

# The Great CEO Shecession: Evidence from 11 Million US Firms

Ming Chieh Chang, Ziho Park

National Taiwan University

December 13, 2024

# Introduction

- ▶ Do male and female CEOs respond to economic crises differently? If so, how?
- ▶ The answer to these questions likely informs key debates in the literature, such as
  - ▶ the mechanisms behind the lower share of women CEOs in larger corporations
  - ▶ the effect of gender in top corporate hierarchy ([Ahern and Dittmar, 2012](#); [Bertrand et al., 2019](#))

# Introduction

- ▶ The literature has studied how *workers* of different genders responded to recessions differently, e.g. [Elsby et al. \(2010\)](#); [Farber \(2011\)](#); [Hoynes et al. \(2012\)](#) for the Great Recession and [Adams-Prassl et al. \(2020\)](#); [Albanesi and Kim \(2021\)](#); [Alon et al. \(2022\)](#); [Goldin \(2022\)](#) for the Covid Recession, **but there is relatively scant prior work** on analogous questions with respect to *CEOs*.
- ▶ In this paper, we ask "*Did firms led by female CEOs adjust their employment differently to their male counterparts during recessions?*"

## Summary of Results

- ▶ Female-led firms lost more employment during the Great Recession.
- ▶ Female-led firms lost more employment during the Covid-19 pandemic.
  - ▶ Our estimates are **not driven by worker composition, industrial composition, firm size effects, or state-specific trends.**
  - ▶ The results found in the Great Recession and the Covid-19 pandemic exists in most industries, size categories, and states.
- ▶ We term the greater employment drop in female-led firms **"CEO shecession."**

## Data Sources

- ▶ National Establishment Time-Series (NETS): annual time series of a near universe of US establishments
  - ▶ Establishments are traceable over time.
  - ▶ Industry and county information enabling the inclusion of granular fixed effects
  - ▶ **Female CEO indicator** provided every year allows us to trace the heterogeneous employment change between male and female-led firms.
- ▶ NETS takes **January snapshot** of Dun & Bradstreet data
  - ▶ The change from 2007 to 2008 captures the first half year of the Great Recession (Jan 2007 to Jan 2008).
  - ▶ The change from 2020 to 2021 captures the first year of the pandemic (Jan 2020 to Jan 2021).

## Employment Cyclicality

- ▶ Firm employment is **procyclical**, and such procyclicality is even **stronger in female-led firms.**



Average Yearly Employment Growth Rate, 2001 ~ 2021

# Employment Cyclicity

- ▶ Firm employment is **procyclical**, and such procyclicality is even **stronger in female-led firms**.

Firm Employment Business Cycle Statistics, 2000 ~ 2021

	Total Firm Employment	Female CEO Firm Employment	Male CEO Firm Employment
$\frac{\sigma_x}{\sigma_y}$	2.0335	3.5314	1.9828
$\rho_{x,y}$	0.9103	0.9524	0.9029

Firm Employment Business Cycle Statistics, 2000 ~ 2020

	Total Firm Employment	Female CEO Firm Employment	Male CEO Firm Employment
$\frac{\sigma_x}{\sigma_y}$	2.1039	3.6049	2.0551
$\rho_{x,y}$	0.9112	0.9504	0.9045

# Employment Cyclicity

- ▶ The higher procyclicality of female-led firms is **more pronounced in recession periods.**

Firm Employment Business Cycle Statistics, 2007 ~ 2010

	Total Firm Employment	Female CEO Firm Employment	Male CEO Firm Employment
$\frac{\sigma_x}{\sigma_y}$	0.4477	0.6123	0.4520
$\rho_{x,y}$	0.3952	0.8538	0.3512

Firm Employment Business Cycle Statistics, 2019 ~ 2021

	Total Firm Employment	Female CEO Firm Employment	Male CEO Firm Employment
$\frac{\sigma_x}{\sigma_y}$	0.4258	7.6010	0.4854
$\rho_{x,y}$	0.9819	0.6948	0.2129



# Employment Cyclicity

- ▶ The higher procyclicality of female-led firms is **less pronounced in non-recession periods (but still exists)**.

Firm Employment Business Cycle Statistics, 2000 ~ 2021 Excluding 2007 ~ 2010 and 2019 ~ 2021

	Total Firm Employment	Female CEO Firm Employment	Male CEO Firm Employment
$\frac{\sigma_x}{\sigma_y}$	2.3068	3.9110	2.2543
$\rho_{x,y}$	0.9216	0.9754	0.9146

## Sample Construction: Great Recession

- ▶ Continuing firms from 2005 to 2010
- ▶ Firms belonging to regulated utilities (NAICS 2-digit 22) and the public administration sector (NAICS 2-digit 92) are excluded.
- ▶ Firms with only 1 employee throughout the period (non-employers) are dropped.
- ▶ Foreign-owned firms are excluded.
- ▶ Firms in which the CEO's gender changed during the period are dropped (1.9%).
  - ▶ CEO's gender of a firm is defined as the CEO's gender of the firm's headquarter.
- ▶ A comprehensive sample of 29,264,480 firm-year observations with 6,441,512 unique firms

## Sample Construction: Covid

- ▶ Continuing firms from 2016 to 2021
- ▶ Firms belonging to the following sectors are excluded:
  - ▶ Regulated utilities (NAICS 2-digit 22)
  - ▶ Financial services (NAICS 2-digit 52)
  - ▶ Educational services (NAICS 2-digit 61)
  - ▶ Healthcare (NAICS 2-digit 62)
  - ▶ Public administration (NAICS 2-digit 92)
- ▶ Firms with only 1 employee throughout the period (non-employers) are dropped.
- ▶ Foreign-owned firms are excluded.
- ▶ Firms in which the CEO's gender changed during the period are dropped (0.4%).
  - ▶ CEO's gender of a firm is defined as the CEO's gender of the firm's headquarter.
- ▶ A comprehensive sample of 38,755,775 firm-year observations with 6,905,402 unique firms

## Empirical Strategy

- ▶ Difference-in-difference for the Great Recession period:

$$\ln(\text{Emp}_{it}) = \beta_0 + \beta_1 \mathbb{1}\{\text{CEO is female}\}_i \times \text{PostRecession}_t + \gamma Z_{ind(4),county} \times \text{PostRecession}_t \\ + \delta_i + \delta_t + \delta_{ind(4),t} + \delta_{county,t} + \delta_{ind(4),county} + \delta_{ind(SIC),t} + \delta_{ind(SIC),county} + \varepsilon_{it}$$

- ▶ Difference-in-difference for the Covid-19 period:

$$\ln(\text{Emp}_{it}) = \beta_0 + \beta_1 \mathbb{1}\{\text{CEO is female}\}_i \times \text{PostCovid}_t + \gamma Z_{ind(4),county} \times \text{PostCovid}_t \\ + \delta_i + \delta_t + \delta_{ind(4),t} + \delta_{county,t} + \delta_{ind(4),county} + \delta_{ind(SIC),t} + \delta_{ind(SIC),county} + \varepsilon_{it}$$

- ▶  $\mathbb{1}\{\text{CEO is female}\}_i$ : A dummy indicating whether the CEO of firm  $i$  is female
- ▶  $\text{PostRecession}_t$ : A dummy indicating post-Great Recession period
- ▶  $\text{PostCovid}_t$ : A dummy indicating post-Covid period
- ▶  $Z_{ind(4),county}$ : NAICS 4-digit industry-by-county level female worker share controls
- ▶  $\delta_i$ : Firm FE ;  $\delta_t$ : Year FE ;  $\delta_{ind(4),t}$ : NAICS 4-digit Industry-by-year FE ;  
 $\delta_{county,t}$ : County-by-year FE ;  $\delta_{ind(4),county}$ : NAICS 4-digit Industry-by-county FE ;  
 $\delta_{ind(SIC),t}$ : SIC Industry-by-year FE ;  $\delta_{ind(SIC),county}$ : SIC Industry-by-county FE

# Empirical Strategy

- ▶ Event study for the Great Recession period:

$$\begin{aligned} \ln(\text{Emp}_{it}) = & \beta_0 + \sum_{\tau \neq 2007} \beta_{\tau} \mathbb{1}\{\tau = t\} \times \mathbb{1}\{\text{CEO is female}\}_i \\ & + \delta_i + \delta_{ind(4),t} + \delta_{county,t} + \delta_{ind(4),county} + \delta_{ind(SIC),t} + \delta_{ind(SIC),county} + \varepsilon_{it} \end{aligned}$$

- ▶ Event study for the Covid-19 period:

$$\begin{aligned} \ln(\text{Emp}_{it}) = & \beta_0 + \sum_{\tau \neq 2020} \beta_{\tau} \mathbb{1}\{\tau = t\} \times \mathbb{1}\{\text{CEO is female}\}_i \\ & + \delta_i + \delta_{ind(4),t} + \delta_{county,t} + \delta_{ind(4),county} + \delta_{ind(SIC),t} + \delta_{ind(SIC),county} + \varepsilon_{it} \end{aligned}$$

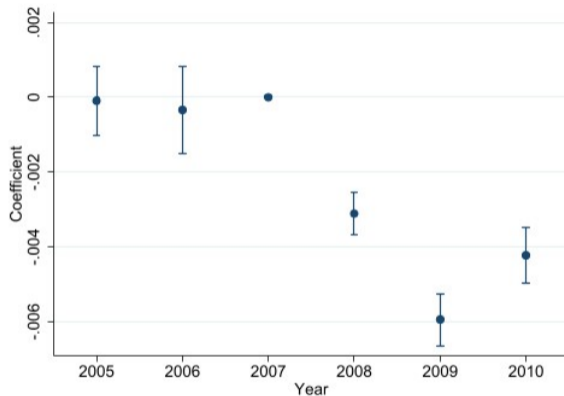
# The Great Recession CEO Shecession Effect

	(1)	(2)	(3)	(4)	(5)
	Log(Firm Employment)				
$\mathbb{1}\{\text{CEO is female}\}_i \times \text{PostRecession}_t$	-0.0030*** (0.0003)	-0.0034*** (0.0004)	-0.0039*** (0.0004)	-0.0037*** (0.0003)	-0.0043*** (0.0004)
Year FE	✓	-	-	-	-
Firm FE	✓	✓	✓	✓	✓
NAICS 4-digit Industry-by-year FE	-	✓	✓	✓	✓
County-by-year FE	-	-	✓	✓	✓
NAICS 4-digit Industry-by-county FE	-	-	-	✓	✓
SIC 4-digit Industry-by-year FE	-	-	-	-	✓
SIC 4-digit Industry-by-county FE	-	-	-	-	✓
<i>N</i>	28916239	28916237	28916230	28908905	28898456
adj. $R^2$	0.9560	0.9565	0.9565	0.9576	0.9578

► Female-led firms lost more employment during the Great Recession.

⇒ A "Great Recession CEO shecession"

## The Great Recession CEO Shecession Effect



- ▶ Stable pre-trend covering 0 in the confidence interval and significantly negative estimates after the Great Recession

# The Great Recession CEO Shecession Effect

	(1)	(2)	(3)	(4)	(5)
	Log(Firm Employment)				
$\mathbb{1}\{\text{CEO is female}\}_i \times \text{PostRecession}_t$	-0.0043*** (0.0004)	-0.0034*** (0.0004)	-0.0041*** (0.0004)	-0.0040*** (0.0005)	-0.0047*** (0.0006)
All Age Female Worker Share <sub>ind(4), county</sub> × PostRecession <sub>t</sub>			✓		
Each Age Female Worker Share <sub>ind(4), county</sub> × PostRecession <sub>t</sub>				✓	✓
Each Age Worker Share <sub>ind(4), county</sub> × PostRecession <sub>t</sub>					✓
Firm FE	✓	✓	✓	✓	✓
NAICS 4-digit Industry-by-year FE	✓	✓	✓	✓	✓
County-by-year FE	✓	✓	✓	✓	✓
NAICS 4-digit Industry-by-county FE	✓	✓	✓	✓	✓
SIC 4-digit Industry-by-year FE	✓	-	✓	✓	✓
SIC 4-digit Industry-by-county FE	✓	-	✓	✓	✓
SIC 8-digit Industry-by-year FE	-	✓	-	-	-
SIC 8-digit Industry-by-county FE	-	✓	-	-	-
<i>N</i>	28898456	28838772	20806690	12595765	10546003
adj. <i>R</i> <sup>2</sup>	0.9578	0.9576	0.9585	0.9597	0.9602

- ▶ The Great Recession CEO shecession persists under female worker share controls.  
⇒ Not driven by gender composition of workers



# The Great Recession CEO Shecession Effect

	(1)	(2)	(3)	(4)	(5)
	NAICS1 0	NAICS1 1	NAICS1 2	NAICS1 3	NAICS1 4
$\mathbb{1}\{\text{CEO is female}\}_i \times \text{PostRecession}_t$	-0.0048 (0.0063)	0.0045** (0.0021)	-0.0008 (0.0014)	-0.0108*** (0.0016)	-0.0044*** (0.0006)
<i>N</i>	122912	981268	3218276	1619620	5918977
adj. $R^2$	0.9624	0.9411	0.9514	0.9732	0.9654
	NAICS1 5	NAICS1 6	NAICS1 7	NAICS1 8	
$\mathbb{1}\{\text{CEO is female}\}_i \times \text{PostRecession}_t$	-0.0049*** (0.0006)	-0.0004 (0.0010)	-0.0124*** (0.0014)	-0.0011 (0.0012)	
<i>N</i>	8654870	3039630	1807990	3457703	
adj. $R^2$	0.9499	0.9667	0.9589	0.9279	
Firm FE	✓	✓	✓	✓	✓
NAICS 4-digit Industry-by-year FE	✓	✓	✓	✓	✓
County-by-year FE	✓	✓	✓	✓	✓
NAICS 4-digit Industry-by-county FE	✓	✓	✓	✓	✓
SIC 4-digit Industry-by-year FE	✓	✓	✓	✓	✓
SIC 4-digit Industry-by-county FE	✓	✓	✓	✓	✓

- ▶ The Great Recession CEO shecession exists in most industries.
- ⇒ Not driven by specific industries

# The Great Recession CEO Shecession Effect

	(1)	(2)	(3)	(4)	(5)	(6)
	Log(Firm Employment)					
Initial (2005) Employment	1	2	3 ~ 10	11 ~ 50	51 ~ 100	≥ 101
$\mathbb{1}\{\text{CEO is female}\}_i \times \text{PostRecession}_t$	-0.0265*** (0.0023)	-0.0090*** (0.0005)	-0.0087*** (0.0005)	-0.0112*** (0.0010)	-0.0296*** (0.0050)	-0.0222*** (0.0067)
Firm FE	✓	✓	✓	✓	✓	✓
NAICS 4-digit Industry-by-year FE	✓	✓	✓	✓	✓	✓
County-by-year FE	✓	✓	✓	✓	✓	✓
NAICS 4-digit Industry-by-county FE	✓	✓	✓	✓	✓	✓
SIC 4-digit Industry-by-year FE	✓	✓	✓	✓	✓	✓
SIC 4-digit Industry-by-county FE	✓	✓	✓	✓	✓	✓
<i>N</i>	1827567	9176352	12957356	4003534	488355	412002
adj. <i>R</i> <sup>2</sup>	0.6685	0.7132	0.8747	0.8631	0.6991	0.9359

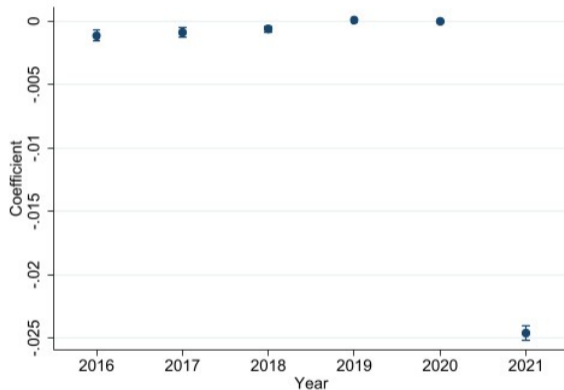
- ▶ The Great Recession CEO shecession exists in all size categories.  
⇒ Not driven by firms of specific sizes
- ▶ The Great Recession CEO shecession also exists in most states (not shown).  
⇒ Not driven by firms in specific states

# The Covid CEO Shecession Effect

	(1)	(2)	(3)	(4)	(5)
	Log(Firm Employment)				
$\mathbb{1}\{\text{CEO is female}\}_i \times \text{PostCovid}_t$	-0.0157***	-0.0242***	-0.0237***	-0.0236***	-0.0241***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Year FE	✓	-	-	-	-
Firm FE	✓	✓	✓	✓	✓
NAICS 4-digit Industry-by-year FE	-	✓	✓	✓	✓
County-by-year FE	-	-	✓	✓	✓
NAICS 4-digit Industry-by-county FE	-	-	-	✓	✓
SIC 4-digit Industry-by-year FE	-	-	-	-	✓
SIC 4-digit Industry-by-county FE	-	-	-	-	✓
<i>N</i>	38587539	38587539	38587529	38581534	38572965
adj. $R^2$	0.9648	0.9670	0.9671	0.9683	0.9694

- ▶ Employment collapse was greater in female-led firms during the pandemic.  
 ⇒ A "Covid CEO shecession"

## The Covid CEO Shecession Effect



- ▶ Stable pre-trend and a significantly negative estimate after the pandemic

# The Covid CEO Shecession Effect

	(1)	(2)	(3)	(4)	(5)
	Log(Firm Employment)				
$\mathbb{1}\{\text{CEO is female}\}_i \times \text{PostCovid}_t$	-0.0241*** (0.0003)	-0.0186*** (0.0003)	-0.0244*** (0.0003)	-0.0269*** (0.0004)	-0.0294*** (0.0005)
All Age Female Worker Share <sub>ind(4),county</sub> × PostCovid <sub>t</sub>			✓		
Each Age Female Worker Share <sub>ind(4),county</sub> × PostCovid <sub>t</sub>				✓	✓
Each Age Worker Share <sub>ind(4),county</sub> × PostCovid <sub>t</sub>					✓
Firm FE	✓	✓	✓	✓	✓
NAICS 4-digit Industry-by-year FE	✓	✓	✓	✓	✓
County-by-year FE	✓	✓	✓	✓	✓
NAICS 4-digit Industry-by-county FE	✓	✓	✓	✓	✓
SIC 4-digit Industry-by-year FE	✓	-	✓	✓	✓
SIC 4-digit Industry-by-county FE	✓	-	✓	✓	✓
SIC 8-digit Industry-by-year FE	-	✓	-	-	-
SIC 8-digit Industry-by-county FE	-	✓	-	-	-
<i>N</i>	38572965	38507443	28900068	15467281	12314391
adj. <i>R</i> <sup>2</sup>	0.9694	0.9710	0.9704	0.9721	0.9727

- ▶ The Covid CEO shecession persists under female worker share controls.  
⇒ Not driven by gender composition of workers

# The Covid CEO Shecession Effect

	(1)	(2)	(3)	(4)
	NAICS1 0	NAICS1 1	NAICS1 2	NAICS1 3
$\mathbb{1}\{\text{CEO is female}\}_i \times \text{PostCovid}_t$	-0.0303*** (0.0041)	-0.0220*** (0.0017)	-0.0288*** (0.0012)	-0.0683*** (0.0023)
<i>N</i>	217690	974063	4354442	1780184
adj. $R^2$	0.9709	0.9726	0.9687	0.9713
	NAICS1 4	NAICS1 5	NAICS1 7	NAICS1 8
$\mathbb{1}\{\text{CEO is female}\}_i \times \text{PostCovid}_t$	-0.0296*** (0.0006)	-0.0130*** (0.0003)	-0.0445*** (0.0012)	-0.0276*** (0.0007)
<i>N</i>	7354190	16004042	2931533	4806414
adj. $R^2$	0.9726	0.9618	0.9686	0.9669
Firm FE	✓	✓	✓	✓
NAICS 4-digit Industry-by-year FE	✓	✓	✓	✓
County-by-year FE	✓	✓	✓	✓
NAICS 4-digit Industry-by-county FE	✓	✓	✓	✓
SIC 4-digit Industry-by-year FE	✓	✓	✓	✓
SIC 4-digit Industry-by-county FE	✓	✓	✓	✓

► The Covid CEO shecession exists in every industry.

⇒ Not driven by specific industries

# The Covid CEO Shecession Effect

	(1)	(2)	(3)	(4)	(5)	(6)
	Log(Firm Employment)					
Initial (2016) Employment	1	2	3 ~ 10	11 ~ 50	51 ~ 100	≥ 101
$\mathbb{1}\{\text{CEO is female}\}_i \times \text{PostCovid}_t$	-0.0189*** (0.0024)	-0.0085*** (0.0003)	-0.0318*** (0.0004)	-0.0439*** (0.0011)	-0.0022 (0.0032)	-0.0139*** (0.0038)
Firm FE	✓	✓	✓	✓	✓	✓
NAICS 4-digit Industry-by-year FE	✓	✓	✓	✓	✓	✓
County-by-year FE	✓	✓	✓	✓	✓	✓
NAICS 4-digit Industry-by-county FE	✓	✓	✓	✓	✓	✓
SIC 4-digit Industry-by-year FE	✓	✓	✓	✓	✓	✓
SIC 4-digit Industry-by-county FE	✓	✓	✓	✓	✓	✓
<i>N</i>	982609	16227218	16286238	4315926	400709	325261
adj. $R^2$	0.7117	0.6505	0.8918	0.9023	0.7160	0.9821

- ▶ The Covid CEO shecession exists in most size categories.  
⇒ Not driven by firms of specific sizes
- ▶ The Covid CEO shecession also exists in most states (not shown).  
⇒ Not driven by firms in specific states

## Mechanisms

- ▶ **What CAUSED the CEO shecession during recession periods?**
- ▶ During the Covid recession, one might assume that female CEOs faced greater challenges managing corporate performance **due to childcare center closures, which require them to take care of their children.**
  - ▶ But how about the Great Recession? At that time there was no increased childcare burden on female CEOs.
  - ▶ Also, we find no evidence that female-led firms in counties with prolonged childcare center closures experienced greater employment losses than other female-led firms.
    - ▶ This is surprising yet reasonable because female CEOs are more likely to be **older**, diminishing the significance of childcare concerns in their families.
    - ▶ Additionally, female CEOs are **wealthier**, providing them with the means to address childcare challenges without personally attending to their children.



## Mechanisms

- ▶ So again, what **CAUSED** the CEO shecession during recession periods?
- ▶ We hypothesize that female CEOs laid off more employees because they are **more risk-averse or less overconfident** (Huang and Kisgen, 2013; Levi et al., 2014; Faccio et al., 2016).
- ▶ We test this hypothesis by estimating the following equation using Compustat data from 2005 to 2021:

$$\text{Leverage}_{it} = \alpha_0 + \alpha_1 \mathbb{1}\{\text{CEO is female}\}_{it} + \phi X_{it} + \delta_t + \delta_{ind(4)} + \delta_i + \varepsilon_{it}$$

- ▶  $\text{Leverage}_{it}$ : total debt divided by total debt plus equity
- ▶ Controls  $X_{it}$  include percentage of total shares owned by CEO, ROA, firm size measured by log total assets, square of firm size, tangibility measured by the ratio of fixed to total assets.
- ▶ When firm fixed effects  $\delta_i$  are included, the analysis relies solely on variation from firms experiencing **CEO gender changes** during the sampling period.

# Mechanisms

	(1)	(2)	(3)
		Leverage <sub>it</sub>	
$\mathbb{1}\{\text{CEO is female}\}_{it}$	-0.0505 (0.0308)	-0.0868*** (0.0333)	-0.0857** (0.0386)
Percentage of total shares owned by CEO <sub>it</sub>			0.0008 (0.0017)
ROA <sub>it</sub>			0.0079 (0.0977)
Size <sub>it</sub>			0.0429 (0.2508)
Size square <sub>it</sub>			-0.0062 (0.0163)
Tangibility <sub>it</sub>			-0.1614** (0.0659)
Year FE	✓	✓	✓
NAICS 4-digit Industry FE	✓	✓	✓
Firm FE	-	✓	✓
<i>N</i>	31107	31011	25968
<i>R</i> <sup>2</sup>	0.0290	0.1246	0.1105

- ▶ Female-led firms have significantly lower leverage throughout the sampling period.  
 ⇒ **Female CEOs are more risk-averse / less overconfident.**

# Mechanisms

	(1)	(2)	(3)
		Leverage <sub>it</sub>	
$\mathbb{1}\{\text{CEO is female}\}_{it}$	-0.0377 (0.0309)	-0.0555** (0.0243)	-0.0722*** (0.0241)
Percentage of total shares owned by CEO <sub>it</sub>			0.0030* (0.0017)
ROA <sub>it</sub>			-0.0414 (0.1274)
Size <sub>it</sub>			0.2555 (0.1779)
Size square <sub>it</sub>			-0.0210* (0.0119)
Tangibility <sub>it</sub>			-0.2928*** (0.0665)
Year FE	✓	✓	✓
NAICS 4-digit Industry FE	✓	✓	✓
Firm FE	-	✓	✓
<i>N</i>	21781	21654	18730
<i>R</i> <sup>2</sup>	0.0582	0.2820	0.2844

- ▶ The results remain even when recession periods are excluded.

## Reference I

- Adams-Prassl, Abi, Teodora Boneva, Marta Golin, and Christopher Rauh**, “Inequality in the impact of the coronavirus shock: Evidence from real time surveys,” *Journal of Public economics*, 2020, 189, 104245.
- Ahern, Kenneth R and Amy K Dittmar**, “The changing of the boards: The impact on firm valuation of mandated female board representation,” *The quarterly journal of economics*, 2012, 127 (1), 137–197.
- Albanesi, Stefania and Jiyeon Kim**, “Effects of the COVID-19 recession on the US labor market: Occupation, family, and gender,” *Journal of Economic Perspectives*, 2021, 35 (3), 3–24.
- Alon, Titan, Sena Coskun, Matthias Doepke, David Koll, and Michèle Tertilt**, “From Mancession to Shecession: Women’s Employment in Regular and Pandemic Recessions,” *NBER Macroeconomics Annual*, 2022, 36 (1), 83–151.
- Bertrand, Marianne, Sandra E Black, Sissel Jensen, and Adriana Lleras-Muney**, “Breaking the glass ceiling? The effect of board quotas on female labour market outcomes in Norway,” *The Review of Economic Studies*, 2019, 86 (1), 191–239.
- Elsby, Michael W, Bart Hobijn, and Aysegul Sahin**, “The labor market in the Great Recession,” Technical Report, National Bureau of Economic Research 2010.
- Faccio, Mara, Maria-Teresa Marchica, and Roberto Mura**, “CEO gender, corporate risk-taking, and the efficiency of capital allocation,” *Journal of corporate finance*, 2016, 39, 193–209.

## Reference II

- Farber, Henry S**, “Job loss in the Great Recession: Historical perspective from the displaced workers survey, 1984-2010,” Technical Report, National Bureau of Economic Research 2011.
- Goldin, Claudia**, “Understanding the economic impact of COVID-19 on women,” Technical Report, National Bureau of Economic Research 2022.
- Hoynes, Hilary, Douglas L Miller, and Jessamyn Schaller**, “Who suffers during recessions?,” *Journal of Economic perspectives*, 2012, 26 (3), 27–48.
- Huang, Jiekun and Darren J Kisgen**, “Gender and corporate finance: Are male executives overconfident relative to female executives?,” *Journal of financial Economics*, 2013, 108 (3), 822–839.
- Levi, Maurice, Kai Li, and Feng Zhang**, “Director gender and mergers and acquisitions,” *Journal of Corporate Finance*, 2014, 28, 185–200. Inside the Board Room.