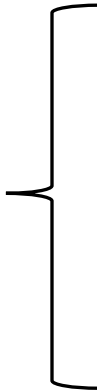


# Employee Flexibility, Exogenous Risk, and Firm Value

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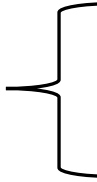
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- Employee-Flexibility Impact on Profitability

# 1. Introduction

## Example

1. When oil prices unexpectedly plunged in 2015, most U.S. airlines posted record earnings, yet over the same period, the stock of Southwest Airlines outperformed that of United Airlines.

# 1. Introduction

## Example

1. Southwest Airlines
2. A Southwest pilot who decided to hold a plane to wait for a customer rushing to visit a dying relative received praise from management.
3. The pilot of a rerouted flight stuck on the tarmac ordered pizza for all passengers, free of charge.
4. Southwest's (CMO): "[Our culture is to] empower employees to make decisions. We [the management] let them use their judgment and act on situations where they can improve customer experience.

# 1. Introduction

## Example

1. United Airlines
2. Following the violent removal of a passenger from an overbooked flight in 2017, United's chief executive officer (CEO) Oscar Munoz said that rule following was the root cause of the incident: "Our policies got in the way of our values, and procedures interfered in doing what's right."

# 1. Introduction

## Background

1. Employee flexibility, defined as employees' ability to react and respond to unexpected changes in the firm's environment.
2. Extensive evidence suggests that psychological empowerment affects individual, team, and organizational performance.
3. Employee flexibility and other intangibles act as an informal contracting mechanism that supplements formal contracts.
4. Theory suggests that corporate intangibles and human capital affect firm value.

# 1. Introduction

## Motivation

1. A flexible work-force can address contingencies, maintaining a flexible workforce is costly for the firm, but its effects on the value of the firm are rarely studied.
2. Traditionally, corporate-culture constructs are estimated through in-depth interviews with selected firm employees. This method is, however, impractical for measuring employee flexibility for a large sample of firms.

# 1. Introduction

## Research question

1. Whether companies with high degree of employee flexibility have higher excess returns?

Yes

2. Is the positive effect of employee flexibility on stock returns concentrated in high-risk period or low-risk period?

High-risk period

3. Is a company with higher employee flexibility more profitable?

Yes



# 1. Introduction

## Research Contents

1. During our sample period, high-FLEX portfolios cumulatively outperform the low-FLEX portfolios by 33.8% and 44.7% for equal- and value-weighted portfolios.
2. The impact of employee flexibility on stock returns concentrates in periods of high exogenous risk.
3. During periods of high uncertainty, high-FLEX firms outperform low-FLEX firms during the earnings-announcement period.
4. High-FLEX firms earn higher gross profits than low-FLEX firms.

# 1. Introduction

## Related researches

1. Research by Edmans (2011) has shown that intangibles can have both short- and long-term impacts on stock returns.
2. The literature on intangibles shows that the market tends to underreact to intangibles (Chan et al., 2001) because market participants with limited attention tend to slowly adjust to the information in intangibles.
3. Several studies find that employee satisfaction is related to firm performance measures such as ROA, return on equity (ROE) and operating margin (Guiso et al., 2015).

# 1. Introduction

## Contribution

1. Our article adds to this literature on how intangibles affect firm value.  
This article fills that gap because we analyze the value relevance of one aspect of psychological empowerment.
2. Our article contributes to the literature on the effects of human capital and intangible assets on firm value.

## 2. Research design: Variable

Our measure of employee flexibility comes from the textual analysis of approximately 1,245,000 unique job reviews of S&P 1500 firms posted on a career-intelligence website (Indeed.com).

Each review contains the following information: company name, date of publication, reviewer's position (job title), reviewer's location, and a free-form review. Users optionally can identify the pros and cons of their work experience and rate their employer (on a scale from 1 to 5).

## 2. Research design: Variable

We first develop a lexical field, a list of words that are associated with flexibility/adaptability.

In developing the lexical field, we start from Fiordelisi and Ricci's (2014) list of “create” words because it is publicly available and because theoretical frameworks maintain that flexibility is an element pertaining to creativity (e.g., Torrance(1965), Kerr and Gagliardi (2003)).

A commonality of adhocracy (“create”) corporate cultures is the value they place on organic processes, including flexibility and spontaneity (Koberg (1987), Odom(1990), and Lund (2003)).

## 2. Research design: Variable

The firm-level flexibility score, FLEX, is calculated in two steps. First, for each review, we compute the frequency of each of the words in our lexical field.

Then we obtain the review-level FLEX ratio (FLEX REV) by scaling the flexibility word count by the number of words in the parsed review.

## 2. Research design: Data

Data Source: Compustat、CRSP、Indeed.com

Period: 2011.01 to 2017.12.

Sample: All New York Stock Exchange (NYSE), American Stock Exchange (Amex), and Nasdaq. We exclude financial and utility firms.

## 2. Research design: method

Univariate portfolio analysis

Fama-MacBeth regressions

Panel regression



### 3.1 Empirical result: Employee Flexibility and Excess Returns

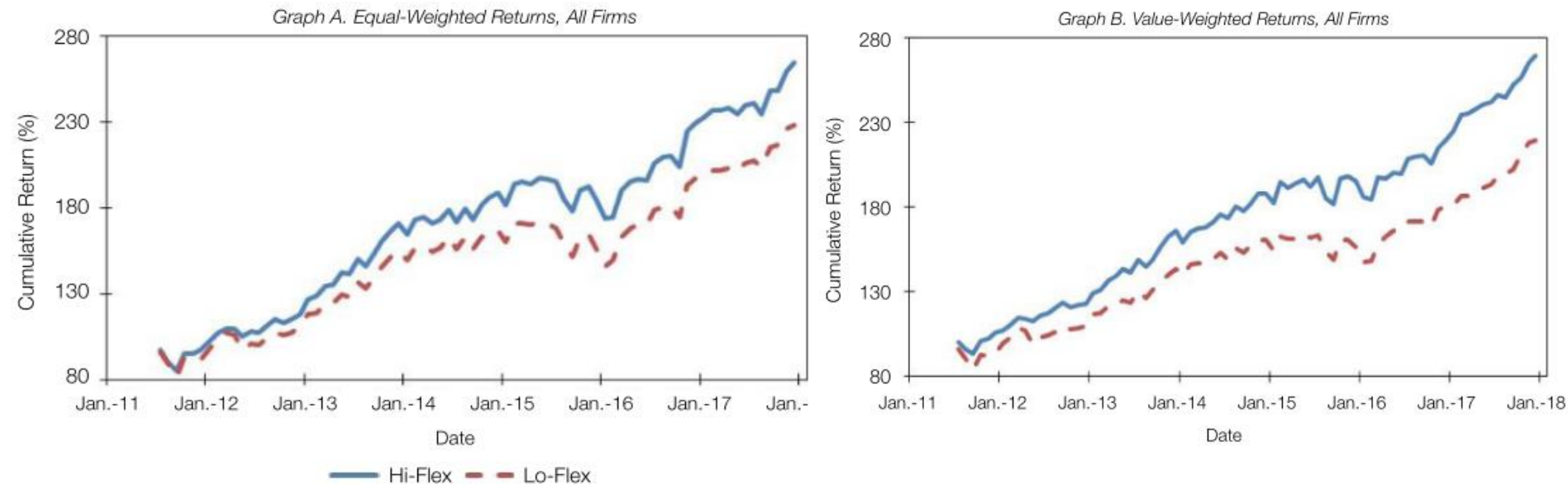


Figure 1 graphically present the stock performance of high- and low-FLEX firms. The equal-weighted (value-weighted) high-FLEX portfolio has cumulative returns that are 33.8% (44.7%) higher than those of the low-FLEX portfolio.

These univariate results show that High-FLEX firms earn excess returns.

### 3.1 Empirical result: Employee Flexibility and Excess Returns

TABLE 4  
Risk-Adjusted Returns

Table 4 reports the alphas from regressions of monthly returns of a portfolio of low-FLEX (LO\_FLEX) firms, a portfolio of high-FLEX (HI\_FLEX) firms, and a long-short portfolio of high- and low-FLEX (HI\_LO\_FLEX) firms, respectively. The returns are regressed on the Fama–French 5 factors (MKT, HML, SMB, RMW, and CMA). The HI\_FLEX and LO\_FLEX portfolio returns are the excess over the risk-free rate. Column 1 shows equal-weighted returns, and column 2 shows value-weighted returns. The  $t$ -statistics are in parentheses and use Newey–West autocorrelation-adjusted heteroscedasticity-robust standard errors. The sample returns are from July 2011 to Dec. 2017. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

Alpha	Equal Weighted 1	Value Weighted 2
LO_FLEX	0.009 (0.12)	−0.041 (−0.63)
HI_FLEX	0.256** (2.59)	0.272** (2.13)
HI_LO_FLEX	0.247** (2.68)	0.313* (1.90)

Consistent with our hypothesis that high-FLEX firms earn higher excess returns, the alphas for the high-low FLEX portfolio are positive and significant for both equal- and value-weighted portfolios.

## 3.2 Empirical result: Employee Flexibility and Exogenous Risk

	Equal Weighted		Value Weighted	
	Alpha	HI_UNCERT <sub>t-1</sub>	Alpha	HI_UNCERT <sub>t-1</sub>
	1	2	3	4
LO_FLEX	0.022 (0.32)	-0.032 (-0.19)	0.084 (1.27)	-0.309** (-2.24)
HI_FLEX	0.187** (2.30)	0.171 (1.08)	0.072 (0.84)	0.495*** (3.14)
HI_LO_FLEX	0.165 (1.64)	0.203 (1.26)	-0.011 (-0.09)	0.804*** (3.29)

The annualized combined alpha (the sum of  $\alpha + \alpha_H$ ) is 4.4% for the equal-weighted portfolio and 9.5% for the value-weighted portfolio in high-uncertainty periods.

In short, Table 5 shows that the alphas of high-low FLEX portfolios are only generated in periods of high economic uncertainty.

## 3.2 Empirical result: Employee Flexibility and Exogenous Risk

Variable	Full 1	High Uncertainty 2	Low Uncertainty 3
HI_FLEX	0.165* (1.82)	0.304* (1.95)	0.054 (0.59)
log(BM)	-0.058 (-0.49)	-0.055 (-0.42)	-0.065 (-0.45)
log(ME_JUN)	0.033 (0.52)	0.021 (0.22)	0.042 (0.56)
RET <sub>-1:-1</sub>	-0.020 (-1.40)	-0.049** (-2.04)	0.004 (0.37)
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High-FLEX firms are associated with higher returns (column 1). However, HI FLEX is significant only in the high-uncertainty subsample, confirming that the benefits of employee flexibility occur only when firms are exposed to external shocks.

### 3.3 Empirical result: Earnings-Announcement Returns

*Panel A. Portfolio Sorts for Firms with Below-Median Market Capitalization*

	<u>LO_FLEX</u>	<u>HI_FLEX</u>	<u>HI_FLEX – LO_FLEX</u>
LO_UNCERT	0.158 (N = 4,099)	0.196 (N = 3,333)	0.038
HI_UNCERT	0.191 (N = 2,055)	0.109 (N = 2,215)	–0.082

*Panel B. Portfolio Sorts for Firms with Above-Median Market Capitalization*

	<u>LO_FLEX</u>	<u>HI_FLEX</u>	<u>HI_FLEX – LO_FLEX</u>
LO_UNCERT	–0.007 (N = 3,918)	0.102 (N = 4,143)	0.109
HI_UNCERT	–0.093 (N = 2,055)	0.244 (N = 2,215)	0.337*

We also examine EARs as supplementary evidence.

We find no significant difference in EARs between high- and low-FLEX firms for small firms.

### 3.3 Empirical result: Earnings-Announcement Returns

*Panel A. Portfolio Sorts for Firms with Below-Median Market Capitalization*

	<u>LO_FLEX</u>	<u>HI_FLEX</u>	<u>HI_FLEX – LO_FLEX</u>
LO_UNCERT	0.158 (N = 4,099)	0.196 (N = 3,333)	0.038
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*Panel B. Portfolio Sorts for Firms with Above-Median Market Capitalization*

	<u>LO_FLEX</u>	<u>HI_FLEX</u>	<u>HI_FLEX – LO_FLEX</u>
LO_UNCERT	−0.007 (N = 3,918)	0.102 (N = 4,143)	0.109
HI_UNCERT	−0.093 (N = 2,055)	0.244 (N = 2,215)	0.337*

However, among large firms, high-FLEX firms exhibit an average EAR that is 0.337% (t = 1.94) higher than that of low-FLEX firms during high-uncertainty periods.

Large firms have more information available to investors, who start to react to these firms' employee flexibility shortly after earnings announcements.

### 3.3 Empirical result: Earnings-Announcement Returns

*Panel C. EAR Regressions*

Variable	Equal Weighted		Value Weighted	
	1	2	3	4
HI_FLEX	0.081 (0.82)	0.081 (0.83)	-0.231 (-0.77)	-0.223 (-0.73)
HI_FLEX × HI_UNCERT	0.097 (0.93)	0.092 (0.91)	0.878*** (3.79)	0.931*** (4.39)
HI_UNCERT	-0.039 (-0.30)	-0.136 (-1.04)	-0.723*** (-3.16)	-0.918*** (-8.72)
log(BM)	-0.025 (0.82)	-0.020 (0.83)	-0.030 (-0.77)	-0.030 (-0.73)
log(ME_FYR)	-0.067* (-0.34)	-0.063* (-0.25)	-0.054 (-0.26)	-0.059 (-0.24)
N	23,314	23,314	23,314	23,314
Adj. R <sup>2</sup>	0.00	0.00	0.00	0.01
Year FE	No	Yes	No	Yes
Industry FE	Yes	Yes	Yes	Yes

The interaction effect exists only when EAR is value weighted confirms that the FLEX effect is stronger among large firms.

High-FLEX firms exhibit a boost of 0.931% relative to low-FLEX firms, so they do not experience abnormally low EARs during periods of uncertainty.

Table 7 support that employee flexibility helps firms to manage exogenous shocks during high-uncertainty periods.

### 3.4 Empirical result: Employee-Flexibility Impact on Profitability

Variable	GP		SGA	
	1	2	3	4
HI_FLEX	4.762*** (6.65)	2.968*** (4.10)	4.636*** (5.89)	3.918*** (2.99)
log(AT)	-4.840*** (-13.54)	-2.882*** (-7.50)	-3.859*** (-11.11)	-2.364*** (-6.28)
BM	-22.751*** (-5.38)	-16.441*** (-4.72)	-9.987*** (-3.33)	-4.861** (-2.04)
DA	-0.201*** (-3.66)	-0.258*** (-6.54)	-0.165*** (-4.79)	-0.216*** (-8.16)
CASH	0.096** (2.16)	0.141*** (3.56)	0.120*** (3.07)	0.121*** (3.37)
AGE	-0.002 (-0.07)	-0.016 (-0.53)	-0.020 (-0.64)	-0.049 (-1.19)
N	5,424	5,424	5,980	5,980
Adj. $R^2$	0.380	0.515	0.286	0.382
Year FE	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes

A high-FLEX workforce in the previous year enhances profitability in the current year. Even though the relationship between employee flexibility and accounting profitability does not clearly indicate causality, the finding helps illustrate why the market values high-FLEX firms more.



### 3.4 Empirical result: Employee-Flexibility Impact on Profitability

Variable	GP		SGA	
	1	2	3	4
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N	5,424	5,424	5,980	5,980
Adj. R <sup>2</sup>	0.380	0.515	0.286	0.382
Year FE	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes

High-FLEX firms are associated with significantly higher levels of SGA expenses. This helps explain why not every firm attempts to maintain high employee flexibility.

Managers who have a short-term focus on profitability may have a disincentive to commit to investing in employee flexibility, especially given that flexibility benefits the firm only during periods of high uncertainty.

## 4. Conclusion

1. A high degree of employee flexibility results in high risk-adjusted stock returns.
2. The benefits of a flexible workforce concentrate in periods of heightened exogenous risk.

## 4. Comment & Inspiration

1. 企业文化作为一种无形资产，会对股票收益产生影响。国内关于这方面的研究很少，主要原因可能是数据的可得性，如果能够获取到相关的数据，创新性应该会较大。