

The Global Impact of Brexit Uncertainty

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Motivation

- ▶ Brexit exemplifies how political and economic shocks originating in one country can propagate to affect firms in other countries.
- ▶ Quantifying & understanding this propagation often difficult: Hard to measure how a given firm may be exposed to a specific policy measure, reform, or other shock.

This paper:

- ▶ Propose a general, text-based, method for isolating firm-level exposure to costs, benefits, and risks relating to *specific* events.
- ▶ Illustrate this method with a comprehensive analysis of how UK, US, and international firms respond to the consequences of 2016 Brexit referendum.

Outline

Measuring a Firm's Exposure to Brexit

Global Exposure to Brexit

Validation: Event Study

The Firm-level Effects of Brexit

Earnings Call Transcripts

- ▶ Complete set of 145,902 English-language earnings conference call transcripts of 7,733 firms headquartered in 71 countries from Refinitiv EIKON, 2011-19.
- ▶ Typically four calls per year, after earnings releases
- ▶ Management presentation followed by Q&A with firm's analysts (0-70 questions, average duration 45 minutes)

What share of the conversation between management and participants centers on costs, benefits, and risks associated with Brexit?

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What share of the conversation between management and participants centers on costs, benefits, and risks associated with Brexit?

Coverage

Region	Number of Sample Firms	
	Headquarters	UK subsidiary
UK	396	NA
EU (non-UK)	971	432
US	3,791	1,633
Rest of the world	2,575	776

A Firm-level Measure of Brexit Exposure

Count the number of times the word “Brexit” is used and divide by the total number of words in the transcript:

$$BrexitExposure_{it} = \frac{1}{B_{it}} \sum_{b=1}^{B_{it}} 1[b = Brexit],$$

where $b = 0, 1, \dots, B_{it}$ are the words contained in call of firm i at time t .

A Firm-level Measure of Brexit Risk

Same procedure as before but now condition on proximity to a synonym for risk or uncertainty

$$BrexitRisk_{it} = \frac{1}{B_{it}} \sum_{b=1}^{B_{it}} \{1[b = Brexit] \times 1[|b - r| < 10]\},$$

where r is the position of the nearest synonym of risk or uncertainty. [▶ List of Synonyms](#)

A Firm-level Measure Brexit Sentiment

Same procedure as before but now count positive and negative tone words (“sentiment”) used in conjunction with Brexit.

$$BrexitSentiment_{it} = \frac{1}{B_{it}} \sum_{b=1}^{B_{it}} \left\{ 1[b = Brexit] \times \left(\sum_{c=b-10}^{b+10} S(c) \right) \right\},$$

where S assigns sentiment to each c (Loughran & McDonald 2011)

$$S(c) = \begin{cases} +1 & \text{if } c \in \mathbb{S}^+ \\ -1 & \text{if } c \in \mathbb{S}^- \\ 0 & \text{otherwise} \end{cases}$$

► List of Tone Words

Outline

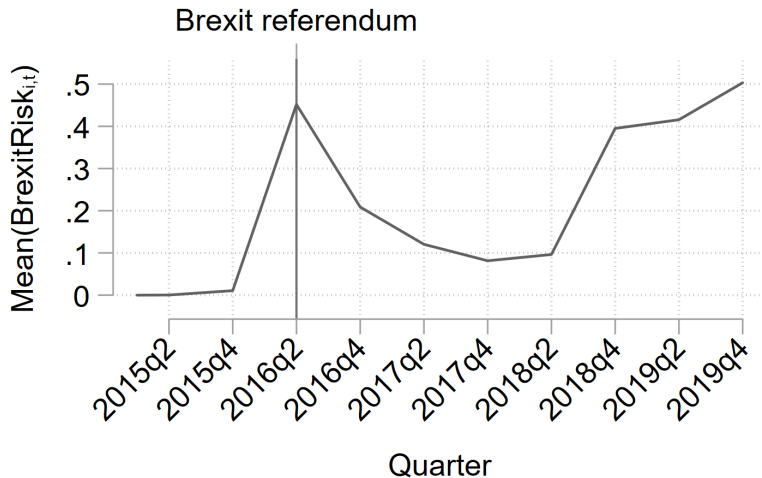
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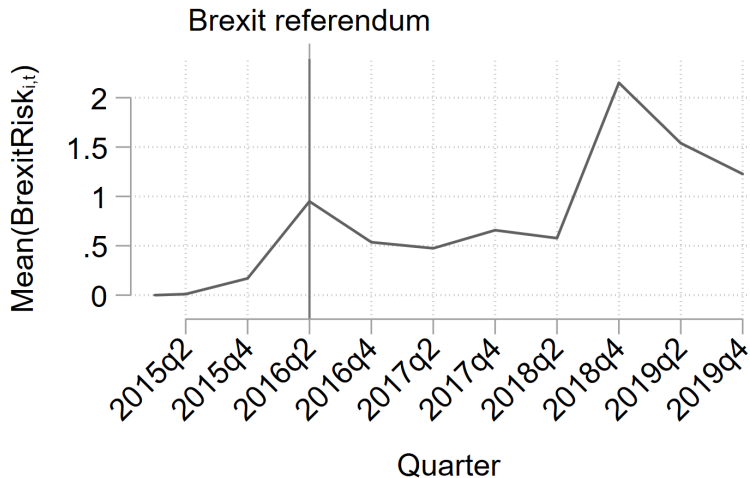
The Firm-level Effects of Brexit

Mean Brexit Risk Over Time (All firms)

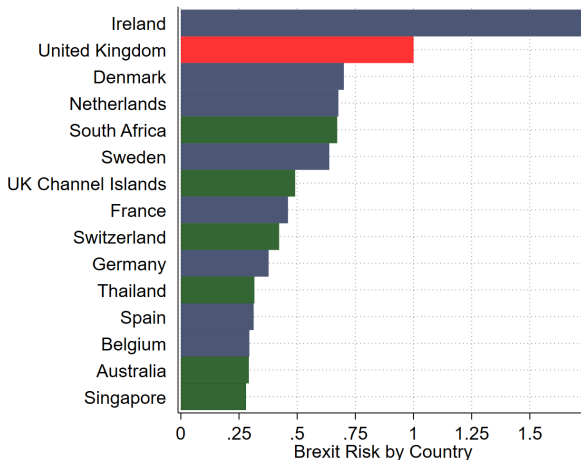


► Characteristics of firms exposed to Brexit

UK Firms

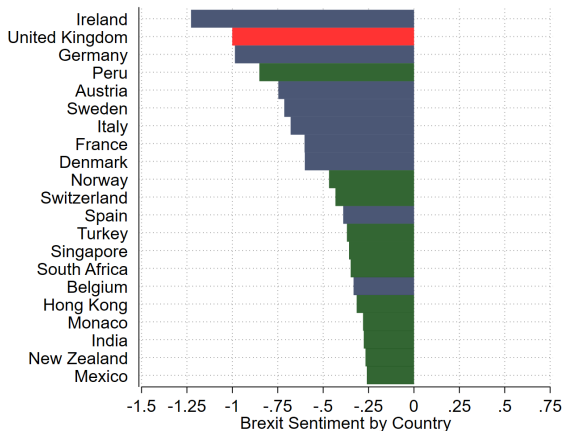


Average Brexit Risk by Country of Firm HQ (1/2)



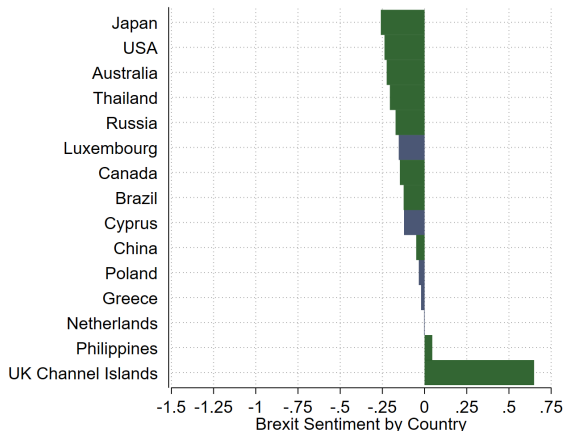
- ▶ Widespread concern among non-UK firms.
- ▶ Avg. Brexit Risk higher in Ireland than in UK. (p-val 0.02)

Average Brexit Sentiment by Country of Firm HQ (1/2)



- Firms overwhelmingly expect negative impacts.

Average Brexit Sentiment by Country of Firm HQ (2/2)



- ▶ Firms overwhelmingly expect negative impacts.
- ▶ Interesting exception: UK Channel Islands (+0.64).

▶ Time Series

Positive Brexit Sentiment

Category	UK in %	Non-UK in %
Not exposed	78.95	79.55
Weak pound	14.03	16.67
Better trade access	5.26	1.52
Relocation opportunities	3.51	3.79
Higher government expenditures	0	1.52
Less regulation	0	0.76

- ▶ Manually read all 473 excerpts with positive Brexit Sentiment. 189 convey sufficiently specific reasoning.
- ▶ Main upsides: firms are happy they are not exposed to Brexit or glad about the devalued pound.
- ▶ No evidence, even among UK firms, of economic benefits touted by leave campaign.

Positive Brexit Sentiment - Examples

Category	Transcript excerpt
Not exposed	despite whats going on with the brexit noise so thus far we havent seen a whole lot of softening and just to remind you our uk office portfolio we have no financial institution exposure (Kennedy-Wilson Holdings Inc, US, 2019 Q1)
Weak pound	saw a spike in leisure occupancy after the brexit referendum in june as tourists took advantage of the cheaper pound (Millennium & Copthorne Hotels PLC, UK, 2017 Q1)
Better trade access	brexit could be beneficial for forfarmers i can understand that it might have a positive impact on your position in the uk (ForFarmers, NL, 2019 Q1)
Relocation opportunities	potential opportunity coming from brexit and weve seen a number of firms announcing that frankfurt would ultimately be their european hub (Deutsche Boerse AG, DE, 2017 Q3)
Higher government expenditure	probably greater amount of private capital going into those assets simply because of the other pressures on government spending so i think brexit is neutral to who knows maybe mildly positive for us (International Public Partnerships Ltd, GG, 2016 Q3)

Negative Brexit Sentiment

Category	UK in %	Non-UK in %
Weak pound	24.69	57.41
Worse trade access	24.69	22.84
Labor market frictions	18.52	9.26
Falling consumer confidence	18.52	2.47
Adjustment and transition costs	8.64	1.23
New, multiple regulatory regimes	6.17	9.88

- ▶ Manually read all 884 excerpts with negative Brexit Sentiment. 243 convey sufficiently specific reasoning.
- ▶ Much more diffuse downsides: weak pound, worse trade access, multiple regulatory regime, labor market frictions.
- ▶ UK particularly concerned with adjustment costs.

Negative Brexit Sentiment - Examples

Category	Transcript excerpt
Weak pound	on the cost side weve had some cost headwinds fx particularly as sterling has still been weaker this year than last after brexit has impacted us (Flybe Group PLC, UK, 2018 Q2)
Worse trade access	if the uk is unable to negotiate access to the single market or open skies it may have implications for our three uk domestic routes (Ryan Air Holdings, IE, 2016 Q3)
Labor market frictions	labor market is getting tighter brexit will bring additional challenges with regard to particularly experienced people within all over banking organizations in ireland (Permanent TSB Group Holdings PLC, IE, 2018 Q3)
Falling consumer confidence	brexit has been and will continue to be a significant focus for the industry over the coming months we will be affected by the outcomes to the extent that there is significant changes in consumer confidence (Auto Trader Group PLC, UK, 2018 Q4)
Adjustment and transition costs	gbp million related to our investment in our operating platform regulatory developments and brexit preparations (Jupiter Fund Management PLC, UK, 2019 Q1)
New, multiple regulatory regimes	i sincerely hope that for the implementation of the brexit reasonable solutions will be found that will preserve to a large extent the rules of the single market for energy (Yunipro PAO, RU, 2016 Q3)

Outline

Measuring a Firm's Exposure to Brexit

Global Exposure to Brexit

Validation: Event Study

The Firm-level Effects of Brexit

Validation: Event Study

- ▶ Referendum result on June 23, 2016 was a surprise.
- ▶ Surprise should be reflected in asset returns.
- Use event study in stock market data to further validate measures of Brexit Risk and Brexit Sentiment.

$$r_i = \alpha + \gamma \overline{BrexitRisk}_i + \delta \overline{BrexitSentiment}_i + X_i' \nu + \epsilon_i$$

where X_i controls for size, CAPM beta, country, and sector fixed effects.

- ▶ If our measures indeed pick up the mean and variance of firm-level exposures to Brexit, would expect $\gamma < 0$ and $\delta > 0$ in a narrow event window around the day of the referendum.

Validation: Event Study

Stock Returns: June 24-28 2016					
	All firms			US firms	
$\overline{\text{BrexitExposure}}_i$	-0.023*** (0.002)				
$\overline{\text{BrexitRisk}}_i$		-0.011*** (0.002)	-0.011*** (0.002)		
$\overline{\text{BrexitSentiment}}_i$		0.002*** (0.001)	0.002*** (0.001)		
Pre-BrexitRisk_i				-0.005** (0.002)	-0.004** (0.002)
$\text{Pre-BrexitSentiment}_i$				0.001** (0.000)	0.002** (0.001)
Constant	0.006 (0.004)	-0.006 (0.004)	0.007 (0.004)	0.010** (0.005)	0.008 (0.005)
R^2	0.207	0.153	0.191	0.175	0.124
N	4,531	4,575	4,531	3,814	2,534
Beta Controls	Y	N	Y	Y	Y

Control for log(assets), industry fixed effects, headquarter country fixed effects.
Standard Errors clustered by firm.

- Exposure to both Brexit Risk and Brexit Sentiment priced in stock market.

Scatter Plots

► Placebos

► Additional Validation: Regional Support

Outline

Measuring a Firm's Exposure to Brexit

Global Exposure to Brexit

Validation: Event Study

The Firm-level Effects of Brexit

The Firm-level Effects of Brexit

Regress firm-year-level outcomes on measures of Brexit Risk and Brexit Sentiment, 2011-18,

$$y_{i,t+1} = \delta_s + \delta_t + \beta \text{BrexitRisk}_{it} + \gamma \text{BrexitSentiment}_{it} + X'_{it}\zeta + \epsilon_{it},$$

where X controls for log of firm assets, Non-Brexit Risk, and Non-Brexit Sentiment.

Brexit Risk and Investment

	$I_{i,t+1}/K_{i,t} \cdot 100$				
	All firms				US firms
BrexitRisk $_{i,t}$	-0.843*** (0.175)	-0.663*** (0.185)	-0.628*** (0.182)	-0.640*** (0.184)	-1.026*** (0.344)
BrexitSentiment $_{i,t}$	-0.115 (0.094)	-0.108 (0.097)	-0.107 (0.096)	-0.115 (0.097)	-0.262 (0.227)
Non-BrexitRisk $_{i,t}$			-1.033*** (0.244)	-0.770*** (0.253)	-1.418*** (0.450)
Non-BrexitSentiment $_{i,t}$				0.799*** (0.262)	0.923** (0.359)
R^2	0.034	0.068	0.069	0.070	0.072
N	22,225	22,204	22,204	22,204	14,198
Year FE	Y	Y	Y	Y	Y
SIC FE	Y	Y	Y	Y	Y
SIC x year FE	N	Y	Y	Y	Y
Country FE	N	Y	Y	Y	Y

Note: Controls for log(assets). Standard errors clustered by firm.

- Implied reduction relative to the mean for firm with average Brexit Risk and Sentiment in: Whole sample: -0.43%, US -0.37%, Ireland -3.91%, South Africa -1.99%

Robustness

	$I_{i,t+1}/K_{i,t} \cdot 100$				
BrexitRisk $_{i,t}$	-0.836*** (0.283)	-0.513*** (0.180)	-0.692*** (0.186)	-0.686*** (0.206)	-0.699*** (0.218)
Earnings surprise $_{i,t}$	-0.037 (0.044)				
Stock return $_{i,t}$		0.254*** (0.028)			
PRiskTrade $_{i,t}$ (std.)			-0.402* (0.209)		
Average UK sales $_i$ (pre-Brexit)				1.476 (4.301)	
BrexitExposure $_i$					0.463 (1.007)
R^2	0.081	0.084	0.075	0.097	0.070
N	15,728	21,176	21,156	15,301	22,204
Controls	Y	Y	Y	Y	Y
Industry x Year FE	Y	Y	Y	Y	Y
Country FE	Y	Y	Y	Y	Y

Note: Include covariates as in column 4. Standard errors clustered by firm.

- Coefficients stable when adding “bad controls” for Brexit exposure.

Placebo



- Erroneously assign Brexit Risk, Sentiment to years prior to the referendum.

Brexit Risk and Employment

PANEL A	$\Delta emp_{i,t}/emp_{i,t-1} \cdot 100$			
	All firms		US firms	
BrexitRisk $_{i,t}$	-0.495*** (0.179)	-0.391** (0.179)	-1.211*** (0.430)	-1.272*** (0.460)
BrexitSentiment $_{i,t}$	-0.016 (0.084)	-0.011 (0.082)	-0.219 (0.201)	-0.197 (0.207)
R^2	0.024	0.052	0.027	0.057
N	27,156	27,141	18,117	18,099
Controls	Y	Y	Y	Y
Industry \times Year FE	N	Y	N	Y
Country FE	N	Y	n/a	n/a

- Implied reduction in employment growth relative to the mean for firm with average Brexit Risk and Sentiment in:
Whole sample: -0.71%, US -1.21%, Ireland -4.21%, South Africa -8.10%

Conclusions

1. Widespread concern about Brexit-related risks among firms outside the UK.
 2. UK and non-UK firms overwhelmingly expect negative impacts from regulatory divergence, reduced labor mobility, trade-access, etc. No evidence of economic benefits touted by leave campaign, even among UK firms.
 3. Brexit risk significantly reduces in investment and employment growth among exposed non-UK firms.
 4. First-moment shocks attributable to Brexit are priced in stock markets but have not realized in firm behavior (yet).
- All measures available at www.firmlevelrisk.com.

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Appendix

Synonyms for “risk” or “uncertainty”

Synonym	Frequency	Synonym	Frequency
uncertainty	1,157	prospect	4
uncertainties	260	unsure	3
risk	205	bet	3
uncertain	96	insecurity	3
risks	77	risky	3
unknown	33	danger	3
possibility	26	faltering	2
exposed	23	dilemma	2
instability	20	probability	2
threat	17	indecision	2
pending	17	suspicion	2
doubt	16	hesitant	2
fear	16	unpredictability	2
unclear	14	unstable	2
unresolved	13	sticky	1
chance	12	venture	1
likelihood	7	fluctuating	1
unsettled	6	hesitating	1
unpredictable	6	reservation	1
variable	5	speculative	1

Single-word synonyms of ‘risk’, ‘risky’, ‘uncertain’, and ‘uncertainty’ from Oxford Dictionary, excluding ‘question’, ‘questions’, and ‘venture’.

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Some Selected Tone Words (top 50)

Word	Frequency	Word	Frequency	Word	Frequency	Word	Frequency
despite	250	improvement	23	volatility	297	negatively	40
good	231	greater	23	concerns	220	slowing	39
strong	170	profitability	23	negative	182	adverse	38
positive	162	benefited	23	difficult	102	aftermath	37
opportunities	99	improving	23	challenges	99	unexpected	37
great	98	stability	20	slowdown	99	turmoil	35
opportunity	70	improve	19	decline	85	slower	35
better	67	optimistic	19	concerned	85	slowed	32
stable	65	advantage	16	concern	84	shutdown	31
able	55	favorable	14	against	74	challenge	31
benefit	49	stabilize	13	weakness	74	crisis	30
leading	48	rebound	13	disruption	72	fears	29
confident	37	strengthening	12	weak	63	delays	26
progress	35	gain	11	weaker	63	weakened	25
pleased	33	successful	11	slow	50	problems	25
improved	31	tremendous	11	late	49	delay	24
gains	29	excellent	11	weakening	47	caution	23
stronger	28	successfully	9	challenging	43	delayed	23
strength	26	achieve	9	volatile	43	exposed	23
best	24	stabilized	9	fallout	42	recall	22

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Top Risk Excerpts - Non UK

Company	Brexit Risk _i	Country	Month	Transcript excerpts
Northstar Realty Europe Corp	18.35	US	2016-07	give rise to greater uncertainty this uncertainty has been exasperated by brexit the prospect of brexit has resulted in a high degree of
Ryanair Holdings PLC	18.29	IE	2017	airlines the pricing environment has also been affected by the post brexit uncertainty which has seen weaker sterling and a switch of charter
Breedon Group PLC	17.58	JE	2019-01	quarter and the increased input costs but also an element of brexit uncertainty in ireland our performance was strong and benefited from the
Sweco AB (publ)	12.58	SE	2018-10	but still there is still an uncertainty when it comes to brexit and some weakness in the real estate market so once again
Stonegate Mortgage Corp	11.65	US	2016-07	markets primarily driven by economic concerns abroad in particular uncertainty around brexit played a major role related to the instability of interest rates

Top firms by average Brexit risk.

Top Risk Excerpts - UK

Company	Brexit Risk _i	Country	Month	Transcript excerpts
Bellway PLC	18.89	GB	2018-10	deliver completions in fy we are mindful of the uncertainty surrounding brexit and we will wait to see whether customer sentiment is affected
Berendsen Ltd	14.14	GB	2016-07	and we have i think a pretty proven resilient business however brexit raises any number of uncertainties for every single business so were
SThree PLC	13.64	GB	2019-01	year theres also a lot of uncertainty around the uk and brexit and that will affect most markets but i think again the
Endava PLC	12.9	GB	2019-01	plans with us as a result of the uncertainties caused by brexit mark will talk about how weve mitigated fx risk in his
Millennium & Copthorne Hotels PLC	10.48	GB	2018-01	as you know there is still uncertainty about british economy and brexit for example we are seeing a rise in costs here because

Top firms by average Brexit risk.

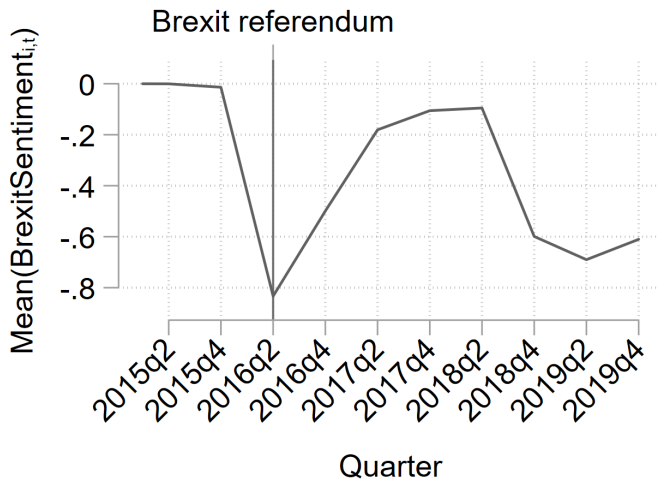
Firm Characteristics and Exposure to Brexit

	<i>BrexitExposure_i</i>			
	(1)	(2)	(3)	(4)
$\mathbb{1}\{\text{UK HQ}\}$	0.872*** (0.075)	0.909*** (0.075)	0.064 (0.088)	0.116 (0.092)
$\mathbb{1}\{\text{UK subsidiary}\}$	0.188*** (0.017)	0.200*** (0.017)	0.227*** (0.022)	0.227*** (0.021)
$\mathbb{1}\{\text{EU non-UK HQ}\}$		0.263*** (0.032)	0.073 (0.087)	0.072 (0.084)
% of sales in UK (2010-2015)			1.842*** (0.405)	
% of sales in UK (2016-present)				1.766*** (0.403)
R^2	0.086	0.103	0.120	0.121
N	7,733	7,733	3,497	3,678

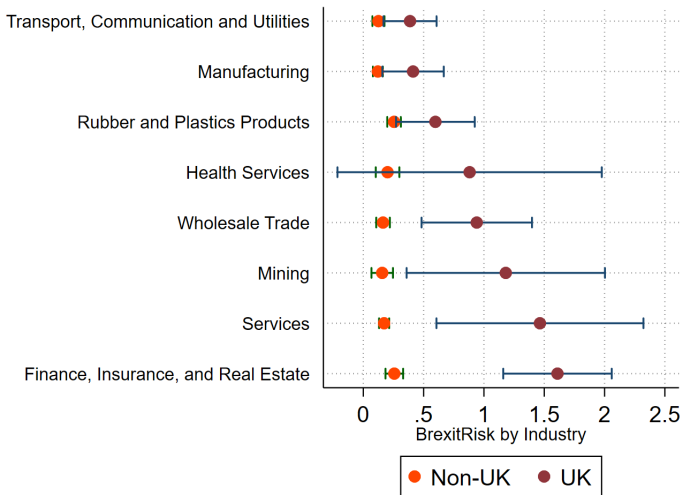
Standard errors are robust.

- ▶ Firms with closer commercial ties to the UK are more exposed to Brexit.

Mean Brexit Sentiment over Time

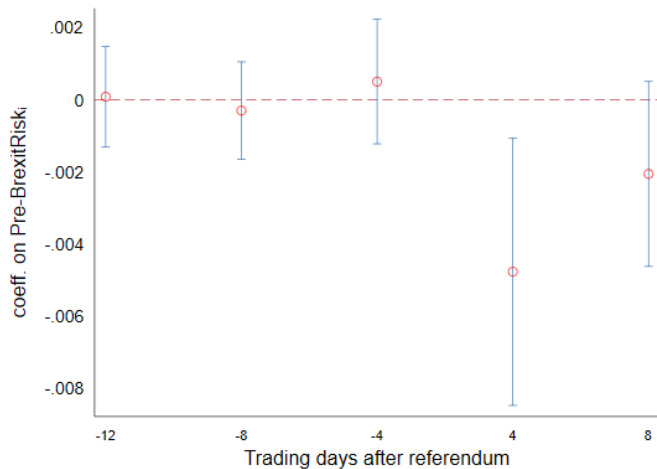


Brexit Risk by Industry



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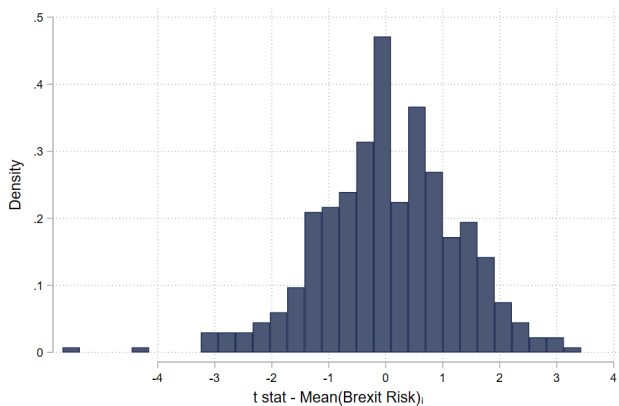
Event Study: Timing



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Placebo

Brexit Risk



Rejection rate (< -1.96): 3.06%

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Validation: Regional Support for Brexit (1/3)

- ▶ Allocate 421 UK firms to their county of residence (HQ).
- ▶ Generate county-level mean Brexit Risk and mean Brexit Sentiment.
- ▶ Relate to referendum results

$$\%leave_d = \alpha + \beta \overline{BrexitRisk}_d + \gamma \overline{BrexitSentiment}_d + X'_d \zeta + \epsilon_d,$$

where all specifications control for regional income per capita and % UK born.

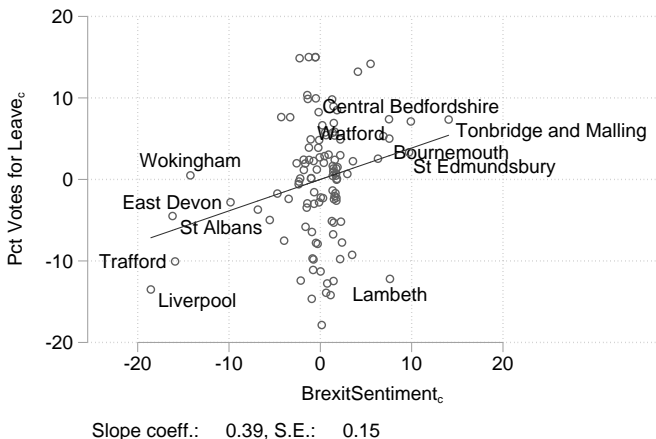
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Validation: Regional Support for Brexit (2/3)

	% Leave		
BrexitRisk _d	-0.838* (0.456)		-0.929** (0.378)
BrexitSentiment _d		0.358*** (0.133)	0.386*** (0.114)
Share UK born _d	50.481*** (7.296)	51.592*** (7.484)	52.395*** (7.380)
Income per capita _d	-0.024*** (0.004)	-0.022*** (0.003)	-0.023*** (0.004)
R ²	0.580	0.586	0.604
N	110	110	110

- ▶ Counties more exposed to Brexit Risk, negative Brexit Sentiment less likely to vote leave.
- ▶ A one s.d. increase in a county's Brexit Risk associated with a 1.4 pp decrease in support for leave.

Validation: Regional Support for Brexit (3/3)



- A one s.d. decrease in a county's Brexit Sentiment associated with a 1.7 pp decrease in support for leave.

Summary statistics

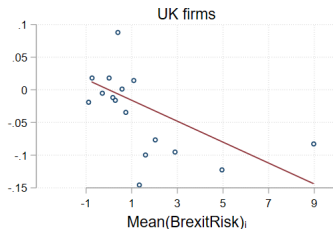
Table: Summary Statistics

	All Firms			UK Firms		Non-UK Firms		Total
	Mean	Median	SD	Mean	SD	Mean	SD	Count
Firm level risk and sentiment (2016 onward):								
BrexitExposure _i	0.211	0.000	0.674	1.000	1.496	0.169	0.568	7,733
BrexitRisk _i	0.195	0.000	0.931	1.000	2.287	0.152	0.771	7,733
BrexitSentiment _i	-0.255	0.000	2.104	-1.000	4.196	-0.215	1.920	7,733
Event study variables:								
Pre-BrexitExposure _i	0.043	0.000	0.366	0.261	0.744	0.034	0.340	4,399
Pre-BrexitRisk _i	0.040	0.000	0.511	0.250	1.312	0.032	0.449	4,399
Pre-BrexitSentiment _i	-0.083	0.000	2.014	-0.344	3.148	-0.073	1.955	4,399
Stock Returns _j : June 24-28, 2016	-0.033	-0.027	0.065	-0.085	0.100	-0.030	0.062	6,077
Area level variables:								
Pct Votes for Leave _c	48.816	50.769	11.334	NA	NA	NA	NA	116
Brexit Risk _c	1.000	0.375	1.585	NA	NA	NA	NA	116
Brexit Sentiment _c	-1.000	-0.065	4.442	NA	NA	NA	NA	116
Firm yearly outcomes (2011-2018):								
BrexitExposure _{i,t}	0.083	0.000	0.502	0.414	1.216	0.067	0.433	44,665
BrexitRisk _{i,t}	0.060	0.000	0.619	0.300	1.620	0.049	0.522	44,665
BrexitSentiment _{i,t}	-0.088	0.000	1.822	-0.351	4.215	-0.075	1.618	44,665
Non-BrexitRisk _{i,t}	1.596	1.364	1.000	1.317	0.778	1.610	1.008	44,665
Non-BrexitSentiment _{i,t}	1.267	1.287	1.000	1.650	0.925	1.249	1.000	44,665
$I_{i,t+1}/K_{i,t} \cdot 100$	24.208	14.250	40.367	19.568	31.431	24.449	40.763	43,868
$\Delta emp_{i,t}/emp_{i,t-1} \cdot 100$	8.168	2.941	29.492	6.853	27.155	8.240	29.613	47,713
$\Delta sales_{i,t}/sales_{i,t-1} \cdot 100$	17.452	6.538	70.393	11.069	47.544	17.766	71.314	55,402

Brexit Risk_i and Brexit Sentiment_i at the firm level for cross-sectional regressions are calculated starting January 1, 2016 to December 31, 2018, and are normalized by average Brexit risk and Brexit sentiment for UK headquartered firms post January 1, 2016. Brexit Risk_c and Brexit Sentiment_c for area level variables are constructed by taking a mean for every firm, and then averaging over all firms headquartered in an area code. Both are normalized by the average Brexit risk and Brexit sentiment for all areas in the UK. For firm outcomes, t is at yearly frequency. The sample period for yearly outcomes is 2011-2018.

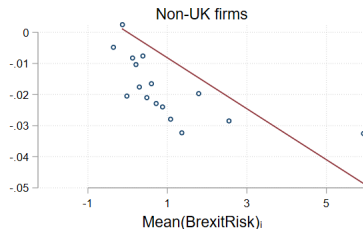
Validation: Event Study

Stock Returns: June 24-28, 2016



Slope coeff.: -0.016, S.E.: 0.005

Stock Returns: June 24-28, 2016



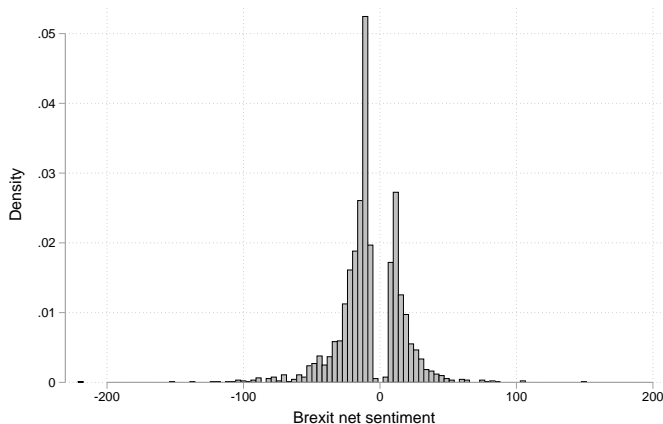
Slope coeff.: -0.008, S.E.: 0.001

Note: Controls as in Column (4).

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Brexit net sentiment summary statistics

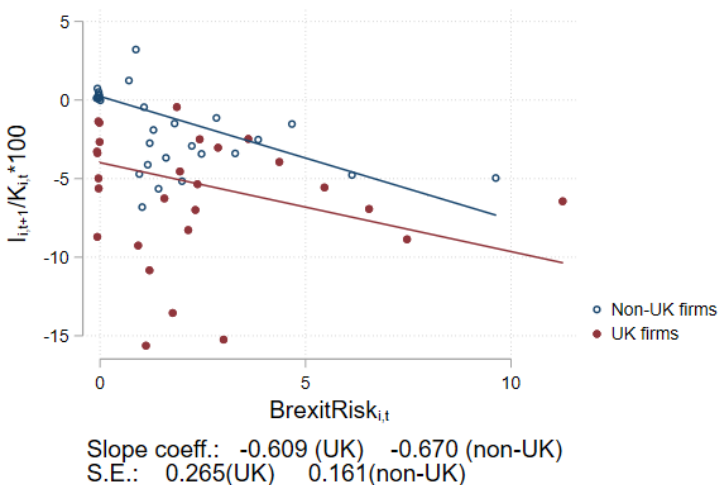
- ▶ Mean: -7.830
- ▶ Median: -10.530 (zeroes suppressed)



Timing of the Outcomes

	$I_{i,t}/K_{i,t-1} \cdot 100$	$\Delta emp_{i,t}/emp_{i,t-1} \cdot 100$
	(1)	(2)
Brexit Risk $_{i,t}$	-0.251 (0.156)	-0.509** (0.210)
Brexit Risk $_{i,t-1}$	-0.471*** (0.150)	-0.172 (0.238)
R^2	0.072	0.047
N	21,449	22,698

Brexit Risk and Investment



- Among UK and non-UK firms, clear negative association between Brexit Risk and investment rates.

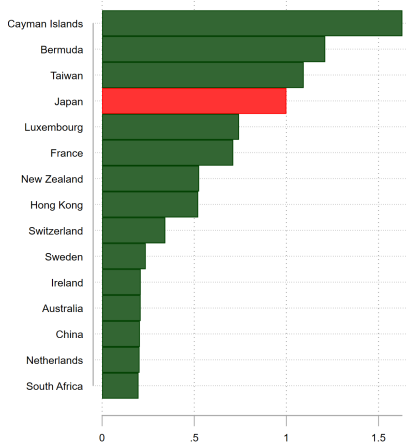
Brexit Risk, Sentiment and Sales

	$\Delta sales_{i,t} / sales_{i,t-1} \cdot 100$			
	All firms		US firms	
BrexitRisk _{<i>i,t</i>}	-0.396 (0.253)	-0.135 (0.251)	-0.091 (0.613)	-0.096 (0.591)
BrexitSentiment _{<i>i,t</i>}	0.118 (0.075)	0.135* (0.081)	0.305** (0.142)	0.410** (0.167)
R^2	0.025	0.052	0.035	0.058
N	29,059	29,042	18,846	18,828
Controls	Y	Y	Y	Y
Industry \times Year FE	N	Y	N	Y
Country FE	N	Y	n/a	n/a

- Consistent with theory, no effect of Brexit Risk on sales growth, stronger loading on Brexit Sentiment.

In the paper: Application to Fukushima Disaster (1/2)

- ▶ Introduce library-based method to generate keywords to measure exposure to specific events that did not become synonymous with a unique word creation such as 'Brexit.'
- ▶ Measure firm-level exposure to 2011 Fukushima disaster.



▶ Back

Fukushima Exposure by Country

- ▶ Supply chain disruption
- ▶ Insurance liabilities
- ▶ Future of nuclear power
- ▶ Devaluation of Uranium reserves, technologies

