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Corporate governance and life cycles in emerging markets

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ABSTRACT

Whereas the corporate life cycle hypothesis says firms follow structured goals along their life cycle, others argue that corporate governance objectives vary independently of predetermined life cycle stages. This study examines the impact of the corporate life cycle on corporate governance in emerging markets, where firms can self-select into stricter rules by adopting an exchange listing level that fits the governance needs of the organization independently of life cycle requirements. We find the listing-level decision is a better predictor of corporate governance quality than corporate life cycle. Firms signal improvements in corporate governance by bonding to more stringent regulation; they determine the corporate governance quality that matches their needs at any point during their life-cycle.

1. Introduction

Principal-agent theory portrays a narrow, static, corporate governance function, ignoring the resource and strategic roles for corporate governance espoused by Filatotchev et al. (2006): corporate governance exists solely to perform a monitoring role whereby shareholders (principles) appoint a board of directors (agents) to monitoring the behavior of self-serving managers. However, there is a gap in the literature as, contrary to the commonly prescribed universal/static approach, firms may maximize shareholders wealth by emphasising different corporate governance functions according to their needs at each stage of their life cycle. This *life cycle* view of corporate governance posits that the role of corporate governance serves different purposes along the life cycle suggesting the existence of an optimal level of corporate governance at each life cycle stage. Specifically, after firm inception, various subsequent corporate life-cycles have been commonly identified and the need for governance to provide agency, resource, and strategic functions varies at each life cycle stage (see, for example, Filatotchev et al., 2006; and Wright et al., 2013).[1] There is also an alternative view of how firms adopt changes in corporate governance, the *bonding* view, which states that firms self-select into stricter regulation independently of the life cycle predictions by adopting a stock exchange listing level, either domestically (e.g., Bovespa listing levels in Brazil) or abroad (e.g., non-U.S. firms bond to NYSE listing standards), that fits the

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[1] For instance, O'Connor and Byrne (2015a) find that the market assigns value to corporate governance only at certain points of the life cycle rather than continuously along the life of the firm. Miller and Friesen (1984); Anthony and Ramesh (1992); DeAngelo et al. (2006); Filatotchev et al. (2006); Dickinson (2011); Faff et al. (2016), among others, have described different proxies for firm life cycles.

governance needs of the organization, consistent with the conjectures of Phelps et al. (2007).[2] The goal of this paper is to evaluate whether firms have a predetermined corporate governance according to the life cycle stage or whether managers are able to adopt the optimum corporate governance according to their needs (i.e. financing, monitoring, and strategy requirements) at any point during their corporate life cycle.

We contribute to the literature by showing that, contrary to the *life cycle* view, the *bonding* view is a better predictor of corporate governance quality. Corporate governance standards vary not by life cycle stage, but rather by stock exchange listing level, whereby firms of the same listing type adopt similar governance practices, regardless of their life cycle stage.[3] Our findings add to the extensive literature on agency theory. Independently of the life cycle stage, managers take steps to improve corporate governance, effectively reducing agency costs, in order to fund growth opportunities. Agents appear to be well-aligned with the shareholder wealth maximization goal. Our results are consistent with Doidge et al. (2004, 2009) where firms bond to stricter regulation using cross-listings in order to access foreign capital and exploit growth opportunities.

In this paper, we test whether the corporate life cycle has an impact on corporate governance, as indicated by Filatotchev et al. (2006), using data on Brazilian firms from Black et al. (2010), where the local stock exchange, Bovespa, provides four distinct listing levels.[4] In addition, we analyse whether firms self-select into stricter regulation independently of the life cycle predictions by adopting an exchange listing level that fits the governance needs of the organization, consistent with the conclusions of Phelps et al. (2007). To our knowledge, this is the first paper testing a comparable research question. It seems a logical step to explore the evolution of corporate governance along the distinct life cycles, yet, only a few researchers have addressed this question. Filatotchev et al. (2006) note that monitoring, resource, and strategic needs inherent in each life cycle entail specific corporate governance qualities.[5] Wright et al. (2013) build upon the life cycle model proposed by Filatotchev et al. (2006) adding financial and entrepreneurship firm characteristics along the life cycle. O'Connor and Byrne (2015b) analyse the strength of corporate governance on a cross-section of firms at different life cycle stages; finding that the resource, strategy, and monitoring functions of corporate governance are relevant at different phases of the firm, consistent with Filatotchev et al. (2006). In closely related work, Loderer et al. (2012) show that governance quality deteriorates as firms' age. In addition, Franks et al. (2012) and Helwege et al. (2007) explore how ownership structure evolves as firms' age beyond their IPO. Perhaps, the limited amount of studies in this area is partly due to the limited amount of reliable firm-level longitudinal data on corporate governance. In contrast, the *bonding* view has received much more attention, yet to the best of our knowledge, none has tested the *bonding* view inclusive of the corporate governance life cycle (see, for example Silveira et al., 2010; Black et al., 2014, and de Carvalho and Pennacchi, 2012, for firms listing in Brazil on Bovespa; and Dewenter et al., 2005, for firms in listing in Korea on KSE and Kosdaq; and Doidge, 2004; Hope et al., 2007; and Foley et al., 2018, for firms cross-listing in the United States). The inclusion of *life cycle* proxies in *bonding* tests, and *listing levels* in *bonding* tests is important, since listing level effects may proxy for life cycle effects (and vice versa), if firms with large growth opportunities (say growth-stage and mature-stage firms) choose a premium listing, compared to early-stage and decline-stage firms, for whom the costs of a premium listing may outweigh the potential benefits.

Using a sample of 116 firms from Brazil, who list across four distinct listing levels, we find that the listing level decision conveys relevant information to the markets about the firm desire to bond to stricter regulations (bonding hypothesis) and hence this signal is a stronger predictor of corporate governance quality relative to the expectations based on the corporate life cycle hypothesis.[6] Our

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[2] Phelps et al. (2007) put forward an alternative view of business evolution. The authors classify the challenges organizations encounter at transition periods into six major categories or "tipping points", which combined with firm learning capabilities (absorptive capacity) result in a more dynamic assessment of organizational change. This method is consistent with the argument that firms change after having experienced major challenges as presented in Miller and Friesen (1984), rather than the static view of the life-cycle which assumes growth is linear, sequential, deterministic and invariant. Phelps et al. (2007) model does not follow a fixed linear sequence of stages or problems, yet it recognizes common key issues that growing firms are expected to face eventually.

[3] It is important to make the distinction between compulsory and voluntary governance reforms. A stock exchange listing means that firms are compelled to adopt mandatory governance requirements. However, firms may voluntarily investing in additional governance provisions. Thus, firms listing across different listing levels will differ because of mandatory listing rules, but also possibly because of differences in voluntary governance. For example, Hope et al. (2013) show that many firms that choose to cross-list in the U.S. as Level 1 and Rule 144a issues, voluntarily disclose more after they cross-list. Boubakri et al. (2010) show that emerging market firms are more likely to cross-list in the US as Level 1 or Rule 144a lists. Black et al. (2014) show that lower level listing firms (i.e., Regular and Level 1 listings) in Brazil voluntarily adopted many of the governance provisions required of firms listing on more listing levels (i.e., firms listing as Level 2 or Novo Mercado). Differences in mandatory governance may arise across firms if firms can opt-out (see Foley et al., 2018).

[4] Emerging markets offer unique characteristics as the difference in corporate governance practices within and across countries is large but has progressed substantially in recent decades (Hugill and Siegel, 2012). However, the average firm from emerging countries still has poorer governance relative to developed markets firms (Claessens and Yurtoglu, 2013). An important reason is that firms from developing markets face stronger challenges to establish a reputation for protecting shareholder rights as domestic bylaws makes costly the enforcement of shareholder rights (Doidge et al., 2007). For example, whereas *de jure* creditors and shareholders rights appear similar in emerging and developed markets, the degree of law enforcement is twice as effective in developed markets compared to emerging markets (Claessens and Yurtoglu, 2013).

[5] These predictions are consistent with related finance literature; such as the free cash flows theory (Jensen, 1986) as more mature firms require stronger monitoring corporate governance. Excess cash holdings increase the potential agency costs as managers may invest excess funds in wealth destroying projects.

[6] The bonding hypothesis suggests that firms self-select to stricter regulation and correspondingly improve their corporate governance. Firms can commit to limit expropriation of minority shareholder by voluntarily adopting more stringent legal and regulatory requirements (Coffee, 1999, 2002). The bonding effects have been studied extensively, particularly regarding U.S. cross-listings, for example, Doidge et al. (2004); Esqueda and Jackson (2015); Esqueda (2017); Foley et al. (2018); Ghadhab and M'rad (2018), among others.

paper contributes to the current literature on corporate governance providing strong evidence in support of the bonding hypothesis employing a unique setting where firms have the choice to select an exchange in their domestic market that fits their corporate needs, hence firms share similar domestic rules and regulation *ex-ante* the listing decision. We provide consistent evidence that the listing level is a better predictor of corporate governance than the life cycle approach, regardless of the proxy for the life cycle employed. Overall, stricter listing levels are associated with stronger corporate governance whereas, contrary to the conclusions of Filatotchev et al. (2006) and Loderer et al. (2012), the life cycle does not significantly affect corporate governance. The listing level is a more powerful predictor of the strength of disclosure, shareholder rights, and board structure. It appears that firms self-select to be regulated at a level that matches their specific requirements at any point in their life cycle, consistent with Phelps et al. (2007). Firms seek to position themselves to satisfy their corporate needs; specifically, financing, monitoring, and strategy requirements. To our knowledge, no other paper has tested such a research question in a similar framework.

Our paper improves significantly the findings from O'Connor and Byrne (2015b) in three different ways. First, we employ a more detailed dataset that let us differentiate between the firm's desires to offer better corporate governance, given the listing levels option, and the firm's quality of corporate governance, using different corporate governance dimensions. Second, rather than the cross-sectional approach used in O'Connor and Byrne (2015b), our dataset let us observe corporate governance quality at different points in time. Lastly, we employ robust and widely used proxies for the corporate life cycle, such as the measures suggested by Faff et al. (2016); Anthony and Ramesh (1992); Dickinson (2011). However, the proxies used by O'Connor and Byrne (2015b) (i.e., namely retained earnings to total equity (RE/TE) and age), and Loderer et al. (2012) (i.e., age) fail to account for the relevant impact of sales growth and profitability, which are considered relevant determinants of the corporate life cycle (Faff et al., 2016). Also, using RE/TE and firm age to measure life cycle, it is unfeasible to classify firms into distinct life cycle stages (i.e., introduction-stage, growth-stage, mature-stage, and decline-stage).

Our paper also contributes to a rich literature which seeks to identify the firm- and country-level attributes which predict the corporate governance practices of firms in emerging markets (see for example, Klapper and Love, 2004; Durnev and Kim, 2005; Black et al., 2006; Doidge et al., 2007; Hugill and Siegel, 2012). Collectively, these studies find that large, risky, growing firms, with an external financing need, and large cash positions, are better-governed. So too are cross-listed firms, while profitability and asset tangibility substitute for governance. Our findings say that we cannot add firm life cycle to this list of corporate governance predictors.

The paper proceeds as follows. The next section presents the literature review and the development of our primary hypothesis. Section 3 describes our sample and the life cycle and exchange listing measures. In section 4, we proceed to estimate empirically the corporate governance life cycle and present our findings. Section 5 presents a series of robustness tests. The final section concludes.

2. Literature review and hypothesis development

Firms' ultimate goal to maximize shareholders wealth is challenged by agents who may act in their self-interest rather than in the interest of shareholders as put by Jensen (1986). During the last decades, research in the field of corporate governance has acknowledged the main avenues that attempt to mitigate the agency problem such as the board of directors, executive compensation, the market for corporate control, concentrated holdings and monitoring by financial institutions, among others (Boubaker et al., 2012). Therefore, corporate governance studies largely concentrate around those research areas. In an attempt to expand our knowledge about the agency problem, researchers have studied extensively the factors influencing the overall quality of corporate governance. Altogether, government-prediction studies have identified a number of factors commonly affecting governance quality. At the firm-level, some variables commonly considered relevant predictors of corporate governance are firm size, growth opportunities, external financing need, asset tangibility, and cross-listing status. Somewhat less frequent, researchers employ R&D expenses, exports, cash holdings, and ownership structure. Black et al. (2006) use one of the richest set of firm-level attributes by including firm risk, leverage, profitability, market share, capital expenditures, and advertising. Overall, this stream of research suggests that large, growing and riskier firms, with external financing needs and large cash positions have better corporate governance.

Although extant corporate governance studies have expanded our knowledge about factors influencing corporate governance quality, this line of research has remained silent on the dynamic nature of firms' corporate governance needs. Specifically, whereas the agency theory suggests that corporate governance functions are static and perform solely in a monitoring role of the owner-agent relationship, Filatotchev et al. (2006) proposes a dynamic role of corporate governance shifting across varying life cycle stages and accomplishing monitoring, resource, and strategy functions. In the latter view, firms can maximize shareholder wealth by adapting corporate governance to the varying needs of the organization, rather than maintaining static governance mechanisms. The value of corporate governance varies across different life cycle stages rather than maintaining a uniform pattern (O'Connor and Byrne, 2015a). Consistent with this conclusion, Filatotchev et al. (2006) put forward the life cycle hypothesis, stating the existence of a varying optimal level of corporate governance along the corporate life cycle.[7] Filatotchev et al. (2006) note that monitoring, resource, and strategic needs inherent in each life cycle entail specific corporate governance qualities. In particular, the resource and strategic roles of governance are high in early- and growth-stage firms, where resources are low, and governance is required to "fuel and support growth". For example, in high tech firms, board members benefit the firm with knowledge, reputation, social capital, and networking (see Bertone et al., 2013). In growth/mature-stage firms, investment in accountability/transparency widens the firms'

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[7] A number of authors have suggested different proxies for the corporate life cycle. For example, Miller and Friesen (1984); Anthony and Ramesh (1992); DeAngelo et al. (2006); Filatotchev et al. (2006); Dickinson (2011); Faff et al. (2016) have developed some widely-accepted life cycle stages.

access to a larger pool of resources once it transitions from private to public firm, allowing the firm to funds its growth opportunities. Transparency declines in mature-stage firms once growth opportunities have been exhausted. Wright et al. (2013) extend Filatotchev et al. (2006) life cycle model adding financial and entrepreneurship firm characteristics. Even though the overall proposition seems intuitive, research on the life cycle stage evolution of corporate governance is scant.

The relationship between corporate governance and the life cycle proposed by Filatotchev et al. (2006) is supported by O'Connor and Byrne's (2015b) findings as the resource, strategy, and monitoring functions of corporate governance are relevant at different phases of the firm. Habib et al. (2018) distinguish between monitoring and advisory directors. Consistent with the life cycle theory, they show that advisory (monitoring) directors are more in demand in early (mature) life cycle stages. In addition, Loderer et al. (2012) conclude that governance quality tends to deteriorate as firms age. Franks et al. (2012) analyse the evolution of ownership structure in family firms after an IPO using a cross-section of countries. Similarly, Helwege et al. (2007) explore the ownership structure among U.S. firms as they mature after becoming public. Other researchers have examined the relationship between financial variables and the corporate life cycle. DeAngelo et al. (2006) find that the propensity to pay dividends increases as the proportion of earned to contributed capital grows; hence, mature firms are more likely to pay dividends. Faff et al. (2016) find that investments and equity issuance decrease along the firm life cycle, while debt issuance and cash holdings increase (decrease) in early (mature) stages of the firm life cycle.

Hypothesis 1. Firms adopt corporate governance characteristics according to their specific corporate life cycle.

Whereas the presumption that organizations follow a uniform pattern according to the life cycle is attractive, certain firm transformation may occur at different phases and the requirements regarding corporate governance may be more diverse for firms in the same phase than previously believed. As described by Miller and Friesen (1984), firms may go through phases in different sequence; for instance, firms may decide to boost innovation after a period of maturity whereas other mature firms enter the decline stage. Since strategic goals can vary substantially, the need for monitoring, resource, and strategic governance shifts, does not follow the same pattern relative to comparable mature firms. Phelps et al. (2007) develop a multidimensional model of firm states where crises or issues can occur at different points during the life of the firm; suggesting this model is more consistent with the modern dynamic competitive environment than the view of a fixed sequence of life cycles. Consistent with this view, Banyi and Kahle (2014) use the propensity to pay dividends to show that the life cycle approach (using the earned/contributed capital ratio) does not explain payout policy universally as it depends on unique factors, such as the IPO year, firm age, and economic variables (for example, the 2003 dividend tax cut). Hence, financial variables are not necessarily dependent on the firm life cycle. Corporate governance objectives regarding monitoring, resource, and strategy may vary by specific firm condition at any point in time rather than by a specific life cycle phase. In this situation, a cross-sectional comparison becomes potentially unfeasible as there may not be a common corporate life cycle (Miller and Friesen, 1984).

In this paper, we hypothesize that firm pursue an optimum degree of corporate governance based on their unique corporate needs, namely monitoring, resource, and strategy, independently of the previously believed corporate governance life cycle requirements. Specifically, we posit that a better predictor of corporate governance is firm self-selection to being regulated more strictly, the bonding hypothesis. Firms in need of external capital will become more transparent and signal this improvement by listing in a stricter stock exchange. To bond using a stock exchange listing, firms can either cross-list abroad on the stock exchange of a country with more stringent listing and regulatory requirements, the U.S. for example, and/or choose to remain at home but migrate to a listing level on a local stock exchange, whose governance requirements are just as onerous as those required of firms listing abroad.[8] Examples of local stock exchanges which offers bonding benefits are Brazil and the listing levels on Bovespa, the now defunct Neuer Market in Germany, and KOSDAQ (versus KSE) in Korea, which merged to form Korea Exchange in 2005. In this paper, we test whether the corporate life cycle has an impact on corporate governance (the life cycle hypothesis), as indicated by Filatotchev et al. (2006), using data on Brazilian firms from Black et al. (2010). In addition, we analyse whether firms self-select into stricter regulation independently of the life cycle predictions by adopting an exchange listing level that fits the governance needs of the organization (the bonding hypothesis), consistent with the conjectures of Phelps et al. (2007). To our knowledge, this is the first paper testing a comparable research question.

Hypothesis 2. The listing level selected by firms has a significant influence on corporate governance.

Testing this hypothesis must involve a sample with two characteristics. First, firms must have access to different levels of regulation (i.e. through listing levels or stock exchanges with different standards) so they are able to signal commitment for quality corporate governance if they decide to do so. Second, there should be substantial differences in corporate governance practices across firms; hence, domestic equity markets must allow for low levels of shareholder protection. In this way, the firm's decision to self-select into a given level of regulation conveys relevant information about target corporate governance quality. We study firms from a unique country, Brazil, since its stock exchange offers four different listing levels that are more likely to match the specific needs of each firm attempting to list in the domestic stock market.[9] As a response to the financial crisis in the late 1990′s, Brazil attempted to improve corporate regulation and governance by creating new listing options for domestic firms, namely, Novo Mercado, Level 1, and

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[8] For example, the corporate governance requirements for Level 2 and Novo Mercado premium listings in Brazil are more onerous than those required of firms cross-listing in the United States.

[9] An alternative approach to answer this research question would be to use international cross-listings in place of domestic listing levels. To the best of our knowledge, there is not prior research which explores the governance life cycle of internationally cross-listed firms.

Level 2, with different regulation requirements.[10] Also, because Brazilian corporate regulation offers little shareholder protection, firm listed in the Bovespa have a wide variation of corporate governance practices. For example, Marques et al. (2018) point out that the Brazilian stock exchange has attempted to fill the existing void in the domestic corporate legislation, hence, the Bovespa has become a viable alternative for firms that prefer to differentiate themselves or signal better protection to minority shareholders. The optional stricter governance rules in the Bovespa stock exchange go beyond the legal minimums and have become increasingly popular among domestic firms (Black et al., 2010). Overall, Brazil provides an appropriate scenario to test this hypothesis as it fits the sample requirements listed above.

3. Variable and sample descriptions

Our sample is one hundred and sixteen firms from Brazil. Corporate governance scores are provided by Black et al. (2010) for the years 2004, 2006, and 2009. Black et al. (2010) calculate their corporate governance index as a simple weighted-average of six corporate governance attributes. These are board structure, board procedures, shareholder rights, disclosure, related party trans-actions, and ownership, which between them provide forty-one individual corporate governance attributes in total. Corporate governance scores range from a low of zero to a high of 100. In appendix A we list all forty-one individual governance attributes of the Brazilian corporate governance index. Governance features which are required of a Level 2/Novo Mercado listing are denoted with an asterisk. The Brazilian Corporate Governance Index (BCGI) captures the mandatory disclosure, shareholder rights, and ownership features required of a Level 2/Novo Mercado listing, yet is sufficiently broad to capture corporate governance attributes not required by Bovespa. The remaining governance features (board structure, board procedure, and related party transactions) are not a mandatory requirement of a Level 2/Novo Mercado listing, but can be voluntarily adopted by firms if they so wish.

To measure firm life cycle, we use the multiclass linear discriminant analysis (MLDA) approach of Faff et al. (2016) that classifies firms into one of four life cycle stages.[11] This approach initially follows Dickinson (2011) to allocate firms to one of four life cycle stages in each year, namely introduction-stage (birth-stage), growth-stage, mature-stage, and shake-out/decline-stage, based on the combined signs of each of the net cash flows from operating, financing, and investing activities. Net cash flows can be positive or negative, resulting in eight possible cash flow combinations.[12]

For example, firms in the mature stage invest more than they divest (net cash flows from investing activities is negative), generate more cash internally on operating activities than they spend (net cash flows from operating activities are positive), which permits mature firms to finance more of their activities using internally generated funds (net cash flow from financing activities is negative). Then, we refine the Dickinson (2011) life-cycle classifications by performing linear discriminant analysis, such as $Group_i = \alpha_0 + \alpha_1 AGE_i + \alpha_2 PROFIT_i + \alpha_3 SGrowth_i + \varepsilon_i$, where age is firm age, PROFIT is return on assets (EBIT/Assets), and SGrowth is one-year sales growth.[13] Using these variables, MLDA provides maximum separation between the groups. MLDA overcomes some of the problems inherent in the Dickinson (2011) approach and hence is expected to yield a more accurate method of allocating firms to a life cycle stage.[14]

There are four stock exchange listing levels on Bovespa (Brazil/Sao Paolo Stock Exchange). These are a Regular listing, Level 1, Level 2, and a premium or Novo Mercado listing. Level 1, Level 2, and Novo Mercado premium listings were established in 2001. Corporate governance standards differ by listing type. A Novo Mercado listing has the highest standards of governance, while a regular listing has minimal listing requirements. Each of these stock exchange listing levels are available to firms coming to the market for the first time via an IPO, or already-listed firms can self-select to abide by higher listing standards by migrating across listing levels. Appendix B summarizes the main listing requirements for each listing level. Compared to a Regular listing, a Level 1, Level 2, and Novo Mercado listing requires firms to adhere to a suite of governance features. The demands of firms listing as either a Level 2 or Novo Mercado are largely the same: the difference is that Novo Mercado lists are not allowed to use preferred shares. Where these listing levels differ is in terms of shareholder rights (see row labelled "Corporate rules"). In theory, a Level 1 listed firm could have equal or stronger corporate governance than stricter listings. For example, Black et al. (2014) shows that some non-Level 2/Novo Mercado listed firms adopt standards required only of Level 2/Novo Mercado listed firms. Like Black et al. (2014) we group

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[10] In 2008, the Sao Paulo Stock Exchange (Bovespa) merged with the Brazilian Mercantile and Futures Exchange (BM&F) to initially form a new entity called Nova Bolsa, which was later renamed BM&FBovespa. In 2017, BM&FBovespa merged with Cetip to form B3.

[11] DeAngelo et al. (2006) use the ratio of retained to total equity (i.e. RE/TE) as a proxy for firm life cycle. We do not use RE/TE because we do not have access to it. Flavin and O'Connor (2017) test the life cycle model of dividends in Korea using RE/TE, Dickinson (2011), and MLDA as life-cycle measures, and find that the life cycle measures do not conflict with one another.

[12] The eight cash flow combinations are as follows. NCF is net cash flow.

Dickinson (2011) life cycle measure:								
Net cash flow and predicted sign:	Intro	Growth	Mature		Shake-out			Decline
NCF from operating activities	−	+	+	−	+	+	−	−
NCF from investing activities	−	−	−	−	+	+	+	+
NCF from financing activities	+	+	−	−	+	−	+	−

[13] In unreported analysis, we find that our main conclusions are not sensitive to alternative MLDA specifications, e.g., including firm size as a life cycle predictor. Also, because firm age, profitability, and growth are used as life cycle predictors, we exclude these individual firm-level measures from all governance regressions which use MLDA as a life cycle indicator.

[14] Faff et al. (2016, pp. 98) provide a number of arguments as to why MLDA is a superior life cycle classification system.

Regular and Level 1 lists (Reg/L1), and Level 2 and Novo Mercado list (L2/NM) together, respectively, to create two distinct listing groups.

In all regressions, we control for other potential determinants of firm-level governance, namely firm size, cross-listing status, cash holdings, asset tangibility, growth opportunities, profitability, leverage, and risk, all of which have been included in related studies (Klapper and Love, 2004; Durnev and Kim, 2005; Doidge et al., 2007; Black et al., 2006; Pillai and Al-Malkawi, 2018). Financial data is from Thomson Reuters Worldscope. Information on cross-listings in the United States by firms from Brazil is sourced from the Bank of New York-Mellon (www.adrbnymellon.com), Citibank (wwss.citissb.com/adr), JP Morgan (www.adr.com), the New York Stock Exchange (www.nyse.com), and NASDAQ (www.nasdaq.com). Because firms cross-delist and migrate across cross-listing types, we consult the historical record to ensure that we classify firms according to their correct cross-listing status in 2004, 2007, and 2009. Because the number of cross-listed firms is small, we group all firms together rather than differentiate by listing type. These variables are summarized in Table 1. Average governance is 60.67 with a standard deviation of 14.05, and a range of 70. Brazilian firms tend to perform better in disclosure quality (78.38) and worst in shareholder rights (49.68) and board structure (51.11). The average firm in our sample is young (just 13.92 years old, and a growth-stage firm), profitable, growing, indebted, and risky.

Table 2 shows the distribution of firms by sample year, Bovespa listing type, and firm life cycle stage, respectively. Our panel of firms is unbalanced: about 42% of the one hundred and sixteen sample firms are observed in multiple periods. Novo Mercado is the most popular Bovespa listing type with seventy-three firm-year observations, followed by a Regular listing (sixty-six observations), a Level 1 (thirty-two observations), and a Level 2 listing (nine observations) (see Panel A). Mature-stage and growth-stage are the most common life cycle stages with sixty-four and fifty-five firm-year observations, respectively, while the majority of firms remain in one life cycle stage throughout the sample period (see Panel B). The majority of firms in the birth-stage choose to register in the least rigorous Regular listing. Similarly, on average, roughly 40% of firms in the growth- and mature-stages opt for Novo Mercado (see Panel C). These findings are consistent with the bonding hypothesis which says growth firms voluntarily choose to adhere to stricter listing requirements in order to reduce the cost of raising external capital (see Coffee, 1999, 2002). De Carvalho and Pennacchi (2012) find that premium listings in Brazil deliver bonding benefits for firms but at lower cost when compared to an international cross-listing in the U.S. Panels D and E characterise firms by life cycle stage and stock exchange listing level using a number of financial variables. Smaller firms tend to be classified within the birth-stage, however, beyond that cycle, there is not a clear size effect. As expected, mature-stage firms have more operating cash flows and less need for financing than firms in any other life-cycle stage. On average, mature-stage firms are more profitable, and consistent with the life cycle model of dividends, tend to pay the largest dividends. Growth-stage firms appear to be the riskiest, using stock prices volatility as a proxy. Growth opportunities (measured using market-to-book of assets, MBA) are largest for mature-stage firms. Panel E compares Regular/Level 1 (hereafter Reg/L1) to Level 2/Novo Mercado (hereafter L2/NM) listing. The latter group of firms are larger, more profitable, pay larger dividends, but are riskier. Consistent with the bonding hypothesis, it is Level 2/NM, which adhere to the strictest governance standards that have the largest growth opportunities.

Table 3 reports the distribution of corporate governance quality scores by life cycle category (see Panel A), Bovespa listing levels (see Panel B), and life cycle stage for each Bovespa listing level (see Panel C). Firms in the growth-stage appear to have the strongest overall corporate governance score (65.07), albeit in close proximity to the corporate governance of mature-stage firms (62.29). Growth-stage and mature-stage firms score highly in terms of board structure, board procedure, shareholder rights, and disclosure. Firms in the birth-stage have the weakest average overall corporate governance score (53.57). The notion that firms provide fuller disclosures, enhance shareholder protection, and alter board structure (e.g. use more outsiders on the board), as they mature, is consistent with the views presented in Filatotchev et al. (2006). Panel B shows that stricter Bovespa listing requirements are associated with better board structures and procedures, more favorable shareholder rights, and better disclosure quality. To a lesser degree, listing level also appears to have a positive association with ownership structure; yet, this relationship does not appear to be linear. Panel C presents the relationship between listing level and corporate governance across life cycle stages. The link between listing level and corporate governance quality described above remains (see Panel B), and is clearly evident in all four life cycle stages (see row labelled "Max range across listing levels"). However, the life cycle does not seem to have a clear connection with corporate governance quality once we add the listing level (see columns labelled "Max life cycle range within listing level"). Firms of the same listing type appear to practice the same overall governance regardless of life cycle stage.

In summary, firms listed in a stricter exchange level have, on average, better corporate governance relative to less strict exchange levels. This difference is statistically significant at the 1% level. There is not a significant life-cycle effect on corporate governance. Nevertheless, there is a clear listing-level effect, even after adjusting for life cycle.

4. Regression analysis and results

We proceed to multivariate analyses and employ pooled ordinary least squares regressions as follows:

$$Gov_{it} = \alpha + \beta L2/NM_{it} + \delta_1 Growth - stage_{it} + \delta_2 Mature - stage_{it} + \delta_3 SO/Decline - stage_{it}$$
$$+ \eta Controls_{it} + Year_t + Industry_i + e_{it} \tag{1}$$

Where the dependent variable is firms' overall corporate governance (Gov) quality score or one of board structure, board procedure, shareholder rights, disclosure, RPT, and ownership, as indicated in Table 4.[15] L2/NM is an indicator variable which is one if the firm

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[15] Loderer et al. (2012) standardize corporate governance annually by industry mean and standard deviation. Our results do not change when we run our tests using the same approach.

Table 1
Variable descriptions.

Variable	Description	Source	Mean	Median	Min	Range	Standard deviation		
							Overall	Between	Within
Corporate governance	Corporate governance	Black et al. (2010)	60.67	62.64	20.12	70.00	14.05	13.56	5.23
Board structure	Board structure	Black et al. (2010)	51.11	57.14	0.00	100.00	22.24	20.36	9.65
Board independence	Board independence	Black et al. (2010)	49.86	50.00	0.00	100.00	31.32	29.33	14.69
Audit committee and fiscal board	Audit committee and fiscal board	Black et al. (2010)	42.59	66.67	0.00	100.00	34.35	32.87	12.03
Board procedure	Board procedure	Black et al. (2010)	64.07	66.67	0.00	100.00	24.97	23.08	12.01
Disclosure	Disclosure	Black et al. (2010)	78.38	90.91	18.18	81.82	25.57	25.43	8.65
Shareholder rights	Shareholder rights	Black et al. (2010)	49.68	57.14	0.00	100.00	25.91	24.78	7.49
Ownership structure	Ownership structure	Black et al. (2010)	58.13	57.11	26.31	64.99	16.38	15.74	5.10
Related party transactions	Related party transactions	Black et al. (2010)	62.67	80.00	0.00	100.00	31.74	28.15	17.08
MLDA life cycle	Life cycle indicator using Dickinson (2011) and MLDA	Worldscope	2.30	2.00	1.00	4.00	0.94	0.84	0.53
AR (1992) life cycle	Anthony and Ramesh (1992) life cycle index	Worldscope	2.24	2.00	1.00	4.00	1.16	1.06	0.48
Dickinson (2011) life cycle	Dickinson (2011) life cycle index	Worldscope	2.48	3.00	1.00	4.00	0.85	0.81	0.44
Firm age	Age of firm: year less listing year	Black et al. (2010)	13.91	11.50	1.00	49.00	11.61	11.26	1.33
Bovespa listing level	Bovespa listing level; one of the firm lists as a L2/NM list, zero if the firm lists as a Reg/L1 listing	Bovespa	0.46	0.00	0.00	1.00	0.50	0.49	0.12
Crosslist	1 if the firm is cross listed in the United States	BNY, Citibank	0.16	0.00	0.00	1.00	n.m	n.m	n.m
Size	Log of book assets in local currency	Worldscope	13.92	13.82	9.32	8.29	1.53	1.51	0.25
Cash	Cash to book assets	Worldscope	0.15	0.13	0.00	0.43	0.12	0.12	0.05
Tangibility	Property plant and equipment to sales	Worldscope	0.57	0.28	0.02	2.84	0.71	0.78	0.12
Profitability	Net income to book assets	Worldscope	0.04	0.05	(0.21)	0.39	0.09	0.08	0.04
Leverage	Liabilities to book assets	Worldscope	0.62	0.58	0.25	1.19	0.27	0.28	0.07
Growth opportunities	Market to book of assets	Worldscope	1.74	1.45	0.73	3.35	0.95	0.85	0.39
Firm risk	Standard deviation of weekly share prices	Worldscope	2.78	1.64	0.02	12.82	3.35	3.21	1.36
Sales growth	One-year sales growth	Worldscope	0.07	0.09	(3.22)	4.48	0.38	0.39	0.20
Insider ownership	Percentage of shares held by largest shareholder	Black et al. (2010)	0.51	0.51	0.06	0.94	0.28	0.27	0.07
Dividend payout	Common dividends to sales	Worldscope	0.03	0.01	0.00	0.15	0.04	0.04	0.01
Industry dummies	Industry codes mapped to US 2-digit SIC codes	Worldscope	n.m.	n.m.	n.m.	n.m.	n.m	n.m	n.m
NCFO	Net cash flows from operating activities scaled by book assets	Worldscope	0.07	0.09	(0.43)	(1.05)	0.13	0.12	0.06
NCFI	Net cash flows from investing activities scaled by book assets	Worldscope	0.07	0.05	(0.26)	0.97	0.10	0.09	0.06
NCFF	Net cash flows from financing activities scaled by book assets	Worldscope	0.04	0.00	(0.24)	0.96	0.16	0.13	0.10

This table summarizes the main variables used in the paper. We describe each variable together with its source.

Table 2
Sample description.

Panel A: Number of observations by firm, year, and Bovespa listing level

Observations by firm		Observations by year		Bovespa listing type	
One	67	2004	43	Regular	66
Two	34	2006	62	Level 1	32
Three	15	2009	75	Level 2	9
	116		180	Novo Mercado	73

Panel B: Number of firm-years in each life cycle stage

# of firm years in each life cycle stage		# of firms and # of life cycle stages	
Birth	44	1 Stage	87
Growth	55	2 Stages	28
Mature	64	3 Stages	1
Shake-out/decline	17		
	180		116

Panel C: Proportion of firm-year observations in each life cycle stage by Bovespa listing level

	# Obs	Birth	Growth	Mature	SO/Decline
Regular	66	0.41	0.20	0.29	0.11
Level 1	32	0.13	0.31	0.38	0.19
L2/NM	82	0.16	0.39	0.40	0.05

Panel D: Life cycle measured using Multiclass Linear Discriminant Analysis (MLDA)

	Size decile	INVCF	FINCF	OPCF	Profit	Dividend	Risk	Cash	MBA
Birth	3.00	(0.06)	0.11	0.00	(0.02)	1.93	2.45	0.10	1.71
Growth	7.95	(0.09)	0.06	0.08	0.06	3.12	3.69	0.16	1.63
Mature	4.81	(0.07)	(0.03)	0.14	0.11	4.68	2.15	0.19	2.05
Decline	6.00	(0.05)	0.09	(0.01)	(0.07)	1.78	3.03	0.10	1.97

Panel E: Comparing Reg/L1 and L2/NM firms

	Size decile	INVCF	FINCF	OPCF	Profit	Dividend	Risk	Cash	MBA
Reg/L1	4.82	(0.06)	0.02	0.06	0.02	2.34	2.40	0.11	1.51
L2/NM	6.17	(0.08)	0.06	0.08	0.07	4.36	3.22	0.20	2.21

This table summarizes our sample of 116 firms from Brazil observed in the years 2004, 2006, and 2009. Panel A reports the number of observations by firm, and the number of observations by Bovespa listing level. Panel B reports the number of firm-year observations in each life cycle stage and whether firms belong in one or multiple life cycle stages over the sample period. Life cycle is measured using multiclass linear discriminant analysis (MLDA). Panel C reports the proportion of firm-year observations in each Bovespa listing level together with the number of life cycle firm-years in each listing level. L2/NM is a combination of Level 2 and Novo Mercado listing types. Panels D and E reports average firm characteristics by life cycle stage and Bovespa listing level. Size is annual rank decile of firm size where firm size is log assets. INVCF is net cash flow from investments scaled by total assets; FINCF is net financing cash flows scaled by total assets, and OPCF is net operating cash flows also scaled by book assets. Profit is EBIT to total assets; dividend is dividends-to-sales (%), risk is calculated annually using the standard deviation of weekly share prices, cash is cash to total assets, and MBA is market-to-book of assets.

Table 3
Corporate governance, firm life cycle stage, and Bovespa listing level.

Panel A: Corporate governance and life cycle

Life cycle stage	Obs	Corporategov	Board structure	Board procedure	Share rights	Dis	RPT	Own
Birth	44	53.57	44.16	53.41	38.96	62.40	66.36	56.11
Growth	55	65.07	53.51	70.61	55.58	87.44	62.55	60.73
Mature	64	62.29	55.13	64.32	54.24	82.39	59.69	57.95
Shake-out/decline	17	58.78	46.22	69.61	41.18	75.40	64.71	55.57
Max range across life-cycle		11.50***	10.98**	17.20**	16.62***	25.04***	6.68	5.15

Panel B: Corporate governance standards on the Bovespa Stock Exchange

Bovespa listing level	Obs	Corporategov	Board structure	Board procedure	Share rights	Dis	RPT	Own
Regular	66	48.14	44.81	52.53	27.49	51.52	60.30	52.21
Level 1	32	61.84	58.04	72.40	37.50	87.22	69.38	46.53
Level 2/NM	82	70.31	53.48	70.12	72.30	96.56	61.95	67.42
L2/NM less Regular listing level		22.17***	8.67***	17.59***	44.81***	45.04***	1.65	15.21***

Panel C: Corporate governance standards on Bovespa by MLDA life-cycle stage

Bovespa listing level	Life cycle stage				Max life cycle range within listing level
	Birth	Growth	Mature	SO/decline	
Regular	46.08	48.45	50.43	49.27	4.35
Level 1	52.63	65.59	59.81	65.79	13.16***
Level 2/ Novo Mercado	69.40	71.65	70.01	64.91	6.74
Max range across listing levels	23.32***	23.20***	19.58***	16.52**	

This table reports average corporate governance quality by life cycle stage for a sample of 116 firms from Brazil. Life cycle is measured using multiclass linear discriminant analysis (MLDA). Panel B reports average corporate governance quality by Bovespa listing level. Panel C reports average corporate governance for firms in each life cycle stage and for each Bovespa listing level. We calculate (a) the range in average corporate governance across the life cycle for each Bovespa listing level (i.e. range within listing level), and (b) the range in average corporate governance across the Bovespa listing levels for each life cycle stage (i.e. range across listing levels). Corporate governance is from Black et al. (2010). ***, **, and * denotes statistical significance at the 1, 5, and 10% levels, respectively.

9

lists as a Level 2 or Novo Mercado list, otherwise zero (i.e. Regular and Level 1 listing levels, Reg/L1, is the omitted reference listing level). With MLDA life cycle, we explicitly include growth-stage, mature-stage, and shake-out/decline life cycle stages, respectively; birth-stage is the omitted reference life cycle stage in this instance. Our main variables of interest are the L2/NM indicator and the firm life cycle indicator variables. Controls is a vector of firm-specific regressors (size, risk, growth opportunities, cross-listing status, cash, tangibility, and leverage) described in the previous section and summarized in Table 1. We add controls for industry and time fixed effects. The standard errors are clustered by firm following Petersen (2009). We estimate Eq. (1) using pooled ordinary least squares (POLS), rather than say firm fixed effects or firm random effects panel regressions, because in our sample of firms, there is little variation in life cycle within firms. Eighty-seven of the one hundred and sixteen sample firms remain in the same life cycle stage throughout the sample period (mostly because we observe 67 firms just once in the sample period); twenty-eight firms are in two stages, and just a single firm occupies three life cycle stages (see Table 2, panel B). In short, in our sample of firms, there is greater variation in life cycle between firms than there is within firms (see also the between and within standard deviations presented in Table 1). In firm fixed-effects regressions, the between-effects (i.e. the cross-sectional relationship between life cycle and corporate governance) are purged from the regression, and the estimated coefficients display how within-firm changes in life cycle cause within-firm changes in governance. Estimated coefficients from random-effects regressions are a weighted average of the within- and between-effects.[16] In unreported robustness tests, we estimate a series of firm fixed effects, firm random-effects, and firm between-effects regressions, respectively. Our findings do not materially differ from the results we are about to present.

Table 4 depicts the results of pooled ordinary least squares regressions expressed in Eq. (1), where the estimated coefficients lend support to hypothesis 2, but not hypothesis 1. Specifically, the listing level (L2/NM) has a positive effect on corporate governance quality which is significant at the 1% level, whereas the life cycle does not have a statistically significant influence on corporate governance, even given the exclusion of the L2/NM indicator variable (unreported). This is consistent with the univariate tests shown in Table 3 above. The listing-level dummy variable (L2/NM) is positive and significant, indicating that corporate governance quality is higher for L2/NM firms relative to Reg/L1 listings. Both Silveira et al. (2010) and Black et al. (2014) show that L2/NM firms are better-governed than Reg/L1 firms. Conversely, the coefficients for the life cycle variables are not statistically different from zero for overall corporate governance. In addition, life cycle variables have few statistically significant effects in any of the corporate governance characteristics; with the exception of board procedure, corporate governance quality does not differ across life cycle stages. In stark contrast, the listing level has a statistically significant effect (at the 1% level) on shareholder rights, disclosure quality, and ownership structure. Differences in corporate governance across listing levels also exhibit sizable economic significance. For example, differences in shareholder rights, disclosure, and ownership between Reg/L1 and L2/NM firms imply governance premiums for L2/NM firms in the region of 127%, 31%, and 33%, respectively. Differences in shareholder rights, disclosure, and ownership scores between Reg/L1 and L2/NM firms are to be expected since it is along these dimensions that governance is mandated to be stronger for L2/NM firms (see Appendices A and B).[17] However, a L2/NM listing does not have a significant effect on the remaining three components of governance.[18] The results support the hypothesis that listing level is a relevant predictor of corporate governance, albeit the effect is not uniform across all corporate governance features, due to the specific exchange requirements across listing levels.

In the remaining columns of Table 4, we estimate the governance-life cycle relationship using two additional life cycle proxies because recent work suggests that different life cycle proxies can conflict with one another (see Banyi and Kahle, 2014). In particular we use the life cycle measures developed by Anthony and Ramesh (1992) and Dickinson (2011) (described in the previous section), respectively. Anthony and Ramesh (1992) is a composite indicator based on four life cycle descriptors, namely dividends, capital expenditures, one-year sales growth, and the age of the firm. It is assumed that all four variables are monotonically related to firm maturity; increasing for dividends and firm age, and decreasing for sales growth and capital expenditures. Based on this indicator, and using portfolio sorts, firms are classified into one of four life cycle stages; namely birth-stage, growth-stage, mature-stage, and decline-stage. The number of firm-year observations in the birth, growth, mature, and shake-out/decline stages is sixty-six, forty-three, thirty-three, and thirty-eight, respectively, using Anthony and Ramesh (1992), and twenty-three, fifty, sixty-nine, and fourteen, respectively, using Dickinson (2011). Using Dickinson (2011), mature-stage firms are better-governed than birth-stage firms. Using Anthony and Ramesh (1992), mature-stage firms are better-governed than growth-stage firms. In both instances, the differences in corporate governance across life cycle stages are economically much smaller than the differences in governance across listing-levels. For example, using Dickinson (2011), mature-stage governance is just 7.9% higher than birth-stage governance (i.e. (4.55/56.97)*100).

Altogether, the results suggest that there is a significant bonding effect but a much less pronounced life cycle effect in the corporate governance practices of listed Brazilian firms. Further, there is evidence to support a size effect; larger firms have better overall corporate governance given the positive and statistically significant coefficient of firm size. With the exception of firm risk (using Dickinson, 2011), none of the other firm-level attributes are statistically significant determinants of overall corporate

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[16] POLS assumes that the within- and between-effect are the same.

[17] Black et al. (2012) show that lower level listings very often voluntarily adopt higher level listing governance standards. This suggests that actual differences in governance between Reg/L1 and L2/NM firms is less than the differences implied by the stock exchange listing requirements per se.

[18] Compared to Reg/L1, L2/NM firms are not mandated by law to improve board structure and procedure and related party transaction governance. Also, Black et al. (2014) show that corporate governance improvements in Brazil over the sample period were largely attributable to enhancements in the board structure and board procedure practices of Reg/L1 firms. For L2/NM firms, corporate governance quality had little change and remained high over the sample period.

Table 4

Regression estimates of the corporate governance life cycle.

Life cycle is MLDA	Dependent variable is							Life cycle is AR (1992)	Life cycle is DK (2011)
	Overall corporate governance	Board structure	Board procedure	Shareholder rights	Disclosure	RPT	Ownership		
Growth-stage	−0.391	4.542	−2.723	0.924	−3.675	−4.687	3.273		
	(0.14)	(0.85)	(0.42)	(0.21)	(0.85)	(0.48)	(0.81)		
Mature-stage	−1.241	4.532	−2.547	2.572	−0.965	−11.246	0.211	3.331	4.552*
	(0.48)	(0.82)	(0.49)	(0.78)	(0.25)	(1.44)	(0.06)	(1.52)	(1.68)
SO/decline-stage	2.180	0.169	10.172	5.163	1.754	−5.453	1.272	2.745	−0.074
	(0.63)	(0.02)	(1.33)	(0.93)	(0.30)	(0.59)	(0.30)	(0.96)	(0.02)
L2/NM	12.550***	1.506	0.109	39.029***	19.497***	−1.254	16.413***	13.528***	11.620***
	(6.31)	(0.32)	(0.02)	(12.54)	(6.64)	(0.21)	(5.36)	(6.06)	(6.54)
Cross-listing	−0.141	4.258	1.074	6.716*	4.153	−11.569	−5.479	1.024	−0.989
	(0.05)	(0.81)	(1.84)	(1.84)	(1.24)	(1.28)	(1.39)	(0.36)	(0.36)
Size	3.076***	1.960	5.887***	1.389	7.185***	2.602	−0.570	2.867***	2.859***
	(3.92)	(1.16)	(3.31)	(1.31)	(6.69)	(1.23)	(0.51)	(3.57)	(3.32)
Cash	7.511	12.124	15.944	8.238	17.242	22.368	−30.850***	3.566	12.670
	(0.91)	(0.72)	(0.85)	(0.76)	(1.36)	(0.96)	(2.73)	(0.38)	(1.26)
Tangibility	−1.931	−3.460	−3.854	−2.972	−1.110	−3.122	2.930*	−1.505	−2.010
	(1.41)	(1.25)	(1.35)	(1.36)	(0.65)	(0.70)	(1.80)	(1.18)	(1.41)
Profitability								−7.501	−4.652
								(0.51)	(0.27)
Growth opps	0.600	4.038*	−0.141	1.995	2.217	−5.196*	0.689	0.511	−0.122
	(0.54)	(1.75)	(0.06)	(1.38)	(1.48)	(1.71)	(0.53)	(0.49)	(0.11)
Leverage	−3.901	3.940	−8.680	−7.444	−11.469*	6.894	−6.643	−3.720	−5.485
	(0.77)	(0.36)	(1.01)	(1.16)	(1.78)	(0.57)	(1.29)	(0.71)	(0.97)
Firm risk	−0.381	−0.561	0.442	−0.089	−0.353	−1.985***	0.262	−0.364	−0.557*
	(1.21)	(0.85)	(0.76)	(0.20)	(0.99)	(2.65)	(0.59)	(1.23)	(1.80)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	180	180	180	180	180	180	180	180	156
R-Squared	0.552	0.217	0.277	0.700	0.709	0.170	0.430	0.561	0.573
				Tests for differences across life cycle stages					
Growth vs. mature								*	
Growth vs. s-o/decline			*						
Mature vs. s-o/decline			*						

This table reports pooled ordinary least squares estimates for the full sample of firms. The standard errors are clustered by firm. The dependent variable is corporate governance or one of its individual sub-indexes, as indicated. Corporate governance is from Black et al. (2010). Life cycle is measured using Anthony and Ramesh (1992); Dickinson (2011), and MLDA. Level 2/NM is a dummy indicator, which is 1 if the firm is a Level 2 or Novo Mercado premium listing, zero otherwise. All regressions include an intercept term, industry and time dummies but are not reported. ***, **, and * denotes statistical significance at the 1, 5, and 10% levels, respectively.

governance quality. Using different governance data, Silveira et al. (2010) also study the determinants of Brazilian corporate governance quality over the period from 1998-2004. In their analysis, it is only the L2/NM indicator dummy, a Level 2/3 cross-listing in the United States indicator dummy, and the percentage of voting to total shares, which are statistically significant determinants of differences in corporate governance practices across firms. They do not find a statistically significant relationship between corporate governance and firm size.

Doidge et al. (2004) model a firms' decision to bond to stricter corporate governance standards. Firms trade-off the costs of foregone private benefits against the benefits of funded growth opportunities; firms most likely to choose the most onerous corporate governance standards (e.g. via a Level 2/NM listing in Brazil or a Level 2/3 ADR in the United States) are those firms with (a) low levels of ownership concentration because the consumption of private benefits is more difficult under strict governance regimes, and (b) large growth opportunities (see also Doidge et al., 2009).[19] In Table 5, we explore if Level 2/NM exhibit these characteristics, by estimating a linear probability model, where the dependent variable is one if the firm trades on Bovespa as a Level 2/NM listing. Consistent with the predictions of the bonding hypothesis, compared to Reg/L1 firms, Level 2/NM firms are younger, faster growing,

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[19] Doidge et al. (2009) use the difference or wedge between a blockholders cash and control rights to proxy for private benefits of control. We do not have access to the cash and control rights of the majority shareholders for the firms in our sample. Instead, we use the percentage of shares held by the largest shareholder as our proxy for private benefits and minority shareholder expropriation, as beyond a certain level of ownership concentration, large owners are more likely to consumer private benefits at the expense of minority shareholders (see Shleifer and Vishny, 1997).

have abundant growth opportunities, and have less concentrated ownership. All in all, the collective findings from Tables 4 and 5 suggest that the bonding hypothesis explains differences in governance standards between Bovespa listing levels.

In Table 6, we further investigate the governance-life cycle relationship, by exploring this connection across each Bovespa listing level. We do so because just twelve of the forty-one individual corporate governance attributes, which constitute Black et al.'s (2010) Brazil corporate governance index, are mandatory for L2/NM listings. Hence, there is scope for firms of the same listing type, but at different life cycle stages, to practice different overall governance, by voluntarily investing in additional governance. To explore this possibility, Table 6 Panel A presents the results of our previous models based on subsamples by listing level.[20] With a single exception, there are no differences in corporate governance quality across life cycle stages. The sole exception is L2/NM firms where we find that growth-stage firms are better governed than firms in the shake-out/decline stage. There are no differences in corporate governance between growth- and mature-stage firms. In Table 6 Panel B, we test a similar model where the dependent variable is each individual corporate governance attribute. With a few exceptions, corporate governance practices across firms are broadly similar within listing levels, regardless of firms' life cycle stage. The exceptions, some of which we find difficult to explain, involve firms in the shake-out/decline stage. For example, Reg/L1 firms in the shake-out/decline stage score more highly in terms of board procedure, and L2/NM firms in the shake-out/decline stage provide fuller disclosures. Compared to mature-stage firms, L2/NM growth-stage firms score more highly in terms of RPT and ownership structure. The difference in RPT between growth- and mature-stage firms is positive (17.28) and economically significant (27.89% of average RPT for L2/NM firms).

Similar to Table 6, in Table 7 we run similar models but using subsamples by MLDA life cycle category. Our main variable of interest is the estimated coefficient on the L2/NM dummy indicator. In Panel A, this indicator variable is positive, statistically and economically significant across all three life cycle stages.[21] Regardless of life cycle stage, L2/NM firms are always better-governed than Reg/L1 firms. As before, we find that few of the control variables are statistically significant determinants of corporate governance. Along with the L2/NM indicator, it is only firm size which is a statistically significant determinant of corporate governance for birth-stage and growth-stage firms, and firm risk for mature-stage firms. In Panel B, we switch the dependent variable to each corporate governance attribute. Listing level is able to explain corporate governance attributes: shareholder rights, disclosure quality and ownership structure, similar to the overall sample results (in Table 4). The coefficients of the listing-level variable is positive in all cases where it is statistically significant, suggesting that firms that list at a stricter level (L2/NM), relative to Reg/L1, enhance corporate governance quality through shareholder rights, disclosure requirements, and ownership structure.[22] As before, there are no differences in board structure, board procedure, and related-party transactions across Bovespa listing levels.

In Table 8 Panel A, we build on the analysis in Table 7, and explore why differences in governance practices between Reg/L1 and L2/NM firms arise. In particular, we evaluate the effect of Bovespa listing level on the Brazil corporate governance index (BCGI) elements required for a L2/NM premium listing but not required for a Reg/L1 listing (Hence, BCGI-L2/NM) and, alternatively, on a Brazil corporate governance index using governance elements not required for a Level 2/NM premium listing (Hence, BCGI-NON-L2/NM).[23] We estimate separate regressions for all firms, and by life cycle stage. We observe that listing level has a statistically significant impact on the corporate governance attributes when they are part of the listing requirements (see Panel A). The estimated coefficients are much larger than what we observed earlier. Specifically, the estimated coefficient for L2/NM implies that Reg/L1 listing firms voluntarily adopt just over half of the mandated L2/NM listing requirements. With one exception (birth-stage firms), L2/NM and Reg/L1 firms score the same when we compare their non-mandatory L2/NM governance practices. In Panel B, the dependent variables are non-mandatory Level 2/NM indexes for each of the individual corporate governance sub-indexes. As expected, the effect of listing level is weak on corporate governance attributes not related to listing requirements for L2/NM. In fact, the listing level variable has a positive and statistically significant effect only on disclosure quality (DIS-NON-L2NM). Taking Panels A and B together, differences in corporate governance quality between Reg/L1 and L2/NM firms come about because the latter score more highly in terms of the governance elements required of a L2/NM listing. Reg/L1 and L2/NM firms are broadly similar when comparisons are made using governance elements not required of a L2/NM listing. Black et al. (2014) show that Reg/L1 firms voluntarily adopt many of the governance provisions required of L2/NM firms, but adopt few non-L2/NM requirements.

In Table 9, we employ an alternative measure of life cycle, namely firm age. Firm age is measured as current year less the year in which a firms goes public and is in log form. Banyi and Kahle (2014) suggest that firm age can serve as an (imperfect) measure of firm maturity. Filatotchev et al. (2006) suggest that the time since a firm becomes a public is a key influencer over corporate governance practices. In Panel A, we test whether firm age has an effect on corporate governance and on each of its attributes using the full sample. Firm age does not have a statistically significant effect on overall corporate governance or its individual components, except for a positive effect on board structure. Also, when we replace the MLDA life cycle measure with firm age, the estimated coefficients for the L2/NM dummy remain positive and statistically significant for overall governance, shareholder rights, disclosure, and ownership.

In Panel B, we test the same model using subsamples by Bovespa listing level. Whereas firm age does not have a statistically

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[20] A caveat is in order when examining the findings from Tables 5–7. These tables suggest a distinct listing effect, but no such life cycle effect. However, the number of firm-year observations in each of these regressions is low.

[21] In these tests we do not include shake-out/decline stage firms because there are too few observations.

[22] The results for disclosure and shareholder are not surprising because a L2/NM listing requires firms to satisfy stringent disclosure requirements and provide protections to shareholders (see appendix 2).

[23] We follow Black et al. (2014) and exclude from the construction of BCGI-L2NM and BCGI-NON-L2NM, two ownership structure elements which are required of a Novo Mercado listing but not a Level 2 listing.

Table 5
Which firms list as Level 2/NM firms?

	Dependent variable is one if firms lists as Level 2/NM
Ownership concentration	−0.525***
	(4.46)
Growth opportunities	0.065*
	(1.81)
Sales growth	0.214***
	(4.08)
Size	0.070***
	(3.05)
Profitability	0.375
	(0.95)
Leverage	−0.027
	(0.53)
Age	−0.014***
	(4.08)
Cash	0.744***
	(2.60)
Dividends	0.001
	(0.12)
Cross-listing	−0.222
	(1.73)
Observations	180
R-squared	0.555

This table presents estimated coefficients from a linear probability pooled regression model, which compares Level 2/NM firms to Reg/L1 firms. The dependent variable is one if the firm is a Level 2/NM firm, zero otherwise. Ownership concentration is the percentage owned by the largest shareholder; growth opportunities is measured using the market-to-book of assets; sales growth is one-year sales growth; profitability is EBIT to total assets; leverage is total liabilities to total assets; age is firm age; cash is cash to assets, dividend is dividends-to-sales, and cross-list is an indicator, which is one of the firm is cross-listed in the United States. ***, **, and * denotes statistical significance at the 1, 5, and 10% levels, respectively.

significant impact (except in one case, ownership structure) on corporate governance using the Reg/L1 subsample, it has a positive effect (sig. at the 1% level) on aggregate corporate governance and two attributes (board structure and disclosure) in the Level 2/NM subsample. This result suggests that firm age becomes relevant only when firms have already signalled to the market that they are listing at a stricter exchange, hence the improvement in corporate governance is conditional on a stricter exchange listing level. Mature firms tend to be better governed than younger firms only if listed in the strictest stock exchanges. Lastly, in Panel C, we create subsamples by firm life cycle category. Firm age does not have a statistically significant effect on corporate governance, even when the dependent variables are corporate governance attributes: it is only weakly significant in one of the 18 models (board structure for mature-stage firms). In contrast, the L2/NM dummy is significant in 10 of the 18 models.

In summary, Table 9 confirms that life cycle is not a strong predictor of corporate governance. However, when firms are listed at the most stringent stock exchanges, firm age is positively correlated with better corporate governance. These findings contrast notably with those of Loderer et al. (2012). Using a sample of firms in the United States, they find that overall corporate governance quality deteriorates as firms' age. Finally, firm listing levels are again shown to be a better corporate governance predictor.

5. Robustness tests

As a robustness check, in Table 10, we introduce alternative samples from emerging markets. Specifically, we employ South Korean and Indian firms to compare the impact of firm life cycle on corporate governance relative to our results on the sample of Brazilian firms.[24] Notwithstanding the fact that the economies of Brazil, India, and Korea, are clearly different, the inclusion of firms from India and Korea permits us to explore the governance-life-cycle relationship in other emerging economies.

We observe 497 firms in South Korea in each year from 1998 to 2004, resulting in a total of 2185 firm-year observations. In India, corporate governance is measured in 2005, 2007, and 2011 for 307 firms in total.[25] Life cycle is proxied using MLDA. Mature-stage

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[24] Prior to the establishment of the Korea Exchange in 2005, Korean firms could list on one of two stock exchanges, namely the Korean Stock Exchange (KSE) and the Korea Securities Dealers Automated Quotation System (KOSDAQ), which differ in terms of their listing requirements. In Table 10 our focus is on exploring the governance life-cycle in Korea. Hence, we do not differentiate firms by stock exchange listing type. Dewenter et al. (2005) differentiate Korean firms by stock exchange choice and show that firms listed on KOSDAQ (where delisting requirements were more onerous than on KSE) were worth more than KSE firms.

[25] Corporate governance scores in Korea and India are compiled by Black et al. (2012). We thank them for kindly providing us with this data. Corporate governance indexes for both countries are presented in appendix 3.

Table 6
Governance-life cycle regressions for each Bovespa listing level.

Panel A	Dependent variable is overall corporate governance	
	Bovespa listing level	
	Reg/L1	L2/NM
Growth-stage	−4.765	5.639
	(1.28)	(1.62)
Mature-stage	0.413	1.252
	(0.13)	(0.47)
Shake-out/decline-stage	1.538	−1.083
	(0.36)	(0.24)
Controls	Yes	Yes
Observations	98	82
R-Squared	0.379	0.135
	Tests for differences in corporate governance across MLDA life cycle stages	
Growth vs. SO/decline		*

Panel B	Board structure		Board procedure		Shareholder rights	
	Bovespa listing level					
	Reg/L1	L2/NM	Reg/L1	L2/NM	Reg/L1	L2/NM
Growth-stage	−0.235	9.718	−6.327	7.852	−5.636	5.513
	(0.03)	(1.40)	(0.65)	(0.86)	(0.97)	(1.04)
Mature-stage	7.202	8.938	−3.609	6.993	0.123	2.845
	(0.97)	(1.42)	(0.48)	(0.91)	(0.02)	(0.79)
Shake-out/decline-stage	−1.293	−4.205	10.490	2.169	3.107	−1.696
	(0.17)	(0.58)	(1.15)	(0.14)	(0.50)	(0.26)
Observations	98	82	98	82	98	82
Controls	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.184	0.234	0.279	0.148	0.245	0.109
	Tests for differences in corporate governance across MLDA life cycle stages					
Growth vs. SO/decline	*		*			
Mature vs. SO/decline			*			

	Disclosure		RPT		Ownership	
	Bovespa listing level					
	Reg/L1	L2/NM	Reg/L1	L2/NM	Reg/L1	L2/NM
Growth-stage	−4.652	1.045	−15.106	3.377	3.368	6.327
	(0.58)	(0.40)	(1.17)	(0.27)	(0.61)	(1.18)
Mature-stage	1.784	2.170	−3.204	−13.903	0.003	0.466
	(0.25)	(0.81)	(0.31)	(1.32)	(0.00)	(0.11)
Shake-out/decline-stage	1.608	6.203**	−5.216	−12.895	0.530	3.927
	(0.18)	(2.44)	(0.51)	(0.65)	(0.13)	(0.46)
Observations	98	82	98	82	98	82
Controls	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.465	0.165	0.123	0.238	0.236	0.260
	Tests for differences in corporate governance across MLDA life cycle stages					
Growth vs. mature			*			*
Growth vs. SO/decline		***				
Mature vs. SO/decline		***				

This table reports pooled ordinary least squares estimates. Separate corporate governance-life cycle regressions are estimated for Bovespa Reg/L1 and L2/NM listing levels, respectively. The standard errors are clustered by firm. The dependent variable is corporate governance (Panel A) or one of its individual sub-indexes (Panel B), as indicated. Corporate governance is from Black et al. (2010). Life cycle is proxied using Multiclass Linear Discriminant Analysis (MLDA). All regressions include an intercept term which is not reported. The regressions do not include industry and time dummies. ***, **, and * denotes statistical significance at the 1, 5, and 10% levels, respectively.

Table 7

Governance-listing regressions for each MLDA life cycle stage.

Panel A	Dependent variable is corporate governance		
	MLDA life cycle stage		
	Birth	Growth	Mature
Level 2/NM	20.019***	12.677***	14.516***
	(4.85)	(3.99)	(4.65)
Cross-listing	3.454	−0.740	−0.259
	(0.50)	(0.21)	(0.06)
Size	4.746***	2.526*	3.117
	(2.99)	(1.87)	(1.57)
Cash	6.339	19.332	−5.871
	(0.44)	(1.02)	(0.47)
Tangibility	−1.058	−0.667	−2.564
	(0.42)	(0.37)	(1.26)
Profitability	14.262	28.279	−56.926
	(0.44)	(0.79)	(1.23)
Growth opps	−1.782	2.291	2.063
	(1.11)	(1.03)	(0.72)
Leverage	10.534	−11.882	−12.276
	(1.09)	(1.33)	(1.08)
Firm risk	0.309	−0.277	−1.253**
	(0.59)	(0.73)	(2.53)
Observations	44	55	64
R-Squared	0.655	0.542	0.422

Panel B	Dependent variable is								
	Board structure			Board procedure			Shareholder rights		
	MLDA life cycle stage								
	Birth	Growth	Mature	Birth	Growth	Mature	Birth	Growth	Mature
Level 2/NM	9.774	−2.126	0.097	13.733	1.061	6.149	37.758***	44.220***	34.940***
	(1.24)	(0.28)	(0.02)	(1.46)	(0.13)	(0.86)	(4.64)	(8.82)	(8.78)
Observations	44	55	64	44	55	64	44	55	64
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.096	0.181	0.106	0.237	0.229	0.223	0.697	0.722	0.680
	Disclosure			Dependent variable is RPT			Ownership		
	MLDA life-cycle stage								
	Birth	Growth	Mature	Birth	Growth	Mature	Birth	Growth	Mature
Level 2/NM	26.851***	16.588***	25.672***	14.996	4.662	−0.810	17.001**	11.655**	21.046***
	(3.54)	(3.47)	(5.25)	(1.23)	(0.48)	(0.09)	(2.32)	(2.55)	(5.86)
Observations	44	55	64	44	55	64	44	55	64
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.743	0.628	0.525	0.354	0.238	0.172	0.528	0.482	0.432

This table reports pooled ordinary least squares estimates. Separate corporate governance-listing levels regressions are estimated by MLDA life cycle stage (excl. shake-out/decline stage firms). The standard errors are clustered by firm. The dependent variable is corporate governance (Panel A) or one of its individual sub-indexes (Panel B), as indicated. Corporate governance is from Black et al. (2010). Life cycle is proxied using Multiclass Linear Discriminant Analysis (MLDA). Level 2/NM is a dummy indicator, which is 1 if the firm is a Level 2 or Novo Mercado premium listing, zero otherwise. All regressions include an intercept term, which is not reported. The regressions do not include industry and time dummies. ***, **, and * denotes statistical significance at the 1, 5, and 10% levels, respectively.

firms are most prevalent in Korea, while the number of firm-year observations is evenly distributed in the introduction, mature, and shake-out/decline life-cycle stages in India (see top panel Table 10). Firm-level controls, industry and time fixed effects are included in all regressions but not reported. We follow Black et al. (2006) and include the following controls; business group (Chaebol) indicator (for Korean sample only), cross-listing indicator, size, and a size-indicator for large firms (for Korean sample only), advertising (to sales), average (two-year) profitability, one-year sales growth, average (two-year) external financing dependence, export (to sales), leverage (natural log of debt to equity), capital expenditures (to sales), firm risk, property plant and equipment (to sales), and market share.

In Panel B, we observe a negative impact of growth and mature life-cycle stages on the quality of corporate governance of South Korean firms, albeit those coefficients are marginally significant (at the 10% level). When we test individual corporate governance attributes, we find that life cycle stages have an effect (statistically significant in 40% of the cases) on board structure and procedure,

Table 8
BCGI-NM and BCGI-NON-NM for Reg/L1 and Leve2/Novo Mercado firms.

Panel A	Dependent variable is							
	BCGI-L2/NM				BCGI-NON-L2/NM			
	All firms	MLDA life cycle stage			All firms	MLDA life cycle stage		
		Birth	Growth	Mature		Birth	Growth	Mature
Level 2/NM	40.519***	50.445***	40.087***	43.566***	2.252	9.203*	2.490	3.753
	(17.77)	(8.10)	(9.76)	(13.66)	(0.85)	(1.75)	(0.60)	(0.92)
Ind dummies	Yes	No	No	No	Yes	No	No	No
Time dummies	Yes	No	No	No	Yes	No	No	No
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	180	44	55	64	180	44	55	64
R-Squared	0.846	0.863	0.832	0.848	0.319	0.392	0.336	0.227

Panel B	Dependent variable is				
	BS-NON-L2/NM	BP-NON-L2/NM	SR-NON-L2/NM	DIS-NON-L2/NM	RPT-NON-L2/NM
Level 2/NM	−3.625	−0.754	2.725	10.924***	1.887
	(0.74)	(0.16)	(0.50)	(3.16)	(0.35)
Ind dummies	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Observations	180	180	180	180	180
R-Squared	0.215	0.260	0.164	0.549	0.176

This table reports pooled ordinary least squares estimates for the full sample of firms and for firms defined by MLDA life cycle stage. The standard errors are clustered by firm. In Panel A, the dependent variable is a corporate governance index based solely on the elements which are required for a Level 2/NM premium listing (BCGI-L2/NM) and a corporate governance index using governance elements not required for a Level 2/NM premium listing (BCGI-NON-L2/NM), as indicated. In Panel B, the dependent variables are non-Level 2/NM indexes for each of the individual corporate governance sub-indexes. BS is board structure, BP is board procedure, SR is shareholder rights, DIS is disclosure, and RPT related party transactions. Corporate governance is from Black et al. (2010). Life cycle is measured using Multiclass Linear Discriminant Analysis (MLDA). Level 2/NM is a dummy indicator which is 1 if the firm is a Level 2 or Novo Mercado premium listing, zero otherwise. ***, **, and * denotes statistical significance at the 1, 5, and 10% levels, respectively.

shareholder rights, and ownership structure; interestingly, the coefficients are mostly negative except for one positive and significant coefficient. Even where statistically significant governance differences exist across life cycle stages, the economic significance of these differences are small. For example, the difference in overall governance coefficients between mature-stage and shake-out/decline-stage firms is small (1.578) or just 4.6% of the average governance score. Large percentage differences in individual governance attributes exists but only when individual governance scores are already low (see for example, board structure). These results question whether there is a clear direction on the impact of life cycle on the corporate governance of South Korean firms.

In Panel C, we run similar tests on a sample of Indian firms. The results are consistent with our main results for Brazilian firms, as life cycle proxies only have one statistically significant coefficient in one of the corporate governance components (related party transactions). Overall the results from Panels B and Panel C support the idea that life cycle does not reliable predict the quality of corporate governance, similar to the results using a sample of Brazilian firms. The results of our paper are not unique to the Brazilian stock exchanges.

Lastly, to test whether corporate life cycle proxies are indeed a robust measure of the life cycle stage, Table 11 shows the relationship between corporate life cycle and corporate policies (dividends-to-sales, cash holdings (measured as cash-to-book assets), and net cash flows from investment) for Brazilian, South Korean, and Indian firms. Even after including relevant control variables, we find that firm-life cycle is able to predict corporate policies, particularly, dividend policy among firms from all countries.[26] To a lesser extent, firm life cycle predicts cash holdings and net investment. Further robustness tests using alternative methodologies (i.e. fixed effects, random effects, and between effects) show consistent results. For Brazil, the firm listing level (life cycle) remains (non-) statistically significant in all models, as shown in our main results. The results for Korea and India remain qualitatively similar as the firm life cycle does not appear to be a reliable predictor of corporate governance. These results are not shown for brevity but are available upon request. Overall, our robustness tests validate our measure of the corporate life cycle.

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[26] Flavin and O'Connor (2017) tests the life cycle model of dividends in South Korea and show that mature firms pay the largest dividends of all firms. Faff et al. (2016) show that investment expenditure (change in cash) decreases (increases) as firm mature.

Table 9

The relationship between corporate governance and firm age in Brazil.

Panel A	Dependent variable is						
	Corporate governance	Board structure	Board procedure	Shareholder rights	Disclosure	RPT	Ownership
Log (firm age)	1.023	5.228**	1.771	0.879	−0.682	−0.094	−0.962
	(0.75)	(2.04)	(0.77)	(0.55)	(0.46)	(0.03)	(0.55)
Level 2/NM	14.385***	3.814	3.593	32.128***	22.420***	1.905	16.448***
	(5.31)	(0.70)	(0.66)	(11.74)	(6.29)	(0.27)	(4.74)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	180	180	180	180	180	180	180
R-Squared	0.508	0.142	0.223	0.687	0.629	0.077	

Panel B	Dependent variable is						
	Corporate governance	Board structure	Board procedure	Shareholder rights	Disclosure	RPT	Ownership
				Reg/L1 firms			
Log (firm age)	−1.399	3.342	−0.399	−1.078	−3.465	−2.967	−3.824**
	(0.79)	(0.79)	(0.13)	(0.34)	(1.04)	(0.71)	(2.08)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	98	98	98	98	98	98	98
R-Squared	0.361	0.174	0.251	0.228	0.464	0.102	0.260
				L2/NM firms			
Log (firm age)	3.104**	6.878***	4.709	2.296	1.321***	2.857	0.565
	(2.40)	(2.77)	(1.67)	(1.43)	(2.80)	(0.65)	(0.26)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	82	82	82	82	82	82	82
R-Squared	0.193	0.297	0.182	0.121	0.103	0.196	0.235

Panel C	Dependent variable is						
	Corporate governance	Board structure	Board procedure	Shareholder rights	Disclosure	RPT	Ownership
				Birth stage firms			
Log (firm age)	0.649	−1.115	−0.001	2.245	−0.920	5.454	−1.858
	(0.25)	(0.17)	(0.00)	(0.55)	(0.20)	(0.78)	(0.61)
Level 2/NM	18.455**	5.113	10.813	36.948***	27.718***	21.013	9.122
	(2.67)	(0.36)	(0.78)	(3.03)	(2.90)	(0.95)	(0.93)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	44	44	44	44	44	44	44
R-Squared	0.638	0.100	0.239	0.684	0.743	0.217	0.532
				Growth stage firms			
Log (firm age)	−1.745	−2.601	−2.749	−0.229	−0.777	−2.287	−1.828
	(0.79)	(0.62)	(0.57)	(0.06)	(0.23)	(0.33)	(0.66)
Level 2/NM	10.583***	−5.246	−2.237	43.945***	15.655***	1.918	9.462
	(3.08)	(0.61)	(0.20)	(6.60)	(2.79)	(0.14)	(1.64)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	55	55	55	55	55	55	55
R-Squared	0.550	0.188	0.236	0.722	0.628	0.240	0.487
				Mature stage firms			
Log (firm age)	1.190	8.762**	3.277	−0.056	−2.666	−3.238	1.053
	(0.42)	(2.05)	(0.73)	(0.03)	(1.08)	(0.51)	(0.42)
Level 2/NM	15.732***	7.976	9.179	35.383***	23.148***	−2.868	21.573***
	(3.38)	(1.12)	(1.05)	(9.03)	(3.94)	(0.26)	(5.23)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	64	64	64	64	64	64	64
R-Squared	0.429	0.181	0.233	0.690	0.529	0.174	0.425

This table reports pooled ordinary least squares estimates. The dependent variable is corporate governance or one of its individual sub-indexes, as indicated. Panel A uses all 116 firms. In Panel B, we estimate separate regressions by Bovespa listing level. In Panel C, we estimate separate regressions by MLDA life cycle stage. The standard errors are clustered by firm. Corporate governance is from Black et al. (2014). Firm age is the log age of the firm and is calculated as year less the listing year of firm. Firm-level controls are included but not reported. Time and industry dummies are included in Panel A only. ***, **, and * denotes statistical significance at the 1, 5, and 10% levels, respectively.

Table 10

The corporate governance life cycle in India and Korea Republic.

Panel A	Number of firms	Firm-year observations in each MLDA life cycle stage			
		Introduction	Growth	Mature	Shake-out/decline
Korea Republic	497	475	433	762	515
India	307	141	57	145	133

Panel B	Korea Republic					
	Dependent variable is					
	Corporate governance	Board structure	Board procedure	Shareholder rights	Disclosure	Ownership structure
Growth-stage	−1.324*	−1.187**	−1.454	0.061	−1.254	−2.788*
	(1.94)	(2.26)	(1.10)	(0.04)	(0.77)	(1.82)
Mature-stage	−1.357*	−0.899	−2.889**	−3.545**	−1.206	1.754
	(1.89)	(1.54)	(2.10)	(2.38)	(0.59)	(1.03)
SO/decline-stage	0.221	−0.423	−2.267**	0.710	−0.094	3.182**
	(0.36)	(0.79)	(2.03)	(0.57)	(0.06)	(2.15)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# Observations	2185	2185	2185	2185	2185	2185
R-Squared	0.566	0.569	0.273	0.517	0.376	0.165
	Tests for differences in corporate governance across life-cycle stages					
Growth vs. mature				***		***
Growth vs. SO/decline	***					***
Mature vs. SO/decline	***			***		

Panel C	India					
	Dependent variable is					
	Corporate governance	Board structure	Board procedure	Shareholder rights	Disclosure	Related party transactions
Growth-stage	−0.062	−2.555	2.901	−0.558	2.850	−2.947
	(0.04)	(0.88)	(1.05)	(0.21)	(0.88)	(0.62)
Mature-stage	−0.582	0.001	2.149	−2.644	0.575	−2.993
	(0.35)	(0.00)	(0.81)	(0.83)	(0.17)	(0.69)
SO/decline-stage	−1.774	0.214	−1.878	−1.354	0.798	−6.650**
	(1.29)	(0.09)	(0.83)	(0.58)	(0.31)	(2.02)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# Observations	476	476	476	476	476	476
R-Squared	0.072	0.077	0.062	0.092	0.161	0.151

This table reports pooled ordinary least squares estimates for firms from Korea Republic and India. For Korea Republic, the sample period is 1998 to 2004. For India, firms are observed in the years 2005, 2007, and 2011. The dependent variable is overall corporate governance, board structure, board procedure, shareholder rights, disclosure, ownership structure, and related party transactions, as indicated. The standard errors are clustered by firm. Life cycle is proxied using MLDA. MLDA classifies firms into one of four life cycle stages (introduction, growth, mature, and shake-out/decline) using multiclass linear discriminant analysis. Corporate governance is from Black et al. (2010). All regressions include an intercept term, time dummies, and firm-level controls, which are not reported. ***, **, and * denotes statistical significance at the 1, 5, and 10% levels, respectively.

6. Concluding remarks

Filatotchev et al. (2006) propose three main corporate governance objectives (monitoring, resource, and strategic goals) that may follow a structured pattern along the corporate life cycle. Other authors suggest, however, that corporate governance objectives vary independently of predetermined life cycle stages; hence corporate goals do not follow a universal life cycle pattern (Miller and Friesen, 1984; Phelps et al., 2007). This stream of literature suggests that corporate governance may vary by specific firm conditions at any point in time rather than based on a life cycle phase.

In this paper, we posit that firms signal to the markets improvements in corporate governance by self-selecting into a more stringent listing level; the bonding hypothesis (Doidge et al., 2004, 2009). The listing level decision is a better predictor of corporate governance quality relative to the corporate life cycle explanation. Firms signal changes in corporate governance objectives by listing at a degree of scrutiny that fits the governance needs of the organization, consistent with the conjectures of Phelps et al. (2007). For example, firms in need for external capital become more transparent and signal this improvement by listing in a stricter exchange. We find that the listing level is a better predictor of corporate governance than the life cycle approach, regardless of the life cycle proxy employed. Overall, stricter listing levels are associated with higher corporate governance quality whereas the life cycle does not impact corporate governance. Our findings support the bonding hypothesis but fail to find evidence in favour of the life cycle

Table 11

The relationship between life cycle and corporate policies in Brazil, Korea, and India.

	Brazil			Korea			India		
				Dependent variable is					
	Dividends	Cash	Net Investment	Dividends	Cash	Net Investment	Dividends	Cash	Net Investment
Growth-stage	−1.343**	0.026	−0.038	0.639***	0.011	−0.022**	0.659**	−0.026	0.026
	(2.26)	(0.83)	(0.91)	(8.68)	(1.44)	(2.30)	(2.00)	(1.09)	(1.38)
Mature-stage	0.806	0.046*	−0.015	0.793***	0.030***	−0.023**	1.978***	−0.000	−0.013
	(1.45)	(1.78)	(0.51)	(11.08)	(3.39)	(2.30)	(5.84)	(0.02)	(0.80)
SO/decline-stage	−0.423	−0.039	−0.010	0.347***	−0.003	0.004	0.687***	−0.026	0.046***
	(0.62)	(1.40)	(0.24)	(5.04)	(0.46)	(0.57)	(2.68)	(1.46)	(3.14)
Growth opportunities	1.164***	0.028***	−0.011	0.178***	0.018***	−0.010	0.082*	0.000	−0.003
	(3.51)	(2.81)	(0.98)	(3.50)	(4.74)	(1.56)	(1.75)	(0.18)	(1.46)
Corporate governance	0.030			0.010			0.021**		
	(1.38)			(1.61)			(1.97)		
Size	0.384*	0.002	0.002	0.045	−0.010***	−0.012***	0.110	0.010	−0.012***
	(1.93)	(0.21)	(0.25)	(1.52)	(3.06)	(5.06)	(1.49)	(1.46)	(3.69)
Cash/Assets	4.552*		0.092	1.810***		−0.052	3.477*		0.133***
	(1.80)		(1.06)	(3.26)		(0.82)	(1.91)		(2.78)
Leverage	−4.612***		0.035	−1.352***		0.041*	−2.393***		−0.111***
	(5.19)		(0.68)	(6.31)		(1.66)	(3.84)		(2.58)
PPE/Assets	4.384***			0.307			1.024		
	(3.01)			(1.64)			(1.63)		
Sales/Assets			0.003			0.001			0.019
			(0.40)			(0.86)			(1.59)
CAPEX		−0.154			−0.176***			−0.106*	
		(1.13)			(4.16)			(1.88)	
Dividend dummy		0.078***			0.008			0.016	
		(4.17)			(1.26)			(1.51)	
LTD		0.101			−0.119***			−0.064	
		(1.39)			(4.39)			(1.52)	
STD		−0.036**			−0.162***			−0.071	
		(2.30)			(5.79)			(1.30)	
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Observations	180	180	156	2,184	2,184	2,184	476	476	476
R-Squared	0.474	0.339	0.550	0.264	0.193	0.063	0.262	0.156	0.175

This table reports pooled ordinary least squares estimates for firms from Brazil (2004, 2006, and 2009), Korea Republic (1998–2004) and India (2005, 2007, and 2011). The dependent variable is dividends (dividends-to-sales (%)), cash holdings (cash-to-assets), and net cash flows from investment to total assets, as indicated. The standard errors are clustered by firm. Life cycle is proxied using multiclass linear discriminant analysis (MLDA). All regressions include a constant, time and industry dummies which are not reported. ***, **, and * denotes statistical significance at the 1, 5, and 10% levels, respectively.

hypothesis. The listing level is a better predictor of the strength of disclosure, shareholder rights, and board structure. Firms determine the degree of regulation that matches the specific requirements at any point during their life cycle.

Our findings are relevant for market regulators as they can assess the outcomes of exchange listings requirements and create related policy and market guidelines that further enhance the corporate governance of listed firms. This issue is critical in emerging markets as domestic quality firms with high growth opportunities typically migrate to more developed exchanges (either cross-listing or single-listing) given the limited access to external capital in local exchanges, mainly due to weaker legal frameworks and corporate governance requirements relative to exchanges from developed markets. Portfolio managers can evaluate corporate governance objectives relative to external financing needs and the implications on portfolio diversification and firm performance. In addition, investors can consider the exchange listing requirements as an important proxy for the quality of board structure, shareholder protection, disclosure requirements, and ownership structure.

Our paper has relevant academic implications. Results suggest that the firm life cycle does not belong to the list of corporate governance predictors suggested in extant literature (namely, size, risk, cash holdings growth opportunities and external financing needs). When different listing levels are available, managers self-select into stricter regulation rather than voluntarily improve corporate governance within a less-strict listing level. Even though we have completed a robust and detailed study with the best available data, this research question can further be examined in different stock exchanges and during a different and longer time frame. In addition, different corporate governance proxies can enhance what we know about the state of emerging market economies.

We also suggest other venues for related academic research. We have observed that the signal of an intention to improve corporate governance is well-perceived by the market. For example, Brazilian firms migrating to stricter listing levels have positive abnormal returns and higher liquidity (De Carvalho and Pennacchi, 2012) and higher firm value (Braga-Alves and Shastri, 2011), particularly due to better corporate governance (Black et al., 2014). However, these studies have examined the immediate impact of firm migration; it is still unknown what are the long-term valuation effects of liquidity and corporate governance improvements

following firm migration, and what is the monitoring effect of cross-listings and delistings (see Doidge et al., 2010). In addition, Hasan et al. (2015) examine the cost of equity capital along the firm life cycle, yet, there is scant evidence on the effect of *de jure* corporate governance on the relationship between the cost of equity capital and the corporate life cycle. We leave those questions for future research.

Due to potential limitation of the model specification, we do not necessarily reject the notion that the life cycle is irrelevant in emerging markets, however, we conclude that listing requirements and enforcement appears to be better predictors of corporate governance. In other words, firms self-select to comply with and even exceed regulation requirements, hence, it results in stronger corporate governance than the universal concept of the evolution of the firm. We observe that the decision to list at a given level depends on the financing, monitoring, and strategy needs. In this line, Hugill and Siegel (2012) find that once controlling for country-level regulation and enforcement, the amount of investment opportunities, the need for external financing, and concentration of cash flow ownership rights are the strongest firm-level predictors of corporate governance. These results are consistent with the need for monitoring and financing requirements, but are not necessarily related to the life cycle.

Appendix A

Table A1

Table A1
Brazil Corporate Governance Index.

		Level 2 or NM	Novo Mercado
	Board Structure index:		
1	≥ 1 outside director	*	
2	≥ 30% outside directors		
3	≥ 50% outside directors		
4	CEO is NOT board chairman		
5	Audit committee exists		
6	Permanent or near-permanent fiscal board exists		
7	Permanent fiscal board or audit committee with minority shareholder representative exists		
	Board Procedure subindex:		
8	> 4 board meetings in last year		
9	Firm has system to evaluate CEO		
10	Firm has system to evaluate other executives		
11	Board receives materials in advance of meetings		
12	Firm has code of ethics		
13	Bylaw/policy to govern board		
	Disclosure index:		
14	RPTs are disclosed to shareholders		
15	Firm has regular meetings with analysts		
16	Annual financials on firm website		
17	Quarterly financials are consolidated	*	
18	Firm puts quarterly financials on firm website		
19	English language financial statements exist	*	
20	Financials included statement of cash flows	*	
21	Financial statements in IRFS or US GAAP	*	
22	MD&A discussion in financial statements		
23	Firm discloses annual agenda of corporate events	*	
24	Auditor does not provide non-audit services		
	Shareholder rights index:		
25	Annual election of all directors		
26	Board included at least one member elected by minority shareholders		
27	Freeze out offer to minority shareholders based on shares' economic value	*	
28	Takeover rights on sale of control > legal minimum	*	
29	Disputes with shareholders subject to arbitration	*	
30	Firm has no authorized capital or provides pre-emptive rights		
31	Free float is at least 25% of total shares	*	
	Related Party Transactions (RPT) index: Items 32-34 treated as a single item in calculation of RPT		
32	No loans to insiders		
	No significant sales to/purchases from insiders		
	No real property rental from or to an insider		
33	RPTs require board approval		
34	RPTs approved by non-interested directors		
35	RPTs approved by non-interested shareholders		
36	RPT's banned by company charter		
	Ownership index:		
37	Fraction of common shares owned by largest shareholder		

(*continued on next page*)

Table A1 (*continued*)

		Level 2 or NM	Novo Mercado
38	1.5 * {[(common shares)/(common shares + preferred shares)] – 1/3}		**
39	Ownership parity = (1-wedge). Wedge = (Fraction of voting shares owned by largest owner)-(Fraction of econ. ownership by largest owner). Econ. ownership by largest shareholder = (Common + preferred shares owned)/(Total common + preferred shares)		**
40	Ln (No. of shareholders in control group. If firm has a shareholder agreement, number of members of the agreement. If not, no. of 5% of shareholders who together hold 50% of common shares. If no control group, or no agreement and all 5% of shareholders hold <50% common shares, assume = 10		
41	Firm has one or more outside 5% shareholders (the disclosure threshold)		

Appendix B

Table B1

Table B1
Main aspects of Sao Paulo Stock Exchange (Bovespa) listing levels.

	Regular	Level 1	Level 2	Novo Mercado
Only common shares allowed	No	No	No	REQUIRED
Free-float of at least 25% of outstanding shares	No	REQUIRED	REQUIRED	REQUIRED
Public offerings have to use mechanisms to favour capital dispersion	No	REQUIRED	REQUIRED	REQUIRED
Disclosure requirements:				
Agreements between company and related parties	No	REQUIRED	REQUIRED	REQUIRED
Transactions in company by employees, directors, fiscal board members	No	REQUIRED	REQUIRED	REQUIRED
Shares held by controllers, directors, and members of the fiscal board	No	REQUIRED	REQUIRED	REQUIRED
Securities issued by the company	No	REQUIRED	REQUIRED	REQUIRED
Statement of cash flows	No	REQUIRED	REQUIRED	REQUIRED
Consolidated quarterly financial statements (if firm provides consolidated annual statements)	No	REQUIRED	REQUIRED	REQUIRED
Financial statements which comply with US GAAP or IFRS, note reconciling these to Brazilian statements	No	No	REQUIRED	REQUIRED
English language financial statements	No	No	REQUIRED	REQUIRED
Meetings with analysts (at least annually)	No	REQUIRED	REQUIRED	REQUIRED
Annual calendar of corporate events	No	REQUIRED	REQUIRED	REQUIRED
Board of Directors:				
Minimum number or percentage of independent directors required	No	No	20%	20%
Non-staggered board terms, maximum two years	No	No	REQUIRED	REQUIRED
Corporate rules:				
Preferred shares vote together with common shareholders on selected issues (including mergers spin-offs, contracts between the company and related firms)	No	No	REQUIRED	Not relevant
Freeze out offer based on economic value of firm, determined by independent valuation	No	No	REQUIRED	REQUIRED
Minority common shareholders have tag-along rights on sale of control, at 100% of price paid for controlling shares	No	No	REQUIRED	REQUIRED
Preferred shareholders have tag-along rights on sale of control, at least 80% of the price paid for controlling shares	No	No	REQUIRED	Not relevant
Disputes with shareholders submitted to arbitration	No	No	REQUIRED	REQUIRED

This table reports the main governance provisions associated with the different listing level of the Sao Paolo (Bovespa) Stock Exchange. There are four levels, namely Regular, Level 1, Level 2, and Novo Mercado.

Appendix C

Table C1

Table C1
India and Korea Corporate Governance Index.

	India	Korea
Board Structure Subindex:		
≥ 1 outside director	Required	Required
≥ 30% outside directors	Required	Common
≥ 50% outside directors	Included	Included
> 50% outside directors	Included	Included
CEO is NOT board chairman	Included	Avail (NP)
Board has outside chair or lead director	F (NP)	Included
≥ 50% outside directors or ≥ 1/3 outside directors & CEO is not chairman	Included	Avail (NP)
Audit committee	Required	Included
Audit committee has majority of outside directors	Included	Included
Compensation committee	Included	Included
Outside director nominating committee	NA	Included
Board Procedure Subindex:		
≥ 4 board meetings in a year	Available (NP)	Included
Firm has system to evaluate CEO	Included	NA
Firm has system to evaluate other executives	Included	NA
Firm evaluates nonexecutive directors	Included	Included (NP)
Firm has succession plan for CEO	Included	NA
Firm has nonexecutive director retire age	Included	Rare (F)
Directors receive regular board training	Included	NA
Nonexecutives-only annual board meeting	Included	Rare (F)
Outside directors-only annual board meeting	Rare (NP)	Included
Board receives materials in advance	Included	NA
Nonexecutives can hire counsel, advisors	Included	NA
Firm has code of ethics	Included	F (NP)
Bylaw/policy to govern board	NA	Included (NP)
Directors' votes recorded in board minutes	Available (NP)	Included (NP)
Firm has foreign outside director	Available (NP)	Included
Shareholders approve outside directors' pay	Rare (NP)	Included (NP)
Outsider directors attend minimum % of meetings	Available (NP)	Included (70%)
Firm has internal audit/control function	Available (NP)	Required
Audit committee membership disclosed	Available (NP)	Required
Bylaw to govern audit committee	Included	Included (NP)
Audit committee recommends external auditor	Included	NA
Outside directors on audit committee meet separately	Included	NA
Audit committee includes accounting or finance expert	Required	Included (NP)
Audit committee approves internal audit head	Available (NP)	Included (NP)
≥ 4 audit committee meetings in a year	NA	Included
Disclosure Subindex:		
RPTs are disclosed to shareholders	Included	Required
Firm has regular meetings with analysts	Included	Included (NP)
Firm discloses 5% holders	Included	Required
Control group shareholder agreement disclosed	Included	NA
Annual financials on firm website	Included	Available (NM)
Quarterly financials on firm website	Included	NA
Firm puts annual report on firm website	Included	NA
Directors' report on firm website	Included	NM
Corporate governance report on firm website	Included	NM
Firm discloses annual agenda of corporate events	NA	Required
English language financial statements exist	NM	Included (NP)
Financials included statement of cash flows	Required	Required
MD&A discussion in financial statements	Required	Required
Firm discloses director shareholdings	F (NA)	Required
Annual meeting results disclosed	NA	Required
Board members' roles/employment disclosed	NA	Required
Board members' background disclosed	NA	Included
Board members' date of joining board disclosed	NA	Required
Information re internal audit/control disclosed	NA	Required
Number of board meetings disclosed	F (NP)	Required
Board resolutions disclosed	NA	Required

(*continued on next page*)

Table C1 (*continued*)

	India	Korea
Executive director compensation disclosed	NA	Required
Auditor does not provide non-audit services	Included	F
Non-audit fees < 25% of total auditor fees	Included	F
Full board reviews auditor's recommendations	Included	NA
Audit partner is rotated every 5 years	Included	F
Shareholder Rights Subindex:		
Outside directors serve one year terms	Included	F
Firm allows voting by postal ballot	Included	Included
Company has policy against insider trading	Included	NA
Cumulative voting for election of directors	Not allowed	Included
Director candidates disclosed to shareholders in advance of shareholder meeting	NA	Included
Freezeout offer based on shares' economic value	Required	Required
Disputes with shareholders subject to arbitration	Included	NA
Firm provides pre-emptive rights	Required	Required
Related Party Transactions (RPT) Subindex:		
RPTs are on arms-length terms	Included	NM
RPTs require board approval	Available (NP)	Included (In SR Index)
RPTs approved by noninterested directors	Available (NP)	Required if > Threshold
RPTs with executives approved by board, audit committee or shareholders	Included	Required
RPTs with executives approved by audit committee or non-interested directors	Included	NA
RPTs with executives approved by shareholders	Included	F, Rare
RPTs with controlling shareholder approved by board, audit committee or shareholders	Included	Required if > Threshold
RPTs with controlling shareholder approved by audit committee or non-interested directors	Included	NA

Korea				
	Mean	Standard deviation	Minimum	Maximum
Corporate governance	34.43	10.27	8.05	80.24
Board structure	4.52	8.92	0	42.86
Board procedure	39.57	16.17	0	100
Shareholder rights	26.48	21.03	0	100
Disclosure	14.41	23.54	0	100
Ownership structure	87.16	15.81	10.24	100

India				
	Mean	Standard deviation	Minimum	Maximum
Corporate governance	60.37	10.12	31.93	86.92
Board structure	75.53	17.91	0	100
Board procedure	55.28	16.20	15.38	92.31
Shareholder rights	41.07	16.48	0	100
Disclosure	63.74	19.92	23.08	100
RPT	66.25	27.72	100	100

References

Anthony, J., Ramesh, K., 1992. Association between accounting performance measures and stock prices: a test of the life-cycle hypothesis. J. Account. Econ. 15, 203–227.

Banyi, M., Kahle, K., 2014. Declining propensity to play? A re-examination of the life-cycle theory. J. Corp. Financ. 27, 345–366.

Bertone, F., Colombo, M., Croce, A., et al., 2013. Corporate governance in high-tech firms. In: Wright (Ed.), The Oxford Handbook of Corporate Governance, Oxford.

Black, B., Jang, H., Kim, W., 2006. Predicting firms' corporate governance choices. Evidence from Korea. J. Corp. Finance 12, 660–691.

Black, B., de Carvalho, A., Gorga, E., 2010. Corporate governance in Brazil. Emerg. Mark. Rev. 11, 21–38.

Black, B., de Carvalho, A., Gorga, E., 2012. What matters and for which firms for corporate governance in emerging markets? Evidence from Brazil (and other BRIK countries). J. Corp. Financ. 18, 934–952.

Black, B., de Carvalho, A., Sampaio, J., 2014. The evolution of corporate governance in Brazil. Emerg. Mark. Rev. 20, 176–195.

Boubaker, S., Nguyen, B.D., Nguyen, D. (Eds.), 2012. Corporate Governance: Recent Developments and New Trends. Springer, Berlin Heidelberg.

Boubakri, N., Cosset, J.-C., Samet, A., 2010. The choice of ADRs. J. Bank. Financ. 34, 2077–2095.

Braga-Alves, M.V., Shastri, K., 2011. Corporate governance, valuation, and performance: evidence from a voluntary market reform in Brazil. Financ. Manage. 40 (1), 139–157.

Claessens, S., Yurtoglu, B., 2013. Corporate governance in emerging markets: a survey. Emerg. Mark. Rev. 15, 1–33.

Coffee, J., 1999. The future as history: the prospects for global convergence in corporate governance and its implications. Northwest. Univ. Law Rev. 93, 641–708.

Coffee, J., 2002. Racing towards the top? The impact of cross-listings and stock market competition on international corporate governance. Columbia Law Rev. 102,

1757–1831.

DeAngelo, H., DeAngelo, L., Stulz, R., 2006. Dividend policy and the earned/contributed capital mix: a test of the life-cycle theory. J. Financ. Econ. 81, 227–254.

De Carvalho, A.G., Pennacchi, G., 2012. Can a stock exchange improve corporate behavior? Evidence from firms' migration to premium listings in Brazil. J. Corp. Financ. 18, 883–903.

Dewenter, K., Kim, C.-S., Lim, U., Novaes, W., 2005. Committing to Protect Investors in Emerging Markets: Can Local Exchanges Provide Value-Relevant Bonding Mechanisms? Working Paper. University of Washington.

Dickinson, V., 2011. Cash flow patterns as a proxy for firm life-cycle. Account. Rev. 86, 1969–1994.

Doidge, C., 2004. U.S. cross-listings and private benefits of control: evidence from dual-class firms. J. Financ. Econ. 72, 519–553.

Doidge, C., Karolyi, G.A., Stulz, R.M., 2004. Why are foreign firms listed in the U.S. worth more? J. Financ. Econ. 71, 205–238.

Doidge, C., Karolyi, G.A., Stulz, R.M., 2007. Why do countries matter so much for corporate governance? J. Financ. Econ. 86, 1–39.

Doidge, C., Karolyi, G.A., Lins, K.V., Miller, D.P., Stulz, R.M., 2009. Private benefits of control, ownership, and the cross-listing decision. J. Finance 64, 425–466.

Doidge, C., Karolyi, G.A., Stulz, R.M., 2010. Why do foreign firms leave US equity markets? J. Finance 65 (4), 1507–1553.

Durnev, A., Kim, E., 2005. To steal or not to steal: firm attributes, legal environment, and valuation. J. Finance 1461–1493.

Esqueda, O.A., Jackson, D.O., 2015. Cross-listing performance and insider ownership: the experience of US investors. J. Multinatl. Financ. Manage. 32, 77–94.

Esqueda, O.A., 2017. Controlling shareholders and market timing: evidence from cross-listing events. Int. Rev. Financ. Anal. 49, 12–23.

Faff, R., Kwok, W., Podolski, E., Wong, G., 2016. Do corporate policies follow a life-cycle? J. Bank. Financ. 69, 95–107.

Filatotchev, I., Toms, S., Wright, M., 2006. The firm's strategic dynamics and corporate governance life-cycle. Int. J. Manage. Financ. 2, 256–279.

Flavin, T., O'Connor, T., 2017. Reputation building and the life-cycle model of dividends. Pac. Basin Finance J. 46, 177–190.

Foley, F., Goldsmith-Pinkham, P., Greenstein, J., Zwick, E., 2018. Opting out of good governance. J. Empir. Finance 46, 93–110.

Franks, J., Mayer, C., Volpin, P., Wagner, H., 2012. The life cycle of family ownership: international evidence. Rev. Financ. Stud. 25, 1675–1712.

Ghadhab, I., M'rad, M., 2018. Does US cross-listing come with incremental benefit for already UK cross-listed firms. Q. Rev. Econ. Financ. 69, 188–204.

Habib, A., Bhuiyan, M., Hasan, M., 2018. Firm life cycle and advisory directors. Aust. J. Manage. 43 (4), 575–592.

Hasan, M.M., Hossain, M., Habib, A., 2015. Corporate life cycle and cost of equity capital. J. Contemp. Account. Econ. 11 (1), 46–60.

Helwege, J., Pirinsky, C., Stulz, R.M., 2007. Why do firms become widely held? An analysis of the dynamics of corporate ownership. J. Finance 62, 995–1028.

Hope, O.-K., Kang, T., Zang, Y., 2007. Bonding to the improved disclosure environment in the US: firms' listing choices and their capital market consequences. J. Contemp. Account. Econ. 3, 1–33.

Hope, O.-K., Kang, T., Kim, J., 2013. Voluntary disclosure practices by foreign firms cross-listed in the United States. J. Contemp. Account. Econ. 9, 50–66.

Hugill, A., Siegel, J., 2012. Which Does More to Determine the Quality of Corporate Governance in Emerging Economies, Firms or Countries? Working paper. Harvard Business School.

Jensen, M.C., 1986. Agency costs of free cash flow, corporate finance, and takeovers. Am. Econ. Rev. 76, 323–329.

Klapper, L., Love, I., 2004. Corporate governance, investor protection and performance in emerging markets. J. Corp. Financ. 10, 703–728.

Loderer, C., Stulz, R., Waelchli, U., 2012. Firm Age and Governance. Working paper. University of Bern.

Marques, T.A., de Sousa Ribeiro, K.C., Barboza, F., 2018. Corporate governance and debt securities issued in Brazil and India: a multi-case study. Res. Int. Bus. Financ. 45, 257–270.

Miller, D., Friesen, P., 1984. A longitudinal study of the corporate life-cycle. Manage. Sci. 30, 1161–1183.

O'Connor, T., Byrne, J., 2015a. When does corporate governance matter? Evidence from across the corporate life-cycle. Manage. Financ. 41, 673–691.

O'Connor, T., Byrne, J., 2015b. Governance and the corporate life-cycle. Int. J. Manage. Financ. 11, 23–43.

Petersen, M., 2009. Estimating standard errors in finance panel data sets: comparing approaches. Rev. Financ. Stud. 22, 435–480.

Pillai, R., Al-Malkawi, H.A.N., 2018. On the relationship between corporate governance and firm performance: evidence from GCC countries. Res. Int. Bus. Financ. 44, 394–410.

Phelps, R., Adams, R., Bessant, J., 2007. Life cycles of growing organizations: a review with implications for knowledge and learning. Int. J. Manage. Rev. 9, 1–30.

Silveira, A., Leal, R., Carvalhal-da-Silva, A., Barros, L., 2010. Endogeneity of Brazilian corporate governance determinants. Corp. Gov. Int. J. Bus. Soc. 10, 191–202.

Shleifer, A., Vishny, R., 1997. A survey of corporate governance. J. Finance 52, 737–783.

Wright, M., Siegel, D.S., Keasey, K., Filatotchev, I., 2013. The life cycle of corporate governance. The Oxford Handbook of Corporate Governance Vol. 28. Oxford University Press, pp. 349 Chapter 16.