

# **”Is The Stock Market Biased Against Diverse Top Management Teams?”**

Oliver Spalt, University of Mannheim

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# Is The Stock Market Biased Against Diverse Top Management Teams?

**Alberto Manconi**

Bocconi University

**A. Emanuele Rizzo**

Nova School of Business and Economics

**Oliver Spalt**

University of Mannheim and ECGI

- **Diversity of Top Management Teams** attracts a lot of attention



FINANCIAL  
TIMES

Special Report: **The Inclusive Workplace**

The evidence is growing – there really is a business case for diversity



*The way we were: board meeting at the former Fisons pharmaceuticals and fertiliser company, 1960*

JANUARY 2015

# Why diversity matters

**Vivian Hunt, Dennis Layton, and Sara Prince**

HSR.ORG

# Harvard Business Review



JULY-AUGUST 2016

**25 The Big Idea**  
**The Truth  
About Holacracy**  
Ethan Bernstein et al.

**87 Picking Health Care**  
**Bundled Payments  
vs. Capitation**  
Michael E. Porter, Robert S. Kaplan,  
Brent C. James, and Gregory F. Poole

**114 Experience**  
**When You Have to  
Negotiate with a Liar**  
Leslie K. John



**Most programs  
don't work.  
Here's what to  
do about it.**

**PAGE 51**

# THE WALL STREET JOURNAL.

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OPINION | COMMENTARY

## The Diversity Police Raid the Boardroom

Forcing firms to disclose the race and gender of their directors is a step toward de facto quotas.

# This Paper

- (How) does diversity matter in the **stock market**?
- **Develop a new measure of diversity** using **textual analysis**
  - > 70,000 individual executives in US firms
- **Key finding:** market appears to be biased against diverse top management teams
  - Analysts and investors have downward biased expectations
  - Institutional investors shun diverse firms *despite* higher returns

# Our Contribution: Study Biased Expectations

- **Prior work:** Look at what diverse firms *do*
- **Our paper:** How are diverse firms *perceived* by financial market participants?
- **Perceptions can matter for stock market valuations even in the absence of fundamental differences!**

# Do Investors Care about TMT Diversity? Yes!

**BLACKROCK®**

BlackRock's Investment Stewardship team is focused on assessing the quality of leadership and management at companies as we believe that is closely tied to delivering long-term shareholder returns. [...] **We regularly engage companies on diversity at board and C-suite levels [...]**

Source: Bloomberg interview with Michelle Edkins, Managing Director at BlackRock and Global Head of its Investment Stewardship team

# Key Challenge 1: Measuring Diversity

- Diversity is **multi-dimensional**
  - BlackRock: “gender, race, age, experience, geography, and skills, and other factors.”
- **Our innovation:** measure diversity from biographical texts
- Advantage:
  - Data available **for all listed firms in the U.S.** from SEC EDGAR since 1999
  - More than 70,000 executives in more than 6,500 individual firms

# Biography Example



Jeffrey R. Immelt

Age 57

Director since 2000

Chairman of the Board and Chief Executive Officer, General Electric Company, Fairfield, Connecticut

## DIRECTOR QUALIFICATIONS

**Leadership and Global** experience—current CEO of large public multinational company (General Electric)

**Industry and Government** experience—leadership positions in GE's Plastics, Appliances, Medical and Financial Services businesses; former director of government-organized financial and monetary policy organization (Federal Reserve Bank of New York); former chairman of presidential council (Council on Jobs and Competitiveness)

Mr. Immelt joined GE in corporate marketing in 1982 after receiving a degree in applied mathematics from Dartmouth College and an MBA from Harvard University. He then held a series of leadership positions with GE Plastics in sales, marketing and global product development. He became a vice president of GE in 1989, responsible for consumer services for GE Appliances. He subsequently became vice president of worldwide marketing product management for GE Appliances in 1991, vice president and general manager of GE Plastics Americas commercial division in 1992, and vice president and general manager of GE Plastics Americas in 1993. He became senior vice president of GE and president and chief executive officer of GE Medical Systems in 1996. Mr. Immelt became GE's president and chairman-elect in 2000, and chairman and chief executive officer in 2001. He is a trustee of Dartmouth College and a member of the American Academy of Arts & Sciences. Mr. Immelt has been named one of the "World's Best CEOs" three times by *Barron's*.

# Correlations between Diversity Measures

Team Variable	Diversity	(1)	(2)	(3)	(4)	(5)	(6)
<i>Employment-Related</i>							
(1) Company Overlap	-0.098 <sup>a</sup>						
(2) Tenure Overlap	-0.018 <sup>a</sup>	-0.010 <sup>c</sup>					
<i>Education-Related</i>							
(3) University Overlap	-0.003 <sup>c</sup>	0.144 <sup>a</sup>	0.059 <sup>a</sup>				
(4) Elite University St. Dev	0.112 <sup>a</sup>	0.034 <sup>a</sup>	0.028 <sup>a</sup>	0.179 <sup>a</sup>			
<i>Demographic</i>							
(5) Nationality Mix	0.016 <sup>a</sup>	0.028 <sup>a</sup>	-0.039 <sup>a</sup>	0.036 <sup>a</sup>	0.053 <sup>a</sup>		
(6) Executive Age St. Dev.	0.012 <sup>b</sup>	-0.038 <sup>a</sup>	0.016 <sup>b</sup>	-0.015 <sup>b</sup>	0.007	-0.052 <sup>a</sup>	
(7) Gender St. Dev.	0.281 <sup>a</sup>	-0.045 <sup>a</sup>	-0.002	-0.000	0.130 <sup>a</sup>	0.010 <sup>b</sup>	-0.000

## Key Challenge 2: Identifying Biases in Expectations

- Forecasts as well as market valuations may reflect both
  - Fundamentals
  - Biased expectations
- **We use two approaches:** to isolate the effect from biased expectations
  - ① Study expectations embodied in analyst forecasts
  - ② Use new test due to Engelberg, McLean, and Pontiff (JF, 2018)

# Analysts Have Downward-Biased Expectations

How much do Earnings-Per-Share depend on Diversity?

	(1)	(2)	(3)	(4)
Actual	0.565 (2.56)	0.535 (2.51)	0.476 (3.03)	0.401 (2.56)
Forecast	-0.060 (-0.57)	-0.071 (-0.64)	0.057 (0.63)	0.023 (0.25)
A - F	0.625 (4.35)	0.606 (4.52)	0.419 (4.13)	0.378 (3.84)
Controls	Yes	Yes	Yes	Yes
Date FE	No	Yes	No	No
Analyst $\times$ Date FE	No	No	Yes	Yes
Industry $\times$ Date FE	No	No	No	Yes
Observations	1, 029, 159	1, 029, 159	1, 029, 159	1, 029, 159

- Note: By definition, A-F difference not due to fundamentals
- Similar results when we look at target price forecasts

# Robustness

Robust to MANY (un)observables including:

- Long list of firm characteristics
- Unobserved heterogeneity on the analyst-date level
- Unobserved heterogeneity on the industry-date level
- Governance strengths
- Workforce diversity
- Team size
- Organizational capital
- Length of 10K's and bio length
- Complexity of firm disclosures
- Complexity of firm operations

# Relation to Observable Dimensions of Diversity

Dep. Var.: Analyst Error

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Diversity	0.390 (3.97)	0.381 (3.84)	0.386 (3.98)	0.385 (4.01)	0.376 (3.82)	0.229 (2.68)	0.338 (3.41)	0.277 (2.54)	0.279 (2.63)
Company Overlap	0.003 (0.03)							0.207 (3.37)	
Tenure Overlap		0.022 (4.34)						0.011 (1.74)	
University Overlap			-0.664 (-2.10)					-0.313 (-0.61)	
Elite University St. Dev				0.102 (0.93)				0.176 (1.81)	
Nationality Mix					-0.136 (-2.91)			-0.061 (-1.64)	
Executive Age St. Dev.						-0.003 (-0.86)		-0.004 (-0.96)	
Gender St. Dev.							0.219 (3.00)	0.144 (1.65)	
PC1 Team Observables									0.019 (0.87)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Analyst $\times$ Date FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	965,164	822,123	965,164	965,164	821,904	883,680	966,747	690,984	690,984
$R^2$	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.25	0.25

# Analyst Experience Matters

Dep. Var.: Analyst Error

	(1)	(2)	(3)	(4)
Inexperienced	0.814 (6.00)	0.819 (6.33)	0.526 (4.25)	0.500 (4.12)
Experienced	0.485 (2.78)	0.443 (2.77)	0.244 (2.20)	0.211 (1.95)
Difference	0.330 (2.32)	0.376 (2.76)	0.282 (2.23)	0.289 (2.25)
Controls	Yes	Yes	Yes	Yes
Date FE	No	Yes	No	No
Analyst $\times$ Date FE	No	No	Yes	Yes
Industry $\times$ Date FE	No	No	No	Yes
Observations	1,029,159	1,029,159	1,029,159	1,029,159
$R^2$	0.13	0.15	0.24	0.25

# Summary So Far

- **Analysts are “too pessimistic” about diverse firms**
- What about other investors?

# Institutions Shun Diverse Stocks...

Dep. Var.: Indicator = 1 if stock in PF

	(1)	(2)	(3)	(4)
Diversity	-0.044 (-9.34)	-0.017 (-16.24)	-0.019 (-17.03)	-0.021 (-19.39)
Market Capitalization		0.030 (36.83)	0.036 (40.42)	0.036 (41.32)
Book-to-market		0.001 (2.43)	0.002 (4.76)	0.003 (9.64)
Momentum		0.001 (0.87)	0.000 (0.52)	-0.000 (-0.17)
Return <sub>t-1</sub>			0.007 (2.55)	0.004 (1.75)
Idiosyncratic Volatility			1.408 (16.83)	1.413 (17.05)
Turnover			-0.001 (-16.72)	-0.001 (-16.93)
Investor × Date FE	Yes	Yes	Yes	Yes
Industry × Date FE	No	No	No	Yes
Observations (M)	430.893	407.394	407.360	406.538
R <sup>2</sup>	0.25	0.31	0.32	0.32

# Institutions Shun Diverse Stocks...Despite Higher Returns

Dep. Var.: Monthly Stock Return (Fama-MacBeth)

	Value-Weighted		Equal-Weighted	
	(1)	(2)	(3)	(4)
Diversity	0.744 (3.51)	0.669 (3.39)	0.203 (1.05)	0.335 (2.32)
Market Capitalization	-0.082 (-1.95)	-0.221 (-3.41)	-0.016 (-0.33)	-0.168 (-3.02)
Book-to-market	0.102 (0.72)	0.070 (0.63)	0.132 (1.15)	0.049 (0.54)
Momentum	-0.092 (-0.16)	-0.193 (-0.34)	0.031 (0.08)	-0.022 (-0.06)
Return <sub><i>t</i>-1</sub>		-3.462 (-3.47)		-2.724 (-4.49)
Idiosyncratic Volatility		-0.745 (-3.30)		-0.434 (-2.30)
Turnover		0.015 (1.84)		-0.002 (-0.38)
Observations	446,013	444,248	446,013	444,248
<i>R</i> <sup>2</sup>	0.09	0.15	0.03	0.07

# Variation in Attitudes Towards Diversity

Idea: Biases should be stronger for investors located in more conservative regions

Dep. Var.: Indicator = 1 if stock in PF

Panel A: Republican vs. Democrat States

	(1)	(2)	(3)	(4)
Republican	-0.063 (-11.78)	-0.028 (-25.02)	-0.027 (-22.52)	-0.030 (-25.63)
Democrat	-0.041 (-9.43)	-0.016 (-17.77)	-0.017 (-16.88)	-0.019 (-18.11)
R - D	-0.022 (-3.22)	-0.011 (-7.92)	-0.010 (-6.40)	-0.011 (-7.87)
Baseline Controls	No	Yes	Yes	Yes
Additional Controls	No	No	Yes	Yes
Investor $\times$ Date FE	Yes	Yes	Yes	Yes
Industry $\times$ Date FE	No	No	No	Yes
Observations (M)	315.671	315.671	315.671	315.671
$R^2$	0.27	0.33	0.33	0.34

# Separating Bias From Fundamentals

Dep. Var.: Daily Stock Return

	(1)	(2)	(3)	(4)	(5)	(6)
Diversity	0.022 (2.72)	0.020 (2.91)	0.010 (1.21)	0.007 (0.93)	0.010 (1.20)	0.007 (0.93)
Eday	-0.030 (-0.48)	-0.027 (-0.45)			-0.029 (-0.47)	-0.022 (-0.37)
Eday $\times$ Diversity	0.229 (3.04)	0.217 (2.99)			0.190 (2.51)	0.174 (2.39)
Nday			0.001 (0.11)	-0.005 (-0.42)	0.003 (0.23)	-0.003 (-0.26)
Nday $\times$ Diversity			0.066 (4.56)	0.072 (5.18)	0.053 (3.70)	0.060 (4.35)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Day FE	Yes	No	Yes	No	Yes	No
Industry $\times$ Day FE	No	Yes	No	Yes	No	Yes
Observations	5,666,853	5,665,919	5,666,853	5,665,919	5,666,853	5,665,919
Adjusted $R^2$	0.24	0.28	0.24	0.28	0.24	0.28

- Market is “systematically positively surprised”

# Conclusion

- **Develop a new measure** of top management team diversity for 70,000 executives
- First to study **bias in the perception** of diversity
- **Market appears biased against firms with diverse top management teams**