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The Hidden Cost of Growing Trade Supplier Networks Too Fast

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ABSTRACT:

Dun & Bradstreet found that stocks with the fastest growing number of trade suppliers year over year underperform those with slowest growing trade suppliers. The underperformance is statistically significant after adjusting for the Fama-French 3-factor model + MOM (aka FF3+MOM).

ATTRIBUTE PAYREF.PC12

Definition: *payref.pc12* = percentage change in *payref* compared to 12-month ago[1]

Payref is defined as the number of suppliers that have or had a trading relationship with the subject.

SUMMARY

Large companies tend to have large supplier networks, partly due to economy of scale, partly due to diversification to avoid disruption in supply chain. When companies build relationships with new trade suppliers, there is a chain of necessary logistics to go through before the channel is fully operational. When companies grow their supplier networks too fast, i.e. higher monthly *payref.pc12*, one would assume there is temporary inefficiency that will be reflected in the short-term stock performance.

Here, we study how companies with high *payref.pc12* perform versus those with low *payref.pc12*, and versus the 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 *payref.pc12*, 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 shows stocks that grow suppliers the fastest, underperforms stocks that grow the slowest, by 21 bps over the next month (top 5% vs bottom 5%), or by 40 bps over the next month (top 10% vs bottom 10%)

Index	var	pcThr	Spread	StdErr	tStat	pVal	Conf	Mth	numL	numS
TMI	payref.pc12	0.05	-21.3	15.9	-1.3	0.196	80.4	122	180	190
TMI	payref.pc12	0.1	-40.3	11.8	-3.4	0.001	99.9	122	359	366
TMI	payref.pc12	0.2	-41.3	11.1	-3.7	0	100	122	711	720

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.

TABLE 2 shows that after adjusting for the FF3+MOM, there is still significant (negative) alpha between top (long) and bottom (short) groups.

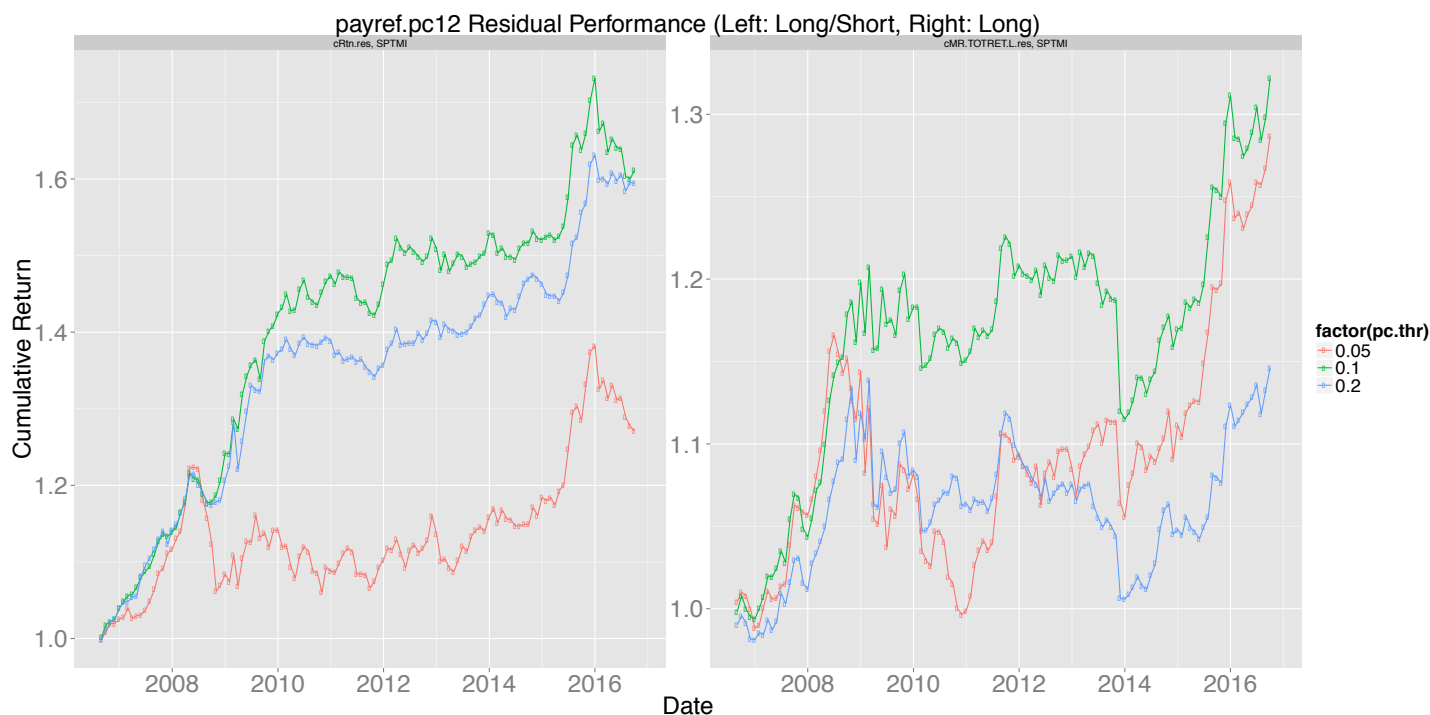| pcThr	xRet	vMxF	vSMB	vHML	vMom
0.05	-21.2 (-1.3)	-0.01 (-0.2)	0.03 (0.4)	-0.05 (-0.6)	-0.01 (-0.1)
0.1	-40 (-3.3)	0 (0.1)	-0.04 (-0.6)	0.03 (0.5)	0.04 (1)
0.2	-39 (-3.5)	-0.01 (-0.4)	-0.1 (-1.9)	0.02 (0.4)	0.01 (0.3)

Table 2: Performance difference between top and bottom group. pcThr: is the percentage threshold used 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 the TMI index, after removing exposure to the FF3+MOM, stocks in the top *payref.pc12* group still underperform:

pcThr	xRet	vMxF	vSMB	vHML	vMom
0.05	-22 (-1.5)	0.94 (24.2)	0.66 (9.1)	0.14 (1.8)	-0.12 (-2.3)
0.1	-23.9 (-1.8)	0.96 (28.6)	0.68 (10.9)	0.18 (2.7)	-0.07 (-1.4)
0.2	-12.1 (-1)	0.97 (30)	0.68 (11.3)	0.15 (2.4)	-0.1 (-2.2)

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 performances for the *inversed* excess alpha in Table 2 (left chart) and Table 3 (right charts)

payref.pc12 Residual Performance (Left: Long/Short, Right: Long)

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