “asleep,” I called up someone in the audience, promising to put him “in the same state” within five minutes, or forfeit fifty dollars. Of course, all my “passes” would not put any man in the mesmeric state; at the end of three minutes he was as whole awake as ever.

“Never mind” I would say, looking at my watch; “I have two minutes more, and meantime, to show that a person in this state is utterly insensible to pain, I propose to cut off one of the fingers of the little girl who is still asleep.” I would then take out my knife and feel of the edge, and when I turned around to the girl when I left on the chair she had fled behind the scenes to the intense amusement of the greater part of the audience and to the amazement of the mesmerists who were present.

“Why! Where’s my little girl?” I asked with feigned astonishment.

“Oh! She ran away when you began to talk about cutting off fingers.”

“Then she was whole awake, was she?”

“Of course she was, all the time.”

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“I suppose so; and, my dear sir, I promised that you should be in the same state at the end of five minutes, and as I believe you are so, I do not forfeit my fifty dollars.”<sup>6</sup>

Calpine is creating an enormous short position in its own shares while using its ability to raise capital from the arbitrage community to improve its own balance sheet. If it can continue this practice for a sufficient number of iterations, it will improve its balance sheet and hence ultimately improve its share price. It will be recalled that the buyers of the 6% convertible will receive cash for par value and shares only to the degree the bonds exceed par in value. It is to be presumed that the arbitrageurs will need to repurchase the shares with the cash received. Of course this will be possible. The question is only one of price. Calpine may well have created the possibility of profit without risk. It is not entirely clear which party has the possibility of profit and which party carries the risk.

In this manner, the hedge fund industry is now creating a multitude of risk transference transactions. The necessary precondition is only a greater fool willing to bear the risk. The companies are also using these to either raise capital or to acquire resources. The hedge fund investors as well as the companies wish to play the role of Barnum. As the reader of the autobiography will undoubtedly discover, there can only be one Barnum.

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<sup>5</sup> 3 P.T. Barnum – Struggles and Triumphs-Reprint of the 1871 edition Volume 1 (Kessinger Publishing Reprint) p157-158

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### Appendix 3

#### *Transaction Alternatives*

There will come a day when the Barnum books will be required reading for investment professionals. Anyone who searches for these books at the current time will soon realize that these are rather rare. This is particularly true of 19<sup>th</sup> century editions. A different sort of hedge fund transaction might be to buy several 19<sup>th</sup> century editions and hold these in storage for the day, perhaps soon, when these will be in demand and therefore command a much higher price than is currently the case. Perhaps they can then be sold on eBay.

The value realization catalyst might well be the day that Calpine repays its \$736 million worth of unsecured convertible debentures in cash and its holders will then need to purchase almost \$700 million of stock to cover a short position on a riskless transaction. The shares will no doubt be covered at some price. Barnum would be proud. Once again a crowd would throng about the “egre

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### Benford's Law As A Tool For Investors

The law of numbers known as Benford's Law is unfamiliar to most investors. This is rather odd since, as will be discussed shortly, it should be of particular interest to short sellers. Benford's law essentially states that in tables of statistics, the digit 1 tends to occur with an unusually high probability. Any number must begin with one of nine possible digits. These are the numbers one to nine. It is believed incorrectly that each number, such as the number one, occurs with equal and random frequency. That is to say that one occurs 11.1% of the time or one out of nine times. Actually, studies show that in tables of statistics, the number one appears in the first position more than 30% of the time.

Although this law is called Benford's law, the phenomenon was actually discovered by the 19<sup>th</sup> Century astronomer Simon Newcomb. Mr. Newcomb was, among other things, a self-taught mathematician. He made the observation that tables of logarithms were much more worn in the first few pages than in the last few pages.

This seminal observation remained nothing other than a mathematical curiosity until it was formulated as a law of numbers in 1938 by a physicist known as Frank Benford. The law states that the distribution of first digits will, on average, follow the following pattern:

1	30.6%
2	18.5%
3	12.4%
4	9.4%
5	8.0%
6	6.4%
7	5.1%
8	4.9%
9	4.7%
<b>Total</b>	<b>100%</b>

Thus, the digit one will appear in the first position 30.6% of the time. Benford found that the law was generally valid for such diverse and unrelated statistics as length of rivers, physical constants, populations, specific heat, black body radiation, atomic weight, molecular weight, cost data, addresses, exponential expansions, American League baseball statistics and newspaper lineage. The actual article can be found by interested readers in the Proceedings of the American Philosophical Society Vol. 78 p. 551-572, 1938. The title of the article is "The Law of Anomalous Numbers".

The utility of this law for the investment analyst should be obvious. Sets of financial data should, over the fullness of time, display more ones, twos and threes than eights, nines and



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sevens. If this is not the case, then there is likely to be some sort of contrivance or probably even a fraud involved.

The reason why the law works is rather simple to envisage. Imagine a newly created firm with one million dollars of shareholders' equity. Let us assume a constant growth rate of 10% and complete reinvestment of earnings (or no dividend payments). The next ten years will exhibit the following progression of shareholders' equity.

year	1	\$1,100,000
year	2	\$1,121,000
year	3	\$1,331,000
year	4	\$1,464,100
year	5	\$1,610,510
year	6	\$1,771,561
year	7	\$1,948,717
year	8	\$2,143,589
year	9	\$2,357,948
year	10	\$2,593,742

Eight years are required until two becomes the first digit. Let us assume that the growth rate were still 10% and that the firm commenced operations with two million dollars of shareholders' equity. The progression of shareholders' equity would then be as follows:

year	1	\$2,200,000
year	2	\$2,420,000
year	3	\$2,662,000
year	4	\$2,928,000
year	5	\$3,221,000

A three appears in the first digit in year five. It will be discovered that only four years are required to attain four in the first digit position if the starting value is three million dollars. If the starting value were nine million dollars, a period of time slightly in excess of one year is required to reach ten million. At this point a one is once again in the first position and the phenomenon will repeat itself.

It should be observed that the law applies only to numbers that have a dimension such as net profit. The law would not apply to numbers expressed as a rate, such as tax rate since, obviously, the government could theoretically legislate that the tax rate remain constant for many years. The law would apply to numbers that theoretically compound, such as shareholders' equity or current liabilities.

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Users of Benford's Law in its fraud detection incarnation claim that cheaters seem to have a great affinity for digits five and six. These are used much more frequently than the 8% or 6.4% expected occurrence as suggested by Benford's Law.

If someone were to examine the net income figures for the NASDAQ 100 group of companies subsequent to 1999, it does not appear that, on a quarterly basis, the number one appears in the first digit 30.6% of the time. Of course, the author of this essay may have simply made a computational error. Alternatively, perhaps Benford's Law is not universally valid.

The top twelve companies in the S&P 500 as of November 3, 2004 recorded 5 or 6 in the first position on annual income figures 22.5% of the time during the past 10 years (1994-2003). This would be 27 observations of 120 data points. The Benford expected frequency is 14.4%. The digit three appears in the first position 19 times in these 120 data points or 15.8% of the time. The expected frequency is 12.4%. The digit 9 appears seven times in 120 data points for an actual observed frequency of 5.8%. The expected frequency is 4.7%. The digit one appears in 25 observations of 120 data points or 20.8% of the time. The expected frequency is 30.6%.

Readers will be left to judge whether or not Mr. Benford made an illuminating or merely a coincidental observation in his 1938 paper. In any case, the mathematics community accepts Benford's Law as valid. The investment community has yet to be convinced.

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## Appendix

Mathematically inclined readers might prefer the formulaic statement of Benford's Law which is:

Digit D appears as the first digit with the frequency proportional to:

$$\text{Log } 10 (1+1/D)$$

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### Zipf's Law as a Tool for Investors, with Brief Remarks upon Bradford's Law

Large collections of quantitative data frequently display similar numerical attributes. These similarities have often been elevated to the level of so-called laws by mathematicians. It is perhaps more correct to use the deliberately less precise term "statistical tendency."

Zipf's law states that the frequency of occurrence of a given event ( $p$ ) is a function of rank ( $i$ ). The law specifies that  $P_i$  is approximated by  $1 / i^a$ , where  $a$  is an exponent close to unity or one. In formulaic terms:

$$P_i \sim 1 / i^a$$

The law can be explained in common terminology by stating that in a statistical distribution a variable for a given rank multiplied by that rank will generally yield a similar number. For example, let us consider a ranked statistic such as armed forces personnel among countries. According to the International Institute for Strategic Studies, national armed forces personnel in the year 2000 were as follows:

<u>Rank</u>	<u>Nation</u>	<u>Number of Military Personnel</u>
1	China	2,810,000
2	Russia	1,520,000
3	United States	1,366,000
4	India	1,303,000
5	South Korea	683,000
6	Pakistan	612,000
7	Turkey	610,000
8	Iran	513,000
9	Vietnam	484,000
10	Egypt	448,000
11	Ethiopia	352,000
12	Burma	344,000
13	Syria	316,000
14	Ukraine	304,000
15	Thailand	301,000
16	Indonesia	297,000
17	France	294,000
18	Brazil	288,000
19	Italy	251,000
20	Japan	237,000

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If you were to multiply rank by personnel for each country, one would then derive the Zipf values as dollars: (e.g. Russia = 2(rank) x 1,520,000 = Zipf value 3,040,000).

<u>Rank</u>	<u>Nation</u>	<u>Zipf Value</u>
1	China	2,810,000
2	Russia	3,040,000
3	United States	4,098,000
4	India	5,212,000
5	South Korea	3,415,000
6	Pakistan	3,672,000
7	Turkey	4,270,000
8	Iran	4,096,000
9	Vietnam	4,350,000
10	Egypt	4,480,000
11	Ethiopia	3,872,000
12	Burma	4,128,000
13	Syria	4,108,000
14	Ukraine	4,256,000
15	Thailand	4,515,000
16	Indonesia	4,752,000
17	France	4,998,000
18	Brazil	5,184,000
19	Italy	4,769,000
20	Japan	4,740,000

A Zipf rank is a way of noticing an irregularity that might not be noticeable in a standard frequency distribution or rank order. It does not appear unusual that Brazil has 288,000 military personnel. Yet, it does seem unusual that Brazil would have the second highest Zipf value after India. One might reasonably wonder whether Brazil is expanding its military with a view to threatening its neighbors. Actually, the reason is a difference in the definition of military personnel. The Brazilian Federal Police are considered to be paramilitary. The U. S. crude equivalents, such as Border Patrol, FBI, Treasury ATF and Customs police are considered to be civilian. France also has a high Zipf value because the National Gendarmerie are counted as military. Thus, the Zipf value provokes an inquiry whereas the mere fact that France has 294,000 armed forces personnel provokes no inquiry. If one noticed that India happens to have the highest Zipf value, one might now suspect that the Indian armed forces personnel data includes some paramilitary forces and is not strictly comparable with some of the other data. Indeed, this would be a correct assumption. The figures for the Indian armed forces include numerous paramilitary and police units such as the Border Security Force, National Security Guard, Indo-Tibetan Border Police, Special

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Frontier Police, Ladakh Scouts, Central Reserve Police Force, Central Industrial Security Force and the Railway Protection Force.

It is quite natural to assume that, when viewing a compilation of statistical data, the data is homogeneous. Yet, this is evidently not always true. An analyst must have a tool that can be used to generate pertinent inquiries about the nature of the data under examination. Zipf's Law is such a tool.

The inventor of Zipf's Law was not a mathematician, but a philologist. He worked at Harvard University as a linguistics professor. It was he who studied the frequency of occurrence of certain words in English language texts. The three most common words were "the," "of," and "to." The occurrences of these words plotted against rank appears to follow Zipf's Law. It was this rank order plotting that generates the Zipf observation.

These observations were then applied to a diverse range of statistical phenomena and appeared to have a universal applicability. Some of these observations are contained in a 1935 book by Zipf entitled "Psycho-Biology of Languages." However, his seminal work formulating Zipf's Law is entitled "Human Behavior and the Principle of Least Effort," published in 1949. Interested readers might also consult "Selected Studies of the Principle of Relative Frequency in Language," published by Zipf in 1932. Readers are cautioned that these books are rather rare and not very easy to obtain, albeit obtainable.

Such concepts can be applied to security analysis. In principle, the various constituent parts of the S&P 500 are efficiently priced. Yet, the Zipf values expose differences among companies. Table A displays the consensus estimated net profit for the 20 most profitable S&P 100 firms in terms of anticipated 2005 net profit. A complete table of estimated 2005 profits for all S&P 100 companies can be found in Appendix A.

### **Consensus Estimated 2005 Net Income Ranked By Income** **(amounts in billions of dollars)**

<b><u>Rank</u></b>	<b><u>Company</u></b>	<b><u>2005 Net Profit</u></b>
1	Citigroup	\$22.8
2	Exxon	\$21.8
3	General Electric	\$18.9
4	Pfizer	\$17.5
5	Bank of America	\$16.3
6	Microsoft	\$15.1
7	AIG	\$13.6
8	JP Morgan Chase	\$11.9
9	Wal-Mart	\$11.6

*(cont'd, next page)*

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10	SBC Communications	\$10.9
11	Altria	\$10.5
12	Johnson & Johnson	\$9.9
13	Chevron	\$9.7
14	IBM	\$9.2
15	Wells Fargo	\$7.8
16	Fannie Mae	\$7.3
17	Proctor & Gamble	\$7.3
18	Verizon	\$7.3
19	Intel	\$7.0
20	Cisco	\$6.7

The next step is to calculate Zipf numbers based upon rank and net income. A list of the Zipf numbers for the estimated 2005 net income for each of the companies in the S&P 100 can be found in Appendix B. The following table displays the 20 lowest Zipf values. It will be observed from even casual scrutiny of Appendix B that the median Zipf number is slightly in excess of 140.

### 20 Lowest Zipf Numbers Based Upon 2005 Consensus Estimates Net Income

<u>Rank</u>	<u>Company</u>	<u>Zipf Number</u>
1	Citigroup	22.8
2	Schering Plough	35.2
3	Exxon	43.6
4	General Electric	56.7
5	Yahoo	67.3
6	Pfizer	70.0
7	Bank of America	81.5
8	Comcast	88.2
9	Microsoft	90.6
10	JP Morgan Chase	95.2
11	AIG	95.2
12	eBay	102.2
13	Wal-Mart	104.4
14	SBC Communications	109.0
15	Automatic Data Processing	110.6
16	EMC	110.9
17	Altria	115.5
18	Fannie Mae	117.0
19	Wells Fargo	117.0
20	Johnson & Johnson	118.0

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The Zipf number calculation creates an interesting sample devoid of the ordinary common denominators such as a P/E ratio screen or price to book value screen. Yahoo and eBay are selected as companies worthy of study. Note that the Zipf value does not suggest whether these are to be studied as long or short investments. The long buyer concludes that the growth rate of these two firms is so high that this warrants investment. Alternatively, the short seller might conclude that the high returns on equity of these companies are unsustainable and their valuations preposterously high. Of course, a conventional screen might have suggested these as worthy of study due to their growth rates. Yet, only a different type of screen would have suggested Fannie Mae as a subject worthy of study. It is possible that one might conclude that its P/E ratio is sufficiently low such that it discounts all possible negative earnings events. Alternatively, one might conclude that the accountancy issues are so severe that earnings cannot be accepted as presented in the accounts of Fannie Mae

The other end of the Zipf number is, of course, the high values. These can be observed in Appendix B. Two possible topics for future study are Lowe's (Zipf number 149.6) and Washington Mutual (Zipf number 148.8). Both companies are quite sensitive to the housing industry. Positively inclined investors might note the high growth rate of Lowe's and the low valuation of Washington Mutual. Negatively inclined investors may regard these as exemplary instances of companies sensitive to the housing bubble. It must be emphasized that the Zipf number merely reveals subjects worthy of study.

General Electric has a Zipf number of 56.7. There does not exist a powerful statistical tendency that draws firms to the median Zipf number. As a pure matter of arithmetic, GE cannot improve its Zipf number by an increase, even if it were substantial, in net income. If GE were to record \$21.9 billion of net income in 2005 instead of the projected amount of \$18.9 billion, it would then be in the number 2 net income rank and its Zipf number would actually decline (i.e.,  $21.9 \times 2 = 43.8$ ). Nevertheless, this does not necessarily entail that the net profit of GE will decline, although this is an arithmetically obvious way to generate a Zipf number more comparable to the general tendency.

Another possible scenario is suggested by another mathematical theorem known as Gambler's Ruin. The theorem operates as follows: Assume the existence of two players that wager for pennies by guessing heads or tails. Each player obviously has a 50% probability of winning each wager. If the wagering process is continued for a sufficiently lengthy period of time, the probability that one of the players will become insolvent is 100%. The probabilities  $P_1$  and  $P_2$ , that players one and two, respectively, will become insolvent, is a function of the ratio of the amount of pennies of each player to the total quantity of pennies held by both players. The formula for this is:



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$$P_1 = \frac{n_2}{n_1 + n_2}$$

$$P_2 = \frac{n_1}{n_1 + n_2}$$

Where

$n_1$  = the number of pennies held by player 1

$n_2$  = the number of pennies held by player 2

General Electric is rapidly increasing its total assets by growth and acquisition. If GE were merely wagering for pennies, it would have an enormous advantage of size. For instance, if GE had 850 pennies and its adversary N2 had 150 pennies, then, by substitution, the probability that the GE adversary would eventually become insolvent would be:

$$P_2 = \frac{850}{850 + 150} = 85\%$$

Total assets of GE now exceed \$704 billion. Total assets of Citigroup equal the astonishing sum of \$1.4 trillion. The companies have enormous power over customers and suppliers. As these firms seek efficiencies with a view to increasing profit margins, it is conceivable that this can occur at the expense of suppliers, if not of customers. If this were the case, then the net profit of various companies would decline and their Zipf numbers would decline as a consequence. If the reported profit of the largest companies such as Citigroup and GE were to increase, their respective Zipf numbers would increase. Hence, the increasing dominance of several large S&P 100 firms is a potential scenario that would equilibrate the differences that currently exist in Zipf numbers.

Incidentally, calculation of Zipf numbers need not be confined to net profit figures. Quantities such as shareholders' equity, total assets, levels of property and equipment, debt capital or even inventories can be subject to Zipf number analysis. For example, although space limitations make a thorough analysis impossible, the Zipf number for J.P. Morgan Chase appears unusually high in relation to the established pattern for the total assets variable. Consequently, if one accepts the validity of Zipf number analysis, one would select J. P. Morgan Chase as a subject worthy of study. Zipf number analysis is in no way any sort of substitute for conventional equity analysis. It is merely a means of selecting suitable subjects for such analysis. As a selection methodology, it does yield subject matter that is not likely to be suggested by conventional screening methods. For instance, the Zipf number for S&P 100 net income yields subject matter as diverse as low P/E stocks such as Washington Mutual, high P/E stocks such as Yahoo, a classical growth stock such as Lowe's or Wal-Mart, a conventional value stock such as J. P. Morgan Chase as well as a non-conventional value stock such as Comcast.

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A reader who accepts the validity of Zipf numbers may wonder why the Zipf pattern is a consistently observed feature of aggregations of number with regard to many sorts of phenomena. The truthful answer is that the cause is unknown. However, it is known that Zipf's law is an example of a power law. A power law is simply a relationship between two variables such as X and Y that can be written in the form:

$$y = ax^K$$

where a and K are constants. In physics, many such power laws exist such as the Stefan – Boltzman Law of energy radiated per surface unit of a black body in unit time. Another example would be the inverse square law of Newtonian gravity.

Variants of Zipf's law can be found in the so-called Pareto Principle. The establishment of the Pareto Principle actually occurred before Zipf wrote his books. The Pareto Principle is also known as the 80 – 20 Rule or the Law of the Vital Few or the principle of factor sparsity. It was observed by certain Italian economists that 80% of the property in the country was owned by 20% of the people. The S&P 500 tends to gravitate to a Pareto distribution structure. This is to say that 80% of the S&P market value is represented by 20% of the stocks. At the moment the 100 largest capitalizations account for about 66.2% of the index. (This is something that readers can consistently observe.) It will exhibit the tendency to restore itself to roughly the 80% level. This can theoretically be accomplished by the decline in value of many of the NASDAQ type firms with high valuations that have come to gradually populate the S&P 500. Of course, the principle of Pareto distribution might finally be invalidated by the continual ascent of those NASDAQ companies.

It is not known why certain quantitative patterns continually appear in natural phenomena. It is merely known that the basic Pareto distribution is a power law of the form:

$$F(x) = 1 - \frac{1}{x^a} \text{ for } x \geq 1 \text{ and } a > 0$$

Readers even without mathematical expertise will note the similarity of this equation to the Zipf function on page one of this essay.

It might well be asked why students of markets should concern themselves with quantitative patterns in natural or statistical phenomena given that the causes of these patterns are unknown. The reason is that there exists yet another law known as Bradford's law that is used by librarians. It is a law that quantifies the exponentially diminishing returns from extending a given library search. For instance, the probability of finding something of interest in x books or journals decreased exponentially with the number of items searched. If one finds two items of interest in the first 10 books searched, perhaps a search of another 20

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books will be necessary in order to discover another 2 items of interest. In this case, the Bradford multiplier known as  $bm$  would be 2 (i.e. 20/10).

Bradford's law clearly has implications for investors who must search over increasing numbers of securities in order to find a worthwhile investment opportunity. Given that there is no substitute for the rigorous fundamental study of a certain company as investment possibility, one cannot achieve an efficiency by economizing on research. Consequently, in order that an analyst make most efficient use of available time, one must seek economies in the search process for possible subjects or companies to study. Hence, Bradford's law has relevance for the investment analyst.

Readers should excuse the length of this paper. It is rather difficult to express the remarkable patterns in quantitative data in concise, succinct form. Nevertheless, this has been done by such an individual as Winston Churchill. A far superior substitute for this essay is merely the following Churchill quotation:

“Man will occasionally stumble over the truth, but most of the time he will pick himself up and continue on.”

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## Appendix A:

### **S&P 100 Index Ranked by Consensus Estimated Net Income for 2005**

1 Citigroup	22.8	51 Bellsouth	2.9
2 Exxon	21.8	52 Walt Disney	2.8
3 GE	18.9	53 Viacom	2.8
4 Pfizer	17.5	54 Bristol Myers	2.7
5 Bank of America	16.3	55 Du Pont	2.7
6 Microsoft	15.1	56 Metlife	2.7
7 AIG	13.6	57 Medtronic	2.6
8 J.P. Morgan	11.9	58 Lowe's	2.6
9 Wal-Mart	11.6	59 McDonald's	2.5
10 SBC Comm	10.9	60 Caterpillar	2.4
11 Altria	10.5	61 Anheuser Busch	2.3
12 Johnson & Johnson	9.9	62 Qualcomm	2.3
13 Chevron	9.7	63 Target	2.3
14 IBM	9.2	64 Motorola	2.3
15 Wells Fargo	7.8	65 Prudential Financial	2.2
16 Fannie Mae	7.3	66 Alcoa	2.2
17 Proctor & Gamble	7.3	67 Boeing	2.2
18 Verizon	7.3	68 National City	2.1
19 Intel	7.0	69 Suntrusts Banks	2.0
20 Cisco	6.7	70 First Data	2.0
21 Wachovia	6.7	71 UPS	2.0
22 Conoco	6.4	72 Exelon	2.0
23 Merck	5.7	73 Nextel	2.0
24 Home Depot	5.6	74 Fifth Third Bancorp	2.0
25 Hewlett Packard	5.0	75 Texas Instruments	1.9
26 Coca Cola	4.9	76 Cendant	1.9
27 Morgan Stanley	4.9	77 Sprint	1.9
28 Freddie Mac	4.8	78 Kimberly Clark	1.9
29 Tyco	4.6	79 Gillette	1.9
30 U.S. Bancorp	4.5	80 Boston Scientific	1.9
31 Merrill Lynch	4.4	81 Walgreen	1.7
32 Pepsico	4.3	82 BB&T	1.7
33 Goldman Sachs	4.1	83 Honeywell	1.7
34 Abbott Labs	3.9	84 Carnival	1.7
35 Allstate	3.9	85 Applied Materials	1.6
36 Dell	3.9	86 Bank of NY	1.6
37 Wyeth	3.9	87 Emerson Electric	1.6
38 American Express	3.8	88 FedEx	1.6
39 Eli Lilly	3.5	89 Southern	1.5
40 Ford	3.5	90 Illinois Tool Works	1.5
41 Amgen	3.4	91 Schlumberger	1.5
42 Dow Chemical	3.4	92 Lockheed Martin	1.5
43 Oracle	3.3	93 Duke Energy	1.4
44 Time Warner	3.3	94 Colgate Palmolive	1.4
45 MMM	3.2	95 EMC	1.2
46 St Paul Travelers	3.2	96 Automatic Data Proc.	1.2
47 United Health Group	3.1	97 eBay	1.1
48 Washington Mutual	3.1	98 Comcast	0.9
49 United Technologies	3.1	99 Yahoo	0.7
50 MBNA	2.9	100 Shering Plough	

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## Appendix B:

### **S&P 100 Ranked by Zipf Numbers for Consensus Estimated 2005 Net Income**

1	United Technologies	151.9	51	Suntrust Banks	140.2
2	Medtronic	150.4	52	Applied Materials	140.1
3	Lowe's	149.6	53	Ford	139.4
4	Metlife	149.4	54	Pepsico	137.6
5	Washington Mutual	148.8	55	Southern	136.9
6	Kimberly Clark	148.4	56	Fedex	136.6
7	Du Pont	148.4	57	Allstate	136.5
8	Boston Scientific	148.0	58	Eli Lilly	136.5
9	Bellsouth	147.9	59	Merrill Lynch	136.4
10	Target	147.7	60	Illinois Tool Works	136.1
11	McDonald's	147.7	61	Goldman Sachs	135.3
12	Gillette	147.6	62	U.S. Bancorp	135.0
13	Viacom	147.3	63	Lockheed Martin	134.5
14	Sprint	147.2	64	Home Depot	134.4
15	Motorola	147.1	65	Freddie Mac	134.4
16	MBNA	146.7	66	Cisco	134.0
17	Cendant	146.2	67	Schlumberger	134.0
18	Walt Disney	146.2	68	Tyco	133.4
19	United Health Group	145.9	69	Intel	133.0
20	Bristol Myers	145.8	70	Abbott Labs	132.6
21	St. Paul Travelers	145.5	71	Morgan Stanley	132.3
22	Qualcomm	145.4	72	Verizon	131.4
23	Fifth Third Bancorp	145.3	73	Merck	131.1
24	Time Warner	145.2	74	IBM	128.8
25	Texas Instruments	145.1	75	Colgate Palmolive	127.6
26	American Express	144.4	76	Coca Cola	127.4
27	Nextel	144.3	77	Duke Energy	126.8
28	Boeing	144.1	78	Chevron	126.1
29	MMM	144.0	79	Hewlett Packard	125.0
30	National City	144.0	80	Proctor & Gamble	124.1
31	Honeywell	143.9	81	Johnson & Johnson	118.8
32	Prudential Financial	143.8	82	Wells Fargo	117.0
33	Caterpillar	134.5	83	Fannie Mae	117.0
34	Anheuser Busch	134.1	84	Altria	115.5
35	Carnival	142.8	85	EMC	110.9
36	BB&T	142.8	86	Automatic Data Proc.	110.6
37	Wyeth	142.7	87	SBC Comm	109.0
38	Exelon	142.7	88	Wal-Mart	104.4
39	Alcoa	142.7	89	eBay	102.2
40	Dow Chemical	142.5	90	AIG	95.2
41	UPS	142.0	91	J.P. Morgan	95.2
42	Oracle	141.9	92	Microsoft	90.6
43	Bank of NY	141.7	93	Comcast	88.2
44	First Data	141.5	94	Bank of America	81.5
45	Walgreen	141.2	95	Pfizer	70.0
46	Emerson Electric	140.9	96	Yahoo	67.3
47	Conoco	140.8	97	GE	56.7
48	Amgen	140.7	98	Exxon	43.6
49	Wachovia	140.7	99	Schering Plough	35.2
50	Dell	140.4	100	Citigroup	22.8

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### Gold Related Stocks Versus Gold Indexed Exchange Traded Funds:

#### An Exercise in Comparative Valuation

It is customary that an essay begin with a statement of purpose. This essay must begin with a disclaimer. This is not intended to be either a purchase or sale recommendation of any individual gold related equity. It is not intended to recommend either purchase or sale of any gold related exchange traded fund. It is merely a theoretical exercise that compares the valuation at the current time of the recently issued Street Track Gold Trust as opposed to the valuation of a well established gold company such as Newmont Mining. The exercise has as its premise the notion that investors are reasonable. As is well appreciated, this is the most dangerous action in all matters of finance. It is the source of much, and quite possibly of most, of the misfortune in the field of investments.

Street Tracks Gold Trust is an exchange traded fund (ETF) listed on the New York Stock Exchange. It is sponsored by the World Gold Council. Bank of New York is the fund trustee and State Street is the marketing agent. HSBC Bank is the fund custodian. This fund is simply designed to hold gold in bullion form such that each share is equivalent to 1/10 of an ounce of gold. The fund commenced trading on November 18, 2004 with the issuance to the public of 2.3 million shares. Its price has thus far very closely approximated the daily gold spot trading price. For instance, London spot gold closed on November 26, 2004 at \$451.85 per ounce. The gold trust closed trading at 1:00 pm for the holiday shortened trading session of November 26, 2004 at 45.29. Any difference between fund price and London gold prices is easily attributable to the time difference between the two markets.

Since the Street Tracks Gold Trust is an ETF, it is to be anticipated that more shares will be issued so that the 2.3 million currently outstanding should not be taken to be representative of the shares of the gold related investment demand that is ultimately possible of this investment. At the moment, a salient point: that the fund seems to trade at its apparent net asset value. This had already had an effect upon a similar type of shares. The similar share in question is known as the Central Fund of Canada (CEF). This fund trades on the American Stock Exchange. The fund holds gold and silver in bullion form. Ordinarily, the fund traded at a 12-14 % premium to net asset value. This was not unreasonable viewed from the perspective of the individual investor. An investor in raw gold or silver bullion in the U.S. would need to pay a sales tax which would vary by place of residence as well as the customary bid/ask spread of the bullion dealer. The mere existence of the Street Tracks Gold Trust has made this entirely unnecessary.

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Consequently, in the days between November 18, 2004 and November 26, 2004, the premium to net asset value of the Central Fund of Canada has essentially vanished. Its current NAV premium is slightly in excess of 2%.

The existence of the gold ETF has not yet had any impact upon the valuation of leading gold shares such as Newmont Mining. This latter company has five primary assets. These are:

- 1.) Approximately 100 million ounces of gold reserves, assuming that the gold price remains above \$375 per ounce. At a price of \$325 per ounce, reserves would be only 91 million ounces,
- 2.) Approximately 7.5 billion pounds of copper reserves,
- 3.) Approximately 480 million pounds of zinc reserves,
- 4.) Approximately 6% equity ownership of the publicly traded Canadian Oil Sands Trust (Toronto Stock Exchange COS-U),
- 5.) Royalty income from investments made by Franco-Nevada Mining before it was acquired by Newmont Mining. This income approximates at \$60 million per annum.

One might imagine that the valuation of these five assets is a rather straight forward proposition. However, it is quite subjective based upon the valuation premise utilized by a given analyst. For instance, it should be obvious, even at a glance, that gold is the primary Newmont asset. The amount of reserves is a function of the gold clearing price. Given gold at \$375 per ounce, the company asserts that reserves are about 100 million ounces. However the gold price now exceeds \$450 per ounce so that it is reasonable to assume that reserves are higher than the level quoted by the company since previously uneconomic reserves at \$375 per ounce are presumably now economic.

In any case, let us utilize a reserve estimate of 100 million ounces since, it is the highest available estimate from a presumable reliable source. These reserves cannot be valued at markets since each ounce has a cash extraction cost estimated by Newmont to be about \$233 per ounce. Thus, the value of gold reserves could be said to be:

100 million ounces at	\$452 each	\$45.2 billion
Minus cash cost of	<u>\$233 / Oz</u>	<u>\$23.3 billion</u>
Gold Value of		\$21.9 billion

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This gold will not be produced in the current year. In light of current production rates, the reserve life is equal to 14.5 years. Hence, the 21.9 billion gold reserve value must be reduced by a present value calculation. This requires the choice of a discount rate. The choice is necessarily subjective. However, given the inherent uncertainties of gold production, these should be few objections to the selection of 10% as an appropriate discount rate.

A present value calculation will result in an \$11.336 billion valuation for the gold reserve. This calculation is based upon a cash production cost of \$233 per ounce. Yet, there are capital costs involved in gold production. It is arguable that a more appropriate valuation calculation would include total production costs. This figure is supplied by the company and is said to be \$296 per ounce. Therefore the value of gold reserves could more properly be said to be:

100 million ounces at	\$452 each	\$45.2 billion
Minus total production cost of	<u>\$296 / Oz</u>	<u>\$29.6 billion</u>
Gold Value of		\$15.6 billion

This figure must also be subject to a present value calculation. The present value is \$7.576 billion, assuming a 10% discount rate.

Copper reserves can be valued in a similar manner with one complexification that will be addressed in due course. Copper reserves approximate 7.5 billion pounds. The current London Metals Exchange price for high grade copper per pound is \$1.48. The cash production cost is, according to Newmont Mining \$0.85 per pound. This exercise will ignore the total production cost since the purpose of the exercise is to create a realistic best case valuation for Newmont Mining. Consequently, the value of copper reserves could be assessed in the following manner:

100 billion pounds of copper at \$1.48 per pound	\$11.1 billion
Minus cash production cost of \$0.85	<u>\$6.375 billion</u>
Copper Value of	\$4.725 billion

This figure must also be subject to a present value calculation. The reserve life of copper at current rates of extraction is about 17 years. The present value of the copper production at a 10% discount rate equals \$2.147 billion.

One of the complexifying factors is that the forward commodity price curve for copper is very different from that of gold. In the case of the latter commodity, gold for delivery in August of 2006 trades at \$475.8 per ounce. This is the price one might reasonably expect for gold given the time value of money. This implies a 2.6% interest rate.



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In contradiction, copper for delivery in August of 2006 trades at \$116.35 per pound. This implies a 21.4 % decline in copper prices. Given allowance for the time value of money. It would appear that the expected copper price is \$1.11 per pound. Thus, the mere act of valuing the copper at \$1.48 per pound is at variance with the commodity market expectation. Obviously, the use of \$1.11 per pound for the realized copper price would result in a much lower present value for copper.

The zinc reserves total 480 million pounds. Given the current production rate, the asset has a reserve life of perhaps four years. The current London Metals Exchange zinc trading price is \$0.51 per pound. The cash cost of production is \$0.38 per ounce. Hence, the zinc reserves can be valued in the following manner:

480 million pounds of zinc at \$0.51 per pound	\$244.8 million
Minus cash cost of \$0.38 per pound	<u>\$182.4 million</u>
Zinc Value of	\$62.4 million

The present value of this asset at 10 % is \$54.4 million. It clearly exerts negligible influence upon the trading price of Newmont Mining.

The shareholding in Canadian Oil Sands Trust is easy to value. Newmont owns 6 % of the company that, at current trading prices, is worth \$295 million.

The last asset is \$60 million of annual royalty income. One could simplistically assign a 20x p/e ratio to this quantity and thus value the asset at \$1.2 billion. However, this makes no allowance for present value. Given an estimated 20 year life (this could be rather generous) the asset is unquestionably worth less than \$600 million. The actual figure discounted at 10 % per annum is \$509 million.

In sum, the net asset value of Newmont Mining can be calculated in the following manner:

1.) Value of Gold (cash production cost approach) (present value)	\$11.336 billion
2.) Value of Copper (present value)	\$2.147 billion
3.) Value of Zinc (present value)	\$0.054 billion
4.) Value of Canadian Oil Sands Trust - investment	\$0.0295 billion
5.) Present value of Royalty income	<u>\$0.0509 billion</u>
Net Asset Value	\$14.341 billion

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It will be observed that this approach does not make use of the lower and probably more correct method of gold reserve valuation based upon total production cost. Moreover, it must be observed that no allowance has been made for the payment of corporate income taxes. In any case, the net asset value calculated in this optimistic manner is:

\$14.341 billion

Newmont Mining diluted shares outstanding are currently \$447.060 million. Its most recent trading price is \$48.99 per share. Hence, the market value of Newmont Mining is \$21.901 billion or 52.7% above a very generous approach to the calculation of its asset value.

One might well wonder why the shares would trade at this valuation. The answer can only be given in terms of a theoretical abstraction. Of course, it was always possible that a mutual fund would purchase gold bullion as an alternative to the purchase of the shares of gold companies. The operational complexities of such an action could clearly be surmounted. Yet, gold was not a sufficiently important asset class and not a sufficiently large investment as a percentage of any fund such that such an action was advisable. Such an action would merely have raised the expense ratio of a given fund. In any case, gold company shares did not trade at an excessive valuation. Hence, the action was not necessary. The existence of the Street Tracks Gold Trust ETF changes the situation. A fund can now own bullion in preference to shares with no change to its fund charter, no board approval and no increase in expense ratio.

It will be argued that gold shares should trade at a substantial premium to net asset value to embrace the possibility that gold reserves will increase as gold prices rise. If one merely holds bullion, reserves are kept at a constant amount. This is mathematically true. Nonetheless, it is logically equivalent to the argument that the trading price of a given security should reflect its most positive outcome. If the trading price of Newmont reflects the possibility that reserves will increase given a material increase in the price of gold, then it must follow that the anticipated appreciation in share price from such a possible scenario belongs to the current seller of the share and not to the current buyer of the share.

Moreover, although it is true that a positive scenario might develop, it is also true that negative scenarios might develop. Obviously, gold prices might decline and hence the reserve figure might decline. If Newmont trades at a substantial premium to its net asset value, none of this is reflected in the price of the Newmont share. In addition, there can be such events as environmental accidents and associated liabilities, mining accidents, an unanticipated increase in cash production costs or unfavorable political developments in some of the various nations in which the Newmont mining properties are located. Examples of nations with a sufficient degree of political risk to disrupt mining operations might be Peru and Indonesia.

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The valuation of the shares of gold related companies can markedly affect the correlation of those shares with the gold trading price. For example, according to the Gold Institute, the following table depicts the average gold trading price during the period 1970 – 1979.

### Average Gold Trading Price per Ounce 1970 – 1979

Source: Gold Institute

1970	\$36.02
1971	\$40.62
1972	\$58.42
1973	\$97.31
1974	\$154.00
1975	\$160.86
1976	\$124.74
1977	\$147.84
1978	\$193.40
1979	\$306.00

According to Moody's, the average trading price of the Newmont Mining share was in the range of  $37 \frac{1}{2}$  -  $21 \frac{1}{4}$  in 1970. By 1979, the average trading price of a Newmont Mining share was  $39 \frac{3}{4}$  -  $21 \frac{1}{2}$ . In fairness, during this period, Newmont Mining had more exposure to copper, zinc and oil than is currently the case. However, each of those commodities was also dramatically increasing in price during this time period.

In 1980, the gold price for a brief period exceeded \$800 per ounce. It was only in this year that the Newmont Mining share price traded in the range of  $60 \frac{7}{8}$  –  $30 \frac{1}{2}$ . There were no share splits during the 1970 – 1980 time period. Consequently, it is not correct to believe that the Newmont Mining share price is necessarily correlated with the corresponding commodity trading price.

None of the above should be interpreted as a forecast that gold will not rise in price. It is quite possible that inflationary pressures will accelerate. It is quite possible that the U. S. dollar will collapse. It is quite possible that gold is an excellent hedge against the U.S. dollar. Opinions upon such matters are simply beyond the scope of this paper. However, one can quite correctly forecast the price of gold and quite incorrectly forecast the trading price of Newmont Mining. The valuation of the shares simply reflect a very optimistic outcome. Indeed, that

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forecast is far more optimistic than is suggested by the existence of a gold price that exceeds \$450 per ounce.

A reasonable investor, if such a being actually exists, now has an interesting choice. If such an investor wishes to include a gold investment in a portfolio, such an investor can be very correct insofar as a gold forecast is concerned and very wrong insofar as a Newmont Mining forecast is concerned. Alternatively, such an investor can purchase the Street Tracks Gold Trust ETF as a gold investment. By definition, the ETF trading price will accurately reflect the gold price, thus making certain that a correct gold price forecast will be reflected in investment value.

The owner of conventional gold stocks as opposed to the newly created gold ETF will no doubt argue that investors will long retain the habit of owning gold mining shares as a proxy for gold investments. This may be true. In any case, this paper can in no sense offer a refutation of such a position.

However, it is worthy of note that the president of Newmont Mining, Mr. Pierre Lassonde, has been a substantial seller of shares in recent weeks. These are shares that result from stock option exercise. Mr. Lassonde can only be described as a brilliant gold investor. He founded Franco-Nevada Mining with almost no resources some two decades ago and in the worst gold investment environment in history built this firm into one of the great mining firms of the world until it was acquired by Newmont Mining. (See Contrarian Research Report on Franco-Nevada Mining dated June 18, 1999). The selling activity by Mr. Lassonde is very unusual. Readers are directed to a Form -4 SEC filing dated November 12, 2004. Insider selling activity among other members of the Newmont Mining management team, including the chairman Mr. Wayne Murdy, has been uncharacteristically high.

It is also worthy of note that in recent months, Mr. Rob McEwen, the former chairman of Goldcorp, has asked the board of directors to find a successor. Goldcorp, itself, has been a rather unusual gold mining firm inasmuch as it has withheld gold production from the market. It recently sold all of its gold holdings. Goldcorp has been the subject of various Contrarian Research Recommendations. (See original report dated June 24, 2002 and five subsequent updates). Goldcorp chose to sell its previously accumulated 8.3 tons of gold in late 2003. It could be that the action of well informed and historically successful insiders, the creation of the Street Tracks Gold Trust ETF and the fact that gold related equities trade at very substantial premiums to net asset value are entirely coincidental events. Nevertheless, even a coincidence is frequently worthy of notice.

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## High Yield Investing In the Absence of High Yield

### Investment Thesis

The painfully obvious fact about the current state of the high yield bond market is that it is named quite inappropriately. However, the obvious issue of nomenclature obscures a far more important issue. The salient question is whether or not this phenomenon is to remain as it is for some prolonged period of time or whether yields will soon be restored to a more traditional level. It is difficult to imagine a circumstance in which the “high yield” market will provide even lower yields. This is because it is difficult, but not impossible to envisage lower treasury yields. If treasury yields do not decline, the only circumstance in which “high yield” instruments can provide a lower absolute yield would be if the “spread” between “high yield” and Treasury securities were to further contract. It is already remarkably low.

A 20-year Treasury bond yields roughly 5.12%. A BBB industrial credit with a 20-year maturity yields 6.28%. A BB twenty-year industrial credit yields 7.03% A single B twenty-year industrial credit now yields only 7.64%. In order to find higher yields one must descend into the CCC range or even lower. It will be observed that there is not a large quantity of paper that is currently rated below CCC.

One can obtain a higher yield without undue credit risk in one of the closed-end high yield funds. An example would be the Blackrock High Yield Trust (BHY-NYSE listed). This is a fund that trades at a premium of 22.4% to its net asset value. It does have a trailing 12 month yield of 9.4%. However, it is 35.7% leveraged or, alternatively expressed in hedge fund jargon, 135.7% gross invested. Obviously, if the shape of the yield curve were to change with short term rates rising, this fund would at minimum experience a decline in income payout as the cost of carry for the leveraged portion of the portfolio continues to increase.

Thus, it seems evident that the high yield choices, such as these are, do not provide high yield and do certainly provide investment risk. This cannot be a situation that will permanently endure. Essentially, there are two possibilities. The first possibility is that the situation will be restored to normalcy. That is to say that the “spread” between “high yield” and Treasury issues will widen. The second possibility might appear to be somewhat absurd. Yet, it might be said to logically follow from the current yields of lower rated bonds. This is that the default rate on bonds of low quality will be permanently lower than was previously the case. Consequently, the yield has become properly lower and this merely reflects an appropriately lower risk premium for this variety of financial instrument.

It should be arithmetically evident that it is not possible to earn a double digit rate of return on high yield bonds as a class of investment. If the average yield of such an

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instrument in 8.5% and the average instrument trades near or above par value, the best that can possibly happen is that none of the higher coupon issues are called for redemption, none of the issues default and that long term rates do not increase. In such a circumstance one might earn the average yield of 8.5%. In fact, in light of the average yields noted in the opening section of this paper, a yield of 8.5 % is almost certainly an overestimate of what is actually obtainable. Since the default rate will not be zero, the actual return will be comprised of the average yield minus losses due to the average default rate. Hence, a portfolio of B-rated 20-year paper will yield only 7.64%. Losses due to default of over 67 basis points, in a portfolio context, will reduce the return to below 7%. If a 3% position within a given portfolio were to decline by 25% due to default or the threat of default, the portfolio will experience a 75 basis point loss. Thus, the margin for investment error in a portfolio context is very small.

Since it would appear that there are no significant return prospects from yield, one must necessarily seek return, if it can be found, in bond price changes. This leads once again to the remaining possibilities. If high yield spreads widen, high yield bond prices will decline. Alternatively, if the high yield default rate is to be permanently low, perhaps there exists appreciation potential in the related equity securities. The remainder of this paper will examine the two possible scenarios.

### I. Investment Tactics in the Spread Widening

A possible trade that would benefit in the spread widening scenario is as follows: Sell short Nextel Communications 7.375% notes due 8/1/2015. Buy an equal dollar basis in the U. S. 20-year Treasury bond. The Nextel bonds currently trade at 109 ½ bid 110 ½ ask. The current redemption price is 107.375. These bonds are unconditionally callable on or after 8/1/2008 at 103.688%. The current yield is only 6.7%. Given the call prices as well as the maturity date, the Nextel bonds must eventually decline in price. The trade is a negative carry trade on a cash basis insofar as the Nextel bonds in question yield 158 basis points more than the 20-year U.S. Treasury. However in the event of a call at 103.688 in 2008, the trade would manifest a marginal profit.

Nextel is a highly leveraged company active in the very competitive sphere of mobile communications. This is a \$1 billion issue and considered to be one of the rather liquid issues in the world of so-called high yield. If the spread to Treasuries were to widen from the current 158 basis points to a more historical norm of perhaps 450 basis points the bonds would trade at roughly 77.63 for a current yield of 9.5% and a yield to maturity of 11.8%. This has the possibility of providing a 28% return if the spread widening occurs within the next 12 months. If the spread widening occurred within 24 months, the potential return would decline to roughly 12 ½%. If the spread widening occurs within 3 years, the potential return would still be roughly 9.5%. This would be far superior to that which is to be expected if spreads were to remain at their current low level, Although time does work against such a trade inasmuch as there is a fixed possible return. As the time

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required to earn such a return increases, the compound annual rate of return does decline. Yet it is only a failed trade if spreads do not widen within the next three years. Accordingly, as the risk appears minimal, it does possess sufficiently asymmetrical return characteristics such that it is recommended as an action.

A similar type of “spread-widening” trade is possible in the case of L-3 Communications 7 5/8% notes due 8/1/2012. This is a general unsecured issue. The face amount of the bonds is \$750 million. The bonds trade at 109 bid 110 asked. The current yield is 6.9%. The yield to maturity is obviously much lower. This yield to maturity would be on the order of 5.2% or quite comparable to the current 20-year U.S. Treasury. The recommended trade is to sell short the L-3 Communications bonds and purchase an equal dollar amount of U.S. Treasury 10 year bonds. This is a slightly negative carry trade on a current yield basis. It is approximately break even on a yield-to-maturity basis. The L-3 Communications bonds are callable on June 15, 2007 at 103.813. These, then, gradually decline in call price to the level of par on 6/15/2010. It is readily conceivable that if the current interest rate environment were to persist until June 2007, these bonds would trade at their call price. In this circumstance, the trade would manifest a very marginal profit.

If spreads were to widen to only 375 basis points on a current yield basis, the bonds in question would trade at 84.75. If spread widening occurs within a year, the return on such a trade could still exceed 20%. At a price of \$85.75 the L-3 Communications bonds would exhibit a yield to maturity of approximately 10.2%.

It should be noted that L-3 Communications is a very leveraged enterprise. Its long term debt does now exceed \$2.5 billion. Although shareholders’ equity also exceeds \$2.5 billion, goodwill and other intangible assets exceed \$3.6 billion. L-3 Communications is a very acquisitive defense electronics firm. Acquisitions are notoriously difficult to orchestrate successfully. The growth rate of the company is dependent upon future acquisitions. A failed acquisition could easily restore the credit spread with respect to this issue to its customary level which would, at current levels of rates, result in an L-3 Communications yield of over 10%.

Time does work to the disadvantage of this trade as it does with all spread trades of this type. Nevertheless, given the current yield of the L-3 Communications bonds in question, there does not appear to be appreciable risk of appreciation of the short position in this trade. The asymmetrical risk reward character of this trade is sufficiently alluring such that this trade is recommended.



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### II. Investment Tactics if Spreads Never Again Widen

Let us simply assume that spreads will never widen or, at least, not widen for years. This is, in investment community parlance, the functional equivalent of never. This is rather similar to the assertion that defaults will remain rather low. Let us use a recent Distressed Securities Report recommendation as an illustration of investment tactics.

It will be recalled that the Distressed Securities Report recently recommended purchase of Calpine 4 3/4% Convertible Notes due 11/15/2023. (See Distressed Securities Report dated October 7, 2004). At the time of recommendation only several weeks ago, these Calpine Convertible bonds traded at a yield-to-put off approximately 15% per annum. (These bonds are puttable to the company on 11/15/2009 at par). In recent days these same bonds traded at 84 for a yield-to-put of 8.80%. The issue is convertible into 153.8462 shares of Calpine per \$1000 per value. At current Calpine share prices, this is equivalent to a conversion premium of 50.8%. Calpine common shares trade at a 35% discount to book value. This is probably due to the conventional view that Calpine has too much debt in its capital structure. It is believed that the associated debt service will be difficult to pay and hence losses will ensue that will erode the book value per share. A reduction in shareholder equity would imply that the company will experience a decline in credit worthiness. Yet, the low 8.8% yield-to-put of the bond in question logically is at variance with such a view. In fact, the former 16% yield-to-put would be far more consistent with the notion that Calpine is not credit worthy.

In order that the bond market and the equity market reflect a logically consistent view, then either the bond must return to its former level (roughly 68) or the shares should trade at a higher level. Insofar as the share price is concerned, a trading level such that the shares would trade at least at book value is much more consistent with the current yield-to-put of the bond.

Since the premise of this section is that current yield spreads will not widen let us assume that the shares will ultimately return to book value. The 4 3/4% coupon payment each year represents only a minimal rate of return. If one were to invest the coupon into Calpine call options, one could considerably enhance the return of the security in question.

In the precise scenario that Calpine common shares were to trade at book value by January 2007, the 4 3/4 Convertible bonds would trade at least at parity value. Parity would equal:

$\$9.90$  (Book Value) x 158.8462 shares (conversion rate) = 152.3 per bond.

This equals a principal-only return of 81.3%. The coupon return would add 11.3% to this return.

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Let us assume that in December 2004 and December 2005 the coupons of 4.75% were invested in Calpine January 2007 2 ½ call options. In order to create an artificially simple calculation, it will be presumed, no doubt incorrectly, that Calpine shares will reach the level of \$9.90 in January 2007, not gradually but suddenly in that month. The shares, for calculation purposes, are therefore presumed to trade at the current price until such time.

A coupon of 4.75% can purchase \$4,750 worth of call options each year for two years. The January 2007 5 call options now trade at \$1.00 per contract. One year from now, assuming that Calpine were still to trade at \$3.49 per share, the price of the Calpine January 2007 5 Call Option can be simulated by the current trading price of the January 2006 5 Call Option since, in one year, the 2007 Call Option will be a one year option, as is the case with the January 2006 5 Call Option at present. Thus, at the current time \$4750 of coupon income will purchase 45 contracts. In one year, \$4,750 of coupon income should be sufficient to purchase 75 contracts.

Consequently, in January 2007 the Calpine convertible investor will be long the following quantities of securities, assuming an \$84,000 initial investment for 100,000 face amount of bonds. Once again, it is assumed that Calpine shares trade at book value of \$9.90 each.

1). 100,000 face Calpine 4 ¾ % Conv. 11/15/2023 at 152.3	=	\$152,300
2). 45 Calpine January 2007 5 Call Options x Intrinsic value per contract of \$4.90;		Value = \$22,050
2). 75 Calpine January 2007 5 Call Options x Intrinsic value per contract \$4.90;		Value = \$36,750
		Total Value = \$211,100

Compound annual rate of return = 58.5%

If coupons are collected in cash and the same scenario were to take place, the compound annual rate of return would only be 38.8%.

Calpine Convertible 4 ¾% Notes 11/15/2023 remain recommended for purchase. In addition, it is recommended that coupon income be invested in Calpine call options.

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### Summary

It should be self-evident that the current yield environment makes the traditional double digit return from high yield investing arithmetically unlikely. Historically, only some of the double digit rate of return was actually generated by coupon income. Much return was generated by price appreciation. At the current levels of trading prices, such appreciation is quite simply not obtainable. Since it does not exist, it must be artificially created.

It is possible to generate such return in both an environment of widening credit spreads as well as an environment in which credit spreads do not widen. This paper has been an exercise in tactics for both environments. It is beyond the scope of this paper to predict credit spreads. However, the current situation is certainly not immutable. The trades illustrated in this paper are a first attempt to assess the opportunities that exist as spread conditions evolve.