
INSIGHTS

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GROW THE POOL: DIVERSE DIRECTORS ASSOCIATED WITH STRONGER PERFORMANCE, BUT NOT IF THEY ARE TOO BUSY

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Minority representation on US boards has grown more than 50% in the last eight years, but this reflects an increase in the number of seats for existing minority directors as much as a diversification of the director talent pool. We find that the share of minority directors only has a positive association with future returns if we restrict attention to those with less than four seats. Furthermore, there is a negative stock price reaction when a minority director obtains more than three seats on other boards. Diverse, non-busy boards are also associated with stronger employee ratings on social media.



Ethnic/Racial diversity on US boards has been growing rapidly; for example, in 2017 less than half of S&P 500 firms had multiple minority directors, but now it is more than three-fourths.¹ The picture changes substantially if we focus on individual board members rather than companies. As Exhibit 1 shows, the fraction of white male

directors with more than three board seats in US companies has fallen in the past five years, but the opposite trend holds for minority board member. To use the jargon, minority directors are nearly twice as likely to be “busy” or “over-boarded”². This has implications for the overall pool of director talent as well for individual firms.³ To illustrate, if no minority directors had more than three seats in any S&P 500 corporation, more than 300 new individuals could be added to the director population without changing board size.

There are clearly benefits to both directors and firms of having more than one seat as it broadens networks and exposure to different businesses.

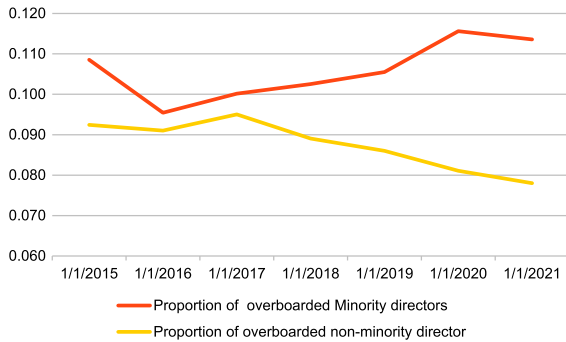
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Exhibit 1 Proportion of directors with more than three seats.



Source: ISS ESG Diversity Data.

But time and attention are inevitably limited; for example, a 2015 McKinsey study suggests that effective directors in the US spend roughly 40 days on their role.⁴ Thus, basic time constraints impinge strongly on anyone serving on more than three boards with a full-time job. Field *et al.* (2020) document that busy white male directors are generally paid more and serve on more important committees, but find no such premium for busy diverse directors. We see a similar pattern with the committee assignments in our data suggesting that companies place less value on busy minority directors. Just under half of the ethnically diverse directors who hold more than three board seats are on a key committee (compensation, nominating, or board) but for those with three or fewer seats the proportion is higher rather than lower.

Our paper emphasizes the effect of diverse directors with relatively few board seats; they have time to focus on the company and represent additions to the pool of board talent.⁵ We find that the share of minority directors has a small and insignificant association with future returns, but the effect doubles and becomes significant when we restrict attention to those with three or fewer seats.

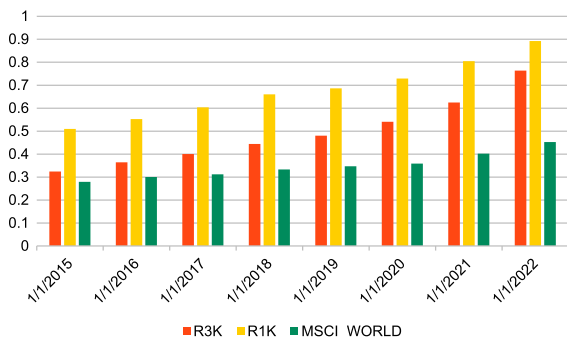
The above evidence is based on standard portfolio sorts. We supplement this finding with an

adaptation of Perry and Peyer's (2005) event study of the appointment of a new director to a listed firm. Perry and Peyer (2005) examine the stock price response in the "sender" firms for which the person is *already* a serving director; this reduces the endogeneity concerns that plague many event studies because the sender firm did not choose this additional seat (see Prabhala, 1997 for a broad treatment of this topic). We find a positive effect on the sender firm when a minority director obtains a second board seat, but the effect becomes negative as the number of current seats (and sender firms) increases. By contrast, for white directors the reaction to a new board seat is statistically unrelated to the number of seats currently held.⁶

Our final piece of evidence focuses on the relationship between employee ratings on social media from Glassdoor and board diversity. Glassdoor ratings applications are a complementary metric and capture overall workforce satisfaction; Green *et al.* (2019) also show that they are associated with stronger firm performance. Consistent with our return evidence, we find a significant association between Glassdoor ratings and board ethnic diversity which becomes larger if we restrict attention to board members with three or fewer seats. Boards that are diverse and not overly busy seem to be associated with higher employee satisfaction across the organizational hierarchy.

1 Board Information and Summary Statistics

Our board data come from the Institutional Shareholder Services ESG (ISS ESG) dataset. The data cover Europe and Asia as well as the US but self-disclosed ethnicities are only available for US firms. Exhibit 2 summarizes the coverage over time for major investment universes. We decided to focus on the Russell 1000 universe for our tests as we have a more reasonable coverage especially post 2017. ISS reports some data on director

Exhibit 2 Proportion of firms with board data by investment universe.

ethnicity for smaller US and non-US companies but coverage is quite sparse, as the sensitivity to ethnic disclosure varies significantly from one region to another.

The Appendix provides a detailed breakdown by ethnic sub-category but to obtain reasonable sample sizes our analyses emphasize the binary classification of White and non-White and refer to the latter category as “minority”.

This paper leverages three additional datasets: stock returns from the Barra GEM3 risk model,

Worldscope for financial accounting metrics, and finally the Glassdoor rating dataset that we extract from their website as explained in Section 5. Exhibit 3 summarizes the key data items and sources.

The growth in board seats for minority directors is influenced by size and by location, but is there an industry effect? Exhibit 5 shows that growth in overall minority representation and over-boarding are both observed in all GIC sectors.

2 Portfolio Returns

In this section we analyze the return performance for firms with the most and the least minority board representation with particular attention paid to the effect of over-boarding. The ISS data have identifiers for both firms and individuals. This allows us to easily compute both the representation of minorities at the firm level and the number of board seats held by each individual.

Exhibit 6 summarizes the distribution of minority representation in two cross-sections of the

Exhibit 3 Summary statistics and data sources.

		1/1/2015	1/1/2022
Board size	# Observations	584	941
	Min	5	4
	Quantile: 0.1	8	8
	Mean	10.1	10.4
	Median	10	10
	Quantile: 0.9	13	13
	Max	30	29
	Source		ISS
Number of minority directors	# Observations	584	941
	Min	0	0
	Quantile: 0.1	0	0
	Mean	1.3	1.8
	Median	1	2
	Quantile: 0.9	3	3
	Max	12	10
	Source		ISS

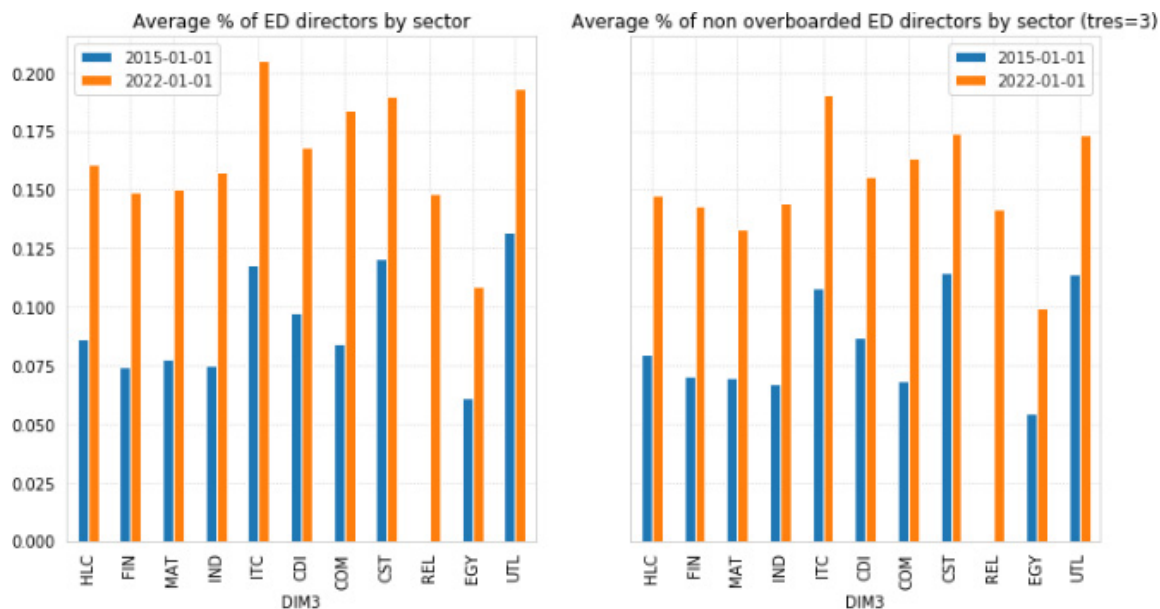
Exhibit 3 (Continued)

		1/1/2015	1/1/2022
Number of directors with more than three seats	# Observations	584	941
	Min	0	0
	Quantile: 0.1	0	0
	Mean	0.9	0.8
	Median	1	1
	Quantile: 0.9	2	2
	Max	5	9
	Source	ISS	
Number of directorships per minority director	# Observations	584	891
	Min	1	1
	Quantile: 0.1	1	1
	Mean	1.9	2
	Median	2	2
	Quantile: 0.9	3	3
	Max	6	8
	Source	ISS	
Number of directorships	# Observations	6626	4804
	Min	1	1
	Quantile: 0.1	1	1
	Mean	1.8	1.7
	Median	1	1
	Quantile: 0.9	3	3
	Max	10	13
	Source	ISS	
Market capitalization (B)	# Observations	1000	1000
	Min	0.3	0.3
	Quantile: 0.1	2.9	3.9
	Mean	21.1	37.4
	Median	7.8	12.4
	Quantile: 0.9	45.9	72.5
	Max	660.9	2255.9
	Source	Worldscope	
Assets (B)	# Observations	1000	998
	Min	0.01	0.2
	Quantile: 0.1	1.9	1.9
	Mean	34.1	45.1
	Median	7.8	9.6
	Quantile: 0.9	53.4	79.6
	Max	2526.6	3246.1
	Source	Worldscope	

Exhibit 3 (Continued)

		1/1/2015	1/1/2022
Gross profit/assets	# Observations	887	858
	Min	0.005	-0.2
	Quantile: 0.1	0.1	0.1
	Mean	0.3	0.3
	Median	0.3	0.2
	Quantile: 0.9	0.6	0.5
	Max	1.26	1.1
	Source	Worldscope	
Glassdoor rating	# Observations	739	706
	Min	1	1
	Quantile: 0.1	2.2	3
	Mean	3.2	3.7
	Median	3.2	3.7
	Quantile: 0.9	4.1	4.6
	Max	5	5
	Source	Glassdoor site	

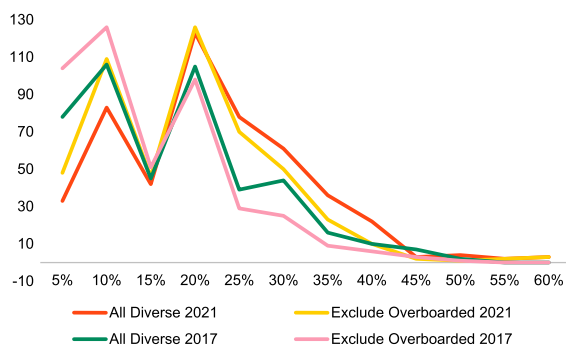
Exhibit 4 Sector representation of minority directorships within RUSSELL 1000.



Source: ISS ESG Diversity Data, the sector decomposition are extracted from the gem3 barra model GICS 10 sectors.

data, one from January 2017 and the other from January 2021. Minority representation is clearly larger in the later year, and of course smaller if we exclude the over-boarded directors. The effect of

over-boarding is especially pronounced in 2021; for example, 92 firms had more than 30% minority directors in the standard counting approach, but it drops to 55 if we account for over-boarding.

Exhibit 5 Distribution of minority share of board seats in Russell 1000.

January 2017 and January 2021.

All distributions are clearly non-normal and decile or quintile portfolios would over-emphasize small differences near 10% and 35%, with the effect also varying over time. There are, however, three reasonably clear clusters: the low range with 10% or less, the middle range between 11% and 29%, and finally the highest representation above 30%.

To account for these properties of the data our first two tests simply divide the data into three equal size groups in each cross-section and focus on the top and bottom terciles after removing size and industry effects. Our last analysis uses a continuous formulation to ensure that our results are not driven by our choice of grouping.

Exhibit 7 summarizes the annualized return of these two groups after removing the overall S&P 500 return.

As indicated in the introduction, there is a small but insignificant abnormal return if we sort on all diverse directors. If we exclude diverse directors with more than three seats, the high and low returns are different from zero at 10% and the high-low returns are nearly 2% and different from zero at 5%.

Exhibit 8 reports returns with continuous board measures. We run monthly Fama–MacBeth

Exhibit 6 Univariate returns for most and least diverse board terciles.

Statistic	Least diverse all	Most diverse all	Least diverse, three or fewer seats	Most diverse, three or fewer seats	Most-least all	Most-least, three or fewer seats
Annualized market-adjusted return	-0.50%	0.42%	-0.90%	0.96%	0.90%	1.88%
P-value	0.49	0.68	0.093	0.070	0.25	0.047

January 2015–December 2021

Exhibit 7 Summary statistics of Fama–MacBeth coefficients 20170101–20211231.

	All diverse directors		Excluding over-boarded diverse directors	
	Mean	t-stats	Mean	t-stats
Intercept	0.0049	0.166	0.0038	0.13
Log MktCap	0.00014	0.123	0.00018	0.164
B2P	-0.00056	-0.2604	-0.00049	-0.223
Pct minority directors	0.0042	1.173	0.0077	1.901
# Observations	61	61	61	61

Exhibit 8 Monthly market-adjusted reaction to an additional board seat.

Variable	Minority director	Minority director	Non-minority director
Intercept	0.0124 (5.80)	0.0016 (0.20)	0.0141 (5.57)
Number of seats currently held	-0.0109 (2.47)	0.0622 (2.28)	-0.0068 (0.267)
(Number of seats currently held) ²		-0.016 (2.04)	
R^2	0.04%	0.05%	0.0014%
# Observations	84	84	84
Total number of events	1,584	1,584	5,084

201501–202212

monthly regressions in the Russell 1000 universe including a *Book_to_price* variable computed to control for value effects, the log of the market capitalization as a proxy for size as well as industry dummies. Exhibit 8 summarizes the results with the summary statistics of the coefficients; for these tests we use only the period starting in 2017 when the majority of our investment universe had coverage. Fama–MacBeth (1973) analyses are based on point estimates of the various coefficients and these estimates are extremely noisy when coverage is low.

The results confirm that minority directors are associated with stronger returns if we adjust for board seats. The *t*-statistic is modest but reasonably strong for a relatively small sample size. If we follow Grinold and Kahn's (1999) approach of adjusting for sample size,⁷ a *t*-statistic of 1.9 over 61 months translates into an Information Ratio of 0.85; if we do not adjust for over-boarding the ratio is less than 0.5.

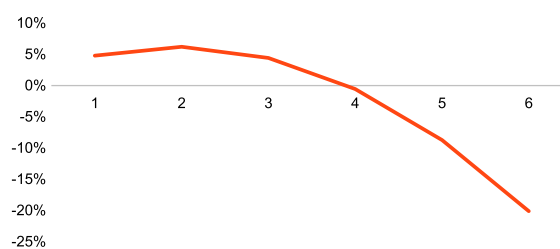
3 Event Study on Additional Board Seats

This section adapts the approach of Perry and Peyer (2005) to isolate the valuation

consequences of additional board seats for different types of directors. We compute the market-adjusted return following an additional appointment of a director for the firms where that director already serves on the board ("sender firm"). The time unit of the analysis is monthly, meaning that when a director is appointed at any point during a month, they are considered as a board member at the start of the following month.

Exhibit 9 summarizes the monthly return response for the sender firm, focusing on the relationship with number of seats the director already has at the time his/her additional seat is reported by ISS. The numbers represent OLS regressions with monthly market-adjusted return as the dependent variable.

The first two columns of results restrict attention to minority directors. The univariate specification suggests a negative effect of additional seats, while the intercept implies a positive effect for the first few seats. The result is intuitive because additional board seats can be seen as a validation of the sender firm's decision to appoint the director. This interpretation is appealing but not fully satisfactory since the intercept literally refers to zero existing seats in which case there would be no "sender" firm to analyze. Accordingly, the second column incorporates a squared term, and the results clearly indicate a positive effect for the first few seats which turns negative as the number of seats increases. Exhibit 9 plots the estimated relationship.

Exhibit 9 Stock price reaction as a function of seats already held.

The final column shows that there is no significant market response when white directors obtain additional seats; this is consistent with Perry and Peyer (2005) who find non-zero effects when they subset by other governance features (their earlier

data is dominated by White males). Overall, the results in this section confirm the portfolio sort findings; diverse board members with relatively few seats seem to add value, while those with an excess number detract.

Exhibit 10 Descriptive statistics for Glassdoor data in January 2022.

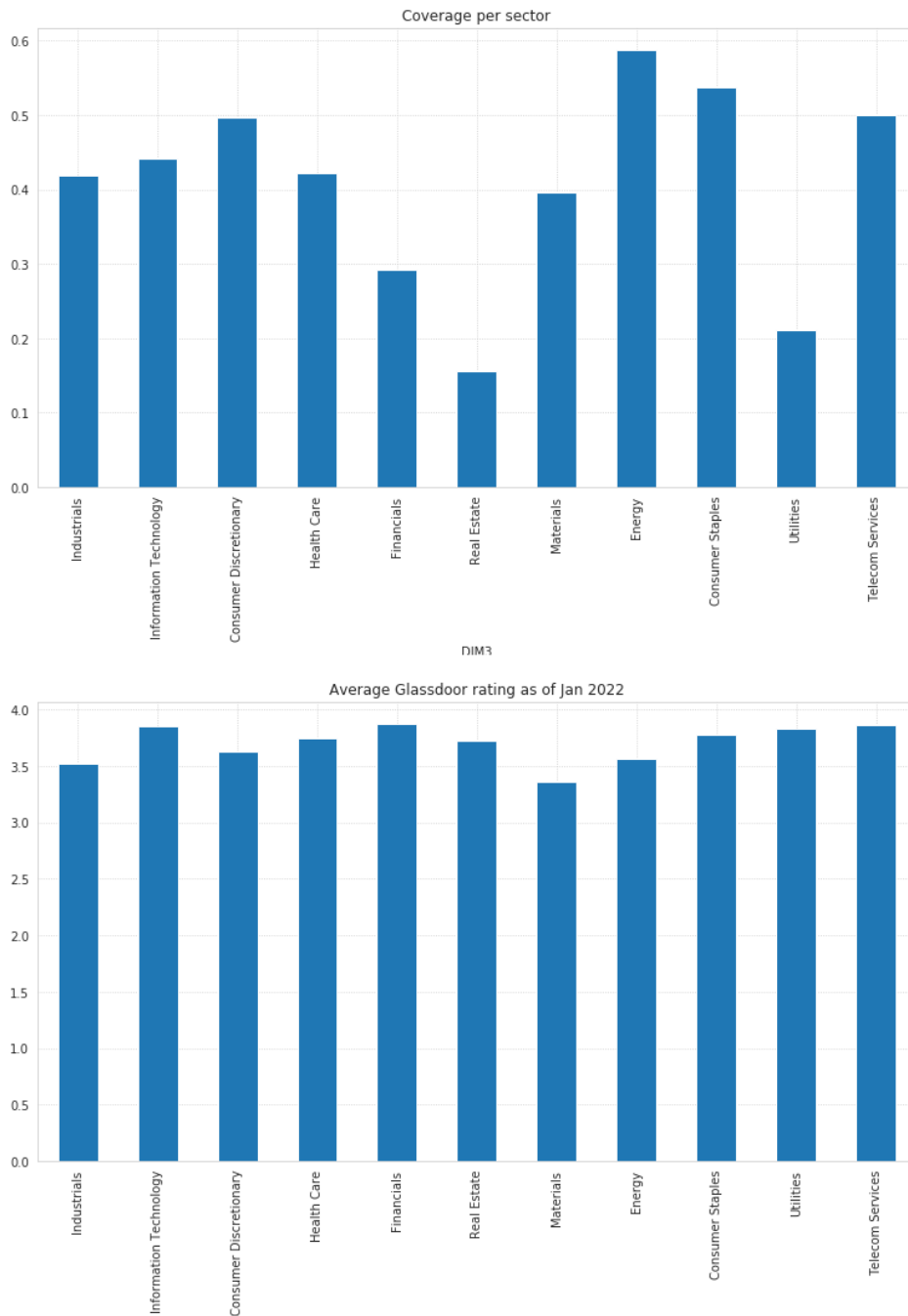


Exhibit 11 Pooled correlations, annual data 2015–2021.

Variable	Diverse percent	Diverse percent ex-over-boarded	Log assets	Gross profit/assets	Next year gross profit/assets	Glassdoor rating
Diverse percent	1					
Diverse percent ex-over-boarded	0.748	1				
Log assets	0.217	0.117	1			
Gross profit/assets	0.033	0.055	-0.344	1		
Glassdoor rating	0.051	0.053	0.08	0.027	0.045	1

4 Growing the Pool and Glassdoor Ratings

Glassdoor is a review and recruiting website on which employees voluntarily leave reviews of their employers. The website ameliorates company influences by requiring each user to disclose personal information including social network accounts. The reviews cover five categories: Compensation and Benefits, Work/life balance, Career Opportunities, Culture and values, and Senior Management. Green *et al.* (2019) provide a detailed examination of features such as review length and find that with the exception of Work/life balance, all score components are associated with stronger performance. In this study we focus on the aggregated rating which corresponds to a score between 1 and 5.

We use a name mapping algorithm described in the Appendix to match Glassdoor to our board and return data (Green *et al.*, 2019 use a hand map). Exhibit 10 summarizes coverage and average ranking by GICS sector in January 2022. While coverage varies substantially across sectors, the average rating varies little and the differences are not significant.

Exhibit 11 summarizes the univariate correlations between Glassdoor rankings and our two measures of board diversity along with firm size and profitability.

The univariate relationships are reasonable. Larger and more profitable firms tend to have higher employee satisfaction. Moreover, there is a substantial correlation between our raw measure of employee satisfaction and board diversity. Both diversity measures are positively correlated with size and profitability. To disentangle diversity from size and profitability, Exhibit 12 combines the two in regressions explaining the ratings.

Both diversity measures are significantly linked to higher Glassdoor rating. The coefficient increases by 25% higher after we control for

Exhibit 12 Pooled annual regressions explaining Glassdoor rating (including year and GICS sector fixed effects).

Variable	All minority board members	Excluding over-boarded minorities
Intercept	1.71 (4.32)	1.21 (2.91)
Log assets	0.07 (4.15)	0.09 (5.45)
Gross profit/assets	0.27 (1.91)	0.3 (1.97)
Percent of diverse board members	0.35 (1.91)	0.46 (2.08)
Adjusted R^2	1.6%	1.6%

over-boarding, but the effect is not statistically significant and the standard error increases somewhat, due most likely to more concentration of the non-overboarded measures at lower values of representation.

5 Conclusion

Our paper combines two distinct perspectives on boards; the literature on diversity and that on “busy” directors. We find consistent evidence that diversity is valuable so long as the minority directors have fewer than four board seats. We do not directly capture the expansiveness of firms’ board recruitment process, but instead infer it from the presence of minority directors without too many seats. More detailed examination of board recruitment policies and approaches seems a fruitful area for future research.

Appendix

Ethnicity details

Exhibit A1 shows the percentage of US directors and directorships held by the five main groups covered in the data. Based on 2020 census data and 2022 director data from ISS ESG, the racial

and ethnic groups with the largest relative under-representation in the US are Hispanic/Latinx, Black, and Native American/Alaskan Native.

Name mapping algorithm

The company names in Glassdoor are not standardized and have different naming conventions to other traditional standardized datasets. We address this by first truncating the text into $k = 3$ length characters, shifting across by one character at a time, with the trigram length of three typically used for matching names/entities. We removed special characters and generic terms like “Corp” or “Inc” to help with the matching process.

We follow the term frequency inverse document frequency (TFIDF) procedure to convert the trigrams into vectors (see Sparck Jones, 1972), which counts the frequency of each trigram. Similar company names will have a similar distribution of trigrams, which are formally matched with a cosine similarity measure. Multiple entries can also be accepted if the data used shows potential of different naming schemes/practices of the same entity. We perform manual checks and also check robustness with different thresholds on the cosine similarity measure.

Exhibit A1 Representation of ethnicities in US boardrooms relative to population.

US Office of Management and Budget Classification	% Directors	% Directorships	% US	Difference
Hispanic/Latin American	3.5%	3.2%	18.5%	−15.0%
Black	8.2%	7.2%	13.4%	−5.2%
Native American/Alaskan Native	0.1%	0.1%	1.3%	−1.2%
Asian (total)	7.0%	7.4%	5.9%	1.1%
Caucasian/White	81.3%	82.1%	60.1%	21.2%

Source: ISS ESG Diversity Data as of 12-01-2021 and 2020 US Census Bureau QuickFacts, 2019 Annual Social and Economic Supplement.

Endnotes

- ¹ Our data on racial and ethnic diversity come from the US Census, specifically “Race and Hispanic Origin”. We will henceforth refer to the under-represented ethnic and racial groups as “minority”.
- ² We will use these two terms interchangeably throughout the paper. We do not have information on directors’ full range of outside commitments and restrict attention to board seats in listed firms.
- ³ This universe of firms are all exposed to pressure from institutional investors; Gormley *et al.* (2022) find that institutional ownership increases the appointment of female directors in a wider sample of firms where there is more variation in this variable. Tonetto (2022) documents that an extreme form of external pressure for gender diversity (mandates in the state of California) is associated with an increase in the number of board seats for the average female director.
- ⁴ See <https://www.mckinsey.com/featured-insights/leadership/the-ceo-guide-to-boards>. Consistent with this, Fich and Shivdasani (2006) find evidence that overly busy directors are associated with weaker performance and monitoring.
- ⁵ Bernile *et al.* (2018) treat the number of board seats as one of the six board diversity indicators. They find that this index is associated with lower risk. It is, however, unclear how important the number of seats in their index. Moreover, their measure of risk (standard deviation of returns) includes both upside and downside and does not represent a directional performance measure. Our returns analysis indicates lower factor risk loadings for diverse boards but we focus more squarely on directional performance.
- ⁶ Perry and Peyer (2005) and much of the related literature such as Fich and Shivdasani (2006) emphasize agency variables such as executive ownership in the sender firms. It is unclear that these traditional considerations would affect any results related to diversity; put another way, we find an average, unconditional effect of over-boarding with diverse directors but none with white directors.
- ⁷ The adjustment is simply the square root of 12/number of months in sample. The factor of 12 annualizes the statistic and dividing by sample size removes the degrees of freedom effect.

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The views expressed here are those of the authors alone and not of BlackRock, Inc.

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