Information Consumption and Asset Pricing

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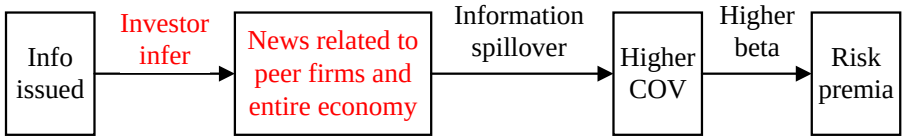
Motivation

- How information is incorporated into prices is an essential question in finance.
  - Risk premia accrue on days when information gets consumed.
- Savor and Wilson (2016): a risk-based explanation for this risk premia:



- $\rightarrow$:Propose a measure, EIC, to explore the effects of this cross-learning on asset pricing.

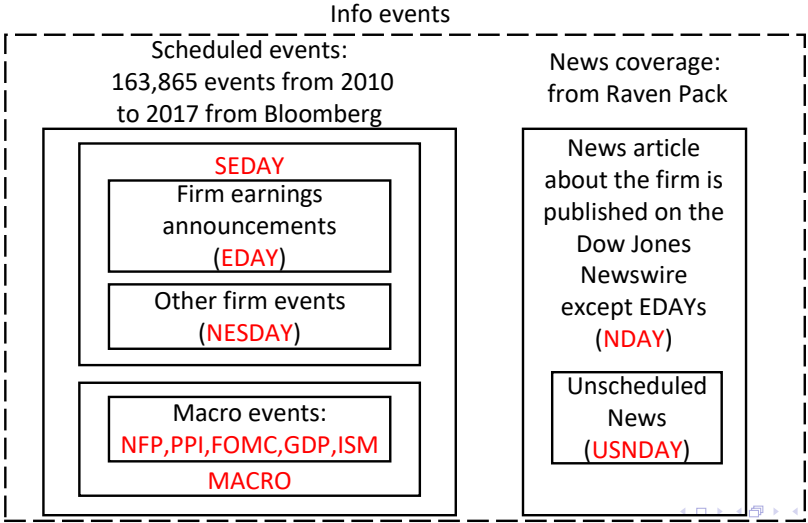
Question

- Q1: How does cross-learning during announcements affect prices?
  - Positive EIC(cross-learning) is associated with a return premium.
- Q2: Whether the return premium consistent with a risk-based interpretation?
  - Yes
  - CAPM beta is higher on days with positive EIC.
  - CAPM performs better on days with positive EIC.

Contribution

- Literature that documents higher stock returns on scheduled information days
  - Prior: explores info spillovers based on the supply of info
  - Extension: based on the info consumption and examine info spillover directly
- Literature about peer-firm definitions
  - Prior: SIC-based industry classifications,customer-supplier links...
  - Extension: EIC appears to be priced after controlling for these other definitions
- Literaure on the market risk premium around FOMC announcements
  - Extension: Consider a cross-sectional dimension

Data:Information Events



Data:Information Consumption(IC)

- Abnormal Institutional Attention (AIA): institutions

$$\text{AIA} = \begin{cases} 0, & \text{if Bloomberg's daily maximum hourly attention score is 0,1,2} \\ 1, & \text{if if Bloomberg's daily maximum hourly attention score is 3,4} \end{cases}$$

- Abnormal Google Search Volume Index (DADSVI):retail investors

$$ADSVI_{i,t} = \frac{DSVI_{i,t}}{\frac{1}{N}\sum_{i=1}^{N} DSVI_{i,t-i}}$$

$$\text{DADSVI} = \begin{cases} 0, & \text{if DSIV less than 94\% of the DSVI over previous 30 days} \\ 1, & \text{if DSIV greater than 94\% of the DSVI over previous 30 days} \end{cases}$$

Data:Expetced Information Consumption

- Principal: If firm A's AIA often spikes during past scheduled B eventday, we predict firm A's EIC will be 1 on the next B eventday.
  - *EIC_PEER*:Predicted AIA on other firms' SEDAY
  - *EIC_FOMC*: Predicted AIA on FOMC days
  - *EIC_MACRO*: Predicted AIA on MACRO days
  - *EIC_ALL*:Predicted AIA on SEDAY & MACRO days
- Expetced retail consumption(ERIC): Predicted DADSVI on event days

Q1:Design

- Whether firm-days with EIC are associated with a return premium?

$$\begin{aligned} RET_{it} = & \alpha_i + \beta_1 \times EIC_{it} + \beta_2 \times NESEDAY_{it} + \beta_3 \times EDAY_{it} + \beta_4 \times ERIC_{it} \\ & + \beta_5 \times EAVOL_{it} + \beta_6 \times CO - NEWS_{it} + \beta_7 \times CUS - SUP_{it} \\ & + \beta_5 \times OTHERPEERS_{it} + \epsilon_{it} \end{aligned}$$

  - *RET*: daily stock return
  - *EIC*:*EIC_PEER*,*EIC_FOMC*,*EIC_MACRO*,*EIC_ALL*

Q1:Result1

- Y: *RET*; *EIC*:*EIC_PEER*

Variable	(1)	(2)	(3)	(4)	(5)
EIC	2.258***	2.116**	2.118**	2.121**	2.107**
	(0.870)	(0.867)	(0.869)	(0.863)	(0.863)
NESEDAY		7.296**	7.295**	7.376**	7.124**
		(3.291)	(3.288)	(3.294)	(3.277)
EDAY		15.967***	15.968***	16.017***	15.995**
		(3.991)	(3.990)	(3.989)	(3.984)
ERIC		0.346	0.346	0.346	0.362
		(0.565)	(0.564)	(0.564)	(0.564)
EAVOL			−0.017	−0.028	−0.013
			(0.715)	(0.715)	(0.715)
CO-NEWS				0.171	0.171
				(0.169)	(0.169)
CUS-SUP				0.034	0.007
				(0.199)	(0.196)
OTHER PEERS					0.469
					(0.327)

- Coefficient on EIC is significantly positive, but smaller than those on scheduled events.
- EIC firms are associated with higher risk premia than other peer firms

Q1:Result2

- Y: *RET*

	EIC_FOMC		EIC_MACRO		EIC_ALL		
Variable	(8)	(9)	(10)	(11)	(12)	(13)	FF48 SEDAY (14)
EIC	11.063***	11.235***	7.230***	7.187***	3.613***	3.668***	3.777***
	(3.191)	(3.253)	(2.599)	(2.608)	(0.942)	(0.943)	(0.938)
NESEDAY		0.328		1.394		4.316***	4.281***
		(4.900)		(2.777)		(1.152)	(1.140)
EDAY		3.794		10.420*		17.298***	17.395***
		(12.113)		(6.303)		(3.177)	(3.173)
ERIC		−0.545		0.312		0.358	0.385
		(3.411)		(1.308)		(0.500)	(0.500)
EAVOL		−1.169		−3.387			−1.118
		(2.348)		(2.746)			(0.593)
CO-NEWS							0.107
							(0.149)
CUS-SUP							0.043
							(0.149)
OTHER PEER							0.080
							(0.283)

- *EIC_FOMC* (*EIC_MACRO*) is associated with an additional premium

Q2: Design

- Whether systematic risk is higher on days with EIC?

$$\begin{aligned} ERET_{it} =& \alpha_i + \beta_1 \times EIC_{it} + \beta_2 \times ERIC_{it} + \beta_3 \times NESEDAY_{it} + \beta_4 \times EDAY_{it} \\ &+ \beta_5 \times EAVOL_{it} + \beta_6 \times MKTRF_t + \beta_7 \times MKTRF_t \times EIC_{it} \\ &+ \beta_8 \times MKTRF_t \times ERIC_{it} + \beta_9 \times MKTRF_t \times NESEDAY_{it} \\ &+ \beta_{10} \times MKTRF_t \times EDAY_{it} + \beta_{11} \times MKTRF_t \times EAVOL_{it} + \epsilon_{it} \end{aligned}$$

  - *ERE* / *MKTRF*: excess stock/market return

- Whether CAPM performs better on days with EIC?

Q2:Result1

- Y: *ERET*

	EIC_ALL						
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
MKTRF	1.148***	1.153***	1.150***	1.150***	1.149***	1.146***	1.144***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)
MKTRF EIC*	0.047**					0.048**	0.043**
	(0.018)					(0.018)	(0.018)
MKTRF ERIC*		−0.011				−0.015	−0.017
		(0.014)				(0.014)	(0.013)
*MKTRF*NESEDAY*			0.061***			0.065***	0.066***
			(0.020)			(0.020)	(0.020)
*MKTRF*EDAY*				0.139***		0.139***	0.136***
				(0.041)		(0.041)	(0.042)
MKTRF EAVOL*					0.041***		0.035**
					(0.015)		(0.014)
Direct Effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- The increase in beta on EIC days supports a risk-based interpretation

Q2:Result2

- CAPM betas based on subsample FM regression:

	EIC_PEER		*EIC_FOMC*		*EIC_MACRO*		*EIC_ALL*	
	(1)		(2)		(3)		(4)	
	Intercept	Beta	Intercept	Beta	Intercept	Beta	Intercept	Beta
$EIC = 0$	4.865***	0.130	1.710	10.761	2.272	7.931	6.706***	0.034
	(1.716)	(2.615)	(7.381)	(9.211)	(3.356)	(6.209)	(1.302)	(2.111)
$EIC = 1$	0.527	8.166**	−15.852	43.852**	−13.482	29.812***	−0.318	9.709***
	(3.043)	(3.844)	(12.075)	(16.779)	(8.178)	(9.085)	(2.945)	(3.713)
Diff 1 - 0	−4.337	8.036*	−17.561	33.091*	−15.754*	21.882**	−7.024**	9.676**
	(3.493)	(4.649)	(14.152)	(19.141)	(8.840)	(11.003)	(3.220)	(4.271)

- CAPM performs better on days with positive EIC.

Conclusion

- Positive EIC is associated with a return premium.
  - Scheduled announcements generate return premium for firms that experience information spillovers.
- Such return is consistent with a risk-based interpretation.
  - CAPM beta is higher and CAPM performs better when EIC is high.
- EIC appears to modulate the effect of FOMC announcements on asset prices