Value Investing in the Great Boom

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This thesis for honors recognition has been approved for the Department of Accounting, Business & Economics, Carroll College, Helena, Montana.

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4-15-98
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Value Investing in the Great Boom

Presented in Partial Fulfillment for the Requirement of Graduation With Honors to the Department of Accounting, Business & Economics, Carroll College, Helena, Montana.

John Michael Knopik
May 1998
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Value investing is just standard economics. Think logically about what you're doing. Think about it without emotion. And think about what makes sense.

Andrew Weiss
INTRODUCTION

This decade’s economy has blown a remarkable trade wind into the market’s previously stagnant sails. Investors on board witnessed favorable economic conditions never before thought possible. They discovered a new era where market gains accelerated upward and plunder abounded. Those times were great, but the most prosperous period is just coming into view. By examining the root causes, not the present symptoms, of the U.S. economy and its capitalistic gyrations, one may predict the future direction of our economy, in essence an economic treasure map. Coupled with this map, investors can position themselves to take full advantage of an historic stock market boom described by Harry Dent in his book called The Great Boom Ahead. This paper will provide the economic foundation and six of the most prominent value investing tools to earn money in the market for years to come.

THE ECONOMY

The U.S. economy hasn’t seen a major recession for 15 years. Interest rates, inflation, and unemployment have continued to fall--something most economists never dreamed possible. The stock market has made gains that exceeded even the most optimistic analysts’ predictions. But these factors do not explain the economy. They are a result of it. Many theories have been ushered into the economic community in explanation of current U.S. growth, but only one seems to unveil the workings of our market place. This theory is founded in demographics...more specifically, U.S. births.
As generations of people move through their life spans, they bring changes in social structure, breakthroughs in technology, and, most importantly, consume goods which in turn drives the economy. The premise of this paper is that extended booms and busts are not caused by anything but the fundamental trends of birth numbers in a generation.

**GENERATION THEORY**

To understand our condition today and in the future we must examine the generation that is driving the U.S. economy. The baby boomers are that generation, all 80,000,000 of them. They were born in three installments with births peaking in the third between 1957 and 1961. This generation is far and above the largest in American history, and therefore will provide even more gas to America's economic engine.

According to Dent, the generation theory is comprised of four related waves. The birth, innovation, spending, and organization waves show how baby boomers progress through a predictable cycle. Each wave builds and builds until it peaks at a certain age delivering its own unique impact and then declines to
give way to the next wave.

The innovation wave (I-wave) outlines when new technologies are developed and adopted. The I-wave tops out around twenty years after the peak of a generation’s births when people are entering the workforce (The Great Boom Ahead, 98). At this time, the generation is creating new products and industries. These innovations follow life cycles just as people in a generation do. The S curve is the basis of the I-wave and allows us to predict when products will grow, be adopted, and finally mature. As figure 3 indicates, products go through three stages of growth, the innovation phase (0-10%), the growth phase (10-90%), and the maturity phase (90-100%). The product spends an equal time in each phase, and therefore most of a product’s growth occurs in the 10-90% period. The innovation phase is when the invention is created. It is a time when the investor or company spends much time and money on the product and receives little return. Production is usually expensive, and the good is regarded as a niche market with less than 10% market share. In the growth phase the product is rapidly adopted into the mainstream economy. A breakthrough innovation occurs to make the product more affordable to the mass market. Two factors that drive this phase are consumer adoption patterns and cost curves. Consumers resist new products so adoption comes in stages. Products usually move from high income to low income individuals, young to old, and

![Figure 3](image)

Harry S. Dent (101)
urban to rural areas. The cost curve is the most influential factor, since falling costs dictate S curve direction, and are the most universal force in consumer adoption. When products are first introduced in the innovation stage they are expensive. As costs decrease, broader segments of the market demand the product. The maturity phase sees the product’s market share level off since there are only so many consumers willing to buy the product.

Refer to figure 5 for a classic example of the S curve. The automobile follows a product life cycle precisely. From 1900 to 1914 the car was only a toy for the rich, a niche market. In 1914 the assembly line breakthrough allowed manufactures to cut costs in half and increase market demand. Every generation’s I-wave brings its own new technology and products, and the automobile was the creation of the Henry Ford generation, who were born between 1860 and the
early 1880s. The automobile shaped all industries related to building and owning this product (The Great Boom Ahead, 106).

As products move into their maturity phase, new S curves appear. The new S curve represents a newer version of that old technology, and the two curves only temporarily overlap. This can be seen in mainframe computers and microcomputers. Microcomputers represent the product of the future. The microcomputer’s S curve is essential because it is the key technological breakthrough for the baby boomer’s I-wave. According to Dent, automobiles were to the Henry Ford generation what microcomputers will be to the baby boom generation. Baby boomers will see two overlapping S curves for microcomputers. The first microcomputers were known as personal computers, or PC’s. These were innovated in the mid 1970s and early 1980s. The desktop PC has automated the office, but its life cycle is in the maturity phase with little growth. The second group of microcomputers, portable PC’s, are just entering the market. These laptop, notebook, and palmtop computers will dominate the U.S. economy in the decades to come. These products will allow computers to leave the office and take the company to the customer.

It is important to emphasize that every generation creates its own technologies
and products. The microcomputer was the baby boomer’s product and it is this innovation driving our present economy. The microcomputer was regarded as only a niche product in the 1970s and 1980s, but it has moved into the mainstream economy in the 1990s and will expand in the 2000s. A mistake many investors and companies often make is assuming that a premium-priced, niche market product will not enter the mass market (The Great Boom Ahead, 119). As time progresses, costs decrease and affordability increases. For future investments, look for companies that can bring premium priced products into mainstream affordability.

The microcomputer S curve is the sole force in the baby boom’s I-wave (The Great Boom Ahead, 115). This is crucial because when generations cause booms, as will be discussed later, the booms are in products they innovated, not products in aging industries such as railroads or light bulbs. In the upcoming years the U.S. will find itself in the S curve growth phase of the most influential product, portable PC’s. An outstanding product, though, does not by itself dictate economic direction. An economy needs consumers and their buying power in order for a boom to occur. That is where the spending wave, the most crucial element of the generation theory comes in (The Great Boom Ahead, 43).

The spending wave determines when an economy will boom or bust. It does this by relying on an underlying economic factor, consumer spending. Consumers drive the economy. According to Dent, consumers comprise 67% of GNP and if you include business capital spending in response to consumer demand it is 80%. The government accounts for 20% of GNP but even that is generated by taxing consumers and businesses.
A generation spends and saves in predictable patterns as it ages so the spending wave can be charted into the future and used to predict economic trends. Family spending peaks when family heads reach age 46 as figure 7 illustrates (The Great Boom Ahead, 26). Economic booms grow when consumers in a generation progress up the spending curve with larger generations having a more dramatic affect on the economy. Figure 8 takes the yearly U.S. birth rates and projects them forward 46 years. The spending wave matches the S & P 500 index (The Great Boom Ahead, 31). It forecasts tops and bottoms of the economy, shows the boom in the 1950s and 1960s caused by births in the Bob Hope generation (those born from the 1890s to the early 1920s), and illustrates how the baby boomers are large and in charge from the 1980s on. As economist Dent simply states, “The economy is predetermined by the birth numbers” (The Great Boom Ahead, 29). If this is true, the U.S. is poised for one wild boom since the baby boom generation is the
largest generation ever in American history.

Two factors account for a generation’s spending patterns. First, as people gain work experience, their responsibility and earning capacity increases. The baby boomers entered the work force in the 1970s and 1980s and by 1995 made up three-quarters of the work force (The Great Boom Ahead, 29). The baby boom generation has ascended the work force hierarchy into higher paying jobs, which translates into more money to spend on goods in our economy. The second factor is the predictable family formation cycle. In a nutshell, people in their 20’s to 40’s are married and raising children. In this process they are increasing household assets, and it is the purchasing of these durable goods that has the greatest effect on our economy. There are two stages of acquiring durable goods in the family lifecycle. Between the ages of 20 and 25 people purchase many initial household items such as blenders and dishes. But after age 25 children enter the family, and this marks the biggest buying cycle that peaks around age 46. Families start buying big-ticket items such as houses, cars, and goods for the kids. The most important purchase is the house. Houses not only cost much money, but many goods and services concentrate around a house such as appliances and other furnishings.

As noted above, individual spending is predictable through a lifetime so a generation’s spending wave can be projected into the future with accuracy as figure 9 displays. Baby boomers were born in three allotments. According to Dent, the first boomers’ spending wave surged in the mid 1980s, peaking in 1989. The mild recession in 1990 and 1991 was predictable because the first boomers had reached their peak spending while the second group of boomers had not yet started theirs. But in 1992 this group started its spending curve and drove us out of the recession. That wave has also
topped out, ending in 1997. The third wave of baby boomers, the largest group by far, started its spending in 1998 and will continue until about 2007. To add to the baby boom’s giant spending wave during this period, the Millennial generation, the next generation that was born in the 1980s and 1990s, will enter its first stage of buying durable goods. This combination of baby boomers and the next generation of twenty-five year olds will produce the largest boom in U.S. history (The Great Boom Ahead, 38). Unfortunately this boom will end, as most good things do, after the year 2007. The U.S. will see the next great depression that will last twelve to fifteen years, and the reason will be lack of births. The peak of baby boom births occurred from 1957 to 1961, but the next wave of births was twelve to fifteen years later from 1973 to 1976. After 2007 we will have a smaller number of spending consumers in our economy. No government stimulus
will alter this depression’s course just as it could not stop the depression in the 1930s (The Great Boom Ahead, 35).

Another aspect leading to an economic boom is the combination of a generation’s innovation and spending waves. This graph overlaps the spending wave with both the Bob Hope and baby boom generation product S curves. The Bob Hope generation’s spending wave peaked in the late 1960s as its products and associated technologies entered the maturity phase of the S curve.

The late 1970s and early 1980s saw recession because of two things (The Great Boom Ahead, 122). The Bob Hope generation’s spending wave and product S curves were topped out and the baby boomers were just entering their innovative phase, a period of high investment and low productivity that will be discussed later. Together these elements forced the economy downward. Moving towards the year 2000 in figure 10, you see the baby boom’s spending wave and product S curves rapidly climb together. A climbing spending wave in combination with that generation’s products entering their rapid growth phase points only to a boom. In addition, both the spending wave and S curves for the
baby boomers are the most powerful in history—which spells nothing but the largest U.S. economic boom ever.

Dent’s last component of the generation theory is the organization or power wave. This wave accompanies people through their late 40’s and mid 60’s. In this wave the generation changes social and business structures and has immense political power. Though the organization wave’s true economic impact has been debated, the large number of baby boom births will create, for the first time, an enormous group of economically inactive, elderly voters who will require expensive social services and depend upon government funds for much of their income. Economists, such as Lester Thurow, predict this enormous transfer of resources will make the elderly into one-issue voters, whether the government will increase or decrease their payments (The Future of Capitalism, 96). In a democratic environment one-issue voters have a huge impact on the political process because they do not split their votes when faced with conflicting interests in other issues. Bottom line: down the road the baby boomers will be politically unstoppable and will not allow their benefits to be cut. How this will affect the economy in the future is still unclear.

REAL ESTATE

Another independent cycle has also entered the economic scene. This cycle will spurn the next great population migration and real estate boom in the U.S. It is founded in a sixty-year real estate and credit cycle. Every sixty years there is a peak in inflation, commodity prices, and interest rates (The Great Boom Ahead, 90). Figure 11 displays those peaks of interest rates in 1860, 1920, and 1980. Economists theorize this cycle can be attributed to fluctuations in commodity prices caused by cycles in basic innovations.
Basic innovations, not to be confused with innovations created by a generation’s I-wave, are considered broad scale breakthroughs in science and technology. Basic innovations also occur every sixty years although no one knows why. Examples of basic innovations are the steam engine in the 1760s, railroads in the 1820s, automobiles and electricity around the 1880’s, and the transistor, the building block for digital computers, in the 1940s. These basic innovations change the way people live.

In the years prior to 1860 the population was involved in a rush in rural real estate; prior to 1920 the rush was for real estate in big cities; and during the years before 1980, the population wanted real estate in suburban areas. Banks finance these real estate booms. But as an area becomes more and more populated, prices go up, interest rates skyrocket, and banks become loaded with bad loans...just as the saving and loans did in the 1980’s (The Great Boom Ahead, 91). A decade after a peak in interest rates and inflation, a real estate collapse occurs in those saturated areas. The 1870s saw the collapse of rural real estate, the 1930s experienced spiraling land prices in big cities, and the late 1980s and early 1990s saw real estate prices plunge in suburban areas. This
collapse occurs because the areas become leveraged to unsustainable heights by the inevitable, falling interest rates (The Great Boom Ahead, 92).

People respond to these real estate collapses by leaving the saturated, high-priced property for a lower cost area. Every sixty years the U.S. experiences two to three decades where twenty percent of its population moves to lower cost areas. This transition is aided by basic innovations that improve the standard of living and help ease relocation. In the 1870s Americans shifted to suburbs with the help of cars and telephones. The next great migration will see people moving from the suburbs to smaller towns and communities since these are low cost areas. The computer and its accessories have allowed companies like Semi-Tool and Montana Rail Link to operate in lower cost states such as Montana. Investing opportunities are present with the gradual price appreciation of small town land. The greatest real estate boom in America will occur in the next decades as businesses and baby boomers relocate to small towns and communities.

INFLATION

Inflation has constantly followed the baby boom generation. This dragon has ranged from three to fourteen percent, driven up prices, and in turn, lowered an individual’s purchasing power. Inflation was pushed to uncontrollable levels in the late 1970s and early 1980s by this generation’s early inefficiencies explained earlier by the I-wave. But the baby boomers high productivity in the 1990s will slay the inflation dragon for the decades to follow.

According to Dent, a key, and often overlooked, factor driving inflation is a generation’s rate of entry into the labor force. The labor force growth is lagged two years since lower productivity and high investments required to bring a generation into the
work force peak two years
after initial entry into the
work force. Figure 12
shows the direct correlation
between inflation and labor
force growth. Economists
such as Dent define
inflation as “the economy’s
means of financing a period
of high investment” (The
Great Boom Ahead, 53). This is true because inflation occurs during transitional lapses
between old and new technologies.
The old technologies are not
suitably productive yet the new
technologies require a high
investment to get jumpstarted.
Technological
innovations...remember these
come from a generation’s l-
wave...occur when a generation is moving from the school system and into the labor
force, usually in its early twenties. The actual entry into the labor force causes high
investment and low productivity. Young, new employees need training, desks, and other
equipment to do their jobs, yet they are inexperienced and initial productivity tends to be
low. Adding to this, people in their late teens and early twenties do not save as this graph displays, so there is less capital to fund this huge labor force investment. The larger the generation, the bigger the inflation rate. On the other side of the coin, baby boomers will end inflation with their high productivity. In their 40’s they will no longer need that high investment and will be saving more to finance present and future economic growth. The savings rate is supported by human’s predictable patterns in the family life cycle. Savings rates go up as people age. Young people need to borrow to get off the ground with house and car payments while older people tend to save more for retirement. Thus baby boomers will be highly productive and possess large savings for our booming economy to expand further.

The issue of productivity must be examined because of its importance in the disappearing inflation scenario. Productivity is defined as output per labor hour. With a large labor force, an economy does not need a high productivity rate because there are plenty of workers to do the job. But a large labor force is not in the future with figure 14 showing an ever-shrinking labor force until the year 2015. Japan has already experienced higher productivity because it has lost much of its workforce to retirement and has been forced to automate jobs (The Great Boom Ahead, 40). Increased automation creates higher productivity. Blue-collar jobs in the manufacturing sector are already being eliminated, replaced with more productive automation procedures. This
trend will continue but will also spread to white collar jobs. More than 70% of the U.S. workforce is involved in clerical and white collar work. Many of these jobs will be eventually automated because computers can do white collar work faster and cheaper. In addition there will not be a large enough labor force to do all the work. The economy will grow, but labor will not increase so every worker will have to produce more. Higher productivity will not be achieved through general economic consent, but rather because conditions will force productivity to increase.

Economists are split on the productivity issue. Half state that increasing productivity will not be a problem. Productivity will be boosted because the U.S. incorporates more women and minorities into the workforce, the large number of baby boomers are in their most productive years, and the U.S. has the greatest proportion of two-income families thereby doubling a family’s productivity. They give examples of General Electric’s lighting division using the internet to collect bids for spare parts, shortening the process by two weeks, and Chrysler increasing car production by using new computers rather than building new factories. Other economists state that individual companies are making headway, but the U.S. economy is still not increasing overall productivity. From the mid 1970s to 1996 the productivity growth rate hovered around
1% per year (U.S. News and World Report, 39). But those statistics are in dispute. Some say the role of the fast growing software industry is not represented and governmental estimates of inflation are too high, making the productivity growth rate appear lower than it actually is.

The computer’s impact on productivity is probably discounted. How does one accurately assess the increase in output per labor hour attributable to computer improvements? This would be nearly impossible. The fact is computers are an investment, and like investments, they will show their returns in the future. Productivity will increase because of factors within the economy and because increased productivity will be forced upon us as a result of the shrinking labor force.

Other factors affecting inflation also point to the actual disappearance of inflation, although none correlates as well as the labor force growth rate. Commodity prices are often directly related to inflation and have been spiraling downward since their peak in 1980. Commodity prices will continue to slip as new technologies reduce the quantity of raw materials needed to produce products (The Great Boom Ahead, 57). Another indicator of inflation is defense spending. Increases in defense spending usually accompany hikes in inflation. Defense spending for the U.S. peaked in the 1980’s and has been declining ever since.

Inflation is not random. History shows that the greater the level of inflation in a period, the greater the boom to follow (The Great Boom Ahead, 73). The bottom line predicts inflation will be contained between 0% and 4.5% (mostly below 3%) from 1988 to 2007. For a few decades after 2007, inflation will be nil with even deflation occurring. Thus, consumers will see an increase in their purchasing power just as economic
productivity increases. Consumers will be able to afford more goods and services and help contribute to the economic boom.

THE NEW CUSTOMIZED ECONOMY

The current economic examination has so far only looked at the microcosms inside the American business system. Studying consumer behavior, real estate and credit cycles, inflation, and productivity are important since they together help make up an economy. But in fear of losing the forest through the trees, a broader view of the American economy is necessary. It is not surprising that, like its underlying roots, it too is in a time of transition. The U.S. economy and its capitalistic behavior is in a transition from old to new.

An economy is based on the distribution and consumption of goods and services produced by industries united by a unique set of new technologies and management/production processes. On January 1, 1990, ten of the twelve largest companies in America were natural resource companies (The Future of Capitalism, 66). At that time the U.S. possessed a natural resource economy. Only one of those twelve companies, General Electric, is alive today. Companies, industries, and ways of doing business have changed, and an idea has been set forth to explain these economic changes which ties into the Generation Theory.

According to Dent, an economy takes two generations to build. One generation creates the economy and the next extends the economy into its maturity phase where the following generation begins yet another economy. As with everything that is natural, no two generations are identical. The generation that forms the new economy is more inner-directed and individualistic while the second generation is outer-directed and strives for
conformity. These two generations each have their own unique characteristics that react to the previous generation.

Dent cites the example of America’s last economy, the Standardized Economy. This economy was formed by the “individualistic” Henry Ford generation, born from the 1860s to the early 1880s, and extended by the “conformist” Bob Hope generation, born from the 1890s to the early 1920s. Inner-directed generations, such as the Henry Ford generation, tend to be radical innovators that attack old infrastructures of the past. They set new directions for society and on the way start up new enterprises. Outer-directed generations, such as the Bob Hope generation, follow the inner-directed generation and react to their individualism. They seek unity and strive to improve society. They move the previous generation’s innovations into mainstream society, turning entrepreneurial companies into Fortune 500 companies. The Standardized Economy that these two generations shaped was based on a common economic formula in which the assembly line allowed industries to mass-produce a standardized product. Productivity in the Standardized Economy was driven by dollar investments in heavy machinery that worked harder and consumed more natural resources. That economy is ending.

Baby boomers, an individualistic generation, have introduced a new economy, the Customized Economy, and it will be extended by the Millennial generation, a conformist generation. As radical innovators, baby boomers created the foundation of this new economy, the microcomputer. The Millennial generation will find ways to mass market microcomputer products to all of society. Microcomputer technologies will allow us to custom design, market, and produce products at a lower cost. Production will not be
driven by heavy machinery but rather by flexible software and information which in turn will make products more affordable.

But today our economy is in a state that biologists refer to as “punctuated equilibrium” (The Future of Capitalism, 7). “Punctuated equilibrium” is where the environment suddenly changes, and the dominant species rapidly dies and is replaced by some other species. The Standardized Economy has ended and the Customized Economy has begun, and only those companies willing to adjust to its new environment will survive. The Customized Economy will be an era of man-made, brain power industries. Skills, education, and knowledge will be the capital that powers the economy. This “human capital” will replace the physical capital (big plants and machinery) that was used in the old economy. Human capital will be the only source of competitive advantage in the upcoming economy. The catch is that human capital, unlike physical capital, cannot be owned, and it requires a longer time horizon. No company can legally own an individual’s mind which makes the investment more risky. Secondly, educating people takes many years of high investment with low return. Our economy and those companies that want to survive will have to make these long-term investments because
future brain power industries will require them to grow. Already technology in these brain power industries is moving in a skill-intensive direction. Just-in-time inventories, statistical quality control, and computer technologies all require a skilled labor force. Auto companies at one time hired high school graduates and even high school dropouts to work in their plants. Today they want production workers who have skills equaling a junior college degree. Technology converted what used to be unskilled assembly line jobs into jobs that require skills and education. For example, robots on assembly lines have replaced human welders, and those lost jobs go to employees who can repair the robots.

Companies wanting to survive in this time of “punctuated equilibrium” must adapt. Investors should look for these company traits:

- Willing to make the long-term investment in its worker’s education
- Developing its human capital into a sustainable competitive advantage
- Staying at the leading edge of technology and participating in the progress of man-made, brain powered industries
- Customizing products to individual consumer needs
- Personalizing and maintaining front-line service to deliver respect and courtesy to customers (The Great Boom Ahead, 150)

The Customized Economy will bring many opportunities as dynamic companies replace those companies that cannot adapt to the new conditions.

Investors need sound future economic forecasts because these forecasts affect daily decisions. An economic outlook is important because it points to bright spots where investors can profit and also to trouble areas that investors should avoid. The factors discussed point to nothing but a growing economy and stock market until around
the year 2007. Inflation will continue to be silent in the years ahead which will help the
current economy. Future years will see a population migration from the suburbs to
smaller towns and communities where the cost of living is cheaper. Our economy is
presently in a transition from old to new where the rules of the game have changed.
Many weak companies will falter, and only those that change will profit. Together this
information allows the investor to assess how aggressively to invest and on which general
areas of the economy to focus his investing. The next part of this thesis will allow the
value investor to locate actual companies that merit an investment.
Value investing can be defined as the search for securities priced below their intrinsic value (Value Investing Made Easy, 13). Investors buy a stock for a price below its real value and sell it when other investors are willing to buy. Value stocks are usually stocks that are not popular on Wall Street. Negative news about a company may continually appear in the Wall Street Journal, and investors quickly judge the stock to be worthless. They push the stock price lower and lower until it is unjustifiably below its intrinsic value and therefore undervalued. Benjamin Graham, the father of value investing, pointed to two reasons that made this approach so successful (The Warren Buffett Way, 38). First, the market frequently misprices stocks out of investor greed and fear. As billionaire investor Warren Buffett stated, “I’d be a bum on the street with a tin cup if the markets were efficient” (Value Investing Made Easy, 16). Secondly, a statistical phenomenon called “reversion to the mean” supports the value investing approach. Basically it explains that in the long term prices will move towards the stock’s intrinsic value or as Graham put it, “Many shall be restored that now are fallen, and many shall fall that now are in honor” (The Warren Buffett Way, 38). The undervalued stock can only be pushed so far below its intrinsic value before it starts creeping up. Thus, a true value investment is one that has enormous growth potential but limited downside risk. Six value investing tools will be examined that when used together can uncover undervalued stocks. Following are the six criteria:

- Earnings Per Share (EPS)
- Price to Earnings (PE)
• Price to Book (PRICE/BOOK)
• Price to Sales (PRICE/SALES)
• Internal Growth
• Intrinsic Value

An investor should not select a security based on just one or two of these criteria. When all six are combined to evaluate a stock, more pieces are put together allowing the investor to make a wiser decision on the exact image of the puzzle. This is not to say that one cannot rely more on certain criteria than on others, but an investor must investigate each of the six value criteria. Also, each criterion's numerical results cannot be interpreted in a vacuum. An investor must consider where the market is and how other stocks in the industry are priced. For example, in a bull market PE's will normally be higher than those in a bear market so investors cannot automatically conclude that all stocks in a bullish market are overpriced. A company's debt load must also be evaluated when investigating those criteria. Debt, especially long term debt, can magnify earnings, sales, and all around growth without appearing as an anchor in the current period. The reason is the company's debt might be structured in a fashion where interest and principal payments come due five to ten years in the future. The company immediately receives this money and puts it into the firm, increasing profits while not realizing any liability payments in the present period. Long term debt also makes a company less financially flexible due to its future debt payments. Investors should avoid companies with considerable long term debt. With all this in mind, this paper will begin the examination of six important criteria for value investing.
EARNINGS PER SHARE

Earnings per share (EPS) are the amount earned by the firm during the period on each outstanding share of common stock. The graphic illustrates how it is calculated.

Market analysts’ earnings are generally too high (Rules of Investing, 24). They overestimate companies by anywhere from 10% to 50% so a company that ends a quarter below expected earnings is not necessarily a struggling company, even though the market’s herd mentality might brand it as one. Earnings have a considerable impact on the value of a security. Many top investors such as Warren Buffet and Peter Lynch are convinced earnings drive share price growth. Companies must have enough earnings to pay all expenses, cover debt, pay dividends, and reinvest for future expansion.

For earnings to be helpful to the investor, they must be historically consistent. The reason for this is that companies can manipulate EPS in the short term through accounting and other financial activities such as stock buybacks. Only by looking at previous years’ earnings can an investor make a conclusion on the company’s future earning power. Graham considered a company to have stable earnings when its earnings doubled in the most recent ten years and declined no more than 5% in two of the past ten years (Value Investing Made Easy, 51). Companies that have a history of unexplained, wild earnings swings should be avoided. Investment grade stocks should show a considerable increase in their current quarterly EPS when compared to the prior year’s identical quarter. A study of the 500 best performing stocks, based on their relative price strength, from 1953 to 1993 revealed a characteristic common to a majority of them.
Three out of four of the best performing stocks showed earnings increases averaging 70% in the last publicly reported quarter before they started their major price advance. Investors should buy stocks with EPS up at least 18% to 20% in the current quarter compared to the same quarter of the previous year. Many money managers demand a 25% to 30% increase, and in bull markets many require a EPS increase of 40% to 50%. A company’s annual EPS for the last five years should also show an increase from the prior year’s EPS. The annual growth rate of earnings should be 25% to 30% per year over four or five years. An investor who wants a standout stock should demand that both its annual and quarterly earnings be excellent. Watch for earnings accelerations since share price will most likely follow.

PRICING TO EARNINGS

The PE ratio represents the amount investors are willing to pay for each dollar of firm earnings. It is a common measurement of how cheap or expensive a stock is relative to other stocks. Higher PE’s indicate greater investor confidence in the company’s ability to generate future earnings and, therefore, are willing to pay more for its current earnings. Three different PE’s can be found simply by substituting earnings from various points in time. The trailing PE uses earnings for the past twelve months, current PE uses present earnings, and the projected PE uses projected earnings for the following year. This paper will use PE and current PE interchangeably.
Like EPS, PE’s need to be compared against previous years and industry averages. History has shown that securities with low PE’s outperform those with higher PE’s. Low PE’s happen to cyclical companies that are travelling through the bottom of their cycle, companies out of favor, and companies faced with a troubling issue such as depletion of resources or the expiration of important patents. Opportunity abounds for value investors in the first two cases, but companies faced with unique troubling problems should be avoided (Value Investing Made Easy, 59).

A great study done by James O’Shaughnessy on various value ratios supports the idea of low PE’s being better investments. O’Shaughnessy’s work was the first long-term study of Wall Street’s most popular investment strategies. In examining 43 years (1951-1994) of financial and market data in a Standard and Poors database, he found that “the stock market methodically rewards certain investment strategies while punishing others” (What Works on Wall Street, 5). He divided stocks into two universes, all stocks (market capitalization of greater than $150 million) and large stocks (market capitalization greater than database average, top 16% of database). On December 31, 1951, he initially invested $10,000 in 50 stocks with the highest PE’s from the all stock and large stock universe. He also put in $10,000 in 50 stocks with the lowest PE’s from both universes. O’Shaughnessy annually rebalanced the portfolios to assure they held the 50 stocks with the lowest or highest PE’s in any given year. Year by year he calculates each portfolio’s return and risk. The results of the study showed portfolios of stocks with high PE’s in both universes did not even beat the 43 year average market return. In both universes, he found that stocks with low PE’s rewarded the investor with higher returns compared to those achieved with portfolios containing high PE stocks.
Needless to say, investors should stay away from securities with high PE’s. A good indication of an undervalued stock is a PE that is below the firm’s earnings growth rate. As far as a definite number that a PE should fall under, the experts are divided. Some say that PE’s should be under 16, others say 20, yet a few like to subtract the current inflation rate from 20 to arrive at the magical number. Who is right? Graham answers the question in a general statement with, “People who habitually purchase common stocks at more than 20 times their average earnings are likely to lose considerable money in the long run” (What Works on Wall Street, 67). In general, investors should stick with stocks with current PE’s below 20 and under their 7 to 10 year averages.

**PRICE TO BOOK VALUE**

The PRICE/BOOK ratio has lost some support in the last years. Some are of the opinion that asset values today have no relationship to their original costs, what they could be sold for, or their future replacement costs (Value Investing Made Easy, 29). This group argues that, except for securities, nobody knows how much an asset will fetch until it is actually sold. This might be true to an extent, but the fact remains that there is a relationship between a stock’s PRICE/BOOK and its price performance.

The PRICE/BOOK ratio is calculated by dividing a stocks share price by its book value per share. Book value per share is simply the company’s total assets minus its total liabilities divided by the total number of common shares outstanding. Graham fine tuned the PRICE/BOOK ratio by replacing the book value per share with a similar calculation referred to as net net asset per share. This was calculated by subtracting the firm’s
current liabilities and long term debt from its current assets and dividing the total by the
total number of common shares outstanding. The difference between the two methods is
that the net net asset approach only used liquid assets that could be easily converted to
cash in case of liquidation--while book value was based on all assets. Graham liked the
net net asset approach because it was a more conservative estimate of the firm's value
and buying at a price near it gave more assurance to price appreciation (Rules of
Investing, 167). The problem today is few, if any, stocks are selling at their net net asset
values due to the bullish market so book value will be used to calculate PRICE/BOOK.

The lengthy study performed by O'Shaughnessy helps bring PRICE/BOOK into
investing perspective. With the same rules applied as in the PE example, the results show
in the long term the
market rewards both
larger and smaller
companies with low
PRICE/BOOK ratios
and punishes those
with high ones.
Figure 19 illustrates
the degree in which
the 50 lowest
PRICE/BOOK stocks
in both universes outperformed the market. Buying stocks with low PRICE/BOOK's
allows one to own a security at a price fairly close to its liquidating value and assures the
price paid for the firm’s assets were not outrageous. It should be noted that a high PRICE/BOOK could be an indicator of a growth stock so this ratio alone should not discourage an investor from purchasing a stock (What Works on Wall Street, 84). But the long-term results of this study should caution one against buying companies with high PRICE/BOOK ratios.

**PRICE TO SALES**

The PRICE/SALES ratio is one of the most important value investing criteria (Super Stocks, 20). The ratio shows how much Wall Street is willing to pay for a dollar of a company’s sales. The PRICE/SALES ratio is a great measure of a stock’s popularity. This is so because it is founded on sales which are inherently more stable than most other variables. It is rare to see a great company with sales declining. The ratio is relatively unused in the investing community, which adds to its effectiveness. According to Ken Fisher, the PRICE/SALES ratio is a must for the value investor because of its ability to uncover depressed stocks.

The ratio is calculated by dividing the total market value of a company, the stock price multiplied by its total number of outstanding common shares, by the last twelve month’s sales. Companies with high PRICE/SALES ratios have high expectations while those with low ratios are believed to be substandard companies. But the fact is that low ratios provide more potential for profit and less potential for risk than high ratio stocks. James O’Shaughnessy affirmed this with his study of PRICE/SALES ratios. Companies with the lowest ratios beat the all stock and large stock universe on a return and risk basis as seen in figure 20. Low PRICE/SALES delivered the best return of all the other ratios...
he examined and led him to label the PRICE/SALES ratio as, "the king of value factors" (What Works on Wall Street, 105).

Companies with high PRICE/SALES turned in the worst returns of all ratios examined. They vastly underperformed the market, proving stocks with high ratios can only appreciate with continued hype and investor interest. Market hype and interest last only so long before a plunge occurs. Investors should note these results and concentrate on stocks with low PRICE/SALES.

Fisher points out that one should avoid stocks with ratios of greater then 1.5 and never buy a security that has a ratio of above 3. The value investor should seek stocks with PRICE/SALES of around .75, or a little higher in a bullish market.

**INTERNAL GROWTH**

The internal growth rate, or sustainable growth, is the growth a company can maintain without resorting to new external financing. This calculation approximately forecasts the growth limit to be financed by retained earnings. The internal growth rate is found by multiplying a firm’s return of equity by one minus the payout ratio (the
percentage of earnings that the company pays to investors as dividends). The calculation of one minus the payout ratio is important because it represents the percentage of earnings the company is reinvesting in itself for future growth. Companies that grow, and therefore appreciate in price, at a quicker pace reinvest more of its current earnings and, in turn, have a low payout ratio. The internal growth rate forecasts a company's likely sustainable long term growth rate. It is viewed as a sustainable rate because of the simple assumption that over the long term a company’s current or projected growth cannot be higher that its internal growth rate. For example, XYZ company grew 85% during a 12 month period, but its internal growth rate was just 30%. This suggests that in the long term the company could not sustain that growth and will probably decrease to its internal rate of 30%. The internal growth rate can also be used to check the validity of company and analyst forecasts. If a Wall Street analyst projects earnings will climb 100% in the next year, but yet the company’s internal growth rate is 50%, one could conclude that earnings estimate is overstated. The internal growth rate is a helpful forward looking tool that can distinguish companies that have true growth potential.

**INTRINSIC VALUE**

The intrinsic value of a company, as stated in the introduction, is its true worth. A business rarely sells at its true value but sells around it. The intrinsic value is an elusive number, not a definite dollar amount. Only when a company is liquidated is the ultimate intrinsic value revealed and by that time it serves no great benefit to investors. Graham invented a formula to calculate intrinsic value using earnings in relation to AAA bond ratings (*Value Investing Made Easy*, 56). Graham developed this formula to establish
what he called a “margin of safety”.

Investors that buy stocks at prices below their intrinsic values are essentially taking steps to cover their downside risk. The further the stock price is below its intrinsic value, the higher the margin of safety.

Graham’s intrinsic value formula can be changed to reflect a company’s intrinsic value at different points in time making it a very flexible investment tool. By using historical, current, and expected earnings rates for the variable $r$, an investor is given three intrinsic values. From this, one can evaluate the direction of a company’s share price. For example if the values show a decreasing intrinsic value, one could assume that in the long term the company might not be worth as much as it is today. Note that intrinsic value is not a firm number. The formula computes a price at which the stock is approximately worth which helps uncover long term price direction. It should never be used to justify short term buys or sells on small price advances or declines.

The six investing criteria discussed are useful guides in detecting an undervalued stock with future price potential. Value investors must incorporate meaningful criteria into their investing philosophy because his or her stock decisions will be directly affected by the criteria’s results. EPS, PE, PRICE/BOOK, PRICE/SALES, internal growth, and intrinsic value are meaningful criteria that should help make investment decisions. These

\[
\text{Intrinsic Value} = E(2r + 8.5) \times (4.4/Y)
\]

$E$→company’s EPS  
$r$→expected earnings growth rate  
$8.5$→the correct PE multiple for a company with no growth  
$Y$→current yield on AAA corporate bond

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six investing tools attempt to quantify a stock’s value using variables and mathematical computations. But human emotion is the great unknown variable on Wall Street, and it is investor emotion that stipulates investing is not an exact science.

CONCLUSION

The market’s wheels have already been put in motion. U.S. births have determined that Wall Street will remain bullish until somewhere around 2007. The combination of many favorable economic conditions will continue to send securities upward. With this in mind, the value investor can position himself to take advantage of this market. By searching for companies possessing the favorable business traits discussed earlier, investors can uncover firms that will prosper in the new customized economy. With those firms, the value investor may then incorporate the six value investing tools to help insure a healthy investment. By demanding a company’s PE, PRICE/BOOK, and PRICE/SALE ratios be low, EPS consistent, internal growth above industry averages, and an intrinsic value that points to security undervaluation; a value investor will reap the rewards from Dent’s continuing bullish market.
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