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High Relative Trade Credit Underperforms

By Chang Lin, Advanced Analytics Services, linch@dnb.com

ABSTRACT:

Dun & Bradstreet found that stocks with high relative trade credit (to sales) underperform those with low relative trade credit. The underperformance is statistically significant after adjusting for the Fama-French 3-factor model + MOM (aka FF3+MOM).

ATTRIBUTE HICDTAVG.ADJ

Definition: *hicdtavg.adj = hicdtavg/sales*[1]

Hicdtavg, or "high credit average," is a monetary figure specifying on average the amount extended to the business on credit for all trade references with a payment manner. This is an arithmetic mean determined by taking the sum of all non-zero amounts with a payment manner and then dividing it by the total number of accounts that contributed to this amount. Zero values mean $0 in high credit reported. Absent is no CSAD record. *Sales* is the trailing annual sales.

SUMMARY

A high credit average provides a measure on how creditworthy the company is. One can assume (correctly) that larger size companies have higher credit. The more trade credit a company has, the more goods a company can procure to make products, which leads to more sales. However, its credit cannot be larger than its subsequent sales, otherwise the company would not be profitable. Thus, we conclude that a company can only increase its trade credit by so much relative to its sales.

This study explores how companies with high *hicdtavg.adj* perform versus those with low *hicdtavg.adj*, and versus stock market index. The universe is the S&P Total Market Index (S&P TMI), from 2005 – 2016. At the end of each month T we rank stocks in the universe based on ranking sorted by *hicdtavg.adj*, and compare the top x% with bottom x%, on the total return for month T+1. We also compare the top x% with the TMI index return for month T+1.

TABLE 1 below shows that companies in the top 5% of *hicdtavg.adj* significantly underperform those in the bottom 5%, by 76bps monthly, with 94% confidence. When we compare the top 10% vs the bottom 10%, the underperformance is 46bps per month, with 84% confidence. This demonstrates that, given the same sales, companies with lower trade credit outperform, likely due to lower financing costs for trade credit, or higher profit margin, among other reasons.

Index	var	pcThr	Spread	StdErr	tStat	pVal	Conf	Mth	numL	numS
TMI	hicdtavg.adj	5%	-75.9	40.5	-1.9	0.06	94	134	184	184
TMI	hicdtavg.adj	10%	-45.8	33.1	-1.4	0.164	83.6	134	367	367
TMI	hicdtavg.adj	20%	-24.4	25.2	-1	0.319	68.1	134	734	734

Table 1: TMI is the S&P Total Market Index; pcThr is the percentage threshold used in constructing long/short portfolio; Spread is the return difference between top and bottom group; StdErr, tStat, pVal, Conf are standard error, t-statistics, p-value, and confidence interval of the Spread; Mth is the total number of months tested; numL, numS are the average number of stocks in the Long (top group) and Short (bottom group) portfolio.

[1] We've applied a statistically rigorous process to identify attributes that have predictive power in separating cross-sectional stock returns. The D&B dataset used here is Credit Score Archive Database (CSAD, 2004-2016), which contains about 140 attributes – some of them are further transformed to make suitable for testing. In each document, we present one attribute for illustration purpose. The attribute shows from a unique and proprietary angle how D&B data and analytics helps to enhance stock returns. The complete list of attributes identified, with test statistics, is available upon request.

Next, we examined whether the spread provides any alpha beyond the FF3+MOM, which is a model designed by Eugene Fama and Kenneth French and extended by Mark Carhart to describe stock returns. The four factors of the model are:

– **MxF,** the excess return on the market, is the value-weighted return on all NYSE, AMEX, and NASDAQ stocks (from CRSP) minus the one-month Treasury bill rate (from Ibbotson Associates).
– **SMB** (Small Minus Big) is the average return on three small portfolios minus the average return on three big portfolios.
– **HML** (High Minus Low) is the average return on two value portfolios minus the average return on two growth portfolios.
– **Mom** is the average return on the two high prior return portfolios minus the average return on the two low prior return portfolios.

TABLE 2 shows that after removing exposure from the FF3+MOM, the spread shows -96 bps alpha monthly (top 5% vs bottom 5%), or -55 bps (top 10% vs bottom 10%).

pcThr	xRet	vMxF	vSMB	vHML	vMom
5%	-96 (-2.9)	0.18 (2)	0.97 (6.2)	-0.89 (-5.3)	-0.38 (-3.3)
10%	-55.1 (-1.9)	0.06 (0.8)	0.7 (5.2)	-0.78 (-5.3)	-0.3 (-2.9)
20%	-25.2 (-1.2)	-0.04 (-0.7)	0.48 (4.6)	-0.61 (-5.5)	-0.22 (-2.9)

Table 2: Performance difference between top and bottom group. pcThr: is the percentage threshold use in constructing long/short portfolio; xRet is the alpha (excess return) after adjusting for the FF3+MOM; vMxF, vSMB, vHML, vMom are the portfolio exposure to the FF3+MOM. The t-stat of the coefficients are in parenthesis.

TABLE 3 shows that compared to index, after removing exposure to the FF3+MOM, companies in the top *hicdtavg.adj* group significantly underperforms by 87 bps per month (top 5%), and by 41bps (top 10%).

pcThr	xRet	vMxF	vSMB	vHML	vMom
5%	-86.5 (-2.4)	1.13 (12)	1.3 (7.8)	-0.55 (-3)	-0.34 (-2.7)
10%	-41.1 (-1.4)	1.04 (13.6)	1.07 (7.9)	-0.46 (-3.1)	-0.31 (-3)
20%	-8 (-0.4)	0.98 (16.9)	0.93 (9)	-0.33 (-3)	-0.26 (-3.3)

Table 3: Performance difference between top and index S&P TMI. xRet is the alpha (excess return) after adjusting for the FF3+MOM; vMxF, vSMB, vHML, vMom are the portfolio exposure to the FF3+MOM. The t-stat of the coefficients are in parenthesis

The following charts show cumulative performance for the inversed excess alpha in Table 2 (left chart) and Table 3 (right chart).