

The Value of Growth: Profiting And Avoiding Pitfalls

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Introduction

In both business and investing people are enamored by the mere mention of the word “growth.” Growth has become the cure all solution for any problem and corporate strategies are almost sure to make reference to it. It is also often the primary selling point to investors. Owning “growth stocks” has become a popular investment strategy because these are the stocks that are seen as cutting edge and the ones that offer huge upside potential. The appeal of growth is completely understandable because it seems so intuitive. Who wouldn’t want to grow? If you don’t grow, doesn’t that mean you are being left behind?

Growth has the potential to create tremendous shareholder wealth. **Under the right circumstances, businesses that have the ability to grow and sustain that growth are incredibly valuable assets.** However, at the same time, the unquestioning praise of growth in no way captures the full reality.

The fact of the matter is that **growth can be value enhancing, value neutral, or value destroying.** This last point is the toughest to get your head around. The fact that a business can become larger—increasing sales of their product while making more money—but actually destroy shareholder wealth is difficult for most to understand. But it is absolutely possible for a business to achieve growth but as a result of the growth the business actually becomes less valuable.

The goal for us as investors should be to move beyond using “growth” as a vague buzzword and instead understand how and when growth creates value. From a business perspective we need to understand the pitfalls that can occur as businesses pursue growth. From an investment perspective we need to understand where we can go wrong when we invest with growth in mind. Having a complete and realistic picture of growth is especially important because of how popular appeals to growth are and how susceptible people are to statements about growth.

Growth Requires Investment

Companies create value for their owners by investing cash now to generate more cash in the future. Provided that the company is creating returns above the cost of capital, the faster a business can grow and deploy more capital, the more value it will create. The relationship between growth, return on invested capital, and ultimately cash flow are intertwined.

Because of this interconnected relationship, simply looking at growth in isolation presents an incomplete picture. In fact a growth rate on its own tells us nothing about the value being created by the company. This is because companies have to make investments in the present in order to create future growth.

Consider the two companies below.

	Company A				
	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	1000	1050	1102	1158	1216
Earnings	100	105	110	116	122
Investment	-25	-26	-28	-29	-31
Cash Flow	75	79	82	87	91
Present Value of Cash Flows					1500

	Company B				
	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	1000	1050	1102	1158	1216
Earnings	100	105	110	116	122
Investment	-50	-53	-55	-58	-61
Cash Flow	50	52	55	58	61
Present Value of Cash Flows					1000

* Present value assumes 10% cost of capital

Both companies have the exact same earnings and earnings growth rates. In order to achieve the 5% growth they are experiencing, both companies must make current investment. Even though both companies have the exact same growth rates, the companies have drastically different valuations because of different reinvestment requirements. Company B must invest half of its earnings, or \$50, to create 5% growth, whereas Company A only has to invest \$25 to achieve the same level of growth. As a result, the present value of Company A is \$1500, while the present value of Company B is only \$1000, a fairly surprising margin considering both companies are growing at exactly the same rate.

The different reinvestment requirements are driven by the implicit differences in ROIC of the two companies. Company A does not have to invest as much because of its high ROIC. Company A invested \$25 to produce incremental earnings of \$5 for an ROIC of 20%. On the other hand Company B invested \$50 to produce the incremental earnings of \$5 for an ROIC of 10%.

This simple illustration shows two major mistakes Wall Street makes. The first is stating growth rates on their own as if growth without additional information tells us something about wealth creation. This mistake is of course more likely to happen when the growth rate is high and the intention is to impress the investor. The second mistake the example illustrates is that focusing on earnings instead of cash flow is a problem. Two companies can have identical earnings but drastically different cash flows because of investment requirements.

The takeaway here is: **Growth is meaningless unless you simultaneously consider return on invested capital and therefore investment requirements.**

When Growth Creates Value

The table below is incredibly useful in understanding the relationship between growth and return and invested capital and their effects on total value creation. The example illustrates the value created by various combinations of ROIC and growth. The table assumes base year earnings of 100, a cost of capital of 9% and that after 15 years all scenarios grow at 3%.

Translating Growth and ROIC into value

Exhibit2.4(P21)

Growth	3%	800	1,100	1,400	1,600
	6%	600	1,100	1,600	2,100
	9%	400	1,100	1,900	2,700
		7%	9%	13%	25%
		ROIC			

For example, the box at the intersection of 13% ROIC and 3% growth answers the question: If I have a company that is currently earning \$100 and that company produces a ROIC of 13% and grows at 3% how much is the total company worth today? The table illustrates that a company

with a base of \$100, ROIC of 13% and growth of 3%, assuming a 9% cost of capital is worth \$1400 today. In this way the table acts as an incredibly quick valuation tool.

Notice that by using base earnings of 100 it is easy to see relationships using the widely popular Price to Earnings ratio. The company we just discussed is worth \$1400 and had base earnings of 100. \$1400 divided by \$100 is equal to 14. So if we see a business that we think will continue to produce ROIC of 13% and grow at 3% with a cost of capital of 9% that stock should trade at a P/E of 14.

Translating Growth and ROIC into value

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	9%	400	1,100	1,900	2,700
		7%	9%	13%	25%
		ROIC			

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Notice that for any level of growth, value increases with improvements in ROIC. The picture with growth is more complicated, however. Remember that the table assumes a cost of capital of 9%. **When ROIC is higher than the cost of capital, faster growth increases value. However, when ROIC is lower than the company's cost of capital, additional growth actually destroys value.** In fact, the more a company grows when ROIC is below the cost of capital the worse the situation becomes.

The point where a company's ROIC is equal to its cost of capital marks the dividing line between value creation and destruction. Here it is 9%. If ROIC is set equal to the cost of capital no value is created regardless of how fast a company grows. Even if a company is achieving an obnoxiously high growth rate such as 50% year over year growth, absolutely no value is being created unless ROIC is above the cost of capital. *Therefore large growth rates as standalone pieces of information are absolutely meaningless.*

There are a few general points about the table that investors should take note of. Companies already earning a high ROIC can generate more additional value by increasing their rate of growth, while low ROIC companies will generate more value by focusing on improving ROIC.

Take a look at the far right column of the table that shows companies earning an ROIC of 25%. If a company were able to move from the far upper right corner to the box directly below it observe how much value is created. By increasing growth by only 3%, from 3% to 6%, the value of the total firm increases by over 30%. (From \$1600 to \$2100, a 31.25% increase.) The table again illustrates the fundamental point when dealing with growth: **when ROIC is above the cost of capital, growth creates substantial value for the firm; the wider the gap between ROIC and the cost of capital, the more important growth becomes.**

Translating Growth and ROIC into value

Exhibit2.4(P21)

Growth	3%	800	1,100	1,400	1,600
	6%	600	1,100	1,600	2,100
	9%	400	1,100	1,900	2,700
		7%	9%	13%	25%
		ROIC			

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The second point from the table to note is that there are times when companies should completely abandon their growth objectives. Look at the far left column where ROIC of 7% is less than the cost of capital.

The general assumption of Wall Street and most businesses people is that growth is always good. As discussed in the introduction, most business people assume that growth acts as the cure all solution for business problems. However low ROIC businesses should abandon any growth objectives and instead focus their energy only on improving ROIC. Any investments that a company is making when ROIC is less than the cost of capital is destroying company value. This reaffirms that most investor's obsession with growth, without considering additional information is incredibly misplaced.

ROIC Sets the Ceiling for Internal Growth

The engine of growth runs on capital. In the section “Growth Requires Investment” we looked at the fact that in order to produce growth companies must make investment. In the example with Company A and Company B we assumed a relatively low growth rate of 5%. Both companies were more than able to fund that growth from their current earnings. But what if the growth rate of a company is quite high? **If the growth rate of the company outstrips its ROIC, internally generated funds will not be sufficient to fund the growth.** The company will have to look to further debt or equity raises to fuel the desired growth.

Growth Rate = Return on Invested Capital X Reinvestment Rate

If your reinvestment rate is 1 meaning you plowback all of your internally generated funds, you can see the growth rate is equal to the ROIC. For example let's say your ROIC is 10%. The maximum growth rate you can achieve through solely internally generated funds is also 10%.

10% Growth = 10% ROIC X 1 Reinvestment Rate

If this same company had the desire or the opportunity to grow at 15% they would have to seek additional outside funds.

15% Growth = 10% ROIC X 1.5 Reinvestment Rate

Obviously you can only reinvest 100% of what you have, so the additional .5 would have to come from additional debt or equity raises.

There is of course nothing wrong with needing additional funds—this is the whole reason the capital markets exist. In fact if ROIC is above the cost of capital the company should raise additional capital to achieve a higher growth rate if they have exhausted internal funds.

However, there are a couple of important things to keep in mind. The first thing to note is if your desired growth rate far outstrips your ROIC, you are counting on properly functioning capital markets to accomplish your objectives. In all but the most distressed times the capital markets are available to finance value enhancing growth, but as investors we must realize that in difficult times the markets may not be available to us. We must also realize that if we are forced to raise equity in depressed markets, these equity raises can be highly dilutive to existing shareholders.

Secondly, we must keep in mind that in situations where growth exceeds ROIC the additional outside financing may not come without costs. As we continue to take on debt to fuel our company's growth, there will come a point in time that the amount of leverage we are applying will actually begin raising our cost of capital. As the company takes on high levels of debt, investors will begin requiring higher rates of return to compensate them for the increased

possibility of default. Recall that ROIC must be above the cost of capital in order for growth to create value. **If we have taken on so much debt that our cost of capital equals or is greater than our ROIC, our plan for value enhancing growth will be negated.**

The main point is that in situations where our company's growth rate exceeds our ROIC, we must be aware of the large amount of outside funding we will need to achieve that growth. **Growth can be incredibly positive, but it is not free.** *Never forget that growth requires investment, and a high growth company is a huge consumer of capital. Growth rates above the ROIC of company will consume large amounts of outside capital.*

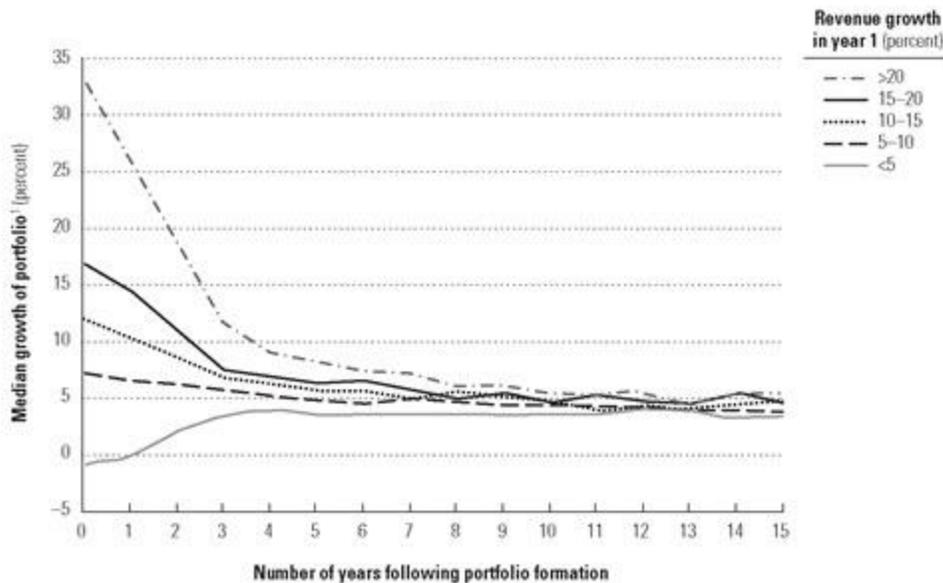
Difficulty of Sustaining Growth

Sustaining a high rate of growth for more than a short period of time is incredibly difficult. Investors who are overly sucked in by the growth obsession make two common fatal mistakes: *1) they drastically over estimate the rate of growth the company will be able to achieve in the future and 2) as a result end up over paying for the investment today because the growth assumptions implicit in the price of the stock have only a minimal chance of coming true.*

As a general rule, when making predictions about the future most people simply take recent results and extrapolate them. If a company is currently having a lot of success and achieving high rates of growth, people take these high growth figures and project them into the future. When things are going well people naturally become overly optimistic. People's internal feelings simply mirror the current state of affairs. A more independent and realistic evaluation of growth will serve us better.

As companies get larger, it becomes more difficult to sustain high percentage growth rates in revenues for two reasons. The first is that the same percentage growth rate will require larger and larger absolute changes in revenues each period and thus will be more difficult to deliver. The second is that a company's success will attract the attention of other firms. The additional competition will act as an anchor on growth.

The graph below created by McKinsey shows how difficult sustaining growth really is. The study began by grouping companies into five different portfolios based on their initial rate of growth. The super growth portfolio was composed of companies growing well in excess of 20% annually. The low growth portfolio contained companies that were growing less than 5%. The other 3 portfolios contained companies with varying degrees of growth in between the super growth and low growth portfolios. McKinsey did this on a rolling basis for the past 45 years. The results are below.



¹ At year 0, companies are grouped into one of five portfolios, based on revenue growth.

As the data from the last 45 years shows, growth declines quickly. Within the first three years the differences between growth rates contract considerably. After five years, the highest growth companies outperform the lowest growth portfolio by less than 5%. You can see that by after a decade, the initially super high growth firms are completely indistinguishable from the initially low growth firms. Growth exhibits a high degree of “decay” over time. This harsh reality contrasts sharply with the view of most investors that current growth rates can be extrapolated far into the future.

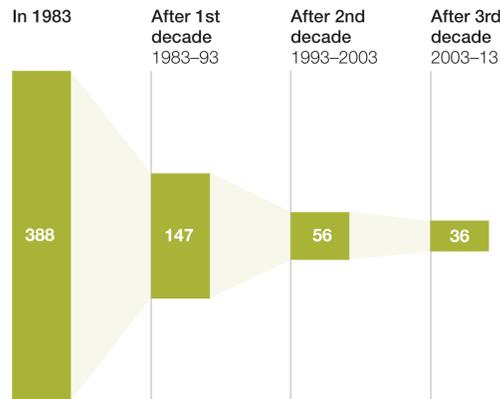
What the empirical data suggests is that, at best, even the highest growth companies have only around a decade of above average growth. And this is the absolutely best case scenario pertaining to a select few companies starting with astronomically high growth. Even for the fastest growing companies each subsequent year brings additional deceleration of growth.

The general rule of thumb is: **for most growing firms that growth will moderate within 3-5 years; a select number of companies may be able to achieve growth of a few percentage points above the norm for over a decade; finally, by the end of a decade initially high growing firms are indistinguishable from the mean.**

Another study by McKinsey adds additional data concerning the difficulty of maintain growth over time. The study analyzed the number of S&P companies that were able to achieve growth rates above the rate of GDP over several decades.

Few companies manage to maintain strong growth over time.

Number of companies¹ that remained in S&P 500 and had revenue-growth rates outpacing GDP growth



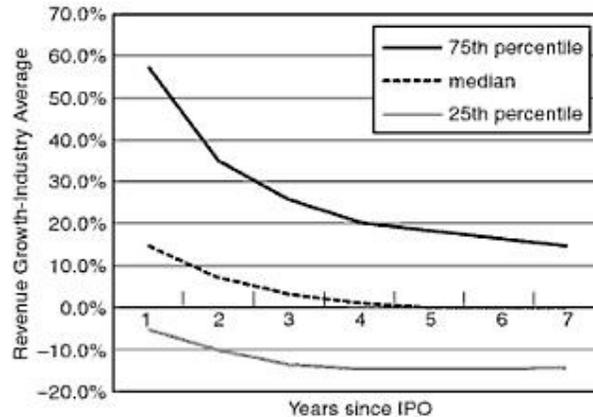
¹Sample = 458 companies; financial-services companies are excluded.

McKinsey&Company

Less than half of the S&P companies that increased their revenues faster than GDP from 1983 to 1993 managed to do so from 1993 to 2003. Fewer than 25 percent of the outperformers of 1983 to 1993 remained in that group through 2013. This again illustrates the large degree of fade that growth experiences over time. The study revealed that only 8% of companies were able to achieve growth rates above GDP throughout the study period (36/458). So could the company you are looking at right now maintain a small degree of above average growth? Sure, but it seems unwise to assume that you have the ability to continually pick out the rare exception. Pricing your company as if it will fall into the 8%, exposes you to large downside risk because the probabilities predict negative surprises.

A final study of note looked at growth rates not in comparison to companies as a whole but solely to companies in the subject firms industry. The below graph shows that the revenue growth rate of the "median" IPO company is 15% higher than the revenue growth rate of other companies in the sector one year after the IPO. Following one year of large outperformance, excess growth drops to 8% after two years, to 5% after three years, and to the sector growth rate 5 years after. In other words, company-specific growth at the typical high growth company dissipates in about 4 to 5 years. Even incredibly high performing IPOs such as those in the 75th percentile see large drops in the differential growth rate over the five year period.

*REVENUE GROWTH COMPARED TO INDUSTRY AVERAGES,
PLOTTED AS A FUNCTION OF “YEARS SINCE IPO”*



SOURCE: Wharton Research Data Systems (WRDS), S&P Compustat.

When looking at firms with incredibly high current growth rates it would be a mistake not to consider the large pull reversion to the mean has on growth. This does not mean that current high growth companies can't be a good investment. It simply means that **if the price you are paying for the stock requires the company to sustain its current rate of growth far into the future you are setting yourself up for disappointment.** It is simply unrealistic to think that the current growth rate the company is achieving on smaller revenues will be able to be replicated as revenues become much larger. Success acts as a damper on growth. Investors must adopt reasonable expectations for future growth and realize that **Wall Street and most investors consistently over estimate the sustainability of growth over time.**

Growth and Valuation—Paying for Growth

When you buy a typical “growth stock” much of the current share price reflects anticipation of future growth. It is helpful when analyzing a potential investment to determine how much of the current price is a result of growth expectations. This way you can determine your comfort level with making your success dependent on the company achieving continued growth in the future. Hopefully, we may be able to avoid overpaying for companies whose valuation is overly dependent on unrealistically optimistic growth forecasts.

We can figure out how much of the current valuation is a result of future growth expectations by separating the current valuation in to two portions—a “steady state” which assumes no growth, and a future growth portion. We can calculate the steady state value of the company by capitalizing the Net Operating Profit After Taxes (NOPAT) of the company. The steady state is how much the company would be worth if the company earned its current NOPAT in

perpetuity. In other words, how much the company would be worth with not a single dollar added from growth.

$$\text{Steady State} = \text{NOPAT} \div \text{Cost of Capital}$$

We can then calculate how much growth we are implicitly paying for through reverse engineering by subtracting the steady state value from the entire valuation. In other words, if some portion of the current valuation is a result of current earnings, the remainder of the valuation must come from growth.

$$\text{Current Enterprise Value} - \text{Steady State Value} = \text{Amount Paid For Future Growth}$$

Below is the process applied to several well known companies. It illustrates the varying degrees to which growth expectations make up the current valuation of businesses. You can see that for some businesses current NOPAT supports most of the current market price, whereas in other businesses a large portion of the valuation is dependent on achieving future growth.

* Assumes 8% Cost of Capital

Company	NOPAT	Enterprise Value	-	Steady State Value	=	Amount Paid for Future Growth	Growth as % of Current EV
Netflix (NFLX)	250M	64B		3B		61B	95%
Facebook (FB)	8.1B	358B		101B		257B	72%
Alphabet (GOOG)	15.5B	475B		194B		281B	59%
Express Scripts (ESRX)	3.6B	55B		45B		10B	18%
Target Corp. (TGT)	3.3B	48B		41B		7B	15%

Data from Q2 of 2017

A full 95% of Netflix's current enterprise value is a result of anticipated future growth. If Netflix did not achieve any growth going forward and simply maintained its current state, the company's fair value would be only 3B. This is in comparison to the 64B the market is currently valuing the entire business at.

At the other end of the spectrum in this example is Target. Almost all of the current valuation of Target results from the current performance of the business. At this valuation investors are paying very little for any future growth that might occur. As you can see companies can fall anywhere in this large continuum. By breaking a company's valuation into a steady state and a growth state, we can get a feel for whether investor's forecast of the future may be getting overly optimistic.

The whole point of the above exercise is to understand how much of what you are paying for is dependent on future growth expectations and then determining whether these expectations are justified.

As we have seen, growth has the ability to create large amounts of value. This occurs when ROIC is above the cost of capital; the larger the spread and the longer this condition persists, the more value growth can produce. But as we have seen, growth experiences a tremendous reversion to the mean which makes most investment forecasts of future value creation from growth overly optimistic.

If you make an investment in which a large degree of the current valuation is made up of future growth, simply realize that you are paying a lot now in the present for things that may or may not occur well into the future. If you pay a lot for growth you are locking yourself into a situation where the price you have paid is only appropriate if the company meets growth expectations. **Ideally, you would like to find an investment where the valuation provides a situation in which growth is a nice upside surprise, but not a requirement.** *The best situation occurs when the current valuation does not reflect a lot of growth—in other words you are not paying a lot for growth—but where you in fact anticipate a large amount of value from growth can be created in the future.*

Takeaways

- Growth can be either value creating, value neutral, or value destroying.
- Looking at a growth rate on its own is meaningless because growth requires current investment which affects cash flows.
- Growth only creates value when ROIC is above the cost of capital.
- The larger the spread between ROIC and the cost of capital the more important growth becomes.
- ROIC sets the upper limit for internally financed growth.
- Growth is far more difficult to sustain than most growth companies' valuations would imply.
- At the very best, a company may be able to achieve a decade of above average growth; a more typical case has growth reverting near the mean in a 3-5 year span.
- By breaking a company's valuation into a steady state and a growth state we can see how much of the valuation is dependent on meeting future growth expectations.