Definition
Fade is the tendency to earn the mean real required rate of return over time. Persistence is the tendency to earn the same return as in the previous period.

The Corporate Lifecycle
All firms evolve along a corporate lifecycle. From startup to mature, firms continually adapt, develop, transition. Firms that survive the full spectrum of the lifecycle evolve from startup to high growth, fading winner, mature (including cash cows), and finally turnaround. Exit can occur at any point in the lifecycle, and for numerous reasons, including bankruptcy, acquisition, or delisting. In the HOLT database, less than 50% of firms exist beyond 10 years.

Early lifecycle firms invest substantial resources in their business, often without immediate payoff. Returns are typically below the cost of capital. Successful mid-lifecycle firms earn excess profits but attract competition. Competition eventually pushes returns back toward the cost of capital, the industry matures and growth rates decline. Not infrequently in late lifecycle, returns fall below the cost of capital and consolidation, disinvestment and bankruptcy serve to eliminate excess capacity, tending to push returns once again back toward the average.

Fade evidence contains more than 75,000 unique firms with 880,000+ time observations. The study of Fade is aided by the use of CFROI, which removes distortions in operating returns caused by accounting treatments, inflation, and other influences of time. HOLT eliminates as many of these distortions as possible so that its return metric (CFROI) is comparable across countries and time, and is useful for benchmarking, forecasting, and continued empirical research. These adjustments increase the reliability of HOLTs forecast CFROI and Warranted Price estimates.

Fade as an Empirical Fact
Empirically, firms tend toward the average real required rate of return of 6.0% over time. Evidence above from 1950 through 2010, shows that high and low return businesses tend toward the average required yield. The chart displays the median CFROI of firm groups based on their starting CFROI level. From lowest to highest CFROI, a clear and general tendency toward 6% is observed over time. Because fewer and fewer firms survive each passing year, fade research includes a survivorship bias. This bias is offset by HOLTs unique discount rate approach, which measures an equilibrium-state required yield. A significant benefit of this approach is that fade estimates are produced based on average survivorship rates, while the discount rate includes default risk. This approach is highly reasonable, since DCF forecasts should only be made for going-concerns, while risk should include some estimate of default.

HOLT & the Corporate Lifecycle
Research shows that stages of the corporate lifecycle produce predictable and repetitive general patterns of behavior. The study of Fade is event-based (historical fact). The application of fade within the HOLT Framework is predicated on general principles of economics and Finance. HOLTs research of the corporate lifecycle has been on-going for over 40 years. Continuing research improves forecast CFROI, resulting in stronger predictions. HOLTs growing body of empirical

HOLT Treatment
HOLT fades all firms in a three-step process. First, firms fade based on their unique lifecycle characteristics over the initial 5 years of the forecast, termed the explicit fade period. In stage 2, the residual period, all firms fade such that 10% of economic spread (CFROI-6) is eliminated per year. In the Terminal period, a firm is valued as a cost of capital perpetuity, or equivalently, assets are wound down and harvested from the balance sheet.

The primary determinants of fade are:
- CFROI Level
- CFROI Volatility
- Reinvestment Rate

CFROI Level is the strongest predictor of the next period’s operating return. Higher CFROI volatile firms fade toward 6% faster than lower volatility firms. The average firm experiences about 25% volatility in its 5 year average CFROI per year.

Firms with higher reinvestment fade faster than firms with lower reinvestment. High reinvestment rates are generally associated with earlier lifecycle businesses, high innovation, higher risk-taking, and aggressive competition.

Example
Volatlie Corp. (VOL) is a high growth, high return mid-lifecycle business. Consensus based CFROI in LFY+1 is estimated to climb from 15 to 18%. CFROI deviation is high at 3.2. VOL grew assets at more than 25% last year. HOLT forecasts CFROI to decline from
18 to 14% by LFY+5. Above-average fade is driven primarily by the volatility exhibited in returns and high reinvestment, which is correlated with subsequent reduction in operating returns.

In contrast, Stable Corp (STAB) is a stable, mature firm, earning positive CFROI of nearly 11.5% year after year. Combined with modest growth of 2.5%, STAB is predicted to continue to earn nearly the same CFROI of 11.5% over the next 5 years.

Starting in year 6, both firms are forecast to lose 10% of their economic spread (CFROI-6%)/year.

Advanced Concepts
Windorsized (removal of outliers) CFROI has a normal-shaped distribution, as follows:

![Normal (Gaussian) Distribution](image)

Sector/Industry Effects
HOLT recognizes distinct business models for Industrials, Regulated Utilities, and Financials. Regulated Utilities "piggy-back" off of the Industrials fade research, using an intercept adjustment to isolate the distinctly lower CFROI level of most regulated utility firms. A separate fade model is used for Financials. The primary drivers of fade for Financials are similar to Industrials: CFROE level, CFROE volatility, and reinvestment rate. The sample principles of a corporate lifecycle, competition, and mean-reversion apply.

Regional Effects
Regional differences in fade exist. For Industrials, Japan has a significantly lower average CFROI than most other economies, captured by an intercept adjustment. For Financials, regional differences are recognized for Japan, Continental Europe, and Emerging Markets, with US Financials displaying significantly higher average CFROE.

Benefits
Terminal growth rate issue
A material benefit of Fade is that it explicitly avoids estimating a terminal multiple. Terminal multiples are subject to manipulation and can contribute to outsized valuation effects. Instead, economic profits and losses are forecast to eventually earn the cost of capital over time, as evidenced by empirical research and acknowledged by economists.

Perpetual returns
Numerous analyst models embed a perpetual growth of 2.5% for Japan, Continental Europe, and Emerging Markets, with US Financials displaying significantly higher average CFROI than most other economies.

Normalizing Process
Most analyst models attempt to "normalize" the excess profits or losses embedded in near-term forecast cash flows by the end of the explicit forecast. HOLTs forecast CFROI is based on the most likely outcome, given a firm's CFROI Level, CFROI Volatility and Reinvestment Rate.

Probabilistic
Because HOLTs forecasted cash flows in the explicit period are based on empirically derived fade rates, and fade thereafter in order to revert to the long-term mean CFROI, its cash flow forecast and warranted price estimate represent the mean expected outcome for a firm given its unique combination of fade drivers. In other words, if a thousand iterations were run using empirical fade data and Monte Carlo simulation, the mean expected NPV cash flow forecast would be equal to HOLTs estimated Warranted Price.

Relevant Academic/Practitioner Studies
- Brandes Institute, "Global Small Cap Stocks: A Life Cycle Perspective." August 2008
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The HOLT methodology does not assign ratings or a target price to a security. It is an analytical tool that involves use of a set of proprietary quantitative algorithms and warranted value calculations, collectively called the HOLT valuation model, that are consistently applied to all the companies included in its database. Third-party data (including consensus earnings estimates) are systematically translated into a number of default variables and incorporated into the algorithms available in the HOLT valuation model. The source financial statement, pricing, and earnings data provided by outside data vendors are subject to quality control and may also be adjusted to more closely measure the underlying economics of firm performance. These adjustments provide consistency when analyzing a single company across time, or analyzing multiple companies across industries or national borders. The default scenario that is produced by the HOLT valuation model establishes a warranted price for a security, and as the third-party data are updated, the warranted price may also change. The default variables may also be adjusted to produce alternative warranted prices, any of which could occur. Additional information about the HOLT methodology is available on request.

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