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Summary of "The Other Side of Value: The Gross Profitability Premium"[1]

Profitability, as measured by the ratio of a firm's gross profits (revenues minus cost of goods sold) to its assets, has roughly the same power as book-to-market in predicting the cross-sectional difference of average stock returns. Portfolios sorted on gross profits-to-assets exhibit large variation in average returns. From 1963 to 2010, a "profitability" strategy that longs the top quintile portfolio and shorts the bottom quintile portfolio achieves statistically significant, monthly value-weighted average return equal to 0.31%. A similarly constructed "book-to-market" (or "value") strategy generates average monthly return equal to 0.41%.

What makes the profitability strategy attractive is its negative correlation (-0.57) with the value strategy. Therefore, an investor running a 50/50 mixed strategy would capture 0.71% per month but would face no additional risk. The annualized Sharpe ratio is 0.85, two and a half times the 0.34 observed on the market over the same period. The figure shows the trailing five-year Sharpe ratios of profitability and value strategies, and this joint strategy. Understandably, the profitability strategy

exhibits significant negative loading on the value factor, and delivers statistically significant, three-factor alpha equal to 0.52% per month.[2] Hence, it provides an excellent hedge for traditional value strategies, and thus, dramatically improves a value investor's investment opportunity set.
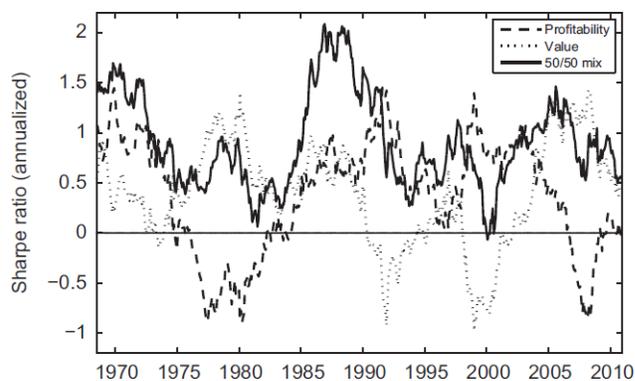
The traditional univariate sort on book-to-market yields a value portfolio polluted with unprofitable stocks and a growth portfolio polluted with profitable stocks. Gross profitability is negatively correlated with book-to-market with a magnitude similar to the negative correlation observed between book-to-market and size (market capitalization). Therefore, the profitability strategy is a "growth strategy", and the return spread between profitable and unprofitable firms is even significant among the largest, most liquid stocks (top size quintile).

Within the 500 largest nonfinancial stocks, the author ranks stocks on both their gross profits-to-assets and book-to-market, from lowest to highest. An equal-weighted strategy that longs the 150 stocks with the highest combined profitability and value ranks and shorts the 150 stocks with the lowest combined ranks generates average return of 0.62% per month and annual Shape ratio of 0.74.

The strategy requires little rebalancing, because both gross profits-to-assets and book-to-market are only updated annually and they are highly persistent. Only one-third of each side of the strategy turns over each year. Most of these benefits do not even require shorting individual unprofitable growth stocks, but can be captured by shorting the whole market or selling market futures. The profitable value stocks, when hedged using the market, have a Sharpe ratio of 0.75 and earn excess returns of nearly 1% per month when run at market volatility.

The same philosophy underpins strategies based on both valuation ratios and profitability. Both are designed to acquire productive capital cheaply, though the two criteria select different stocks. Book-to-market ratio guides us to the underpriced assets, while given the assets in place, gross profits-to-assets ratio measures assets' productivity. Furthermore, the author shows that gross profitability is a powerful predictor of firms' future economic performance, such as gross profitability itself, earnings, free cash flow, and payouts (dividends plus repurchases), at both three- and ten-year horizons.

The author proceeds to examine the mechanism behind the return predictive power of gross profits-to-assets, and its relation with book-to-market. DuPont model decomposes gross profits-to-assets into asset turnover (sales-to-assets, the efficiency measure) and gross margins (gross profits-to-sales, the market power measure). Portfolios sorted on asset turnover, exhibits large variation in average returns, but portfolios sorted on gross margins do not. Therefore, the return predictive power of gross profits-to-assets ratio mainly comes from asset turnover, which measures how efficient a firm's assets generate sales. Firms with high gross margins tend to have lower book-to-market than firms with low gross margins, and thus, sorting on gross margins helps us to select growth firms and generates the negative correlation between the returns to profitability and value strategies.

Finally, the author finds that profitability underlies most earnings related anomalies, as well as a large number of seemingly unrelated anomalies. Market excess return, and industry-adjusted value, momentum, and gross profitability factors, perform remarkably well pricing a wide range of anomalies including (but not limited to) strategies based on return on equity, default risk, net stock issuance, and organizational capital. In other words, the average returns to the long/short strategies based on these anomalies are basically different linear combinations of average market excess return, and the average returns of industry-adjusted value, momentum, and gross profitability strategy.[3]

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[1] Novy-Marx, Robert, 2013, *Journal of Financial Economics* 108(1), 1-28.

[2] The strategy is also orthogonal to momentum. For more details, please refer to: Fama, Eugene F., and Kenneth R. French, 1993, Common risk factors in the returns on stocks and bonds, *Journal of Financial Economics* 33, 3-56; Carhart, Mark M., 1997, On persistence in mutual fund performance, *Journal of Finance* 52, 57-82.

[3] For more details, please refer to section 4 in the paper.