AUSTIN VALUE CAPITAL

Price and Returns

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Price and Returns

The overall return on any investment rests on three factors: the price paid, the value ultimately obtained, and the length of the investment. At the time of purchase, the investor is generally only absolutely certain about the price being paid, whereas the length of time the investment will be held and the ultimate value are usually hazy at best. As a result, when deciding whether to make a certain investment, an investor must evaluate the range and likelihood of potential values of the investment, i.e., how the investment might evolve over time under a variety of scenarios. For good returns, it is critical that the investor not pay too high a price at the outset relative to the value obtained at the end.

Of course, there are many paths to good returns. One of the most desirable approaches is to pay a low price for a growing business; however, such opportunities are few and far between. More typically, investors may choose to pay a low price for a company that has mediocre or poor prospects, e.g., hoping for reversion to the mean (a recovery) or a liquidation, or pay a higher price for a company that has better prospects, e.g., relying on the underlying growth to compensate for the price paid. In either case, it is helpful to understand how the return on investment varies at different initial purchase prices, underlying growth rates, and holding periods. In the discussion below, the returns on investments having different underlying growth rates (high, low, zero, and negative) are shown for multiple different price points across a 0-25 year holding period, using book value as a proxy for underlying value. Later, the framework is expanded to encompass more complicated valuations, using Berkshire Hathaway as an example.

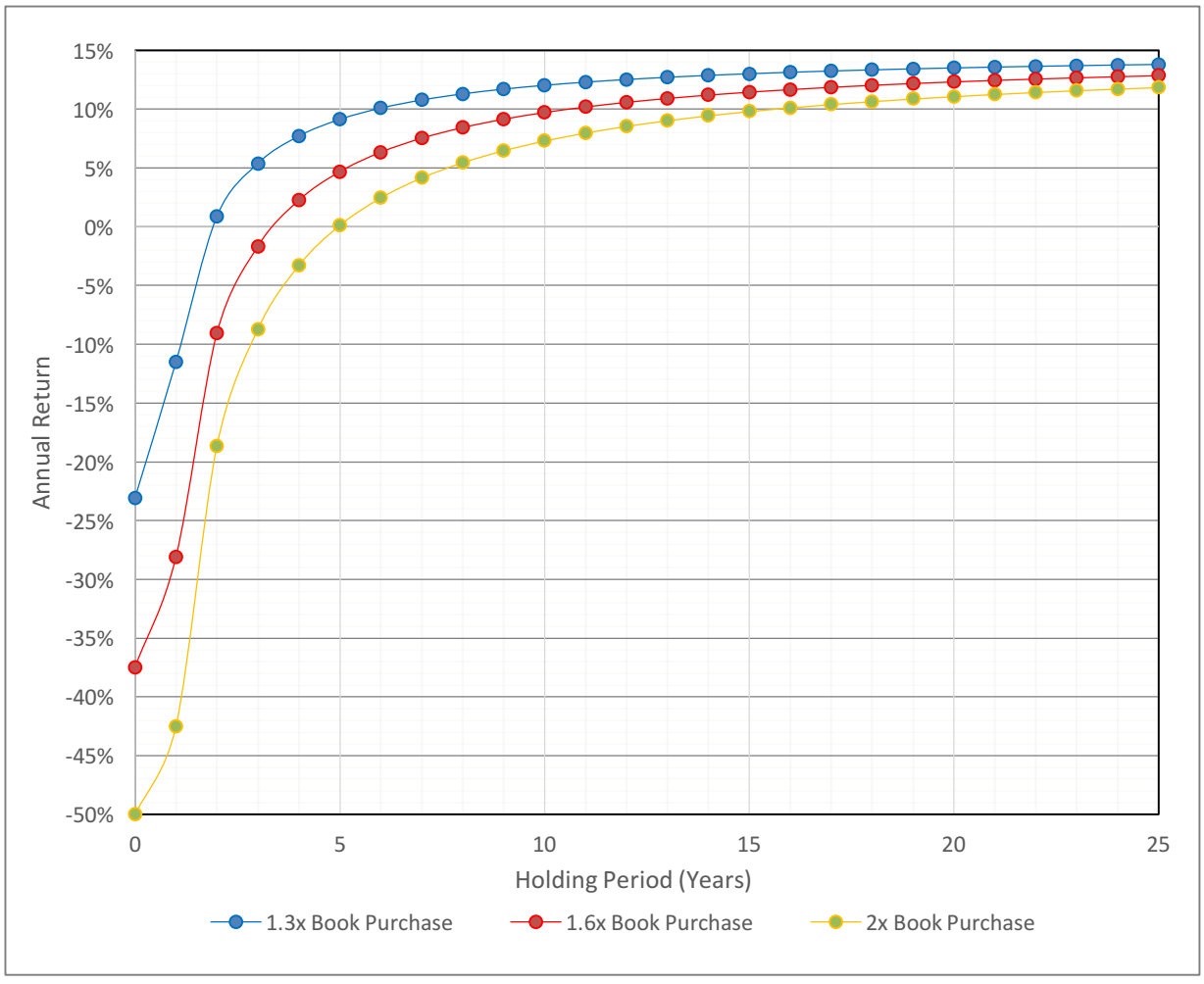
High Growth

Many investors are attracted to companies that have a history of compounding underlying value at high rates. However, absent a panic in the market or a problem specific to the sector or business, the multiples of these companies are typically high enough to give conservative investors pause. To determine whether to invest, the question then becomes: Is the company's expected growth rate high enough, and sufficiently sustainable, to provide adequate returns for the investor's holding period given the current multiple? This decision is particularly useful in determining the appropriate multiple for companies such as Berkshire Hathaway, Markel, Brookfield Asset Management, Fairfax, and other favored "compounders".

Consider a hypothetical company that is capable of compounding book value at 15% a year over a long period of time. To be conservative, let's also assume that while the company is purchased at an initial price that exceeds book value, it will ultimately be sold at book value (e.g., at the time of selling, the prospects of the company may have diminished, the company might be liquidated, and/or sentiment might just happen to be poor at that moment). The following table and graph illustrate how the investor's annualized returns develop using different initial book value multiples:

Annual Returns for 15% Book Value Compounding

Purchase Multiple/ Annual Returns	1.3x Book Value	1.6x Book Value	2x Book Value
After 1 year	-11.54%	-28.13%	-42.5%
After 3 years	5.37%	-1.68%	-8.72%
After 5 years	9.12%	4.68%	0.11%
After 10 years	12.02%	9.72%	7.3%
After 15 years	13.01%	11.45%	9.81%
After 20 years	13.5%	12.33%	11.08%
After 25 years	13.8%	12.86%	11.86%



As shown, as the holding period of the investment increases, the annualized returns approach the underlying growth rate, even when the initial purchase price is as high as twice the original book value. However, if the investment length is not sufficiently long, these annualized returns can be unacceptable for most investors. For example, the investment length must be in excess of 5 years for a 1.3x initial purchase multiple to achieve more than a 10% annual return. For 1.6x and 2x multiples, the holding period extends to more than 10 and 15 years, respectively. Thus, investments falling into the high growth category naturally lend themselves to long or potentially "forever" holding periods.

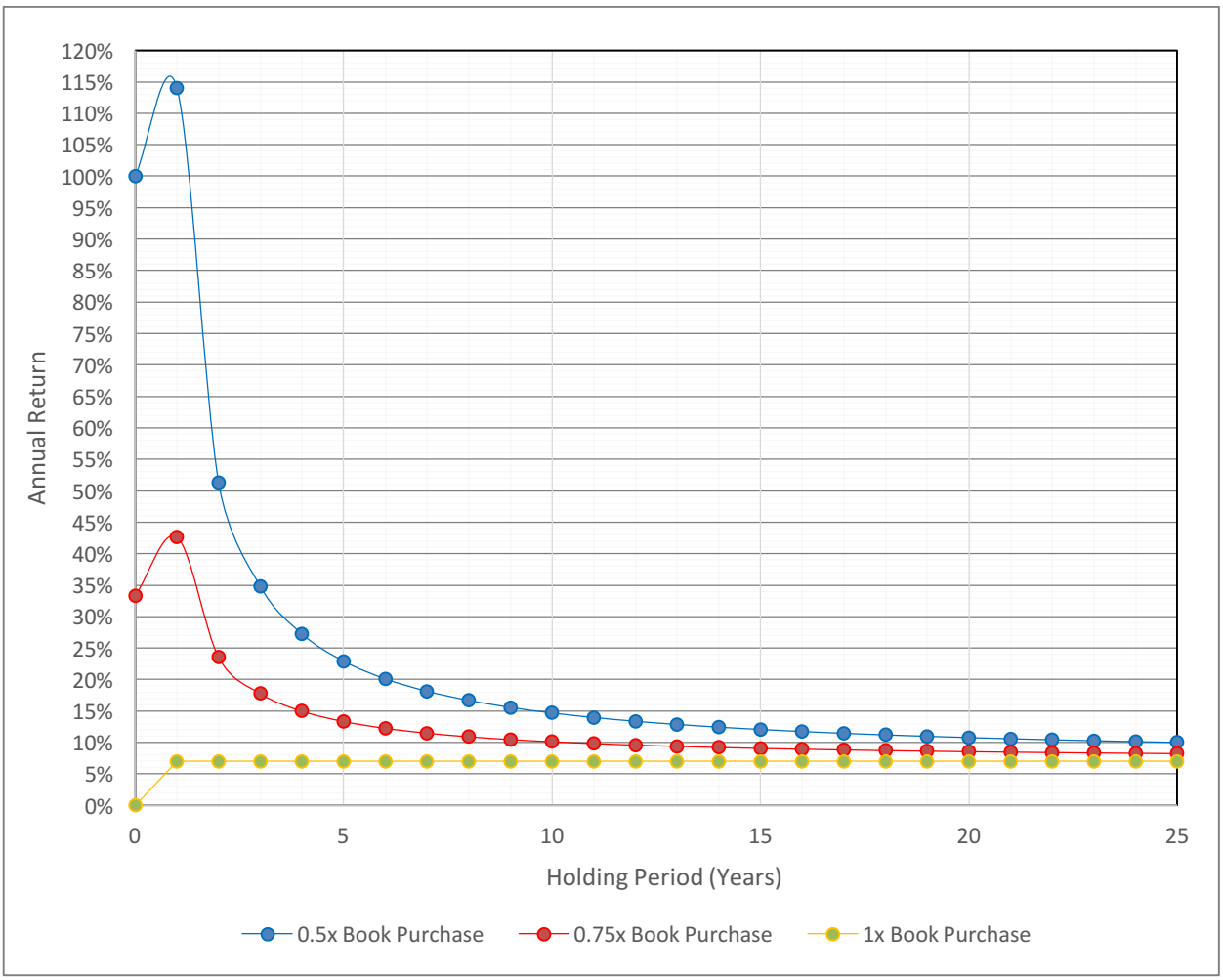
Of course, if the company is still operating efficiently, the investor may be able to sell the investment for more than book value at various times during the investment. In such cases, if the investor is able to sell at the same purchase multiple or higher, then the returns will match or exceed the underlying growth rate. Thus, since such companies are unlikely to sell for book value or less, the initial low returns shown for shorter holding periods may be overly conservative compared to actual outcomes.

Low Growth

Many investors use a hurdle rate in determining whether to make an investment. For example, an investor may only invest in companies where he thinks he can obtain at least 10% per annum return over the course of the investment. For those companies whose underlying growth prospects are less than this hurdle rate, the purchase price must be made at or below book value (at least according to the current simplified framework) to allow the investor to achieve desirable returns. Accordingly, in the remaining examples, where underlying growth is low, nonexistent, or even negative, the purchase price is assumed to be 0.5x, 0.75x, and 1x book value rather than the higher book value multiples used in the high growth example. In the present low growth case, the hypothetical company still grows book value at 7% per annum, and it is presumed that the investor sells at 1x book value. The investor's returns develop as follows:

Annual Returns for 7% Book Value Compounding

Purchase Multiple/ Annual Returns	**0.5x Book Value**	**0.75x Book Value**	**1x Book Value**
After 1 year	114%	42.67%	7%
After 3 years	34.81%	17.77%	7%
After 5 years	22.91%	13.34%	7%
After 10 years	14.68%	10.12%	7%
After 15 years	12.06%	9.07%	7%
After 20 years	10.77%	8.55%	7%
After 25 years	10.01%	8.24%	7%



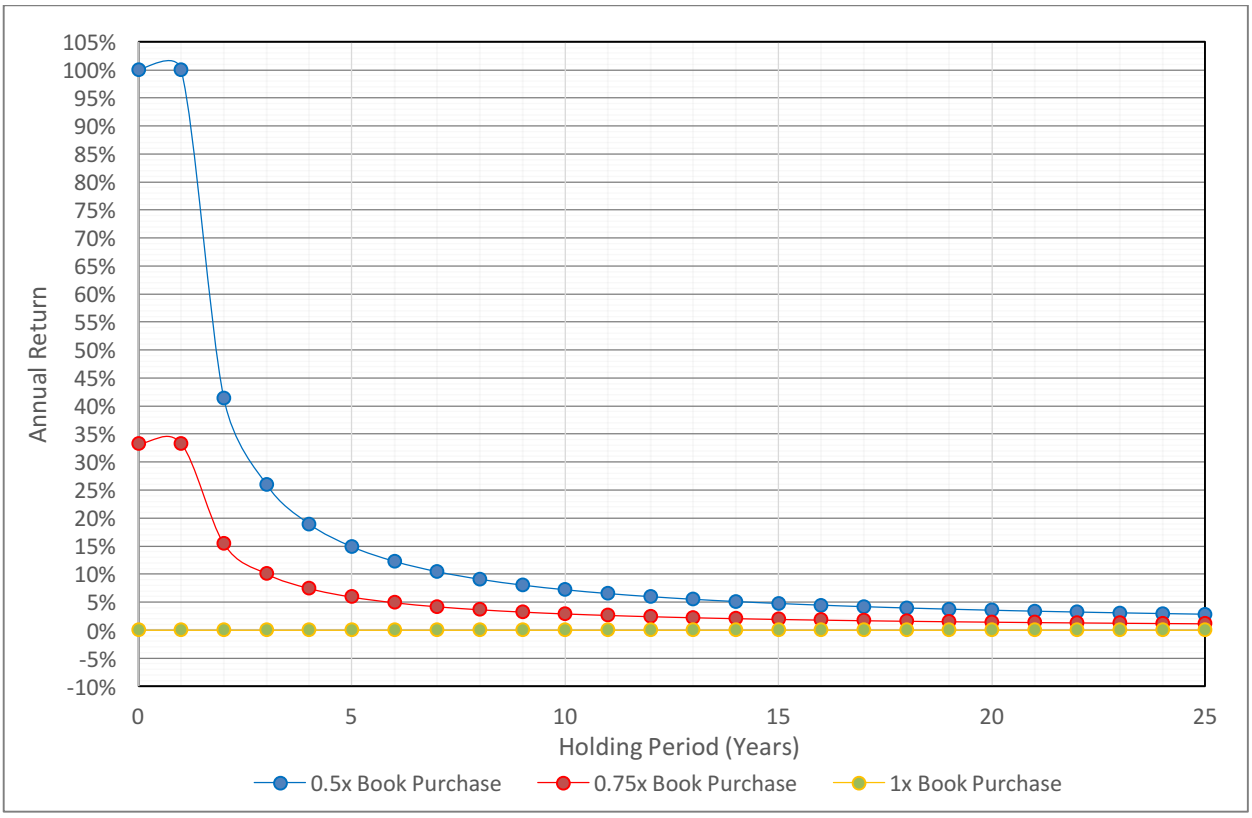
As shown, the low growth case lends itself to much shorter investment lengths than the high growth case. A purchase price of 0.5x produces the best investment result in a very short time period (within a few years) and the result begins to approach much lower 10% per annum returns as the holding period exceeds the 5-year mark. Similarly, at a more modest 0.75x book value purchase price, the best (albeit much lower) investment result also occurs in a relatively short time period, and the result tends to approach 10% annual returns by the 10-year mark. This comparison demonstrates the tremendous importance of purchase price when buying low growth companies. Additionally, and more relevant to our discussion, the above data clearly illustrate that the purchase of marginal quality (low growth) companies necessitates a much shorter holding period than the purchase of higher quality, higher growth companies. With respect to the time frame in which an investor is able to achieve 10% annual returns, while a purchase price of 0.5x book value may allow for a holding period of up to 25 years to achieve such returns, at a more modest 0.75x book value purchase price, a holding period of 10 years or less may be more appropriate. Moreover, while a very short-term holding period for such low growth companies may generally be more desirable in terms of annual returns, in reality it often takes at least some amount of time for the stock market multiple of such companies to change from 0.5x to 1x book value multiples. In other words, it is somewhat rare that an investor is able to buy a company at 0.5x book value and immediately (e.g., within a year or so) sell it for twice his purchase price. Thus, investments of these types are more likely to have an investment length of 3-7 years, which essentially is determined by the point in time which the investment can be sold back to the market at 1x book value.

No Growth

In the following, the hypothetical company does not grow, and the investor is assumed to be able to sell at 1x book value. In this case, the investor's returns develop as follows:

Annual Returns for 0% Book Value Compounding

Purchase Multiple/ Annual Returns	0.5x Book Value	0.75x Book Value	1x Book Value
After 1 year	100%	33.33%	0%
After 3 years	25.99%	10.06%	0%
After 5 years	14.87%	5.92%	0%
After 10 years	7.18%	2.92%	0%
After 15 years	4.73%	1.94%	0%
After 20 years	3.53%	1.45%	0%
After 25 years	2.81%	1.16%	0%



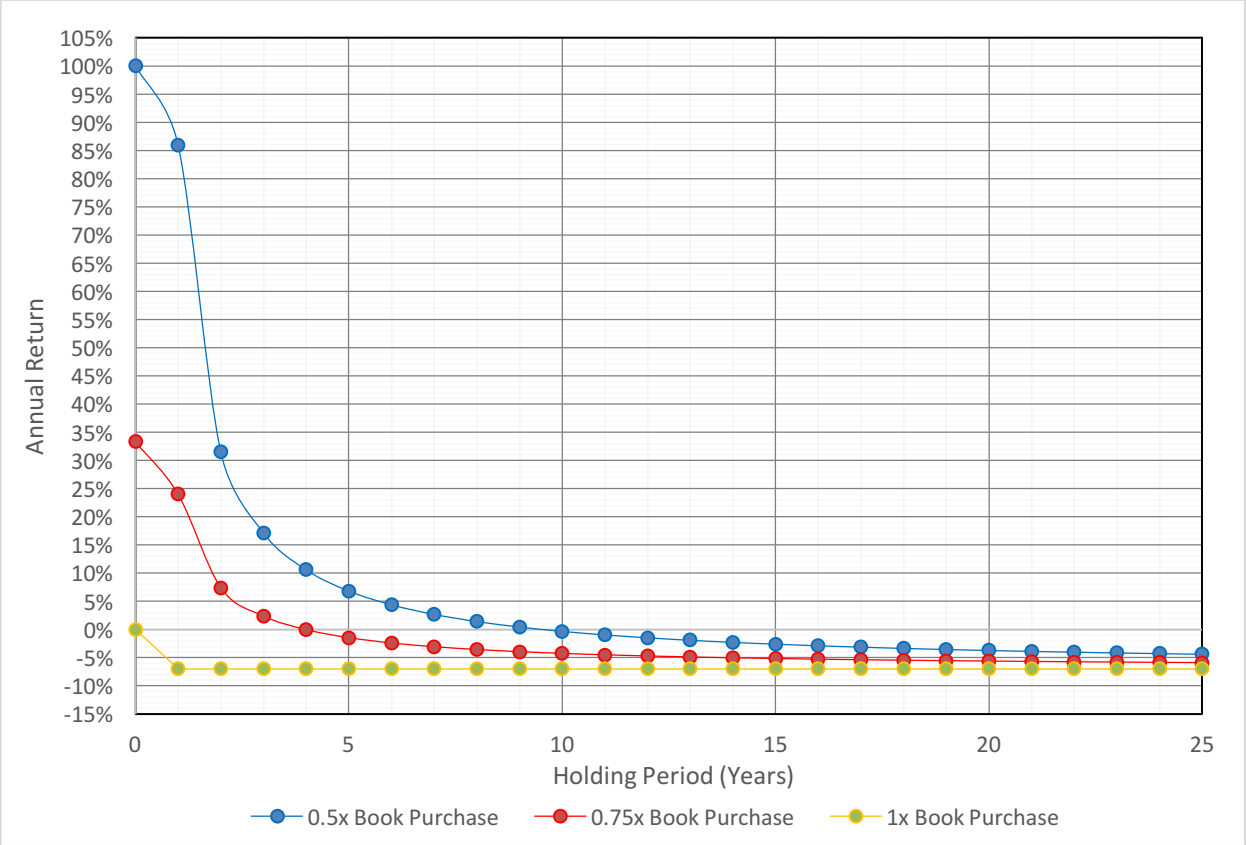
Similar to the low growth example above, the no growth case lends itself to shorter investment lengths than the high growth case. In this case, assuming a 10% hurdle rate, an investor must be able to sell at 1x book value prior to 10 years for a 0.5x initial book value multiple and prior to 5 years for a 0.75x initial book value multiple to achieve adequate returns.

Negative Growth

In the following, the hypothetical company decreases book value at 7% per annum and the investor is assumed to be able to sell at 1x book value. In this case, the investor's returns develop as follows:

Annual Returns for -7% Book Value Compounding

Purchase Multiple/ Annual Returns	**0.5x Book Value**	**0.75x Book Value**	**1x Book Value**
After 1 year	86%	24%	-7%
After 3 years	17.17%	2.36%	-7%
After 5 years	6.83%	-1.49%	-7%
After 10 years	-0.33%	-4.29%	-7%
After 15 years	-2.6%	-5.2%	-7%
After 20 years	-3.72%	-5.65%	-7%
After 25 years	-4.39%	-5.92%	-7%



For the negative growth case, only a short holding period makes sense. In this case, assuming a 10% hurdle rate, an investor must be able to sell at 1x book value prior to 5 years to achieve adequate returns. For this case, returns would be greatly helped if the deterioration in value is expected to subside over time, since such negative growth rates are unsustainable for any positive outcome, and/or if the negative growth was coupled with substantial returns of capital to shareholders. Alternatively, the ability to sell the investment at 1x book value may be achievable within the desired time frame in the event of a catalyst, such as a liquidation, buyout, special dividend, etc.

Adjusting the Framework

In the examples above, book value was used as a proxy for underlying value primarily because many of the obvious "compounders" (such as Berkshire Hathaway, Markel, Fairfax, and others) are judged by book value growth and valued using multiples of book value. Additionally, it is a relatively simple way of providing concrete examples of how price, growth, and returns interrelate over time. However, book value is obviously not the only way to measure value or growth, and any number of alternatives may be used. In a simple case, an investor might make certain modifications to book value to come up with an adjusted book value for the company, e.g., marking up or down certain assets that have changed in value since the purchase, certain liabilities that may not be true liabilities, etc. Alternatively, the investor may use an entirely different valuation method, e.g., based on a sum-of-the-parts valuation, multiples of earnings or EBITDA, etc. However, in using these adjustments or alternate valuations, **it is crucial that the investor be certain that the assumed growth rate still applies to the new valuation**.

For example, a company may own certain real estate that is marked on its books at its original purchase price from a period long in the past. Accordingly, the investor may be justified in adjusting the book

value to reflect that undervalued asset at a more appropriate price. However, if the company's book value has been growing at a high rate (e.g., 10% or more), then this new marked-up value may no longer be capable of compounding at the same rate. Said another way, since the book value adjustment is made to reflect the true value of the undervalued real estate, and that real estate is unlikely to grow at the same high rate that the reported book value grew in the past, the projected growth rate for the adjusted value must necessarily be reduced. As another example on the liability side, it is possible that the debt or the capital structure provides the leverage by which the high growth rates are generated. Thus, if the adjustments to the liabilities reduce the leverage creating the high returns, it may mean that the higher adjusted book value will grow at a slower rate, e.g., providing no improvement in investment returns.

For adjustments or alternative valuations that have the same growth characteristics as that of the book value (i.e., the adjustments are also able to compound at, or otherwise do not affect, the rate of book value growth), then the new value may indeed be substituted for book value in the framework without consequence. Alternatively, for valuations that do not have the same growth characteristics, the adjusted or alternative valuation may be used, but care should be taken to ensure that the expected growth assumed for this valuation is applicable.

Berkshire Hathaway

Perhaps the most iconic high growth company is Berkshire Hathaway. As noted above, rather than using reported book value, many investors make adjustments to certain components of Berkshire's reported book value, such as discounting the float or deferred tax liabilities, increasing the marked values of certain subsidiaries bought at low prices, etc. Alternatively, based on guidance from Warren Buffett, investors may use an entirely different valuation method, e.g., using the so-called "two-column" approach, which adds the investments per share to a multiple of the operating earnings of the owned subsidiaries. In either case, these valuations typically result in an estimated intrinsic value that may be 1.3-1.8x reported book value. In order to examine how the growth rate of this alternative valuation relates to the more traditional book value based valuation, the following table compares the year-end book value, price, price to book value, value (using Whitney Tilson's two-column valuation from November 2015), and valuation to book, from 2001-2015:

Berkshire Hathaway

	Book Value per Share	Year-End Price	Price to Book	Two-Column Valuation	Valuation to Book
2001	$37,920	$75,600	1.99	$64,000	1.69
2002	$41,727	$72,690	1.74	$70,255	1.68
2003	$50,498	$84,250	1.67	$97,217	1.93
2004	$55,824	$87,900	1.57	$103,003	1.85
2005	$59,377	$88,620	1.49	$117,329	1.98
2006	$70,281	$109,990	1.57	$144,236	2.05
2007	$78,008	$141,600	1.82	$157,543	2.02
2008	$70,530	$96,600	1.37	$121,728	1.73
2009	$84,487	$99,200	1.17	$119,659	1.42
2010	$95,453	$119,100	1.25	$152,330	1.6
2011	$99,860	$114,755	1.15	$178,366	1.79
2012	$114,214	$134,060	1.17	$200,786	1.76
2013	$134,973	$177,900	1.32	$226,413	1.68
2014	$146,188	$226,000	1.55	$254,593	1.74
2015	$149,735	$195,757	1.31	$267,000	1.78
Compound/Average	10.3%	7.03%	1.48	10.73%	1.78

As shown, book value per share has increased at 10.3% over the past 15 years, while the stock price has only compounded at 7.03% due to the compression in book value multiple over that period from 2x to 1.3x (having an average multiple of 1.5x). Over the same period, Tilson's two-column valuation has compounded at 10.73%, slightly exceeding the book value growth and having an average multiple of the valuation to book of 1.78. Thus, this two-column approach has been able to compound at just over the same rate as reported book value, indicating that it is not a simple adjustment that increases current valuation at the cost of future growth.

These results line up with comments that Buffett made regarding appropriate multiples for the company, while discussing the future of Berkshire in the 2014 shareholder letter (emphasis added):

First and definitely foremost, I believe that the chance of permanent capital loss for patient Berkshire shareholders is as low as can be found among single-company investments. That's because our per-share intrinsic business value is almost certain to advance over time.

This cheery prediction comes, however, with an important caution: If an investor's entry point into Berkshire stock is unusually high – at a price, say, approaching double book value, which Berkshire shares have occasionally reached – it may well be many years before the investor can realize a profit. In other words, a sound investment can morph into a rash speculation if it is bought at an elevated price. Berkshire is not exempt from this truth.

Purchases of Berkshire that investors make at a price modestly above the level at which the company would repurchase its shares [1.2x book value], however, should produce gains within a reasonable period of time. Berkshire's directors will only authorize repurchases at a price they believe to be well below intrinsic value. (In our view, that is an essential criterion for repurchases that is often ignored by other managements.)

Conclusion

The examples provided above naturally divide into two categories: those investments that are able to compound at a rate higher than the investor's hurdle rate and those that do not. Where the investment does compound at a rate higher than the hurdle rate (as in the high growth case), an investor can pay a relatively high price and still achieve adequate returns given a long enough holding period. For those investments that fall below the hurdle rate, the holding period for the investment is naturally limited—the degree to which corresponds to the difference between the hurdle rate and growth rate (i.e., the larger the difference, the shorter the holding period).

While all of the examples fall along a continuum of returns and holding periods, the latter category may be further separated into those that are able to maintain value and those that do not. According to this further division, the provided examples break down into three investment types: paying higher prices for above-average growth, paying lower prices for low or no growth, and paying very low prices for negative growth. Each of these has the potential to provide good returns to investors; however, as noted above, they also have their own "sweet spots" for holding periods. In particular, the high growth companies naturally pair with long holding periods (e.g., 10+ years) since they are growing at high rates throughout the investment, and it takes time to overcome the higher price paid. For low or no growth companies, assuming a relatively low initial price, a medium holding period (e.g., 3-7 years) seems most appropriate since it usually takes some time to correct the reasons for the low price, and the investment is not deteriorating during that time. However, given the fact that the investment is not growing very much during the holding period, a long-term holding period results in mediocre returns. Finally, for negative growth companies (so called "melting ice cubes"), the holding period must be relatively short (e.g., less than 3 years), and/or the price paid must be absurdly low since the returns very quickly turn negative as value dissipates. Thus, paying a cheap price for a low quality business might offset the downside risk in the short-term, but unless the investment is sold or liquidated at a higher price in a reasonable length of time, the opportunity cost can be quite painful. On the other hand, paying a higher price for a growing company may have more downside risk in the short-term if sentiment changes or the underlying growth stalls, but the long-term results can be fantastic. As summarized by Buffett: "Time is the friend of the wonderful company, the enemy of the mediocre."

Since good returns are possible across all of these situations, each investor must find a manner of investing that matches his own personality while at the same time ensuring that the price paid and the holding period is compatible with the underlying growth of the investment. Personally, I have a preference for investing in companies that can maintain or increase underlying value, primarily because the holding periods are long enough to outlast most changes in market sentiment, which I view as largely unpredictable. Thus, I prefer companies that have the "capacity to suffer" through periods of tumult, which often arrive quickly and unexpectedly—ultimately, it lets me sleep easier at night. Additionally, longer holding periods result in less turnover, which reduces the need to pay taxes and the number of new investments needed to continue to provide adequate returns for the portfolio.

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