
The Greenwald Method

One of the best ways of learning something is to teach it to others. When Benjamin Graham, the father of value investing, started teaching at Columbia University in 1928 he was already an accomplished investor but I'm sure that the process of articulating his investment strategy helped himself as well as his students. These classes also resulted in the investment classic Security Analysis written together with Graham's Columbia protégé professor David Dodd. It is number 2 on our list of the best investment books ever.

Up until 1978 the value investing course was subsequently taught by Roger Murray who also edited several editions of Security Analysis. The list of investors who over the years have taken the course reads like a who's who of successful money managers including Warren Buffett, Mario Gabelli, Charles Royce, Walter Schloss, Glen Greenberg and countless others. If there is one institution in the teaching of value investing, this is it. Columbia, one of the six Ivy League business schools and situated on Manhattan, is still retaining this proud heritage and the person carrying the torch for the last several decades is Bruce Greenwald who teaches the present course in value investing. Other high profile investing names currently associated with Columbia are Jean-Marie Eveillard and Joel Greenblatt.

With an academic background in electrical engineering and a Ph.D. in economics Greenwald might not strike you as the obvious candidate as Graham's successor but he's grown into being one of the world's premier authorities on value investing. The New York Times has – no doubt to his liking - dubbed him “a guru to Wall Street's gurus”. Greenwald has also co-authored numerous books on investments and strategy including Competition Demystified and Value Investing, number 5 and 18 on our top list of investment literature. All those who have taught the value investing course over the years have developed their own personal touch with regards to what they present. So what is it that Bruce Greenwald teaches, what is the Greenwald Method? Given his background he has carved out a very interesting niche in-between the areas of microeconomics, corporate strategy, franchise value investing and deep value investing.

This is “the story of investing according to Bruce” as I to my best ability can interpret it. After an introduction the text will cover Greenwald's process that consists of a search strategy, a valuation method, a research method and a risk management practice. In the end we wrap up.*

The Greenwald Method

There are a number of approaches to investing. If you are going to succeed as an investor you should really pick just one or potentially two – in the latter case they should be kept mentally separate.

The first distinction to make is if you are a believer in efficient markets or not. If you are, you should simply index your securities holdings and focus on asset allocation and cost minimizing. If you are not (and you would have the evidence on your side), you have to choose a strategy that fits your personality and specifically whether you need instant gratification or not. If you do, you should use a short-term strategy – either a technical momentum style or a short-term fundamental strategy. Momentum trumps value in the short term - even though you will have the trading costs working against you. There are successful managers in the technical quant type of camp with Renaissance Technologies as a shining example. The problem is that the short duration of the strategies they are using makes them have to reinvent themselves every 12 or 24 months. Very few firms have this capacity. Most investors, and almost the entire sell side, are short term fundamentalists who try to forecast short term changes in corporate financials – typically estimates of EPS – and map this against consensus numbers. The issue here is that this is a strategy that depends on an information advantage and since everybody crowds into this space, that advantage of having information that no one else has is really, really hard to sustain.

This leaves us the longer term investing approaches such as so called growth investing or value investing where you aspire to buy securities that are priced lower by the market than you think they are fundamentally worth. The notion here is that price and value are not the same; “price is what you pay, value is what you get.” Value investors have dubbed the discrepancy between a security's price and its intrinsic value “margin of safety” and often demand a 30 to 50 percent discount to be interested in a stock. Value investing is simply looking for bargains in the financial

markets. This is a strategy that in fact almost everybody claim they use. Certainly few claim to be buying securities for a higher price than they think they are worth. Further, the evidence is quite clear that – while value investing works - investors overpay for stocks with the highest expected growth rates with underperformance as the result. So in this longer-term area, value investing is the more rational choice.

There are a number of premises underlying value investing and the ability to buy securities at a lower price than their intrinsic value. The first is that the price of a stock fluctuates more than the intrinsic value of a stock and thus that the two regularly diverge. It is market irrationality that creates opportunities. A second premise is that the intrinsic value is measurable. Not only that, it must be reliably calculable for you specifically as an investor. To be able to do this you must stay within the area you understand - your so-called circle of competence. Finally, fundamental value must determine the price in the long run, i.e. the price must fluctuate around the value creating periodic disappearances of the market miss-valuation. By buying stocks with a margin of safety the investor will bag not only the underlying trend growth in corporate value, but also the catch up movement when the undervaluation corrects.

The evidence for premises one and three are quite overwhelming. The trickiest is the second one. To succeed you need to look intelligently for value opportunities, ascertain what you know as not all value is measurable – either by you due to your limited circle of competence or by anyone due to the unpredictable type of investment. Also, you need character and patience to wait for the really good opportunities and further concentrate your portfolio holdings in these best ideas.

There are plenty of securities that no one can value effectively. They have few assets and the future is highly uncertain with a wide distribution of payoffs. Make sure you don't design a process around the premise that you are the one that can value these companies. Ask yourself how much of the future returns you are reasonably able to anticipate? How much corporate value will be created in the near future and how much in the distant future?

1. The Process

One aspect of the efficient market theory is actually correct. In aggregate all investors cannot outperform the market as they constitute the market. Investing is in this respect a zero sum game. The average investor will perform in line with the market less costs (meaning 70 percent will underperform after costs). In every transaction performed in the stock market there is a buyer who buys a stock thinking this will make him outperform and a seller who sells the same stock thinking this will make him outperform. One of them will be wrong. The interesting question is how you as an investor should behave to more often than not be on the right side of this transaction – how can you develop an edge to outperform the market over time? Why are you the one who is right, and the person who is trading with you is wrong? What is your edge? That is the most fundamental aspect of investing and investors should be more humble about it than is often the case.

Basically, a) you will need a better and more rational process than others and execute it expertly. Also, b) you will need to specialize in some way to get the upper hand with regards to understanding the situations you are in, the motivation of those on the other side of the trade and the quality of information at hand. If you are a generalist on the other side of a trade with a specialist you will probably not fare well. You are not going to be good at valuing everything. You have to concentrate on what your own particular circle of competence is. You have to know what you know and what you don't know. Specialization could be done in a number of ways. The obvious one is to focus on a few sectors to get an edge but it could also be done by regional segmentation or by focusing on one specific niche, style or method.

It's not what is within your circle of competence or how large the circle is that matters most. The trick is to refrain from venturing outside it where you are at a competitive disadvantage. Deep domain knowledge within a circle of competence trumps the benefits of being able to search value over a larger opportunity set. If you try to be an expert in everything, you will be an expert in nothing. Buffett has done well in insurance, media,

consumer durables and to some extent in banks, but actually not so well when he ventured into currencies, airlines, metals etc.

In practical terms, with regards to the process, you need 1.1) a search strategy that increases your chance of being on the right side of the trade when you are looking for opportunities, 1.2) a differentiated and better method to value stocks and better than others understand the intrinsic value, 1.3) a more effective and relevant research method than others and 1.4) a rational risk management practice, including a reasonable strategy for what you are going to do when there are no obvious opportunities and you are growing impatient to act.

1.1 Search Strategy

A well-formulated way to find opportunities should zero in on the areas with the least competition. In which corners of the market can you search to get an upper hand? Where are you “the smart money”? Any obscure corner would be a good place to start. It’s probably hard to lose money over time if you invest in companies where you are the only professional investor that has visited them. Ideally you want to be the only one seriously studying a particular security or one of a few people. You will have a higher probability of being on the right side of the trade in small and micro-cap stocks and in boring stocks with low analyst coverage.

Secondly, you should search for irrational or forced sellers creating a supply-demand imbalance. This means looking at spin-offs, stocks falling out of indices, distressed companies, stocks with low liquidity (which you care less about as a long-term investor, at least if you have an equally long term client base) and other situations where investors don’t want to be. Finally, you should seek the undesirable that gets oversold. Look for low growth, industry and company problems, disappointing long-term performance and above all look for low valuation multiples. Industry and company problems are your friend as long as the industries and the companies are viable. In this you don’t want to look for the stocks that have been disappointing for the last 12 months as the momentum effect on average will create a

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continuing trend for the next 12 months. Instead look for the really ugly, crappy and disappointing ones that have underperformed other stocks the most during the last 3 years and be prepared to hold them for about the same time going forward. Simply looking for boring stocks is usually not enough if they are boring but widely analyzed. Boring has to be combined with obscure.

If you see large investors from a particular discipline systematically outperform the market it is an indication that this particular discipline has advantages. Those who like Warren Buffett, Michael Price, Mario Gabelli have gotten very rich are to an extraordinary degree concentrated among value investors.

Ironically, the most well-known academic proof that value investing is a corner to focus on comes from Eugene Fama - one of the high priests of the efficient market theory - plus Kenneth French, who showed that in the US stock market between 1963 and 1990 the cheapest decile of stocks on price-to-book outperformed the market by 0,4 percent a month, while the most expensive ones underperformed by 0,6 percent. Buying cheap works. At the same time the decile of stocks with the lowest market capitalizations outperformed by 0,2 percent a month and the largest companies underperformed with 0,3 percent. Again, the relative performance of the deciles in the middle doesn’t differ that much from the market so it’s the really small and really cheap you want to look for (quintiles at the very least). In the really cheap decile actually 2/3 of the companies ended up in bankruptcy but the ones that survived performed so much that they made up for all the others.

It also turns out to be really hard to improve on buying this group of stocks. For example, the cheapest stocks that also rank among those with the highest growth rate do not materially outperform the market. Joel Greenblatt and Joseph Piotroski have both constructed methods to try to screen out the value traps among the cheap stocks by adding various quality measures. Greenblatt has performed spectacularly but could have performed even better only using his valuation measure and Piotroski didn’t succeed especially well when setting up a real life portfolio. What they ended up doing was diluting the positive ugliness-effect.

To be convinced that the value effect will stay in place also in the future you must understand why it's there to start with. There are really two types of systematic biases that create the opportunity. First there are psychological biases of the individual investor. People like lotteries even though the payoff from putting money into them is terrible. The parallel high-payout-but-minuscule-probability-venture on the stock market are the get rich quick glamour stocks and as a consequence they are overvalued and subsequently underperform. People like speculative situations and exciting industries. This is not where you want to be as it minimizes your chance of being at the right side of the trade. Overconfidence further makes people much too sure about their abilities to predict the future of stocks and markets. When afterwards they turn out to be wrong - because the brain wants to suppress uncertainty - they revise their memory to actually believe that they knew all along that what happened would happen and hence they learn nothing from the experience. People mistakenly think they know what's going on and they forget what they really did. They erase their mistakes from memory. Further, loss aversion makes people irrational sellers of what is ugly and boring and to avoid losses, people will take unreasonable risks.

You would think that the professional institutional money manager organizations would be perfectly placed to capitalize on the biases of the individuals – instead they tend to amplify them. The big risk for an institutional money manager is the career risk and this risk is only really acute if he underperforms the market materially. The rational cause of action is then to be a closet indexer and to herd into what is popular for the moment together with everybody else. Portfolio managers don't want to expose themselves to the risk of not embracing an institutional trend among peers. Add to this the selling that is done to window dress the portfolio so that the customers will not spot the – now cheap - stocks in the portfolio that are mentioned as disasters by the press. All in all it's hard to see much of the above changing and so the value effect will probably be there also going forward. Therefore, specialize and capitalize on these biases. Value investing is in this respect a rational and disciplined approach to navigating financial markets.

1.1.1 Barriers to Entry

Given the importance of competitive advantages and barriers to entry we will take a deep dive into the subject before again returning to valuing growth later on. Identifying franchise businesses is key to identifying good businesses. The protection from structural barriers to entry for competitors allow franchises to generate plenty of reliable cash flow where a large part is possible to re-deploy at high incremental returns on investment. High capital intensity could create a barrier to entry but will also necessitate heavy capital expenditures, often making returns no more than average. On top of barriers to entry that shut competition out, the company must be well run. Cash flow comes from assets plus effective management. Therefore management must both be good capital allocators and efficient business operators. It's important to note that what is needed is competitive advantages for the incumbent companies of an industry. If it's the new entrants who have competitive advantages for example through newer technology then it's a recipe for hyper-competition and constant change in market leadership.

An analysis of the competitive advantages of a company should a) start with an industry map describing the environment the company is in. Divide the corporate landscape around the company into segments of the value chain and list the companies with the largest market shares in each. b) Next, look to history to get a feel for if barriers to entry exist. The two best clues are sustained and high ROIC, especially for the dominant competitor, and stable market shares over time. If there are barriers to entry there should be share stability. Look to average market share change over the last 10 years for the largest competitors. For both the beginning and ending years of the period, list the market shares of the largest competitors, adjust the shares to sum to 100 percent, look at the change in absolute share for each company during the period and calculate an average of those. Also, ask yourself if the dominant competitor has changed and if there are new entrants. An additional clue is if it's hard to list the dominating companies. In this case there are seldom any competitive advantages. Finally, c) you must analyze what the competitive advantages are based on to be able to understand their

sustainability going forward (or if they will erode) and the effects of this on future profitability. Competitive advantages should be identifiable to function as a base for an investment. Look for hidden franchises such as unused pricing power, good businesses hidden among several bad divisions of a company etc. In doubt, don't pay for the franchise – instead focus on the AV.

There are a number of overrated competitive advantages. Access to broad asset pools or resources such as capital (“deep pockets”), Chinese labor, high quality staff etc. are seldom a sustainable advantage as competitors will get equal access to them sooner or later. Even locations like woodlands with access to timber can be bought and sold and they have an opportunity cost. Judging from the companies that have succeeded in the past, first mover advantages are also often over-rated and further there is a low correlation between the level of prestige associated with brands and profitability. Also, differentiation - the standard recipe if there are no barriers to entry – will not be sufficient to protect a company if there is nothing stopping competitors entering and copying the strategy. Differentiation is only of value if there is something that gives you discretion over the price you are going to charge. Then there has to be something that interferes with the process of market entry.

Let's first look at the consequences of free entry in a commodity market such as the steel market. In markets like this the market price of the products will as a general rule be the same for all competitors and it will not be dependent on the sold quantity. The average cost per sold quantity will however decrease as the quantity increases and fixed costs are spread over larger volumes. At a certain point diseconomies to scale will however dominate scale economies and the average cost per sold unit will increase as volumes increase further. If the average cost for a company at a specific volume is lower than the market price it will make money to cover the cost it has of capital. The problem is that capacity increases are relatively easy to make both for new companies but especially for the existing ones. As individual companies they would all improve their profits if they increased their capacity and the others didn't (even though the market price would be somewhat negatively

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impacted by the increased supply). In aggregate several firms will increase capacity, supply will go up and prices will go down to a level where return on capital equals the cost of capital – or often even lower. One additional problem is the exit costs after the investments have been made; the industry will be stuck with the added capacity for a very long time. In industries like this it's only the firms that have a sustainably lower cost structure than their competitors that can earn a return slightly higher than the cost of capital.

The consequences of free market entry in a market with differentiated products such as luxury cars are very similar. In this market the demand curve is negatively sloped – the higher the price the lower the sold quantity. The cost curve is relatively similar to the one in the steel market where the average cost per sold quantity first decreases and then starts to increase. The consequence of new entrants, say when first BMW and Mercedes and later Lexus and Infinity started to compete with Cadillacs and Lincoln Town Cars in the US, isn't always lower prices but instead lower volumes for the individual firms, in the end equalizing the price and the cost. A Lincoln Town Car might have a prestige brand with differentiation but so has Mercedes and luxury car buyers are more than happy to try out new vehicles.

Moving on to potentially durable competitive advantages. The first class of sustainable barriers to entry are supply side incumbent advantages. These cost based advantages could come from a proprietary technology, access to specialized niche resources or an accumulated body of experience taking the company further down the learning curve. These advantages are rare and they are often the weakest kind. Proprietary technology is most common in industries with quick technical development making it less valuable, as it sooner rather than later will be replaced by a new technology. In industries with less change proprietary technology is much less common.

The second class of barriers to entry are demand side advantages. These advantages give the incumbent preferential access to customers – a customer captivity - that others lack. My competitors can't compete with me because I have access to demand they cannot match. For products

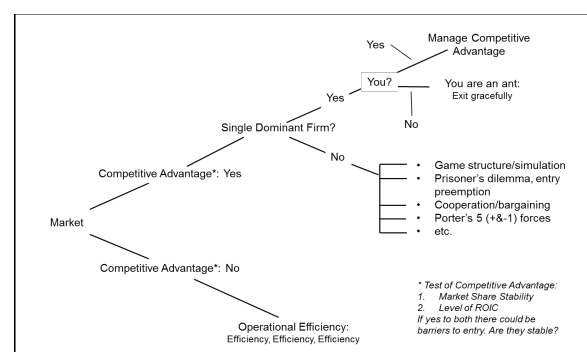
with high frequency purchasing such as Coca-Cola the advantage is often due to habit in combination with a brand loyalty. In situations of high complexity the advantage comes from the high search cost of finding a replacement. The advantage could also be based on a high switching cost for example due to the high risk or difficulty for a customer of changing products that have been integrated into the current production and workflow. Examples of sectors with high switching costs are banks and computer software. Over time there is however a turnover in the total customer base and there is always a risk that the advantages die with the customers.

The third and most important competitive advantage is economies of scale. The advantage of spreading costs over larger volumes is more economically important in sectors with high fixed costs as the average cost per sold quantity will decrease even when the quantity a firm sells goes from very large to even larger. The fixed cost effect will trump any scale disadvantages in those cases. The incumbent with higher volumes will then always have a beneficial cost structure to opponents. However, to be enduring the economies of scale will have to be complemented with some measure of customer captivity for example due to networking effects, switching costs etc. Take for example a high fixed R&D cost necessary to keep up with a technological development in combination with high switching costs if the products are integrated in the customers' process. The incumbent's scale advantage will create a positive feedback loop where the higher sales than that of the competitors leave room for higher R&D, further expanding the product advantage and driving higher sales and so on. Scale economies in themselves are not sufficient to create a competitive advantage. Without some measure of customer captivity a competitor with deep pockets will eventually step in and share the volumes and also the scale economies as nothing stops customers from leaving the incumbent.

Note that the high fixed cost is not an absolute number. Importantly, the cost should be high in relation to the size of the relevant market and to the major competitors. For example in food retail there are fixed costs in distribution and advertising

within each local market and a locally dense retail network also facilitates easier supervision and management. The investor has to segment the market in a way that is economically relevant. For a food retailer the relevant market to dominate is local and then national or international reach is less important for scale economies than the local market share. In pharmaceuticals, sales and marketing towards doctors are the largest costs. Doctors are organized in medical faculties making this the relevant economic market and the companies that have shown the highest profitability therefore are those that dominate specific product niches. If the market a company serves is global there will seldom be scale economies that create a competitive advantage. This is because the market will be large enough to support most companies' fixed cost bases. Large global markets are difficult to dominate. Smaller markets are susceptible to domination. The result from this "market relative scale effect" is that most sustainable competitive advantages are found within smaller market niches such as geographies, product segments, customer segments etc.

In terms of corporate strategy this means that the advantage of being a "one stop shop" seldom exists and that the best expansion strategies start with local domination and then gradual expansion into close adjacent areas. A more general strategy road map for companies to follow will look as follows.



The fact that scale economies must be set in relation to the size of the relevant market and to the competitors' size points to a need of vigilant defense of the incumbent's position. As long as the size difference remains versus the other companies, the incumbent will have the lower cost structure and can set prices that put pressure on

the others. If the difference becomes smaller the relative scale advantage will quickly diminish, creating a double whammy of lost sales and lost profitability level. This is why customer captivity is key but it also points to that the incumbent must be very active in matching any price threat from competitors. Advantages are dynamic and must be defended.

In addition to the barriers to entry above there are a number of others and they are often based on either the state as in the case of licenses, permits, concessions, regulations and patents (all these tend to be as fickle as the politicians who ultimately grant them) or on informational advantages where banks, financial services, HMO's etc. have the upper hand in relation to customers. Other aspects of market behavior include cooperation within barriers to entry (cigarette makers) and strategic alliances to divide the spoils of a value chain.

1.2 Valuation Method

With this overview of barriers to entry out of the way we are now turning to the topic of valuing stocks. The intrinsic value of a stock is only possible to approximate. The dominant method of valuing a stock among practitioners is to multiply a cash flow proxy measure – for example EPS - with a discretionary chosen multiple, often based on the average multiple currently priced by the market among comparable companies. There are huge problems with this. First it's hard to find true comparables as economically motivated multiples are effected by differences in economic situation, cyclical situation, leverage, management quality, return on capital, cost of capital, growth etc. and secondly, the relative valuation might turn out to be misleading anyway if all the other companies are over- or undervalued. The range of error is more than 100 percent and hence with this method the investor really has full freedom to decide the intrinsic value he wants.

The preferred method among academics and the more financially advanced practitioners is to use a DCF. The NPV in a DCF is the theoretically correct intrinsic value. But as they say, in theory there is no difference between theory and practice, in practice there is. Several factors conspire to make DCFs almost unusable. To start with, a DCF

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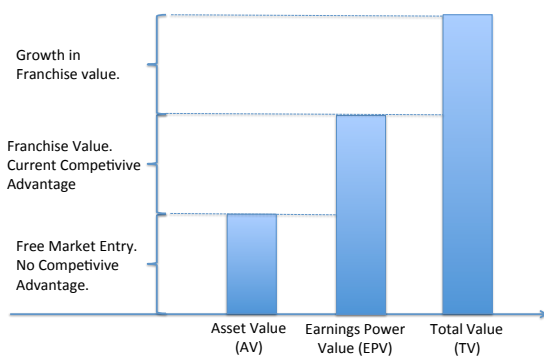
almost completely ignores the information in the balance sheet and as no one is looking at this key financial statement it probably should be a competitive advantage to do so. Further, a DCF mixes information like current year's sales and cash flow that you can estimate with a decent accuracy with very imprecise estimates of economic variables further out in time. Unfortunately the bad information tends to dominate the good when for example a terminal value five or ten years out is the basis for half or more of the estimated value. Finally, the analysis is really sensitive to changes in difficult-to-forecast parameters that on top of everything else co-vary in complex ways that are very hard to understand. The ranges of possible values are too wide to be of practical use. This makes using DCF's a stupid thing to do. It also makes scenario analysis hard as you – again - pretty much end up with the outcome you seek.

So how do you construct a better valuation method to have the upper hand in the trades you make? You want an approach that will restrict you to making decisions on the basis of what you really know. A valuation method is like a machine for translating from the assumptions that you reliably can do about the future to the present day value of the security. How do you construct this machine to value things more effectively? You should 1) use all of the financial information that is of value and also be able to cross-correlate that information, 2) the valuation components should be organized by reliability so you know what you can be relatively sure about as well as what you must take with a pinch of salt and finally 3) it should use strategic information that effects the value of the company.

Instead of, as in a DCF, using unknowable factors such as a company's margins or investment rate ten years from now, it is possible to use knowable factors such as if an industry is economically viable during the time frame in question, if there are barriers to entry to an industry and if a firm has a sustainable, stable competitive advantage. The fact that these later factors basically never are considered when it comes to valuation, makes using them a competitive advantage.

Greenwald for the sake of better clarity divides the value of a company into three elements: a) a tangible and balance sheet based Asset Value (AV)

that uses no extrapolation or forecasts, that is the most reliable measure and the AV is all there is if there are no barriers to entry in the business and thus the company has no competitive advantages and b) a current earnings based Earnings Power Value (EPV) which extrapolates current normalized profitability and assumes that it is sustainable, but uses no further forecasts of the future. If the EPV is larger than AV then this is because there exists a franchise value as the company currently has a competitive advantage. Finally, c) the most unreliable element called Total Value (TV) which includes projections of future profitability and growth. Historically all those have been used separately by a number of successful value investors. By using them all together an investor will be able to look at a broader spectrum of investment cases.



You should start with the AV, the Asset Value, as it's your most reliable information, using no projections of an unknown future. You could technically go out and look at almost everything that is on the balance sheet. It's also the case that for most companies over time there are no barriers to entry or sustainable competitive advantages and then the AV is in principle all you need. Why should the AV correlate to the intrinsic value of a company? Because there is a market for corporate control and for corporate assets. If there are returns generated above the cost of capital in an industry, new and old competitors will want to invest in new industrial capacity. This could be done either by new green-field investments or by brown-field investments buying existing assets if they are valued too low. Asset pricings which deviate too much from the value they have as return generators will trigger M&A. As such the AV works as a backstop for what a company is worth, capping the downside for the investor.

The first thing to decide when performing an AV is if the industry is a viable one or not. If it's not then the company will be liquidated and the assets should be valued at their liquidation value in a fire sale. In this case you are going down the balance sheet seeing what is recoverable. Specialized equipment and intangible assets will yield little value. Cash and marketable securities are marked to market and should be valued at full value. Accounts receivable should be paid in principle but use an 85 percent number to be on the safe side. What you will get for the inventory will depend. The more generic it is the higher the recovery ratio – an inventory of cotton is better than one of ready-made T-shirts. The value of property, plant and equipment will vary widely. Generic offices in good location will sell at little discounts (or even premiums) while specialized production plants in locations off the beaten track will have substantial discounts. You can also compare the net liquidation value you got with the simple Graham and Dodd liquidation value: working capital minus all the liabilities – so called net net working capital – as that might be a useful substitute of liquidation value.

If the industry is viable and the company a going concern, then a company's productive ability constantly has to be renewed to be competitive, i.e. the assets have to be replaced over time. Hence, you have to look at the cost of reproducing those assets with today's technology and prices. You have to look at the reproduction value of the assets that have the same level of productive capacity if the same business would be set up anew. The task is to understand what the most capable and efficient possible new entrant would have to pay to have the same capacity. This requires industry knowledge. The result could be viewed as a refined and more correct version of the book value.

Again no adjustments would have to be made to cash in this calculation. A firm's account receivables probably contain some allowance built in for bills that will never be collected. A new firm starting up is even more likely to get stuck with low quality customers so the cost of reproducing a firm's accounts receivables is probably more than the book amount. If the bad debt allowances are specified these should be added back. The stated value of inventory could be too high or low by

substantial amounts. If inventory days have been building up lately more of it will probably have to be discounted and the value should be lowered. By contrast, if the company uses a last-in-first-out-method of recording inventory costs and prices have been rising, the reproduction cost will be higher than the book value as a new entrant cannot buy an inventory at prior year's prices.

Property as land is booked at cost and depending on location this can mask substantial undervaluations even if there would be a cost related to selling the land. Plant could be anything from an office, a motel chain, a factory or an oilrig. Inflation in combination with a lack of alignment between depreciation periods and the life of the economic value of the asset conspire to make the calculation a tough one. Use common sense to get approximate values. Equipment is easier as it is often depreciated over its useful life. The adjustments to book value will most probably be small enough to ignore.

Goodwill and other intangibles represent the largest challenge. In themselves the numbers may reflect nothing else but an expensive acquisition but they also represent the economic value of the non-physical assets of a company. All companies have these intangible assets that most often don't appear on the balance sheet – they are hidden assets. These assets can include the product portfolio, customer relationships etc. In trying to estimate the intrinsic value of the company we need some way to estimate the worth of these hidden assets. Remember, the aim is to estimate what it would take to rebuild the productive capacity. A product portfolio is built of prior R&D and different products have different average lifespans. Here you need to understand the business to make reasonable estimates of how many years of R&D it would take to rebuild an equivalent product portfolio. If it's like the auto companies where it takes six years to produce a product portfolio, you will have 6 years of R&D spending and this is the reproduction value. An aircraft has an average life span of 15 years while some garments will be unfashionable in 6 months.

Developing customer relationships also costs money and this asset never appears on the balance sheet. One way of estimating the reproduction

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value is to estimate how many months of SG&A (and especially the amount of A&P, advertising and promotion) it will take before a new business is up to full sales capacity with established customer relationships. In this business fundamentals vary even within the same sector. It takes 3 months to build traffic for a clothing retailer situated in a mall while it takes 4 years until a Home Depot gets up to full capacity. Other hidden assets could be organizational design, licenses and franchises, subsidy businesses etc. A certain amount of creativity is warranted when estimating a reproduction value and the further down the list of assets you go the trickier it gets. See to what costs have been, make simple common sense calculations, look at prices in private transactions or at insurance values etc. Try to triangulate and get input from several angles.

Assets	Graham-Dodd Value	Liquidation Value	Reproduction Value
Cash	Book	100%	100%
Accounts Receivable	Book	85%	Add bad debt allowances. Adjust for collections
Inventories	Book	10% - 50%	Ad LIFO-reserve, if any. Adjust for turnover.
Property, Plant & Equipment	0	10% - 90%	Original cost plus adjustment.
Product Portfolio	0	0	Best estimate
Customer Relationships	0	0	Best estimate
Organization	0	0	Best estimate
Licenses, Franchises	0	0	Best estimate
Subsides	0	0	Best estimate
Liabilities			
Accounts Payable, Accrued Taxes and Accrued Liabilities	Book	100%	Book
Debt	Book	100%	Market value if available or Book
Deferred Tax, Reserves	Book	100%	Book
Bottom Line	Net Net Working Capital	Net Liquidation Value	Net Reproduction Value

By deducting the value of the company's liabilities a net reproduction value is generated and this is then divided by the number of outstanding shares to get an estimate of the net asset value per share. If possible the value of the interest bearing debt should be the market value. If this is too hard to estimate the book value will often be a sufficient approximation. One problem is that in highly leveraged companies slight errors in estimating the value of the debt will create huge swings in the net production value. Many value investors will therefore shy away from this kind of situation, as the margin of safety will be highly uncertain. Also, in the case of a balance sheet dominated by intangibles that are difficult to appraise, the AV might not be the reliable backstop to the valuation as in the normal case.

This brings us to the Economic Power Value, EPV, which is an estimate of the corporate value based on the earnings power of a company's current sustainable distributable earnings. As it builds on today's earnings it's the second most reliable type of valuation. EPV estimates the enterprise value by dividing an earnings measure with the weighted average cost of capital (WACC, that is the cost of debt multiplied with the weight of debt in the company's financing, plus the cost of equity multiplied with the weight of equity financing). Then add excess assets, i.e. assets like excess cash (anything above 0,25 to 0,5 percent of sales as a rule of thumb) which is not needed for the operations, deduct debt and divide by the number of outstanding shares to get EPV of equity per share. This is comparable to the AV per share net of debt (i.e. the net net working capital value, net liquidation value or net reproduction value per share). Don't make the mistake to compare an enterprise value to an equity value.

To correlate with the enterprise value and to be neutral to a company's leverage the calculation uses EBIT as its starting point. You then have to adjust for any accounting shenanigans that are going on, you have to adjust for the cyclical situation, for a tax situation that may be short lived, for excess depreciation over the cost of maintenance capital expenditures and really for anything else that is going on that is causing current earnings to deviate from long run sustainable earnings. What you are after is a number that adequately represents the current sustainable distributable cash flow. If the company is facing disruptive structural developments the advice is to stay clear of investing altogether as estimating the company's value will be inside no-one's circle of competence.

When cyclically adjusting EBIT you should preferably look to two business cycles to get a better picture. A good practice to estimate a cyclically adjusted EBIT is to apply the average historical EBIT-margins to current sales. Any extraordinary items not normal to the operations will need to be adjusted. One time charges are however sometimes more periodic than the companies would admit. Look to average levels over time and normalize. The amortization of goodwill should be added back as the R&D and SG&A include costs for sustaining customer

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relationships, brands and other intangible assets. After deducting taxes you will arrive at an adjusted NOPLAT. EBIT less taxes is also often called NOPLAT, net operating profits less adjusted taxes. You shouldn't necessarily use official tax rates as companies structurally pay a lot lower taxes than that, but you will have to adjust current levels that are not reasonably long term.

Further you need to make sure that the depreciation represents the investments in capex needed for guaranteeing a going concern. Since the EPV represents a no growth case, adjustments for investments in working capital to support sales growth will not be required. Depreciation today tends not to reflect true no-growth depreciation. True depreciation is what it would cost to put the company in the same condition at the end of the year as it was at the beginning of the year. Compare the level of both depreciation and capex over a number of years to get a feel for discrepancies and trends. There are two main adjustments: first possible under or over depreciation and secondly adding back the growth capex. Excess depreciation could come about in situations where input prices for capex are going down over time. In this case a part of the depreciation has to be added back to EBIT. When looking at capex and depreciation you should differentiate between the part in current capex that is maintenance capex and the one that is growth capex, as the later should be added back to the profit. The EPV is a valuation of current earnings level so it should only be burdened by the maintenance capex level. The simplest way to estimate the growth capex is to look at the capital intensity of the business (property, plant & equipment-to-sales), say it's 20 cent of PPE per USD in sales on average over the last 5 years (i.e. 20 percent), and multiply this with the dollar growth value in sales. The adjusted NOPLAT further adjusted for any over or under depreciation and growth capex will give us the figure for a distributable cash flow that we are after.

With regards to the WACC the advice is to not get too technical. The beta used in a CAPM calculation is too unstable to be of any use and the equity risk premium nobody knows what it should be. Look at what the cost of corporate debt is in the market and adjust for unsustainable situations or look at

the level of government debt and apply an appropriate spread. The cost of debt is calculated post tax. The cost of equity lies somewhere in between the pretax cost of debt and the returns that are demanded of venture capital funds. Say that those numbers are 5 and 13 percent, then the average is 9 percent and reasonable estimates for cost of equity for low, medium and high risk companies could be 7, 10 and 13 percent.

After estimating an EPV you have got two pictures of a company's value. Two observations give the opportunity to triangulate and by this comparison get valuable insights into the key issues of the investment case. A better clarity of a situation is generated by separating various aspects of value. There are three possibilities:

1. The AV is greater than the EPV. Either you have missed to pick up that this is not a viable company in a viable industry and that you in terms of AV should have performed a liquidation valuation instead of a reproduction valuation, or – more probable - this is a case of a corporate mismanagement. The nice thing of the valuation approach is that it tells you the current cost that management is imposing in terms of lost value. Good management always adds value to the assets. Bad management subtracts value. So which is the correct value to use? It depends on what happens with management. Ask yourself if the asset value can be realized. Is it possible to get rid of the management and get to the assets? Or is it possible that a new management will be reinstated that can utilize the assets better? If so, the higher AV might be relevant. If not, the lower EPV is a better guide. All in all, this points to the key issue for this company: it is a search for catalysts that will surface the true value of the company. Make sure you're not going to be trapped with old management (value trap). A third explanation is that the industry is one of overcapacity, so it's not the fault of the management. The trigger then becomes changes in the industry structure, which is harder to orchestrate for example for an activist.
2. The AV essentially equals EPV. The probable reason is that there are no barriers to entry and no competitive advantages. If this sounds reasonable you have a fair grip of what the stock is worth from two independent

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valuations. The stock could still be a worthwhile investment if the margin of safety is large enough (for example due to cyclically or temporarily depressed earnings). If the two figures are the same although the company does have clear sustainable competitive advantages due to barriers to entry this is again another type of corporate mismanagement.

3. The EPV is greater than the AV creating a so called franchise value (EPV minus AV equals the franchise value). In the long run this should only be the case if the company can earn a return on capital that is higher than the cost of capital. Due to the functionality of capitalism this must be because there are barriers for competitors to enter the industry. The key task to determine whether EPV or AV is the better estimate of the value, is to understand if the current competitive advantage is sustainable. If the competitive advantage that created the current franchise value is not deemed sustainable you should never pay more than the AV. A higher EPV than AV could also be due to superior current management. This is however seldom sustainable in the long run as management teams will be changing and the advantages then disappear. As the most important competitive advantage is scale, shrinking franchise businesses experience nasty dynamic effects that are seldom appreciated by investors beforehand. A combination of declining profits due to declining sales plus declining ROIC is not a pretty development.

The third estimate of a company's value is the Total Value (TV) that includes the value of growth. This is the least reliable estimate of value as you have to forecast change - not just stability in earnings power – and the estimate is highly sensitive to the assumptions made. Data indicates that investors systematically overpay for growth and strict value investors therefore want growth for free, i.e. they don't pay more than EPV. The standard view of analysts is that growth is your friend, that growth is always valuable. This is wrong. In fact growth is relatively rarely valuable in the long run. Growth at a competitive disadvantage has negative value and the only case where growth has a positive value is where it occurs behind the protection of an identifiable competitive advantage. This for example makes the use of PEG-ratios without reference to sustainable ROE

levels absolutely crazy. If return on capital roughly equals the cost of capital for a company there is in principle no need to further calculate TV.

Looking at the value of growth it is on the one hand obvious that a growing stream of cash flow is more valuable than a constant stream everything else alike. On the other hand growth requires investments to come about which reduces the cash flows that are realized. So the value of growth depends on the balance between the utility of a growing income stream and the downside of having to invest to get that growth. Which force is most important turns out to depend on the barriers to entry for competitors. Say that a company invests USD 100 million in a project and that the cost of that invested capital is 10 percent, then the investment obviously must return more than 10 percent to create value. The only way this can happen is in an industry where the higher returns on investments are protected by barriers against competition. Otherwise competition will make sure that the return on capital is the same as the cost of capital and the investment of USD 10 million will match the USD 10 million you generate from the investment.

The TV is separated from the other valuations as it is the most difficult part of the corporate value to estimate but when isolated it doesn't interfere with the more reliable parts of the value. Investing in the TV requires a larger margin of safety than investing in the AV or EPV. As noted above, a positively growing stream of cash flows is more valuable than a constant steam everything else alike. That is, if growth (G) is positive number, then:

$$(CF_0 * [1/R-G]) > (CF_0 * [1/R])$$

CF_0 is the cash flow the current year and R is the required cost of capital, i.e. the WACC. The thing is that, everything else isn't alike. The cash flow in the growth case to the left will be the cash flow after the investments needed to support the growth – the two cash flow numbers are not the same. The value of the future increased cash flow will have to be balanced against the value of the invested capital and most of the time the value of growth amounts to nothing. In the case where the TV is lower than EPV, growth will have destroyed

value for shareholders. So far so good, but if we look further on valuing growth it becomes apparent how unstable a valuation including a growth factor is. If R, i.e. the WACC, is 10 percent and G, the growth rate, is 5 percent then the cash flow is multiplied with a multiple of 20 times. If we change R to 11 percent and G to 4 percent the multiple is 14. With the same one-percentage point changes in the other direction to 9 and 6 percent the multiple becomes 33. Hence, small adjustments or errors in input parameters leave us with huge swings in corporate valuations.

This fundamental problem makes placing an absolute TV on a stock a very precarious thing to do. Especially if the current growth is high and the industry is hard to forecast due to quick change. In his book *Value Investing: From Graham to Buffett and Beyond* Greenwald still presents how the TV could be calculated while in his class he has favored a yield based approach instead. We will take a look at both methods.

The only technically slightly tricky point in the first method is to calculate the proper number for CF_0 . Say that the no growth earnings power (E) of a company as used in the EPV-calculation for example is \$20mn. This will in itself by definition be equal to the amount of capital (C) times the return on capital (ROC), in this case \$200mn * 10 percent. The investment (I) to support an annual growth (G) of 5 percent is in this case 5 percent of the capital base, that is $I = C * G$ or \$200mn * 5 percent = \$10mn. The distributable cash flow (CF_0) equals the no growth earnings power minus the investment or \$10mn. The present value (PV) of a growing cash flow is $PV = CF_0 * [1/R-G]$ where (R) is the cost of capital and the cash flow is $CF_0 = (C*ROC)-(C*G) = C*(ROC-G)$, then follows that $PV = C*(ROC-G) * [1/R-G]$ which translates to a calculation of a present value of:

$$PV = C * [(ROC-G)/(R-G)]$$

In our case this is \$200mn = \$200mn * [(0,1-0,05)/(0,1-0,05)]. Also, just to double-check, the value \$200mn also checks out with the original equation of $CF_0 * [1/R-G]$ since \$10mn * (1/(0,1-0,05)) is \$200mn. What does this say? As long as the return on capital (ROC) is the same as the cost of capital (R), then the level of growth will not matter.

But if they differ from each other the growth rate will impact value. If $ROC > R$ any increase in G will create value and any decrease in G will destroy value. If $ROC < R$ any increase in G will destroy value and any decrease in G will create value. The estimates of the present value will vary widely with small adjustments of the input values of the return on capital, the cost of capital and the growth rate. Also, the equation breaks down when the estimated G equals R . Further, as G assumes constant growth the estimate made cannot deviate too much from the general economy growth rates over time.

We now move to the second method of valuing growth companies. Warren Buffett who invests in franchise GARP-stocks has solved the problem of the huge swings in estimated absolute intrinsic values of growth companies by looking to expected returns (for example 11 percent annual return) instead of trying to estimate an intrinsic value. This method has the advantage of using more robust inputs such as current valuation and the existence of competitive advantages. Looking at the yield will provide more analytical insights for example on whether capital should be reinvested or distributed to the owners. The downside of using a yield and not an intrinsic value is that you'll have no price target to sell at. In Greenwald's opinion sell rules are always more or less arbitrary anyway and he's set his sell rule at a p/e-ratio of 27,5 to remind him of the discretionary nature of his rule. Seth Klarman sells when the p/e-ratio goes above 20. Warren Buffett has stopped selling.

Greenwald's method of calculating expected returns goes through the following steps a) calculate an earnings return (or earnings yield), b) split this into cash distribution returns and reinvestments, c) identify the return on reinvestments and d) identify the returns from organic low investment growth. e) The total return of the investment is the cash distribution return plus the reinvestment return plus the organic growth, or put differently $TR = (d/p) + ((e-d)/p) * (ROIIC/WACC) + (g^*(v/p))$. This model uses the assumption that the stock market multiples that the company is priced at will not change. Let's look at the steps one by one:

- a) The earnings return or earnings yield is simply the inverted PE ($1/(p/e)$). Simple enough, but the earnings number to use in the p/e-ratio has to be the adjusted sustainable earnings as used in the EPV-valuation. Say that the p/e-ratio is 14, then the earnings yield is $(1/14)$ 7,1 percent.
- b) Say further that the dividend yield is 2,1 percent and that the company net buys back 1 percent of the share count a year, then the cash distribution return "d/p" will be 3,1 percent and the remaining 4 percent of the earnings (that is " $(e-d)/p$ ") will be reinvested. Try to normalize the distribution policy of the company and use a sustainable level of cash distribution.
- c) The competitive analysis and the investor's view of the barriers to entry will govern the spread he thinks the reinvested capital will earn over the cost of the capital. If ROIIC, Return on Incremental Invested Capital, is 15 percent and the WACC is 10 percent then the return on reinvestment will become $0,04 * 1,5 = 6$ percent. A higher reinvestment rate is beneficial with a high ROIIC. In estimating the ROIIC, analysis and some creativity is needed. Historical levels of ROIC and ROIIC give a baseline but you can make a better prediction by looking at what current incremental investments actually fund. What is the management doing with the money? Remember, it is hard to grow and sustain the historic level of ROIC. There is always a risk that the franchise will erode and ROIIC will decrease.
- d) The growth factor, i.e. $(g^*(v/p))$, is complicated as the " v/p ", that is the value-to-price multiple, creates a feedback loop since valuing the company is what we're ultimately after. Therefore this multiple is by Greenwald set to 1/1 making it redundant and just leaving us to estimate the organic growth rate. If in the end the total return of the investment turns out to be relatively high it's fair to assume that $v > p$. The organic growth should be the long run nominal figure. In reality this equals nominal GDP with slight adjustments for long-term structural factors (often 4,5 percent +/- 2 percent). The number assumes constant long-term growth so it cannot deviate too much from the economy. The number should not include growth coming from changes in market shares. In markets where there are franchise values, market shares don't

change much. For example, our case company is expected to have an organic growth of a relatively low 2,9 percent.

- e) The total return of the investment is 3,1 percent + 6 percent + 2,9 percent = 12 percent. Depending on the investment objectives of the investor this total return should be compared with the target return yield that the investor has, alternatively to the estimated total stock market return or the return of alternative investment opportunities in general. If the total expected yield is comfortably higher than the target giving a margin of safety and the analyst is relatively certain about the inputs, the stock could be worth buying.

Note the effects of shrinking earnings. If the expected organic growth for example had been -7,1 percent a year the total yield would have been a meager 2 percent. Shrinking franchises often turn out to be bad investments. To invest in shrinking franchises you must really make sure that the net present value of the conservatively estimated cash distributed to the owners - for example over the coming 10 years - covers the price paid. On the other hand a growing franchise that can redeploy capital at high returns will compound the capital and generate huge returns over time. Investing is in essence an allocation of capital. Warren Buffet likes to invest in companies that do the job for him by investing in high ROIIC-projects saying "Time is the friend of the wonderful business and the enemy of the mediocre."

1.3 Research Method

To be able to add value to the statistical process of looking to valuation multiples the research must be tailored to the type of situations at hand. Without this adaptation there is a great risk that the research will subtract from the statistical analysis, as the researcher will be subject to various psychological biases. For example, Sanford Bernstein is a top tier asset manager who combines quantitative screening and fundamental research, employing over 200 analysts. They have about USD 500 billion in AUM and have outperformed the market with a remarkable 3 percent a year over the last 25 years. Yet, when they looked at their returns they discovered that they would have outperformed by almost 4 percent a year if they had simply followed

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their initial P/B-based screening. You will need a research process that will not dilute what you searched for to begin with. Still, you should add fundamental research to a numeric process, as you want to make sure that you are on the right side of the trade. You want to be able to explain why a stock is cheap to validate the investment. And you have to have some rationale why this opportunity exists. Always be vigilant to make sure the investment is not a value trap.

A general rule is to be flexible and to use a broad toolbox as no one-valuation method fits all companies or all situations. To be able to value a company the investor needs to understand how competitive advantages arise industry per industry. Don't generalize. Instead look at how each division of a company has performed over time. A deep understanding makes it possible to zero in on the few key issues that will determine the financial future of the company. The three valuation methods above will further give clear hints on key issues to analyze. If you are buying earnings power and especially if you value the growth, the crucial issue is the strength of the franchise. If you are buying the assets the critical issue is the management. Never the less, a broader checklist is a valuable research tool as it helps you cover relevant issues and not be swayed by the topics management wants to bring forward. Another great tool is to write an investment diary where you in some form that fits you note the deals you do, the motivation for them, the expectations you have on the investment and also perform a post mortem of sold shares. Importantly – and often forgotten – you need to set aside a regular scheduled time to read through the notes, seek for patterns, reflect and learn from mistakes made.

Other collateral information to look at in the review process are a) what deals insiders are doing in the stock, b) who the other investors in the company are and c) what the Wall Street consensus view of the stock is. Insiders' dealings in the stock can give you a hint of what they really think rather than what they want you to believe. If a stock is decreasing in price, you start to find the stock attractive but the management is selling for all that they are worth, you might want to reconsider your investment thesis. In companies where the investment case depends on a trigger such as

management changes, increased ownership from an activist investor is a great sign. Also, you will only earn a different return than the market if you have a variant view of a stock from the consensus. To be able to assess this you need to understand the view Wall Street has of a stock. How else would you know that you are right and the other investors are wrong?

You need to understand which psychological irrationality among other investors you are profiting from. At the same time it's important to understand your personal biases to not fool yourself in the process. You have to rigorously track your own performance. If you make a mistake that is fine, but if you make it again you have not done your homework. Use the investment diary to this effect.

1.4 Risk Management

You now have 1) a good search strategy, 2) a good valuation technology and 3) careful review of the crucial issues. And finally 4) you have to have a good process for managing risk. In value investing the fundamental way you manage risk is to know what you are buying. "Use knowledge to reduce uncertainty." For a combined portfolio consisting of several sub-portfolios it is the total risk that is relevant and the risk in a number of portfolios should because of this be centrally managed.

In traditional portfolio theory risk is specified as the relative or absolute volatility. Volatility however assumes a randomness that isn't there, it punishes positive upside movements and it ignores the fat tails of the distribution. Volatility assumes a linear relationship over time but this has been proven to be false as there are momentum trends over time horizons up to 12 months and reversal trends after that. Thus, volatility is not a good risk measure.

Instead an investor should focus on long term downside risk - that is, permanent impairment of capital. The advantage is that permanent impairment of capital is often company or industry specific which makes it analyzable and it also makes the risks diversifiable. As a rule value investing implies concentration to your best ideas instead of diversification, so don't overdo it with regards to the number of securities owned. Around

20 to 30 offsetting positions with different business drivers should balance the risk of becoming an index fund with the risk of making a costly research mistake in a stock. You will make mistakes; try to make sure the effects of them are not correlated. Further, more money should be placed in the stocks in the investor's portfolio with more potential. That is, position sizes should be differentiated after the risk/reward of an investment.

The volatility of the market will create temporary losses in the portfolio. An investor should have a strategy for liquidity to not be stopped out in the low point of a crisis, unnecessarily making temporary capital losses permanent. Leverage, either in the portfolio or in the portfolio companies, will greatly increase the risk of permanent loss of capital as it either might force the portfolio to realize losses at the wrong time or simply because the portfolio companies go bankrupt. For the long-term investor economic macro events seldom give rise to permanent loss of capital, only temporary losses. As long as economies have developed robust economic and social institutions they have proven extremely durable against macro shocks.

The margin of safety, i.e. the demanded price discount to the intrinsic value is not only a return generator but also a protection against mistakes. With a 50 percent margin of safety the estimate of intrinsic value can be off quite a bit without threatening the undervaluation. Different investors demand different size and type of margin of safety. Seth Klarman seeks a 15 percent investment return if he can see a trigger for a revaluation in the investment within one year, a 30 percent return if he believes the trigger is two years out, a 45 percent return with a horizon of 3 years and so on. The basic way for an investor to analyze risk is to ask; what price am I paying; what am I buying; what discount am I getting and how sure am I of those characteristics. Beyond that diversification helps.

A huge risk to protect against is the investor's own impatience and lack of discipline. At times the stock market will be expensively priced and it will be hard to find good investment ideas. Plenty of money has been lost because investors felt the

pressure to act or because they were bored and in the end they, after researching stock after stock without finding a compelling case, bought the next stock that landed in front of them. You have to take what the market gives. Chasing opportunities is a bad idea. So you should have a good default strategy. A default strategy is a plan for what you are going to do if you have no ideas. What you should do is to minimize risk. The way to minimize risk depends on the portfolio; for a relative investor the no-risk alternative is the index, for an absolute investor it is cash and other investors instead phase in a statistically generated portfolio of the very safest high quality, low risk stocks. Gold could be used instead of cash but those who own gold for some reason have a tendency to keep it and miss the opportunity to buy equities when they have fallen and prices again are cheap.

Greenwald prefers phasing in high quality, low risk stocks. The difficult issue with cash is that over time the mistakes made trying to time the market – more often than not being too early - generally will lower the performance more than the money saved by having cash (compared to high quality, low risk stocks) in a downturn. For most long term investors being out of the stock market is generally not a good idea. The best short seller in the business is Jim Chanos and even his long-term track record is a 3 – 4 percent annual total return. Sell options is another way to protect the portfolio if they are used opportunistically. The good thing is that when the economy is great, stock markets are on their all-time highs, the volatility is low and therefore the risk for a downturn in reality is the largest, the sell options will be the cheapest. Buy them when they almost don't cost anything and get insurance practically for free. You don't know if there will come a downturn but if it does you have protection and if it doesn't you haven't lost much.

The macro economy generally cannot be predicted, but the investor can prepare for possible scenarios. Through scenario planning and identifying risks he can understand his vulnerabilities and manage the consequences before running into acute problems.

Mats Larsson, July 27, 2015

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Historically the most important macro risk factors have been inflation and economic recessions (or depressions). Looking to the vulnerability of various assets an investor will get decent protection from these two risks by holding a mix of fixed income, real assets and franchise businesses. Depending on the investor's risk tolerance he can construct a total portfolio with a preferred mix out of those three assets.

Asset	Inflation vulnerability	Recession vulnerability
Fixed Income	High	Low
Real Assets	Low	High
Franchise Businesses	Low	Low

Fixed income doesn't have to be government bonds but could instead be high quality corporate bonds that over time will yield slightly more. The risk in bonds issued by Nestlé is probably lower than that of almost any state. Real assets include real estate or land, but could also be non-franchise based deep value stocks instead. All those categories rely on asset values that should rise with inflation.

2. Wrap up

What you are looking for in investment management is a) a good search strategy preferably looking for the cheap, ugly, obscure or otherwise ignored; b) a good valuation technology that differentiates between the asset value, the earnings power value and the franchise value giving at total value; c) a good review process looking to key issues, collateral evidence and personal biases; and d) a sensible risk management strategy using a margin of safety, some diversification and an impatience/default strategy.

All the elements have to be in place. Value investing in theory and in practice has done extraordinary well in all those areas but the investment method is psychologically hard to handle. Greenwald finds that about 1/3 of his trainees remain as value investors. The balance reverts to old habits of herding and trying to buy lottery tickets.

** Disclaimer: Please note that the above text is simply my interpretation of Bruce Greenwald's opinions on investing. They are neither necessarily a true reflection of those opinions or the same as my personal opinions on investing. To form your own interpretation on what professor Greenwald thinks, I strongly advise you to take the course at Columbia and read Greenwald's books. You will be richly rewarded in knowledge and likely also in wealth.*

