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Gender equality and corporate performance

Seeking gender balance inside and outside of the boardroom



White paper
Marketing material
for professional investors
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'A gender balanced workforce supports corporate performance'



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Summary

Proprietary research from RobecoSAM examines the link between gender equality and corporate performance.

From a corporate perspective, gender equality encompasses issues of workforce diversity, and equal pay and career opportunities. Our earlier whitepaper, *Does gender equality lead to outperformance?* was borne out of the conviction held at RobecoSAM that a gender diverse workforce at all levels of the company with equality of opportunity for men and women should support business performance, and therefore financial performance. Our RobecoSAM Global Gender Equality Impact Equities strategy is based upon this philosophy.

In this new research we seek to examine further the validity of the widely cited connection between business performance and enhanced gender equality, using statistical analysis. The results of our research into gender equality in the corporate environment are consistent with the growing body of academic research which tend to find that gender diversity and equality contribute to better corporate performance and investment returns. Specifically our analysis illustrates three distinct points:

- Global progress towards gender equality remains slow.
- Gender equality supports profitability, returns, and share price performance.
- The proportion of women in management positions has the most consistent and robust effect on corporate performance, followed by the proportions of women on the board and then women in the total workforce.

We also looked at how this may differ relative to firm size, finding that for larger firms, the evidence connecting gender diversity metrics and corporate performance is on average stronger than for smaller firms.

With an expectation that full gender parity in the global workforce could take more than 250 years¹ at the current rate of progress, our research also seeks to pinpoint the critical mass of women in each of three categories – board, management, and total workforce – required to reach the point where corporate performance may benefit from the impact of improved gender balance. Outlined in further detail within this whitepaper, the data enables us to conclude that firms with more than 30.2% of women in management positions, more than 20% of women on the board and more than 44.7% of women in the total workforce has a positive link to financial fundamentals.

‘The higher proportion of women in management positions has the most consistent and robust effect on corporate performance than at either board level, or the total workforce’

¹ World Economic Forum, “Global Gender Gap Report 2020”, 2019

Introduction

Much existing research on gender diversity in corporates finds that a gender-balanced workforce supports corporate performance in terms of the share price, profitability, or risk reduction.

Since launching the RobecoSAM Global Gender Equality Impact Equities strategy in 2015, a Peterson Institute survey of nearly 22,000 firms from 91 countries found that the presence of female executives is associated with strong firm performance, as measured by gross and net margins², while a Morgan Stanley report found that companies with high gender diversity delivered better risk-adjusted stock returns than those with low gender diversity³. Major studies by consultants Catalyst and McKinsey have both found correlations between gender diversity at senior management level and the financial performance of large global companies^{4,5}. Another study has found that companies with higher diversity in management contribute to increased revenue generated from new products and services⁶. Yet, the most recent WEF Global Gender Pay Gap Report 2020 states that (only) '36% of firms have women in senior roles', a gender imbalance that is no longer viewed as acceptable corporate stewardship.

We consider gender "equality" to be a broader issue than "diversity", encompassing equal pay and equal access to career advancement opportunities for men and women at all levels of the organization, employee well-being programs to support family and work-life balance, as well as levelling the proportion of men and women in the workforce.

Gender diversity has been considered a key issue in corporate governance where checks and balances are important. Additionally, board and management team composition should match companies' strategic needs. Gender diversity and equality enhances firms' corporate performance, ability to attract talent and human capital development. Diverse teams bring different perspectives, and varying approaches to solving issues, while also improving teams' information-processing and decision-making^{7,8}.

Diverse teams also better represent firms' client bases, improving their ability to target and specifically serve customer markets, such as women, ethnic minorities groups, and other communities that are commanding an increasing share of consumer wealth⁹. The relevance of being better able to address such markets is illustrated by 40% of global wealth¹⁰ now held by women, representing an attractive, untapped market for some companies. Real diversity is impossible without an inclusive and equal workplace environment. Diversity must be supported by an inclusive and fair culture that nurtures diversity of thoughts and creates a sense of belonging. These in turn should foster superior value creation for stakeholders. Corporate policies promoting gender diversity are a reflection of a well-managed company and can boost its long-term competitiveness.

'Corporate policies promoting gender diversity are a reflection of a well-managed company and can boost its long-term competitiveness'

Progress towards gender equality around the world has been slow, such that it will take 257 years to close the economic participation gender gap, compared to the already sobering 202 years forecast in 2018¹¹. Some countries are starting to introduce legislation to promote gender equality in the workplace and female career progression beyond implementing board quotas. For example, UK companies with 250 or more employees are now required to publish the gap between the average earnings of their male and female employees.

² Peterson Institute for International Economics, "Is Gender Diversity Profitable? Evidence from a Global Survey", 2016

³ Morgan Stanley, "Gender diversity continues to work", "Putting Gender Diversity to work: Better fundamentals, less volatility", 2016

⁴ Catalyst, "Why Diversity Matters", 2013 and "Why Diversity and Inclusion matter: Financial Performance", 2018

⁵ McKinsey & Company, "Delivering through Diversity", 2018

⁶ Rocío Lorenzo, Nicole Voigt, Karin Schetelig, Annika Zawadzki, Isabell M. Welp, and Prisca Brosi, The Boston Consulting Group, "The Mix That Matters: Innovation Through Diversity", 2017

⁷ Harvard Business Review, David Rock, Heidi Grant, "Why diverse teams are smarter", November 2016.

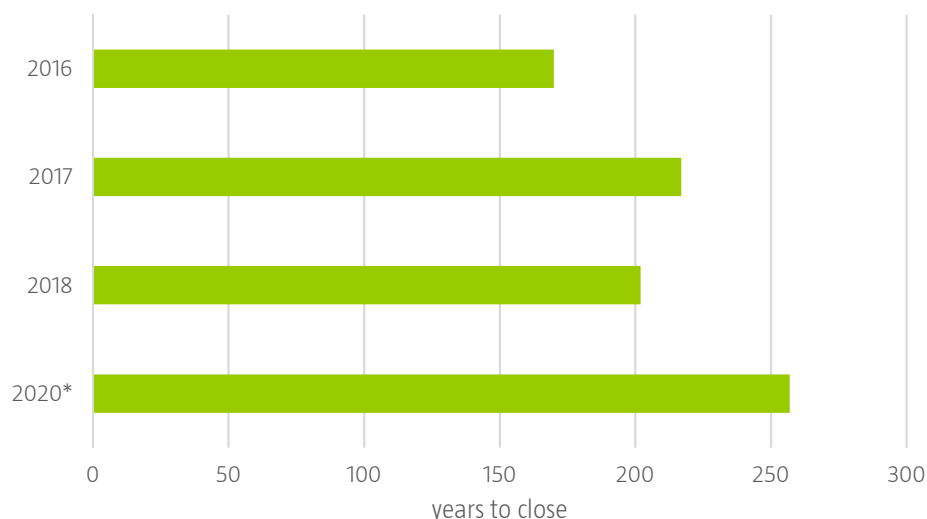
⁸ Forbes, Erik Larson, "New Research: Diversity + Inclusion = Better Decision Making at Work", September 2017

⁹ Catalyst, "Buying Power series", May 2015 and The William Institute, M.V. Lee Badgett et al, "The Business Impact of LGBT – Supportive Workplace Policies", May 2013.

¹⁰ Credit Suisse, "2018 Global Wealth Report", 2019

¹¹ World Economic Forum, "Global Gender Gap Report 2020", 2019 and "Global Gender Gap Report 2018", 2018

Figure 1 | Number of years to close the economic gender gap



Source: World Economic Forum

*WEF, Global Gender Gap Report 2020, 2019

Corporate gender equality is critical for companies, investors, and society at large beyond the social and ethical implications: according to the IMF, gender inequality is linked to sub-optimal economic growth. Furthermore, differences in remuneration for men and women do not just lead to income inequality, but also result in unequal access to education, health services, and financial markets¹². McKinsey suggests that achieving full gender equality in the workforce could boost global annual GDP between USD 12 trillion to USD 28 trillion by 2025¹³. As gender equality becomes a more significant issue for companies, it naturally becomes a material issue for investors to consider. In this paper, we analyze data from companies around the world to evaluate the gender equality landscape and explore its links to corporate fundamentals and share price performance.

¹² International Monetary Fund, "Women, Work, and Economic Growth", February 2017

¹³ McKinsey Global Institute, "The Power of Parity: How Advancing Women's Equality Can Add \$12 Trillion to Global Growth", September 2015

Progress towards gender diversity at different levels

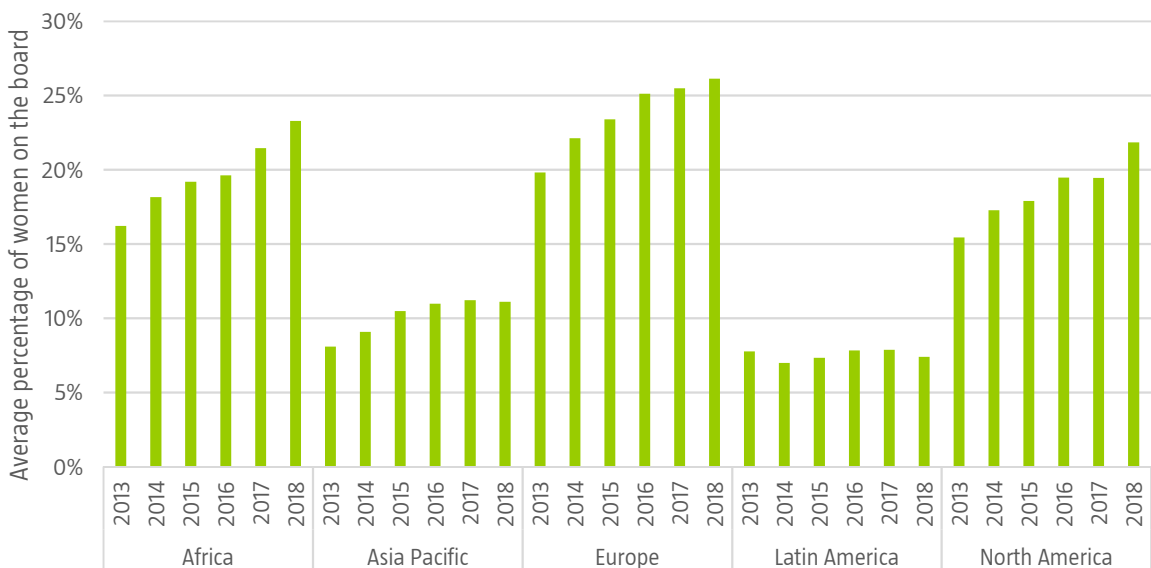
A gender-diverse workforce at all levels of an organization, with equality of opportunity for all, should support business performance, and therefore financial performance, over time.

In this paper we analyze a unique dataset collected through the SAM Corporate Sustainability Assessment (CSA) to evaluate whether the findings support this view of gender-diversity¹⁴. Our data set consists of 20,720 firm-year observations from 2013 to 2018 covering publicly listed companies around the world. The data shows that progress towards gender equality has been slow, particularly so in some areas.

Diversity across boards, management, and the total workforce

We found that gender diversity on corporate boards increased in most regions over 2013–18, from 13% to 17% which is a clear positive for corporate governance. In 2018, Europe was the best-performing region in this respect, with an average 26% of board members being female. At the other end of the spectrum, around 11% of board members in Asia Pacific firms are women, and just 7% in Latin American firms. Europe, North America and Africa have shown good progress over the period, but the sample of African companies in our survey is still very small.

Figure 2 | Percentage of women on corporate boards by region, 2013–18



Source: RobecoSAM, SAM Corporate Sustainability Assessment (CSA), 2019

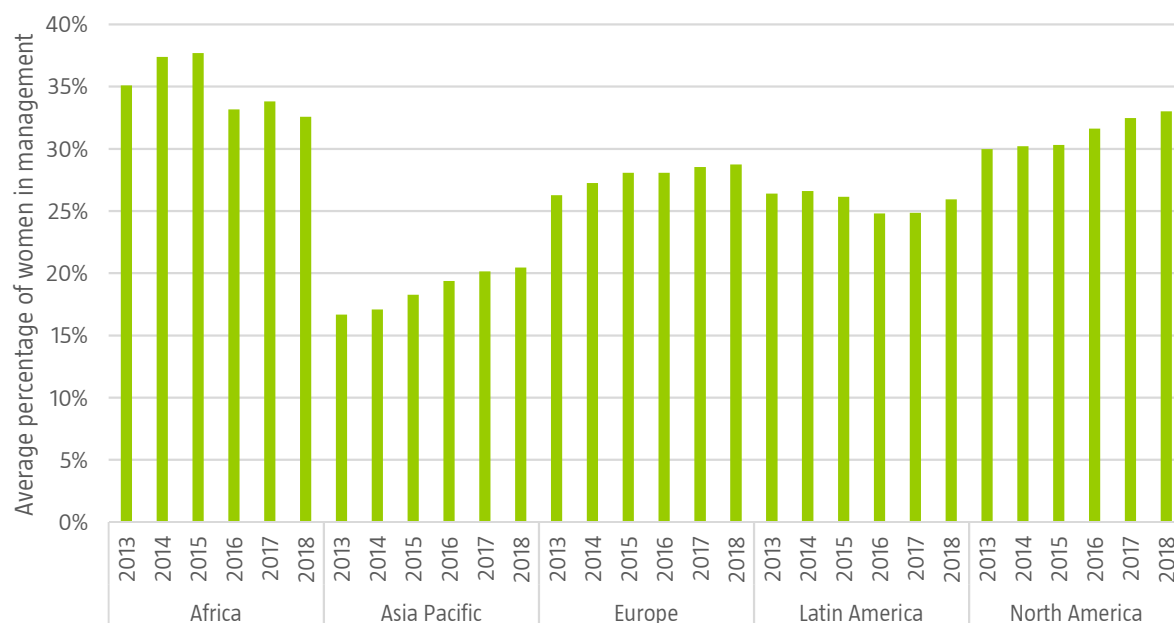
There has been limited spill-over of increased board diversity to management levels. The proportion of women in management positions around the world has risen, but slowly, up from 24% in 2013 to 26% in 2018. At 33% in 2018, North America had more women holding management positions than European companies' 29% and Asian firms' 20%. Africa had 33% of female managers but again, this may reflect the very small sample size. Interestingly, North America and Asia Pacific showed the most progress in increasing the proportion of women managers over the period, whereas Europe did not make significant improvements.

¹⁴ The SAM CSA, established by RobecoSAM and now issued by S&P Global, is an annual evaluation of companies' sustainability data and practices.

‘There has been limited spill-over of increased board diversity to management’

The proportion of women in the total global workforce remained fairly stable over the period in question, standing at 34% in 2013 and 35% in 2018.

Figure 3 | Percentage of women in management by region, 2013–18

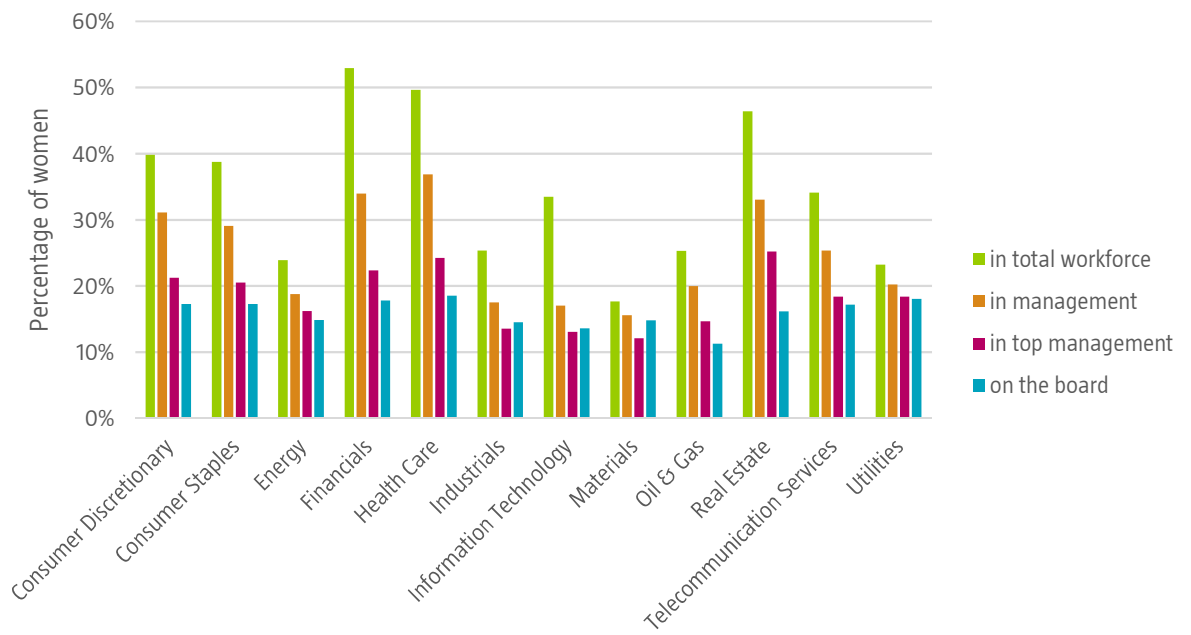


Source: RobecoSAM, SAM CSA, 2019

Progress of women's representation at all levels across industry sectors

The proportion of women at board level has generally improved across sectors over the past five years. At management level, the consumer staples, IT and real estate sectors have seen the most progress over this period, although IT still has a low proportion of female managers, as do the materials and industrials sectors. When it comes to increasing the proportion of women in top management, the IT sector has made good progress, with a 4.3 percentage point increase from 2013 to 2018. There is also a smaller pay gap (measured in terms of the average salary of women relative to men) in the IT sector relative to the global average at both the top management and management levels, and IT companies are increasingly implementing well-being programs to attract and retain talent.

Figure 4 | Female representation at different levels by sector in 2018



Source: RobecoSAM, SAM CSA, 2019

Analyzing the effect of gender issues on corporate performance

A look at the relationship between gender equality and firm performance.

Our approach to investigating this relationship is regression analysis. We also consider how significant the results are for firms of differing size, and aim to find out if there are thresholds for female representation in the workplace above which firms tend to deliver better performance.

To measure firms' fundamental performance, we consider their Return on Capital (ROC), Return on Equity (ROE), EBIT margin, the debt to assets ratio, and cash flows to total assets as of the end of firms' fiscal years. The gender equality-related data we look at includes; the number of women on the board, the proportion of women at top management level (defined by maximum 2 levels away from CEO), at all management level and in the total workforce in the year prior to the fiscal year of the financial metrics. This enabled us to determine the relationship between gender diversity and corporate fundamentals in the following year.

In our regression models we controlled for region, industry, and size biases. We also include some financial controls, when statistically relevant sales (log), dividend payout ratio, total common equity or total net assets, EBIT margin, debt to assets levels, capital expenditure intensity, and research and development to sales ratios. Our dataset consists of 20,720 firm-year observations from 2013 to 2018 and covers companies across the world.

Finally, we evaluate the effectiveness of a "Gender Score" calculated by RobecoSAM to investigate the relationship between gender equality and stock returns. To do so we adopt a portfolio approach, constructing high-gender-equality and low-gender-equality portfolios and analyzing their relative past performance.

Is there a link between female talent and firms' performance?

Splitting our data into quantiles before performing regression analysis enabled us to determine if there was a significant link with financial performance at particular gender diversity thresholds. Our regressions show that having more than 30.2% of women in management roles, more than 20% of women on the board, or more than 44.7% of women in the total workforce has a positive relationship with firms' returns, EBIT margin and a negative relationship with leverage ratio¹⁵. Hence firms' profitability and risk (high leverage can lead to the risk of default and bankruptcy) improve with gender diversity.

On the other hand, firms with under 16.6% of women in management, under 10% of women on the board, and under 24% of women in the total workforce has an inverse relationship with the return and profitability metrics. This may suggest that a critical mass is needed in order to have an impact on organizational dynamics as only a few female group members could be considered as token members and exert no influence on the decisions made by the group.

¹⁵ Our quantitative investigation sheds light on the threshold levels in our sample universe, however it is hard to argue why the proportion of women should lie exactly at a specific threshold level. Further research and studies of organization structures should be explored.

'A critical mass of women at each level is needed in order to have an impact on organizational dynamics'


Figure 5 | Positive link with financial performance at particular gender diversity thresholds



Source: RobecoSAM, SAM CSA, 2019

The impact of women as managers

Having women in leadership positions is critical to business performance. The percentage of women in management has a positive relationship with firms' profitability and returns. These financial metrics are also characteristics of a firm's quality and the health of its operations. Our regression analysis on our sample universe yielded consistent significant positive coefficients for the percentage of women in management at firms and the financial variables in terms of EBIT margin, ROE, ROC and free cash flows to total assets. In addition, more gender diverse firms have also exhibited lower earnings volatility.



Example:

If all other things are considered equal for a firm in our sample universe, a 1 percentage point increase in the percentage of women in management would lead to an increase of 0.11 points in its ROE ratio. (see Appendix Table 2).

'Firms with more women managers produced higher returns and profitability'

These positive results are reflective of a firm's governance structure. Both corporate performance and behavior are to a large extent a function of management teams, responsible for most strategic and organizational decisions.

The results above are in line with multiple studies that show the relationship between diversity in management and firms' performance. Hence, it highlights the importance of promoting gender diversity and paying attention to the gender composition of management teams.

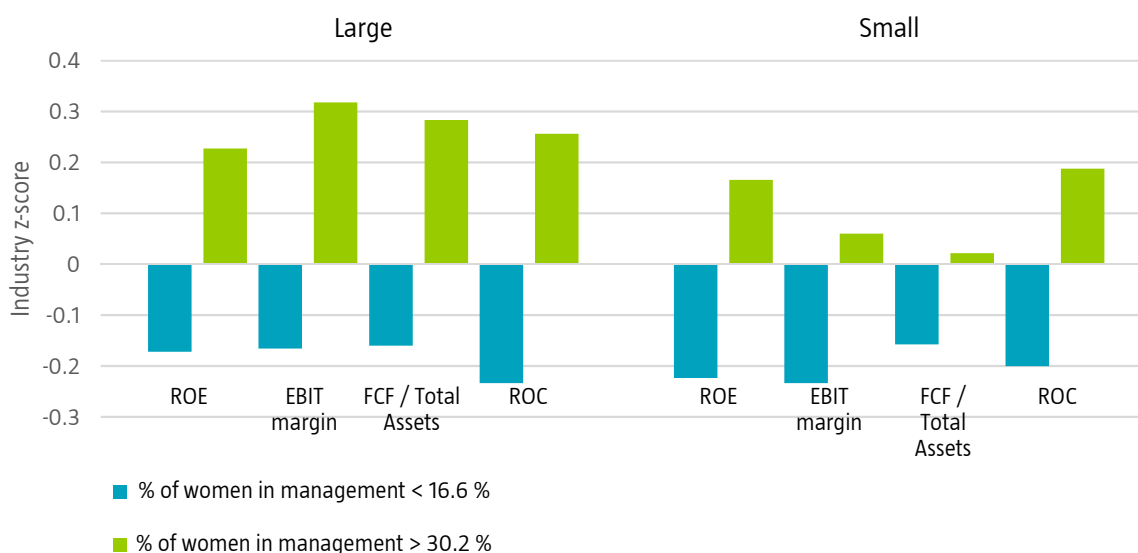
The impact of female managers in large firms vs. small firms

When splitting our universe of firms according to their size¹⁶, we see a stronger link between gender diversity and performance for large firms. In most of the regression models across our four independent variables, the results are positive and more significant for large firms than small firms. More research would be needed to investigate the reason why the effect on large firms is more significant. Some possible theories may be that large firms may have more resources and capacity to adopt diversity and inclusion practices and tools more readily than smaller firms. Larger firms may also face stronger institutional pressure because they tend to attract more scrutiny from regulators, investors, general public and media. This higher level of scrutiny may push them to better manage and improve workforce diversity.

‘Stronger link between gender diversity and performance for large firms’

As the charts below show, the top tier firms with more than 30.2% women managers have produced higher returns (ROE/ROC) and been more profitable than the bottom tier firms with less than 16.6% women managers. In these charts, we control for industry bias by calculating the industry¹⁷ z-scores which shows how far above or below (in standard deviations) the company is from its respective industry average. This is calculated for ROE, ROC, EBIT margin and free cash flows over total assets, enabling us to identify firms that outperform their respective industries. Top tier firms outperformed bottom tier firms across the various financial metrics and the results are more positive for large firms than small firms.

Figure 6 | Fundamental metrics for top-tier firms and bottom-tier firms in terms of % women in management, by firm size, 2013–18



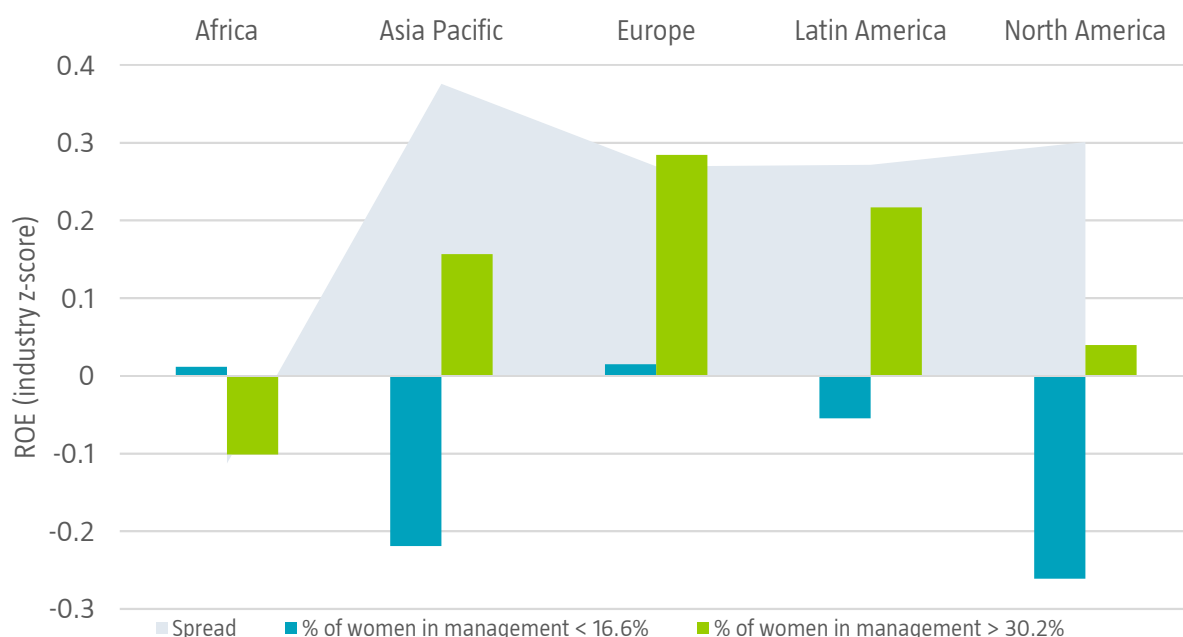
Source: RobecoSAM, SAM CSA, Bloomberg (for financial data), 2019

The graph shows the average of firms' ROE, EBIT margin, FCF/Total assets, ROC industry z-score depending on their gender performance; that is the top first tier in terms of percentage of women in management more than 30.2% and the bottom first tier less than 16.6%. We compute the industry z-score of each of the financial metrics to normalize and allow for comparison by industry.

¹⁶ We classify a firm as large if its market capitalization in any given fiscal year is greater than the median value for all firm-year observations in its industry sectors. The median market capitalization for the whole sample universe is USD 6.03 billion. We also tested our analysis using firms' total common equity, which yielded similar results.

¹⁷ RobecoSAM defines 61 industry sectors. The z-score shows how far above or below (in standard deviations) the company is from its respective industry average.

Figure 7 | Return on equity of top-tier and bottom-tier large firms in terms of percentage of women in management, by region, 2013–18



Source: RobecoSAM, SAM CSA, Bloomberg (for financial data), 2019

The graph shows the average of firms' ROE industry z-score depending on their gender performance; that is the top first tier in terms of percentage of women in management more than 30.2% and the bottom first tier less than 16.6%. We compute the industry z-score of ROE. The spread measures the difference of ROE between the top tier and bottom tier firms.

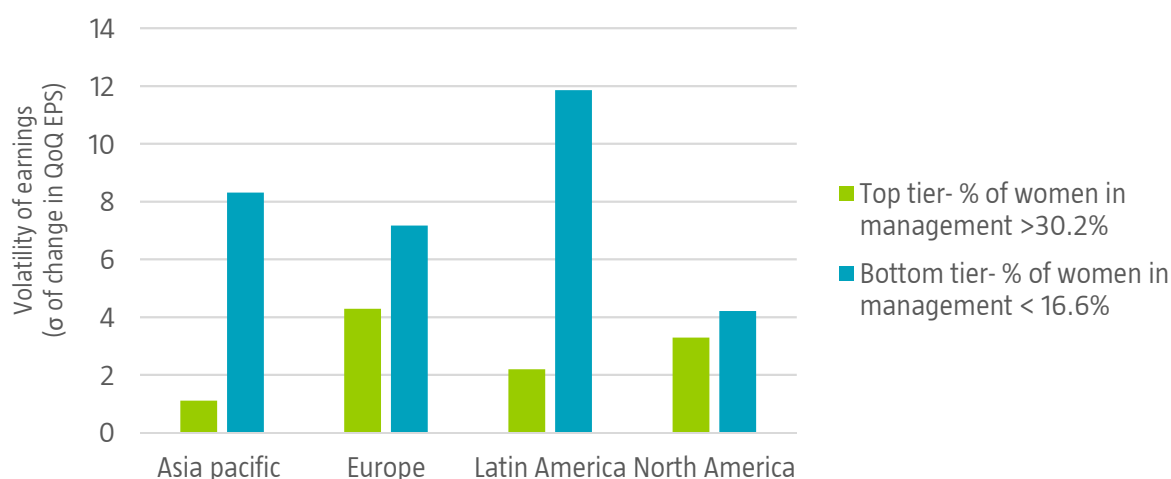
Across all regions except in Africa, the ROE for top tier firms in terms of women managers is higher than for bottom tier firms. Asia Pacific stands out as having the widest positive spread, the difference of ROE industry z-score between top tier and bottom tier firms.

Earnings volatility lower for firms with more female managers

Earnings stability is a characteristic of defensive and well-managed companies. As earnings are reflective of a firm's fundamentals and a driver of stock performance, inconsistent earnings may imply higher risk and we find that top-tier companies in terms of the proportion of women managers have exhibited lower earnings volatility than bottom-tier companies, after controlling for industry bias. This result is consistent across regions.

'Top-tier companies in terms of the proportion of women managers have exhibited lower earnings volatility than bottom-tier companies'

Figure 8 | Earnings volatility by region 2013–18: firms with more women managers have seen lower earnings volatility.



Source: RobecoSAM, SAM CSA, Bloomberg (for financial data), 2019
We standardize firms' quarterly data across industry.

Women at the board level and in the total workforce

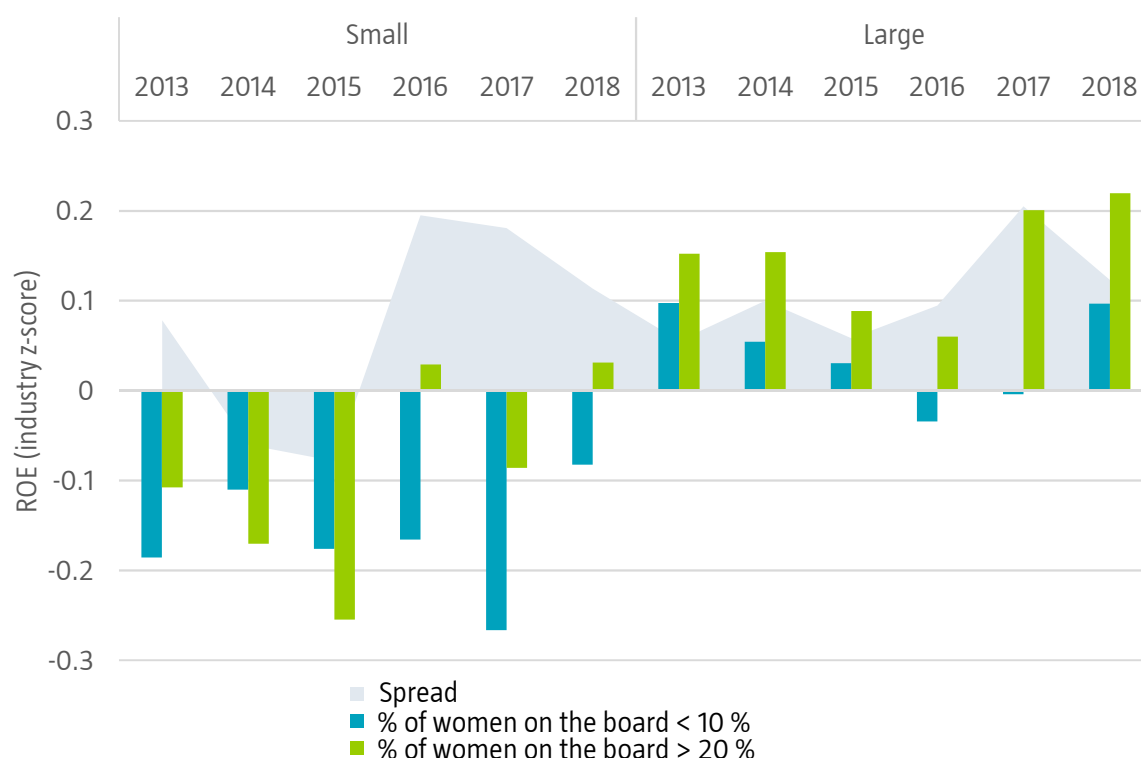
Although less consistent than the results for the proportion of women in management positions, our analysis shows that a higher percentage of women on the board also has a positive link with firms' returns and profitability. These findings are also more significant for larger firms¹⁸. Our regressions suggest that the proportion of women in management positions has a more consistent effect on corporate performance than the proportion of women on the board. This is probably due to the importance of management teams for the execution of strategic corporate decisions, implementation of governance policies, practices to facilitate a diverse and inclusive workplace environment which are essential to an organization's success beyond the development of corporate strategies at the board level.

Once again using our threshold levels, we observe that firms with more than 20% of women on the board have exhibited on average a higher return on equity than firms with less than 10% of women on the board. There is also a positive relationship between the percentage of women in the total workforce with returns and profitability.

'Firms with more than 20% of women on the board have exhibited on average a higher return on equity than firms with less than 10% of women on the board'

¹⁸ See Appendix Tables 3,4,5

Figure 9 | Return on equity for top-tier firms and bottom-tier firms in terms of percentage of women on the board, by firm size, 2013–18



Source: RobecoSAM, SAM CSA, Bloomberg (for financial data), 2019

The graph shows the average of firms' ROE industry z-score depending on their gender performance; that is the top tier in terms of percentage of women on the board more than 20% and the bottom tier less than 10%. We compute the industry z-score of ROE. The spread measures the difference of ROE between the top tier and bottom tier firms.

Overall, our findings suggest that the proportion of women in management positions has the most robust and consistent effect on corporate performance, followed by the proportion of women on the board and then in the total workforce. This indicates that companies might earn the highest rewards from implementing practices that promote and retain women managers.

The glass ceiling prevails

Calculating the correlations between gender metrics¹⁹ leads to some interesting findings. For example, the percentages of women in management positions and in the total workforce are strongly correlated, which is in line with much research into the relationship between women leaders and increased hiring of women. In summary, such research has observed that gender-diverse management teams may be likely to encourage more diversity, with a potential spill-over effect to the rest of the organization. As is usually – and correctly – stated in the literature, there could be two reasons for this: women managers may tend to hire more women because people tend to hire people like them²⁰, or women applicants may be more likely to apply to companies with greater gender-diversity as this type of working environment may appeal to them²¹.

On a less positive note, our data also shows that the correlation of women in the workforce with other gender metrics – women at management level, top management level and board level – becomes weaker with increasing corporate rank. This is unsurprising, and may be indicative of the uphill battle that many women may face in progressing to executive and board positions. Employee retention programs, career progression opportunities, access to sponsorships and mentorships, fair and transparent remuneration practices to reduce the salary gap, flexible workplace practices, childcare support and employer-funded paid parental leave²² are some initiatives that could help women break through the glass ceiling. Furthermore, they would benefit both men and women.

¹⁹ See correlation matrix in Appendix, Table 7

²⁰ Collin West and Gopinath Sundaramurthy, Kauffman Fellows, "Startups With At Least 1 Female Founder Hire 2.5x More Women", October 2019

²¹ Sue Duke, "The key to closing the gender gap? Putting more women in charge", November 2017

²² Alan Duncan, Rebecca Cassells, "Gender Equity Insights 2019: Breaking through the glass ceiling", March 2019

'The correlation of women in the workforce with other gender metrics – women at management level, top management level and board level – becomes weaker with increasing corporate rank'

Creating a diverse and inclusive workplace environment, with equal opportunities and programs for all, would increase engagement and productivity levels for the whole company. It should be a strategic priority for all companies.

It is important to note that while numerous studies link gender diversity to better firm performance, the dynamics are complex, and it is challenging to establish a causal relationship. Further research is needed to better understand the interactions involved and the underlying reasons for the results.

We acknowledge that this is not a scientific research paper. There may be omitted variables that our research does not cover, such as unobservable corporate cultures and management practices which are difficult to measure. Also, the different background, experiences, tenure of board members, managers and employees may impact the dynamics. We also acknowledge the issues of reverse causality, in that better-performing firms may be more likely to hire women or women are more likely to join better-performing firms. We used financial data as at the end of firms' fiscal year and gender data in the year prior to the fiscal year of the financial data. Our results would suggest that increased diversity is linked to better fundamentals in the following year. Consistent with many other studies, our research suggests that greater gender diversity seems to be an indication of better-managed firms.

The RobecoSAM Gender Score

The implication of gender equality on returns for investors.

As gender issues become more material to companies, they become a potentially valuable indicator for investors to consider when making investment decisions. We go beyond counting the number of women at the board level in favor of a more holistic approach to assessing work place equality. With this in mind, RobecoSAM has constructed an investment 'Gender Score' that ranks companies based on their performance across a range of key labor and gender-related criteria, including:

- diversity among executives, management, and the total workforce
- the consideration of diversity in the board nomination process
- retention of female talent
- equality of remuneration
- approach to employee health, safety, wellbeing and satisfaction

'The RobecoSAM "Gender Score" ranks companies based on their performance across a range of key labor and gender-related criteria'

We use a portfolio approach to evaluate whether our Gender Score is a useful predictor of investment performance. All companies in the investment universe are ranked according to our Gender Score, dividing them into two groups – high Gender Score portfolio represented by the top 33 percentile companies and low Gender Score portfolio represented by the bottom 67 percentile companies – and equal-weighting their components. The score is based on the questions above, adjusted for transparency biases coming from region, sector, and size. According to our backtests the high Gender Score portfolio outperformed the low Gender Score portfolio by 0.5% annualized per year, over the period June 2004 to June 2019 and with slightly lower volatility.

Figure 10 | Portfolio performance of gender equality leaders versus laggards June 2004 to June 2019



Source: RobecoSAM, 2019

RobecoSAM Gender score is adjusted for transparency bias coming from size, region, country and sector. The performance shown is based on simulated and hypothetical (backtest) equally weighted portfolios that do not take into account trading costs or market factors such as liquidity or execution prices. Past performance is not a guarantee of future performance, and backtest performance differs from actual performance because it is achieved through the retrospective application of model portfolios designed with the benefit of hindsight.

Conclusion

Beyond the social and ethical implications, there is a strong case for both companies and investors to promote gender equality, as shown by the superior fundamentals and investment returns of firms with better gender balance.

Our previous whitepaper on this subject was aligned with much research of its time, supporting the financial materiality of gender diversity in corporates, which included looking at the proportion of women in the workforce compared to the proportion of women in management, the retention of women, and the average difference between male and female pay. Our belief in this philosophy from the perspective of both financial returns, and societal change, led to the launch of the RobecoSAM Global Gender Equality Impact Equities strategy.

Slow progress towards a growing opportunity

This whitepaper was published to go further in first addressing the “big picture”, i.e. the current status of gender equality in corporates across different regions, finding significantly that progress has been slow over the last five years, and is far from where it should be in order to capitalize on the talent pool of women who make up close to 50% of the global population. Thus, there is some way to go in achieving the UN Sustainable Development Goal 5, Gender Equality.

The utilization of detailed statistical analysis in this whitepaper serves to add further evidence to the existing research on the superior performance of corporates when higher numbers of women work alongside men – as measured by better financial fundamentals, and earnings stability. Moreover, not only does the analysis determine a threshold for the proportion of women – in the total workforce, at the management level, and at the board level – at which point firm performance improves, but it also carves out the presence of more women in management roles as being most significant to contributing to financial performance.

Despite such clear positives stemming from gender balance in the corporate environment, already this year the WEF states that as little as 36% of women are in senior roles²³. Meanwhile as referenced earlier, McKinsey has cited that advancing women’s parity in the workplace could add USD 12 to 28 trillion to global growth. Hence it becomes clearer that corporates which actively seek greater gender balance will be well-positioned to gain in many ways, such as by tapping into a latent pool of talent, bringing diversity of thinking and decision-making, improving work-life balance issues for both male and female employees, and finding new business opportunities to serve female-focused markets.

Advancing gender equality: the win-win for investors

Achieving SDG 5 is one of the biggest global social challenges of our time, investors who take gender equality into account now can play a role in both driving social change as well as enhancing their own potential for financial returns by investing in companies with a competitive advantage.

The RobecoSAM Global Gender Equality Impact Equities strategy invests in companies with high degrees of gender equality combined with strong business fundamentals, with the aim of achieving attractive social and financial returns. Since launch in 2015, the strategy has since built up a solid track record.

Active ownership is also an important aspect of how we manage the strategy: we actively exercise our rights as stockowners through voting and engagement activities on gender equality-related topics and other sustainability issues, with the aim of improving the risk-return profile of our investments while making a positive contribution to society.

²³ World Economic Forum, “Global Gender Gap Report 2020”, 2019

Appendix

Table 1: Coefficients of gender representation groups in regression models¹

Dependent variables	Percentage of women on the board >20%	Percentage of women on the board <10%	Percentage of women in management >30.2%	Percentage of women in management <16.6%	Percentage of women in the workforce >44.7%	Percentage of women in the workforce < 24%
EBIT margin	0.069***	-0.064*	0.119***	-0.102***		
ROC	0.047***	-0.140***	0.083***	-0.172***	0.094**	-0.177***
ROE	0.049***	-0.047***	0.083**	-0.067**	0.029*	-0.067**
Debt to assets	-0.065*	0.009	-0.012*	0.039*	-0.053	0.084*

¹To test for a piece-wise linear relationship, we split our data into quantiles before running regressions. Best results were obtained when splitting into 3 groups.

*** p < 0.01, ** p < 0.05, * p < 0.1

P values test the null hypothesis that the independent variables have no correlation with the dependent variables.

If the null hypothesis is true, it means that there is not enough evidence of a correlation between the changes in the independent variable and the changes in the dependent variable.

The goal is then to have a p value for a variable, small enough, ie lower than a significance level of 5%, 1% or even better 0.1% to claim that we have enough evidence to reject the null hypothesis and that there exists a non-zero correlation. In other words, this exogenous variable is statistically significant and it makes sense to keep it in the regression model to explain the endogenous variable.

Table 2: Dependent Variable: ROE

Explanatory variables	Whole universe					Large firms					Small firms				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
% women on the board			10.68***		3.51			6.49**		3.67			6.11**		2.97
% women in top management		11.61***					10.14***					11.10**			
% women in management	10.95***				8.25***	11.18***				7.75**	8.60***				8.45*
% women in the workforce				21.86***					20.04***					24.96**	
Country dummy	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry dummy	YES	YES	YES			YES	YES	YES			YES	YES	YES		
Size dummy	YES	YES	YES	YES	YES										
Risk dummy				YES					YES					YES	
Innovative dummy				YES					YES					YES	
Financial controls ¹	0	0	0	I	I	0	0	0	I	I	0	0	0	I	I
R ²	0.30	0.39	0.25	0.27	0.31	0.26	0.37	0.22	0.29	0.25	0.42	0.44	0.46	0.25	0.41

¹0: z-score computed on the whole universe, I: z-score computed by industry

***p<0.01, **p<0.05, *p<0.1

Only conclusive results are shown, the number of explanatory variables in the regression differs from one model to another.

Table 3: Dependent Variable: EBIT margin

Explanatory variables	Whole universe					Large firms					Small firms				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
% women on the board			7.78***		1.15			11.69***		2.04			3.73		0.63
% women in top management				26.09***					36.37***					14.54***	
% women in management	18.62***				15.23***	27.20***				19.27***	10.77**				11.66**
% women in the workforce		21.31***					31.34***					2.10			
Country dummy	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry dummy			YES	YES	YES			YES	YES				YES	YES	
Size dummy	YES	YES	YES	YES	YES										
Financial controls ¹	I	I	O	O	O	I	I	O	O	O	I	I	O	O	O
R ²	0.14	0.16	0.08	0.15	0.13	0.12	0.14	0.08	0.16	0.10	0.14	0.24	0.09	0.18	0.17

¹O:: z-score computed on the whole universe, I: z-score computed by industry

***p<0.01, **p<0.05, *p<0.1

Only conclusive results are shown, the number of explanatory variables in the regression differs from one model to another.

Table 4: Dependent Variable: ROC

Explanatory variables	Whole universe					Large firms					Small firms				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
% women on the board			7.20***		3.23**			7.89***		3.59*			5.85		2.33
% women in top management		3.79***					3.83**					3.02*			
% women in management	3.76***			11.20***	10.45***	3.67***			11.74***	10.99***	4.15***			9.33***	8.63***
Country dummy	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry dummy	YES	YES				YES	YES				YES	YES			
Size dummy	YES	YES	YES	YES	YES										
Risk dummy	YES		YES	YES	YES	YES		YES	YES	YES	YES		YES	YES	YES
Innovative dummy	YES		YES			YES		YES			YES		YES		
Financial controls ¹	O	O	I	I	I	O	O	I	I	I	O	O	I	I	I
R ²	0.47	0.48	0.33	0.34	0.34	0.45	0.43	0.32	0.34	0.34	0.53	0.60	0.37	0.37	0.37

¹O: z-score computed on the whole universe, I: z-score computed by industry

***p<0.01, **p<0.05, *p<0.1

Only conclusive results are shown, the number of explanatory variables in the regression differs from one model to another.

Table 5: Dependent Variable: FCF/TOT_ASSETS

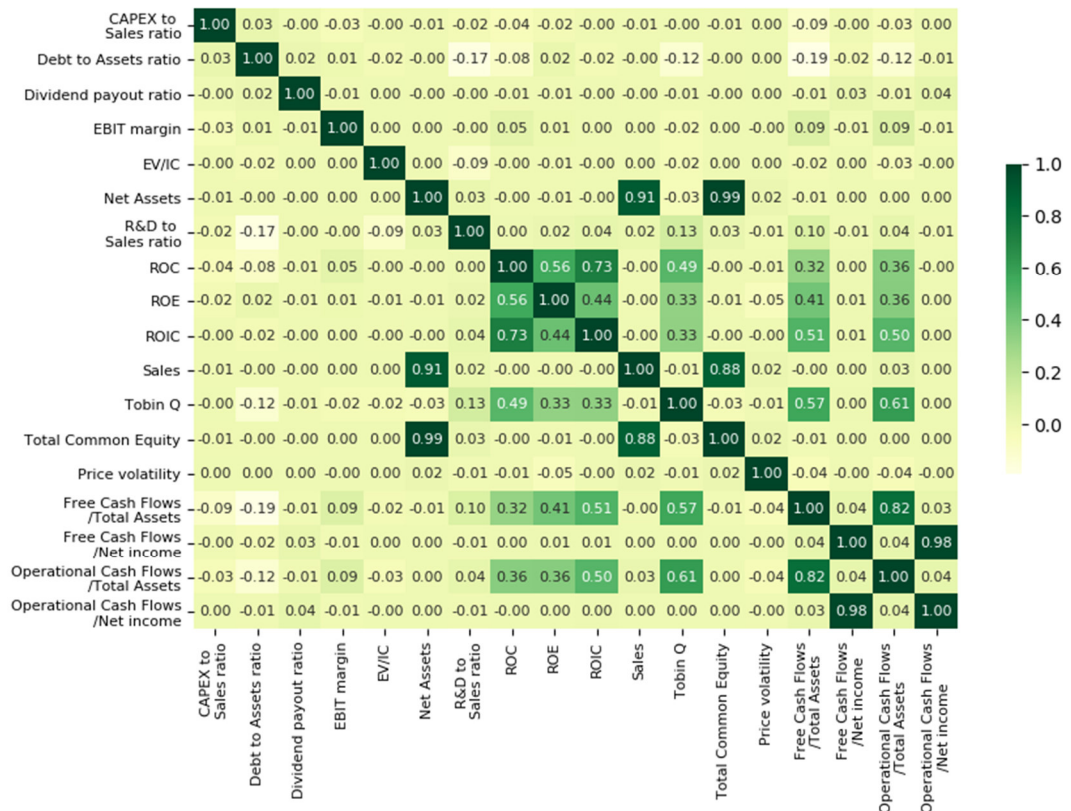
Explanatory variables	Whole universe					Large firms					Small firms				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
% women on the board	0.01*		0.03***			0.01		0.03***			0.01		0.02		
% women in top management				0.05***					0.06***					0.03*	
% women in management	0.04***				0.05***	0.06***				0.06***	0.02*				0.03**
% women in the workforce		0.04***					0.04***					0.04*			
Country dummy	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry dummy	YES		YES	YES	YES	YES		YES	YES	YES	YES		YES	YES	YES
Size dummy	YES	YES	YES	YES	YES										
Innovative dummy	YES	YES	YES			YES	YES	YES			YES	YES	YES		
Financial controls ¹	O	I	O	O	O	O	I	O	O	O	O	I	O	O	O
R ²	0.27	0.20	0.26	0.25	0.27	0.33	0.23	0.31	0.28	0.33	0.24	0.16	0.24	0.24	0.24

¹O: z-score computed on the whole universe, I: z-score computed by industry

***p<0.01, **p<0.05, *p<0.1

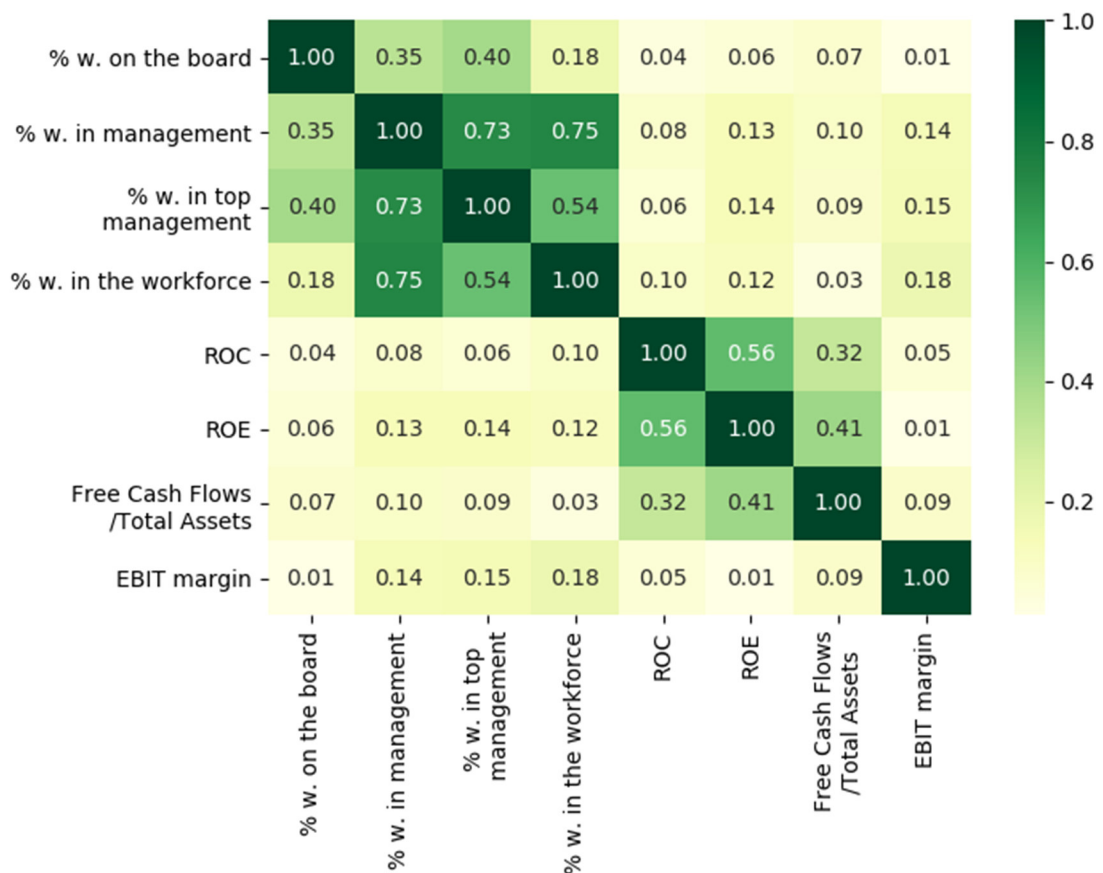
Only conclusive results are shown, the number of explanatory variables in the regression differs from one model to another.

Table 6 | Correlation matrix of financial variables



Source: RobecoSAM

Figure 3 | Correlation matrix of gender diversity and financial variables



Source: RobecoSAM

The figures show the correlations between the variables used in different regression models. Specific attention was paid to autocorrelation, therefore financial controls include on average not more than 5 variables. Similarly, in most models, the gender diversity metrics are taken one by one. The only exception was made to confront board and management diversity metrics in the same model, where the correlation is of 0.35.

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Contact

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