

Beyond lip service: tracking the impact of the gender diversity gap

Dr Joanna Nash and Dr Ron Guido



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Introduction

Achieving gender equity in the corporate world has proved to be a slow and challenging journey. In both developed and emerging markets, women are a minority at both management and board levels. Decades after women began taking on professional and managerial roles, the so-called 'glass ceiling' appears to be stubbornly persistent.

Not only does this have negative social impacts, it raises issues for investors in these companies. If a large part of the talent pool goes untapped, and 'groupthink' reigns among decision makers, could it limit companies from achieving their full potential?



About the research methodology



While much research has been done on gender diversity in the corporate world, it has been limited in scope due to the constraints of what companies report and the complexity of the data. Realindex set out to address these gaps.



The ability to gather company data has improved significantly in recent times due to technology such as machine learning and natural language processing. Using data provider Factset, we sourced a comprehensive data set on gender, which goes beyond the oft-reported board statistics, to include senior management. The data set contains biographical information for individuals associated with over 1 million firms including the board and senior management positions in publicly listed as well as private companies, and collected via a variety of sources including company web sites, regulatory filings and press releases. By tracking the evolution of individuals in the terms of their roles and job functions across companies and through time, we are able to get a clearer picture of female representation in multiple markets, and track the numbers over more than a decade, rather than capturing a moment in time.



To understand the complex relationship between diversity and performance, we applied a range of statistical analyses to see how gender diversity interacts with various company performance and investment indicators. Applying the same level of robust quantitative analysis as we apply to our investments, Realindex has been able to provide a more detailed view of the business case for gender diversity.



The data covers companies in the MSCI ACWI, an index of large- and mid-cap stocks across 23 developed and 25 emerging markets that spans more than a decade. In the analysis that follows, we track the behaviour and performance of firms from 2009 to 2021.

Using Realindex's own comprehensive data set, we set out to answer a number of questions, including:

- How do different regions compare in terms of women in corporate leadership roles?
- Has disclosure of gender balance in company reports affected the number of women in leadership?
- Have quotas led to increased representation of women in senior management and on boards?
- Is diversity on boards as important to performance as diversity in management teams?
- Do higher levels of women in leadership – at both board and management levels – affect company performance and investment returns?

Note on charts: all data is sourced by Realindex and FactSet, covering the period 1 January 2009 – 31 December 2021, unless otherwise stated.



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When it comes to the link between gender balance, company performance and investment returns, the data is compelling: more gender diverse leadership teams generate better results.

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For this analysis, we make comparisons between representation at the board level as well as the senior management level of the firm to understand how gender diversity has evolved and impacted the firm over time. For the purposes of this study, we define senior management as the Chief Executive Officer (CEO), and their direct reports which would typically include, the Chief Financial Officer, Chief Operating Officer, Head of Human Resources, and Chief Legal Officer.

Our overall conclusion is that without external pressure, promises to achieve gender diversity are simply lip service. Analysis shows that quotas are more effective than disclosure in boosting female representation – although both are important. This is evident in the higher proportion of women on boards in markets where minimum levels are mandated. The proportion of women in senior management lags in nearly all markets where there are no such requirements for gender balance. And even when they do form part of the management team, women are concentrated in several functions outside of the CEO role (and less likely to be a launch-pad into the top job).

To understand the impact of gender diversity on company performance and investment returns, we cross-referenced the gender data with multiple company attributes such as return on equity and profit margins. The analysis showed a clear correlation between greater diversity and better company performance.

Finally, we looked at whether this diversity/performance advantage had been recognised by the market and priced into company valuations. In short, it has not – meaning that investors who can identify companies with higher diversity, especially in senior management, may generate alpha through this factor.

When it comes to the link between gender balance, company performance and investment returns, the data is compelling: more gender diverse leadership teams generate better results.

What is Upper Echelon Theory and why does it matter?

There has been a rich literature examining the performance drivers of top management teams and the role of demographics. Since the early seminal work by Hambrick and Mason (1984) where the notion of Upper Echelon (UE) theory was introduced, numerous studies have investigated the ways in which various aspects of diversity in top management teams lead to firm performance (Bantel, 1994; Hambrick, Cho, & Chen, 1996; Sanders & Carpenter, 1998; Carpenter & Fredrickson, 2001; Carpenter, 2002; Jaw & Lin, 2009; Nielsen, 2010).

UE's central premise is that for executives in top management teams, their "experiences, values and personalities greatly influence their interpretations of the situations that they face, and in turn affect their choices" (Hambrick, 2007). In other words, diversity in top management teams matters. Top management teams have loosely been defined as that "relatively small group of most influential executives at the apex of an organisation usually the CEO and those who report directly to him or her" (Finkelstein, Hambrick, & Cannella, 2009), however many studies often include within that group the Board of Directors or other senior work groups (Homburg and Bui, 2013).

However, these studies tend to draw conflicting or inconsistent conclusions and findings as to whether diversity is a positive or negative effect on the firm (see Cannella, Park and Lee, 2008). This has often been the result of not having a clear idea of what diversity is and the limited data that has been available to carry out thorough empirical analysis. Our research seeks to address these limitations with a clear definition of diversity and a comprehensive data set.

This paper explores one dimension of diversity: gender, and related issues around senior female representation in companies. Realindex has developed a new and comprehensive data set that spans multiple markets, covers both board and senior management appointments, and tracks progress over time. Our analysis reveals numerous insights about gender diversity and its impact on company performance and investment outcomes.

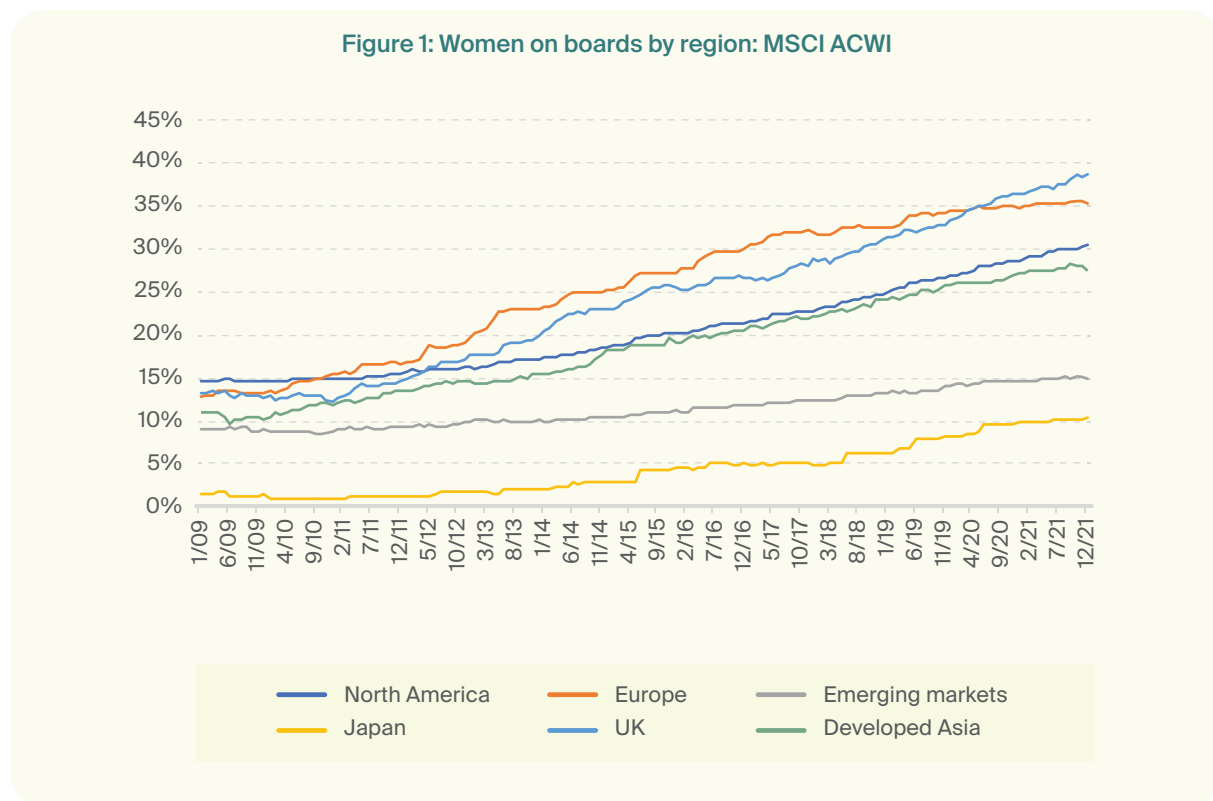




Part I
Women on boards:
a decade of progress

While women have been a key part of the corporate world since at least the 1980s, they have been remarkably absent from its decision-making ranks since that time. It's only in the past decade that there has been real progress in boosting the number of women on boards and even then, the progress has been patchy. Some countries have gained more ground than others.

Figure (1) tracks the percentage of women on boards within the MSCI ACWI over the last decade and half. Our research shows that developed markets perform better in gender diversity than their emerging market counterparts – with the exception of Japan, which is an outlier. Although the number is improving slowly, Japanese boards have fewer than 10% female directors, compared to Europe and North America, where the average is above 30% - a number that has been reached despite a slow start in the first decade of the millennium. Emerging market countries, whilst starting at a higher level than Japan, have seen a slower increase in female representation.



Although the number is improving slowly, Japanese boards have fewer than 10% female directors, compared to Europe and North America, where the average is above 30% - a number that has been reached despite a slow start in the first decade of the millennium.



Japan

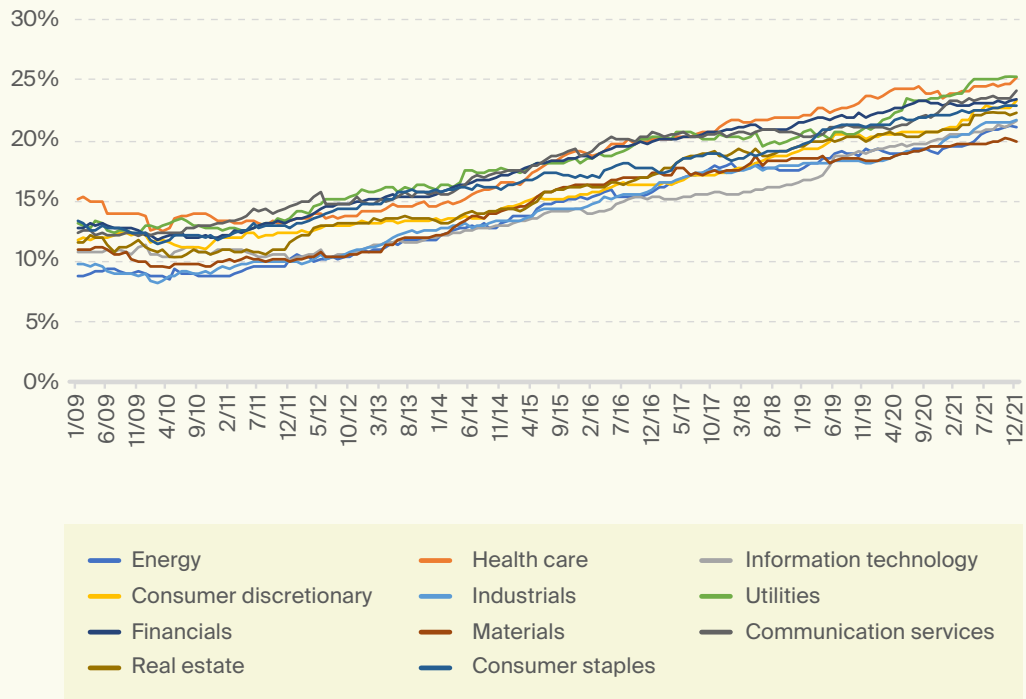
<10%

Europe/North America

>30%

There are also differences in sectors, with Healthcare having the highest percentage of women on boards and Materials the lowest - although more recently, the IT sector has lagged as well as shown in Figure (2).

Figure 2. Women on boards by sector: MSCI ACWI



To quota, or not to quota?

What accounts for this multi-speed progress? It appears that the key driver is the level of pressure applied to companies through disclosure or legislation.

To dig deeper into the impact of quotas on female representation, we looked at three different categories of countries:

- Countries that have imposed quotas
- Countries without quotas but with disclosure requirements
- Countries with neither quotas nor disclosure requirements



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Europe: what gets mandated, gets done

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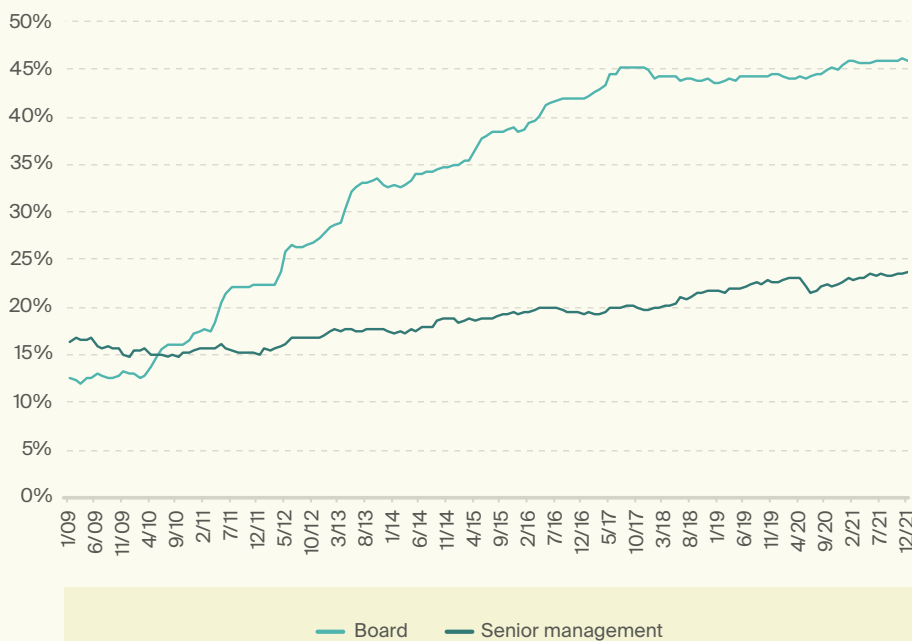
The effects in Norway were at first mixed, giving rise to the so-called “golden skirt” problem, where only a few women occupied multiple board seats. Nonetheless, several European countries followed Norway's footsteps and mandated some form of gender quotas on corporate boards.

In France, the Copé-Zimmermann Law required listed companies to include 40% of women on their corporate boards from January 1, 2017. To allow companies to prepare for meeting this goal, there was a phased transitional period whereby in 2014, the percentage of directors of each gender could not be less than 20% of the aggregate number of board members.

We can see how effective this has been in the chart below (Figure 3), which tracks the average number of females at the board and senior management level for French stocks in the MSCI ACWI universe.

It shows a steady upwards trajectory, before hitting the 40% target. Interestingly, since then, it has remained reasonably flat. And if we look at senior management over the same period, the change has not been as impressive, going from around 12% to 22% over the same time. (We discuss the senior management gap further in Part II).

Figure 3: Proportion of women on boards and management - France

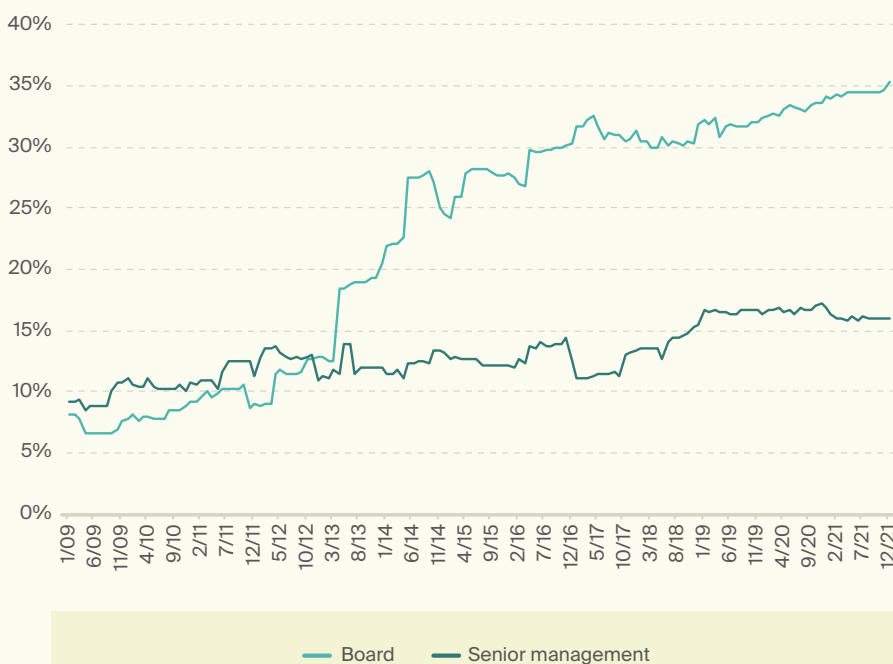


Italy (Figure 4) is another country that legislated female representation on boards, passing a law in 2012 which required a progressive implementation towards 30% women. It required 20% representation for the first board renewal after 2012 (boards are elected every three years) and then 30% for the following board renewals.

We can see these changes in the data below for Italian firms in the MSCI ACWI universe. Starting from a very low base of around 5% representation, there is a large jump up in 2013, hitting the 20% target in 2014 and then the steady increase to 30% since from 2018.

Again, the levels in senior management have been relatively flat starting at approximately 11%, rising somewhat, and then falling back to 15%.

Figure 4: Proportion of women on boards and management - Italy



Australia: 'If not, why not' disclosure in action

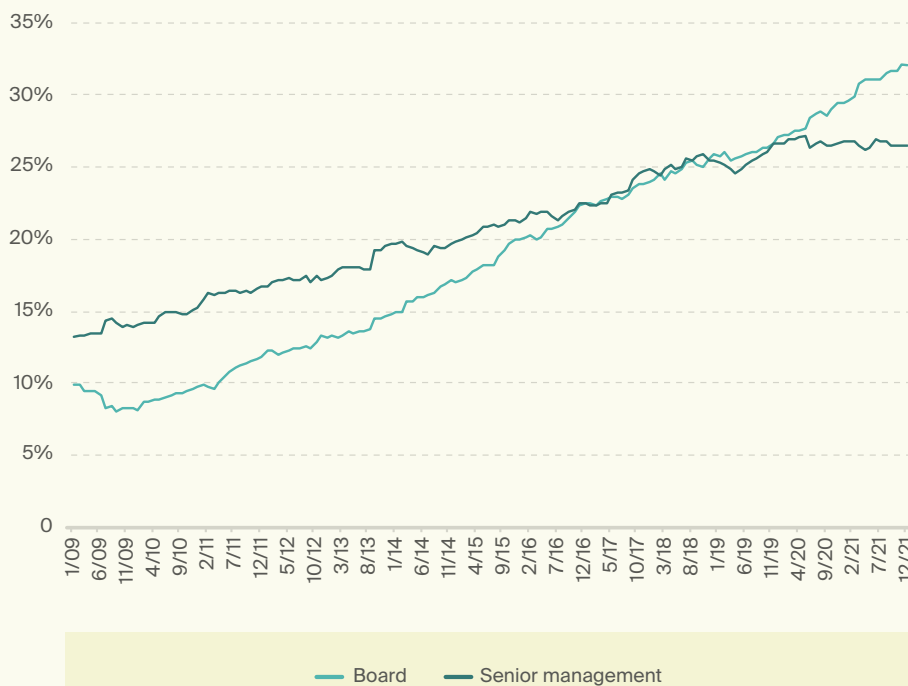
Australia has not imposed any quotas but has had a focus on gender diversity disclosure and targets through the corporate governance guidelines issued by the Australian Securities Exchange (ASX). It's worth noting that these guidelines are not rules: if a company doesn't meet the goals, there is no sanction, just a requirement to explain to shareholders why this is the case¹.

There have been two main changes regarding diversity in these guidelines:

- In 2010, listed companies had to disclose the number of women at board, senior management and company level.
- In 2019 a further change was made where all companies reporting from 1 Jan 2020, if they are in the ASX 300, are required to have an objective of 30% female representation at the board level. Thus the requirement is not to have 30% women, but to aim for it².

In Figure 5, for Australian firms in the ASX 300, we see that since 2010, there has been a steep increase in the number of women on boards. Starting from a low base of around 10% in 2011, it has steadily increased to just below 30% at December 2021. The number of women in senior management has also been increasing from 12% to around 26% by December 2021, although the increase has tailed off in recent years.

Figure 5: Proportion of women on boards and management - Australia



In 2010, listed companies had to disclose the number of women at board, senior management and company level.

1. ASX Corporate Governance Principles and Recommendations, 4th Edition, 2019
2. ASX Corporate Governance Principles and Recommendations, 4th Edition, 2019

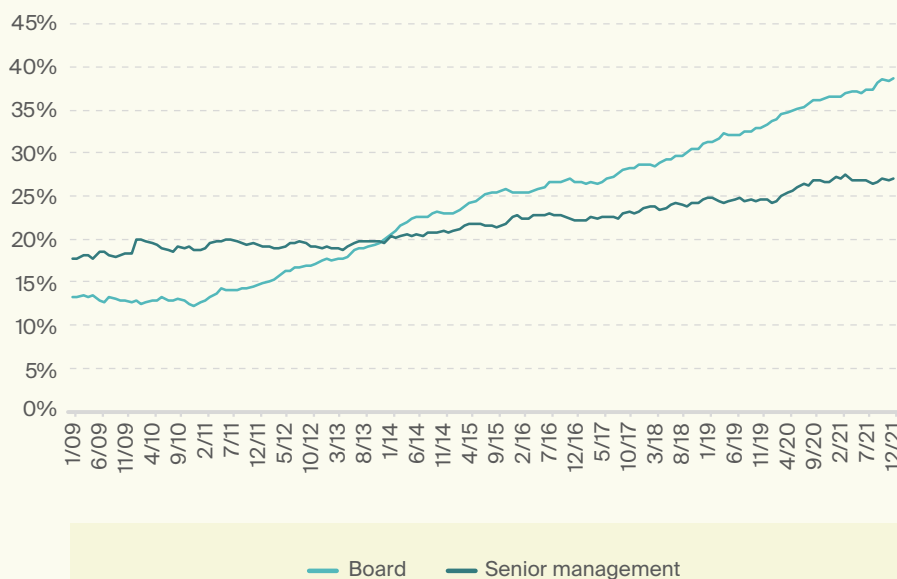


United Kingdom: slow and steady progress

In 2011, the UK set voluntary targets of 25% women on boards. This was largely reached in 2016 and has since increased to 33%. We can see the steady increase since that voluntary target was called for and then the plateau before it increased again.

Again, in Figure 6, for UK firms in the MSCI ACWI, the rise in women at senior management level has been a lot slower, from a higher initial starting level of 18% to just under 25% as no targets for senior management were set.

Figure 6: Proportion of women on boards and management - UK

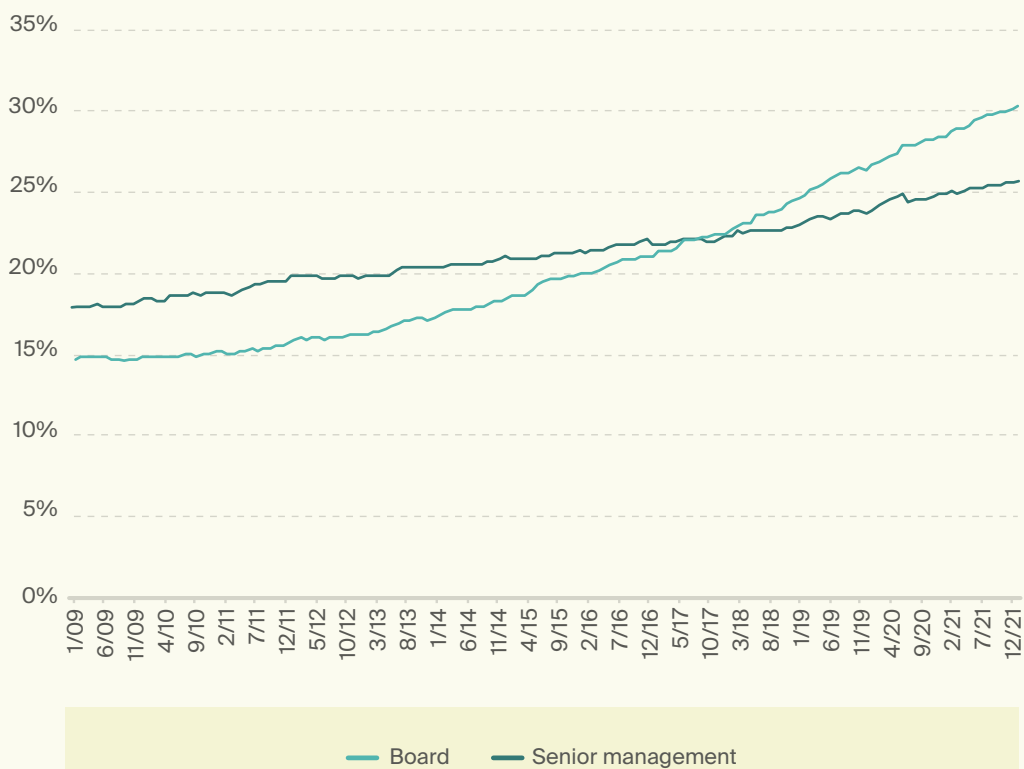


Countries with limited focus

If we look at the US, there are no quotas or any disclosure requirements. Although investors may have a focus on gender and put pressure on companies, there is no regulatory requirement for companies to share any gender data.

For US firms in the MSCI ACWI, while there has been a steady increase in representation from just under 14% to 28%, many other countries have outpaced the US, tripling their representation of women on boards, with the US still yet to hit the average of 30% representation at the board level. An even slower trend is apparent for women in senior management. Figure 7 highlights these trends.

Figure 7: Proportion of women on boards and management – United States



Although investors may have a focus on gender and put pressure on companies, there is no regulatory requirement for companies to share any gender data.



Japan and South Korea: lagging behind

Japan and South Korea stand out as countries with low representation (less than 10%) not only in senior management but at the board level as well. Whilst a lot of this slower progress can be attributed to cultural norms in the countries, with women generally seen as the homemaker and childcare providers, this is slowly starting to change. We can see these patterns in Figure 8 and 9 which tracks female representation of South Korean and Japanese firms in the MSCI ACWI.

Figure 8: Proportion of women on boards and management – South Korea

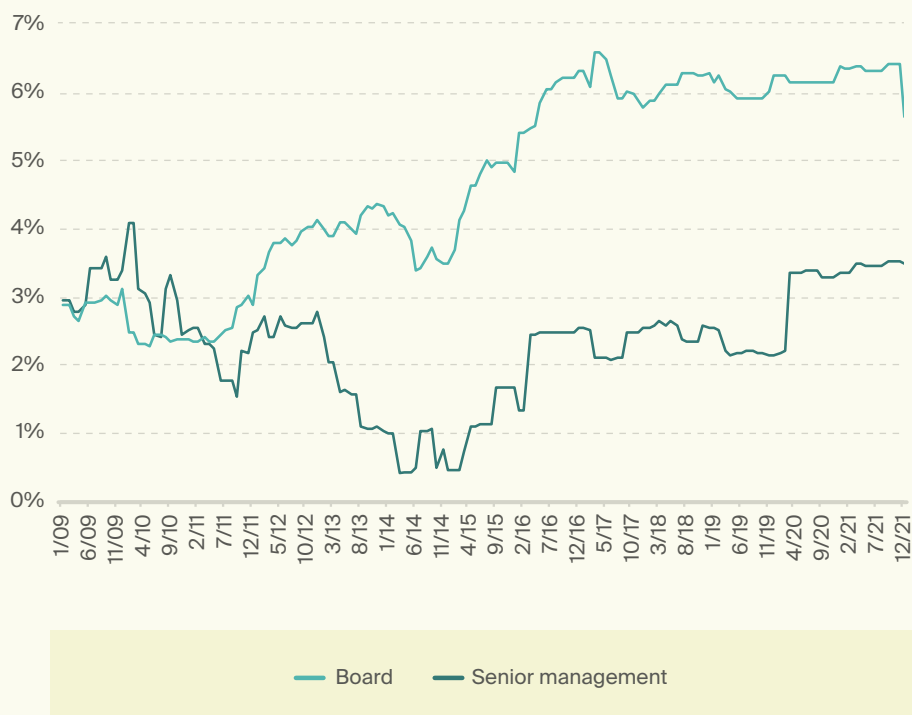
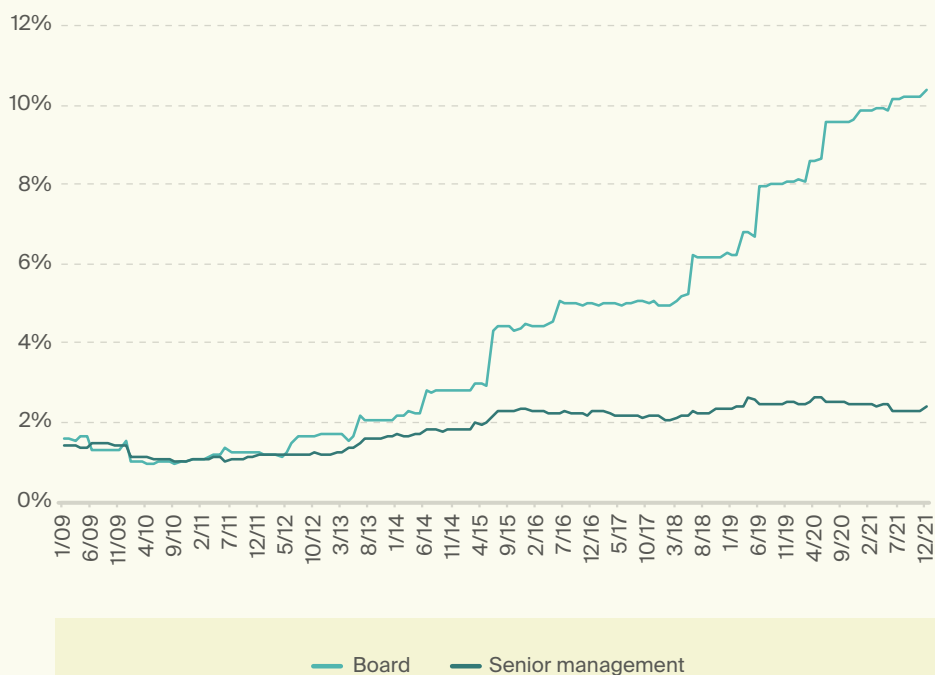


Figure 9: Proportion of women on boards and management – Japan



South Korea's Financial Investment Services and Capital Market Act, passed in January 2020, stipulates that listed firms with 2 trillion won or more in total assets should not have a board comprised entirely of one gender. The rule is mandatory but not subject to any penalty and has a two-year grace period, so it may still take some time to see any changes. When these changes were announced in January 2020, 8 out of 10 companies that would be captured by the act had no female directors³.

Japan is also slowly making progress. There was an initial push under former Prime Minister Shinzo Abe to improve the representation of women in leadership to 30% by 2020. While this has had limited success thus far, it will hopefully change with the incorporation of diversity in the corporate governance code, and if asset managers start voting against boards that lack any gender diversity.

Quotas and targets are effective in boosting gender diversity

From these charts, we can see that quotas appear to be effective in increasing female board participation, especially if they are legislated.

Countries that have not legislated this area, but have disclosure requirements or targets, are still seeing positive change – albeit not as fast. This is in contrast to countries that do not have any targets or disclosure, notably the US. Whilst there has been a steady increase in the percentage of women on boards, the US is yet to reach the 30% levels achieved by similar developed countries.

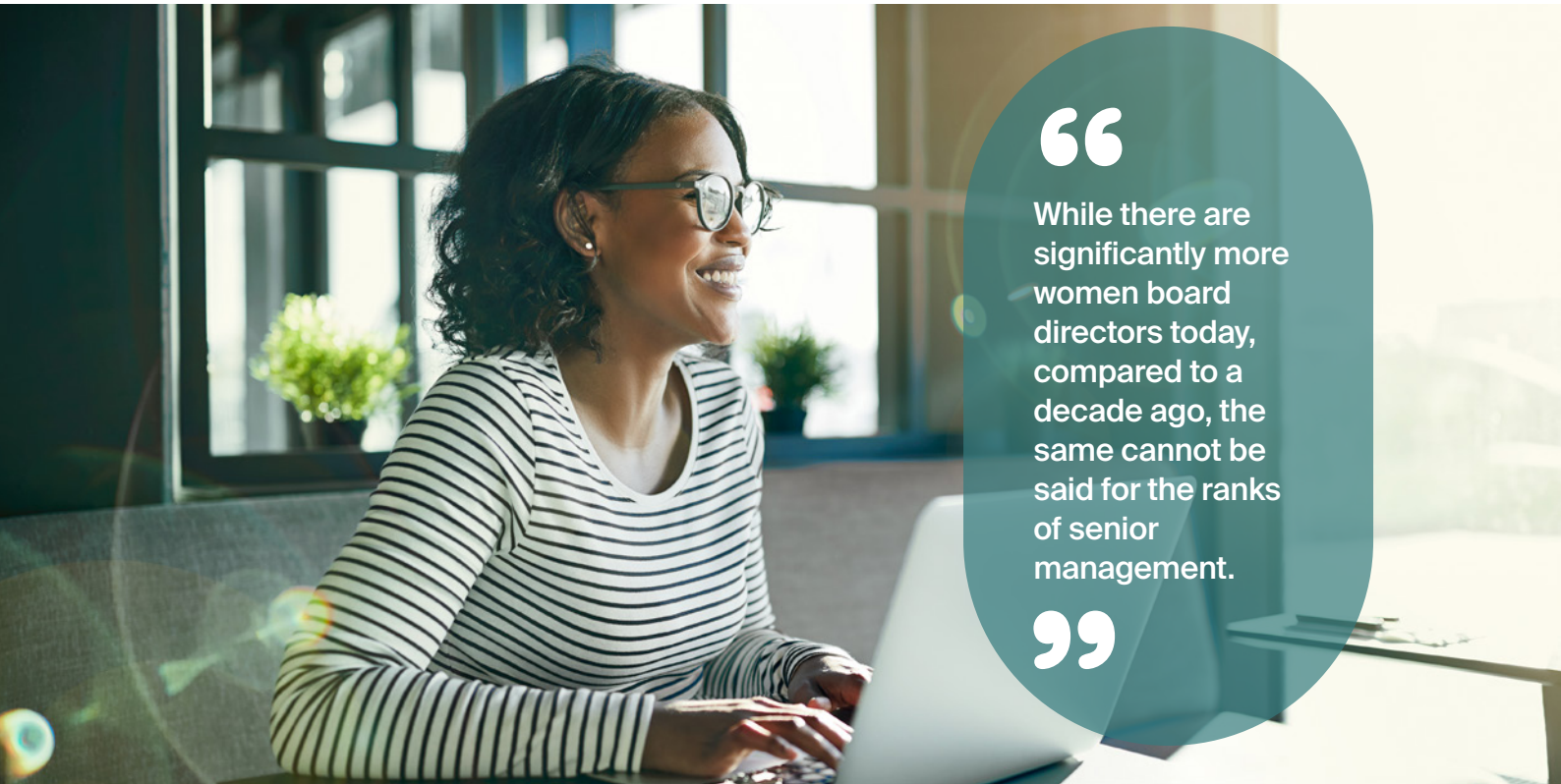
The other interesting observation is that once these targets are reached, there tends to be a plateau: we see it appear at 40% in France, at the initial 25% in the UK (before the target was increased) and at the 30% mark in Italy. Whilst these numbers cannot continue to increase forever, we would expect to see figure that is closer to the gender split in the workforce, rather than the 30% limit we are seeing in most countries.

However, gender diversity matters beyond the boardroom, which has prompted us to explore gender diversity in senior management at a more granular level.

3. <http://www.koreaherald.com/view.php?ud=20200119000125>



Part II
Women in senior management:
a long way to go



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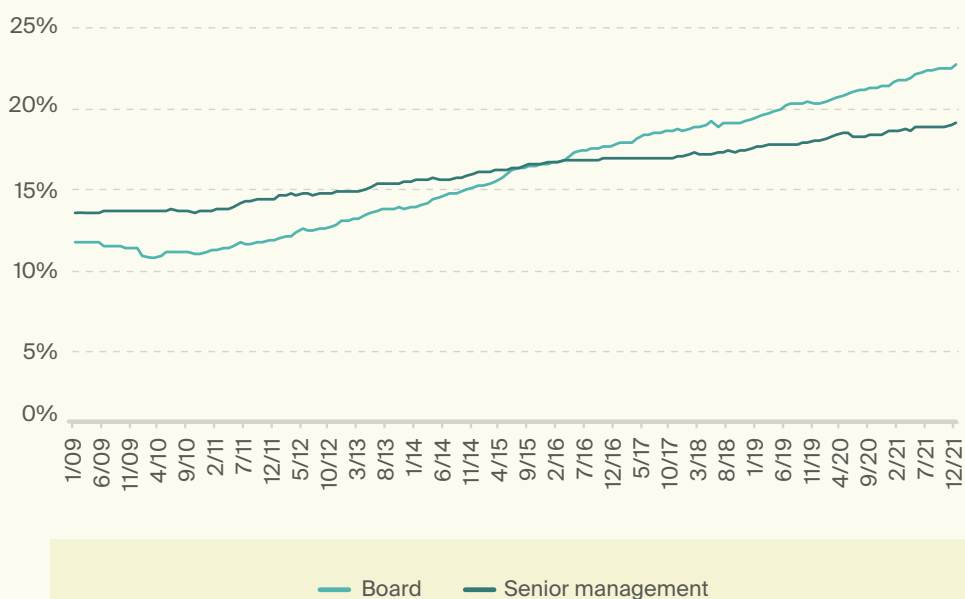
While there are significantly more women board directors today, compared to a decade ago, the same cannot be said for the ranks of senior management.

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While there are significantly more women board directors today, compared to a decade ago, the same cannot be said for the ranks of senior management. The factors driving board diversity – mandated gender disclosure and quotas - have not been in place for executive teams to the same extent. As a result, gender diversity among senior management - which was higher than board diversity at the start of the last decade - has now fallen behind.

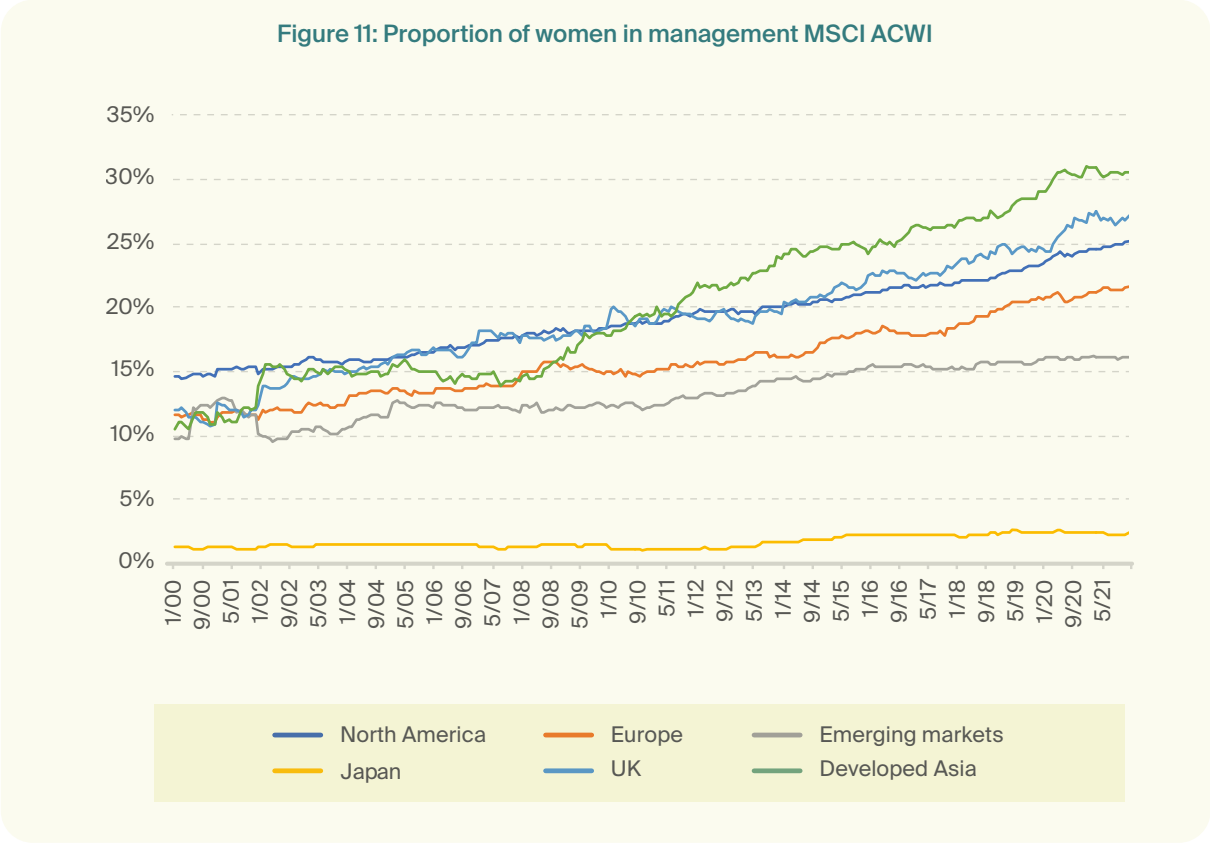
On an aggregate level, when examining all firms within the MSCI ACWI as shown in Figure 10, both numbers are still disappointingly low, with around 1 in 5 board or senior management roles being held by women globally.

Figure 10: Proportion of women on boards and management – Global

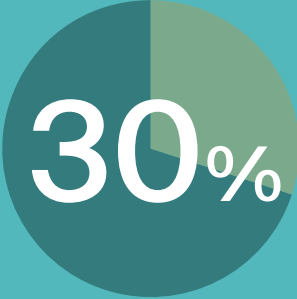


Stark regional differences evident

Figure 11 highlights the trends in female representation in senior management across regions over the past decade. Along with Japan, companies in emerging markets have lagged compared to the rest of the worlds in terms of representation, however interestingly Europe ex UK and North American firms do not lead the way UK and the Developed Asian Markets (Australia, Singapore and Hong Kong) have generally had higher female representation in senior management. The spread across the most and least diverse regions is considerable; as at December 2021, the difference amounts to almost 30%.



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Sector differences: Real Estate leads the way

Real Estate, Communication Services, and Healthcare have the highest levels of female representation at senior management level, while Industrials and Materials are the lowest as shown in Figure 12 – a difference of approximately 8 percentage points between the highest and lowest sectors. We observed a similar result for sectors with the highest female representation at the board level.

Figure 12: Proportion of women in senior management by sector

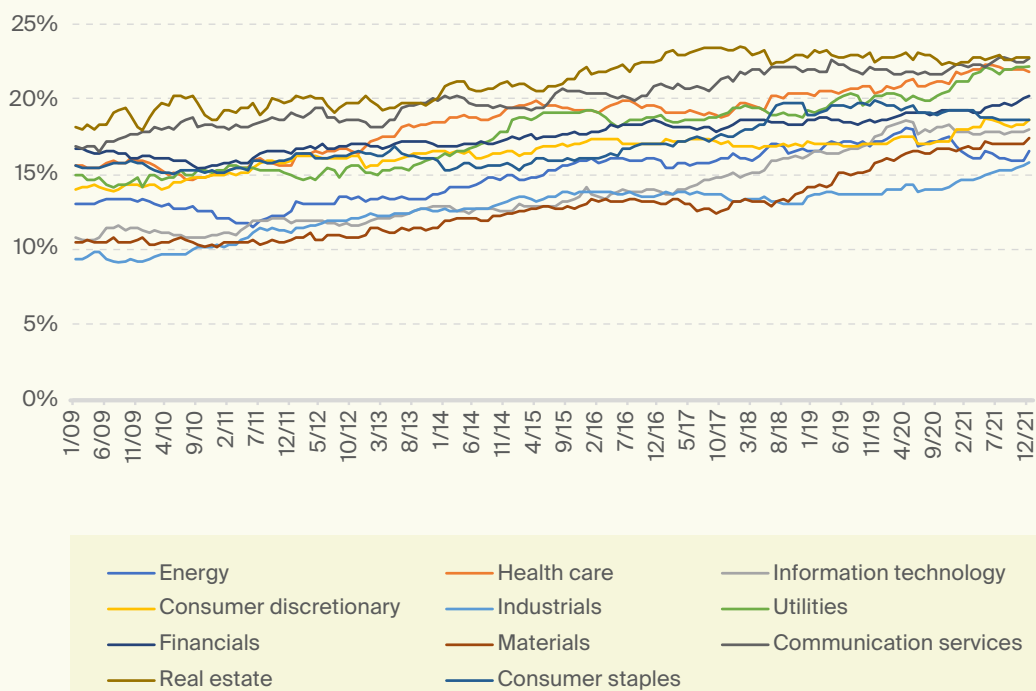
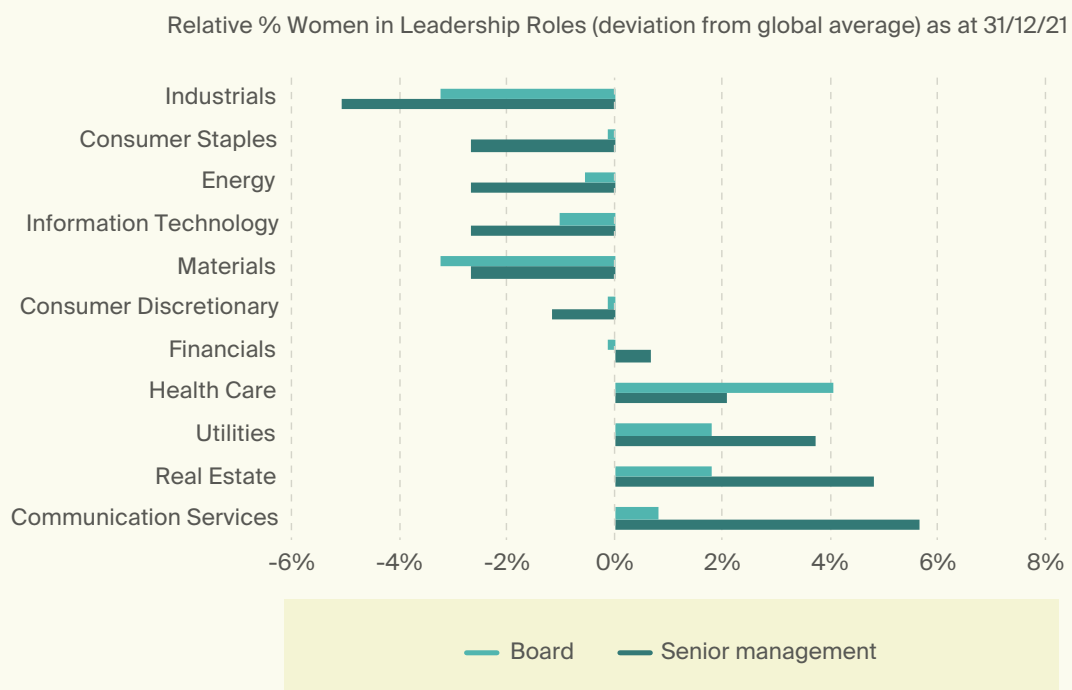
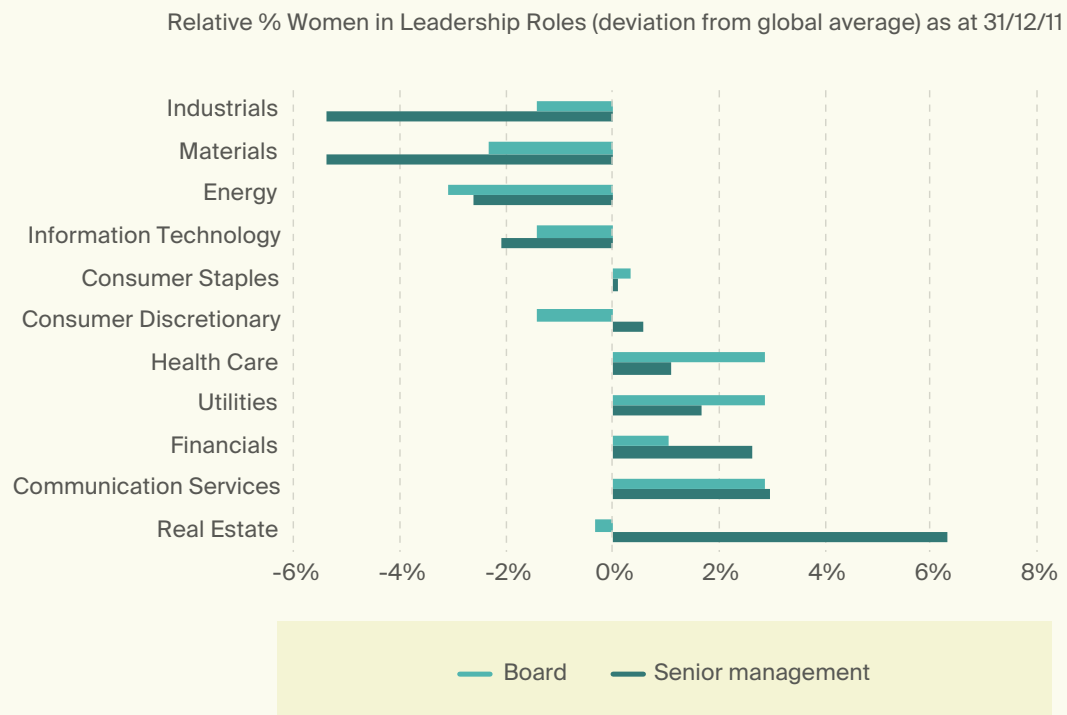


Figure 13 highlights how the gap between high and low gender diverse sectors has changed over time. Over the past decade, the gap has been narrow between the best and worst performing sectors when it comes to board diversity, but it remains significant for senior management. Whilst the dispersion between the leaders and the laggards at a board level is approximately 5%, at the senior management level this is more than double at 11%.

Figure 13: Proportion of women in senior management and boards by sector



Regional differences: ‘Down under’ is on top

The relative absence of women in senior management is consistent with the notion that quotas, legislation and pressure from investors have been successful in boosting gender diversity on boards. Where these factors aren’t in play, progress has been very slow.

The data highlighted thus far bears this out. This is certainly the case in France and Italy, where legislation meant these countries have led the way on female board appointments. Looking at women in the C-suite, however, France has only reached 20% and Italy is just behind.

The UK and US have increased the percentage over time, but at very slow rates. The one outlier is Australia, which has not only had improvements in board representation but also senior management representation. Although still below 30% in senior management, Australia has more than doubled the level of representation during the period 2010- 2021.

This is likely due to disclosure requirements in Australia, where companies have to report annually on the percentage of women at both board and senior management levels. With these numbers more visible in investors’ minds, it puts pressure on these companies to do better beyond the board. It may also have become more apparent to the companies themselves, as they are forced to review these numbers each year and disclose them to staff.

Even countries that are seen as leaders in gender equity demonstrate a significant gap between women on boards versus women in management, as shown by Norwegian and Swedish MSCI ACWI firms in Figure 14 and Figure 15, respectively.



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Figure 14: Proportion of women in senior management and boards - Norway

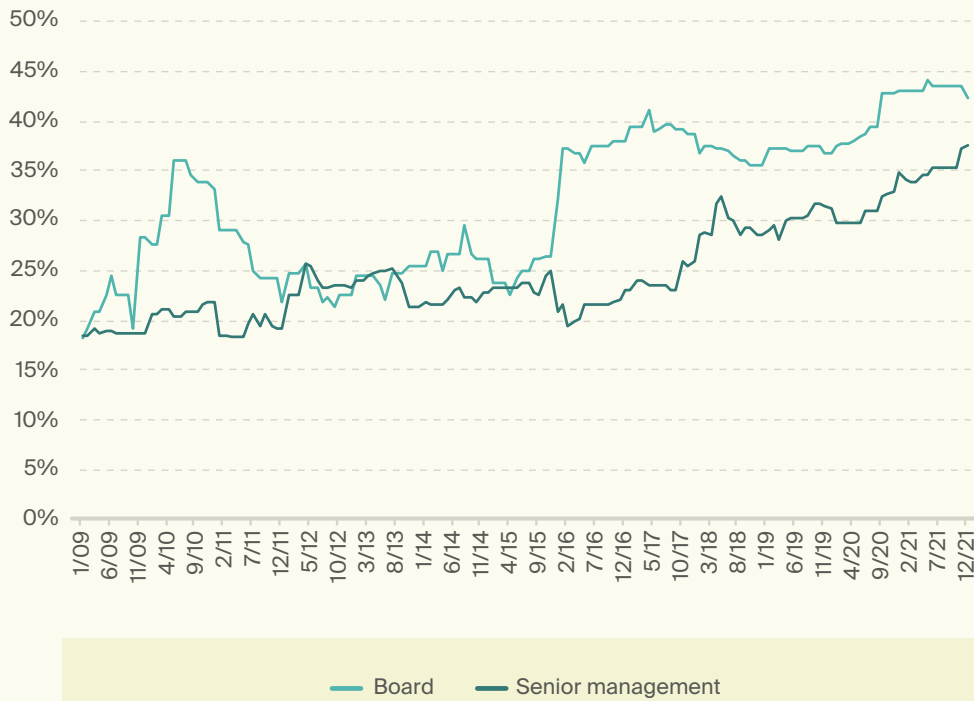
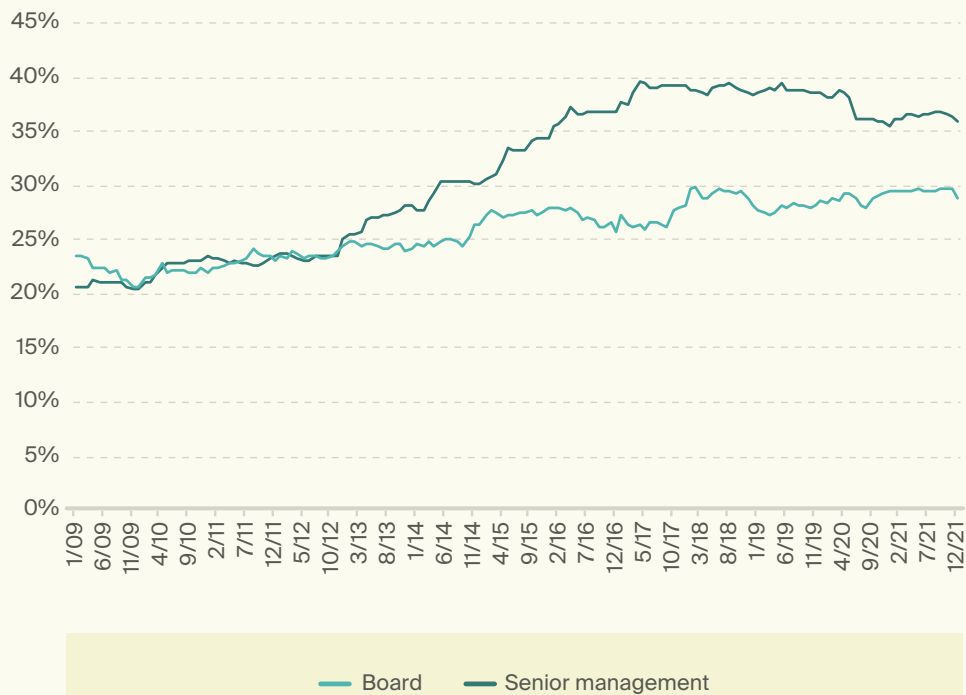


Figure 15: Proportion of women in senior management and boards - Sweden



Role differences: are pink ghettos emerging?

While women are slowly filling senior management roles, they are still a rarity in the top job. In the 2021 Chief Executive Women Senior Leadership Census, there were only 18 women CEOs in the ASX 300 (or 6%), and out of the 23 new CEO appointments in 2021, only one was a woman. Most women executives are in functional roles such as HR, marketing and legal.

Is this trend also reflected in the MSCI ACWI? Are women clustered in certain roles and functions, sometimes referred to as 'pink ghettos'?

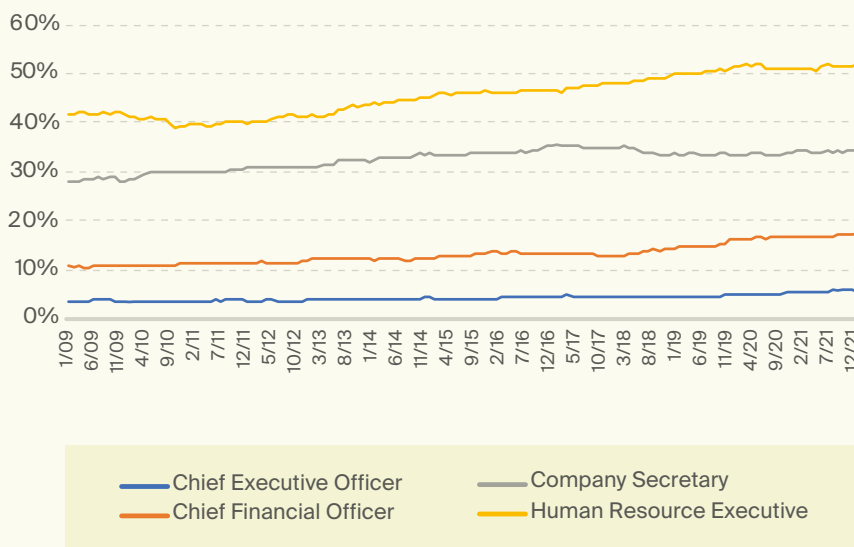
The data shows this to be the case as seen in Figure 16. Comparing gender representation within the traditionally male-dominated roles of Chief Executive Officer and Chief Financial Officer, to the functional roles of Human Resources and Company Secretary, we observe gender differences across a broad universe of firms that span multiple sectors and countries.

Looking firstly at CEO roles, we can see female representation has been increasing since 2008, and has picked up slightly in the last 5 years. However, as of 2021, only 5.5% of companies globally have a female CEO. Female representation in the CFO role has also shown a steady increase but again from a very low base, reaching approximately 17% by 2021.

Over the same period, the percentage of women in senior HR and Company Secretary roles rose significantly, and from a higher base: 40% and 26% respectively, which grew to 52% and 35%.

It's likely that the scarcity of women CEOs is linked to the fact that they are clustered in certain functions, as the pipeline for CEO appointments has not traditionally been through back-office functions such as HR or Company Secretary roles.

Figure 16: Proportion of Women in Senior Management Functions: MSCI ACWI



The background is a solid teal color. In the top-left corner, there is a pattern of overlapping, semi-transparent geometric shapes in a lighter shade of teal. These shapes include circles, rounded rectangles, and elongated ovals, arranged in a somewhat diagonal, overlapping pattern that fades towards the center.

Part III

Diversity and company performance:
window dressing or successful policy?

The effects of quotas and investor pressure on improved gender representation are evident in the generally positive trends on average over the last decade. The next question is: has this increase in gender diversity had a meaningful impact on company performance?

Gender diversity and firm characteristics: correlations

To understand the potential drivers for gender diversity, we turn to firm level attributes and examine the correlation of gender diversity with a variety of firm specific characteristics - the type of indicators that we would look for in our quantitative company analysis process.

Table 1 reports the average cross-sectional correlations of the firm gender diversity (as captured by the percentage of females in senior management - senior management gender diversity, and the percentage of females on the board - board gender diversity) with a number of firm characteristics. The highest correlation of 1 is represented in the lightest colour, and the lower correlation is shown in the darker colours.

Table 1: Correlation of gender diversity metrics with other firm characteristics MSCI ACWI

	BY	EY	ROA	ROE	SIZE	Net Profit Margin	Gross Profit Margin	MOM12M	VOL12M	Senior Management Gender Diversity	Board Gender Diversity
BY	1	0.35	-0.49	-0.52	-0.27	-0.18	-0.01	-0.37	0.11	-0.16	-0.16
EY	0.35	1	0.20	0.34	-0.08	0.32	0.05	-0.29	-0.04	-0.03	-0.07
ROA	-0.49	0.20	1	0.79	0.06	0.56	-0.08	0.02	-0.06	0.05	0.01
ROE	-0.52	0.34	0.79	1	0.13	0.54	0.04	0.00	-0.07	0.11	0.08
SIZE	-0.27	-0.08	0.06	0.13	1	0.10	0.16	0.22	-0.28	0.17	0.26
Net Profit Margin	-0.18	0.32	0.56	0.54	0.10	1	0.47	-0.01	-0.13	0.14	0.04
Gross Profit Margin	-0.01	0.05	-0.08	0.04	0.16	0.47	1	0.01	-0.07	0.16	0.10
MOM12M	-0.37	-0.29	0.02	0.00	0.20	-0.01	0.01	1	-0.17	0.02	0.02
VOL12M	0.11	-0.04	-0.06	-0.07	-0.28	-0.13	-0.07	-0.17	1	-0.12	-0.13
Senior Management Gender Diversity	-0.16	-0.03	0.05	0.11	0.17	0.14	0.16	0.02	-0.12	1	0.42
Board Gender Diversity	-0.16	-0.07	0.01	0.08	0.26	0.04	0.10	0.02	-0.13	0.42	1

We find that gender diverse firms (both board and senior management) are typically higher quality firms, where gender diversity has positive correlation with return on assets (ROA), return on equity (ROE), and profit margins (Gross and Net Profit Margins). They also tend to have higher price returns over the previous year (MOM12M) and lower market volatility as evidenced by the negative correlation to 12-month price volatility (VOL12M).

We also find that larger capitalised firms (as captured by Size) tend to have higher diversity, especially in the boardroom, while diverse firms also appear to have high valuation multiples, as seen by the negative correlation between the diversity metrics and book yield (BY) and earnings yield (EY).

Diversity and future operating performance

The questions that follow are:

- Has increased female representation made a meaningful impact on firms by improving their operating outcomes?
- Does senior management gender diversity have a more material impact than diversity in the boardroom?

The central proposition behind this is that diversity in management, and leadership more generally, would lead to greater innovation and, in turn, better financial or operating performance. To answer these questions, we looked at whether there is a link between diversity and profitability/performance of the firm.

Various studies have examined the link between diversity and company performance, including McKinsey (2015, 2018 and 2020) and Boston Consulting Group (2018).

Those studies conclude that diversity and financial performance are correlated and that firms with above-average diversity scores are more likely to generate increased revenues from R&D related products and services. These studies have, however, relied on smaller, survey-based samples and offered snapshots of diversity at particular points in time.

Our analysis has extended these insights by examining a broader cross-section of companies globally, spanning more than 30 countries and over 2500 large cap firms, and covering an extended time period spanning more than a decade, from 2009.

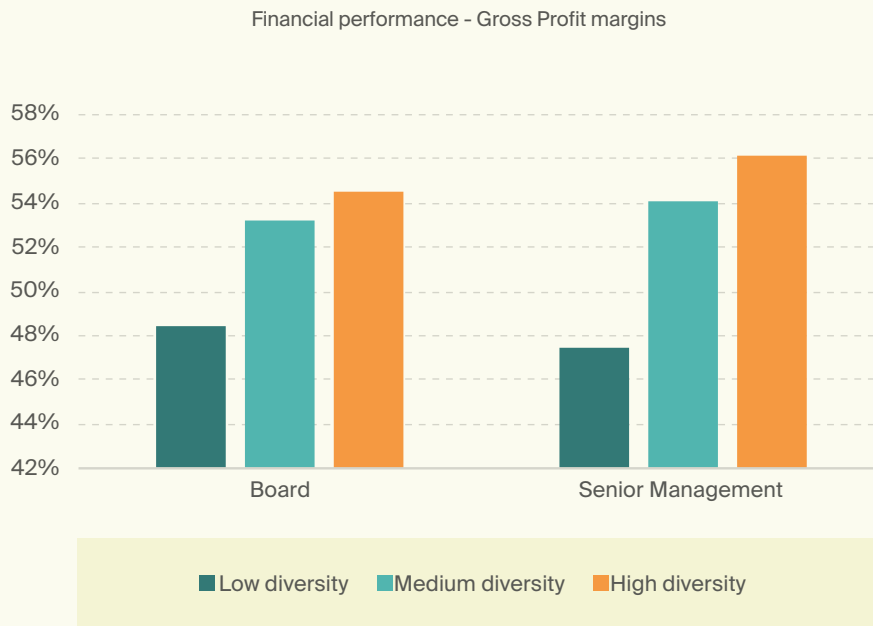
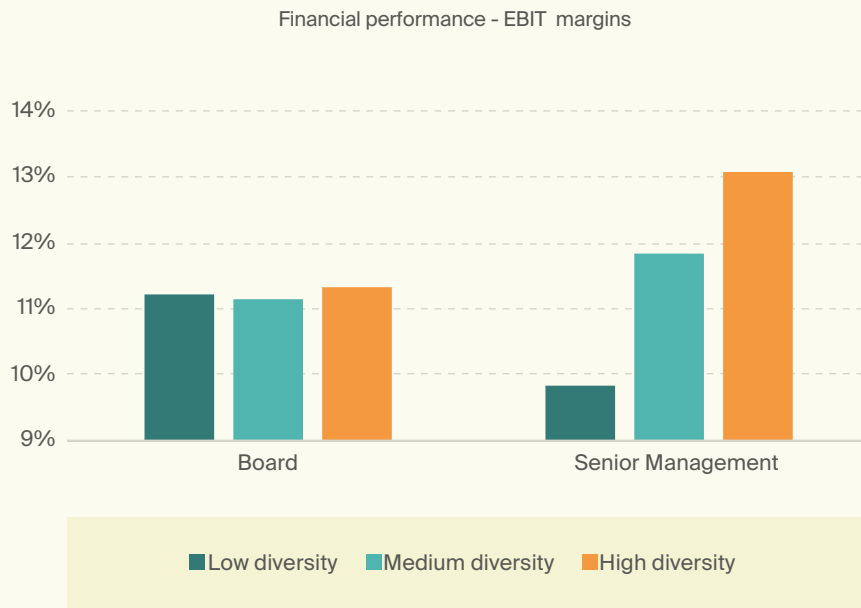
Following some of this work, we initially investigated if there is a link between diversity and profitability. For both board and senior management gender diversity, we looked at profitability metrics commonly investigated in other studies such as gross and net profit (EBIT) margins. Some interesting results emerge over the sample period, as highlighted in figure 17.

- In any given year, higher-diversity firms (those approximately in the top one-third of all firms) have about 20% higher margins in the following 12 months than lower-diversity firms (those approximately in the bottom one-third of all firms).
- In terms of EBIT margins, diversity in senior management is correlated with approx. 30% higher future profit margins, while the diversity at the board level board has less significant effect.



We find that gender diverse firms (both board and senior management) are typically higher quality firms, where gender diversity has positive correlation with return on assets, return on equity, and profit margins.

Figure 17: Gender diversity and one-year ahead margins



Our analysis then examined future operating performance over multiple years by testing whether the Return on Equity (ROE) of a firm is impacted positively by gender diversity. To do this, we again ranked firms based on their level of senior management or boardroom gender diversity and examined ROE performance over the next 5 years.

The results for senior management are highlighted in Table 2 and Table 3 for the boardroom. The data shows that for senior management, higher-diversity firms are able to generate cumulative ROEs that are almost 30% higher than lower-diversity firms over a 5 year period. Similarly, for boardroom diversity, cumulative ROE for high boardroom gender diversity firms outstrips firms with low diversity, by 20%.



Table 2: Senior management gender diversity and ROE

Gender Diversity		Cumulative ROE				
		year 1	year 2	year 3	year 4	year 5
	Low	12.1%	23.9%	35.3%	46.1%	56.4%
	Med	14.1%	27.8%	41.4%	54.7%	67.9%
	High	15.2%	30.2%	44.9%	59.2%	73.1%
	% Difference (High v Low)	25.7%	26.8%	27.3%	28.5%	29.6%

Table 3: Boardroom gender diversity and ROE

Gender Diversity		Cumulative ROE				
		year 1	year 2	year 3	year 4	year 5
	Low	12.4%	24.5%	36.3%	47.7%	58.8%
	Med	14.1%	28.2%	42.2%	55.3%	68.0%
	High	14.7%	28.9%	42.9%	57.0%	70.9%
	% Difference (High v Low)	18.6%	17.6%	18.2%	19.4%	20.5%

To understand whether these results are robust, we examined whether the relationship remains after controlling for a number of other common factors, in order to determine if diversity is essentially just picking up other characteristics of the firm that are known to be related to future operating performance.

In particular, we can control for several firm characteristics such as past profitability (captured by the current level of ROE), valuation (captured by the firm's book-to-price ratio), price-based momentum (captured by the firm's previous 12-month price return) and size (captured by the firm's market capitalisation) as well as sector and region effects.

Controlling for common factors in the data

We take the raw diversity values in a given year, for a given firm, and de-mean its value for the average sector and regional effects. Doing so also effectively removes the positive trend in gender diversity that was observed earlier. The diversity scores now represent the firm's relative diversity score after controlling sectors and regions. This means the firm's diversity score is now relative to its sector and regional peers.

These relative diversity scores are then used to determine whether diversity is able to predict forward profitability of the firm over the next five years. This is achieved by running a regression of forward 5 year ROE against the relative diversity score, as well as a number of controls that are likely to influence future ROE, including the current level of ROE. To facilitate comparability, the relative diversity scores are ranked into deciles, which are in turn used in the regressions. The results are detailed in the Appendix, Table A.1.

This analysis points to the robustness of the results shown earlier and reveals a number of insights:

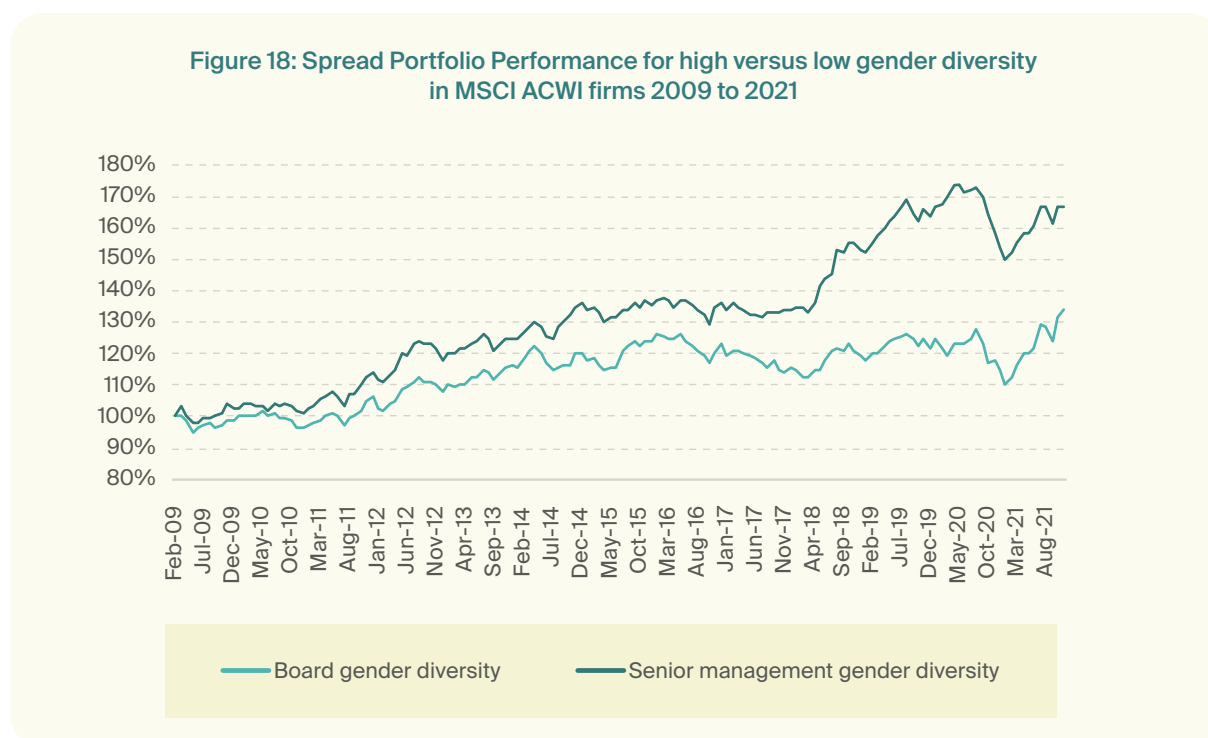
- Controlling for sector and region effects, as well as other firm level characteristics, both senior management and board gender diversity are strongly statistically significant in predicting future firm level profitability.
- For either metric, we can see that firms in the top decile of gender diversity are able to generate approximately an additional 5% of ROE over the next five years, compared to firms in the bottom decile of either diversity metric, after controlling for other effects that drive firm performance.
- Furthermore, despite their correlation, the presence of both diversity metrics within the same regression does not invalidate the significance of either metric. In fact, we find that firms in both the top decile of senior management and board diversity generate approximately an additional 10% of ROE over the next 5 years compared with firms that have low (bottom decile) diversity in both senior management and the board. This suggests the importance of gender diversity for both boards and senior management teams, as predictors of financial performance.



Part IV
How does the market price
gender diversity?

Given that gender diversity can lead to improved operating outcomes for the firm, the question arises as to whether the market fully prices this effect into company valuations.

To investigate this, we constructed a straightforward strategy where, each month within the sample period, we take a long position in high diversity stocks (top quintile stocks as ranked by diversity) and a short position in low diversity stocks (bottom quintile stocks as ranked by diversity), and observe the resulting holding period returns. We do this for both board gender diversity and senior management diversity scores. The results are presented below in Figure 18 for the period covering 2009 to 2021:



The results suggest that the market does not fully price the information contained in either set of diversity metrics, as a positive return premium can be generated by owning more diverse firms and avoiding, or in this case, shorting low diversity firms. Investing in high diversity firms, relative to low diversity firms, during the sample period can be shown to generate an annual return premium of 2.5% for the case of board and 4% annual return premium for the case of senior management.

To understand better the source of these return premiums, we take a closer look at the stock return behaviour of high- and low-diversity firms by examining performance across all quintiles according to their senior management and board diversity scores. We then examine their average excess returns over the market (in this case the MSCI ACWI) during the sample period. The results are highlighted in Figure 19 which shows the excess return to companies ranked by their diversity quintile.

When we look at the returns generated in this situation, we can see that higher diversity firms lead to higher returns in most cases. The performance boost delivered by diversity has not been recognised or priced in by an inefficient market.



To better understand the source of these return premiums, we took a closer look at the stock return behaviour of high- and low-diversity firms. We examined performance, across all quintiles, according to their senior management and board diversity scores.

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Investors who can identify and invest in companies with higher female representation in the C-suite may not just support social equity – they may boost their investment returns as well.

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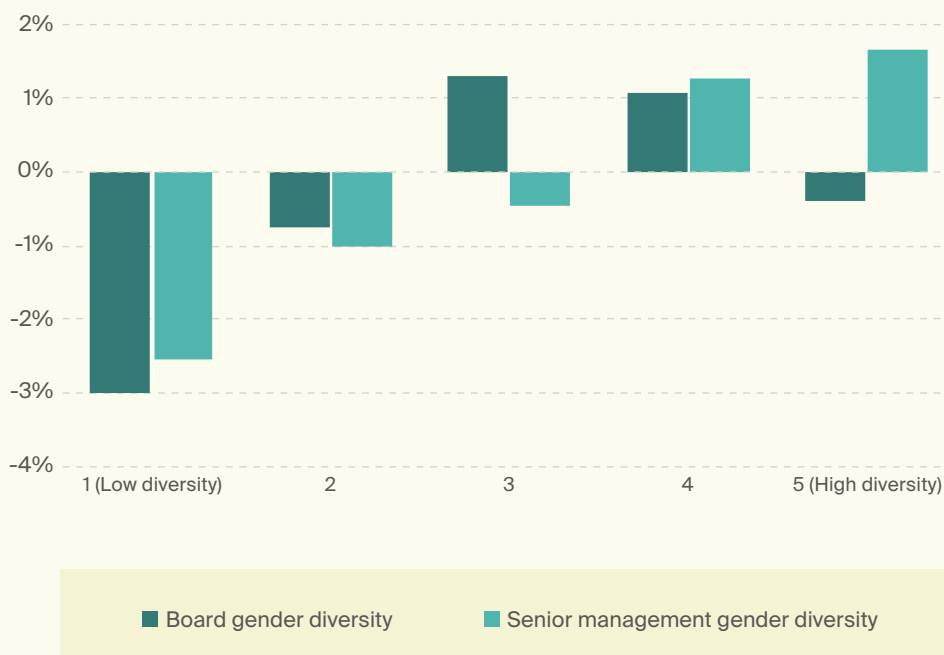


One exception is interesting though: the firms with high-diversity boards don't reflect the same valuation gap. Whilst there is an increasing positive return to more diversity in senior management, the returns for the top quintile for boards are relatively flat. We would suggest this is because board composition is so visible, and the focus of so much regulation, that it becomes a matter of expectation: good firms have good boards that include women. This market expectation then gets reflected in prices.

We believe there is greater opportunity to generate alpha by identifying firms with more diverse senior management teams, than there is for finding diverse boards. This is possibly because the information on management is harder to source, and therefore attracts less of a focus.

The conclusion we draw from this is that investors who can identify and invest in companies with higher female representation in the C-suite may not just support social equity – they may boost their investment returns as well.

Figure 19: Relation between return and of Gender Diversity Senior Management and the Board: MSCI ACWI firms: 2009 to 2021





Part V
Conclusion



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A combination of government policies, initiatives, legislation, and shareholder activism have been key drivers for improvements changes at the board level.

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There has been a long-held notion that improved diversity in leadership roles leads to better teams and decision-making. Realindex has interrogated a comprehensive global data set to test this notion, among others. Our key conclusions from the research are show below.

Gender quotas and disclosure work

A combination of government policies, initiatives, legislation, and shareholder activism have been key drivers for improvements at the board level. These efforts have not yet translated to the same extent at the senior management levels of the firm, and so we see greater variation in the extent of diversity observed in senior management relative to the board.

Gender diversity means better company performance

Given the conclusion above, we asked whether greater gender diversity has in general led to improved financial performance outcomes for firms and whether the differences in senior management diversity across firms matter more than the board.

We found that improving diversity can make more than just a meaningful impact on social outcomes; and that across countries and sectors, diversity improves the ability of firms to generate superior operating outcomes and financial performance.

Moreover, we have highlighted that diversity in senior management, as well as the Board, is important. Efforts to improve the gender diversity of the board, such as quotas, legislation and shareholder activism have not amounted to a window dressing effect.

After controlling for firm characteristics as well as country and sector differences, gender diversity at both the board level and senior management level still matters in driving financial performance.

While we would expect senior management diversity to matter more, it remains relatively low and therefore harder to measure. As it increases, we believe we will see a greater impact on firm performance.

Gender diversity can improve returns

Finally, we also show that this positive impact of diversity on financial performance is not fully priced by the market. This creates opportunity to generate higher returns in an inefficient market, because other investors are ignoring the benefits of a diverse leadership team.

This work has focused on gender diversity in leadership roles, but we acknowledge diversity is multidimensional, such as diversity in skills, experience, and backgrounds. Future work will look to see how we can build a more comprehensive picture of team diversity, thereby gaining greater insights into the management quality or organisational capital of the firm.

About the Authors

Dr Joanna Nash
Senior Quantitative Portfolio Manager

Joanna brings 15 years' quantitative investment experience including senior roles at Acadian, where she was a senior portfolio manager, and Blackrock, where she was a portfolio manager within scientific equities, ran index portfolios and was Head of Sustainable Investment in Australia. Joanna is also a Lecturer at New York University. Joanna holds a CFA accreditation, has a PHD in Economics from Yale University, and was awarded a Fulbright scholarship. She has a Bachelor of Laws and Economics (Honours) from the University of New South Wales.

Dr Ron Guido
Senior Quantitative Portfolio Manager

Ron has 18 years' asset management experience. Prior to joining Realindex, Ron held various roles including the Head of Research at RF Capital, Portfolio Manager, Systematic Active Equities at BlackRock, Chief Investment Officer at Callisto Asset Management and Senior Quantitative Research roles at Marshall Wace, Fidelity International and SSgA. Prior to his career in asset management, Ron held a faculty position at UNSW where he lectured in quantitative finance. Ron holds a PhD in Finance and Statistics from the Australian Graduate School of Management, and has completed a Bachelor of Economics (Hons) at the University of Sydney.

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Appendix

Table A.1: Predictive regression of future ROE with gender diversity and other firm attributes

The table presents panel regression results of 5 year forward Return on Equity (Fwd ROE) against gender diversity metrics and various firm controls including sector and region dummy variables across a number of different specifications for all firms in the MSCI ACWI universe covering the period 2009 to 2021. The regression models being estimated take the following form:

$$\text{Fwd ROE} = a + b_1 \text{ROE} + b_2 \text{MOM12M} + b_3 \text{BY} + b_4 \text{SIZE} \\ + c \text{ Gender diversity} + \text{Sector \& Region Dummies}$$

Board Gender Diversity is a firm's percentage of women on a board that is country and region adjusted and decile ranked. **Senior management gender diversity** is the decile ranked sector and region adjusted percentage of women serving in senior management. **ROE** is the firm's current level of Return on Equity **MOM12** is the firm's past 12-month return. **BY** is the firm's Book to Price ratio and **Size** the log of the firm's market capitalisation (in millions). Values for each firm are taken as at December end each year. R-squared values and estimated coefficients from a panel regression consisting of 17,354 firm-year observations. Coefficient estimates are reported with t-statistics reported in parentheses.

Dependent variable: 5 Year Fwd ROE					
# Observations (firm year observations)	17354				
Specification		1	2	3	4
Adj R-squared		0.48	0.48	0.49	0.5
Intercept		-0.29 (-4.00)	-0.27 (-3.88)	-0.25 (-3.36)	-0.34 (-4.17)
ROE		2.03 (-83.24)	2.02 (83.53)	2.06 (81.66)	2.02 (80.24)
MOM12M		0.16 (17.17)	0.18 (18.61)	0.18 (17.46)	0.17 (17.50)
BY		-0.30 (-38.86)	-0.30 (-39.08)	-0.30 (-37.35)	-0.27 (-32.15)
np.log(SIZE)		0.03 (10.80)	0.03 (10.77)	0.03 (9.61)	0.04 (10.06)
Relative board diversity		0.06 (5.83)		0.05 (4.59)	0.05 (4.86)
Relative senior management diversity			0.05 (4.74)	0.04 (3.20)	0.04 (3.27)
Consumer disc					0.02 (1.05)
Consumer staples					0.02 (1.23)
Energy					-0.29 (-16.66)
Financials					-0.03 (-1.95)
Health					-0.03 (-1.54)
Industrials					-0.05 (-3.13)
Information					-0.02 (-1.25)
Materials					-0.13 (-8.22)
Real estate					-0.08 (-4.20)
Utilities					-0.09 (-5.12)
Emerging markets					0.06 (4.21)
Europe					0.01 (0.66)
Japan					0.01 (0.69)
North America					0.05 (3.92)
UK					0.07 (3.67)

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