

Customer-base concentration:

Implications for firm performance and capital markets

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Motivation

Conventional view of customer-base concentration:

- Supplier's weakness in bargaining with major customers puts a downward pressure on its financial performance
 - *From Wal-Mart to Galbraith's "American Capitalism"*

Alternative view of customer-base concentration:

- Cost savings and improved asset utilization due to supplier-customer collaboration and coordination
 - *Operations management and marketing research*

Does either of these views prevail in practice?

Research question & method

- Examine *whether* and *how* customer-base concentration affects supplier firm performance and stock market valuation.
- Comprehensive sample of 47,396 supply-chain relationships and firm-year measure of customer-base concentration (*CC*).
- Traditional capital markets research tools to address a not so traditional question.

Summary of main results

- Positive contemporaneous association between CC and accounting rates of return.
 - *Suggests that alternative view prevails*
- ΔCC strong leading indicator of subsequent changes in firm performance.
 - *Suggests a causal link between customer-base structure and firm performance*
- ΔCC explains contemporaneous stock returns and predicts one-year-ahead stock returns
 - *Suggests that fundamental implications of customer-base dynamics are incorporated into stock prices with a time-lag*

Sample

- FASB (SFAS 14; 30; 131) & SEC disclosure requirements for names and revenues of major customers
- 47, 396 business-to-business links from 1977-2006
- 69 two-digit SIC industries
- Primary explanatory variable:

$$CC_{it} = \sum_{j=1}^J \left(\frac{Sales_{ijt}}{Sales_{it}} \right)^2$$

Fundamental implications

Levels analysis

- What is the empirical link between CC and firm performance?

$$PERFORMANCE_{it} = \alpha_t + \beta_{1t}CC_{it} + \sum_{k=2}^K \beta_{kt}X_{it}^k + \varepsilon_{it}$$

- Controls: Market cap., firm age, sales growth, fin. leverage, # reported business segments, product market competition, industry dummies

Levels analysis (Table 2)

ROA=Asset Turnover x Profit Margin
DuPont analysis

Profit Margin= Non-Operating + Operating

Operating Margin = Gross Margin – (SG&A/Sales)

More concentrated suppliers tend to be more profitable because of efficiencies:

- (i) Enhanced asset utilization
- (ii) Cost savings

Alternative view prevails!

	1	2	3	4	5	6	7
	<i>ROA</i>	<i>Asset Turnover</i>	<i>Profit Margin</i>	<i>Non-operating Margin</i>	<i>Operating Margin</i>	<i>Gross Margin</i>	<i>SG&A/Sales</i>
<i>Intercept</i>	✓	✓	✓	✓	✓	✓	✓
<i>Controls</i>	✓	✓	✓	✓	✓	✓	✓
<i>Industry F.E.</i>	✓	✓	✓	✓	✓	✓	✓
<i>CC</i>	0.020 <i>9.47*</i>	0.061 <i>2.72*</i>	0.040 <i>12.16*</i>	0.005 <i>0.65</i>	0.036 <i>4.74*</i>	-0.068 <i>-6.08*</i>	-0.101 <i>-9.13*</i>
<i>Adj. R²</i>	0.17	0.39	0.36	0.37	0.47	0.35	0.27
<i>N</i>	23,168	23,168	23,168	23,168	23,168	23,168	23,168

Intertemporal analysis

- What would a cause-effect link between customer-base structure and supplier firm performance imply
 - *Examine lead-lag association of changes in performance and ΔCC*

$$\Delta PERFORMANCE_{it+1} = \alpha_t + \beta_{1t} \Delta CC_{it} + \sum_{k=2}^K \beta_{kt} X_{it}^k + \varepsilon_{it+1}$$

- Controls: level of profitability, changes in profitability components, industry dummies

Intertemporal analysis

(Table 4)

	1	2	3	4
	ΔATO_{t+1}	ΔSGA_{t+1}	ΔPM_{t+1}	ΔROA_{t+1}
<i>Intercept</i>	✓	✓	✓	✓
<i>Controls</i>	✓	✓	✓	✓
<i>Industry F.E.</i>	✓	✓	✓	✓
ΔCC	0.146	-0.079	0.095	0.059
	2.93*	-3.62*	2.75*	3.75*
<i>Adj. R²</i>	0.08	0.07	0.07	0.04
<i>N</i>	19,419	19,316	19,413	19,335

- Main points
 - ΔCC significant predictor of subsequent changes in profitability components and overall performance
 - Increased concentration predicts efficiency gains in the form of enhanced asset utilization and reduced operating expenses

Capital market implications

Market reaction to ΔCC

- Do investors use the forward-looking information embedded in customer-base dynamics when setting stock prices?
 - *Examine contemporaneous association between inter-announcement stock returns and ΔCC*

$$Return_{it} = \alpha_t + \beta_{1t}\Delta CC_{it} + \sum_{k=2}^K \beta_{kt}X_{it}^k + \varepsilon_{it}$$

- *Controls: proxies for revenue and expense surprises, scaled level of earnings, changes in profitability components, industry dummies*

Market reaction to ΔCC

(Table 6)

	Model 1	Model 2	Model 3	Model 4
<i>Intercept</i>	0.119 <i>1.33</i>	-0.037 <i>-0.47</i>	-0.174 <i>-2.92*</i>	-0.175 <i>-3.01*</i>
ΔCC	0.181 3.25*	0.182 3.91*	0.144 3.20*	0.166 3.80*
<i>Rev. Surprise</i>		1.438 <i>10.94*</i>	0.932 <i>12.37*</i>	0.821 <i>10.13*</i>
<i>Exp. Surprise</i>		-1.26 <i>-9.34*</i>	-0.82 <i>-9.61*</i>	-0.69 <i>-8.31*</i>
<i>E/P</i>			2.568 <i>11.16*</i>	2.577 <i>11.34*</i>
ΔPM				0.387 <i>2.35**</i>
ΔATO				-0.081 <i>-1.87***</i>
<i>Industry F.E.</i>	✓	✓	✓	✓
<i>Adj. R²</i>	0.05	0.16	0.20	0.21
<i>N</i>	21,223	20,960	20,810	20,538

ΔCC and future stock returns

- Do investors fully anticipate the fundamental implications of customer-base dynamics?
 - *Test for stock return predictability*

$$Return_{it+1} = \alpha_t + \beta_{1t}\Delta CC_{it} + \sum_{k=2}^K \beta_{kt}X_{it}^k + \varepsilon_{it+1}$$

- Controls: market cap., book-to-market, accruals scaled by total assets, changes in asset turnover, product market competition
 - *Results insensitive to additional controls (e.g., stock returns, customer-base stock returns, industry returns, CAPM beta, volatility, distress risk)*

ΔCC and future stock returns (Table 7)

Although stock prices react in year t to ΔCC , prices continue to drift in the direction of the initial change over the subsequent year.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Intercept</i>	0.1208	0.1869	0.1148	0.1809	0.1283	0.1357
	3.42*	3.85*	1.93***	2.89*	2.20**	2.42**
ΔCC	0.1006	0.0975	0.0964	0.0970	0.0971	0.0966
	4.10*	4.00*	3.82*	3.90*	3.90*	3.95*
<i>MV</i>		-0.1264	-0.0912	-0.1065	-0.1017	-0.1009
		-3.11*	-2.39**	-2.78*	-2.67*	-2.70*
<i>B/M</i>			0.1060	0.0919	0.0939	0.0955
			2.23**	1.90***	1.96***	2.03**
<i>ACC</i>				-0.1004	-0.0916	-0.0916
				-4.13*	-3.66*	-3.72*
ΔATO					0.0891	0.0891
					4.40*	4.40*
<i>HHI</i>						-0.0164
						-0.69
<i>Adj. R²</i>	0.0025	0.0130	0.0316	0.0358	0.0408	0.0411
<i>N</i>	20,373	20,373	20,373	19,196	18,969	18,969

The ΔCC effect

Mispricing caused by investors underreaction?

- ☑ *Disproportionate % of the effect clustered around EA dates*
- ☑ *Predictable variation with firm characteristics (e.g., analyst following, institutional ownership)*

Conclusions

- Large-sample, comprehensive evidence of link between customer-base structure and supplier firm performance.
 - *Validates importance of major customer disclosures for FSA*
 - *Highlights need to look beyond the boundaries of the firm, along the supply chain*
- Bottom line: Customer-base concentration matters!
 - *Efficiencies from coordination may dominate weaknesses in dealing with major customers*
 - *Need to pay closer attention at costs below the gross margin line!*

THANK YOU!