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Bazeet Olayemi Badru, Nurwati A. Ahmad-Zaluki, Wan Nordin Wan-Hussin,

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# Women on corporate boards and allocation of capital raised through IPOs

Women on  
corporate  
boards

Bazeet Olayemi Badru

*School of Economics, Finance and Banking, Universiti Utara Malaysia,  
Sintok, Malaysia, and*

Nurwati A. Ahmad-Zaluki and Wan Nordin Wan-Hussin

*Othman Yeop Abdullah Graduate School of Business,  
Universiti Utara Malaysia, Sintok, Malaysia*

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## Abstract

**Purpose** – The purpose of this paper is to examine whether the differences in men and women, such as risk aversion in decision making, can influence the amount of capital that the board of directors can allocate for investment opportunities.

**Design/methodology/approach** – This study sampled 212 IPOs over the period of 2005–2015 and employed the OLS and the quantile regression techniques to examine the impact of female directors on capital allocation.

**Findings** – The results show that women on corporate boards have a positive influence on the amount of capital an IPO company can allocate for investment opportunities. These findings suggest that the investment strategies of women in an emerging financial market, like Malaysia, may differ from women in other financial markets.

**Practical implications** – The presence of women on corporate boards plays an important role in board involvement in a company's strategic decision at the time of the IPO. Therefore, regulators and IPO issuers should pay close attention to the corporate governance structure of a company at the time of an IPO. In addition, investors and other stakeholders of a company may consider women on corporate boards as an important factor in financing and investment decisions.

**Originality/value** – Despite several studies that have examined the influence of women on corporate boards on corporate outcomes, globally, the presence of women on corporate boards and their influence on corporate decision-making related to allocation of capital to investment opportunities, have not been fully explored in the IPO literature.

**Keywords** IPO, Malaysia, Quantile regression, Risk aversion, Investment opportunities, Women on corporate boards

**Paper type** Research paper

## 1. Introduction

Raising capital through an Initial Public Offering (IPO) involves the issue of primary new shares to the public and the offering of secondary shares by existing shareholders (offer for sales) or both at the same time. However, only the primary shares issued provide new capital to the IPO company (Kim and Weisbach, 2008). The amount of capital raised during the IPO has been recognised as an important determinant of IPO success (Certo *et al.*, 2009; Lowry *et al.*, 2017), and studies have revealed that board structure and CEO characteristics can influence the amount of capital raised (Badru *et al.*, 2017a, b; Zimmerman, 2008). However, whether or not the board structure can influence the use of capital raised has yet to receive scholarly attention. The use of capital raised[1] can be considered as one of the financial resource acquisition functions of the board of directors (BODs) that relates to strategic decisions at the time of an IPO (Hillman *et al.*, 2008; Reutzell and Belsito, 2015). For instance, scholars arguing from the resource dependence theory angle have suggested that the board's strategic decisions can be influenced by the differences in the gender of directors in terms of their value-driven agenda (García-Sánchez *et al.*, 2017; Kirsch, 2018). Similarly, the view of economists and psychologists is that gender can affect corporate decision making, because



women and men differ in their choices and preferences (see Barber and Odean, 2001; Fondas and Salsalos, 2000; Rossi *et al.*, 2017). Such differences may be critical in determining the board's ability to steer corporate strategic decisions. Thus, the important question is, can the board structure in terms of gender diversity influence the allocation of capital raised?

The appointment of women on corporate boards at the time of an IPO makes the board structure more appropriate (Burke, 2003), signals the company's quality and is beneficial to the functioning of the BODs (Sanders and Boivie, 2004). In addition, the role of women in corporate decision making has become a topic of discourse, to the extent that various countries (e.g. Belgium, India, Italy, Norway, South African, the USA and the UK, among others) have passed legislation on the mandatory quota for women on corporate boards (Adams, 2016; Terjesen and Sealy, 2016). Similarly, the Malaysian Cabinet in 2012 set out a policy to ensure that a minimum of 30 per cent of corporate board members must be women (Low *et al.*, 2015). In fact, the former Prime Minister of Malaysia, in his keynote address at Invest Malaysia Kuala Lumpur on 21 July 2017, categorically mentioned that public-listed companies must fulfil the 30 per cent gender quota by 2020[2]. Given the popularity of the gender-related policy by the government, the effect of gender on strategic decisions that can spur business performance and economic growth[3] needs to be thoroughly examined.

Normally, the use of capital raised for investment purposes signals the future growth prospects of the company and gives it a higher competitive advantage (Chung *et al.*, 2005; Trueman, 1986). However, growth investment comes with risk and a high degree of uncertainties over future cash flows (Myers, 1977; Ritter, 1984). Given the differential behavioural characteristics of women in terms of being risk averse and less over-zealous than men in terms of strategic decision making, it is conceivable that gender composition of the board may affect the board's decision in allocating a larger portion of the capital raised for investment (e.g. for acquisition, R&D and capital expenditure).

Moreover, growth investments are important contributors to economic growth and employment in a knowledge-based economy (Aggarwal *et al.*, 2009; Chen *et al.*, 2015). Therefore, the current study argues that the allocation of capital raised in an IPO can be better explained from the perspective of the value-added advantage of growth investments, rather than the risk and uncertain returns associated with growth investments. For instance, the resource dependence perspective suggests that women on corporate boards are creative thinkers and innovators, as well as providers of knowledge and skills that can increase a company's competitive advantage (Adams and Ferreira, 2009; Gul *et al.*, 2011). Thus, such gender diverse boards are expected to allocate more capital for investment opportunities.

Using a sample of 212 Malaysian IPOs, this study tests and finds that women on corporate boards have a positive influence on the allocation of capital raised for investment opportunities. This implies that the resource function of women on corporate boards and their role in strategic decision making at the time of IPOs cannot be ignored. It also indicates that IPO companies can use women on corporate boards to signal that effective corporate governance mechanisms have been put in place by the company to oversee the use of financial resources acquired during the IPO. By implication, the presence of women on corporate boards may indicate that the board is structured in a way consistent with maximising shareholders' interest (De Bruin *et al.*, 2006). Therefore, the findings reported in this study support Adams and Funk's (2012) argument that women on corporate boards would engage in value investment that can maximise shareholders' value. Additionally, the examination of the influence of women on the allocation of capital raised is vital in an IPO context because IPO companies are mostly young companies with potential for growth that would add value not only to the company, but also to the economy as a whole. Finally, this study heeds the general call for more research on gender and strategic decisions of management as suggested by Kirsch (2018, p. 11), as well as more understanding on gender differences in the boardroom (Adams and Funk, 2012).

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The remainder of this paper is structured as follows: Section 2 discusses the literature review and hypothesis development; Section 3 presents the research methods; and Section 4 provides the discussion and conclusion of this paper.

## 2. Literature review and hypothesis development

### 2.1 *Women on the board and allocation of IPO capital raised for investment opportunities*

The BOD is the highest decision-making body in a company, responsible for designing, selecting and implementing corporate strategies (Fama and Jensen, 1983; Ruigrok *et al.*, 2006). Thus, a well-functioning board should be able to offer strategic directions that would create value and increase the company's reputation (Bertoni *et al.*, 2014).

At the time of an IPO, the functional role of the board is particularly important (Mak and Roush, 2000), because an IPO, with the ultimate motive for growth, is considered to be a milestone for a new company (Chaganti *et al.*, 2016). Hence, the strategic advice given by the BOD at the IPO stage may have significant consequences for the success of the company (Bertoni *et al.*, 2014).

An insight into the resource dependence theory suggests that the BOD provides multiple resource functions, like offering strategic advice and counsel to management (Hillman *et al.*, 2009; Johnson *et al.*, 1996; Pfeffer and Salancik, 1978). For instance, the board advises and counsels the management on various strategic decisions[4] (e.g. allocation of capital raised from an IPO or capital investment proposal). These decisions should fundamentally enhance the company's survival and competitive advantage in the marketplace. This may foster the company's ability to raise capital to finance investment opportunities (Chaddad and Reuer, 2009). Similarly, disclosure of intended use of IPO proceeds for investment projects could serve as a signal of favourable information about the company (Trueman, 1986). As such, determining the right composition of board members that would facilitate allocation of IPO proceeds to investment purposes at the time of an IPO is of crucial importance.

In recent times, finance scholars are of the opinion that gender plays a key role in the selection of strategic investment activities of the company, where gender diverse boards are likely to engage in innovative strategies (Huang and Kisgen, 2013; Sila *et al.*, 2016). Women on corporate boards bring different professional experiences, opinions and perspectives to enrich board decisions, most especially decisions that would create value for the company (Hillman *et al.*, 2000; Mathisen *et al.*, 2013). A typical example is a strategic decision-making simulation involving undergraduates and MBA students carried out by Apesteguia *et al.* (2012). They find that gender diversity is positively related to good team dynamics. Similarly, Nielsen and Huse's (2010) study on the role of women on corporate boards of Norwegian companies indicates that women bring along with them value that positively influences their contribution to the board's strategic involvement. Other arguments from the literature suggest that women on corporate boards scrutinise decisions thoroughly to ensure that final decisions taken can drive the company's growth and fall in line with shareholders' expectations (Hoobler *et al.*, 2016). In a similar vein, de Luis-Carnicer *et al.* (2008) document that women on corporate boards have a slight edge over men on corporate boards in terms of impacting strategic planning, which further helps the board to execute its strategic functions. Another important feature of women on the board is that they promote greater ethical standards, thereby minimising the ineffective use of shareholders' funds (Galbreath, 2011; Terjesen and Sealy, 2016).

Drawing from the value relevance of women on the board, a growing body of literature indicates that women are superior to men from the aspects of innovativeness, creativity, problem solving and decisiveness, which, in turn, are associated with board effectiveness. Research on this area has found a link between women on corporate boards and innovative strategies, such as the level of R&D expenditure, patents and citation counts. For example, Miller and Triana (2009) and Rossi *et al.* (2017) find that women in the boardroom have a significantly positive

impact on investment in R&D. Chen *et al.* (2015) find that regardless of whether or not companies have innovation potential, women on the corporate board foster innovation.

Further studies have also recognised that women on corporate boards are associated with improvement in company value and legitimacy (Brammer *et al.*, 2009; Campbell and Minguez-Vera, 2008; Ding and Charoenwong, 2013; Gaviou *et al.*, 2012; Gyapong *et al.*, 2016; Terjesen *et al.*, 2016; Gul *et al.*, 2011). Women on corporate boards add new perspectives to the company's strategies to improve company performance (Fondas and Salsalos, 2000; Low *et al.*, 2015; Solakoglu and Demir, 2016).

Research has also suggested that investors consider women on corporate boards effective leaders and as an indication that good corporate governance is in place (Bagudu *et al.*, 2015). For instance, Gul *et al.* (2011) find that stock prices of companies with more women on corporate boards reflect more company-specific information, of which the impact appears to be stronger in companies with weak corporate governance. In addition, Gul *et al.* (2011) show that the presence of women on the board improves stock price informativeness through the mechanism of increased public disclosure in large companies and by encouraging private information collection in small companies. Evgeniou and Vermaelen (2017) find that there is a significant improvement in the quality of information disclosed by companies with more women on the board. The quality of information disclosed makes share buybacks to be less driven by market timing and associated more with smaller long-term excess returns after buybacks. In a cross-sectional sample of board of directors of 1,024 US public-listed companies, Adams and Ferreira (2009) show that women on corporate boards have better board meeting attendance records, and are more likely to join monitoring-related committees than male directors. Moreover, increased monitoring by women on the board improves the manager's incentives to innovate (Chen *et al.*, 2015).

Considering the aforementioned evidences on the influence of women on various corporate outcomes, it appears that the influence of women on corporate boards on corporate strategic decisions has mostly been documented in the case of established companies. For newly listed companies, one of the main motivations to go public is to finance investments, like acquisitions and R&D (Brau and Fawcett, 2006; Kim and Weisbach, 2008). Therefore, allocating a large amount of IPO proceeds for investment pursuits is paramount. Advocates of women on corporate boards from the resource dependence perspective have argued that women on corporate boards bring different perspectives and opinions into a discussion that may help to improve a board's decision making, behaviour and effectiveness (Adams and Ferreira, 2009; Chapple and Humphrey, 2014; Huse and Solberg, 2006). Hence, strategic decisions taken by such boards may have a significantly positive impact on board inputs and corporate outcomes. Therefore, this study assumes that women on corporate boards would provide better quality decisions at the time of an IPO. Building on this argument on the importance women on corporate boards play in resource provisioning to the board, this study hypothesises that women on corporate boards are associated with the amount of IPO capital allocated for investment in growth opportunities:

*H1.* Women on corporate boards positively influence the allocation of IPO proceeds for investment opportunities.

### *2.2 Other board characteristics and allocation of IPO capital raised for investment opportunities*

Given that the main aim of the study is women on corporate boards and allocation of capital raised for investment opportunities, other governance variables that may affect the effectiveness of board decisions are controlled in the regression model. According to the resource dependence theory, board size, which is the number of directors serving on a corporate board, is a connecting factor that enables a company to gain resources relevant to the outcomes of the board's decisions (Pfeffer, 1972). For instance, a larger number of

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directors increase the pool of expertise and advice that a company can capitalise on (Ruigrok *et al.*, 2006). Larger boards take a longer time to make decisions, but the longer period enables the board to make significant contributions in strategy development because such boards integrate multiple perspectives to develop more holistic alternative solutions (Jensen, 1993; Ruigrok *et al.*, 2006).

However, due to coordination costs, a larger board may have difficulty in reaching consensus. Larger boards also allow its directors to become free riders with limited involvement in strategic decisions (Golden and Zajac, 2001; Jensen, 1993). Moreover, strategic involvement of board directors requires active directors who are able to intensely discuss strategic opportunities during board meetings. Empirical evidence in this regard shows that board size is negatively associated with growth opportunities (Cheng, 2008; Denis and Sarin, 1999). For example, Cheng (2008) reports that the reduced level of acquisitions for larger boards is due to increased difficulty in reaching a consensus among board members. Similarly, Mak and Roush (2000) find that IPO companies with more growth opportunities tend to employ smaller boards. However, Abebe and Myint (2018) report that a larger board increases the likelihood of businesses engaging in innovation adoption. This reveals that a larger board may provide a better resource provisioning function. Therefore, this study suggests that board size is positively associated with the amount of IPO capital allocated for investment opportunities.

Besides board size, decisions can also be enhanced through the number of non-executive directors on the board (Daily and Dalton, 1994; Mak and Roush, 2000). According to the resource dependence theory, non-executive directors play a key role in providing knowledge and advice essential for survival and success of a company (Kor and Misangyi, 2008) as well as support for innovativeness (Bertoni *et al.*, 2014). In fact, stock market participants consider a higher number of non-executive directors as one factor that contributes to good corporate governance (Moore *et al.*, 2012). Similarly, Bertoni *et al.* (2014) provide evidence that the impact of non-executive directors on IPO valuation is higher in more innovative companies. In addition, Mak and Roush (2000) find that the proportion of non-executive directors is positively associated with the extent of growth opportunities available to the company at the time of an IPO. As a result, this study expects that the proportion of non-executive directors is positively associated with the amount of IPO capital allocated for investment opportunities.

In addition to board size and proportion of non-executive directors on the board, the CEO plays a critical role in making strategic decisions, such as allocation of the company's resources. In fact, he/she is considered as the chief master planner and the architect of a company's innovation strategy. In addition, situations whereby the positions of the CEO and the chairperson are combined provide the CEO a better chance to have a greater influence on strategic decision making by the BODs (Badru and Raji, 2016; Finkelstein and D'aveni, 1994; Ruigrok *et al.*, 2006). In fact, Booth and Deli (1996) opine that combining the positions of CEO and chairperson is an indication that the company has some growth opportunities. This combination also binds managers to engage in projects with positive net present value. With regards to the important role of CEOs in strategic decisions, Abebe and Myint (2018) find that CEO duality increases the likelihood of business model innovation adoption. Nguyen *et al.* (2018) find that CEO duality is beneficial for companies with high growth opportunities. Similarly, Mak and Roush (2000) indicate that IPO companies with more growth opportunities are likely to combine the positions of CEO and Chairperson. This can also indicate that the CEO has greater company-specific human capital that is needed in an IPO market. An IPO, being the first public appearance of a company, requires a CEO who can make tough and unified decisions that can inspire confidence among key stakeholders of the company. For these reasons, this study posits that CEO duality is positively associated with the allocation of IPO capital for investment opportunities.

*2.3 Other firm characteristics and the allocation of IPO capital raised for investment opportunities*

Poulsen and Stegemoller (2008) indicate that companies are likely to undertake an IPO when they have greater investment opportunities. Several studies have also found that companies undertake IPOs in order to finance investment opportunities (Brau and Fawcett, 2006; Kim and Weisbach, 2008; Mortal and Reisel, 2013). Reber *et al.* (2005) and Jain and Kini (2000) suggest that companies that have raised large amounts of capital from equity offerings are more likely to be companies with significant future investment opportunities. In line with the aforementioned evidence, this study proposes that companies that have raised a large amount of capital are likely to allocate a greater portion of it for investment opportunities. The reason being that a higher amount of capital raised improves the company's ability to fund growth investment (Jin *et al.*, 2017; Khurana *et al.*, 2006). Therefore, this study posits that the amount of IPO capital raised is positively associated with investment opportunities.

Brau and Fawcett (2006), in their survey of CFOs, mention that for companies to mobilise capital for growth, they should go public in their early life cycle. Similarly, Aggarwal *et al.* (2009) and Poulsen and Stegemoller (2008) report that most private companies that tend to raise capital through an IPO are usually young and such companies are interested in allocating a larger percentage of capital raised for growth opportunities. Pagano *et al.* (1998) empirically confirm that companies that issue IPOs to rebalance their capital structure are mostly older companies. Hence, this study claims that company age is negatively associated with IPO capital allocated for investment opportunities.

Similar to company age, the size of a company can also significantly influence corporate policies. Bancel and Mitto (2009) find that bigger companies consider an IPO decision as a means of gaining recognition in the public market, while small companies consider it as a means of raising capital for growth opportunities. Moon and Tandon (2007) find that bigger companies are negatively associated with growth opportunities. Therefore, this study expects that company size is negatively associated with IPO capital allocated for investment opportunities.

Companies with strong pre-IPO financial performance have a tendency to allocate a larger amount of capital raised for growth opportunities (Poulsen and Stegemoller, 2008). However, Aggarwal *et al.* (2009) demonstrate that companies with negative earnings are likely to engage in growth investments because negative earnings are associated with investment in value growth option. Thus, this study posits that pre-IPO financial performance is positively associated with IPO capital allocated for investment opportunities.

Other factors that may contribute to the success of IPO companies, include underwriter's reputation and auditor's quality, because these two financial intermediaries play a crucial certification role in the IPO process (Brau and Fawcett, 2006). In the IPO literature, it is well accepted that the certification provided by underwriters reduces the uncertainty of an issue and influences managers in strategic resource allocation (Bhabra and Pettway, 2003). Studies on the certification role of underwriters demonstrate that reputable underwriters are concerned with protecting their reputation capital, and thus, will be likely to avoid risky companies (Carter and Manaster, 1990). Therefore, this study proposes that IPOs associated with reputable underwriters tend to allocate less capital raised for investment opportunities.

The auditor's quality also plays an important role in the IPO process. For instance, Big-4 auditors are considered as competent assurance providers, delivering high-quality financial reporting for companies than their non-Big-4 counterparts. In addition, Big-4 audit firms possess financial expertise needed to evaluate various companies' investment projects (De Franco *et al.*, 2011). Thus, this study expects that auditor's quality is positively associated with the amount of IPO capital raised for investment opportunities.

Prior studies are also of the view that the value of most start-up companies is measured by growth opportunities (Bertoni *et al.*, 2014; Kallapur and Trombley, 2001). Thus, companies with high growth opportunities can be categorised as companies with high market to book ratio. Such companies have tendency to make larger investments in growth

opportunities (Chung and Charoenwong, 1991). However, if a company has a high market to book ratio at the time of an IPO, it can be considered that such IPO companies have growth investments and may pursue less growth activities leading to lower allocation of capital raised for growth opportunities. The existence of growth opportunities may have a profound influence on how a company is viewed by investors and other market participants. Based on this notion, this study posits that IPOs with higher market to book ratio are positively associated with the amount of capital raised for investment opportunities.

Normally, companies that require high growth investments, such as R&D and capital expenditure, are mostly associated with technology companies (Bertoni *et al.*, 2014; Filatotchev and Piesse, 2009). Hence, this study posits that IPOs that belong to the technology industry tend to allocate a greater portion of the capital raised for growth opportunities. However, growth opportunities may not only be found in the technology industry; companies in other industries may also allocate a larger portion of capital raised for investment opportunities. Therefore, this study tests for the industry effect on the allocation of IPO capital raised for investment opportunities.

In addition to the industry effect, this study also controls for the year effect because Badru *et al.* (2017b) reveal that the highest amount of capital raised was in 2012 and this period coincides with the period that Malaysia was recognised globally as a major IPO financial hub in terms of IPO proceeds. Thus, this study suggests that the year of listing may influence the amount of IPO capital a company would allocate for investment opportunities.

### 3. Research methods

The analysis in this study is based on sampled IPOs issued in Malaysia spanning the 2005–2015 period. Over this period, 301 IPOs were issued. However, in line with prior IPO studies (Ahmad-Zaluki, 2012; Reutzel and Belsito, 2015), this study excludes close-ended funds (1), finance (10), REITs (20) and SPACs (5) IPOs. This study also excludes offer for sale because the money raised does not go directly to the company (Bertoni *et al.*, 2014). In addition, IPOs with incomplete information in calculating the Altman Z-score are exempted. This results in a final sample of 220 IPOs. However, the inclusion of market to book ratio[5] as an additional control variable in the regression model reduced the sample to 212. This is because eight IPOs have negative shareholders' equity. Therefore, the overall sample used for the regression model is 212. In addition, all the data used in this study are extracted from the prospectus issued by IPO companies at the time of listing. This includes data related to corporate governance variables (e.g. gender composition, board size, proportion of non-executive directors and CEO duality), and IPO characteristics (e.g. amount of capital raised, proportion of capital allocated for investment opportunities and underwriter's reputation, among others). Other financial data are hand collected from the prospectuses.

#### 3.1 Variable measurements

*Dependent variable.* The dependent variable in this study is investment opportunities, which is measured as the proportion of capital allocated for growth investment at the time of the IPO. Such allocation is often considered as growth financing (Subrahmanyam and Titman, 1999). This includes the sum allocated to R&D, capital expenditure and acquisition divided by the amount of capital raised (Amor and Kooli, 2017).

*Independent variable.* The main independent variable is women on corporate boards. This variable is determined by counting the number of female directors divided by the total number of directors on the board (Low *et al.*, 2015; Reutzel and Belsito, 2015).

*Control variables.* Other variables that may have influence on companies' investment decisions are controlled for in the statistical model. This study controls for other board characteristics variables, such as board size, board independence and CEO duality. Board size

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is measured as the number of directors on the board at the time of the IPO. Board independence is the number of non-executive directors on the board divided by board size. CEO duality is a binary value of 1 for a situation whereby a single person is both the CEO and the chairperson. This study also controls for the IPO characteristics, such as IPO proceeds, pre-IPO financial performance, company size, company age, underwriter's reputation, auditor's quality and market to book ratio. The IPO proceeds is the amount of capital raised at the time of the IPO. Company size is the pre-IPO total assets; company age is the number of years that a company has been in operations to the IPO year; underwriter's reputation is a dummy variable of 1 for IPOs underwritten by Top Five underwriters (Affin Hwang Investment Berhad, CIMB Investment Bank Berhad, RHB, Maybank and Kenanga Investment Berhad) and 0, if otherwise. Auditor's quality is measured by a binary number equalling 1 if the company is audited by audit firms affiliated with the Big-4 (Ernst & Young, PricewaterhouseCoopers, KPMG and Deloitte) and 0, if otherwise; market to book ratio is measured as the market value of equity over the book value of equity, where the market value of equity is calculated as the sum of book value of assets and the market value of common stock; and pre-IPO financial performance is determined using the Altman Z-Score model stated below.

Model 1:

$$Z_i = 0.717X_{1i} + 0.847X_{2i} + 3.107X_{3i} + 0.420X_{4i} + 0.998X_{5i},$$

where  $Z$  is the measure of overall financial health of the company,  $X_1$  represents the net assets of the company's liquidity relative to total capitalization, which is calculated as current assets minus current liabilities divided by total assets,  $X_2$  represents the total amount of reinvested earnings calculated as retained earnings divided by total assets,  $X_3$  represents the productivity of the company's assets calculated as earnings before interest and taxes divided by total assets,  $X_4$  represents the gearing capacity of the company calculated as book value of equity divided by book value of liabilities and  $X_5$  represents income generating ability and management capacity in dealing with competitive conditions. This is calculated as sales divided by total assets respectively.

### 3.2 Model specification

To examine the impact of women on corporate boards on the allocation of capital raised, this study employs a multiple regression technique using the traditional standard regression technique, i.e., ordinary least squares (OLS) and the quantile regression (QR) technique. The QR technique allows this study to have a more complete picture of the association between capital raised for investment opportunities, which is the dependent variable and the proportion of women on corporate boards, which is the independent variable. This is in contrast to OLS that predicts only the conditional mean relationship between the dependent and independent variables (Hao and Naiman, 2007). Therefore, Model 2 presents the OLS model and Model 3 shows the QR model.

Model 2:

$$IO_i = \beta_0 + \beta_1 WDP_i + \beta_2 LBSIZE_i + \beta_3 ND_i + \beta_4 CEOD_i + \beta_5 LNPTA_i \\ + \beta_6 Z\_Score_i + \beta_7 LTA_i + \beta_8 LCA_i + \beta_9 UR_i + \beta_{10} AQ_i + \beta_{11} LMB_i + \varepsilon_i,$$

Model 3:

$$IO_q = \beta_{0q} + \beta_{1q} WDP_i + \beta_{2q} LBSIZE_i + \beta_{3q} ND_i + \beta_{4q} CEOD_i + \beta_{5q} LNPTA_i \\ + \beta_{6q} Z\_Score_i + \beta_{7q} LTA_i + \beta_{8q} LCA_i + \beta_{9q} UR_i + \beta_{10q} AQ_i + \beta_{11q} LMB_i + \varepsilon_i$$

where,  $q$  represents a quantile in the conditional distribution of the amount of capital raised for investment opportunities. The  $q$  is 0.25, 0.50, 0.75 and 0.95.

In Models 2 and 3, IO represents the proportion of capital allocated for investment opportunities; WDP represents the proportion of women on corporate boards; LBSIZE is the natural logarithm of board size; ND is the proportion of non-executive directors; CEOD represents a binary value of 1, equalling an IPO with a single person serving both the CEO and board chair positions; LNPTA is the natural logarithm of 1 plus net amount of capital raised to total assets; Z\_Score represents a continuous value of pre-IPO financial performance, which is derived from Altman Z-Score in model 1; LTA is the IPO company's size, measured as natural logarithm of pre-IPO total assets; LCA is the IPO company's age, measured as a natural logarithm transformation of 1 plus year of incorporation to the IPO year; UR represents underwriter's reputation, measured as a dummy variable of 1 for IPOs underwritten by reputable underwriters, otherwise 0; AQ is Auditor's quality, which is a dummy variable of 1 for high-quality auditor, otherwise 0; and LMB represents the natural logarithm of one plus market to book ratio.

### 3.3 Analysis and results

*Descriptive analysis.* Table I shows the descriptive statistics for the sample of variables used in this study. According to the statistics, companies, on average, allocate 47.90 per cent of the amount of capital raised for investment opportunities, with a median and maximum of 52.02 and 96.09 per cent. The average percentage of women on corporate

Variables	Mean	Median	Max.	SD	Skewness	Kurtosis
Investment opportunities (millions)	49.76	8.50	3,910.00	290.47	11.56	149.81
Investment opportunities (%) (IO)	47.90	52.02	96.09	25.00	-0.48	2.35
Women directors (%) (WDP)	9.00	0.00	50.00	12.15	1.47	4.87
Women directors dummy (WDD)	0.43	0.00	1.00	0.50	0.27	1.07
Men directors (%) (MDP)	90.98	100.00	100.00	12.00	-1.40	4.41
Board size	6.81	7.00	13.00	1.52	0.92	4.41
Ln board size (LBSIZE)	1.90	1.95	2.56	0.22	0.22	3.11
Non-executive directors (%) (ND)	60.76	57.14	100.00	20.25	0.59	2.37
CEO duality (CEOD)	0.26	0.00	1.00	0.44	1.07	2.14
Net proceeds	82.96	16.75	4,299.00	360.81	8.81	93.82
Net proceeds/total assets	0.42	0.28	4.13	0.45	3.82	26.64
Ln (1+net proceeds/total assets) (LNPTA)	0.32	0.24	1.63	0.24	1.72	7.62
Z-Score (Z_Score)	1.94	1.80	6.71	1.04	0.43	6.97
Total assets (millions)	401.32	70.70	29,336.07	2,140.09	11.99	159.77
Ln total assets (LTA)	18.13	18.07	24.10	1.49	0.76	4.20
Company age	5.88	3.00	38.00	6.67	2.58	9.92
Ln company age (LCA)	1.38	1.10	3.64	0.79	1.09	3.17
Underwriter reputation (UR)	0.43	0.00	1.00	0.50	0.29	1.08
Auditor's quality (AQ)	0.42	0.00	1.00	0.50	0.32	1.11
Market to book ratio (MB)	3.62	2.89	22.02	2.63	3.86	22.83
Ln (1+MB) (LMB)	1.44	1.36	3.14	0.39	1.37	6.42

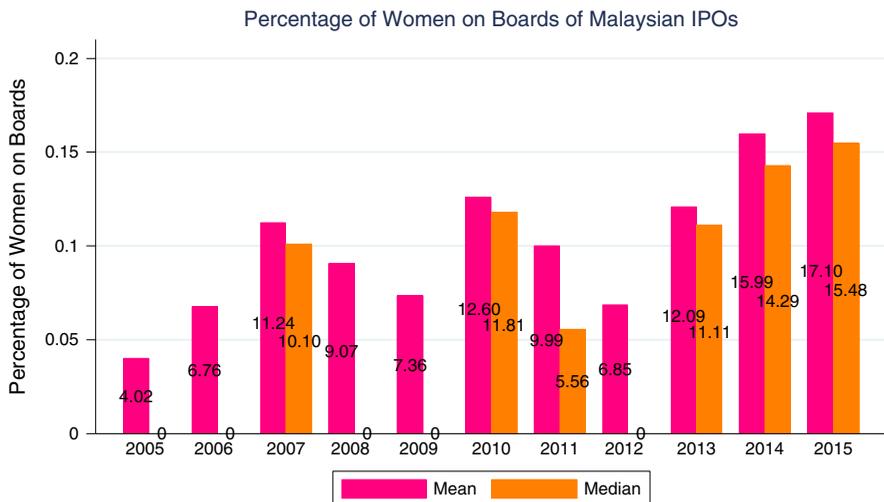
**Notes:** IO represents the percentage of IPO proceeds allocated for investment opportunities; WDP is the proportion of female directors to the total number of board directors; WDD represents a binary value of 1 if a female director is present on the board of directors; MDP is the proportion of men directors on the board; LBSIZE is the natural logarithm of the total board size; ND is the proportion of non-executive directors to total board size; CEOD is a binary value of 1 for IPO where an individual is the same person as the CEO and board Chair; LNPTA represents the natural logarithm of 1+ net amount of capital raised to total assets; Z\_Score is the final figure derived from the Altman Z-Score stated in model 1; LTA is the natural logarithm of pre-IPO total assets; LCA represents the natural logarithm of the year of incorporation to the listing year; UR is a dummy variable of 1 for highly reputable underwriter, otherwise 0; AQ is a dummy variable of 1 for high-quality auditor, otherwise 0; and LMB is the natural logarithm of one plus market to book ratio, where market to book ratio is the market value of equity over book value of equity

**Table I.**  
Descriptive Statistics  
of all variables for  
212 IPOs

boards is 9 per cent and the maximum is 50 per cent. In contrast, the average percentage of men on corporate boards is 90.98 per cent, and a median and maximum value of 100 per cent. Similarly, only 43 per cent of IPO companies have at least one woman on the BOD at the time of the IPO. These statistics indicate that almost 57 per cent of the boards of companies at the time of the IPO have no woman on the board, suggesting that most board directors of companies are men. All these suggest that gender diversity on the boards of Malaysian IPOs remains relatively low. The average board size is 6.81 directors and the median is seven directors. The maximum number of directors is 13. The average proportion of non-executive directors on the board is 60.76 per cent and the median is 57.14 per cent. About 26 per cent of IPO companies have the position of the CEO and chairperson held by a single individual. The average net amount of capital raised is RM 82.96m and the median as well as the maximum are RM 16.75m and RM 4,299m, respectively. The average total assets are RM 401.32m. Most IPO companies have strong pre-IPO performance because the average Altman Z-Score is 1.94 and the median is 1.80. In addition, the average age that a company issued an IPO is 5.88 years. Further, a company has been operating for 38 years before issuing an IPO. The average percentage of IPOs underwritten by reputable underwriters and by high-quality auditor's is 43 and 42 per cent, respectively. In addition, average market to book ratio is 3.62.

A further look at Figure 1 shows that the mean and median estimate of the percentage of women on the board at the time of the IPO has increased over time. Noticeably, the bar chart plots presented in Figure 1 reveal that the mean percentage of women on the board increased from 12.09 per cent in 2013 to 17.10 per cent in 2015. In addition, the median percentage of women on the board increased from 11.11 per cent in 2013 to 15.48 per cent in 2015. The increase in percentage of women on the board in recent times reflects that companies have begun to recognise the importance of women on the board. It also brings to notice that the companies are gradually adhering to the Malaysian government's policy towards ensuring that at least one third of the directors on the board are women. However, some years having a low mean and zero estimate for the median percentage of women on the board are indicative that of the boards of most IPO companies are male dominated.

*Correlation analysis.* According to the correlation analysis presented in Table II, five variables (WDP, LNPTA, Z\_Score, LTA and LMB) are significantly correlated with the



**Figure 1.** Mean and median estimates of percentage of women on boards: 2005 to 2015

Variables	1	2	3	4	5	6	7	8	9	10	11	12
IO (1)	1.00											
WDP (2)	0.12*	1.00										
LBSIZE (3)	-0.02	0.07	1.00									
ND (4)	-0.04	0.04	0.12*	1.00								
CEOD (5)	0.09	-0.11	-0.13**	-0.28***	1.00							
LNPTA (6)	0.29***	-0.06	-0.19***	-0.16**	0.17**	1.00						
Z_Score (7)	0.24***	0.04	-0.19***	-0.14**	0.14**	0.29***	1.00					
LTA (8)	-0.14**	0.06	0.33***	-0.39***	-0.27***	-0.62***	-0.35***	1.00				
LCA (9)	-0.09	0.03	0.17**	0.19***	-0.15**	-0.25***	-0.12*	0.32***	1.00			
UR (10)	0.04	0.01	0.19***	0.16**	-0.11	0.03	-0.08	0.27***	0.14**	1.00		
AQ (11)	-0.02	0.01	0.19***	0.09	0.01	-0.13**	-0.16**	0.22***	0.06	0.09	1.00	
LMB (12)	-0.14**	0.11	-0.04	0.05	-0.14**	0.27***	-0.02	-0.03	-0.08	0.02	-0.02	1.00

**Notes:** IO represents the percentage of IPO proceeds allocated for investment opportunities; WDP is the proportion of women on corporate boards to the total number of board directors; LBSIZE is the natural logarithm of the total board size; ND is the proportion of non-executive directors to total board size; CEOD is a binary value of 1 for IPO where an individual is the same person as the CEO and board Chair; LNPTA represents the natural logarithm of 1+ net amount of capital raised to total assets; Z\_Score is the final figure derived from the Altman Z-Score stated in model 1; LTA is the natural logarithm of pre-IPO total assets; LCA represents the natural logarithm of the year of incorporation to the listing year; UR is a dummy variable of 1 for highly reputable underwriter, otherwise 0; AQ is a dummy variable of 1 for high-quality auditor, otherwise 0; and LMB is the natural logarithm of one plus market to book ratio, where market to book ratio is the market value of equity over book value of equity. \*, \*\*, \*\*\* Represent statistical significance level of 10, 5, and 1 per cent, respectively

Women on  
corporate  
boards

**Table II.**  
Correlation results

allocation of capital raised for investment opportunities. Specially, LNPTA and Z\_Score are positively correlated with the amount of capital raised for investment opportunities at the 1 per cent significance level, suggesting that IPO companies that raised a large amount of capital with strong pre-IPO performance tend to allocate a larger portion of their capital for investment opportunities. Similarly, WDP is positively correlated with allocation of capital raised for investment opportunities, meaning that IPO companies where women are sitting on the board at the time of the IPO allocate a larger amount of capital raised for growth investments. In contrast, LTA and LMB are negatively correlated with investment opportunities at the 5 per cent significance level. By implication, bigger IPO companies do not tend to use the capital raised for growth investment, probably because bigger IPOs must have invested in growth investment through borrowings prior to the IPO. In addition, the negative correlation between the market to book ratio and allocation of capital raised indicates that IPO companies with high market to book ratio are not likely to invest in growth investment because they are embedded in investment opportunities that would increase their value at the time of the IPO. Therefore, allocating a larger amount of capital for investment opportunities may probably not be their main motive for the IPO. To confirm these arguments, untabulated results on the correlation between LTA and LMB on allocation of capital raised for debt repayment reveal that LTA and LMB are positively correlated with the amount of capital raised for debt repayment purposes.

*Regression analysis.* A multiple regression was undertaken to test the study hypotheses, but before running the regression, three important underlying assumptions of OLS regression were considered. These include the test for collinearity between the independent variables, normality and heteroskedasticity for the model. To check for the problem of collinearity, the variance inflation factors (VIFs) were calculated. In all the cases presented in Table III, the VIF values are below 10, which imply that there is absence of any multicollinearity problem. Statistically, data used for regression analysis are considered to be normally distributed if the skewness value is zero and the kurtosis value is lower than 3. Thus, the distribution of the data is symmetric and the tail of the data is thinned (Ramdani and Witteloostuijn, 2010).

A look at the results in Table I show that the skewness values for some variables used in this study are not close to zero, meaning that the variables are not symmetrically distributed. In addition, the kurtosis values for some variables, such as the proportion of women on the board (WDP), Altman Z-Score (Z\_Score), company size (LTA) and market to book ratio (LMB) are all above 3. These indicate that there are some observations with extreme values. Notably, the mean and median values for these variables are slightly different. These evidences suggest that the distribution of the data is not bell shaped. Notably, further checks for normality of the residuals from the OLS regression using the Shapiro–Wilk W test reveal that the null hypothesis that the residuals are normally distributed is rejected ( $W=0.98$  and  $p\text{-value}=0.02$ ). Similarly, the Jarque–Bera normality test for all the variables shows that the data are not normally distributed, except for the LBSIZE ( $\chi^2(2)=1.75$  and  $p\text{-value}=0.42$ ). To detect whether there is heteroskedasticity problem, a Breusch–Pagan/Cook–Weisberg test was conducted. The test results show that the null hypothesis that the variance of the residuals is homogeneous is rejected ( $\chi^2(1)=11.11$  and  $p\text{-value}<0.00$ ), meaning that there is a heteroskedasticity problem. For this reason, this study employed White’s heteroskedasticity-consistent standard error. To complement the robust regression results and due to the fact that the data are not normally distributed, estimating the effect of women on corporate boards and other controlled variables on investment opportunities at different points of investment opportunities was warranted, since each quantile may be associated with different effects. Therefore, an additional

regression method, besides the OLS, was employed to examine the influence of these variables on investment opportunities.

Tables III and IV report the OLS and QR results for the effects of all independent and controlled variables on capital allocated for investment opportunities. While Table III presents the regression results without controlling for the year and industry effects, Table IV takes into consideration the industry and year effects in the regression model[6].

The OLS and robust OLS results are reported in columns (2) and (3) of Table III, with investment opportunities standing as the dependent variable. The QR results are presented in columns (4), (5), (6) and (7). Based on the OLS results, the proportion of women on the board (WDP) is found to be positively and significantly associated with the allocation of capital raised for investment opportunities at the 5 per cent level of significance. However, a much stronger significant association is found between women on corporate boards and allocation of capital raised for investment opportunities in the robust regression results at the 1 per cent level of significance after correcting for the heteroskedasticity problem as earlier mentioned. In addition to the OLS results, a significant association between women on corporate boards and allocation of capital raised for investment opportunities is reported in the lower (0.25), median (0.50) and upper quantile (0.75) levels, while no significant influence of women on corporate boards is found at the extreme upper quantile (0.95) level. This means that women on corporate boards reasonably influence decisions related to investment opportunities at the time of the IPO. They ensure that such investments tend to add to shareholders' value rather than for the manager's requisite purposes. Therefore, one can argue that IPO companies with higher

Variables	OLS regression		Quantile regression				VIF
	OLS	Robust	0.25	0.50	0.75	0.95	
WDP	0.32**	0.32***	0.50**	0.31***	0.34**	0.19	1.03
LBSIZE	0.02	0.02	0.21	0.09	-0.06	-0.07	1.18
ND	0.01	0.01	0.10	-0.03	0.05	-0.01	1.25
CEOD	0.01	0.01	0.04	0.01	-0.01	0.03	1.18
LNPTA	0.43***	0.43***	0.53***	0.41***	0.33***	0.33***	2.07
Z_Score	0.04**	0.04***	0.03	0.03**	0.01	-0.02	1.18
LTA	0.03	0.03	-0.01	0.03**	0.05**	0.06**	2.50
LCA	-0.01	-0.01	-0.01	-0.02	0.01	0.02	1.15
UR	-0.00	-0.00	-0.00	-0.01	0.00	0.04	1.19
AQ	0.00	0.00	0.01	0.00	0.00	-0.02	1.09
LMB	-0.17***	-0.17***	-0.24***	-0.17***	-0.15***	-0.14***	1.19
Constant	-0.04	-0.12	0.05	-0.19	-0.04	-0.03	
Mean VIF							1.37
R <sup>2</sup> (Adjusted R <sup>2</sup> )%	19 (15)	19					
Pseudo R <sup>2</sup> %			17	12	9	9	
Ramsey test	0.12						

**Notes:** WDP is the proportion of women on corporate boards to the total number of board directors; LBSIZE is the natural logarithm of the total board size; ND is the proportion of non-executive directors to total board size; CEOD is a binary value of 1 for IPO where an individual is the same person as the CEO and board Chair; LNPTA represents the natural logarithm of 1+ net amount of capital raised to total assets; Z\_Score is the final figure derived from the Altman Z-Score stated in model 1; LTA is the natural logarithm of pre-IPO total assets; LCA represents the natural logarithm of the year of incorporation to the listing year; UR is a dummy variable of 1 for highly reputable underwriter, otherwise 0; AQ is a dummy variable of 1 for high-quality auditor, otherwise 0; and LMB is the natural logarithm of one plus market to book ratio, where market to book ratio is the market value of equity over book value of equity. \*, \*\*, \*\*\* Represent statistical significance level of 10, 5, and 1 per cent, respectively

**Table III.**  
Ordinary least squares regression and quantile regression results for 212 IPOs

Variables	OLS regression		Quantile regression			
	OLS	Robust	0.25	0.50	0.75	0.95
WDP	0.29**	0.29**	0.49	0.20	0.45	0.33**
LBSIZE	0.02	0.02	0.25	0.09	-0.12	-0.14
ND	-0.00	-0.00	-0.02	0.03	0.09	0.16
CEOD	0.00	0.00	0.03	-0.02	0.02	0.10
LNPTA	0.42***	0.42***	0.46*	0.37	0.34	0.23**
Z_Score	0.03*	0.03**	0.01	0.02	0.02	-0.03
LTA	0.03	0.03	0.00	0.01	0.04	0.00
LCA	-0.02	-0.02	-0.04	-0.04	0.02	0.05
UR	0.00	0.00	-0.01	-0.01	-0.03	0.02
AQ	-0.02	-0.02	-0.05	-0.01	0.00	-0.06
LMB	-0.17***	-0.17***	-0.15*	-0.16	-0.12	-0.06
Constant	-0.10	-0.10	-0.21	0.17	-0.17	0.32
Industry/year	No/No	No/No	No/No	No/No	No/No	Yes/Yes
R <sup>2</sup> (AdjustR <sup>2</sup> )%	28 (17)	28				
Pseudo R <sup>2</sup> %			24	19	18	24

**Notes:** WDP is the proportion of women on corporate boards to the total number of board directors; LBSIZE is the natural logarithm of the total board size; ND is the proportion of non-executive directors to total board size; CEOD is a binary value of 1 for IPO where an individual is the same person as the CEO and board Chair; LNPTA represents the natural logarithm of 1+ net amount of capital raised to total assets; Z\_Score is the final figure derived from the Altman Z-Score stated in model 1; LTA is the natural logarithm of pre-IPO total assets; LCA represents the natural logarithm of the year of incorporation to the listing year; UR is a dummy variable of 1 for highly reputable underwriter, otherwise 0; AQ is a dummy variable of 1 for high-quality auditor, otherwise 0; and LMB is the natural logarithm of one plus market to book ratio, where market to book ratio is the market value of equity over book value of equity. \*, \*\*, \*\*\* Represent statistical significance level of 10, 5, and 1 per cent, respectively

**Table IV.** Ordinary least squares regression and quantile regression results for 212 IPOs – with industry and time effects

proportion of women on the board, are more likely to allocate a larger percentage of capital raised for growth investment[7]. These results are consistent with Adams and Funk (2012) who claim that women in top corporate positions do not possess the normal behavioural traits attributed to ordinary women; rather, they engage in strategic decisions that bring value to the company. The results are also similar to Miller and Triana (2009) and Chen *et al.*'s (2015) findings that women on corporate boards positively influence R&D and innovation activities in companies. However, these results contradict prior studies (e.g. Huang and Kisgen, 2013; Levi *et al.*, 2014; Sila *et al.*, 2016) that document that women are risk averse and exhibit some behavioural traits and attitudes that make them shy away from risky investments. Therefore, the present study concludes that women on the board at the time of an IPO can better signal that an IPO company tends to use a larger amount of the capital raised for investment opportunities.

Besides the proportion of women on corporate boards, other governance variables, such as board size, non-executive directors and CEO duality are insignificantly associated with the use of capital raised for investment opportunities. These results suggest that these variables do not really have an impact on companies' investment decision. The findings also concur with Ruigrok *et al.*'s (2006) argument that neither board size (LBSIZE) nor the proportion of non-executive directors on the board (ND) as well as when the positions of the CEO and chairperson are combined (CEOD), are associated with board involvement in strategic decision-making. This result is also consistent with prior studies that non-executive directors do not contribute to a company's performance (Terjesen *et al.*, 2016).

Other results presented in Table III show that the amount of capital raised (LNPTA), pre-IPO financial performance (Z\_Score) and company size (LTA) are all significantly

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associated with the allocation of capital raised for investment opportunities. As shown in Table III, LNPTA is positively and significantly associated with investment opportunities in both OLS and across quantiles[8]. Hence, IPOs with a larger amount of capital raised are likely to allocate a larger portion of that capital for investment opportunities (Jain and Kini, 2000).

Similar to LNPTA, *Z\_Score* is positively associated with the amount of capital raised for investment opportunities, except in the lower and upper quantile levels. The positive effect of *Z\_Score* on investment opportunities suggests that IPOs with strong pre-IPO financial performance at the time of the IPO are likely to allocate more capital raised for investment opportunities in order to continue to maintain their strong financial performance. Unlike *Z\_Score*, *LTA* is found to be positively and significantly associated with the allocation of capital raised for investment opportunities across quantiles with the exception of the lower quantile (0.25) level. This means that larger IPO companies still allocate a larger amount of capital raised for investment opportunities in order to maintain their growth prospects and withstand the competition that may arise in the company's future operations. Contrary to expectations, *LMB* is found to be significantly and negatively associated with the amount of capital raised for investment opportunities, which implies that IPOs with growth opportunities at the time of the IPO may only allocate a smaller portion of proceeds for investment opportunities. Moreover, investment opportunities of a company constitute an important component of market value. Therefore, this may imply that such IPO companies have engaged in investments that would propel the growth of the company prior to the IPO [9] through other sources of financing strategy.

Unlike the earlier results presented in Table III, Table IV provides the regression results after taking into consideration the industry and year effects in the regression models. Similar to the significant influence of women on corporate boards as reported in Table III, they remain significant with some slight changes. For example, a significant association is found in the OLS and the extreme upper quantile (0.75) level, indicating that women on corporate boards contribute more to board involvement in strategy related to the allocation of capital raised in the extreme upper quantile level. Interestingly, some industry and year dummies are found to be significantly associated with the amount of capital raised for investment opportunities. In particular, industry dummy related to the companies in the properties sector is significant and negatively associated with the amount of capital raised in the extreme upper quantile (0.95) at the 5 per cent level of significance. This implies that this category of companies allocates a lesser amount of capital for investment opportunities. In fact, a look at the percentage allocation of capital dedicated to investment opportunities by companies in this industry shows that none has allocated up to 50 per cent of capital raised for growth investment. Larger amount of capital raised is dedicated for working capital. Similar to the presence of industry effect, the results indicate the existence of year effect. A significantly positive association is found in some year dummies (2005, 2007, 2012 and 2013) and allocation of capital raised for investment opportunities. In fact, it is interesting to note that companies listed in year 2012 have allocated a larger amount of capital raised of more than 50 per cent for growth opportunities.

#### 4. Discussion and conclusion

Researches have argued that the BOD plays a crucial and strategic role in decision making that may have implications for the success of a company. Despite the recognition of the strategic role of the BOD, the impact of board structure on the quality of strategic decisions taken by the board has received little attention in finance literature. Specifically, women on corporate boards are considered as better strategic planners, advisors and monitors, whose economic consequences may contribute to effective managerial decision-making or influence governance outcomes.

In addition, the future strategic investment opportunities set in a company may affect the way investors and other market participants view the company. Therefore, this study examines whether women on corporate boards can influence decision making of the board at the time of the IPO in terms of the amount of capital that can be allocated for investment opportunities. To provide evidence as to whether or not the argument holds true, this study uses a sample of 212 Malaysian IPOs and the results provide a general support that women on the board have a significantly positive influence on the amount of capital allocated for investment opportunities. The evidence of a positive influence of women on corporate boards on allocation of capital raised for growth opportunities is consistent with the tenets of the resource dependence theory that women on corporate boards have an impact on strategic planning and engage in decisions that can drive the company's growth (Hoobler *et al.*, 2016). The results also suggest that women pursue strategic decisions that would create value for company stakeholders (Galbreath, 2011; Terjesen and Sealy, 2016). Thus, it can simply be argued that gender diversity can serve as a proxy for heterogeneous boards, since such boards are associated with higher creativity and innovation (Solakoglu and Demir, 2016). Additionally, the results complement Adams' (2016) claim that women remain the superheroes of tomorrow, and key to healthier economies and companies on whose boards they sit because the under-utilisation of the skills of highly qualified women can lead to the loss of economic growth potential.

Moreover, the economic growth of a country is driven by R&D and innovation, development of new technologies and these sets of growth potential are likely to drive the performance of a company. For instance, growth investment is recognised as investment that contributes largely to subsequent performance of companies after IPOs (Amor and Kooli, 2017). Thus, if women are considered better advisors, value drivers and effective monitors of the company and their presence improves the quality of board discussion as studies have claimed (Gul *et al.*, 2011), the expectation is that their economic consequence should be reflected in managerial decision making by investing in growth investments that would maximise the company's value.

Similarly, the confounding factors that contribute to the performance of the company in the long-run are investment opportunities embarked on by the company. Therefore, the presence of women on the board truly improves the quality of board discussion and leads to a better corporate image because such companies' boards are associated with the allocation of a larger amount of capital raised for growth investments. Further, the results imply that gender diverse boards in the Malaysian IPO market ordinarily choose growth investments, meaning that women do not allow their risk averseness foreclose them from capitalising on the company's investment opportunities.

The overall interpretation of these findings is that women on corporate boards have the greater influence on corporate strategic decisions at the time of the IPO. Therefore, managers or entrepreneurs must consider the inclusion of more women as board members to lead the company during critical events, such as an IPO, and for better corporate strategic decisions. These can contribute positively to the future growth and functioning of the IPO market.

Despite the evidence provided on the impact of women on corporate boards on strategic decision making, an important limitation for this study that simultaneously provides an avenue for future studies is that the allocation of capital raised is the intended use of capital raised rather than the actual use of capital raised. The actual use of capital raised can be derived using Wadhwa *et al.* (2016) and Kim and Weisbach (2008) among other measurements, to reveal the financial effect of the use of IPO proceeds. Therefore, the current study provides a starting point for future studies to examine whether or not a change in the allocation of capital raised exists post-IPO. Another area open for empirical study would be whether or not the board structure can influence the actual use of capital raised[10]. For instance, studies have claimed that women on corporate boards promote greater ethical standards, thereby minimising the ineffective use of shareholders' funds

(Galbreath, 2011; Terjesen and Sealy, 2016). As such, it would be interesting if future studies can assess the impact of women on corporate boards on the actual use of capital raised from an IPO.

## Notes

1. Finance literature has documented that capital raised can be used for investment, debt repayment and working capital (Badru *et al.*, 2016; Kim and Weisbach, 2008).
2. PM Najib's Keynote address at Invest Malaysia Kuala Lumpur, 25 July 2017, [www.theedgemarkets.com/article/pm-najibs-keynote-address-invest-malaysia-kuala-lumpur](http://www.theedgemarkets.com/article/pm-najibs-keynote-address-invest-malaysia-kuala-lumpur)
3. The economic growth of a country is driven by innovation, research and development and new technologies and these sets of growth potentials are likely to drive the performance of a company.
4. Others are capital market choice of raising capital, defining the business domain, gate-keeping (systematic screening of proposed strategic choices), innovation, diversification and confidence-building measures (Abebe and Myint, 2018; Moore *et al.*, 2012).
5. We thank the anonymous reviewers for highlighting the importance of this variable.
6. We thank the anonymous reviewer(s) for suggesting that there is a need to control for industry and year effects.
7. To reaffirm this result, the WDP was changed to represent the proportion of men on corporate boards on the board; a negative association is found, which suggests that men on corporate boards tend not to allocate a larger proportion of capital raised for investment opportunities. This is as expected.
8. When LNPTA is tested against other uses of IPO proceeds, such as debt repayment and working capital, a negative association is found for debt repayment, while the effect on working capital is insignificant. These results further reaffirm that amount of capital raised is significantly important for investment opportunities.
9. To test whether this assertion holds, a regression analysis was conducted using allocation for debt repayment as the dependent variable and the results show that a positive association exists between LMB and use of capital raised for debt repayment purposes.
10. We thank the anonymous reviewers for offering these important suggestions, which are key areas future researchers can explore.

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#### **Further reading**

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#### **Corresponding author**

Bazeet Olayemi Badru can be contacted at: [bazeetolayemi@gmail.com](mailto:bazeetolayemi@gmail.com); [badru@uum.edu.my](mailto:badru@uum.edu.my)