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con · sil'i · ence, *n.* [con- + salire to leap]
interlocking explanations of cause and effect between disciplines

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I've Fallen and I Can't Get Up

Mean Reversion and Turnarounds

The key finding of this research . . . is that the demonstrated rarity of achieving sustained superior economic performance implies that it is extremely difficult to achieve. An associated finding . . . is that even if superior performance is achieved and sustained for a period of time, the probability of slipping from that lofty perch is relatively high.

Robert R. Wiggins and Timothy W. Ruefli
Sustained Competitive Advantage [1]

Returns and Growth

In a recent *New York Times* article, finance professor Josef Lakonishok argues that today's stock market has many "pockets of craziness."[2] Lakonishok's case is based on the relationship between growth and price-earnings ratios, and suggests that the market is implying unrealistically rapid earnings growth rates for some companies with lofty price-earnings multiples. Research he conducted with a pair of colleagues shows that very few companies sustain high growth rates.[3]

But what really determines a price-earnings ratio? A company's value is a function of the market's expectations for its growth rate *and* its economic returns. This fundamental concept explains why looking at growth in isolation can be so misleading. Growth can be good (when a company earns returns in excess of the cost of capital), bad (when returns are below the cost of capital), or neutral (when returns equal the cost of capital).

You must first have a clear sense of whether or not a company is earning appropriate returns before you can judge the impact of growth. Companies can, and do, grow their way to bankruptcy.[4] Likewise, some low-growth, high-return businesses consistently carry premium valuations. Studying growth in isolation of economic returns is an invitation to failure.

Gaining a firm grasp of a company's prospects for economic returns requires a thorough understanding of competitive strategy.[5] The goal of strategic analysis is to address three fundamental questions:

1. Is the company generating returns on investment above the cost of capital, or is there good reason to believe it will earn attractive returns in the future?
2. If returns do exceed the cost of capital, for how long can the company sustain its excess returns?[6]
3. Once a company's returns dip below the cost of capital, what's the probability it can stage a sustained recovery to above-required returns?

In this piece we take a closer look at the latter two questions, drawing on empirical data from the technology and retail industries to bring the points to life.

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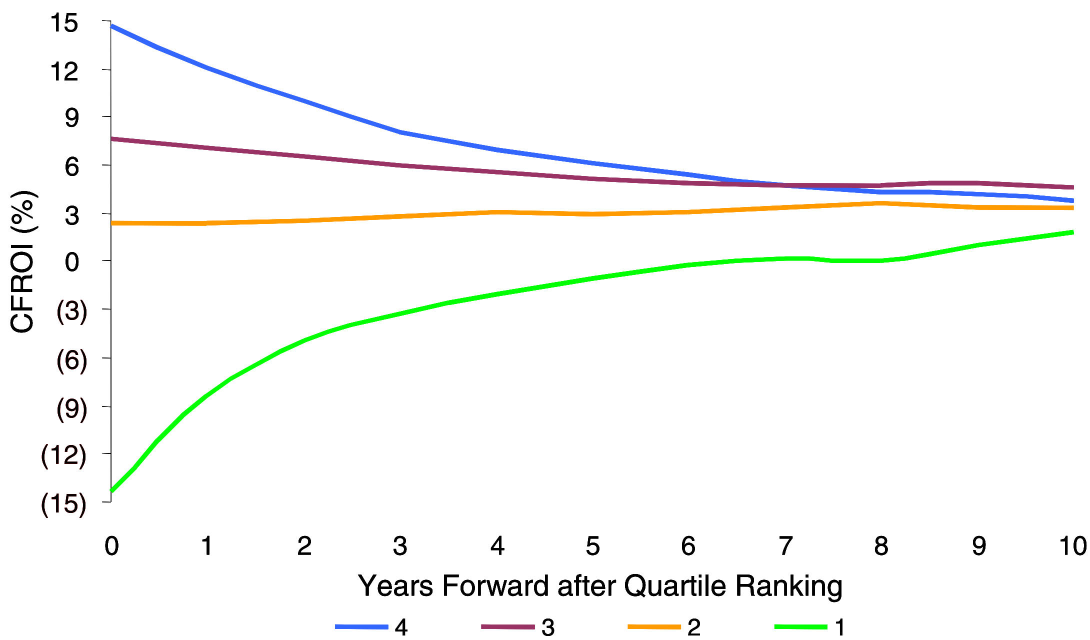
Death, Taxes, and Reversion to the Mean

One microeconomic theory that is well documented empirically is the notion that a company's return on investment reverts to the cost of capital over time.[7] The theory, and intuition, is straightforward. Companies that generate high returns attract competition and capital, which drive returns toward opportunity-cost levels. Similarly, capital flees poor return industries—through bankruptcy, disinvestment, or consolidation—lifting returns back to the cost of capital.

Exhibit 1 shows this process for a sample of over 450 technology companies from 1979 to 1996. (We stopped at 1996 to avoid issues related to the bubble.)[8] We ranked companies in quartiles based on their cash flow return on investment (CFROI®), and followed the return patterns. Because CFROI is a real, after-tax measure, the time series is unaffected by the potentially distorting shifts in interest rates and inflation.

Exhibit 1: U.S. Technology CFROI Fade



Source: CSFB HOLT.

The top group earned an average CFROI of 15% during the initial period and declined to 6% after only five years. The worst group went from 15% negative returns to zero (still well below the cost of capital) within five years. The middle two quartiles showed relative stability around cost-of-capital levels. The return gap between the highest and lowest quartiles went from 3,000 basis points at the first measurement period to just 300 basis points after ten years. While ten years in insufficient to complete the reversion-to-the-mean process, much of the progression is evident within that timeframe.

Consistent with theory, attrition plays a central role in the improvement of lowest-quartile returns. Just 60% of the lowest-quartile companies were active after five years, as many of the poor performers went bankrupt or were acquired. This attrition creates a survivorship bias, allowing returns to rise during the decade. In contrast, 85% of the firms in the highest-return quartile were active after five years. Attrition rates across all quartiles tend to average out after five years.

One consistent feature across the many mean-reversion studies is that some companies (albeit not many) can and do earn persistently high returns. In our study of nearly 700 retailers from 1950 to 2001, 14% of the companies never earned below their cost of capital.[9] Of the 1,700 technology companies in our sample from 1960 to 1996, 11% sustained an unblemished record of positive excess returns.

Sustaining high returns is a huge potential source of wealth. Given two companies with the same initial returns and future growth rates, the business that can sustain above-cost-of-capital returns longer will be significantly more valuable, and hence will trade at a much higher valuation multiple. [10]

A strategic assessment of a business earning high returns should reveal the source of the excess spread—typically either a consumer or production advantage—and provide some framework to consider the longevity of that advantage. Further, some businesses (especially those in network and knowledge businesses) enjoy *increasing* returns as they grow. [11] A company's strategic strengths, and the economics that result, are essentially overlooked by a singular focus on growth.

I've Fallen and I Can't Get up

Stock prices reflect expectations, and the key to generating superior long-term returns is to successfully anticipate expectation revisions. An important corollary is that neither a good (i.e., high-return) business nor a bad (low-return) business is inherently attractive or unattractive. Investors need to assess the stocks of all companies versus expectations. [12]

In this spirit, we took a look at a particular class of companies—those that have realized a downturn. Here, we define a downturn as two consecutive years of CFROI below the cost of capital following two years of returns above the cost of capital.

This analysis is particularly important for value investors, who often buy companies that are statistically inexpensive in the hope that economic returns improve. The classic value trap is buying a cheap company that deserves to be cheap based on poor economic returns. But buying a company that is cheap because of a temporary downturn is potentially very attractive if the market does not anticipate the turnaround.

Exhibit 2 shows what happens to companies that realize a downturn. Our sample includes almost 1,200 companies from the technology and retail sectors. The data for the two industries are strikingly similar, and not particularly encouraging: Only about 30% of the sample companies were able to engineer a sustained recovery. (We define a sustained recovery as three years of above-average returns following two years of below-cost-of-capital results.) Roughly one-quarter of the companies produced a non-sustained recovery. The balance—just under half the population—either saw no turnaround or disappeared. Companies can disappear gracefully (get acquired) or disgracefully (go bankrupt).

Exhibit 2: I've Fallen and I Can't Get Up

	Technology [1]	Retail [2]
No turnaround	45%	48%
Non-sustained turnaround	26%	23%
Sustained turnaround	29%	29%

[1] Sample of 712 companies, 1960-1996.
[2] Sample of 445 companies, 1950-2001.

Source: CSFB HOLT.

Within this analysis, we were also able to see how long companies experienced downturns. For both retailers and technology companies, roughly 27% of downturns lasted only two years, and for both sectors over 60% of downturns lasted for less than five years. In other words, the destiny of most firms that live through a downturn is determined rather quickly.

These mean reversion and turnaround data underscore how strong and consistent competitive forces are. Most stocks that are cheap are cheap for a reason, and the likelihood that a business earning poor returns resumes a long-term, above-cost-of-capital profile is slim.

Yet the evidence that high-return persistence does occur (and the likelihood that markets misprice this persistence) suggests that investors with a strong grasp of competitive dynamics and a sufficient investment horizon have an opportunity to realize superior returns.

[1] Robert R. Wiggins and Timothy W. Ruefli, "Sustained Competitive Advantage: Temporal Dynamics and the Incidence and Persistence of Superior Economic Performance," *Organizational Science, Vol. 13, 1,* January-February 2002, 100.
[2] Mark Hulbert, "The Five-Year Forecast Looks Great, or Does It?" *New York Times*, January 25, 2004.
[3] Louis K. C. Chan, Jason J. Karceski, and Josef Lakonishok, "The Level and Persistence of Growth Rates," *The Journal of Finance, Vol. 58, 2*, April 2003, 644-684. See also Michael J. Mauboussin and Kristen Bartholdson, "The Pyramid of Numbers: Firm Size, Growth Rates, and Valuation," *The Consilient Observer, Vol. 2, 17*, September 17, 2003.
[4] Michael J. Mauboussin and Kristen Bartholdson, "Whither Enron: Or—Why Enron Withered," *The Consilient Observer, Vol. 1, 1*, January 15, 2002.
[5] Michael J. Mauboussin and Kristen Bartholdson, "Measuring the Moat; Assessing the Magnitude and Sustainability of Value Creation," *Credit Suisse First Boston Equity Research*, December 16, 2002.
[6] Michael J. Mauboussin, Alexander Schay, and Patrick J. McCarthy, "Competitive Advantage Period (CAP): At the Intersection of Finance and Competitive Strategy," *Credit Suisse First Boston Equity Research*, October 4, 2001.
[7] Ibid., 7-9.
[8] Todd Erickson, Carin Cooney, and Craig Sterling, "US Technology Sector: Mean Reversion Analysis," *CSFB HOLT Research*, February 2, 2004. This presentation is available upon request.
[9] CSFB HOLT analysts Christopher Catapano, Katie Dunne, and Craig Sterling performed the retail industry analysis.
[10] To illustrate, we created a model with two companies that had 8% operating income growth rates, initial returns on incremental invested capital of 100%, and identical costs of capital. We faded the first company's returns to zero over 10 years, and the second company's returns to zero over 20 years. The second company—again, with identical growth—was 33% more valuable than the first, representing over 6 price-earnings points.
[11] W. Brian Arthur, "Increasing Returns and the New World of Business," *Harvard Business Review,* July-August 1996.
[12] Michael J. Mauboussin and Kristen Bartholdson, "Be the House: Process and Outcome in Investing," *The Consilient Observer, Vol. 2, 18*, October 7, 2003.

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