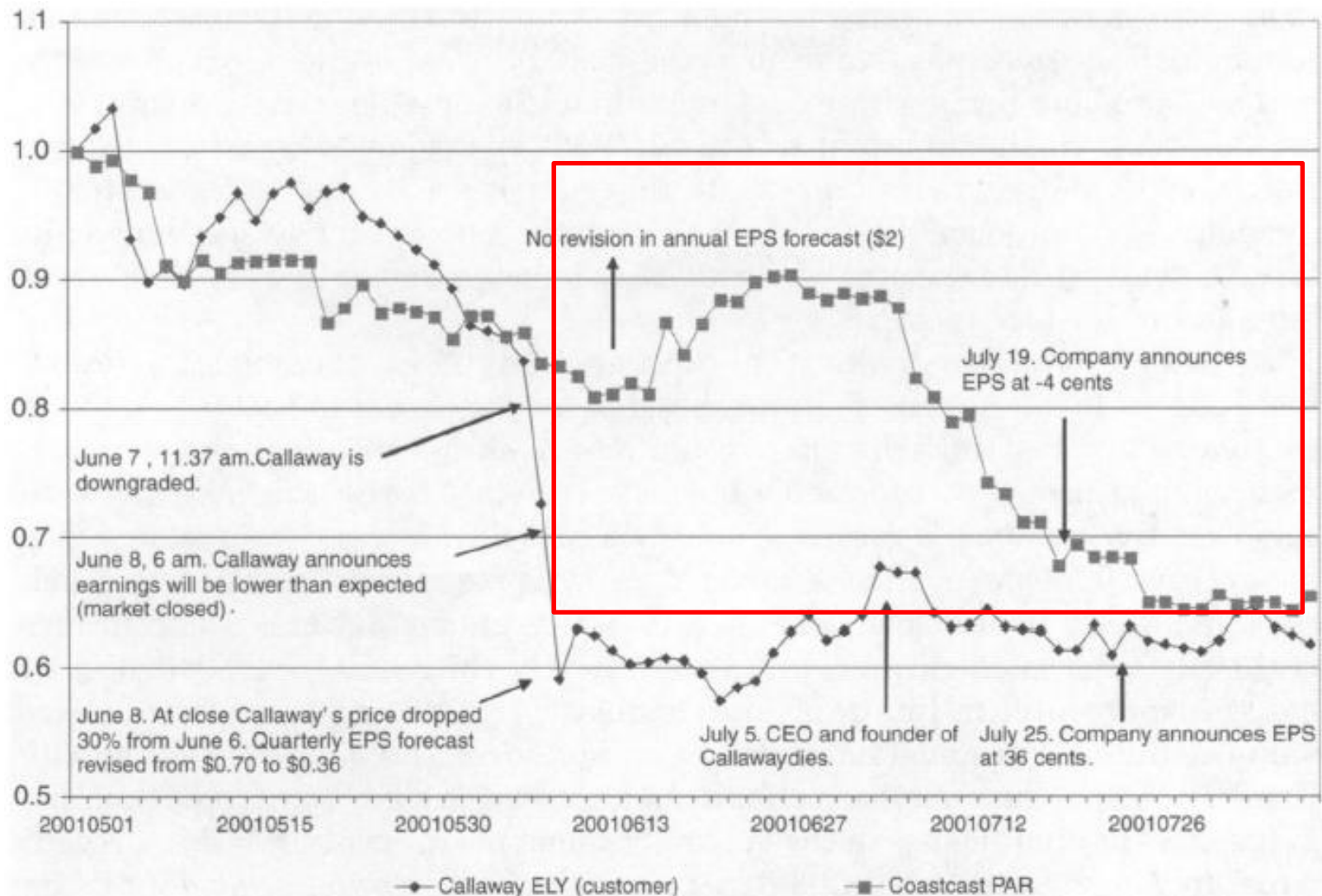


Economic Links and Predictable Return

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The Links and Predictable Return



Contents

- Introduction
 - Background & Motivation
 - Research Problem
 - Contribution
- Model Design: Customer Data, Strategy
- Empirical Results
 - Main Results
 - Other Results
- Conclusion

Backgrounds & Motivation

- Individuals have a difficult time processing many tasks at once. Given the vast amount of information available and their limited capacity, investors may choose to select only a few sources of salient information, causing the investor inattention.
- Many papers study investor inattention from various angles, such as lagged industry returns and lagged dollar exchange rate change, finding predictable return.
- Firms do not exist as independent entities. Can clear economic links - customer-supplier links test investor inattention and find evidence of return predictability?

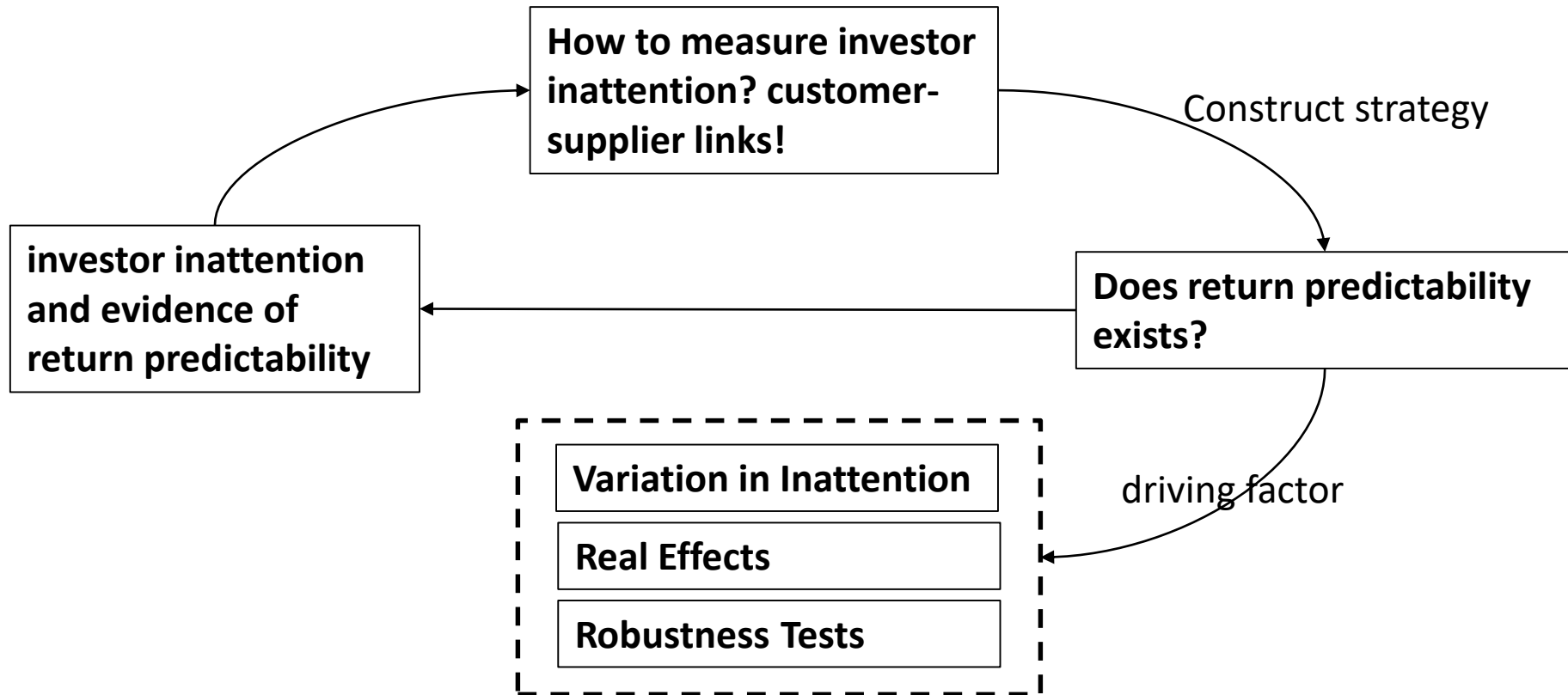
Research Problem

- When focus on customer-supplier links, how shocks to one firm translate into shocks to the linked firm in both real quantities and stock prices?
 - This translation exists with a certain lag, leading to return predictability across assets.
- And why, is it consistent with investors displaying limited attention?
 - We provide evidence consistent with investors inattention.

Contribution

- We put forward a new approach to discuss the relationship between individual customer returns and future supplier's returns. Specifically, we do not restrict the analysis to specific industries but simply follow the evolution of customer-supplier firm-specific relations.

Outline



Model Design: Customer Data

- Regulation SFAS No. 131: Firms are required to disclose certain financial information for the identity of any customer representing more than 10% of the total reported sales.
- Data: Our sample consists of all firms listed in the CRSP/Compustat database with non missing values of BE and ME at the fiscal year end and focus on common stocks only, covering the period between 1980 and 2004. We extract the identity of the firm's principal customers from the Compustat segment files.
- To ensure being available to the investing public before prices evolve, we impose a 6-month gap between fiscal year-end dates and stock returns.

Model Design: Customer Data

	Min	Max	Mean	<i>SD</i>	Median
Panel A: Time Series (24 Annual Observations, 1981–2004)					
Number of firms in the sample per year	390	1470	918	291	889
Number of customers in the sample per year	208	650	433	116	411
Full sample % coverage of stock universe (EW)	13.2	31.3	20.3	5.2	19.8
Full sample % coverage of stock universe (VW)	29.1	70.7	50.7	11.9	48.4
Firm % coverage of stock universe (EW)	8.5	22.8	12.8	4.1	13.2
Firm % coverage of stock universe (VW)	3.3	20.0	9.2	4.5	9.2
Customer % coverage of stock universe (EW)	4.9	11.5	7.6	1.8	7.4
Customer % coverage of stock universe (VW)	26.4	66.5	46.5	11.3	43.5
% of firm–customer in the same industry	20.6	27.3	23.0	1.9	22.7
Link duration (years)	1.0	23.0	2.7	2.3	2.0

- The stock return predictability we analyze is mostly related to assets in different industries as opposed to securities within the same industry.

Model Design: Strategy

- Hypothesis Limited Attention: Stock prices underreact to negative (positive) news involving related firms, and in turn generate negative (positive) subsequent price drift.
- Customer momentum portfolio: At month t , we rank stocks in ascending order based on the sales – weighted customer returns in month $t-1$ and assign them to one of five quintile portfolios. The long-short portfolio is rebalanced every month to maintain value (equal) weights.
- Customer return: monthly return of customer momentum portfolio, is a proxy for news about customers.

Model Design:

- Regulation: This investment rule should earn zero abnormal returns in an efficient market. However, positive / negative abnormal returns following positive / negative customer returns indicate the presence of customer momentum, consistent with under - reaction or a sluggish stock price response to news about related firms.

Empirical Results: Main Results

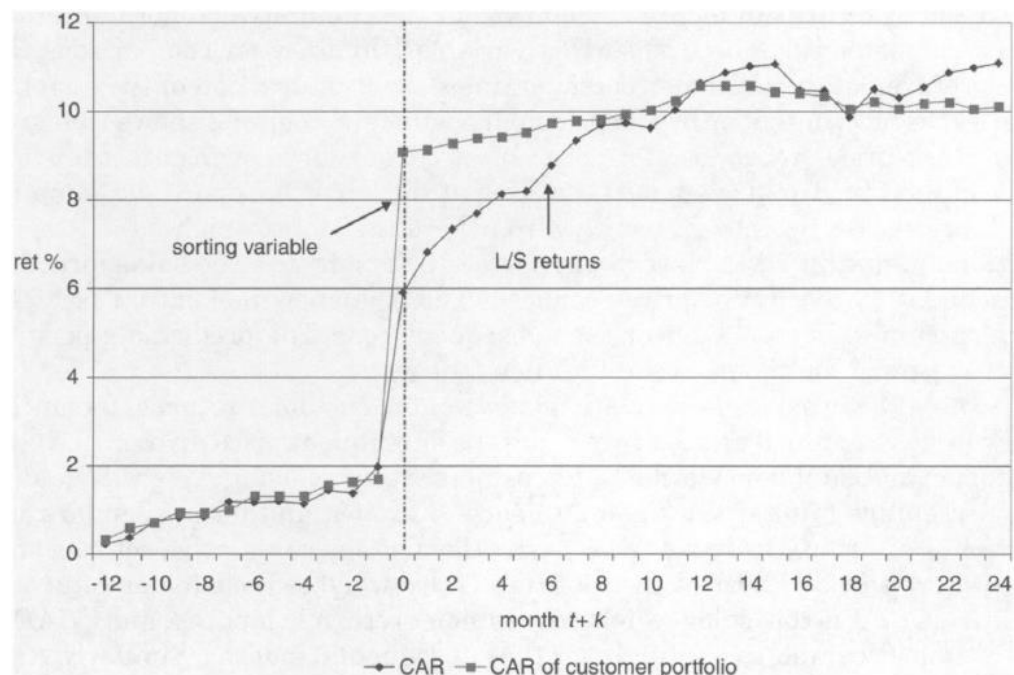
This table shows calendar-time abnormal returns of the customer momentum strategy.

Panel A: Value Weights	Q1(Low)	Q2	Q3	Q4	Q5(High)	L/S
Excess returns	−0.596 [−1.42]	−0.157 [−0.41]	0.125 [0.32]	0.313 [0.79]	0.982* [2.14]	1.578* [3.79]
Three-factor alpha	−1.062* [−3.78]	−0.796* [−3.61]	−0.541* [−2.15]	−0.227 [−0.87]	0.493* [1.98]	1.555* [3.60]
Four-factor alpha	−0.821* [−2.93]	−0.741* [−3.28]	−0.488 [−1.89]	−0.193 [−0.72]	0.556* [1.99]	1.376* [3.13]
Five-factor alpha	−0.797* [−2.87]	−0.737* [−3.04]	−0.493 [−1.94]	−0.019 [−0.07]	0.440 [1.60]	1.237* [2.99]

- High / low customer returns today predict high / low subsequent stock returns of a related firm.

Empirical Results: Event time returns

This figure shows the average cumulative return in month $t+k$ on a long-short portfolio formed on the firm's customer return in month t .



- The portfolio earns a cumulative 4.73% over the subsequent year. The predictability persists for about a year and then fades away.

Empirical Results: Underreaction Coefficient

CRET: the (sales-weighted) customer return in month t

CCAR: customer cumulative return over the subsequent 6 months

RET: the supplier stock return in month t

CAR: supplier cumulative return over the subsequent 6 months

$URC = RET / (RET + CAR)$:
underreaction coefficients, it is the fraction of total return from month t to month $t+6$ that occurs in month t

	All Firms	Larger Firms	Smaller Firms
Panel A: S			
PERCSALES	0.351	0.351	0.363
CRET	6.791*	6.795*	7.026*
(Sales weighted)	[42.51]	[41.74]	[41.55]
RET	4.192*	5.270*	2.055*
	[13.17]	[14.57]	[5.09]
CCAR[$t+1, t+6$]	0.442	0.495	0.336
	[1.59]	[1.72]	[1.12]
CAR[$t+1, t+6$]	2.799*	2.383*	3.854*
	[3.74]	[2.91]	[3.55]
Panel B			
URC_{cust}	0.939	0.932	0.954
	[1.53]	[1.70]	[1.15]
URC_{sup}	0.600*	0.689*	0.348*
	[5.71]	[3.89]	[8.15]

Empirical Results: Variation in Inattention

- Hypothesis: Varying inattention should vary the magnitude and significance of the result.

	All Stocks	
	EW	VW
Low COMOWN	1.653*	2.301*
Lower percentage of common ownership	[5.46]	[5.24]
High COMOWN	0.750*	1.098*
Higher percentage of common ownership	[1.97]	[2.17]
High-low	-0.903*	-1.203*
	[-2.08]	[-1.99]

- Common ownership: number of mutual funds holding both the customer and the supplier (#COMMON) divided by the number of mutual funds holding the supplier over the same month (#FUNDS), a proxy to identify subsets of firms where attention constraints are more (less) likely to be binding.

Empirical Results: Variation in Inattention

- Hypothesis: Managers that do not hold a firm's customer in their portfolio are more likely to initially overlook news about a firm's principal customer, and thus will trade less on these customer shocks.

$$NETBUY_{jt} = \frac{\Delta S_{jt}}{SHROUT_{t-1}} = \underbrace{\frac{\Delta CS_{jt}}{SHROUT_{t-1}}}_{NETBUY^C} + \underbrace{\frac{\Delta NCS_{jt}}{SHROUT_{t-1}}}_{NETBUY^{NC}}$$

$$NETBUY_{jt} = NETBUY_{jt}^C + NETBUY_{jt}^{NC},$$

$$NETBUY_t^i = a + b_1^i CRET_t^i + \theta^i \mathbf{X}_t^i + v_t^i \quad i \in \{C, NC\}$$

Empirical Results: Variation in Inattention

	(1)			(2)		
	NETBUY ^C	NETBUY ^{NC}	Diff	NETBUY ^C	NETBUY ^{NC}	Diff
CRET _t	0.240*	-0.052	0.292*	0.248*	-0.342	0.590*
	[2.66]	[-0.32]	[2.53]	[2.44]	[-1.73]	[2.58]
CRET _{t-1}	0.218	0.282*		0.242*	-0.104	
	[1.92]	[2.60]		[2.14]	[-0.57]	
CRET _{t-5,t-2}	0.047	0.041		0.051	-0.039	
	[0.80]	[0.46]		[0.77]	[-0.41]	
RET _t				0.377*	1.355*	
				[4.40]	[9.00]	
RET _{t-1}				0.267*	0.889*	
				[3.73]	[6.25]	
RET _{t-5,t-2}				0.078*	0.245*	
				[2.83]	[5.09]	
IRET _{t-5,t}						
M/B				-0.025	-0.085	
				[-1.01]	[-1.66]	
log(ME _t)				0.020	-0.008	
				[1.15]	[-0.30]	
R ²	0.021	0.024		0.026	0.030	

- Common managers trade significantly more than non - common managers on news about a linked customer firm.

Other Results: Real Effects

- The investor limited attention hypothesis is based on the assumption that investors should give attention to customer-supplier links.
- Hypothesis: Sales and operating income are significantly more correlated when they are linked, relative to periods when they are not linked.
- Conclusion: Customer-supplier relationships generate significant comovements in the underlying cash flows of the linked firms, and thus should be given attention by investors.

Other Results: Robustness Tests

- lead-lag effect: larger firms lead smaller firms + the average customer tends to be much larger than the average supplier
- liquidity effect / nonsynchronous trading: some stocks don't trade for weeks, thus generating an apparent lagged reaction to news
-
- customer returns forecast subsequent supplier stock returns. The effect is large, robust, and largely unrelated to other documented predictability effects.

Conclusion

- This paper suggests that investor limited attention can lead to return predictability across assets. We provide evidence consistent with investors displaying limited attention, and this limited attention having a substantial and robust effect on asset prices, reflecting the informational inefficiency of prices .
- The customer-supplier link provides a natural framework to test investor inattention, makes what we document is not an isolated situation that is constrained to a few firms, but instead is a system across firms.