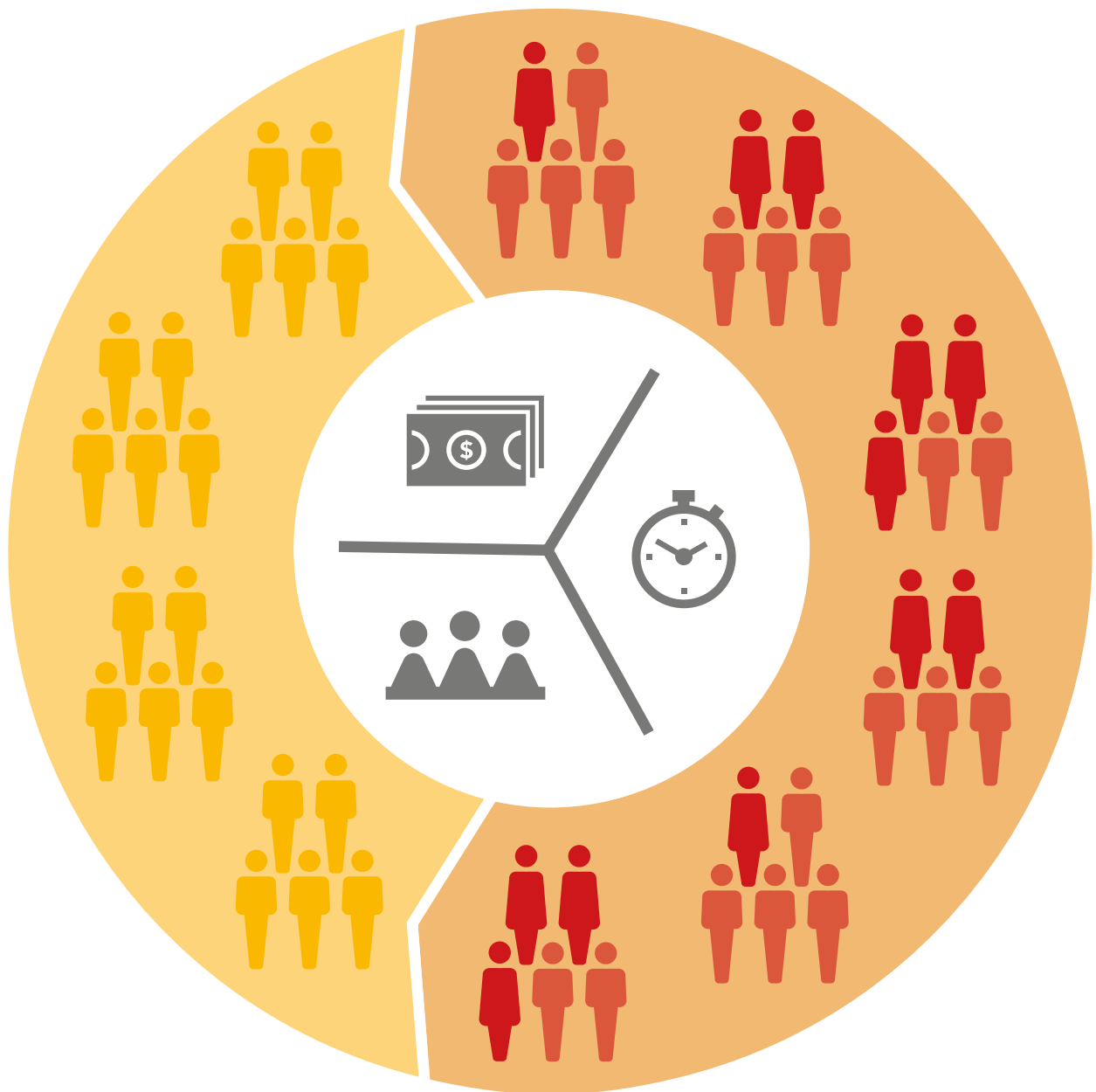


A Public Reality For Women In Biotech Boardrooms



Study of the boards of
directors as biotech
companies transfer from
private to publicly listed



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EXECUTIVE SUMMARY



Executive Summary

Boardroom diversity is very much part of the current corporate governance narrative. This discussion, while taking in all forms of diversity, often centres on the issue of gender. Although the moral and societal advantages of equality are clear, the business imperative for boardroom diversity has not yet penetrated the executive discourse sufficiently as to motivate boards to change. In this study of the boardrooms of newly public listed biotech companies, we show that increased levels of gender equality improve governance and performance, and therefore evidence that you can do well while doing good. Bifurcation of these objectives seems no longer accepted by the new generations of emerging talent. They prefer to align themselves with employers who not only perform well but do it by living their values. Therefore, elevating diverse culture to being the key value leads not only to better business but also greater inclusion and competitiveness for human capital.

Below we summarise key points of this report, which when absorbed and acted upon, should lead to improved corporate governance as well as improved culture and performance across all levels of a biotechnology company.

Biotech sector slow to embrace boardroom gender diversity

The biotechnology sector, while progressive in so many ways, remains an industry where women are significantly under-participating in the leadership of the companies, particularly on their boards. Looking at a group of 177 biotechnology companies which filed to become publicly listed between 2012 and 2015, we found that women hold around 10% of the board positions. Although there is evidence of minor improvement in years immediately following Initial Public Offering (IPO), we found that companies were unable to sustain gender diversity on their boards across the period studied. This highlights the need for a cultural transformation capable of embedding diversity into the long-term behaviours of the company. An optimistic output of the study is that almost 58% of the studied boards now have women serving on them. This index has exceeded 50% for the first time since we started monitoring the boards of biotechs.



ALMOST 58% OF THE STUDIED BOARDS NOW HAVE WOMEN SERVING ON THEM

The leadership culture set from the top

The corporate culture is a central component of the discussion on diversity. Much of the excellent research which has been published ties gender diversity on the boards with explicit advantages for companies. Yet, improved culture is often the intangible dividend of increased diversity. However, culture is rarely the sole responsibility of the board. While it sets the tone and values for the organisation, the CEO plays a key role in promulgating this through the company. This means both the Chair and CEO are accountable for culture setting, and so we assessed these influential positions. We found that the Chair was occupied by men in 98% of companies and the CEO in 92% of companies. This clearly shows that the power-axis of Chair and CEO is dominated by men.



CLEAR RELATIONSHIP BETWEEN SEPARATING THE CHAIR AND CEO ROLES AND INCREASED GENDER DIVERSITY OF THE BOARD

Furthermore, we saw that companies increasingly combined the Chair and CEO position in the post-IPO period. By 2016, just over 25% of companies had a CEO also fulfilling the Chair position. To check whether this shift in board governance can be linked to gender equality, we compared the gender composition of the boards

where CEO and Chair positions were combined, with those where the positions were separated. We found a clear relationship between separating the Chair and CEO roles and increased gender diversity of the board.

VCs dominate biotech boardrooms

Given the importance of venture capital to the sector, we assessed the prominence of VCs in the biotech boardrooms. Throughout the period of the study, VCs held between ~30% and ~35% of the board positions. At the time of IPO, women constituted only between ~2% and ~4% of all board directors. In the period following the IPO, we observed a steady reduction in the number of VCs on boards, although a stubborn residual of ~60% of original participation remained after 3 and 4 years post-IPO. At the end of the study period (2016), 360 of all 1289 directorships were still occupied by VC partners. Importantly, we found that when VCs leave the boards, this leads to doubling the proportion of women non-executive directors on the boards. Our study shows that the male dominance of venture capital brings unintended implications for the portfolio companies in terms of their board diversity, and consequently may also have an undesirable effect on their ability to attract talent.



**360 OF ALL 1289
DIRECTORSHIPS WERE
STILL OCCUPIED BY
VC PARTNERS (2016)**

Where women participate on boards

Public market regulatory requirements and growing board responsibilities are two reasons for establishing board committees. We looked at the distribution of the expertise brought by women directors within various board committees and found that women serve on more than one committee, with their participation having increased to a peak of 18% by the end of the study period. Women are most often seen on audit committees (53.7%), suggesting they are appointed for technical experience. They chair the audit committee on an average of 6.7% of occasions, and nominations committee in only 5.4% of cases. This means their power and influence over the appointments process is very limited.



**WOMEN MOST OFTEN
SEEN ON AUDIT
COMMITTEES (53.7%)
SUGGESTING WOMEN
ARE APPOINTED FOR
TECHNICAL EXPERIENCE**

We then established the level to which both men and women were leaving boards, as well as being appointed. This data was used to draw trends in behavioural changes among the boards following the IPO, specifically their approach to the diversification of boards with women directors. Over the period of the study, we saw a greater influx of men than women, with men representing 68% of the net gain over the study period. Men are being added to boards at twice the rate to that of women, meaning the status quo is perpetuated.



**MEN ARE BEING
ADDED TO BOARDS AT
TWICE THE RATE TO
THAT OF WOMEN**

The business imperative demands a faster rate of change

We also attempted to assess the business case for diversity and compared share price performance of the companies with all-male boards to those with women on the board. On average, the diverse boards showed +19% (increase) in share price, whereas the all-male boards -9% (decrease), a net 28% difference in performance. It could, therefore, be concluded that board diversity is a contributing factor to share price performance.



**COMPANIES WITH AT
LEAST ONE WOMEN
ON THEIR BOARD
OUTPERFORMED
COMPANIES WITH
ALL-MALE BOARDS
BY ~28%**

As this and our previous studies clearly show, the biotech sector is far from reaching the effectual level of 3 positions (or 30% of the board) to be occupied by women.

We measured the increase in participation of women on studied boards and predicted how long it would take to reach the set target of 30% as well as 50%. We saw 0.99% change in the women on boards between 2015 and 2016. Therefore, applying this as

a constant rate of change, we predicted that the studied companies would reach 30% in 2036 and gender parity by 2056.

This poor prognosis means there is a need for interventional approaches to accelerate the cadence of this change. In order to move from the baseline of 10% of women on boards of the studied group and achieve an aspirational target of 30% by 2025, 17 times more women would need to be appointed than that which have been added since 2012. When we consider that the base line of 10% is evident across small and medium size companies throughout the biotechnology sector, the magnitude of the effort needed to bring women into the boardroom to the level required becomes all too clear.



IT WOULD TAKE
**20 YEARS TO REACH
30% AND 40 YEARS TO
REACH 50% OF WOMEN
ON STUDIED BOARDS**

1

INTRODUCTION

1.0 Introduction

The composition of a board of directors should concern any person serving a board. A well constituted and diverse board can effectively marshal the company through prosperous times, but more crucially, also during significant pressures and times of change. Compose the board of the wrong blend of people and dysfunction can quickly take hold. Board composition is a central tenet of governance which is widely understood by those serving on boards, but also those who evaluate and scrutinise boards; from investors to corporate governance analysts.

As private companies go public, they face increased public scrutiny and different challenges, all of which place new demands on the board. The transition from a private to publicly listed company also brings incredible optimism for a company. A public offering is a funding event with great significance, and many companies, quite rightly, view it as a key milestone in their evolution. The raising of public market capital usually funds the further strategic ambitions of the company, as well as provides a liquidity event for those who have backed it so far. It also brings considerably greater levels of regulatory compliance requirements and the board must uphold its fiduciary responsibility to a new and changing shareholder base.

Life as a publicly listed company therefore brings great opportunities, as well as new risks. The board of directors which oversees this shifting strategic landscape must also evolve, to reflect the future needs of the company. This important transition opens the door to propagate a highly diverse slate of new board directors and to be rewarded with the full advantages this brings.

In this report, we examine the board environments of biotechnology companies which became publicly listed between 2012 and 2015, charting the progress of their board of directors up to the end of 2016. This provided a distinct opportunity to assess whether companies take advantage of the benefits of a well constituted and diverse board during the transition from private to public, as well as in their early years as a public company. We explicitly focused upon the representation of women on these boards, with the express intent of measuring the level and trajectory of gender diversity.



THE TRANSITION FROM PRIVATE TO PUBLIC LISTED COMPANY OFFERS A POSSIBILITY TO APPOINT A **HIGHLY DIVERSE SLATE OF NEW BOARD DIRECTORS**



WE ASSESSED WHETHER COMPANIES TOOK ADVANTAGE OF THE TRANSITION PROCESS AND DIVERSIFIED THEIR BOARDS

2

ABOUT THIS REPORT



2.0 About This Report

This report focuses upon the issue of gender diversity among the board of directors as companies transfer from being private to publicly listed. In this study, we analysed 177 biotech companies which conducted an Initial Public Offering (IPO) between 2012 and 2015 (Table 1). It was a significant period of financing for the biotechnology industry, during which the number of public listings exceeded the prior 13 years by more than 30%, and exceeded \$13.5bn of raised capital.

Table 1 / Number of companies that filed IPO each year

YEAR	2012	2013	2014	2015
Companies that filed for IPO	12	42	84	45
Companies acquired			2	4
Cumulative number of companies	12	54	136	177



177 BIOTECH COMPANIES WHICH CONDUCTED AN IPO BETWEEN 2012 AND 2015

In studying these companies, we did not seek to confirm the data which we had gathered in the previous studies; *Diversifying the Outlook – The X&Y of Biotechnology Leadership* (2014), *Investing in Biotechnology Management* (2015), or *2015 Board and CEO Compensation and Governance Report* (San Diego). In each of these prior studies, the evidence was that biotech boardrooms remain the domain of men, holding 90% of all directorships. The presence of women as CEOs consistently was between 7–9% (except in San Diego) board chairs ~4%, and all-male boards were seen in more than half (52%) of all companies. Our prior studies were comprehensive and repeatedly showed consistent statistics.

In this report, we look further into the issue of gender diversity by analysing a group of the biotechnology companies maturing from private to public. Each of these companies was embarking on a transformative event in their financing, ownership, and governance structures. Following their journey from the point of filing their registration for the public markets, and onwards, enabled us to examine board composition changes and behavioural trends in subsequent periods of board operations. In particular, we looked at the initial board composition from a gender diversity perspective and studied whether companies, as they go public, used the opportunity to refresh and reconstitute their boards, and whether they introduced diversity by adding women to their board.

The move to become a public listed company is a key event which catalyses many changes in the way the company is run. This often challenges executives without prior public markets experience. As such, the composition of the board should be as good as it can be leading in and leading out of the IPO. Therefore, this IPO window was chosen for the purpose of this study, because we could study precise numbers and also behaviours.



THE COMPOSITION OF THE BOARD SHOULD BE AS GOOD AS IT CAN BE LEADING IN AND LEADING OUT OF THE IPO

2.1 The objectives of the study were:

- To identify the level of participation by venture capital firms on the board of directors and how this changed in the post-IPO period, including in/out-flow of directors.
 - To assess the replacement rates of board directors in the subsequent period following IPO and how this director turnover might have improved the participation of women on the boards.
 - To find any evidence of the relationship between share price performance and the presence of increased diversity on the board.
-

3

PUBLIC BIOTECH'S BOARDROOM GENDER IMBALANCE

3.0 Public Biotech’s Boardroom Gender Imbalance

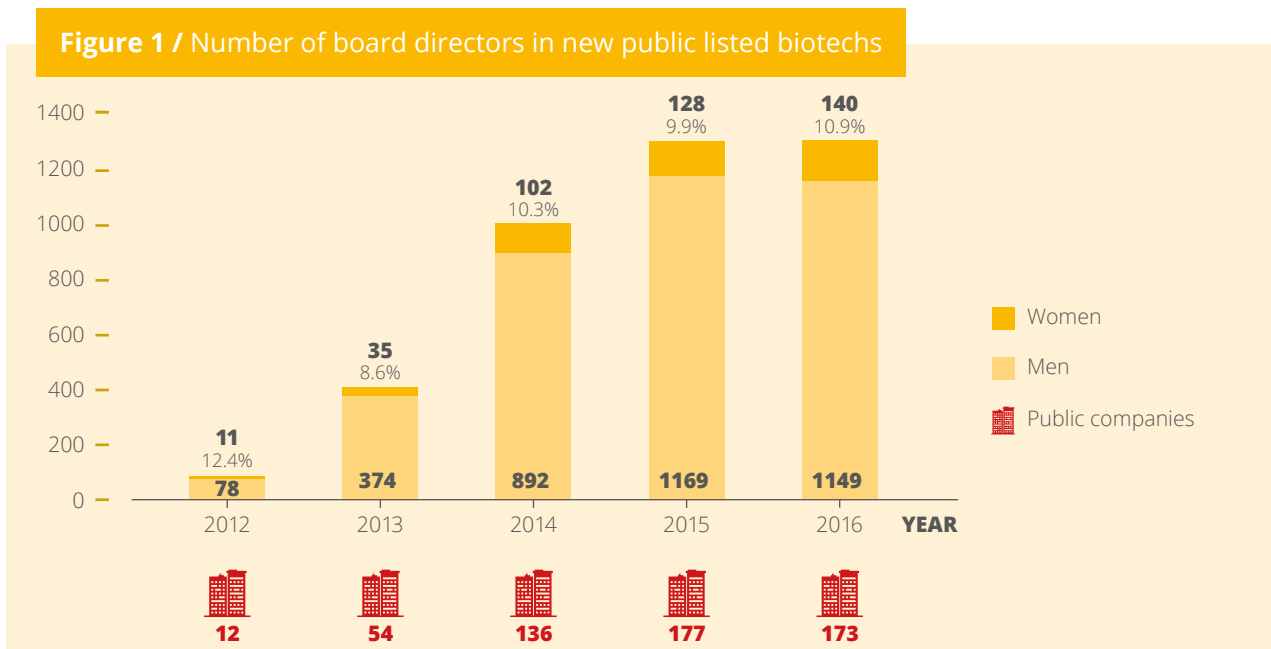
Preparing a board and management team for the journey towards becoming a public listed company requires extensive planning to ensure that they are ready for all that being public throws at them. Leaving this too late can have negative implications for the company because the company’s leadership could be insufficiently skilled, the cadence of change becomes too high, and the disrupted board continuity can weaken the company’s governance.

In our previous study of 1,491 therapeutic and diagnostic small and medium companies (*Diversifying the Outlook – The X&Y of Biotechnology Leadership, 2014*), we showed that women held 11.2% of board seats (Europe) and 9.7% in California and Massachusetts. Here, we question whether companies preparing for IPO and becoming public would exhibit a more progressive statistic. After all, the benefits of boardroom diversity are well evidenced and have been widely discussed for quite some time. Additionally, public companies are overall viewed as promising businesses, and one would hope for a more progressive boardroom culture. Furthermore, the scrutiny of public companies should push the boards towards increasing the participation of women.

However, we found that the gender composition of the boards of the companies which conducted an IPO between 2012–2015 is consistent with the previous findings, and show that cumulatively women hold 10.9% of the board seats (Figure 1).

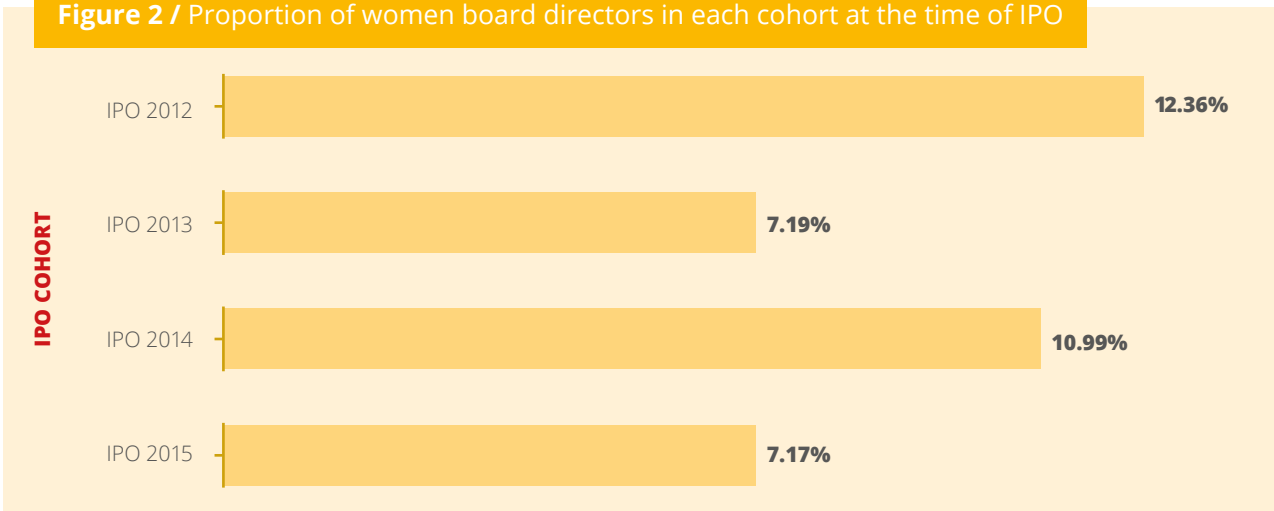


BECOMING A PUBLIC LISTED COMPANY REQUIRES EXTENSIVE PLANNING TO ENSURE THAT BOARDS ARE READY FOR ALL THAT BEING PUBLIC THROWS AT THEM



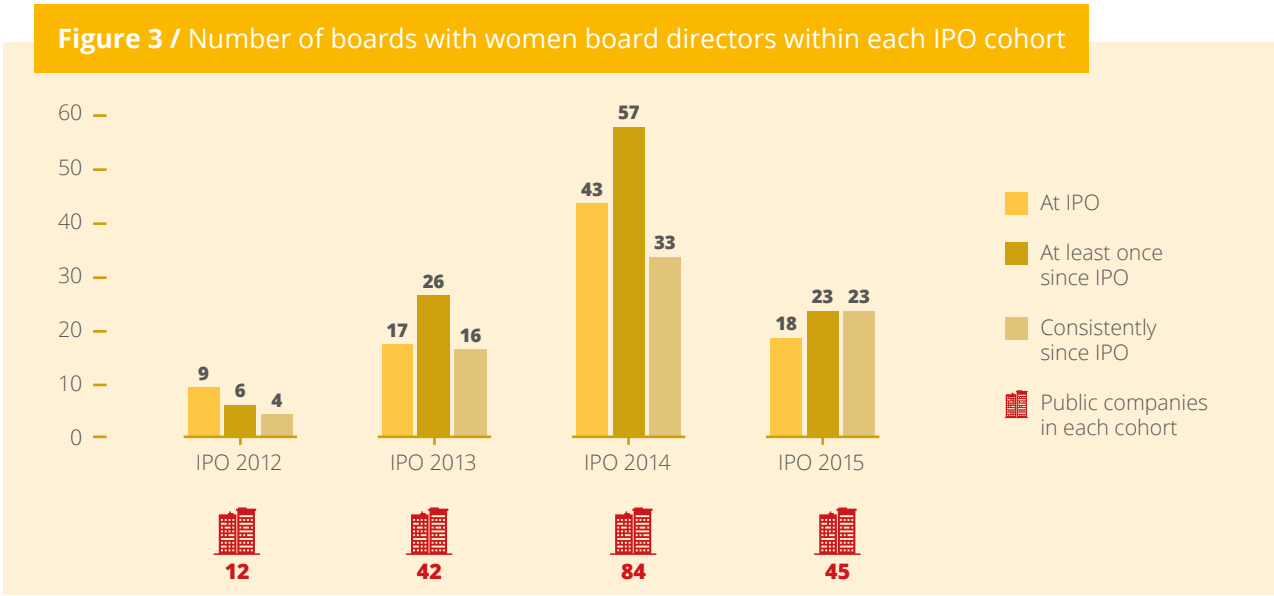
This data clearly show the scale of the situation as the number of board directors reached 1289 directors, with just 140 board positions occupied by women. Although the 177 companies studied might have chosen to apply changes to their boards in the run-up to IPO, the representation of women on the board at IPO (Figure 2) is consistent with the market average, and implies that women were not a considerable part of any pre-IPO inflow to the boards.

Figure 2 / Proportion of women board directors in each cohort at the time of IPO



Nevertheless, we found that in the post-IPO period, perhaps driven by public scrutiny, the companies from 2013–2015 IPO years indeed introduced changes to their board composition, and the number of diverse boards (having at least one seat held by a woman) increased (Figure 3). However, having analysed whether women were consistently present on the board every year after IPO, we found that the number of diverse boards decreased, even below the level of IPO (except from 2015 as two series of data represent the year). This shows that in assessing the changes in the behaviour of boards, a snapshot of data is inadequate, and we need more longitudinal analysis to see how boards are changing their commitment to appointing women. More importantly, our data show that boards have so few women on their boards (often only one, with an average board size of 7.5), that if one woman director leaves, it contributes to noticeable fluctuations in the number of diverse boards. This effect is a result of a lack of critical mass.

Figure 3 / Number of boards with women board directors within each IPO cohort



Creating critical-mass in relation to gender diversity on boards is commonly cited. This is where we see evidence of at least 3 board positions (30% of board roles) held by women, from which multiple advantages can be derived. Building a critical mass of women on boards would not only enhance performance results of companies, but would dampen the effect of losing women from boards through normal turnover.

Greater numbers of women directors per company’s board would bring a sustained level of gender diversity that would be culturally transformative.

Critical Mass

The underlining theory behind the critical mass principle is that women serving boards alone are unable to exert influence in a way which is consistent with their expertise or knowledge. Because they are viewed as the ‘different’ voice, their views go unheard or undervalued. This theory was first described in research by Kanter (1977).

Supplementing this with a second woman on the board changes this dynamic, moving beyond tokenism towards a more diverse representation in the group. While the two women are not naturally agreeing because of their common gender, or supporting each other’s viewpoint, they do feel more able to express their view and to support one another to make that view heard.

A move to expand this further to 3 women then creates a dual critical mass, where the views of both genders are more equally expressed and the marginalising of influence and power, based on minority status, becomes less evident.

Kanter, Rosabeth Moss (1977). “Some effects of proportions on group life: skewed sex ratios and responses to token women”. *American Journal of Sociology*. 82 (5): 965–990 for the University of Chicago Press.

Konrad, A.M., Kramer, V.W. and Erkut, S. (2008) “Critical mass: The impact of three or more women on corporate boards” *Organizational Dynamics* 37, 145–164.

Joecks, J., Pull, K. and Vetter, K. (2013) “Gender diversity in the boardroom and firm performance: What exactly constitutes a “critical mass?” *Journal of Business Ethics* 118, 61–72.

Torchia, M., Calabrò, A. and Huse, M. (2011) “Women directors on corporate boards: From tokenism to critical mass” *Journal of Business Ethics* 102, 299–317.

Amelie Charles, Etienne Redor, Constantin Zopounidis (2015). “The determinants of the existence of a critical mass of women on boards: A discriminant analysis”. *Economics Bulletin, Economics Bulletin*, 35 (3), 185–197.

Nevertheless, although a sustainable change in boardroom diversity seems hard to achieve without creating the critical mass, efforts of companies to add women board directors can contribute to an overall change. In fact, a cumulative analysis over the study period shows the number of boards that had at least one woman did grow (Figure 4), and the proportion of women board directors within each separate cohort also grew for 2013–2015 (Figure 5). The change between 2013 and 2016 shows that 9% more companies had at least one woman on the board (Figure 4), signifying that for the first time in any of our studies, the number of all-male boards is below 50%. This must be taken as a positive signal, albeit it is set in context by a remaining 42.8% of boards still being all-male.

Figure 4 / Proportion of companies with a diverse board

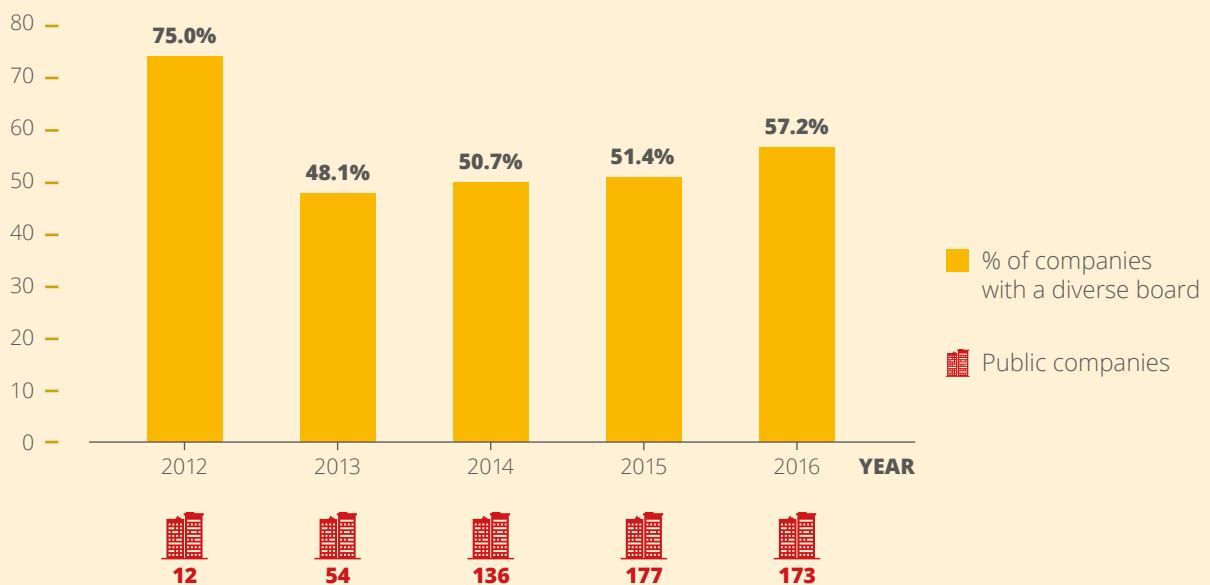
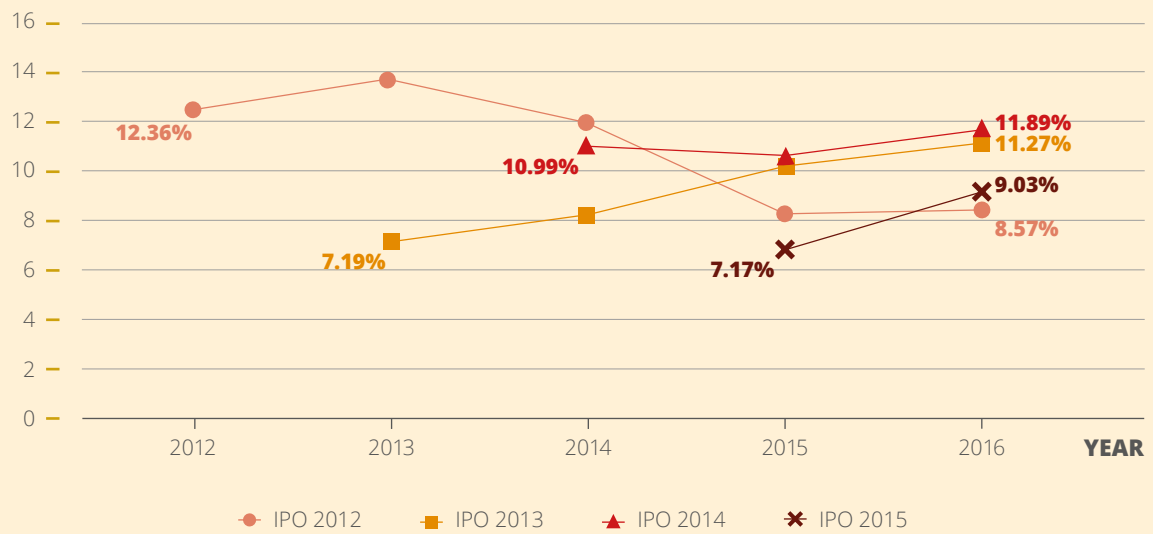


Figure 5 / Proportion of women board directors in each IPO cohort over time



4

THE LEADERSHIP CULTURE IN PUBLIC BIOTECHS

4.0 The Leadership Culture in Public Biotechs

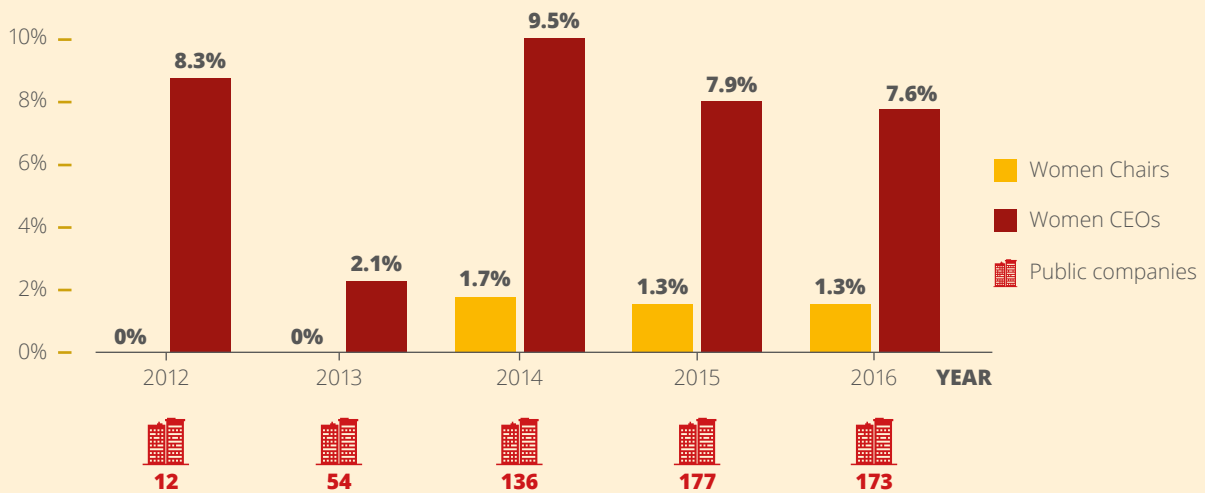
The public market can be an unforgiving environment into which to lead a company, with every performance indicator forensically scrutinised. Therefore, the people selected to lead the company to this stage must exhibit the requisite capabilities. Among these, the Chairperson and CEO are perhaps those who receive the greatest focus, as investors interpret the strength of a Chair to run the board, and the capability of the CEO to deliver the strategic goals.

Therefore, we looked at who was occupying the two pivotal leadership positions in the company. Strikingly, in 2016, we observed that the Chairperson was male in almost 99% of companies and that CEO positions were cumulatively held by women in less than 8% of companies (Figure 6).



IN 2016, THE CHAIRPERSON WAS MALE IN ALMOST 99% OF THE COMPANIES STUDIED

Figure 6 / Proportion of all CEOs and Chair positions that are held by women



The all-important cultural tone of each organisation hinges on the Chairperson, and to a greater extent the CEO, positions which we show are dominated by men. For diversity to become part of the cultural fabric of the company, the Chair and the board must set the right tone on diversity. Equally, the CEO must promulgate this throughout the organisation. Often, where a woman is Chair and/or CEO, you will see improved levels of gender diversity. Where men occupy both positions, the cultural cascade clearly faces considerable challenges.

The Chairperson and CEO are the power-axis of most company leadership structures. There are arguments for and against combining the CEO and Chair roles. While we favour separation, we also advocate reviewing individual context to explore the company's needs, strengths and weaknesses, as well as environmental factors – all of which would help to determine the board governance model.



THE CULTURAL TONE OF EACH ORGANISATION HINGES ON THE CHAIRPERSON AND THE CEO

We looked at how the role of Chair and CEO was configured within our study group. Cumulative analysis shows that the proportion of boards with combined Chairperson and CEO increased annually, reaching 25.3% of all boards in 2016¹ (Figure 7). A similar trend was observed when each IPO cohort was analysed separately (Figure 8). This is in contrast with long-range data which indicate a trend among US companies for separating the role of Chair and CEO.

Figure 7 / Board governance of new public listed companies

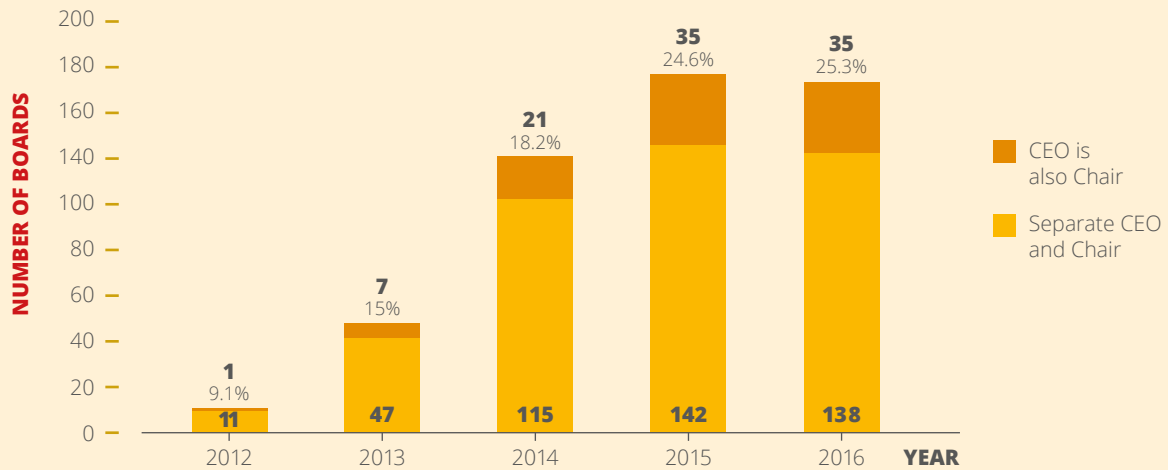
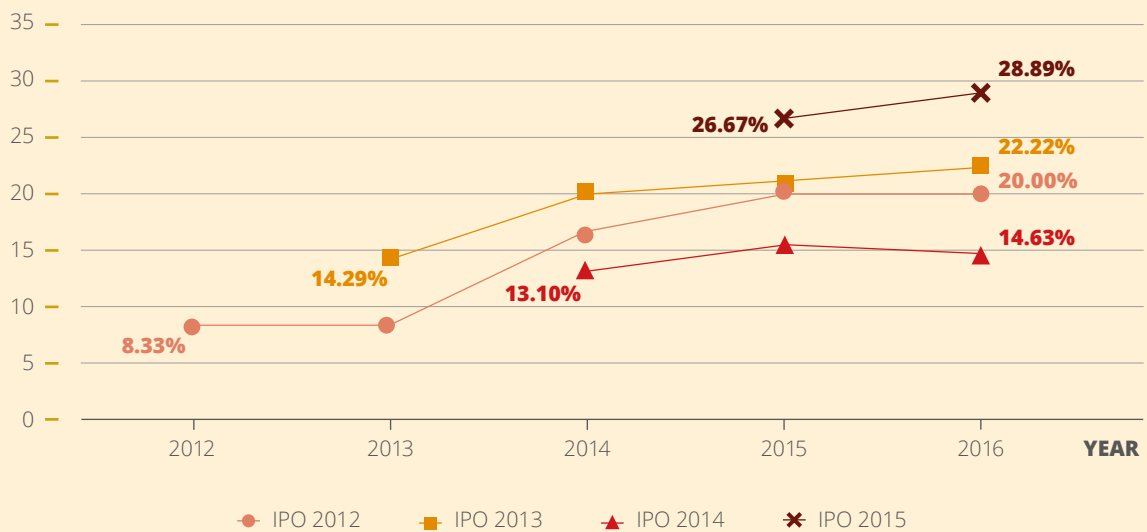


Figure 8 / Proportion of boards with role of CEO and Chairperson combined within each IPO cohort over time



¹ While combined chair/CEOs exist at about 69% of S&P 100 companies (albeit with lead directors also present at about 84% of all S&P 100 companies).

The parameters of our study did not allow us to assess the circumstances which contributed to the increase observed in our study, but possible explanations include:

- Chair succession planning was sub-optimal in these companies.
- CEOs have consolidated power in the absence of a strong and settled board.
- CEOs assumed even greater responsibility in an otherwise challenging transition to public company.
- Companies decided this was their preferred governance structure.

Clearly, the vacancy of a Chair position provides an opportunity for the CEO to consolidate power by combining both posts. This allows the CEO, who has the greatest influence on a company’s culture, to begin to set the cultural tone from the board too. Whereas, the presence of an independent Chair allows the board to create a value system and to task the CEO of delivering it among the organisation.

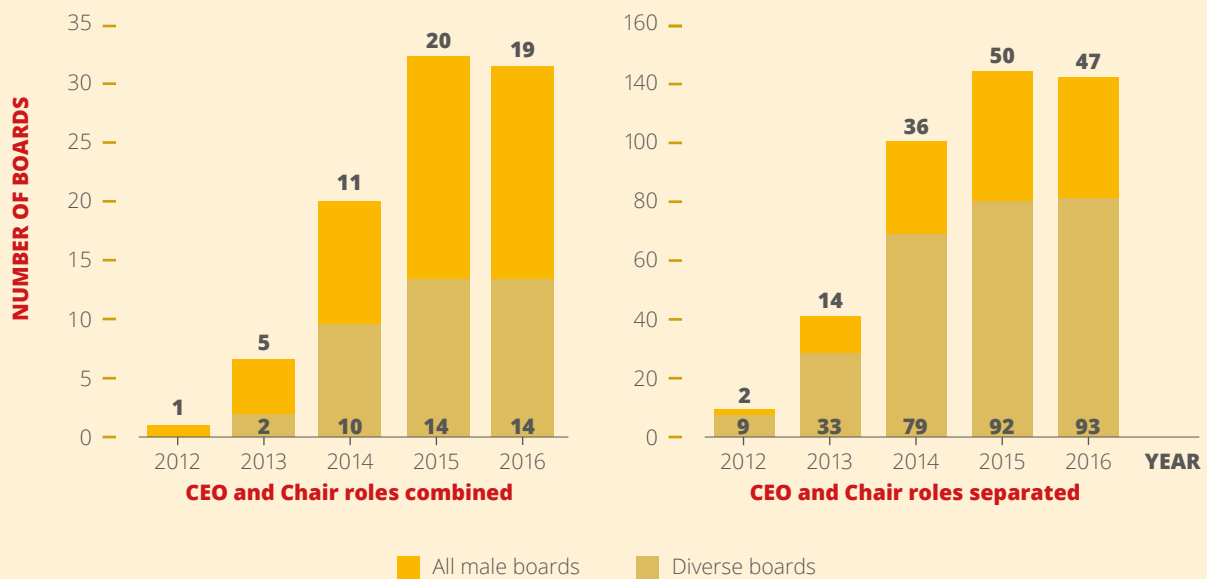
This ‘setting of the tone’ is an important concept we have previously researched in the arena of board diversity. Companies who are otherwise enlightened to the benefits of good governance, often show a stronger commitment to diversity. This, as some commentators suggest, is what leads to these companies outperforming their peers.

We believe we found a confirmation of this hypothesis in our study (Figure 9). Within the group of companies which had separated the role of CEO and Chairperson, diverse boards were the majority. Additionally, a larger proportion of all-male boards had the role of CEO and Chairperson combined. While the debate between separating the role of Chair and CEO continues to exercise the corporate governance literature, the board culture and ‘tone from the top’ is irrefutably important. For the first time, we have found a clear link between separating the Chair and CEO roles and increased gender diversity of the board.



THE MAJORITY OF DIVERSE BOARDS HAD THE ROLE OF CEO AND CHAIRPERSON SEPARATED

Figure 9 / Gender composition of boards



5

THE VENTURE CAPITALISTS LEAVE THE BOARDROOM

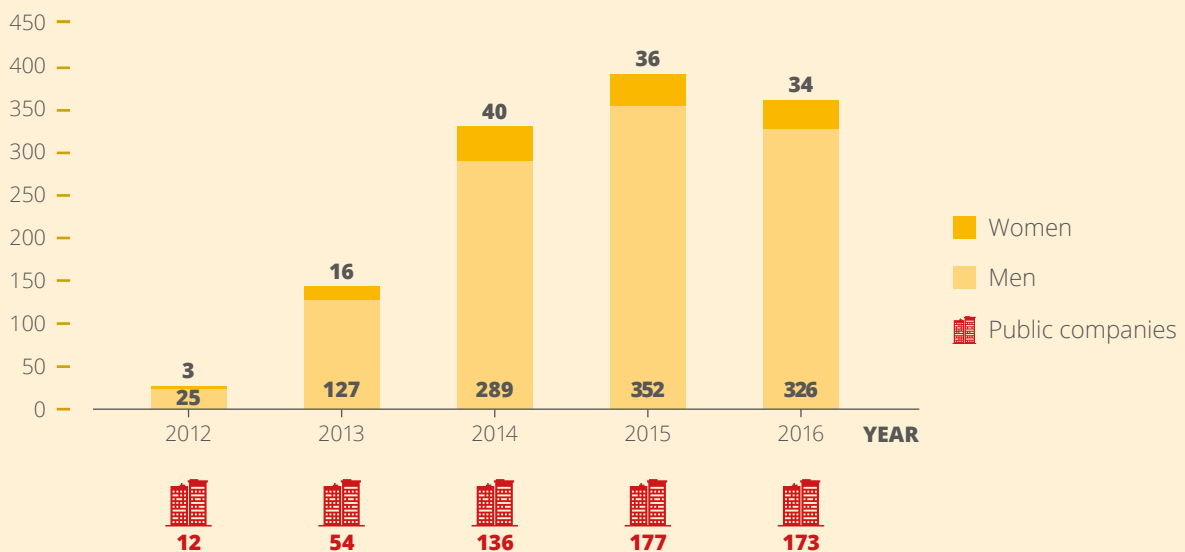
5.0 The Venture Capitalists Leave the Boardroom

Venture capital firms are a major force within the boardrooms of private biotechnology companies. The capital intensity of the biotechnology sector dictates that large sums of capital are required to accelerate innovative technologies towards commercial use. This capital is deployed in companies with considerable risk, which means venture is a large contributor of equity financing, in return for which they frequently require a seat on the board. Our data show the extent to which VCs occupy boards of the portfolio companies (Figure 10). In 2015, 388 board roles were occupied by venture capital partners, with women making up just 9% of this pool. In 2016, there were 360 venture capitalists on the boards of the study group remaining to be replaced, which makes nearly 1/3 of the pool of all board directors. These numbers serve to highlight the prominence of VCs in biotech boardrooms and how currently they are an opposing force to the gender diversification of portfolio company boards.



WOMEN MADE UP ONLY 9% OF THE POOL OF VC PARTNERS SERVING ON BOARDS IN 2015

Figure 10 / Number of VC board directors in new public listed companies



This dominance of the board of directors from venture firms often results in a limited capacity to add other external directors to the board, either in an executive or non-executive position. During the years of private ownership, the board changes as VCs rotate positions, and other VCs are added during financing rounds, yet their boardroom dominance endures. This is a particular issue where gender diversity is concerned. The introduction of diversity into the boardroom of the portfolio company becomes highly dependent upon the venture firms themselves diversifying their own ranks, and thereby populating the board of a portfolio company from a more diversified internal group.



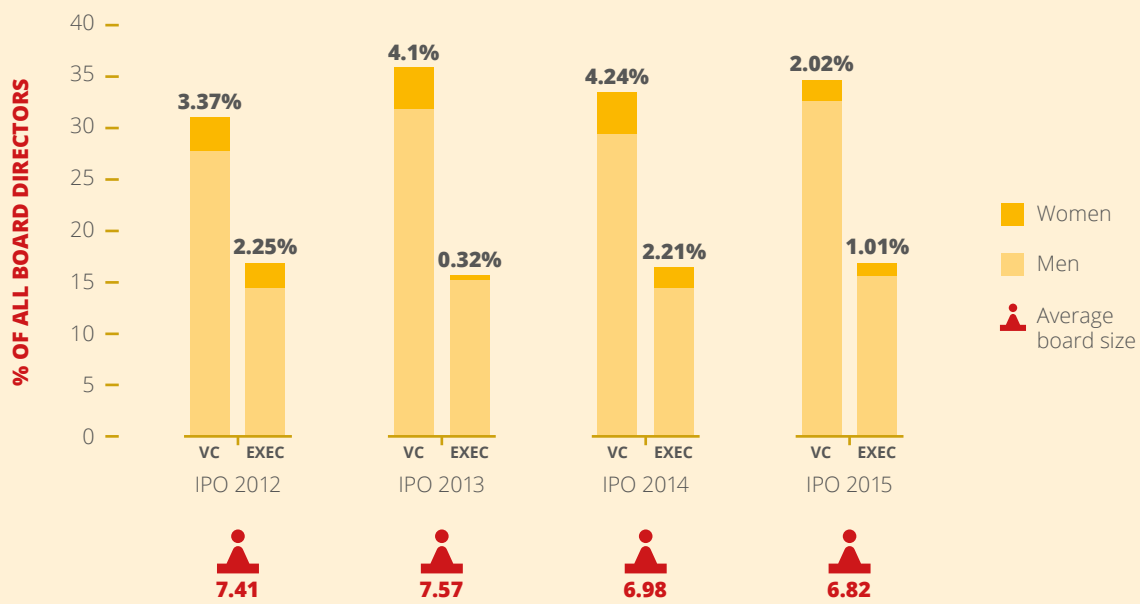
THE DOMINANCE OF THE VC PARTNERS OFTEN RESULTS IN A LIMITED CAPACITY TO ADD NEW BOARD DIRECTORS

We looked at the way in which venture firms influence the composition of the board at the point of IPO, and in subsequent years (Figure 11). We found that at the time of the IPO, women VCs constituted no more than 4.24% of all board directors in the studied companies, and it declined thereafter, reaching a low of 2.02%. This evidently shows

how VC firms bring little gender diversity to the biotech boardroom. The results show that executive representation on the board is consistently under 20% across all years, meaning that on aggregate we're seeing only 1 person from the executive committee serving on the board, most often the CEO. For this reason, the low representation of women among the executive directors is a consequence of them rarely holding the office of CEO.

This highlights the limitations of a gender-diverse executive management impacting the board composition.

Figure 11 / Gender composition of VCs and Exec Directors at the time of IPO



The lack of diversity at the executive level can be explained by the presence of a male dominated board. We know from our research that women are steering away from companies with all-male boards and/or management teams. Consequently, the overbearing presence of male VCs on company boards is inhibiting the portfolio company from accessing women in the talent pool. Furthermore, the influence of biases, both conscious and unconscious, as well as network segregation, will skew the appointments being made to executive management in favour of men. This effect on human capital management could, somewhat paradoxically, be impairing value.

The growing deployment of corporate venture capital (CVC) within biotech means that representatives of CVCs are sitting on boards. The terms which govern these entities can mean they must resign their positions from the board prior to IPO. Equally, we're aware of traditional venture capital companies who also prefer to step down from the board prior to IPO. This suggests some changes to the board will have occurred pre-IPO, but we're unable to discuss those changes due to the lack of available data. Nevertheless, we looked in more detail at post-IPO changes in VCs.

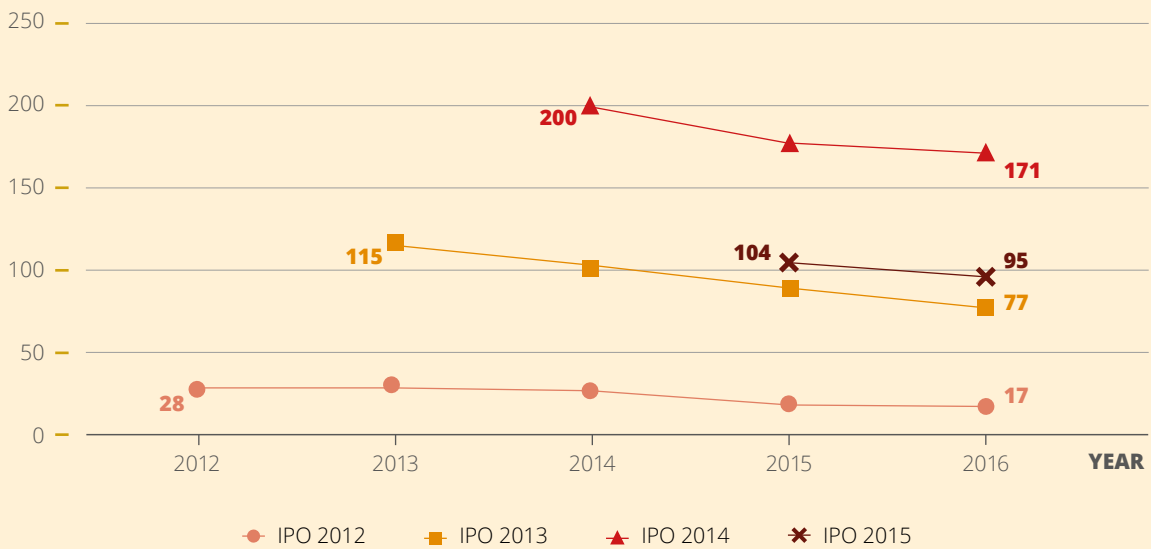
Analysis of the number of VC directors per IPO-cohort sets out the VCs that left the boards in the years following the IPO (Figure 12). Across all the companies in the study, there is a steady reduction in the number of VCs sitting on the board of directors. What is surprising however, is the small degree of the gradient of the lines, indicating a slow pace of VC's departure, with 66% (2013) and 60% (2012) VCs still sitting on the board after 3 and 4 years post-IPO respectively.



60% OF VC PARTNERS WERE STILL SITTING ON THE BOARD AFTER 4 YEARS POST-IPO

Venture capitalists often vociferously argue the positive impact of remaining on the board post-IPO. It is possibly under-appreciated by the wider population the extent to which VCs continue to be shareholders in the company post-IPO, and how they add value in their board positions. In fact, VCs are also seen buying into the IPO, thereby increasing their shareholding. Their return on the investment is not always crystallized at the end of the lock-up period, some 90–180 days after the floating of the shares. Continued ownership fuels a motivation to remain on the board, with a clear view of the company’s progress, and an ability to influence the strategic path. Premature abdication as a director, and/or accelerated selling of their shares, might be interpreted by some new public investors as a negative indictment, thereby reducing support for the shares and diminishing value. These all influence VC decisions for continued participation on the board.

Figure 12 / Number of VC board directors in each IPO cohort over time



On the other hand, an accelerated reduction in VC directors on the board would be indicative of a progressive board, which reflects the needs of a newly listed company and is focused on addressing the future strategic goals of the business. VCs have nurtured the ventures to an important milestone in the strategic development of the company, and maybe their participation should be less dominant in the following period. Public companies are in the gaze of public market investors and increasingly, all forms of media. Managing an increasing number of stakeholders and emerging risks, including that of reputation, becomes a growing part of the board’s changing responsibilities. While VCs are often capable of this, more independent board configurations can bring increased advantages.

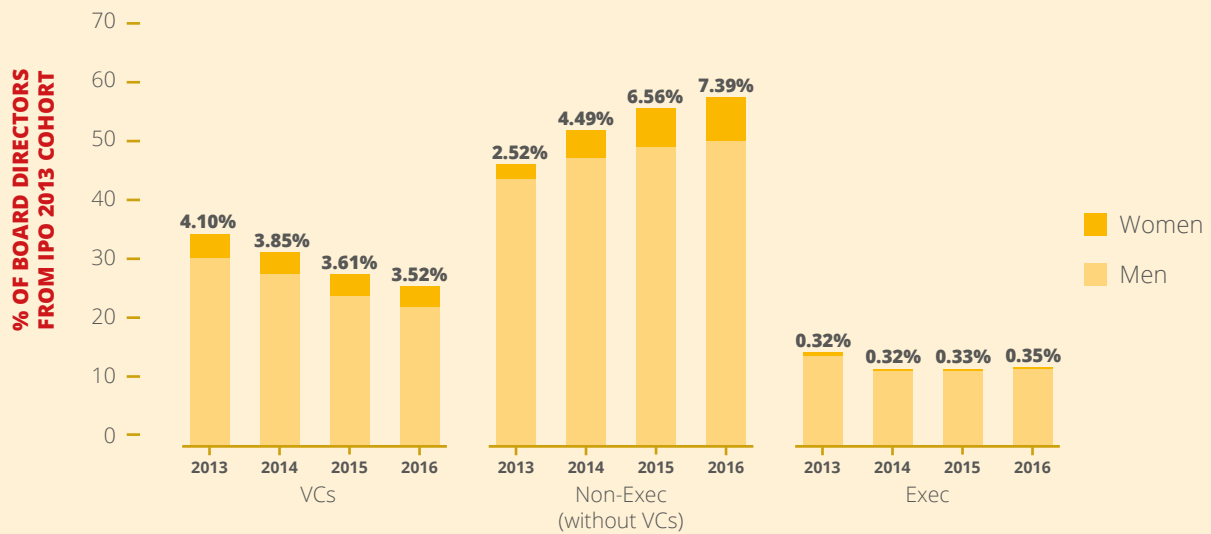
At this transition from private to public, earlier investors become supplanted by the new ones, giving rise to questions of organisational strategic intent and who is best to provide oversight from the board. Led by the chair, the board needs to carefully balance the composition, frequently re-evaluating the board’s current or future experience gaps, as well as address performance requirements. This refreshment and evolution are drivers for replacing VCs. Effective succession planning is also vital to ensure the cadence of this change doesn’t detrimentally impact the organisation.



**ACCELERATED
REDUCTION IN VC
DIRECTORS ON THE
BOARD WOULD
INDICATE A
PROGRESSIVE BOARD**

One observable advantage of VC’s post-IPO departure is an opportunity to diversify the board. We studied this by looking at the boards of the IPO cohorts as they went public and monitored the changes in the board’s composition from the gender perspective. Our 2013 cohort quite visibly demonstrates that as VCs leave the boardroom, and the new non-executive directors join, the presence of women directors increases, improving gender diversity (Figure 13). By 2016, the presence of women non-executives has doubled the presence of women VCs on the company boards. This trend was observed across all the years excluding 2012, a smaller cohort than other years.

Figure 13 / Representation of board directors in IPO 2013 cohort over time



The data overall point to VCs leaving boards at a relatively constant and quite predictable rate following an IPO. The male dominance within VCs impacts the composition of boards of pre-IPO companies and their departure opens-up opportunity for increasing the presence of women in the boardroom, mainly by appointing non-executive directors. This pattern of transition should be something which nomination and governance committees, or the collective board, are doing more to plan for in the months and years leading up to the IPO, as well as beyond it. Board refreshment and succession are critical to the performance of the board, as is diversity, all of which can be positively addressed through this transition period.



DEPARTURE OF VC PARTNERS OPENS-UP OPPORTUNITY FOR INCREASING BOARDROOM DIVERSITY

6

BOARD COMMITTEES FALL SHORT OF INCLUSION

6.0 Board Committees Fall Short of Inclusion

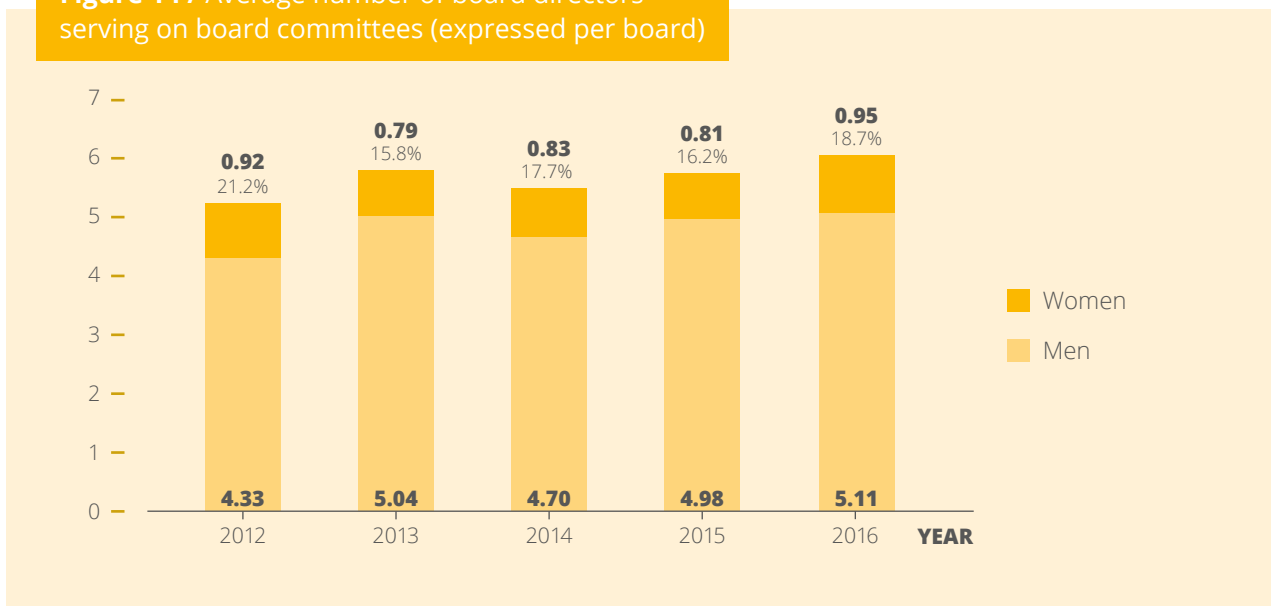
Bringing diversity to the boardroom is a first step to improving the board, however, only when fully inclusive behaviour begins to manifest do you see the distinct advantages of a diverse group. The participation of women on the board committees is thought to be a surrogate for the level of inclusion and influence of women on the boards they belong to. Here, we look whether boards integrate women directors in a way that discharges diverse talent and its capabilities through the various board committees.

Cumulative data across the years show that the participation of women on the board committees increased from 15.8% in 2013 to 18.7% in 2016 (Figure 14). However, this still only represents 1 (0.95) women per board serving on committees. This indicates that women are contributing to the board committees increasingly, albeit that the statistical view suggests that the few women on a board are serving multiple committees and perhaps have limited ability to exert influence.



ONE WOMEN PER BOARD WAS SERVING ON THE BOARD COMMITTEES

Figure 14 / Average number of board directors serving on board committees (expressed per board)

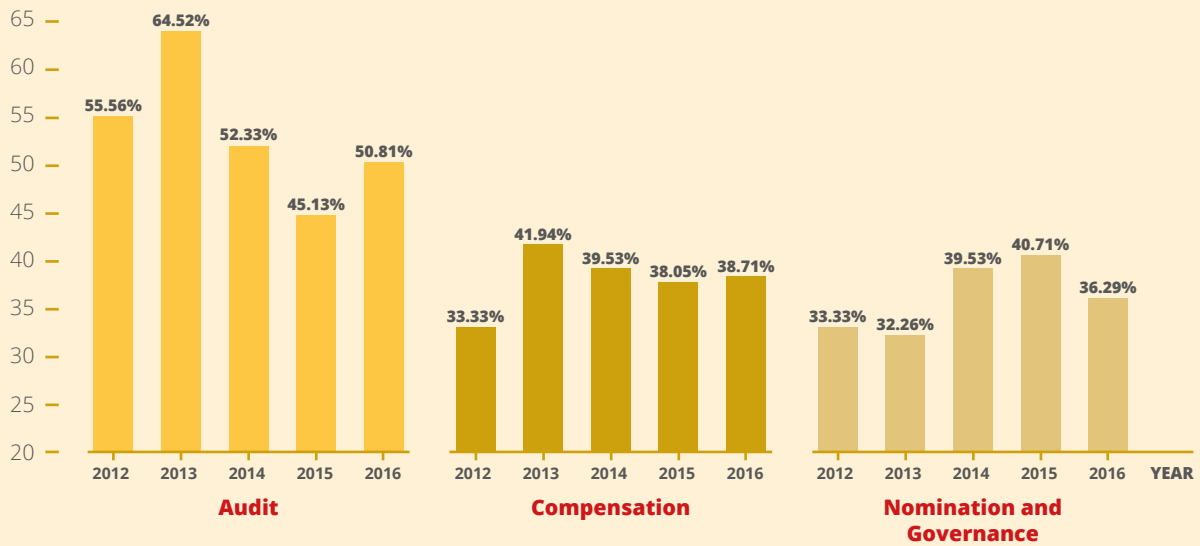


The presence of women on the board committees is, of course, one signal of their inclusion. Nevertheless, the question is whether these women directors are able to further affect the board's improvements by influencing future appointments and composition factors. To answer this question, we looked at the level of participation of women on various committees, especially on the nomination and governance committee (Figure 15). We found that within companies that had women directors on the board committees, they are overwhelmingly being employed to serve on the audit committee (average of all years 53.67%) and that their presence on the nomination committee is the lowest of the three main board committees (average 36.42%). The greater presence of women on the audit committee may suggest that women are being appointed based on their technical competence and willingness to take on the more onerous board committee duties.



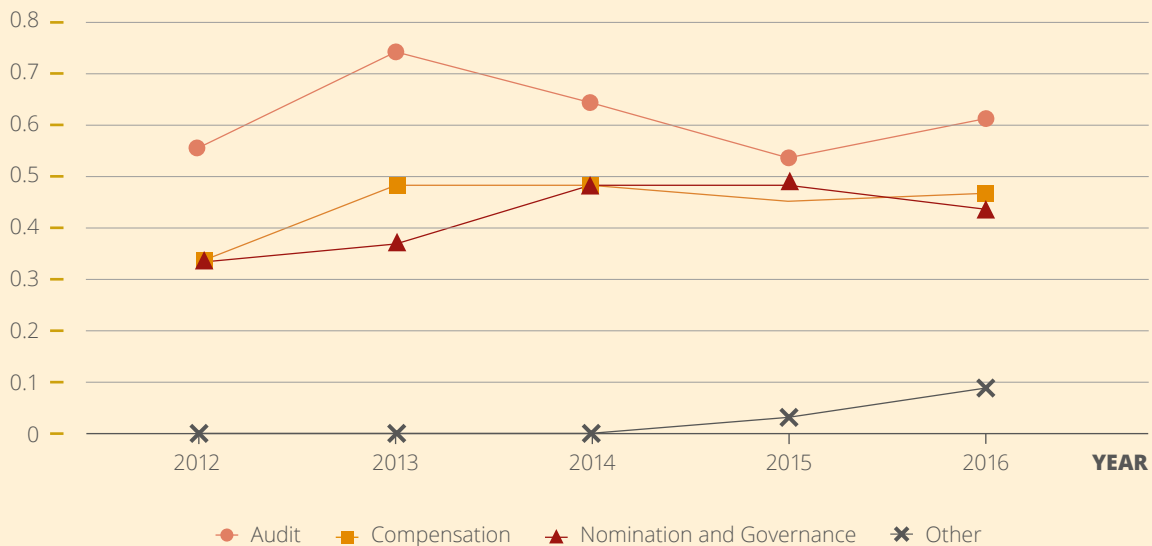
WOMEN DIRECTORS MOSTLY SERVE ON THE AUDIT COMMITTEE AND LEAST ON THE NOMINATION COMMITTEE

Figure 15 / Distribution of women non-exec directors serving on board committees



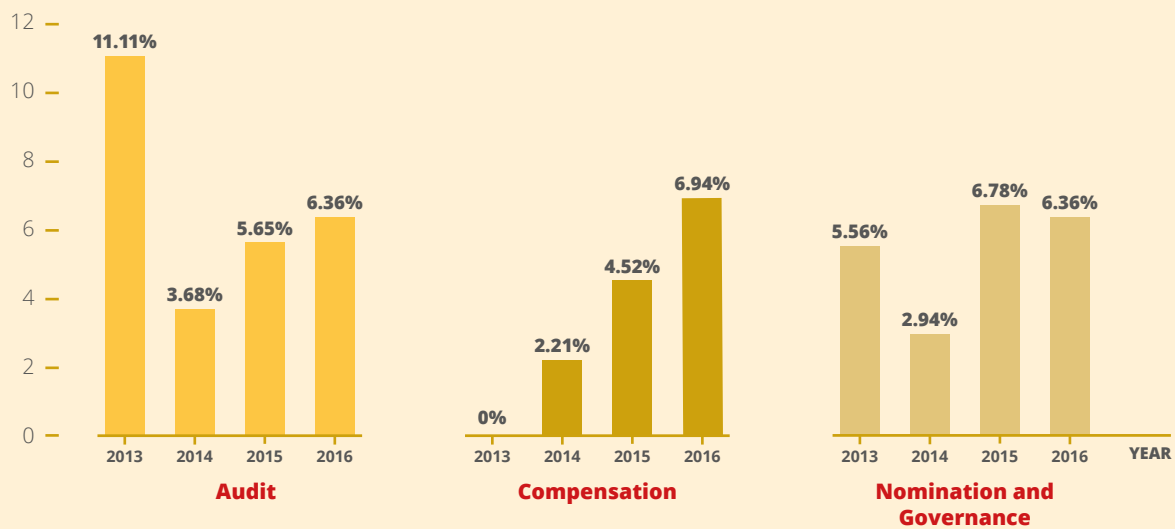
Further analysis shows that within diverse boards, the cumulative average number of women serving on all committees increased only marginally over time (Figure 16). Implicitly, their influence over the board's future appointments and direction is not growing relative to their presence on boards. This could mean that they are unable to change the pattern of board appointments towards improved diversity.

Figure 16 / Average number of women directors from diverse boards serving on board committees (expressed per board)



Finally, within all biotech companies studied, on average women directors constituted only 6.7% (audit), 3.4% (compensation) and 5.4% (nomination & governance) of all committee chairs, suggesting that they are not being provided access to the positions of power and influence within the board (Figure 17).

Figure 17 / Proportion of all committees' chairperson positions held by women



7

THE BOARDROOM HAS A REVOLVING DOOR

7.0 The Boardroom Has a Revolving Door

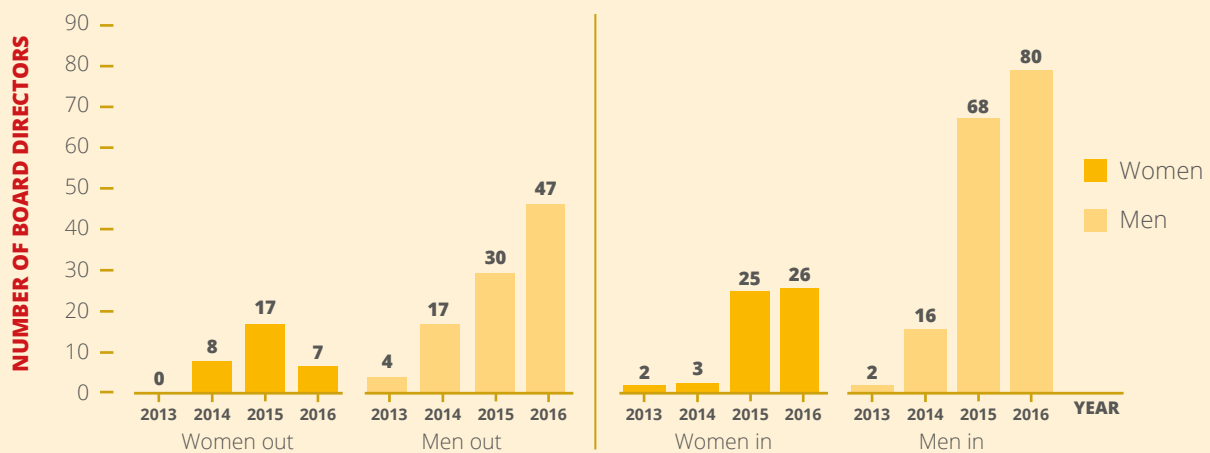
It is important to track the rate of director and executive turnover, and assessing the characteristics and capabilities of those leaving, and those who arrive. By doing so, deeper insight into the level of gender diversification of these company's boards becomes possible. This tactic, when applied to the group of the new public listed companies, would identify any behavioural changes in appointment practices resulting from the changing environment of a company moving from private to public. Especially with regards to gender diversity, as both men and women directors rotate, the question is whether the new public listed companies attract more women than men?

Within the study group, we tracked departing and arriving board directors and categorised them by gender. The data was broken down by year. As we found very little change in the ranks of the executive directors in the entire group of companies studied (3 women leaving, 9 men leaving and 3 joining), we focused further analysis on the non-executive directors.

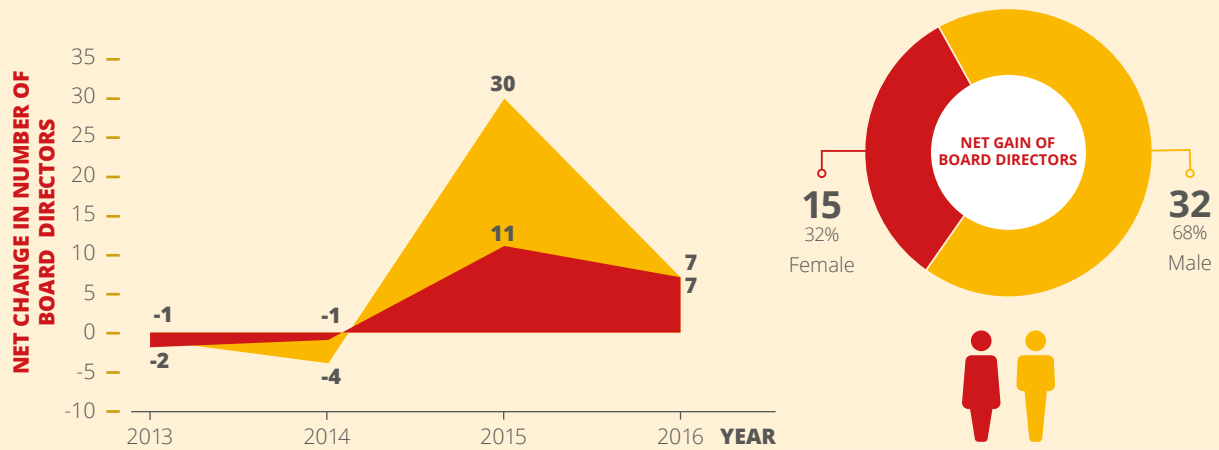


TRACKING THE RATE OF BOARD DIRECTORS TURNOVER IN NEW PUBLIC COMPANIES ALLOWS IDENTIFICATION OF NEW BEHAVIOURS WITH REGARDS TO GENDER DIVERSIFICATION

Figure 18 / Turnover of non-executive directors



Not surprisingly perhaps, considering the baseline proportion of women and men directors, we registered much greater turnover of men than women non-executive directors (Figure 18). However, the number of exchanges on its own would not influence the gender composition of the boards if the inflow and outflow per gender remains the same. More revealingly, we looked at the net changes in non-executive boards directors in each year's cohort of companies (Figure 19) and found that overtime there was still a greater influx of men (represented by the graph area) joining the studied public companies. This strengthens our understanding that men are still being appointed to boards at a rate greater than that of women. Additionally, as a result of all the director turnover, cumulatively, the entire group of companies studied gained net only 15 new women non-executive directors, but 32 men (Figure 19).

Figure 19 / Net changes in board directors of public listed companies since IPO until 2016

Overall, we see that the appointment of men remains twice that of women, which leads us to conclude that the desirable critical mass of 3 women per board, or 30%, remains largely unattainable under the current rate of change. The positive takeaway here is that women are being appointed to boards at a rate greater than they're leaving, but this might be scant consolation to those wishing to see greater parity between the genders in terms of the appointment of new directors.

8

THE FINANCIAL BUSINESS CASE FOR BOARDROOM DIVERSITY

8.0 The Financial Business Case for Boardroom Diversity

Results from multiple studies show the impact of gender diversity on business performance, such as: increased levels of innovation, improved talent attraction and retention, better return on investment, reduced volatility; but also enhanced risk mitigation strategies, improved competitiveness, more effective stakeholder management, and greater access to capital. These improvements should ideally translate into financial returns, a primary goal of any successful business.

We attempted to assess whether a link can be identified between gender diversity in the boardroom and financial performance of the public biotech companies studied. Understandably, this type of analysis brings certain challenges, among which are that companies have been listed on public markets at different times. Additionally, each company can be pursuing a different therapeutic indication or modality, possibly at a different stage of the development cycle, experiencing different capital intensity requirements and with a different level of capital efficiency.

One method of evaluating the financial performance of companies, and over varying time frames, is by comparing the change in their respective share prices. After all, the change in share price is used to calculate Total Shareholder Return (TSR) – a measure used to assess company’s financial performance when evaluating many executive compensation packages.

Using the list price at IPO of each company and a share price at a unified end-point, August 31st 2016, we evaluated percentage share price change for each company studied. Then, by grouping the companies by those which have no women on their board, and those with at least one, we compared their aggregated share performance.

Strikingly, we found that shares of companies with diverse boards showed on average ~19% increase while shares of companies with all-male boards decreased by ~9% (Figure 20)! This result demonstrates a positive link between a diversified boardroom and financial performance. Additionally, this data clearly points towards a disadvantage of boards lacking diversity and should alarm every all-male board. While we accept the simplicity of this analysis, when considered in the context of other studies which look at share price performance and board diversity, our results make yet another strong argument for the need of biotech boards to reassess their gender composition.

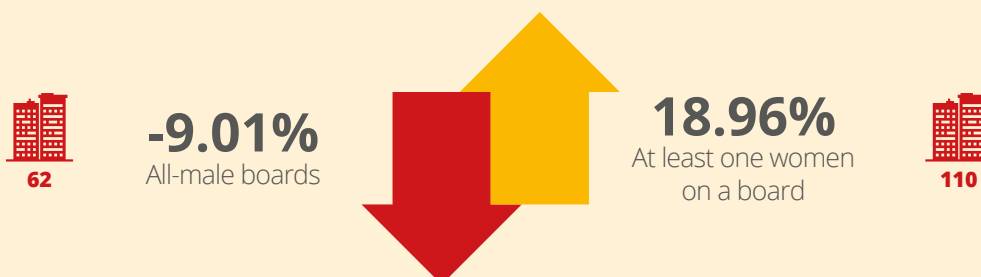


DIVERSITY TRANSLATES INTO BETTER BUSINESS PERFORMANCE, INCLUDING FINANCIAL RETURNS



ON AVERAGE, SHARE PRICES OF COMPANIES WITH DIVERSE BOARDS INCREASED BY ~19% ; SHARE PRICES OF COMPANIES WITH ALL-MALE BOARDS DECREASED BY ~9%

Figure 20 / Comparison of average percentage change in share price since IPO between companies with all-male vs diverse boards



9

PLANNING FOR PARITY – A LIFE'S WORK

9.0 Planning for Parity – a Life’s Work

In our previous research across the entire sector of small and medium-sized biotechnology ventures, as well as in this report of 177 public companies, we have set out quite clearly that women remain significantly under-represented among the boardrooms. We are seeing that women generally make up 10% of these boards and while there are some positive indicators of progress cited in this report, the rate of change remains glacial. In Figure 3 we show that while there is an evidence of women being added to the boards, sustained diversification is a considerably greater task.

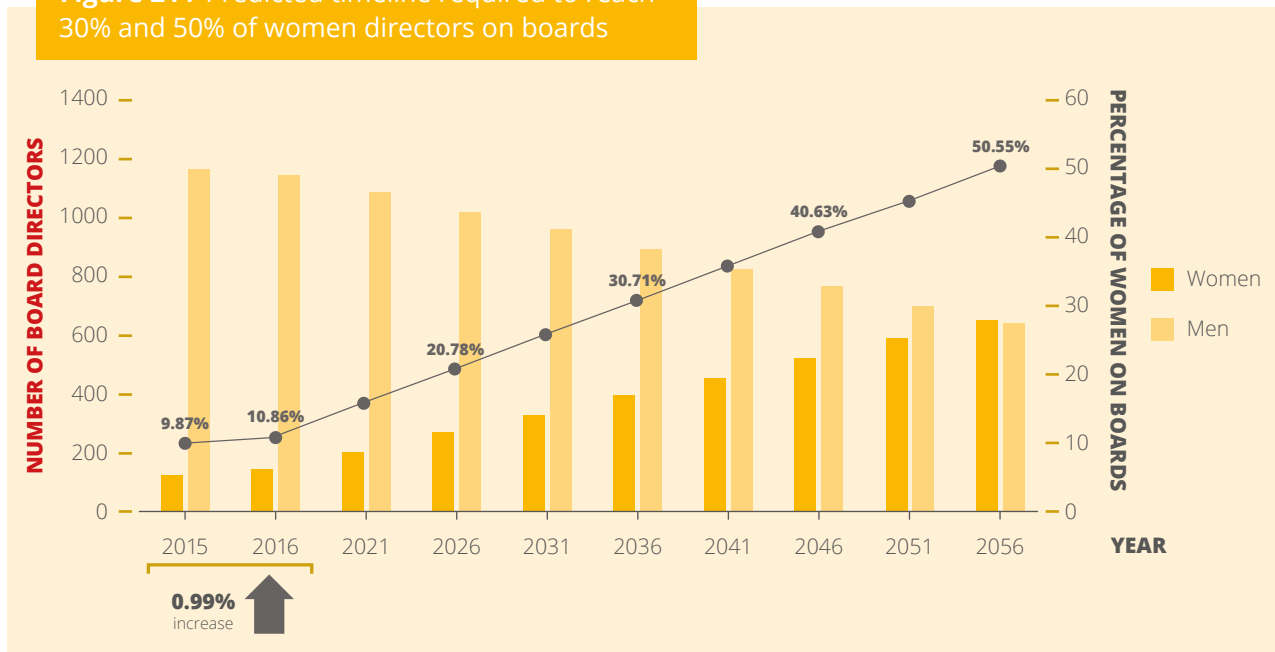
As with any objective, firstly you must identify what it is that you want to do, and then assess what must be done in order to accomplish it. To achieve the advantages offered by diversity, companies must aspire to reach the critical mass of 3 women per board or 30% as a minimum. Among our study group we wished to make a projection into the future, to see how long it would take the companies studied to reach the aspirational goal of 30% women on each board, and to go all the way to parity.

Based on the 2015 to 2016 increase in the participation of women directors in the boardrooms of the biotechs studied (Figure 1), we predicted that it would take until 2036 to reach 30% of women and until 2056 to reach gender parity (Figure 21)! This represents the same period that Genentech (a founding company of the biotech industry) has been in existence, which gives some perspective on the timeline.



TO ACHIEVE THE ADVANTAGES OFFERED BY DIVERSITY, COMPANIES MUST ASPIRE TO REACH THE CRITICAL MASS OF 3 WOMEN PER BOARD OR 30% OF BOARD DIRECTORS

Figure 21 / Predicted timeline required to reach 30% and 50% of women directors on boards



Additionally, this model assumes a constant number of companies and an infinite supply of competent executive women ready to serve on boards, but almost no talent market functions in this manner. Agreeably, this model also implies that the rate of change is constant, but this is never the case – it may improve or it may even slow down.

Overall, this data show that the current pace of change among these boards is too slow on the issue of gender diversity, and these combined considerations mean that interventional action is required to accelerate this progress. To do so, more must be done to identify and appoint women board directors capable of adding value to these innovation-driven ventures.

If we set a new marker of 30% by 2025, which is a generous aspirational time frame, we would need to see an increase in participation of women of 2.13% annually. While this sounds eminently possible, it represents over double the rate of change currently being seen. To put it in the context of what needs to happen, over the course of this study (2012–2016), we have seen a net increase of 15 women added to boards. To reach 30% in the next 9 years, specifically within the 177 companies of this study, we would need to see a net increase of 255 women directors, or 17 times the number which have been added in the past 4 years.

This outlines the level of the challenge and the cooperation that will be needed to accomplish this level of gender diversity in biotech boardrooms.



**TO REACH 30% BY 2025,
255 WOMEN DIRECTORS
WOULD NEED TO BE
ADDED TO THE STUDIED
BOARDS, WHILE ONLY 15
WERE ADDED IN THE
LAST 4 YEARS**

10

CONCLUSION

10.0 Conclusion

In this study, we aimed to understand whether filing for IPO and transitioning from private to public company stimulates companies to develop strong, independent and diverse boards. Additionally, we looked at the role of the venture capital firms in shaping these boards, both pre- and post-IPO. We intended to look deeper into the issues of gender diversity within the group of new public listed companies, and assess if any progress has been made. This study would extend the understanding of any mechanisms and factors that may influence (both negatively and positively) the rate of diversification of the biotech boards.

This report shows that despite embarking upon a board transition, although being increasingly educated about the benefits of gender diversity, the group of new public listed companies which filed for IPO within 2012–2015 show very little progress in incorporating gender diversity into the leadership and governance system of their boards. Any small improvements observed in this study do not translate into a sustainable, effectual or transformative change to the system which currently prevents boardroom gender diversity in the biotech sector.

New public listed companies fall short of participation and inclusion of women directors in their boards and committees, especially in pivotal positions of leadership (CEO, board chair, committee chair). With only ~10% of women holding director positions, 8% women being a CEO, and 2% women chairing the board, these companies show no sign of improvement above the average biotech board. The opportunity to propagate a highly diverse pool of the new board directors, offered by the transitioning from private to public, seems underutilised both pre- and post-IPO. Although women directors are being appointed increasingly after IPO, men are being added to the boards in numbers exceeding 3 times those of women. Additionally, VCs are occupying more than 1/3 of directorships, bringing very little gender diversity to the biotech boardroom. Their prolonged departure from the board contributes considerably to slowing down the sustainable diversification of the public biotech boards. All of which suggests a perpetual pattern of male dominance on boards, including the key Chair and CEO positions.

The connection made in this report between the presence of increased gender diversity on boards and the separation of the Chair and CEO roles is an important result. From this unanticipated finding, we can conclude that different leadership and governance models can bring performance advantages through diversity. This mandates the need for continued research to, for example, establish the degree to which the power and cultural dominance brought by unifying the Chair and CEO roles shapes board diversity, versus the diverse board which chooses to separate these functions.

The separation of the Chair and CEO contributes to an enlightened board presiding over an inclusive performance culture, and similarly we see the effect of the culture on the financial performance of the companies with diverse boards. Showing that companies with at least 1 women on their board outperformed companies with all-male boards by ~28%, demonstrates a clear signal of improved financial returns resulting from diversity.

This report does not seek to be definitive but provides an additional data set to help companies improve their boards by increasing the representation of women. Positive action is being taken by some companies, this is evident. If more companies commit to

adding at least one women to their boards while aspiring for critical mass; by improving director succession planning, setting the right cultural tone from the board, pressuring VCs for diversified boards; as well as creating independent corporate governance structures; and being outward looking when sourcing new directors – **then sustainable diversity can, more quickly, become a reality.**

11

METHODOLOGY

11.0 Methodology

Data collection

The study group included 177 biotech companies which conducted an Initial Public Offering (IPO) in the USA between January 2011 and December 2015.

Information regarding the size, composition and the governance of each company was collected using publicly available company filings, accessible on www.sec.gov/index.htm. The general form for registration of securities under the Securities Act of 1933 (filing S-1 and S-1/A, or F-1 and F-1/A forms for non-USA companies) was used to access information regarding the company at the time of the IPO. Additionally, proxy statements (filings DEF 14A) submitted in subsequent years after IPO were used to collect information about the post-IPO period of each company.

Financial data, such as list price at IPO of each company and a share price at end-point of August 31st, 2016 was collected using www.google.co.uk/finance.

Data analysis

For the purpose of this report, we defined the “diverse board” as a board with at least one women director, and the “all-male board” as a board with no women.

Throughout the report, the term “Non-Executive Directors” refers to a group of non-executive directors including VCs, unless specified otherwise.

Based on the year of filing for an IPO, companies were grouped into cohorts. When analysed cumulatively over time, new public listed companies were added to the overall group, thus data for each year represent all new public listed companies in each year. On rare occasions, where stated, separate IPO cohorts of companies were compared – either at the time of IPO or over time. Companies that were acquired in their post-IPO period were removed from the analysis only after their acquisition.

The turnover analysis was performed by tracking board director’s departures and appointments. Net change in the number of board directors was calculated based on the cumulative difference between directors leaving (negative value) and joining the boards (positive value) over each year. The cumulative net increase of board directors was calculated by adding each year’s net change in the number of board directors together.

Prediction of the timeline required to reach 30% and 50% of women directors on boards was calculated based on the increase of the number of board positions held by women on the boards of studied companies from 2015 to 2016 (0.99% increase of women on boards). Furthermore, the model used assumes that: the number of companies and board directors to be constant for the purpose of the prediction; increase in a number of women board directors is achieved by replacing men; increase in percentage will remain 0.99%.

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