# Staying or Leaving? How Businesses Take Action Towards Economic Sanctions and Evidence from the Ukrainian War

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# Motivation & Research Question

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- Around half of Western firms are still maintaining their business there
- Heineken (fully withdrawn) and PepsiCo (business-as-usual).

# Motivation & Research Question

**Research question: following economic sanctions, under which circumstances are firms more likely to withdraw from the target state?**

# Theory

**Theory**: Under economic sanctions, firms which are more economically vulnerable under geopolitical risks will be less likely to exit.

- Economic footprint in the target market.
- Extractive sectors.

# Theory & Hypotheses

- Geopolitical risks: "threats or escalation of adverse events linked with wars, terrorism, and other state or political actor tensions influencing the peaceful trajectory of international relations" (Caldara & Iacoviello, 2022)

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# Theory & Hypotheses

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- Firms may not have the same incentives as states do + states have limited resources to enforce punishment to all firms (Rodman, 2001; Early, 2015)
- Two primary economic factors determining economic vulnerability of firms: their input and strategic environment.

# Theory & Hypothesis

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- *Ex ante*: Firms whose inputs are sensitive to geopolitical risks by nature
- *Ex post*: Firms with higher probability of being "retaliated" by both sides

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  - More economic activities $\rightarrow$ more likely to be caught in a cross-fire of the tension between the imposer and the target
  - Market valuation

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  - Highly politicized $\rightarrow$ volatile input price
  - Highly regulated and restrictive to foreign firms

# Research Design

- Data: consult from a variety of data sources
  - CELI: a list of companies withdrawing and staying in Russia after sanctions, collected by the team from Yale School of Management (Sonnenfeld & Yale Research Team, 2022).
  - Orbis: information of private firms around the world
  - UNCTAD International Investment Agreements: information of BITs.
  - fDi Market: history of operation

# Research Design

- Dependent variable: *Withdraw*, 1 if a firm withdraws, 0 otherwise (coded from the original categorical variable)
- Independent variable:
  - *Extractive*: 1 if a firm is extractive, 0 otherwise
  - *Russian Subsidiaries*: Number of subsidiaries in Russia

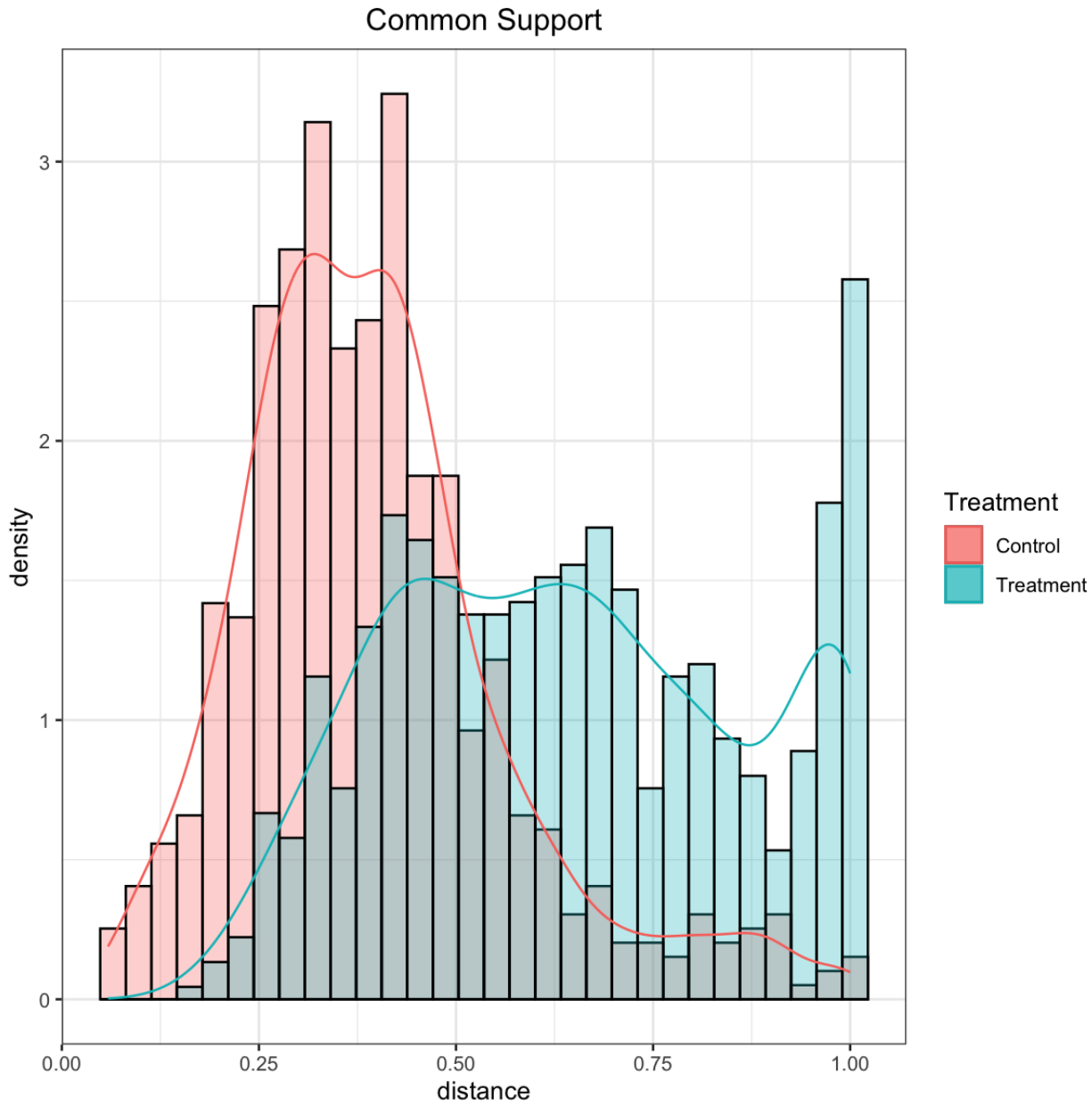
# Research Design

- Control variables:
  - *ln_employees*: Natural log of the number of employees
  - *US_allies_subsidiaries*: Number of subsidiaries in the US and allies
  - *ln_market_cap*: Natural log of market capitalization
  - *year_in_Russia*: Number of year in Russia
  - *US Allies*: 1 if the firm's original country is the US or its allies; 0 otherwise

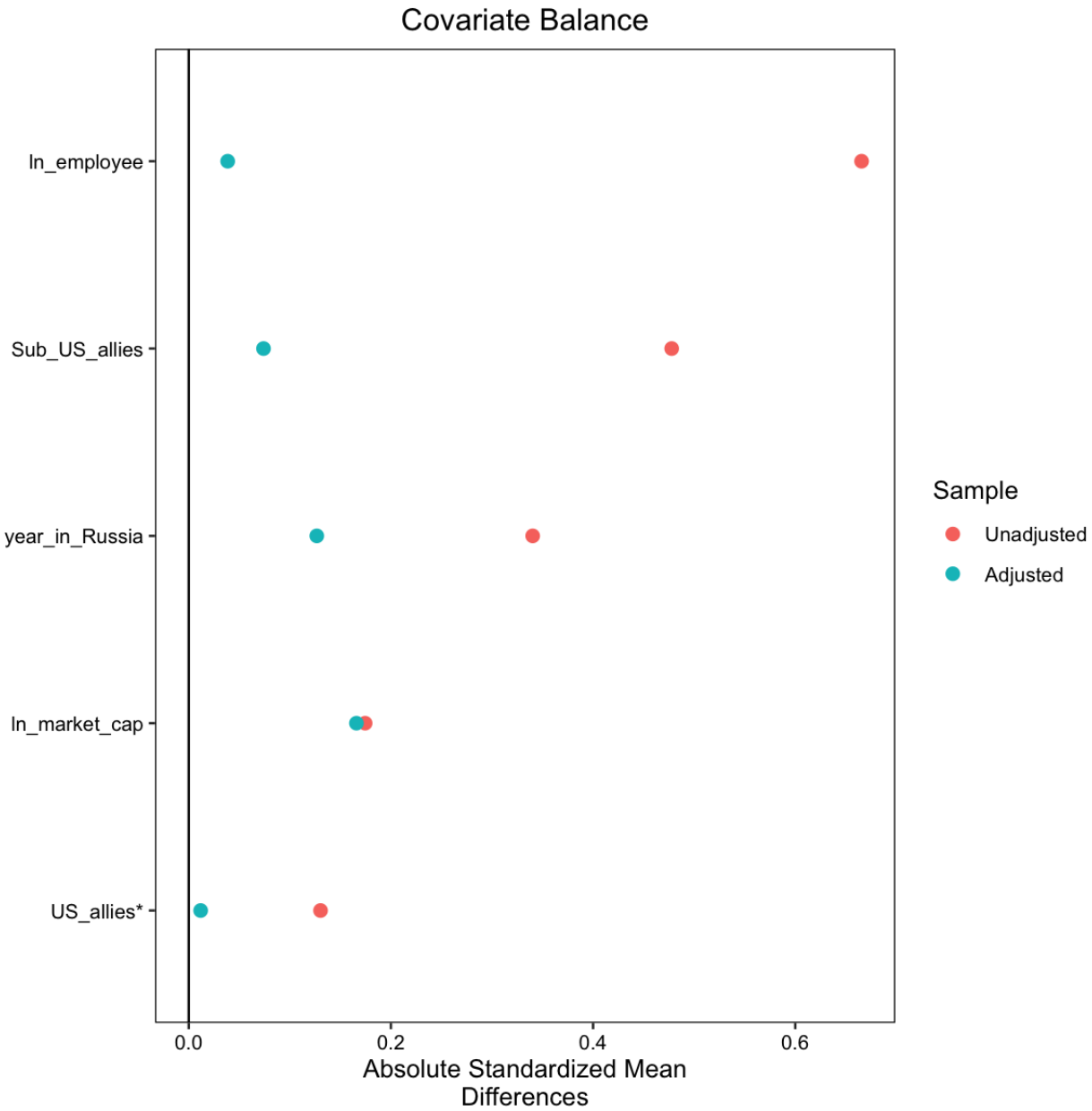
# Research Design

- Empirical Model
  - Full matching
  - Multiple Imputation
  - Logistic model with country clustered standard errors
  - Industry fixed effects for H1
- Robustness Check
  - Entropy matching (Hainmueller, 2012)
  - Control for the origins' bilateral investment treaty with Russia
  - Ordered-logistic model with original coding scheme.
  - Replacing *US_allies* with *US_firm*, and re-run the baseline model.

# Results


Common Support
density
distance
0
1
2
3
0.00
0.25
0.50
0.75
1.00
Treatment
Control
Treatment

# Results


Covariate Balance
ln_employee
Sub_US_allies
year_in_Russia
ln_market_cap
US_allies*
0.0
0.2
0.4
0.6
Absolute Standardized Mean Differences
Sample
Unadjusted
Adjusted

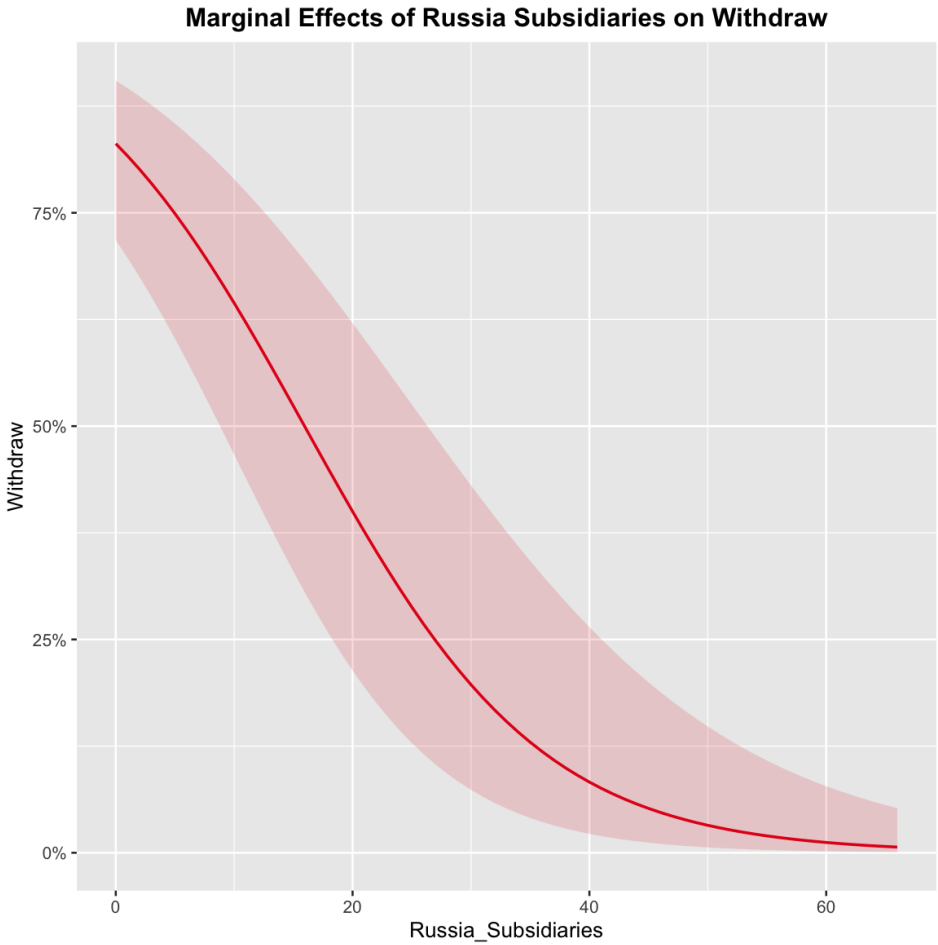
# Results

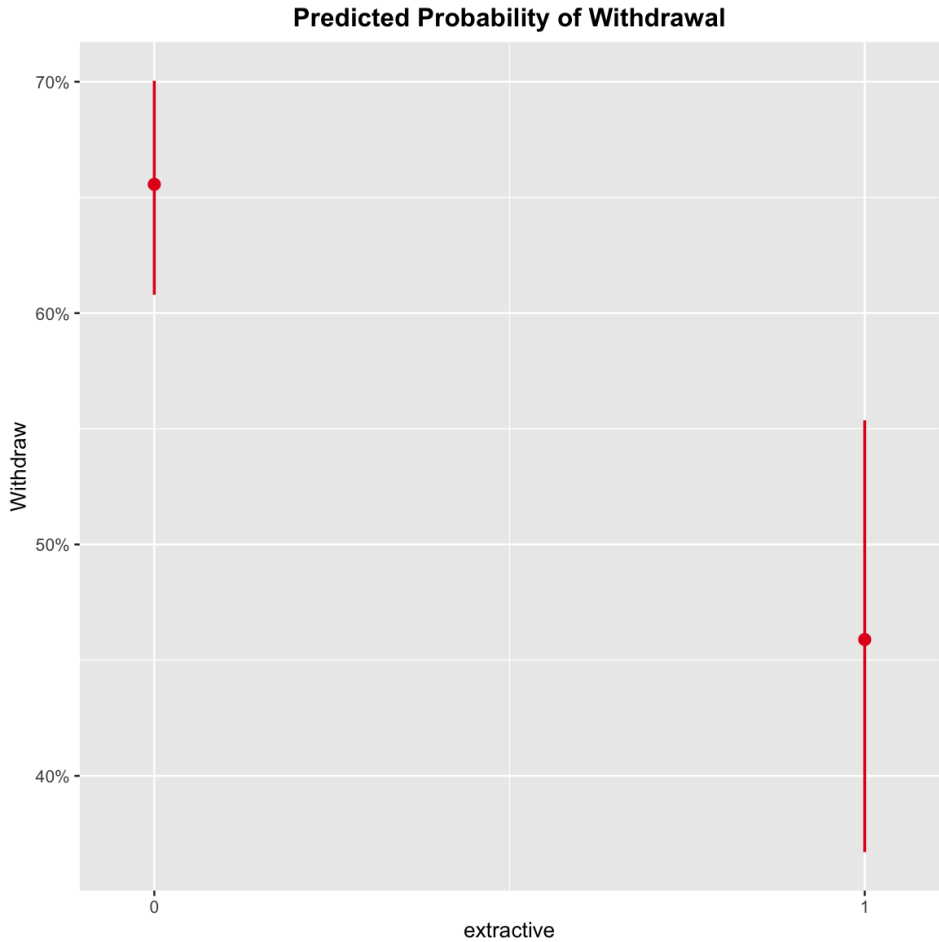
| | *Dependent variable:* | |
|---|---|---|
| | Withdrawal | |
| | (1) | (2) |
| Russia_subsidiaries | $-0.100^{***}$ | |
| | (0.015) | |
| extractive | | $-0.809^{***}$ |
| | | (0.190) |
| Constant | $-0.049$ | $-0.767^{*}$ |
| | (0.505) | (0.395) |
| Observations | 1301 | 1301 |
| Industry FEs | Yes | No |

$^{*}$p<0.1; $^{**}$p<0.05; $^{***}$p<0.01

*Note: Standard errors are clustered at the sectoral and matching subclasses levels.*

# Results


Marginal Effects of Russia Subsidiaries on Withdraw
75%
50%
25%
0%
Withdraw
0
20
40
60
Russia_Subsidiaries


Predicted Probability of Withdrawal
70%
60%
50%
40%
Withdraw
0
1
extractive

# Contributions

- Business operation and political risks (Abdelal, 2015; Busse & Hefeker, 2007; Bussy & Zheng, 2023; Caldara & Iacoviello, 2022; Haendel, 2019; Hassan et al., 2019; Horst, 1972; N. Jensen, 2008; Kobrin, 1979, 1980; Wellhausen, 2019)
- **Contribution: Delves into how economic vulnerability shapes firms' reactions to economic sanctions**
- Political economy of international security (Blanchard et al., 1999; Kirshner, 1998; Mastanduno, 1999; Narizny, 2007; Patomaki, 2007)
- **Contribution: Sheds light on the behavior of multinational firms**

# Next Steps

- Using more comprehensive datasets on foreign firms in Russia to increase the sample size.
- Adding variables on types of sanctions and specific products are under US and EU sanction regimes.
- Getting the information of fully withdrawn firms on their timing, i.e the difference in the time they fully withdraw and utilize this variation to conduct other empirical tests.

# Robustness Tests

| | *Dependent variable:* | | | |
|---|---|---|---|---|
| | Withdraw | | | |
| | Entropy | Entropy | BIT | BIT |
| Russia_Subsidiaries | −0.103*** | | −0.079*** | |
| | (0.015) | | (0.016) | |
| extractive | | −0.912*** | | −0.892*** |
| | | (0.186) | | (0.198) |
| US_allies | 0.065 | −0.039 | 0.664*** | 0.772*** |
| | (0.127) | (0.117) | (0.170) | (0.163) |
| ln_employee | 0.010 | 0.009 | −0.005 | −0.015 |
| | (0.034) | (0.032) | (0.036) | (0.035) |
| US_allies_Subsidiaries | 0.001*** | 0.0004*** | 0.001*** | 0.0003*** |
| | (0.0002) | (0.0001) | (0.0002) | (0.0001) |
| ln_market_cap | 0.022 | 0.009 | 0.057 | 0.026 |
| | (0.040) | (0.037) | (0.041) | (0.039) |
| year_in_Russia | 0.066*** | 0.073*** | 0.056*** | 0.060*** |
| | (0.013) | (0.012) | (0.013) | (0.012) |
| BIT | | | −0.986*** | −1.233*** |
| | | | (0.177) | (0.168) |
| Constant | 0.047 | −0.887** | 0.219 | −0.227 |
| | (0.536) | (0.400) | (0.513) | (0.410) |
| Observations | 1301 | 1301 | 1301 | 1301 |
| Industry FEs | Yes | No | Yes | No |
| *Note:* | | | | *p<0.1; **p<0.05; ***p<0.01 |

# Robustness Tests

| | *Dependent variable:* | |
|---|---|---|
| | Grade | |
| | (1) | (2) |
| Russia_Subsidiaries | −0.065*** | |
| | (0.011) | |
| extractive | | −0.499*** |
| | | (0.167) |
| US_allies | −0.024 | −0.119 |
| | (0.109) | (0.103) |
| ln_employee | 0.019 | −0.003 |
| | (0.030) | (0.030) |
| US_allies_Subsidiaries | 0.0004*** | 0.0001 |
| | (0.0001) | (0.0001) |
| ln_market_cap | 0.068** | 0.044 |
| | (0.034) | (0.033) |
| year_in_Russia | 0.051*** | 0.055*** |
| | (0.011) | (0.010) |
| Digging In\|Buying Time | −1.623*** | −0.495 |
| | (0.331) | (0.346) |
| Buying Time\|Scaling Back | −0.957*** | 0.135 |
| | (0.332) | (0.346) |
| Scaling Back\|Suspension | −0.373 | 0.677* |
| | (0.334) | (0.346) |
| Suspension\|Withdrawal | 1.253*** | 2.204*** |
| | (0.339) | (0.350) |
| Observations | 1301 | 1301 |
| Industry FEs | Yes | No |
| *Note:* | *p<0.1; **p<0.05; ***p<0.01 | |

# Robustness Tests

| | *Dependent variable:* | |
|---|---|---|
| | Withdraw | |
| | (1) | (2) |
| Russia_Subsidiaries | −0.095*** | |
| | (0.015) | |
| extractive | | −0.876*** |
| | | (0.177) |
| US_firm | 0.361** | 0.693*** |
| | (0.162) | (0.144) |
| ln_employee | −0.011 | −0.016 |
| | (0.036) | (0.034) |
| US_allies_Subsidiaries | 0.001*** | 0.0003** |
| | (0.0002) | (0.0001) |
| ln_market_cap | 0.031 | 0.001 |
| | (0.042) | (0.038) |
| year_in_Russia | 0.068*** | 0.085*** |
| | (0.013) | (0.012) |
| Constant | −0.077 | −0.978** |
| | (0.518) | (0.385) |
| Observations | 1301 | 1301 |
| Industry FEs | Yes | No |
| *Note:* | *p<0.1; **p<0.05; ***p<0.01 | |

*Thank you for listening!*