

Ownership Structures and Stock Price Synchronicity in Brazil and Russia

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Abstract

This thesis investigates how various aspects of ultimate ownership affect the information environment, as measured by stock price synchronicity, of publicly traded companies in Brazil and Russia. Considering the fundamentally distinct ultimate ownership and institutional environments of the two emerging capital markets, hypotheses are developed and tested to link the association of ultimate ownership and firms' information environments in two essays, one relating to Brazil and the other to Russia.

Essay One (Chapter 3), following the introductory and conceptual framework chapters, focuses on the separate effects of the ultimate owners' ownership concentration, control-ownership divergence, and participation in shareholder agreements, as well as the combined effect of firms' listing quality and ownership concentration on the corporate information environment in Brazil. Using a sample of 121 companies listed on the Brazilian stock exchange in 2014, the essay notes that synchronicity is a concave function of the cash-flow rights of the ultimate owner with its inflection (maximum) point at about 50% cash-flow rights. This supports the argument that low levels of ownership concentration (<50%) attract entrenchment behaviour, leading controlling shareholders to withhold firm-specific information from the market, while higher levels of ownership concentration (> 50%) align the interests of the ultimate owners with the non-controlling shareholders, which dilutes the ultimate owners' incentive to adopt poor disclosure and reporting practices. Additionally, the essay confirms the notion that controlling owners' incentives to entrench are even stronger when they have both below-majority ownership stakes and a separation between ownership and control rights: "extreme managerial entrenchment" results in "extreme information asymmetry" between controlling and minority investors.

Another important finding – the more (less) pronounced concave relation between ownership concentration and synchronicity for the firms listed on lower-quality listing segments (higher-quality listing segments) of the exchange – highlights the information role of institutional-level investor protection arrangements in addition to firm-level investor protection mechanisms (i.e., ownership) in Brazil. More precisely, a less (more) pronounced increasing relationship between cash-flow rights and synchronicity in the higher segments of the exchange is attributed to the dampening (exacerbation) of the entrenchment activities of the controlling owner due to high-quality investor protection provisions embedded in the listing rules. Finally, the essay finds that shareholder

agreements (SAs) signed between a controlling shareholder and several non-controlling shareholders have favourable impacts on firms' disclosure and information dissemination practices (lower synchronicity) relative to the shareholder agreements signed among several non-controlling shareholders.

Essay two (Chapter 4) explores how controlling shareholders affect the information content of stock prices (synchronicity) by focusing on the four salient aspects of ownership settings peculiar to Russian corporations. These aspects are cash-flow rights, control-ownership divergence and opacity in the control structures resulting from the use of nominees and foreign off-shore companies, and the simultaneous participation of the state and oligarchs in the ownership structure. Using a sample of 117 companies listed on Moscow exchange, the essay notes that synchronicity is linearly positively (negatively) associated with cash-flow rights (control-ownership divergence). These results are consistent with the beliefs that ultimate owners with a large fraction of cash-flow rights (control-ownership divergence) avoid (pursue) expropriatory behaviour, which encourages (discourages) them to produce and share more and better-quality firm-specific information with outsiders. Further, the essay finds that the pervasive use of nominees and foreign (offshore) companies in control structures by non-transparent oligarchs results in opaque ownership structures that prevent outside investors from finding the true ultimate owners and obstructs them from policing and assessing the self-serving opportunistic behaviour of insiders: ownership opacity leads to information opacity. Finally, the essay reports a positive association between synchronicity and absolute discretionary accruals (a proxy for the quality of firm's fundamental information), which implies that high (low) synchronicity denotes low-quality (high-quality) firm fundamental information. This provides assurance to investors that synchronicity works well as a measure of firm-specific information in an emerging capital market like Russia.

The dissimilarities in empirical findings call for different policy recommendations in the two countries. In Brazil, policy changes ought to be focused *only* on improving one-share one-vote practices whereas in Russia both ownership disclosure and one-share one-vote practices need attention. Mandating the disclosure of ownership details for foreign offshore companies regardless of their equity interest may count as a major change in ownership disclosure practices in Russia, but would significantly improve ownership and corporate transparency. Similarly, to overcome the adverse information implications of control-ownership divergence, both the jurisdictions need policy measures for achieving the one share-one vote principle.

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List of Acronyms

AbsDiscAccruals	Absolute Discretionary Accruals from the Modified Jones Model
BM&FBovespa	Sao Paulo Exchange
BNDES	Brazilian National Bank for Economic and Social Development
CVM	Comissao de Valores Mobiliarios (Brazilian Securities Commission)
Divergence-Diff	Control-Ownership Divergence (Difference of UCO and UCFR)
Divergence-Ratio	Control-Ownership Divergence (Ratio of UCO and UCFR)
FASB	Financial Accounting Standards Board
FFMS	Federal Financial Markets Service (Russian Securities Commission)
GFC	Global Financial Crisis
IFRS	International Financial Reporting Standards
LCG	Lower Corporate Governance Quality
L1	Level 1 Segment of Sao Paulo Exchange
L2	Level 2 Segment of Sao Paulo Exchange
NM	Novo Mercado Segment of Sao Paulo Exchange
HCGQ	Higher Corporate Governance Quality
R ²	Coefficient of Determination Estimated from the Market Model
SA	Shareholder Agreement
SYNCH	Stock Price Synchronicity
TDSA	Total Divergence due to Shareholder Agreement
Trad	Traditional Segment of Sao Paulo Exchange
UCFR	Ultimate Cash-flow Rights Held by the Controlling Shareholder
UCO	Ultimate Control Rights (%age of board seats held by the ultimate owner)
UVR	Voting Rights of the Ultimate Owner

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Author's Declaration

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly referenced), no material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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CHAPTER 1: INTRODUCTION

1.1 Purpose

The purpose of this thesis is to empirically examine the link between ownership structures and the information environments of firms in Brazil and Russia, and expand current knowledge on the topic by focusing on the distinct ownership- and institutional-level characteristics unique to these two large emerging economies. Specifically, the study explores the effects of the varying aspects of ultimate ownership on stock price synchronicity in the two countries recognizing the subtle dissimilarities in their ownership structures.

Numerous synchronicity studies show that the information environments of emerging economies lag behind those of developed countries as they have more synchronous stock prices, indicating less production of firm-specific information and less use of firm-specific information with regard to stock prices in these countries (Fernandes & Ferreira, 2008; Khandaker & Heaney, 2008; Morck, Yeung, & Yu, 2000). The situation is even worse in Brazil and Russia (Fernandes & Ferreira, 2008; Khandaker & Heaney, 2008).

Several country-level and firm-level governance attributes have been identified as primary drivers of the poor information quality in emerging countries, including poor institutional environment; inadequate investor protection; underdeveloped capital markets; high private benefits of control (Morck et al., 2000); poor audit quality (Gul, Kim, & Qiu, 2010; Sami & Zhou, 2008) accounting standards (Daske, Hail, Leuz, & Verdi, 2008); board quality (Gul, Cheng, & Leung, 2011; Services, 2015); analyst coverage (Piotroski & Roulstone, 2004); and concentrated ownership structures (Boubaker, Mansali, & Rjiba, 2014; Gul et al., 2010). Of these, concentrated ownership structures, dominated by single large inside controlling shareholders, have been emphasized as the key determinant of poor accounting and financial information quality in emerging countries, as they shape the way financial information is prepared and reported to outsiders (Ball, Robin, & Wu, 2003; Fan & Wong, 2002). Various aspects of ownership have been documented to have an effect on firms' accounting and information environments in emerging countries including but not limited to control-ownership divergence of the ultimate owner (Bona-Sanchez, Perez-Aleman, & Santana-Martin, 2011; Francis, Schipper, & Vincent, 2005; Kim & Yi, 2006), ownership concentration of

the largest shareholder (Bae, Cheon, & Kang, 2008; Farooq & Ahmed, 2014; Services, 2015); and the identity of the ultimate owners (Hou, Kuo, & Lee, 2012). There is a general consensus in the literature that control-ownership divergence (ownership concentration) induces entrenchment (alignment of interest) for controllers and managers, which results in a poor information environment (better information environment) (Boubaker et al., 2014; Farooq & Ahmed, 2014; Feng, Hu, & Johansson, 2016).

The findings of two significant synchronicity studies in French and Chinese settings (Boubaker et al., 2014; Gul et al., 2010) show that despite several country-level governance similarities including weak investor protection, high private benefits of control, civil-law origin and two-tier board structures, information environments can vary as a result of variations in the ownership structures. For instance, ownership concentration exhibits a concave relationship with synchronicity in China as opposed to a linear negative relation in France, the firm's listing quality also affects information environment in China. Much like France and China, Brazil and Russia have similar country-level governance settings: they both have weak investor protection, underdeveloped capital markets, high private benefits of control, code or civil-law origin and two-tier board structures, but their ownership structures show considerable variations, as elaborated below, which are expected to have varying implications on the firm's information environment: First, ownership structures in both the countries are dominated by single large controlling shareholders—*Oligarchs* and the *State* in Russia vs *Family* and the *State* in Brazil—who leverage their control beyond their cash-flow investments by using various control-enhancing tools. This gives rise to an important firm-specific governance characteristic; control-ownership divergence. The Control-ownership divergence in Brazil manifests in its *extreme* form because ultimate owners (especially family) are able to secure majority control with minority cash flow rights by making use of non-voting shares, pyramids, disproportionate representation on boards and shareholder agreements. Such arrangements ascribe Brazilian ownership structures to *controlling-minority structures* (CMS) found in a limited number of countries in Europe and East Asia, including Sweden (Cronqvist & Nilsson, 2003) and Korea (Song, 2002). In Russia, the control-ownership divergence is less severe: while owners do enhance control by using non-voting shares, pyramids, disproportionate board representation, they retain majority cash-flow stakes. These majority-owned Russian companies are comparable to *concentrated structures* (CS) in the prior literature (Bebchuk, Kraakman, & Triantis, 2000). Second, the ownership structure of Russian listed companies is plagued by opacity

because of the widespread use of nominees and foreign offshore companies by oligarchs to hide their identities. Third, the use of shareholder agreements by colluding shareholders for pooling voting rights highlights another unique firm-specific governance aspect of Brazilian listed companies. Beyond ownership, the high-quality corporate governance institutions in Brazil, especially the tiered listing segments of the Bovespa Exchange, set it apart from Russia as they are known to be quite effective in subverting the controlling power of ultimate owners, improving shareholder's rights, diluting expropriations, and enhancing corporate behaviour (De Carvalho & Pennacchi, 2012; Estrin & Prevezer, 2011)

Building on these differences this study—comprising two separate essays, one relating to *Brazil* and the other to *Russia*—examines how two common firm-specific governance characteristics (ownership concentration and control-ownership divergence) and one unique one (shareholder agreement in Brazil vs ownership transparency in Russia) affect firms' information environment in Brazil and Russia, measured by stock price synchronicity. Additionally, Essay 1, on Brazil, examines the moderating effect of an institutional-level governance mechanism, the firm's listing quality, on the association between ownership concentration and stock price synchronicity.

1.2 Motivation of the Thesis

This study of the relationship between ownership structure and firm's information environment is motivated by the following factors.

First, stock prices represent resource allocation in the capital market. Informative stock prices are known to improve the efficiency of capital allocation by channelling investors' funds to the most valuable companies and thereby contributing to the country's economic growth (Durnev, Morck, & Yeung, 2004; Wurgler, 2000). Comprehending how ownership structures affect stock price synchronicity is imperative from a resource allocation perspective as it can enlighten us about the information-dissemination role of ownership structures in the investment efficiency and economic development of a country.

Second, this study is inspired by a growing body of empirical literature providing evidence that firm-level governance characteristics play a considerable role in explaining cross-sectional variations in stock returns (Cremers & Nair, 2005; Gompers, Ishii, & Metrick, 2010; Li, Nguyen, Pham, & Wei, 2011; Smirnova, 2004). Most importantly, it

resonates with Gompers, Ishi and Metrick's (2010) study that establish a direct relationship between ownership structures and stock returns in U.S. dual-class firms. This relationship is based on the notion that ownership structure influences managerial incentives for entrenchment or incentive-alignment and thus aggravates agency conflicts between large inside controlling shareholders and minority investors, which affects the corporate information environment and stock returns (Bushman, Piotroski, & Smith, 2004).

Third, some studies indicate that weak investor protection and firm opacity preclude the incorporation of firm-specific information into stock prices. For example, Morck et al. (2000) show that weaker legal protection against corporate insiders in developing economies is associated with less firm-specific information incorporation into stock prices, leading to greater stock co-movement and higher stock price synchronicity. Jin and Myers (2006b) contend that opacity of firms, mainly representing lower accounting, disclosure and audit quality, in countries with less developed financial systems and inferior corporate governance is associated with higher stock price synchronicity. Hutton, Marcus, and Tehranian (2009) confirm Jin and Myers' (2006) finding by reporting a positive association between firm's opaqueness (measured by earnings management) and stock co-movement or R^2 . They also indicate that the relationship between firm's opaqueness and R^2 dampened after the passage of Sarbanes-Oxley Act indicating either a decrease in earnings management or less withholding of firm-specific information in a better regulatory environment. However, this study takes the position that firm's accounting, disclosure and audit quality are partly controlled and influenced by the ultimate owners and partly affected by the regulatory provisions stipulated in the firm's listing requirements. Thus, transparent ultimate owners reflecting firm's opaqueness and better firm's listing quality representing both the level of minority investor protection and firm's opacity, should lead to more informative stock prices. By testing the effects of transparent ownership structures (denoted by the less use of foreign-offshore companies and nominees in case of Russia) and firm's listing quality (represented by listings in the NM&L2 or Traditional&L1 segments of the Bovespa Exchange in Brazil) on stock price synchronicity, this study can provide some evidence surrounding this discussion.

Fourth, the increased presence and disclosure of shareholder agreements in the ownership structures of listed companies in a limited number of countries in Europe, Latin America and North America (US) inspired a handful of empirical studies that carried out clause by clause analyses of the agreements (Baglioni, 2011; Belot, 2010; Carvalhal, 2012;

Sternberg, Leal, & Bortolon, 2011). These studies generated discussion whether these agreements, subject to the inclusion of certain type of clauses, are used as “control-enhancing” or “investor protection” instruments by colluding shareholders participating in the agreement. This discussion was taken to the next level when recent studies in Brazil noted that the “investor protection” role of shareholder agreements fitted more closely with *agreements having controlling shareholder* rather than *agreements without a controlling shareholder* (Gorga, 2009; Sternberg et al., 2011). These studies also found that shareholder agreements offering higher degree of investor protection produce positive abnormal returns for investors (Carvalhal, 2012). Building on these findings and encouraged by the public availability of information on shareholder agreements in Brazil, this study isolates the impact of *shareholder agreements with a controlling shareholder* on the corporate information environment from *shareholder agreements without a controlling shareholder*. This investigation may complement and extend the ongoing debate on the role of shareholder agreements as instruments of “control-enhancement” or “investor protection”.

Finally, there is a debate about the information vs noise interpretation of stock price synchronicity in the literature. The information interpretation, supported by Morck et al. (2000), Durnev, Morck, Yeung, and Zarowin (2003), Piotroski and Roulstone (2004), and Hutton et al. (2009), implies that synchronicity is a measure of the extent of firm-specific information reflected in stock prices and firms with low-synchronicity have stock prices that capture relatively more firm-specific information. In contrast, the noise interpretation argues that stock price synchronicity is more a measure of noise than of the degree of firm-specific non-public information incorporated into stock prices. This view is shared by Alves, Peasnell, and Taylor (2010), Li, Rajgopal, and Venkatachalam (2014), and Skaife, Gassen, and LaFond (2006), among others. This study, by linking firm’s fundamentals information (proxied by AbsDiscAccruals) with SPS could lend some evidence surrounding the debate.

1.3 Essay One: Ownership Structures and Stock Price Synchronicity in Brazil

This essay examines the effect of ownership structure on the information environment of publicly traded firms in Brazil. More precisely, it investigates the impact of ultimate ownership structure on stock price synchronicity. The ultimate ownership of Brazilian

companies predominantly rests with the *family*¹ or *state*, who are able to secure majority control with a small fraction of investment in the firm's equity. Typically, these ultimate owners keep majority control, without having to commit 50% of the cash-flow rights, by issuing non-voting shares to outsiders, arranging companies into pyramidal structures, and signing shareholders' agreements with minority block holders who cede their voting power in favour of the largest shareholder (Carvalhal da Silva & Leal, 2003; Leal & Carvalhal da Silva, 2005). Their control is even further enhanced relative to their proportional ownership, as they are able to nominate and elect a majority of their affiliates and relatives on the supervisory and executive boards². Such ownership arrangements, described as controlling-minority structures (CMS)³ by Bebchuk et al. (2000), and as "grupos"⁴ in Brazil produce severe agency conflict between controlling and minority shareholders, which results in extreme agency costs in the form of presenting both the worst moral hazard (incentive to extract private benefits) and the worst adverse selection problems (incentive to misrepresent information to outsiders). These agency costs, especially relating to moral hazard, involving controlling shareholders' desires and propensity to expropriate minority investors, cannot be even remedied given the weak legal systems, inadequate and ineffective governance mechanisms such as lack of independent boards of directors, and the lack of market for corporate control prevailing in Brazil.

Using a unique sample of 121 companies listed on BM&FBovespa in 2014 this study investigates the relationship between ultimate ownership and stock price synchronicity; how the relationship differs in the lower and higher governance segments of the market; and analyse the implications of shareholders' agreements on the firm's information environments (SYNCH). The investigation points out three primary findings.

First, stock price synchronicity is a non-linear concave function of cash-flow rights (UCFR) of an ultimate owner, implying that synchronicity is expected to increase with an increase in equity stake of the ultimate owner to the point of effective control (UCFR=50%) and after that point the higher cash-flow rights is expected to decrease

¹ For example, forty-one per cent of the firms in my sample are ultimately controlled by *family* and about eleven per cent each controlled by the *state* and *widely held corporations* respectively.

² The supervisory boards of many Brazilian firms are populated either entirely or almost entirely by insiders or by the representatives of the controlling family or group (Black, De Carvalho, & Gorga, 2010)

³The Brazilian ownership environment, being dominated by *family-controlled* groups, fits the underlying conditions of CMS structures specified by Bebchuk et al. (2000). For example, CMS is supposed to exist in countries dominated by family-controlled conglomerates arranged in pyramidal structures.

⁴ Most commonly these "grupos" are structured in pyramidal structures with families occupying board positions in the apex layer of the pyramids.

synchronicity. This attests the conjecture that any increase in ownership stake (UCFR) of the controlling shareholder, when they hold a minority cash-flow stake (<50%), invokes entrenchment behaviour resulting in expropriation of minority investors; this restrains them from producing and sharing firm-specific information, thus higher SYNCH. Whereas, any accumulation of equity stake beyond the point of effective control (UCFR=50%) renders expropriation costly for the controlling shareholders and aligns their interest with the minority investors, encouraging them to disseminate firm-specific accounting and financial information, hence resulting in the decline of SYNCH. Further, the study shows that synchronicity is positively associated with both control-ownership divergence (*Divergence-Ratio*) and cash-flow rights (UCFR), when the ultimate owners have a below-majority stake (UCFR<50%) in the company. This signifies that divergence between control and ownership rights begins to matter and is perceived as a sign of entrenchment by the investors, only when the ultimate owners have below-majority ownership interest in the company.

Second, the essay shows that the non-linear concave relationship between SYNCH and cash-flow rights of the ultimate owner (UCFR) is more pronounced in companies listed in the lower governance segment (LCGQ) as compared to their relation in the higher governance segment (HCGQ) of Bovespa Exchange. This suggests that the rate of response of SYNCH to the increase in equity stakes of the ultimate owner is much swifter in LCGQ companies than in HCGQ companies. Intuitively, it indicates that the firm's information environment *deteriorates* (improves) at a greater rate in response to increase in cash-flow rights *below the point of effective control* (beyond the point of effective control) in the LCGQ companies, while in HCGQ companies it *deteriorates* (improves) at a lower rate in response to increase in cash-flow rights below the point of effective control (beyond the point of effective control). These results support the view that any increase in cash-flow rights of ultimate owners in LCGQ firms, when they hold minority ownership interests, entice entrenched owners to expropriate private benefits. Their desire and ability to expropriate is further enhanced by the opaque boards, weak investor protection and weak enforcement of shareholders' rights attributed to these inferiorly governed firms, which intensifies the positive relationship between SYNCH and cash-flow rights. In contrast, the less pronounced positive relationship in HCGQ companies occurs because of the less severe extraction of private benefits resulting from the greater oversight provided by the transparent boards, strong investor protection and strong enforcement of shareholders' rights, therein.

However, beyond the point of effective control, the faster (slower) decline in SYNCH in response to increases in cash flow rights in LCGQ (HCGQ) companies, exhibiting the faster (slower) improvement in firm's information environment in LCGQ (HCGQ) companies, occurs for two reasons: First, any accumulation of equity stake, once the ultimate owners attain effective control, makes expropriations costlier and invokes alignment of interest which incentivises them to share greater amount of firm-specific information with outsiders, hence results in the fall of SYNCH. Second, the rate of fall of SYNCH in LCGQ companies surpasses its rate of fall in HCGQ companies, because investors believe that the benefits from the substitution of large cash-flow investments for poor investor protection arrangements in LCGQ companies *outweigh* the benefits from the reduction in private benefits attributed with the better investor protection, transparent boards and strong enforcement in HCGQ companies.

Lastly, the essay finds that *SAs with an ultimate owner* have lower stock price synchronicity relative to *SAs without an ultimate owner*. This supports the view that shareholders' agreements, signed between a *controlling shareholder and several small non-related* block holders, perform a "*coordination role*" producing benefits that are shared by all shareholders. These shared benefits emanate or accrue from the incremental investor protective clauses, over and above those stipulated by corporate law and CVM regulations, incorporated in these agreements, which curtail the expropriation power of the largest participating shareholder in the agreement and thus results in lower synchronicity or better information environment.

1.4 Essay Two: Ownership Structures and Stock Price Synchronicity in Russia

This essay investigates the impact of cash flow and the control rights of ultimate controlling shareholders on the information environment of publicly traded companies in an emerging capital market, Russia. Stock returns incorporate two types of information; market-level and firm-level. The former represents common financial and non-financial information which is publicly available to a vast majority of outside investors in the market simultaneously. The latter relates to information regarding firm-specific activities such as purchase and sale of inventory, acquisition and disposal of long term assets, accruals, real level of earnings, return on assets. Such information is communicated to the market by firms' managers through financial reports. The inclusion of market-wide information relative to firm-level information into stock prices, known as stock price

synchronicity, depends on the extent of information asymmetry between insiders and outsiders. The greater the access of outsiders to firm-specific information, the lower the information asymmetry between insiders and outsiders (French and Roll (1986); Roll (1988a)).

Using a sample of 117 companies listed on Moscow Exchange in 2013, this study finds that stock price synchronicity increases with the increase in the degree of divergence between the voting and cash-flow rights of the largest controlling shareholder. This result supports the idea, that when controlling owners have more voting rights than their cash-flow stake in a company, it increases the incentive for extraction of private benefits and in turn motivates them to communicate less firm-specific information to the market. The ownership concentration of the largest shareholder, in contrast, documents a reduction in the stock price synchronicity, which validates the notion that greater cash-flow rights render expropriations costly, converge the interests of the controlling and minority shareholders, and ultimately foster the dissemination of firm-specific information. While investigating the effect of types of ultimate owners on stock price synchronicity, this study finds lower synchronicity for firms controlled indirectly by the state through holding corporations relative to those controlled directly by the state. This is consistent with Shleifer and Vishny's (1994) argument that state ownership offers poor protection to minority investors and promotes less transparent financial disclosures, leading to stock prices less reflective of firm-specific information relative to industry and market-wide information. Finally, the study reports that stock price synchronicity for transparent oligarchs is significantly lower than that for non-transparent oligarchs. This confirms the hypothesis that not only accounting opacity but also opacity in a firm's ownership structure plays a role in shaping the firm's information environment.

1.5 Main Contributions of the Thesis

This thesis makes several contributions to the literature.

First, it augments existing empirical research on the effect of ownership structures on stock price behaviour, by linking the ultimate ownership and stock co-movements in the two largest emerging economies, *Brazil* and *Russia*. The economic consequences of ultimate ownership have been extensively examined in Brazil and Russia (da Silva & Leal, 2006; Kuznetsov, Kapelyushnikov, & Dyomina, 2008; Kuznetsov & Muravyev, 2001; Sprenger, 2011; Valadares & Leal, 2000), however its impact on information dissemination in the two largest emerging capital markets i.e., Moscow Exchange

(MICEX-RTS) and the Sao Paulo Exchange (BM&FBovespa) has largely been unexplored. The study fills this gap by examining the association between the two (three) main aspects of ultimate ownership and stock price synchronicity i.e., control-ownership divergence and ownership concentration (control-ownership divergence, ownership concentration and type of ultimate owners), in a geographically unexplored area Brazil (Russia).

Second, the finding of a concave relationship between synchronicity and cash-flow rights of ultimate owners in Brazil complements Gul et al.'s (2010) finding in the Chinese context and contributes to the extant discussion that ownership concentration below the point of effective control leads to managerial entrenchment, while above the point of effective control it produces alignment of interests. However, unlike Gul et al. (2010) who focus on the cash-flow rights of the direct owners (usually state), the study of Brazil instead concentrates on CMS structures where ultimate owners secure majority control with minority equity interests by relying on various control-enhancing tools such as the use of non-voting shares, pyramid schemes and shareholders' agreements. The CMS structures provide ideal settings to accurately assess the severity of agency problems between controlling and minority investors, and their implications for firms' information environments, in situations where the ultimate owners have both large separation of ownership and control rights and hold minority ownership interests. To this end the study notes that synchronicity is significantly positively related with both *control-ownership divergence* and *ownership concentration* when the ultimate owners hold below-majority cash flow stakes. This signifies "extreme managerial entrenchment" producing "extreme information asymmetry" associated with CMS structures since the incentive for inside controlling managers to entrench emanate not only from their smaller cash-flow investment in the company but also from their ability to escape the pro rata consequences of their corporate decisions because of the large separation between control and cash-flow rights.

Third, the study complements and extends the literature that links opacity with synchronicity (e.g., Hutton et al., 2009; Jin & Myers, 2006b; Li, Morck, Yang, & Yeung, 2004) by noting a relatively greater SPS for non-transparent oligarchs than for transparent oligarchs in Russia. Extending the extant opacity studies such as those of Jin and Myers (2006) and Hutton et al. (2009), which focused on accounting opacity at a firm-level, and capital market opacity at a country level (Li et al., 2004), the study of Russia rather stresses on the ownership opacity, arising out of the excessive use of nominees and

foreign off-shore companies in the control chain. These nominees and foreign offshore companies obstruct the traceability of the real ultimate owners and give rise to non-transparent owners called non-transparent oligarchs. Predominantly, non-transparent oligarchs hide their identities behind obscure ownership arrangements for opportunistic reasons such as income tax avoidance; mitigating the risk of being scrutinized for questionable or illegal amount of capital; thwarting the risk of value-enhancing takeovers; unwillingness to disclose association with a company involved in tunneling; personal security (Chernykh, 2008). Such opaque ownership structures can also prevent outsider investors and analysts from policing controlling shareholder's opportunism (Faccio, Lang, & Young, 2001). This incremental incentive of controlling shareholders' opportunism relative to transparent oligarchs could prevent non-transparent oligarchs from sharing firm-specific information with outsiders and thus create higher SPS. In a nutshell the finding of higher SPS for non-transparent oligarchs establishes that apart from accounting opacity, any opacity in ownership structures also matters in shaping a firm's information environment.

Fourth, by testing the moderating effect of a firm's listing quality on the relationship between the cash-flow rights of ultimate owner (UCFR) and SPS in Brazil, this study contributes to and enhances the empirical literature that contends that institutional-level investor protection mechanisms such as antitakeover provisions in the US (Ferreira & Laux, 2007); firms issuing shares on both the Chinese and Hong Kong stock markets (Gul et al., 2010); and the passage of the Sarbanes-Oxley Act in the US (Hutton et al., 2009), affect firms' stock co-movement or stock price synchronicity and play a role in firms' information environment and resolving information asymmetry. While these aforementioned studies assume a direct association between investor protection environment and SPS, this study takes the perspective that institutional-level investor protection arrangements, denoted by a firm's listing quality, influence firm's information environment (SPS) indirectly, in Brazil, by regulating the entrenchment or alignment-of-interests incentives of the controlling owners stemming from their level of cash-flow investments in the company. This is reinforced in the finding of more-pronounced (less-pronounced) positive relation between cash flow rights and SPS in LCGQ (HCGQ) companies, below the point of effective control, confirm more severe (less severe) entrenchment practices, owing to the lax investor rights and lack of oversight from the opaque boards prevalent in LCGQ (HCGQ) companies. Further to the aforementioned investor protection studies that consistently report a positive influence of high quality

investor protection on firmss information environments, this study indicates that better listing quality does not always produce a favourable impact on a firm's information environment, especially when it interacts with the cash-flow rights of the ultimate owner, above the point of effective control. The relatively slower rate of fall in SYNCH in HCGQ companies relative to LCGQ companies past the point of effective control links to the observation that the positive outcomes of reduction in the size of private benefits cannot keep up with the benefits from the substitution effect of cash-flow rights in LCGQ companies: thus the rate of improvement in firms' information environments lags behind in HCGQ companies.

Fifth, the statistically significant association between SAs and SPS in Brazil highlights the role of these voluntary contracts in affecting the information content of stock prices and extends the extant research on shareholder agreements that has been mostly confined to investigating economic consequences (Carvalhal, 2012), value implications or analyzing individual clauses to determine its role as being an instrument of “expropriation” or “investor protection”(Chemla, Habib, & Ljungqvist, 2007; Masullo, 2015). More specifically, the finding that *SAs with an ultimate owner* have a lower SPS relative to *SAs without an ultimate owner* affirms the contention that only coalitions having ultimate owners as signatories pursue “shared benefits of control” and include investor protective clauses that contest the expropriatory ability of the controlling owner, thus resolving information asymmetry between controlling and outside shareholders. This result emphasizes that it is not the SAs that matter in resolving the agency conflict between controlling and minority investors but the participation of ultimate owner that makes the difference in the use of concerned SAs as instruments of “investor protection” or “expropriation”.

Sixth, the study contributes to the empirical literature, investigating the information versus noise role of stock price synchronicity, by testing the relationship between firms' accounting and earnings quality (AbsDiscAccruals) and SPS in Russia. The empirical result shows a positive association between absolute discretionary accruals (AbsDiscAccruals) and SPS, signifying that stock price synchronicity works well as an effective measure of stock price informativeness in an emerging economy like Russia, adding support to the information view of stock price synchronicity in the debate.

Finally, owing to the varying aspects of ultimate ownership being responsible for the corporate information environment in these two civil-law countries, the study suggests the need for different set of policy measures from the regulators and policy makers in

each of these countries to achieve market and corporate transparency. For example, the exemption of foreign-offshore companies holding less than 20% equity interest from disclosing their ownership details limits investors' abilities to assess the expropriation risks associated with the identities of the ultimate owners and serves as a major impediment in the ownership transparency of Russian companies. Removing such exemptions by the regulators can help alleviate ownership and information opacity in Russia and may be a significant step in support of Bushman et al.'s (2004) proposition that improved governance disclosures produce improved corporate transparency in civil-law countries. Also, the findings of favourable (unfavourable) implications of ownership concentration (Control-ownership Divergence) on information environment, in Brazil and Russia, may encourage regulators to initiate policy steps that could enhance cash-flow stakes of the largest shareholders but at the same time not breach the principle of one share-one vote. These could involve outlawing dual-class shares, introducing taxes on intercompany transfer of profits, and reducing the permissible limits for non-voting shares (as in the USA) in both the jurisdictions or offering tax benefits to firms that opt to list on the Novo Mercado (NM) segment of the Brazilian stock exchange because it prohibits non-voting shares.

1.6 Structure of the Thesis

The rest of the thesis is organized as follows. Chapter 2 discusses the conceptual framework that lays the theoretical foundation of the study and presents the key associations of ownership and institutional variables with the corporate information environment in emerging countries. Chapters 3 and 4 are essays on Brazil and Russia, respectively, which frame the hypotheses that test the effects of various aspects of ownership on stock price synchronicity, outline the methodology used for testing hypotheses, present the empirical results and provide the conclusions of the respective essays. Chapter 5 provides the overall conclusion of the thesis, including the limitations of the thesis, and identifies avenues for future research.

CHAPTER 2: CONCEPTUAL FRAMEWORK

In order to gauge the stock price informativeness or the informational efficiency of the stock prices, Roll (1988) proposed a measure called stock price synchronicity (SPS) that tells the extent to which stock prices move together, which in turn is determined by the relative amounts of market- or industry-level and firm-specific information incorporated into prices. In markets where the majority of investors trade on widely available market and industry information, synchronicity will be greater (the stock prices would tend to move together) due to a great deal of stock return variation influenced by general economy and industry-wide factors rather than unique firm-specific events. In contrast, markets that exhibit greater use of firm-specific information will have more informative stock prices and lower stock price synchronicity. It is believed that investors tend to gravitate towards using more firm-specific information, for investing in the stock market, when the firm-specific information is available at a lower cost and the information asymmetry between inside controlling managers and outside investors is minimal. The lower cost of firm-specific information allows arbitrageurs to collect unique private firm-specific information, which intensifies informed trading in the market and results in more informative stock prices (Durnev et al., 2004; Grossman & Stiglitz, 1980b). Also, if there is information asymmetry in the market, investors will be deprived of information about company fundamentals, thus forcing them to rely on market-wide price trends for investment decisions. In such a situation, a great deal of stock return variation in the market would be caused by the overall market trend rather than unpredictable changes in firm-specific fundamentals, thus inducing a higher level of stock price synchronicity (lower stock price informativeness). Therefore, informationally efficient markets not only reflect market-wide information but also involve greater use of firm-specific information in stock returns.

Roll (1988) finds that a large proportion of stock returns are not explained by broad industry- and market-wide information, which points to even greater significance and use of firm-specific information in stock return variation. However, the use of firm-specific information in stock price formation in developing and emerging economies is lower than in developed economies, owing to their weak property rights, poor investor protection, underdeveloped capital markets and concentrated ownership structures. The findings of Morck et al. (2000) show that poor investor protection and weak institutional infrastructure in emerging countries, including Brazil, pose significant impediments to informed trading and prevent firm-specific information from being impounded into stock

prices, which in turn results in greater stock price synchronicity for these countries. Several notable studies, including those of Khandaker and Heaney (2008) and Fernandes and Ferreira (2008, 2009), find that stock price synchronicity in emerging and developing economies is generally higher than in developed economies, and within those emerging countries it is reported to be even higher for Brazil and Russia. Kim and Shi (2012a), in a study on emerging countries, note that stock price synchronicity is highest for Russia and one of the highest for Brazil, which suggest minimal amounts of firm-specific information being produced and impounded in stock prices in the two largest emerging economies.

Higher stock price synchronicity, representing severe information asymmetry between insiders and outside investors, arises from two primary sources in emerging countries. First, emerging countries lack institutional infrastructure and adequate investor protection, and suffer from weak enforcement of property rights, which renders collecting and trading on firm-specific information expensive for arbitrageurs (informed traders) and forces them to rely on market- level information, reducing the amount of informed trading. Second, corporate ownership structures in emerging countries are known to be dominated by large shareholders, mostly family and state, who, being insiders, control the dissemination of firm-specific information through mandatory financial reports (e.g., financial statements, footnotes, management discussion and analysis) and voluntary disclosures (i.e., analysts' presentations, conference calls, website disclosures). These large concentrated owners in countries with weak investor protection reap private benefits from their control, by pursuing and implementing corporate decisions that benefit themselves at the expense of minority investors (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000). In order to hide the value-implications of such self-serving behaviour they may choose to withhold or selectively disclose firm-specific information to outsiders, which can result in lower firm-specific return variation and more synchronous (less informative) stock prices.

The corporate environment in the two largest emerging economies among the BRIC⁵ countries, *Brazil* and *Russia*, is characterized by concentrated ownership structures dominated by single large inside controlling shareholders mainly family (oligarchs) and state; weak legal institutions; minimal investor protection; and underdeveloped capital markets (Lazareva, Rachinsky, & Stepanov, 2009; Nenova, 2006), which provide an ideal

⁵ BRIC stands for *Brazil, Russia, India and China*.

environment for the extraction of private benefits and expropriation of minority investors. For instance, Chernykh (2008) shows that most of the Russian listed firms are controlled either by the state or anonymous private owners (called oligarchs). The state exercises its control through pyramids while oligarchs enjoy control through the use of nominees and foreign offshore companies that enable them to extract private benefits of control. The extraction of private benefits⁶ and abuse of minority shareholders are usually accomplished via transfer pricing, dilution of shares, asset stripping and outright theft of valuable assets (Lazareva et al., 2009). One of several notable cases of private benefits extraction relates to Sibneft, the fifth largest oil company in Russia, whose production subsidiary would sell a large quantity of oil at below market price (i.e., \$2.2 per barrel) to an intermediary company, Runicom, which was associated with the Sibneft's controlling shareholder, Mr Roman Abramovich (Desai, Dyck, & Zingales, 2007). Likewise, Valadares and Leal (2000) note a highly concentrated ownership structure in Brazil, where 62% of the listed companies are owned by a single controlling shareholder holding more than 50% voting rights. These dominant shareholders, according to Nenova (2006), are either *family* or *state* who occupy positions on the boards of these companies. These controlling shareholders in Brazil are infamous for appropriating minority investors and extracting private benefits, where the estimated value of these appropriations, as described by Nenova (2003) and Dyck and Zingales (2004) amount to about a quarter and three-quarters of equity value, respectively.

A considerable amount of empirical research in international settings has examined many aspects of ownership structures, including their effect on market value (Claessens, Djankov, Fan, & Lang, 2002; Maury & Pajuste, 2005; Villalonga & Amit, 2006), firm performance (Himmelberg, Hubbard, & Palia, 1999; Ma, Naughton, & Tian, 2010), firms' information environments (Bona-Sanchez et al., 2011; Fan & Wong, 2002; Warfield, Wild, & Wild, 1995) and the cost of capital (Lin, Ma, Malatesta, & Xuan, 2011), among others. Among the studies that show ownership structures affect corporate information environment, including earnings management (Warfield et al., 1995), earnings conservatism (Bona-Sanchez et al., 2011) and earnings informativeness (Fan & Wong, 2002), the majority are focused on accounting and reporting quality, leaving behind very few studies that examine how ownership structures contribute to the information dissemination and information content of stock prices in capital markets. This

⁶ Other famous cases of private benefits extraction by controlling shareholders in Russian companies, involving *Yukos*, *Gazprom*, *Sidanco*, are detailed in Black, Kraakman, and Tarassova (2000).

is even worse in Brazilian and Russian settings where many studies have investigated the effects of ownership structures on the market value and economic performance of firms (Chernykh, 2008; da Silva & Leal, 2006; Kuznetsov et al., 2008; Rapaport & Sheng, 2010a), while its effects on the firms' information environments, in general, and on the information content of stock prices (*synchronicity*) in particular, remain unexplored.

Considering the concentrated ownership structures and weak investor protection prevalent in Brazil and Russia this thesis examines whether ownership structures matter in explaining stock price synchronicity in the two largest emerging economies. In particular, the study focuses on the effect of ultimate ownership on stock price synchronicity, and establishes the link between *synchronicity* and three important aspects of ultimate owners that are deemed to regulate their incentive to expropriate minority investors: *ownership concentration of the largest shareholder (UCFR)*; *separation of control and ownership rights (Div-Rat)*; and *ultimate owners' identities*.

2.1 Concentrated Ownership Structures, Agency Relationships and Private Benefits of Control

A substantial body of corporate governance literature suggests that concentrated ownership structures coupled with the presence of large controlling shareholders holding substantial equity stakes, dominate listed companies around the world. La Porta, Lopez-De-Silanes, and Shleifer (1999) trace the control chain of largest listed companies worldwide and find that ultimate owners, typically *family* and *state*, are present in most of the companies. Faccio and Lang (2002) examine the ultimate ownership structure for a sample of 5,332 Western European firms and show that 63% of the firms are controlled by the largest shareholder with 20% voting rights and also report that widely held companies are rare phenomena that mainly exist in the UK and Ireland. The dominance of ultimate owners is also documented in emerging and transition economies including *Brazil* and *Russia* in separate studies by: Claessens, Djankov, and Lang (2000) for nine east Asian economies; Rogers, Dami, Ribeiro, and Ferreira De Sousa (2007) for Brazil; Chen, Firth, and Xu (2009) for China, and Chernykh (2008) for Russia.

These concentrated ownership structures dominated by controlling shareholders, in emerging countries including Brazil and Russia, question the classic image of Berle and Means' (1932) "modern corporation", which is owned loosely by a dispersed set of shareholders. In concentrated ownership settings, the standard "principal-agent" agency problem (Jensen & Meckling, 1976) between professional managers and small outside

shareholders does not operate; rather a fundamentally new “principal-principal” agency problem, proposed by Shleifer and Vishny (1997), denoting conflicts between large controlling shareholders and small minority investors sounds relevant. The “principal-principal” agency conflict, is conducive to the expropriation of minority investors by controlling shareholders because of two associated problems: *moral hazard* and *adverse selection*. Moral hazard implies a lack of effort put forth by the controlling shareholders or misuse of corporate resources for personal advantage (aka private benefits) while adverse selection involves the misrepresentation of the abilities of controlling shareholders by misreporting their private information to outsiders for personal and private benefits. Both of these problems can be resolved by increased monitoring of the controllers and reducing information asymmetries between controllers and outside shareholders by producing and sharing more high-quality firm-specific information with outsiders. This thesis concentrates on the information sharing incentives of ultimate owners for curtailing information asymmetry in Brazil and Russia, subject to their cash-flow commitments in the company (UCFR), divergence between control and cash-flow rights (Div-Rat), and the identity of the ultimate owners.

The existence of concentrated large controlling shareholders, in Brazilian and Russian listed companies, can either *exacerbate* or *mitigate* agency conflict depending upon whether they aim to expropriate minority investors by diverting corporate resources for private benefits (*i.e.*, *entrenchment effect*) or wish to initiate and implement corporate decisions that benefit all shareholders including minority shareholders (*i.e.*, *incentive alignment effect*). The *entrenchment* and *incentive-alignment* effects will have opposite implications on the ultimate owner’s incentive to disclose and disseminate firm-specific information; hence their ultimate impact on stock price synchronicity is contingent on which of the two is dominant.

2.1.1 The Entrenchment Effect

The entrenchment of controlling shareholders in companies with concentrated ownership structures is likened to the “managerial entrenchment” modelled by Morck, Shleifer, and Vishny (1988), in widely held companies. A certain level of equity ownership by controlling owners enables them to secure effective control over the firm and this empowers them to determine how the firm’s resources, such as profits or cash-flows, are shared among shareholders. Minority investors fear that entrenched controlling shareholders at the helm may deprive them of their cash flow entitlements in proportion to their share investments in the company. Entrenched controlling shareholders can use

their effective control to engage in self-dealing transactions, yielding private benefits, by diverting corporate resources to other companies under their control or by undertaking relationship-specific contracts or investments to make it difficult for outsiders to replace them (Shleifer & Vishny, 1989).

Entrenched controlling shareholders will have an incentive to hide their self-serving behaviour or to hold the release of related information, withholding negative information or opportunistically timing the release of value-relevant information. The accumulation of equity stake for concentrating control power will undermine the amount of firm-specific information disseminated to the market. Other things being constant, under entrenchment, synchronicity is expected to be positively associated with the concentrated ownership of the ultimate owner, thus signifying greater information asymmetry.

2.1.2 The Incentive-alignment Effect

Under an incentive-alignment perspective, an increase in equity ownership by controlling shareholders can foster the alignment of interests between controlling and minority investors because the power of controlling shareholders to misappropriate minority investors is moderated by their financial commitment in the company. The higher cash-flow stake of these ultimate owners renders expropriation costly and thus invokes incentive-alignment or convergence-of-interests effects as emphasized by Jensen and Meckling (1976). The incentive-alignment effect works opposite to the entrenchment effect and produces effective results when controlling shareholders' ownership interest are increased for preventing their entrenchment or by taking the company private if the problem of entrenchment is severe (Berle & Means, 1932; Demsetz & Lehn, 1985). Any increase in ownership stake by a controlling shareholder earns more voting rights and cash-flow rights in the firm. Once controlling owners secure effective control by accumulating a certain percentage of the equity stake, any further increase in equity ownership beyond the point of effective control does not entrench controlling shareholders, since it will cost more to divert the firm's resources for private benefits. Gomes (2000) argues that significant ownership by entrepreneurs or founding shareholders serves as a credible commitment towards building goodwill for not expropriating minority investors. This commitment is interpreted as a serious one by minority investors because they are aware that if the controlling shareholders extract private benefits they can discount the stock prices and leave a larger dent on the market value of share ownership belonging to the controlling owners. A controlling owners' incentive to expropriate minority investors is a trade-off between their private benefits

and the cost of extracting these private benefits. Hence, an increase in the equity stake of the controlling shareholder beyond the level needed for effective control renders expropriation expensive and improves the alignment of interests between large controlling shareholders and small outside shareholders.

Given the reduced incentive for extraction of private benefits under the incentive-alignment effect, the ultimate owners are less likely to hold and hide firm-specific information, hence synchronicity is expected to be negatively associated with the cash-flow stakes of the largest owner, other things being equal.

2.1.3 Entrenchment Effect under Control-Ownership Divergence

Another important aspect of ultimate ownership is the separation between the ultimate owner's control (voting) and ownership rights (cash-flow rights), which is usually accomplished by using creative control enhancing mechanisms such as preferred (non-voting) shares; pyramids⁷ (Lins, 2003); cross-holdings⁸; golden shares, both in Brazil and Russia (Denis & McConnell, 2003; Valadares & Leal, 2000), and voting agreements specifically in Brazil (De Carvalho & Pennacchi, 2012). These control arrangements constitute a substantial departure from the one share-one vote rule (Adams & Ferreira, 2008) for controlling shareholders and allow them to effectively control the company with a small amount of invested capital, which in turn creates incentives for entrenchment and lowers the cost of private benefits extraction for controlling shareholders. For instance, in the case of Brazil, the ultimate owner can typically gain fifty per cent control rights, in companies⁹ that are legally allowed to issue 50% non-voting shares, with an ownership stake of just 25% of the total shares (i.e., 50% of voting shares). Likewise, a pyramidal structure, e.g., a structure where an ultimate owner owns 20% of the stock in publicly traded Firm X, which in turn holds 40% of the stock in Firm Y, also illustrates how the large shareholder is able to attain higher control rights (20%) (i.e., the weakest link along the voting rights chain) in Firm Y relative to his 8% ownership interest (i.e., the product of two equity stakes along the control chain) in the firm. Owing to the separation of control and cash-flow rights in the above ownership structures, the cost of expropriation is much cheaper (e.g. a hundred-dollar expropriation is going to cost just

⁷A pyramid is a group of companies that are arranged in a vertical control chain that has an ultimate owner at the apex layer. It allows ultimate owner to enhance his control only if each intermediate company in the control chain is owned with less than 100% equity stake.

⁸Cross-ownership or reciprocal holdings occur when the company directly or indirectly controls its own stock by maintaining the interlock of ownership positions.

⁹Except those listed on *Novo Mercado* segment of Sao Paulo Stock Exchange (BM&FBovespa).

\$25 and \$8 for the controlling shareholders of companies with non-voting shares and pyramidal structures respectively). This intuitively implies that the control-ownership divergence exacerbates the entrenchment problem. The higher control rights motivate the ultimate owner to pursue entrenchment practices whereas his/her lower equity investment fails to provide sufficient alignment of interest between controlling and minority investors. The controlling shareholder in this situation can divert corporate wealth towards for his/her personal benefit while bearing only a fraction of the cost.

A great deal of empirical literature on this subject provides evidence that control-ownership divergence worsens the agency problem between controlling and minority shareholders, as it greatly enhances the largest shareholder's ability to expropriate minority investors (Claessens et al., 2002; Lins, 2003; Shleifer & Vishny, 1997), whereby concentration of voting rights invites entrenchment behaviour (Bebchuk et al., 2000; da Silva & Leal, 2006) and cash-flow rights concentration serves to mitigate entrenchment by aligning the interests of controlling and minority investors (Gompers et al., 2010; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2002).

Empirical evidence also suggests that the agency implications of control-ownership divergence are even more severe in companies with ownership structures that correspond with Bebchuk et al.'s (2000) controlling-minority structure (CMS) — these are structures where the controlling shareholders are able to secure majority control (greater than 50% control rights) with minority ownership stakes (less than 50% cash-flow rights). For example, Joh (2003) in a study on 5,829 Korean firms, shows that control-ownership disparity of controlling shareholders in publicly traded firms¹⁰ affiliated with business groups, being synonymous with controlling-minority structures, results in greater “tunnelling” by the controlling shareholders and lower profitability as compared to privately held companies. Gompers et al. (2010) while studying the value implications of control-ownership divergence in dual-class firms, report an incentive-alignment effect (entrenchment effect) for the ownership concentration (control rights concentration) of the controlling shareholders by noting a positive (negative) relationship between insiders' cash-flow rights (voting rights) and firm value. However, the authors find these

¹⁰According to the study, the largest shareholder in publicly traded Korean firms enjoys majority control with just a 31.7% equity stake (cash-flow rights), whereas in privately held companies the ownership stake (cash-flow rights) of the largest shareholder amounts to about 50%.

relationships to be much stronger and more intense for firms in the “separation sample¹¹”— firms effectively controlled at less than 50% of cash-flow rights.

2.2 Institutional-level Governance Mechanisms, Entrenchment Effects and Firms’ Information Environments

Apart from the cash-flow rights and control-ownership divergence of the controlling shareholders, the legal and institutional environment of a country acts as a governance device that regulates the entrenchment and private benefits consumption incentive of controlling shareholders. These legal and institutional infrastructures mainly accomplish greater investor protection by conferring rights on the minority investors and establishing mechanisms (courts, shareholders dispute resolution) that enforce these rights in order to protect minority investors’ interests against large controlling shareholders (Dyck & Zingales, 2004; La Porta et al., 2000; Nenova, 2003). Earlier studies suggest that stronger investor protection, reflecting on the quality of laws that protect investors’ rights, the strength of the enforcement of minority investors’ rights and corporate transparency, curtails the opportunistic self-serving behaviour of inside controlling managers (Hung, 2000) and keeps entrenchment in check by making private benefits extraction extremely expensive for the controlling shareholders (Durnev & Kim, 2005; Klapper & Love, 2004; La Porta, Lopez-de-Silanes, Shleifer, et al., 2002; Nenova, 2003). This reduction in entrenchment is achieved not only by country-level investor protection mechanisms¹² such as rule of law, efficiency of the judicial system, corruption levels in the country. Also, voluntary firm-level governance initiatives and private contracting efforts in the direction of improved investor protection rights, independent and effective boards, efficient shareholder dispute resolution and high quality disclosures, inhibit wealth transfers from minority shareholders to controlling shareholders and serve as an effective substitute for a weak investor protection environment, as highlighted recently in a handful of studies on emerging countries including Brazil and Russia (Durnev & Kim, 2005; Klapper & Love, 2004).

¹¹The separation sample includes dual-class US companies where the insiders exercise effective control with 60% voting rights but hold minority ownership interests with only 40% cash-flow rights.

¹² Most of the country-level investor protection studies used Porta, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny (1998) country level measures of investor protection including anti-director rights as a measure of minority shareholder rights, the mean of the three measures including efficiency of the judicial system, assessment of rule of law and corruption index as a proxy for legal enforcement.

One of the firm-level voluntary governance initiatives could involve listing a company in a high quality regulatory environment that promises more protection to minority investors, increased enforcement of investor rights, and enhanced disclosures. Listing a company, either domestically on a high-quality segment of the domestic stock exchange, or cross-listing it in foreign countries with higher legal safeguards for investors, constitutes a credible commitment by a firm to the stringent oversight of the private interests of managers and the expropriatory practices of controlling shareholders. Several studies establish that companies that opt for foreign listing (listing on stock exchanges in better regulatory environments) bond themselves to high-quality regulatory and institutional environments (Coffee Jr, 2002) that limit the private benefits' consumption ability of management and controlling shareholders; compensate minority investors for the damage in case controlling shareholders engaging in value-destroying behaviour (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2008; Doidge, 2004); call for more transparent, independent and active boards that assure investors of close monitoring of the use of funds; and demand greater commitment towards publication of high quality financial and non-information information for outsiders (Karolyi, 2012). Various sources of minority investor protection, including provisions that grant superior rights to minority shareholders, enforcement rules, board-independence and stringent disclosure provisions, as a result of listing on better segments of the exchange¹³ have been documented in the prior literature as playing a role in dampening the entrenchment endeavours of controlling shareholders.

For instance, studies show that minority investor rights, such as tag-along rights¹⁴ deter controlling shareholders from self-dealing, since shares without tag-along rights would be priced cheaply and invite bidders to buy shares at cheaper prices with a view to expropriating minority investors (Bennedsen, Nielsen, & Nielsen, 2012; Saito & Silveira, 2010). Other studies note that: strong enforcement of investor protection laws enforces property rights for minority investors and prevents expropriation of minority investors by insiders (Defond & Hung, 2004; Desai et al., 2007); effective and better quality boards characterized by independent directors, outside directors and longer serving chairmen,

¹³ In the case of Brazil it refers to the two premium governance listing segments on the BM&FBovespa exchange, known as L2 and Novo Mercado (NM), guaranteeing superior protection to minority investors in the form of tag-along rights, purchasing shares at economic value if the company decides to delist or cancel registration, requiring boards to be manned by 20% independent directors, and mediating disputes between shareholders and the company through arbitration in the market arbitration panel of the exchange.

¹⁴ Tag-along rights guarantee the same stock price to minority investors, in the event that controlling shareholders surrender their shares to outside acquirers.

exhibit a low incidence of financial statements and corporate frauds (Beasley, 1996; Chen, Firth, Gao, & Rui, 2006) and independent boards populated with fewer parent directors, separate chairman and CEO positions, and more outside directors monitor inside managers for misappropriations and prevent them from diverting corporate resources for personal benefits through transfer pricing in emerging countries like Brazil, China and Russia (Dahya, Dimitrov, & McConnell, 2008; Lo, Wong, & Firth, 2010).

The reduced opportunistic and entrenchment activities of inside controlling managers, as a result of stricter and high-quality investor protection, have shown a favourable impact on firms' accounting and information quality in a number of studies. For example, Leuz, Nanda, and Wysocki (2003) find that inside managers do not indulge in wealth entrenchment activities when the country's investor protection is strong and therefore they have no incentive to engage in earnings management for opportunistic reasons. Haw, Hu, Hwang, and Wu (2004) note that the control-ownership wedge entrenches controlling managers, which induces income management, however the level of income management is significantly lower in countries with greater statutory protection for minority investors, proxied by their legal origin, minority rights protection, efficiency of judicial system or disclosure standards. Recently Cahan, Liu, and Sun (2008) reported more opportunistic use of income smoothing in countries with weak investor protection and low informativeness of earnings in these countries.

In summary the review of the findings and arguments put forward in the above investor protection studies suggests three conclusions that become the basis for establishing the framework that outlines the effect of firms' listing quality and ownership opaqueness on the dissemination of firm-specific information to outsiders: 1) controlling shareholders and inside managers of firms operating in a better legal and institutional environment demonstrate less wealth expropriation practices, creating an incentive to pursue improved accounting and reporting practices; 2) "investor protection" arrangements, whether at a country level or firm-level, denote the quality of investor property rights, enforcement of investor rights and corporate opacity level measured by firms' disclosure and reporting practices; and 3) the firms' listing quality signifies investor protection arrangements that ensure greater minority investor rights, strong enforcement of investor rights and improved corporate transparency.

As advanced earlier that investor protection and opaqueness, in practice, go together and mutually reinforce each other. This typically manifests more robustly in the listing quality of firms where the listing provisions usually speak to investor protection and corporate

opaqueness issues simultaneously. For example in Brazil, firms that choose to list on the Novo Mercado (NM) and Level 2 (L2) segments of the BM&F Bovespa Exchange are required to comply with one set of listing provisions that assure stronger investor protection (including provisions such as tag-along rights and shareholder dispute resolution via market arbitration panels) and another set of provisions that seek enhanced corporate transparency (requirements of 20% independent board members and a requirement to prepare and report annual financial statements under IFRS and US GAAP). These two components of a firm's listing quality, i.e., investor protection and opacity, are separately known to have played a role in the assimilation of firm-specific information into stock prices (stock price synchronicity), e.g., MYY (2000) note that poor investor protection renders firm-specific information less useful for arbitrageurs (informed traders), which weakens the participation of informed traders versus noise traders, and force investors to herd and trade market index rather than individual stock, resulting in higher stock price synchronicity. Ferreira and Laux (2007) report that stronger investor protection, measured by fewer antitakeover provisions, leads to informative stock prices as witnessed in higher idiosyncratic return volatility and more information about future earnings in the stock prices. The majority of the opacity studies using various measures of opacity, also suggest a deterioration in firms' information environments by noting: a positive association between earnings management and R-square (Hutton et al., 2009); a negative association between the presence of institutional investors and R-square; and a positive association between the availability of financial reporting information and the degree of informed trading by institutional investors (Maffett, 2012).

In the case of co-existence of weaker investor protection and increased firm opaqueness simultaneously, as is likely for firms with poor listing quality, the firm's information environment is expected to be even worse and can cause stock price synchronicity to be higher, as envisioned by Jin and Myers (2006), for two reasons. First, weak investor protection resulting from fewer minority investor rights and poor enforcement of investor rights may entice managers to intensify their entrenchment activities and capture a great deal of the firm's operating cash-flows. Second, the opaqueness inherent in the listing rules i.e., not requiring independent boards and no mandatory requirement for preparing and reporting financial statements under IFRS and US GAAP, limit outside investors from assessing the exact amount of cash-flow capture by inside managers (firm-specific information). As a result the investors, having limited access to firm-specific information will rely more on market-specific information for making investment decisions which

leads to higher SPS. In contrast, a high listing quality featuring strong investor protection and enhanced corporate transparency listing rules limits inside managers' ability to expropriate resources and greater corporate transparency facilitates investors in gathering and accessing more of firm-specific information for the true assessment of insiders' expropriations and thus lower stock price synchronicity.

Unlike Jin and Myers (2006), the relationship envisaged above between a firm's listing quality and stock price synchronicity assumes that both investor protection and opacity matter for stock price synchronicity consistent with recent opacity studies done by Hutton et al. (2009) and Li et al. (2004). Li et al. (2004), in a country-level study on emerging countries including Brazil, find that capital market openness is associated with low R-square and this relationship is even stronger when institutions with high integrity are able to protect private property rights adequately. Hutton et al. (2009) record a positive association between a firm's opacity (proxied by earnings management) and R-square in the US however, the association became weaker after the passage of the Sarbanes-Oxley Act, which imposes heavy penalties for opportunistic earnings management. These findings reinforce the premise that both a better regulatory environment responsible for safeguarding minority investor rights and reduced firm opacity, are imperative for information quality and stock price synchronicity.

2.3 Substitution Effect of Ownership Concentration for Weak Investor Protection at Higher Cash-Flow Rights

Ownership structures are widely viewed as property rights arrangements, whereby the shareholders are entitled to certain rights namely the right to vote, the right to receive share in company's profits and assets, and the right to transfer shares to other investors. These rights are usually enforced both by the state institutions and the shareholders. If the state institutions are inadequate in enforcing these rights then shareholders substitute for the state institutions and ensure the enforcement of investor rights. Many studies refer to this substitution role of large shareholders by observing a negative relationship between ownership concentration and the legal protection of shareholders (Boubakri, Cosset, & Guedhami, 2005; Gomes, 2000; Himmelberg, Hubbard, & Love, 2004; La Porta et al., 2000; La Porta, Lopez-de-Silanes, Shleifer, et al., 2002; Shleifer & Vishny, 1997). Most of the studies that model and empirically test the association between ownership concentration of the largest shareholder and investor protection, indicate that only large shareholders with large shareholdings are able to push for their rights and replace the

country's legal and institutional infrastructure for safeguarding minority investors (Durnev & Kim, 2005; Gomes, 2000; Shleifer & Vishny, 1997).

These studies do not mention exactly how large the large shareholder ought to be to perform a substitution role; but do provide a clue that they should be effective controllers holding majority votes in a company. For example Lins (2003), in a sample of emerging countries including Argentina, Brazil, Russia, note that non-controlling shareholders facing the increased risk of exploitation in the countries with weak legal regimes transform themselves into controllers, to harness and implement their rights. The study suggests that these non-management block holders are able to gain control by holding about 40% voting rights in general and about 34% voting rights in Brazil in particular. More specifically Durnev and Kim (2005) in the context of emerging countries, especially Brazil, claim that large shareholders, with substantial equity stakes, commit not to steal money from themselves and promise to offer greater protection to minority investors and better governance practices in weakly protected countries (Gomes, 2000).

Drawing upon these studies, it is not plausible to assume a substitution role for the largest shareholder at smaller cash-flow levels. In emerging countries like Brazil and Russia large shareholders can only substitute for the legal systems and enforce their rights without having to rely on courts when they hold significant or majority votes (Durnev & Kim, 2005; Shleifer & Vishny, 1997). Not every increase in the cash-flow rights of the largest shareholder will invoke the substitution effect; only higher levels of cash-flow rights specifically beyond the point of effective control will enable large shareholders to secure rights for themselves and force them to commit not to steal money from the minority investors. Hence the substitution effect, in this thesis, is expected to take effect at higher cash-flow levels in companies operating in poor investor protection environments (especially for companies listed on the lower governance segments of the Sao Paulo Exchange i.e., Traditional and L1).

2.4. Ownership Transparency and Firm's Information Environment

Bushman et al. (2004) posit that governance transparency is of paramount importance for corporate transparency¹⁵ in countries with weak investor protection and underdeveloped capital markets. Their measure of governance transparency, as being information relating to the identity and shareholding of major shareholders and directors, and remuneration of

¹⁵ Corporate transparency was defined as the availability of firm-specific information to those outside the publicly traded firms.

directors and key officers, predominantly stresses the transparency of ownership structures, that enables outsiders to assess who owns and governs the company. Such ownership transparency assists outside investors and analysts in establishing the accountability of relevant directors and shareholders in the case of corporate wrongdoing and guide stakeholders in setting more reasonable expectations about a firm's future performance (Bhat, Hope, & Kang, 2006).

The extant empirical studies mention various schemas and mechanisms that jeopardize ownership transparency, which in turn not only create incentives for inside managers and controllers to pursue entrenchment activities but also limit outsiders' ability to detect such expropriations. For example, a number of studies in East Asia and Europe assert that the use of complex pyramids serves as an important determinant of ownership opacity, which not only allows controlling shareholders to tunnel resources from minority investors but also makes the detection of such expropriation extremely difficult for such investors (Boubaker & Labégorre, 2008; Faccio et al., 2001; Paligorova & Xu, 2012). Also, the presence of founders or heirs (Anderson, Duru, & Reeb, 2009), shared equity interests, shared owners and interlocked directorates in ownership structures (Khanna & Thomas, 2009) are other aspects of ownership opacity that allow controlling shareholders to exploit opacity to reap private benefits at the cost of minority investors (Anderson et al., 2009).

Ownership opacity is even worse when the pyramids are loaded with nominees or unlisted companies registered in foreign offshore centres, because they reduce the ability of outsiders, analysts and regulators to trace the identity of the true controlling shareholders (La Porta et al., 1999; Subashi, 2014). La Porta, Lopez-de-Silanes, and Shleifer (2008) assert that the presence of offshore companies in corporate structures may expose minority investors to insiders' expropriation¹⁶ because of the less transparent environments resulting from lax laws, flexible financial regulations and secrecy policies in offshore centres. Such expropriations may remain unobservable from the glare of outside investors because of the enhanced information asymmetry associated with opaque ownership structures, as indicated in some studies: investors cannot fully assess the extent of agency costs in companies with offshore subsidiaries due to increased information asymmetry (Durnev, Li, & Magnan, 2016); use of nominees and foreign offshore companies, in the control structures of Russian companies, result in information asymmetry that prevents investors from estimating the expropriation risks and possible

¹⁶ Anecdotal evidence points to the opportunistic use of foreign offshore centres by inside managers (see e.g., Tyco Laboratories).

agency conflicts associated with the identity of controlling shareholders and directors (Chernykh, 2008).

Durnev, Li, and Magnan (2017) note that firms with offshore companies in their structures, capitalizing on lax financial regulations and secrecy policies in offshore centres, engage more aggressively in accrual-based and real earnings management and provide lower quality financial information to outsiders. Given the low quality and less dissemination of firm-specific information, attributed to opaque ownership structures, the investors, as predicted by Veldkamp (2006), may rely on inexpensive, readily available market and industry-level information for estimating firms' cash-flows. This can result in higher stock price synchronicity for firms with opaque ownership structures.

2.5 Overall Framework

Studies that examine the effects of ownership structures on firms' accounting, reporting, and information environments are divided into two streams. The first stream contains studies that document the role of those aspects of ownership, in information environments, which are known to outsiders and allow investors to detect the incentive-alignment and entrenchment incentives of controlling shareholders with a certain level of accuracy, because they are reported and disclosed by companies. These include studies investigating the effects of ownership concentration (Gul et al., 2010; Warfield et al., 1995); voting rights (Fan & Wong, 2002) separation of ownership and control rights (Boubaker et al., 2014); identities of owners (An & Zhang, 2013; Cascino, Pugliese, Mussolini, & Sansone, 2010; Ramalingegowda & Yu, 2012); the presence of block holders in ownership structures (Brockman & Yan, 2009), on firms' information environments.

Of these studies that have investigated the impact of ownership concentration on firms' reporting and information quality offer varying results. One set of studies finds that ownership concentration of the largest shareholder results in alignment of interests between controlling and minority shareholders, producing a monotonic positive impact on firms' accounting, information and reporting quality (Boubaker et al., 2014; Lafond & Roychowdhury, 2008). Another set of studies contends that low levels of ownership concentration results in entrenchment and high levels of ownership stakes lead to alignment-of-interest effects, thus report a non-monotonic (concave) effect on firms' accounting and information quality (Gul et al., 2010; Warfield et al., 1995). This study takes the view that this dichotomy in the implications of cash-flow concentration on

information environment is grounded in the differences in the underlying ownership structures. The former positive relationship is more likely in concentrated structures (companies controlled with more than 50% cash-flow rights) while the latter concave relationship is more a phenomenon for the countries having both CMS and concentrated companies. Countries having both CMS and concentrated companies: for the fraction of CMS companies, the minority cash-flow interest of ultimate owners can invoke entrenchment; and the majority ownership stakes of ultimate owners in concentrated companies render expropriation expensive for the ultimate owners, invoking alignment of interest, thus resulting in a non-monotonic concave relationship. This study tests these distinct effects of ownership concentration, measured by the cash-flow rights of an ultimate owner, on firms' information environments in Brazil and Russia, dominated by CMS and concentrated structures respectively (See hypothesis H1(a) and H1 in Chapter 3 and Chapter 4 respectively).

A number of studies suggest that better investor protection and transparent governance structures restrain the entrenchment ability of controlling owners and ameliorate firms' accounting quality: as indicated by reduced earnings management (Leuz, Nanda, & Wysocki, 2003); reduced income management (Hu, Hwang, & Wu, 2004); and lower opportunistic use of income smoothing and more informativeness of earnings (Cahan, Liu, & Sun, 2008). Also there are studies that note that better country-level property rights and market openness lead to more informative stock prices; as reflected in the positive association between R-square and capital market openness and markets with high integrity (Li et al., 2004); the positive association between higher idiosyncratic return volatility and fewer antitakeover provisions (Ferreira & Laux, 2007). However, in this study I combine the two strand of studies and propose that the effect of investor protection rights and governance transparency on firms' information environments is not direct one, rather an indirect one where they regulate the entrenchment and incentive-alignment incentives of the controlling owners, thus affecting the stock price synchronicity. So, I test how the firm's listing quality, being a representative of a firm's investor protection and governance transparency, in Brazil, denoted by their listing in the higher (L2&NM) and lower (L1&Traditional) segments of Bovespa, affect the relationship between ownership concentration and synchronicity proposed earlier in H1(a).

There are fewer studies, in the accounting literature, that examine the role of blockholders in a firm's accounting and information quality. These studies highlight various aspects of blockholders being responsible for firm's reporting and information quality. For instance

Brockman and Yan (2009) contend that blockholders have advantage over atomistic investors in accessing and acquiring private firm-specific information which increases the probability of informed trading and reduces synchronicity; and Dou, Hope, Thomas and Zou (2013) also note that blockholders' heterogeneity, based on the type of blockholders (e.g., pension funds, trusts etc), affect firms' financial reporting quality. In this study I investigate a unique aspect, as to how blockholders' incentive to form coalitions, reflected in the shareholder agreement, affect the phenomena of dissemination and incorporation of firm-specific information in the Brazilian capital market. Specifically in the Brazilian context the effects of two types of coalitions (shareholder agreement), one *without a controlling shareholder* and the other with a controlling shareholder, on firm's information environment are isolated in the study (See Hypothesis H3 in Chapter 3).

The second stream of studies, though very few, contend that there are certain arrangements in control structures that make ownership structures opaque, such as affiliation with the group structure (Kim & Yi, 2006); blurred firm boundaries (Barberis, Shleifer, & Wurgler, 2005); shared equity interests, shared owners and interlock directorates in the ownership structures (Khanna & Thomas, 2009) which can detriment firms' information environments, either by creating more incentives for insiders to pursue opportunistic activities (Kim & Yi, 2006); or by preventing outsiders from detecting the extent of insiders' misappropriations and leading them to rely on commonly available market-level information (higher synchronicity) (Barberis et al., 2005; Khanna & Thomas, 2009). Consistent with these studies, I hypothesize that ownership opacity, measured by the presence of nominees and foreign off-shore companies in the ultimate control chains, creates more incentive for the controlling shareholders to pursue entrenchment activities and limits outsiders' ability to detect such expropriations with any accuracy, forcing them to rely on commonly available market- and industry-wide information, and results in higher stock price synchronicity.

CHAPTER 3: OWNERSHIP STRUCTURES AND STOCK PRICE SYNCHRONICITY IN BRAZIL

3.1 Introduction

This essay examines the effect of ownership structure on the information environment of publicly traded firms in Brazil. More precisely, it investigates the impact of ultimate ownership structure on stock price synchronicity. The ultimate ownership of Brazilian companies predominantly rests with the family¹⁷ or state who are able to secure majority control with a small fraction of investment in the firm's equity. Typically, these ultimate owners keep majority control, without having to commit 50% of the cash-flow rights, by issuing non-voting shares to outsiders, arranging companies into pyramidal structures, and signing shareholders' agreements with minority block holders who cede their voting power in favour of the largest shareholder (Carvalhal da Silva & Leal, 2003; Leal & Carvalhal da Silva, 2005). Their control is even further enhanced relative to their proportional ownership, as they are able to nominate and elect a majority of their affiliates and relatives to the supervisory and executive boards¹⁸. Such ownership arrangements described as controlling-minority structures (CMS)¹⁹ by Bebchuk et al. (2000), and as “grupos²⁰” in Brazil, produce severe agency conflict between controlling and minority shareholders, which results in extreme agency costs in terms of both moral hazard (incentive to extract private benefits) and adverse selection problems (incentive to misrepresent information to outsiders). Such shareholders’ desire and propensity to expropriate minority investors cannot be remedied, given the weak legal systems, inadequate and ineffective governance mechanisms such as lack of independent boards of directors, and the lack of market for corporate control in Brazil.

It is well known that higher agency costs are believed to be associated with the entrenchment behaviour of controlling shareholders who extract higher private benefits of control. In contrast, lower agency costs (represented by lower amounts of private

¹⁷ For example, 41% of the firms in my sample are ultimately controlled by family and about 11% each controlled by the state and widely held corporations respectively.

¹⁸ The supervisory boards of many Brazilian firms are populated either entirely or almost entirely by insiders or by the representatives of the controlling family or group (Black et al., 2010)

¹⁹ Brazil’s ownership environment, being dominated by family-controlled groups, fits the underlying conditions of CMS structures specified by Bebchuk et al. (2000); e.g., CMS is supposed to exist in countries dominated by family-controlled conglomerates arranged in pyramidal structures.

²⁰ Most commonly, these “grupos”, found in Latin American countries, represent family businesses arranged in pyramidal structures where family occupy management positions in companies at the apex layer.

benefits) highlight convergence of interest or alignment of interests between inside controlling shareholders and outside minority investors. The ultimate owners' incentive to disclose and disseminate high quality firm-specific accounting and financial information is subject to whether they are engaged in entrenchment activities or pursuing activities that help align their interests with those of minority investors. The prior literature documents a negative effect of the entrenchment activities on the firm's information quality; entrenched controlling shareholders, in order to mask their private benefits from outsiders, are reported to have resorted to earnings manipulations (Leuz et al., 2003) and publishing low quality accounting reports that are perceived to be less credible by investors (Fan & Wong, 2002). Under the entrenchment endeavours, the controlling shareholders will be tempted to hamper the quality of information and deter the flow of information to the market which will result in less firm-specific content being incorporated into stock prices. Such actions result in higher synchronicity and greater information asymmetry. On the contrary under alignment-of-interest approach, the ultimate owners, working for the benefit of all shareholders, will prefer to convey more and high-quality accounting and financial information, resulting in lower synchronicity, less information asymmetry and less-severe problem of adverse selection.

Several theoretical and empirical studies argue that the financial commitment of the controlling shareholders, as reflected by their equity stake in the company, moderates their power to expropriate minority investors. Higher ownership concentration mitigates agency conflict and lowers the agency cost by rendering the expropriation costly in as much as higher the cash-flow rights increase equity interest of the largest owner in a firm. Ownership concentration is known to have improved the accounting and information quality of the firm e.g., it increases the earnings explanatory power for returns, reduces discretionary accruals (Warfield et al., 1995) and enhances the incorporation of firm-specific information in stock prices (Boubaker et al., 2014). These findings suggest a linear negative relationship between cash flow concentration of the largest shareholder, agency cost and information quality. However, Bebchuk et al. (2000) contend that in countries with CMS ownership structures, such as Brazil, the level of agency cost, denoting private benefits extraction, behaves non-linearly in response to the cash-flow rights of the largest shareholder. He asserts that as cash-flow rights decrease the incentive to extract private benefits increases, not linearly but at a sharply increasing rate, and manifests in far greater expropriation of minority investors by controlling shareholders when they hold small minority cash-flow stakes as opposed to when they own majority

cash-flow rights. This suggests that under a controlling-minority structure (CMS), the entrenchment effect will prevail as long as the ultimate owners own small minority cash-flow rights ($UCFR < 50\%$). However, past that point, any increase in equity stake by owners will help align the interests of controllers with those of minority investors. Consistent with this line of thinking I test whether smaller cash-flow rights of the ultimate owner ($UCFR$), below the point of effective control, indicating entrenchment effect, reduce the information content of stock prices and exhibit positive relationships with synchronicity, while higher cash-flow rights, indicating alignment of interests, improve the flow of firm-specific information to the market, resulting in negative relationship with synchronicity and thus improvement in information asymmetry.

Because of the pervasive use of control-enhancing tools such as non-voting shares, pyramids, disproportionate representation on boards and voting agreements, ultimate owners in Brazil enhance their control beyond their cash-flow rights. Such separation between control and cash-flow rights (control-ownership divergence) worsens agency conflict and exacerbates entrenchment problems. This separation can bring private benefits to the controlling shareholders through tunnelling, excessive salaries to associated managers, misuse of corporate cash on empire-building projects, and even outright theft of a firm's assets (Bertrand, Mehta, & Mullainathan, 2002; Cronqvist, Heyman, Nilsson, Svaleryd, & Vlachos, 2009; Denis & McConnell, 2003; Masulis, Wang, & Xie, 2009). Earlier studies show that control-ownership divergence shapes the corporate information environment (Attig, Fong, Gadhoun, & Lang, 2006; Fan & Wong, 2002) including its role in the incorporation of firm-specific information into stock prices (Boubaker et al., 2014; Feng et al., 2016). As explained earlier, the agency implications of control-ownership divergence, and therefore entrenchment, are recorded to have been worst in CMS structures identified as "publicly traded Korean firms" and "separation sample", in separate studies by Joh (2003) and Gompers et al. (2010) respectively, featuring firms controlled at less than 50% cash-flow rights. This characterizes a situation where the largest shareholder's incentive to entrench stems from two sources: 1) from his/her minority ownership interest; and 2) the separation between control and cash-flow rights, permitting controlling shareholders to escape from pro-rata consequences of their decisions, thus inviting more expropriatory behaviour. At this juncture minority investors, knowing that each dollar of expropriation is going to shift a larger (more than 50%) burden on them, might become more wary and reactive to the entrenchment behaviour of ultimate owners and attach less credence to the information released by the controlling

shareholders. Consistent with this I examine whether control-ownership divergence has an incremental negative effect on firms' information environments (i.e., increases synchronicity) when the ultimate owners hold minority cash-flow rights in the firm.

3.1.1 Moderating Effect of a Firm's Listing Quality on the Relationship between Cash-flow Rights and Stock Price Synchronicity

Apart from the ownership structures, institutional-level arrangements also affect the cost of expropriations and the private benefits of control. The most significant institutional-level arrangement in the Brazilian context that could impact the entrenchment incentives of controlling shareholders pertains to the firm's listing quality, stemming from the firm's voluntary decision to list in one of the four listing segments of the Bovespa Exchange; i.e., Traditional, Level 1 (L1), Level 2 (L2) or Novo Mercado (NM). Brazilian firms that choose to list at the L2 and NM segments, categorised as High Corporate Governance Quality (HCGQ) firms, display a serious commitment to high quality investor protection and corporate governance behaviour as they adhere to listing rules that pledge more rights to minority investors, strong enforcement of investor rights and more corporate transparency as compared to the firms that list at Traditional and Level 1 segments of the exchange, known as Lower Corporate Governance Quality (LCGQ) firms. The main listing provisions that make HCGQ companies more investor friendly include tag-along rights (i.e., guaranteeing the same price to minority investors as promised to controlling shareholders in case of sale of control); buying shares at economic value from minority shareholders in the event of the company's delisting; mandatory shareholders' dispute resolution via a market arbitration panel; and provisions that render HCGQ companies less opaque, requiring 20% of the board to be independent outside directors and requiring financial statements that accord with US GAAP and IAS GAAP.

These provisions collectively and separately, have worked favourably in curtailing the expropriatory and exploitative practices of controlling owners and inside managers in Brazil. For example, De Carvalho and Pennacchi (2012) show that listing at premium segments (L2 and NM) is an inexpensive mechanism of bonding a firm to better corporate behaviour and an explicit commitment on the part of inside controlling shareholders to restrain from exploitation of minority investors. Similarly, the absence of tag-along rights, in Brazil is widely known to have been associated with the weakening of investor rights, increased private benefits of control and expropriations of non-controlling shareholders

by controlling shareholders²¹ (Bennedsen et al., 2012; Nenova, 2006; Saito & Silveira, 2010). The appointment of independent boards in Brazilian companies restricts private perquisite consumption by the dominant shareholders (Dahya et al., 2008) and arbitration is considered the most efficient²² and preferred method, as opposed to the judicial system, for dispute resolution among the shareholders of companies listed in the L2 and NM segments (Masullo, 2015).

Overall the more (less) stringent listing provisions associated with HCGQ (LCGQ) firms, listed in the L2 and NM (Traditional and L1) segments, result in greater (weaker) investor protection and less opaque (more opaque) boards, which will make expropriations and private benefits extraction costlier (cheaper) and riskier (safer) for controlling shareholders. Since a firm's listing quality affects the size of private benefits of control and entrenchment endeavours, it is plausible to assume that the relationship between cash-flow rights and stock price synchronicity will vary or transform in the higher (HCGQ) and lower governance segments (LCGQ) of the exchange. For instance, the smaller cash-flow rights of the ultimate owner, below the point of effective control, in LCGQ (HCGQ) companies is expected to cause more severe (less severe) information asymmetry between controlling and minority shareholders and intensify (dampen) the positive relationship between cash-flow rights and stock price synchronicity because of two underlying reasons. First, lower cash-flow rights entice inside controlling managers to misappropriate resources from minority investors which motivates them to withhold or delay the release of firm-specific information to outsiders; and second, their desire and incentive for misappropriations will be more severe (less severe) when they learn that they cannot be subjected (can be subjected) to close scrutiny for the damage they cause to minority investors, by the Bovespa Exchange, because of the lax (strong) minority investor rights, less-opaque boards (transparent) and less (more) efficient enforcement of investor rights attributed to LCGQ (HCGQ) companies.

While beyond the point of effective control, any increase in cash-flow rights of the ultimate owners is expected to reduce information asymmetry between controlling and

²¹The acquisition of Banespa Bank, a government controlled bank, by Banco Santander Central Hispano, a Spanish bank, illustrates a typical case of exploitation of non-controlling shareholders by controlling shareholders due to the absence of tag-along rights provision in the Brazilian legislation. The acquirer, Banco Santander Central Hispano, offered 912% of the current share price to the controlling shareholders only (i.e., the Government of Brazil), and was able to exclude minority and preference shareholders from the offer because of the absence of Tag-along rights provisions (Bennedsen et al., 2012).

²² Arbitration law requires the Market Arbitration Panel (also called CAM) to reach a decision within 180 days if the company, listed on L2 or NM, is accused of breaching any of the listing provisions (De Carvalho & Pennacchi, 2012).

minority investors, because larger cash-flow investment at this point renders expropriation expensive and helps align the interests of controlling and minority investors, motivating them to publish a large amount of firm-specific information. This results in a negative relation between cash-flow rights and SYNCH. However, the rate of reduction in information asymmetry, reflected in the fall of SYNCH in response to cash-flow rights, is expected to be greater in LCGQ companies relative to HCGQ companies, since investors perceive that the benefits from the substitution of large cash-flow investments in LCGQ companies for the inadequate investor protection outweigh the benefits of the reduction in private benefits associated with better investor protection, transparent boards and strong enforcement in HCGQ companies.

3.1.2 Shareholder Agreement and Stock Price Synchronicity

Finally, the essay investigates the underexplored question of whether the type of coalitions reflected in the shareholders' agreement affect firms' information environment. Shareholders' agreements are voluntary contracts that govern the relationships among the colluding shareholders by specifying their rights and duties, both in accordance with and beyond what are stipulated in the Brazilian Corporate Law and Securities Commission (CVM) regulations. Conventionally, shareholder agreements have been used either for securing and enhancing control by the colluding shareholders with a view to expropriate resources from minority investors (Bianchi, Bianco, & Enriques, 2001; Gianfrate, 2007) or for coordinating corporate decision making and regulating relationships among the controlling and minority shareholders (Carvalhal, 2012). SAs, when used for enhancing control, seem like an "expropriation" instrument, which stresses clauses that secure and enhance the controlling power of the coalition shareholders and produce private benefits only for the signatory shareholders. Most commonly, this situation is achieved by incorporating provisions that restrict the voting rights of the shareholders; bind the directors' votes to the votes cast in the preliminary shareholders' meeting held by signatory shareholders; allow the controlling coalition to elect more board members on the supervisory board relative to its aggregate voting rights; and establish clauses that constrain the distribution of dividends. In contrast, SAs that perform coordination roles resemble "investor protection" devices, which focus on investor protective clauses that aim at resolving conflicts of interest between investors and producing benefits for all shareholders irrespective of their participation in the agreement. The common provisions that are likely to be incorporated into these agreements involve contestability clauses ("Supermajority Vote" or "Affirmative Vote") that contest the control power of the

largest shareholder in the agreement, provisions that outline detailed dispute resolution procedures for resolving shareholders' conflicts, disclosure of executive compensation, restrictions and disclosures of related party transactions and clauses prohibiting the management from downgrading the listing quality of a company.

Depending on the private vs shared benefits of control as incentives for colluding shareholders, SAs can either have positive or negative influences on a firm's information environment (stock price synchronicity). Control-enhancing SAs aimed at expropriating minority investors include contractual clauses that yield private benefits only for the controlling coalition who, in order to hide their self-serving and wealth expropriatory activities from the regulatory authorities and outside investors, might choose to publish and disseminate less firm-specific information, leading to higher stock price synchronicity and greater information asymmetry between controlling and minority shareholders. On the other hand, coalitions driven by shared benefits of control incorporate incremental investor protective clauses in their agreements including supermajority votes, affirmative votes, restrictions on related party transactions, and disclosure of executive compensation. Such clauses limit the control and expropriation power of the largest controlling shareholder and motivate the controlling coalition to share more firm-specific information, leading to lower stock price synchronicity. These effects on firm's stock price synchronicity are assumed to be incremental to the firm's listing quality since clauses included in the shareholders' agreement are beyond what are required in the corporate Law and CVM regulations.

Two recent studies on shareholders' agreements in Brazil suggest that the former type of agreements, identified as "Control Agreements" seeking "expropriation" of the minority investors, are initialled among blockholders in companies that lack a controlling shareholder whereas those with an "investor protection" role are pervasively found in companies controlled by an ultimate owner holding significant control (25% or more) over the company (Gorga, 2009; Masullo, 2015). The authors add that SAs lacking controlling shareholders are rife with clauses that strive to gain and enhance control for coalition shareholders e.g., mandating holding prior shareholders' meetings to decide upon the orientation of directors' voting and outlining procedures for the appointment of directors that favour the selection of directors nominated by the coalition to executive and supervisory boards. While, *SAs in companies with a controlling shareholder* tend to have the purpose of coordinating corporate decision making and regulating relationships

between controlling and strategic minority investors. These findings suggest that *SAs with an ultimate owner* are driven by shared benefits of control while *SAs without an ultimate owner* are likely to pursue private benefits of control; thus the two types of agreements will systematically differ in terms of their impact on firms' information environments. This essay therefore explores how a coalition between an explicit controlling shareholder (holding 25% voting rights) and small non-controlling blockholder(s), as reflected in *SAs with an ultimate owner*, differ from a coalition between several non-controlling blockholders (holding voting rights between 5 and 25%) seeking control over the company, represented by *SA without an ultimate owner*, in terms of their implications on firms' stock price synchronicity.

Using a unique sample of 121 companies listed on BM&FBovespa in 2014 the study investigates the relationship between ultimate ownership and stock price synchronicity, how the relationship differs in the lower and higher governance segments of the market, and analyses the implications of SAs on the firms' information environments (SYNCH). The study points out three primary findings: First, I find that stock price synchronicity is a non-linear concave function of the cash-flow rights (UCFR) of the ultimate owner, implying that synchronicity is expected to increase with an increase in the equity stake of the ultimate owner to the point of effective control (UCFR=50%). Beyond that point the higher cash-flow rights is expected to decrease synchronicity. This supports the idea that any increase in ownership stake (UCFR) of the controlling shareholder, when they hold a minority cash-flow stake (<50%), invokes entrenchment behaviour resulting in expropriation of minority investors, which inhibits the production and sharing of firm-specific information, and leads to a higher SYNCH. In contrast, any accumulation of equity stakes beyond the point of effective control (UCFR=50%) renders expropriation costly for the controlling shareholders and aligns their interest with those of the minority investors. This encourages controlling shareholders to disseminate firm-specific accounting and financial information, resulting in a decline in SYNCH. Further, the study shows that synchronicity is significantly positively related to both the control-ownership divergence (*Divergence-Ratio*) and cash-flow rights, when ultimate owners have a below-majority stake (UCFR<50%) in the company. This signifies that owners' incentives to entrench are at its extreme, when they hold minority cash-flow interests and face large divergence between control and ownership rights: because entrenchment is motivated not only by the minority cash-flow interests but also from their ability to escape the prorata consequences of corporate decisions because of the large separation between control and

ownership rights. Therefore, extreme “managerial entrenchment” produces extreme “information asymmetry” as reflected in the positive relationship of the two with synchronicity.

Second, the essay shows that the non-linear concave relationship between SYNCH and the cash-flow rights of the ultimate owner (UCFR) is more pronounced in companies listed on the lower governance segment (LCGQ) as compared to those listed in the higher governance segment (HCGQ). This suggests that the rate of response of SYNCH to an increase in the equity stakes of the ultimate owner is much swifter in LCGQ companies than in HCGQ companies. Intuitively, it indicates that a firm’s information environment *deteriorates* (improves) at a greater rate in response to increases in cash-flow rights *below the point of effective control* (beyond the point of effective control) in the LCGQ companies, while in HCGQ companies it *deteriorates* (improves) at a smaller rate in response to increases in cash-flow rights below the point of effective control (beyond the point of effective control). These results support the view that any increase in the cash-flow rights of ultimate owners in LCGQ firms with minority ownership interests entice entrenched owners to expropriate private benefit. Their desire for and ability to engage in expropriation is further enhanced due to the opaque boards, weaker investor protection and weak enforcement of shareholders’ rights attributed to these inferiorly governed firms, which intensifies the positive relationship between SYNCH and cash-flow rights. In contrast, the less pronounced positive relationship in HCGQ companies occurs because of the less severe extraction of private benefits resulting from the greater oversight provided by transparent boards, strong investor protection and strong enforcement of shareholders’ rights, therein.

However, beyond the point of effective control, a faster (slower) decline in SYNCH in response to increase in cash flow rights in LCGQ (HCGQ) companies, producing a faster (slower) improvement in firms’ information environments in LCGQ (HCGQ) companies, occurs for two reasons. First, any accumulation of equity stake, once the ultimate owners attain effective control, makes expropriations costlier and invokes an alignment of interest, which results in the fall of SYNCH. Second, the rate of fall of SYNCH in LCGQ companies surpasses the rate of fall in HCGQ companies, because investors believe that the benefits from the substitution of large cash-flow investments for poor investor protection arrangements in LCGQ companies outweigh the benefits from the reduction in private benefits attributed to better investor protection, transparent boards and strong enforcement in HCGQ companies.

Finally, the essay finds that *SAs with an ultimate owner* have lower stock price synchronicity relative to *SAs without an ultimate owner*. This supports the view that shareholders' agreements, signed between a controlling shareholder and several small non-related blockholders, perform a "coordination role" that produces benefits that are shared by all shareholders. These shared benefits accrue from the incremental investor protective clauses, over and above those stipulated by corporate law and CVM regulations, incorporated in these agreements, which curtail the expropriation power of the largest participating shareholder in the agreement and thus result in lower synchronicity or a better information environment.

The rest of the essay proceeds as follows. The next section discusses the evolution of corporate ownership in Brazil and brings forward the key institutional and regulatory factors influencing ownership environment. Section 3 reviews the literature and develops the hypotheses. Section 4 presents the data sample, introduces the ownership and information variables, and outlines the design and construction of empirical models. Section 5 reports the summary statistics and regression results for all the hypotheses, and provides a discussion of the results. Section 6 concludes the essay.

3.2 Evolution of Brazilian Corporate Ownership Structure

Brazilian corporate ownership structures have undergone many transformations before taking their current shape, characterized by the dominance of family- and state-owned business groups, and rife with the widespread use of non-voting preference shares. These structures have evolved the country's three economic phases: a State-led Industrialization Phase (1940-1980); a Privatization Phase (1990-2000); and a Stock Market Liberalization Phase (2000 onwards).

During the industrialization phase, from 1940 to 1980, the Brazilian government, in an effort to industrialize natural resources, formed several companies in areas such as iron-mining, oil and gas, telecommunications and energy sectors. Most of these companies, such as Companhia Vale do Rio Doce (an iron-mining company now called Vale), Companhia Siderúrgica Nacional (a steelmaker), and Petrobras (an oil exploration and production company), were founded in the early 1940s and 1950s by the government to compensate for lack of investment from the private sector in these capital-intensive sectors. At the time, these companies were set up as stand-alone companies, which later transformed into business groups as they added more plants in order to extend their line of business into other industries. This increased state participation in corporations

continued in the 1960s and 1970s as two large electrical energy and telecommunication companies, Electrobras (1962) and Telebras (1972), respectively, were established by the state. Around the same period, private owners largely owned companies structured as business groups in the retail trade, banking and civil construction sectors. Government ownership of business groups intensified further during the 1970s and early 1980s when BNDES (Brazilian National Development Bank), a development bank wholly owned by the federal government, increased its stake in the policy-directed industries by providing them low-cost financing and by bailing out many private companies through debt-equity swaps which defaulted on foreign loans.

The trend of excessive government participation in the corporate sector reversed in the 1990s as a result of the privatization of several state-owned entities during the privatization phase (1990-2000). Over the period 1990-1994, 68 companies were sold to the private sector, mainly from the steel, fertilizer, petrochemical and airline industries, which helped government finance its fiscal deficit and stabilize its exchange rate by amassing USD11.8 billion in revenue and debt-transfers. This and subsequent episodes of privatization in the late 1990s transformed ownership of leading state-owned business groups into organizations controlled by leading Brazilian families. The notable cases of privatization include Usiminas and Companhia Siderúrgica Nacional (CSN), steel makers privatized in 1991 and 1993 respectively; while Companhia Vale do Rio Doce (Vale) and Telebras (telecom company) were transferred to the private sector in 1997 and 1998 respectively. The later episodes of privatization came at a huge cost to minority investor protection when the federal government, in order to encourage private investors' participation in privatization, amended corporate law in 1997, denying equal treatment of minority investors in transfer of control (Baer & Villela, 1994). In essence, it meant that controlling shareholders, while acquiring state-owned companies, were not required to buy shares from the minority shareholders at the same *price* and *terms* as those offered to the majority owner, the government. This loss in minority shareholders' rights was partially repaired by reinstating the right to buy shares from minority shareholders at 80% of the price paid to the controlling shareholders, through a change in corporate law in 2001. However, while this amendment in the law strengthened the minority investor rights a little, it did not reinstate investor protection to the level enjoyed by investors before 1997.

Aside from transferring the majority of companies to private owners (families and individuals) through full-scale privatization, there are companies that were partially

privatized; the government retained its equity ownership in these companies through either the Brazilian National Development Bank (BNDES) or the government employees' pension fund (PREVI) and other pension funds of state-controlled companies such as Petros, a pension fund for Petrobras employees (Musacchio & Lazzarini, 2014).

3.2.1 Legal and Institutional Environment

The ownership structure of companies in Brazil is shaped and influenced by a three-layered legal and regulatory framework represented by: the Corporate Law (2001), the Brazilian securities commission, Comissão de Valores Mobiliários (CVM) (1976), and the Bovespa²³ exchange listing segment rules. Adherence to the rules of the former two is mandatory and violations of these are considered a breach of the law, whereas compliance with the exchange listing segment rules is voluntary.

3.2.2 Corporate Law and Ownership in Brazil

According to the corporate law, enacted in 1976 amended in 1997 and 2001, publicly traded companies in Brazil must be incorporated in the form of “Sociedade Anônima” (SA) which are allowed to sell shares on the Bovespa stock exchange's main market or over the counter market following registration with the Brazilian Securities and Exchange Commission (“Comissão de Valores Mobiliários”). By law, every company in Brazil can issue two types of shares: Ordinary or Common Shares (ON) with voting rights that can be exercised at the company's shareholder meetings, and Preferred Shares (PN), also known as non-voting shares, which enjoy preference in receipt of dividends or reimbursement of capital in the event of the company's liquidation. Each ordinary share can have one vote, and multiple-vote shares are not allowed under Brazilian Law. The maximum allowable limit for preference shares varies with the type of controlling shareholders in any given company. For instance, companies having Financial and Non-Financial Institutions as their controlling shareholders may issue non-voting preference shares up to 50% of their capital, whereas companies held by foreign controlling shareholders are not permitted to issue any non-voting shares. It is important to note that companies that were established before 2001 are allowed to issue two-thirds of its capital as non-voting shares. These non-voting preference shares are further subdivided into A, B, C or another letter appearing after “PN”. The characteristics of each type are stated by

²³As a result of the collapse of the Rio de Janeiro Stock Exchange in 1980, the São Paulo Stock Exchange (Bovespa) became the leading stock exchange in Brazil. Also, the remaining exchanges merged into Bovespa in 2000 (Santana, 2007).

the issuer company in its bylaws and, therefore, vary from one company to another. In summary, the right to issue non-voting shares may reflect badly on minority investors' protection in Brazil as controlling shareholders, by issuing inferior voting shares, can secure majority control over companies by investing only a 25% stake in the total capital.

3.2.3 Brazilian Securities Commission (CVM)

The regulations of the Brazilian Securities Commission (CVM) directly relating to ownership structures are a mandatory requirement for disclosure of the identity of shareholders holding 5% or more voting rights in a company, and mandatory disclosure requirements about independent directors. These disclosures must be reported on an extensive form, Formulario de Referencia, providing information about several aspects of company ownership, financial disclosure and corporate governance. According to CVM, the recommended board size should be five to nine members, preferably with a majority of independent directors. To ensure directors' independence there is a condition, among others, that strictly restricts the directors from being nominated by and associated with the controlling shareholders. However, in practice the majority of companies seem to violate these regulations as the average board size in Brazil is relatively small and about 13% of the firms have only three board directors, just large enough to meet the minimum director limit set by Corporate Law (Black, De Carvalho, & Gorga, 2009). These small boards, with a majority of directors nominated by the controlling shareholders, are indicative of the tighter control being enjoyed by large dominant shareholders in Brazil. Additionally, CVM recommends splitting the chairman and CEO role for companies, which is adequately practiced, as the offices of chairman and the CEO are separate in the majority of private companies, but the chairman is not usually a non-executive director and commonly represents the controlling shareholder (From Black 2009 paper). For state-owned companies, the independence of directors is largely compromised by appointing former government office holders and top government executives. For instance, until March 2015, Petrobras had two deputy-ministers and one former Army General on its board, who were later removed from the ballot list by the government in response to a scandal.

3.2.4 Bovespa Listing Segments

In response to increasing capital markets competition and demand for superior shareholder rights, the São Paulo Stock Exchange (Bovespa) launched a new premium segment, Novo Mercado (NM), in December 2000 for companies that voluntarily

subscribe to what the exchange calls “good practices of corporate governance”. Companies listed in this premium segment are required to follow a “one-share, one-vote” policy, keep a minimum free-float of 25% of the outstanding shares, grant minority shareholders the same rights as those possessed by controlling shareholders in the event of transfer of control, and have a board with at least 5 directors, who are elected to serve concurrent terms of one or two years. In addition, companies in Novo Mercado have to commit to higher standards of information disclosure, including the preparation of financial statements according to the International Accounting Standards (IAS) or the US Generally Accepted Accounting Principles (US GAAP). If a firm chooses to delist from Novo Mercado, the controlling shareholder is required to make a tender offer for all outstanding shares at an economic value established by a renowned appraiser. This appraiser is chosen by the minority shareholders from a three-nominee list submitted by the company’s board of directors. Bovespa has also created two additional segments, Nível (Level) 2 and Nível 1, for companies that do not commit to the “one-share, one vote policy.” Corporate law in Brazil allows companies that went public before 2001 to issue up to two-thirds of their capital as non-voting shares and those listed on BM&FBOVESPA after 2001 may issue non-voting shares up to 50 percent of the total capital.

3.2.5 Shareholder Agreement

Shareholders agreements²⁴ (henceforth SAs) are voluntary contracts that govern the relationship, both among different classes of shareholders (i.e., family vs non-family) and among shareholders within a single class of shareholders (e.g., among members of the same family) in a firm. These agreements usually specify the rights and duties of participating shareholders, in compliance with and potentially beyond what is prescribed by corporate law and CVM regulations, and are used by large shareholders for either coordinating corporate decision making or for exercising and enhancing control. Enhancement in control is achieved when block holders (5% or larger) pool their voting rights by signing SAs that allow some shareholders to transfer their voting power to other shareholders in the agreement. Most commonly SAs are used by shareowners to cede their voting power²⁵ to other shareholders. In doing so, one or several class(es) of

²⁴ Shareholders agreements are also known as *voting agreements* and *voting pacts* in the corporate governance and corporate law literature.

²⁵ The purchase of shares, fundamentally, grants two powers to shareowners: the investment power and voting power. The former refers to the right to buy and sell shares while the latter is associated with the shareholders’ right to exercise voting rights in corporate decision making.

shareholders amass more voteholdings or control than what is suggested by their shareholdings in a company.

In Brazil, the signing of SAs among block-holders (>5%) became popular for two primary reasons. First, subsequent to the introduction of new listing segments (especially NM) ownership of certain companies became increasingly diffused which created problems for management in running these companies smoothly as they were not accustomed to dealing with a disperse set of shareholders²⁶. As a result, the block holders of these companies resorted to the use of non-ownership mechanisms, i.e., SAs, for either coordinating decision making and securing control; Second, during the privatization phase of 1997, the coalition of institutional investors (as a minority investor) with family(ies) or other institutional investors (majority investor), in the consortia of winning bidders for privatized companies, mandated the need for SAs among the control group, who wanted greater investor rights and seeking sufficient representation on the supervisory boards²⁷ (Da Silveira & Saito, 2008). Institutional investors, especially BNDES and pension funds (such as PREVI, PETROS, and FUNCEF) in order to safeguard their investments, adopted clauses in these SAs aimed at achieving better governance practices and stronger investor rights beyond those promised by corporate law and CVM. In a recent study by Perkins, McDonnell, and Zajac (2012) of contractual clauses in over 300 SAs, the authors find that SAs involving family and institutional investors as major signatories include clauses that protect investor rights beyond the provisions of Brazilian Corporate Law. The relevant clauses relate to protecting minority shareholders against tunnelling and anti-freeze out provisions, and specify detailed dispute resolution mechanisms for resolving shareholder conflicts. Such empirical evidence is consistent with Chemla, Habib, and Ljungqvist's (2007) and Klapper and Love's (2004) assertions that SAs play a critical role when the law is not adequate, so they should matter more in countries with weak legal environments.

SAs, as per Brazilian corporate law, are confined to regulating the purchase and sale of shares; preference to acquire shares; the exercise of voting rights; and the exercise of control. Brazilian corporate law facilitates enforcement of these agreements. SAs, when

²⁶ Lojas Renner, one of Brazil's largest retailers listed on the NM segment of Bovespa, is a widely held company (diffused ownership structures) where managers found the company "difficult to run because the shareholders were so unaccustomed to the absence of a controlling shareholder" (Gillan & Starks, 2003, p. 382)

²⁷ Brazilian companies have two-tier board structures composed of supervisory and executive boards. The supervisory board, aka board of directors, is the apex board usually headed by the chairman and is responsible for the appointment of the executive board, which is headed by the CEO.

filed with the company's head office and made public, bind the corporation to enforce its provisions against the signing parties. The majority of shareholders seeking stronger enforcement therefore choose to register these agreements with the company and disclose them publicly (100% of the companies in my sample have filed SAs with the company). Other SAs, not filed with the company, are enforceable against the signing parties but not against the company (Black et al., 2010). The 2001 Corporate law reforms enhanced SAs ability to control corporate actions. Votes cast in breach of the shareholders' agreement, by the signatory shareholders, in a shareholders meeting are not counted by the president of the meeting. Also, directors elected under the filed shareholders' agreement are required to vote in accordance with the terms of the agreement. Such provisions bind directors' votes and may interfere with the independence of the directors, preventing them from acting in the best interests of other minority investors who are not involved in the agreement.

SAs constitute material information and thus are required to be reported to the stock market (also to CVM) every time shareholders sign, amend or breach these agreements. The public disclosure of SAs presents an opportunity to analyse their clauses in detail as outlined under Hypothesis 3. Generally, SAs are terminated when there is a change of control because of sale of shares by the controlling shareholder or when large non-controlling shareholders decide to sell their stake and the controlling shareholder selects not to buy shares by letting go his/her right of first refusal (i.e., the right to sell shares to the existing shareholders before selling to a third party) (Carvalhal, 2012).

3.3 Literature Review and Hypotheses Development

3.3.1 Cash-flow Rights of the Ultimate owner, Incentive-alignment Effect and Synchronicity

Demsetz and Lehn (1985) argue that when a firm's ownership is concentrated, the controlling shareholders have lesser incentive to shirk (that is—spending time and energy on activities that deliver benefits to the owners personally) and leading to a better firm performance. The underlying reason for this is that significant equity stake for owners will shift a large fraction of the cost of shirking to the owners and less to outside small shareholders. Ideally, shirking behaviour will be minimal when ownership and control are concentrated in the hands of one owner, as all of its costs and benefits will flow to the same person. Also, Berle and Means (1932) hint at a potential for conflict of interests when the ownership and management are not concentrated in the hands of the same person. Demsetz (1983) further contends that dispersed owners may concentrate their equity stakes in order to remove ineffective and non-performing managers by initiating takeovers; putting pressure on the incumbent management by forming controlling coalitions; or acquiring large shareholdings by one or a few shareholders.

According to Grossman and Hart (1980), shareholders will have an incentive to monitor incumbent management and bear its costs only when they have significant stakes. Small shareholders with small equity stakes may not have enough financial resources to absorb the large costs of overseeing the management. This reasoning was complemented by Shleifer and Vishny (1986) finding, in a sample of 456 Fortune 500 firms, that the presence of large shareholders in the ownership structure solves the free-rider problem (i.e., tendency of small shareholders, not willing to bear monitoring costs and yet enjoy its benefits) and encourages them to monitor management, which in turn enhances firm value. Most importantly, their construct (proxy) of large shareholder resembles the large shareholders dominating the ownership structures in Brazilian companies in several ways, as it entails large families represented on corporate boards, banks, pension funds and investment companies. Also, they expect that such large individual (family) and corporate investors would have a greater tendency to monitor management and initiate takeovers either themselves or invite outsiders to help with takeovers.

Mitton (2002), in a sample of 398 firms from East Asia, provides further evidence in favour of the monitoring role performed by large shareholders, finding that firms with concentrated ownership are more capable of preventing expropriation of minority

shareholders and therefore these firms experienced better stock returns during the 1997-1998 East Asian financial crisis. Gomes (2000), in a theoretical model, envisages that the level of stock ownership held by founding entrepreneurs or controlling owners plays a role in building a reputation for not exploiting minority investors. The study argues that larger equity stake held by entrepreneurs in a firm are interpreted as a serious commitment towards not extracting private benefits by large shareholders, and therefore leads to higher stock prices. Even if they unexpectedly indulge in extracting private benefits, given their majority stake, the minority investors are going to discount stock prices that essentially will greatly impair the value of the ownership stake held by controlling shareholders. (However, Gomes uses voting power as a proxy for concentration and argues for excessive use of dual class structures and pyramidal structures for building reputation among minority investors). Brealey, Leland, and Pyle (1977) contend that managers' ownership of shares in their own company is interpreted as a sign of good reputation and high market value by outside investors. As a result of less consumption of private benefits and a desire to preserve and build reputation among minority investors, the controlling shareholders may be willing to disseminate high-quality and credible firm-specific information to outside investors. Such disclosures and reputational initiatives, consistent with Fama (1980) and Diamond (1989), can contribute to disciplining financial markets by improving agency relationships and reducing information asymmetry between inside controlling managers and outside investors.

Faure-Grimaud and Gromb (2004) capture the incentive-alignment phenomenon of large shareholders in their theoretical model, and provide an explanation for the information disclosing incentive of large shareholders to small equity investors in the stock market. They suggest that public trading of a company's stock is reflective of a market evaluation of large inside blockholders' activity in terms of how they allocate corporate resources: this might give block holders an incentive to engage in value-increasing activities and can make their incentive-aligning initiatives known to the minority investors through stock prices.

Overall, the arguments and findings presented in the above theoretical studies refer to lower incentives to expropriate private benefits of control and thus a lower tendency to withhold and conceal information from investors when shareholders are large, either by virtue of more voting power or equity stakes. Many empirical studies (e.g., Boubaker et al., 2014; Warfield et al., 1995; Yafeh & Yosha, 2003) extend the discussion further by providing empirical evidence for the theoretical assertions made earlier.

A notable study by Yafeh and Yosha (2003) provides empirical evidence in favour of large shareholders' monitoring role over management when their ownership is concentrated. The study reports a low propensity of managers to spend resources on wasteful activities such as advertisement and entertainment expenditures for personal benefit, when ownership is concentrated in the hands of few large shareholders. This is essentially achieved when large shareholders regulate management's expenditures on non-productive activities by putting caps on it.

Using a sample of 371 Fortune 500 firms, Warfield et al. (1995) report a positive (negative) relationship between the management ownership and informativeness of earnings for stock returns (magnitude of accounting accruals adjustments). One possible explanation for this finding is grounded in the incentive-alignment hypothesis, in which managers with large equity stakes are less likely to pursue shirking and perquisite consumption which, in effect, removes their need for manipulating earnings through large discretionary accounting accruals adjustments. The resulting underlying earnings, being true representative of firms' economic value, would correlate greatly with stock returns²⁸. Therefore, Warfield et al. (1995) conclude that managers with low equity ownership will have greater inclination to make accounting accruals adjustments and impair the informativeness of earnings to stock returns.

Lafond and Roychowdhury (2008), using the percentage of shares held by the CEO and top five managers as two separate proxies of management ownership, note an increase in demand for conservative accounting (measured by asymmetric timeliness of earnings) as a result of decreases in the ownership stakes of inside key managers. The finding of this study suggests that accounting quality mediates the agency cost between managers and shareholders in the separation of ownership and control framework. This implies that significant ownership stakes by inside managers align their interests with outside minority shareholders, lowering the agency cost and the demand for conservative financial reporting.

In the context of Brazil, there are studies reporting controlling shareholders' alignment-of-interest with minority shareholders, when their cash-flow rights are sufficiently large

²⁸ An alternative explanation corresponds to property rights literature and the Theory of firm, which propounds that firms, run by managers with small equity stakes, will be constrained by suppliers of capital from value-destroying activities by writing accounting-based provisions in the contracts. Therefore, in order to relieve themselves from these stringent constraints, managers choose to adopt accounting policies that satisfy accounting-based contractual constraints instead of reflecting the true and fair value of underlying transactions.

and therefore exhibit their greater willingness to commit to better reporting and information quality. For example, Broedel Lopes and Walker (2008), find an improvement in the informativeness of accounting reports, measured by earnings conservatism and timeliness, for firms with better corporate governance practices, measured by higher Brazilian corporate governance index (BCGI), including ownership concentration. While the relationship claimed in this study may not entirely be attributable to the ownership concentration of the largest shareholder because ownership concentration, measured as “ratio of cash-flow rights to voting rights greater than one” is just one component of the entire index (BCGI), the finding still provides some evidence for the alignment-of-interest effect in Brazil.

The above discussion indicates that large shareholders, because of their increased cash-flow stakes, have an enhanced tendency to disseminate more and better quality firm-specific accounting, financial and non-financial information to outsiders. This makes information acquisition and trading less costly for informed traders in the capital market, and allows more firm-specific information to be impounded into stock prices, as modelled by Grossman and Stiglitz (1980a) and Kyle (1988). The information possessed by inside controlling managers being a non-rival good (i.e., consumption by one does not preclude others from using it) has a high fixed cost for discovering it and a low marginal cost for its replication. A greater willingness to share proprietary information by controlling shareholders, when they have larger equity stakes, therefore lowers both the discovery and replication cost for informed traders. Having access to such information encourages informed investors to rely more on firm-specific information in comparison to using commonly available market- and industry-wide information for valuing stocks, thus reducing stock price co-movement (Veldkamp, 2006).

Similarly, Piotroski and Roulstone (2004) also report an increase in the informed trading or firm-specific component of stock price synchronicity, when the trading parties are either insiders or institutional investors. Insiders (executives and directors), are aware of a firm’s operations, risks and opportunities and can convey more firm-specific information to outsiders when they have large stakes. This applies more for institutional investors because their higher ownership stakes enable them access firm-specific information easily, resulting in more informed trading and lower stock price synchronicity.

In the same vein, studying US firms Brockman and Yan (2009) extend the literature by documenting a positive association between blockholding, an equivalent of ownership

concentration, and the quality of a firm's information environment proxied by the probability of informed trading (PIN), idiosyncratic variation and stock price synchronicity. The study basically argues for a clear information advantage of blockholders over small atomistic investors, in information acquisition cost and in the precision of their private information.

Boubaker et al. (2014), using French ownership data, demonstrate that firms owned by controlling shareholders with large cash-flow rights report lower stock price synchronicity and lower likelihoods of stock price crashes. The authors attribute these to the largest shareholder's reduced desire to hide and holding information in general and lower incentive to accumulate bad news in particular, when they own a large fraction of a company's stock, resulting in an alignment-of-interest between controlling shareholders and outside minority investors.

All in All, the information-improving impact of the incentive-alignment perspective mentioned in the literature may hold for ownership structures that are either highly diffused or very concentrated in the hands of few large shareholders having a majority stake in the company. In diffused ownership structures, mainly found in large developed economies such as the USA, UK and Australia, companies are run by professional managers who have little or no equity stake in the company. As managers raise their ownership stakes it raises the cost of shirking, perquisite consumption and other value-destroying activities because they pay a larger share of these costs (Jensen & Meckling, 1976). Not only that, in diffused ownership settings other forces, such as market for corporate control (Jensen & Ruback, 1983), labour-market discipline (e.g., Managers get paid less in the labour market), and product market competition (Jensen & Ruback, 1983) can act to correct the value-destroying behaviour of managers, and in return encourage them to publish value-relevant firm-specific information for outsiders. In fact, there is a limit to the level of correction that can be performed by external forces such as takeovers. For instance, Weston (1979) reported that firms controlled by insiders with 30% or more ownership stakes have never been acquired through hostile takeovers. In conclusion, the alignment effect cannot continue unbound along with the rising stake of managers as the external checks on managers by corporate control and supervision by boards of directors become ineffective at a point where they acquire enough ownership stake (30% in the US). However, in the case of Brazil, the alignment effect and its favourable impact on firm-specific information can arise only if, the largest shareholder increases the equity stakes beyond achieving effective control (i.e. at 50% cash-flow rights) in the company.

This links with Fan and Wong's (2002) argument that once effective control is achieved, every incremental investment in shares by controlling shareholders will serve to align their interest with outsiders and mitigate their incentive to divert resources to their benefit because, it would cost them disproportionately more than the minority investors.

3.3.2 Cash-Flow Rights of the Ultimate Owner, Entrenchment Effects and Synchronicity

The literature reviewed in the earlier section shows that increasing cash-flow rights are likely to converge the interests of controlling owners with those of outside shareholders and hence cause less extraction of private benefits, which in turn produces less incentive to hide firm-specific information (i.e., low synchronicity). Taking this linear negative monotonic relationship between cash-flow rights of the ultimate owner (UCFR) and stock price synchronicity as final and concrete might not be plausible unless we account for the entrenchment perspective. Entrenchment involves reaping benefits and maximizing value for one self, to the detriment of other parties. This, in the case of loosely held companies, is usually practiced by inside managers exhibiting shirking behaviour, consuming perquisites at the expense of small outside shareholders, investing in projects for building empires and employee welfare. In companies owned by single large shareholders, entrenchment may also involve transferring corporate assets on non-market terms to companies and people affiliated with the controlling shareholders. Such activities, which benefit either managers or controlling shareholders personally rather than other shareholders, are deemed as private benefits in the literature. In the case of Brazilian listed companies, the incentive for extracting private benefits is contingent upon the largest shareholder's cash-flow rights in a company. An increase in ownership stake by inside controlling shareholders, when they have not achieved an effective control or majority stake, would provide them higher incentive to expropriate resources away from minority investors because that is interpreted as equivalent to amassing control over the company by the outside shareholders. Since inside controlling managers decide how a company's profits are shared, they would prefer to extract larger private benefits from self-dealing and opportunistic transactions and leave a smaller portion of cash-flows for the minority investors, when they hold less- than-majority equity stake. Smaller equity stakes allow them to bear a lower burden relative to other small shareholders collectively holding the majority stake.

Drawing on the above discussion and empirical evidence, it can be said that the effect of the largest shareholder's cash-flow rights (UCFR) on synchronicity is not linear because

it depends on which of the two effects, alignment-of-interest or entrenchment, prevails at any given time. Under diffused ownership structures (as in the USA, UK, Australia) the level of managerial ownership and external monitoring, by the managerial market and markets for corporate control, jointly determine the two effects. A study by Morck et al. (1988) covering 371 Fortune 500 firms offers a reasonable explanation by noting a significant non-monotonic relationship between management ownership and firm value (Tobin's Q). This implies that as managers increase their stakes, and not yet achieve effective control, the alignment-of-interests sets in, thus firm value rises because they can be monitored by markets for corporate control (e.g., takeovers) and are subject to the better governance by board. An increase in managerial ownership beyond achieving effective control renders the managers so entrenched that outside monitoring by board of directors and market for corporate control become ineffective, causing a reduction in firm value.

The ownership structure in Brazil, being akin to the controlling-minority structures (CMS) suggested by Bebchuk et al. (2000), combines the incentive structures of Diffused Structures (DO) and Controlled Structures (CS). It resembles DO structures when inside managers are able to control the company with a small fraction of equity stake in a company's cash flows; otherwise it behaves like a controlled structure (CS) when it insulates controlling shareholders from takeovers by outsiders. In essence, it is the cash-flow rights of the ultimate owner that determine the presence of either alignment-of-interest or entrenchment effects, because the size of agency cost is affected by the amount of cash-flow stakes held by controlling managers. Using Bebchuk's (2000) argument, the size of agency cost, reflecting controlling shareholders' incentive to extract private benefits, would be greater (smaller) when cash flow rights are smaller (higher). This means that under a controlling-minority structure (CMS), the entrenchment effect will prevail as long as the ultimate owners keep investing cash-flow in the company until they acquire effective control ($UCFR < 50\%$). Past that point, any increase in equity stake by the ultimate owners will help align interests of controllers with those of minority investors. A related evidence concerning this can be noted in a study by Pant and Pattanayak (2007) on 1833 Indian companies where they observe a reduction in firm value (Tobin's Q) when inside managers hold less than a 50% stake (indicating entrenchment of managers), and an increase in market value for firms where inside managers owned more than a 50% stake (Convergence-of-interest or Incentive-alignment effect).

Further empirical evidence in the context of emerging markets is supplied by Gul et al. (2010), using a large sample of Chinese companies, where they found a non-linear (concave) effect of percentage of shares held by the largest shareholder on stock price synchronicity. A possible explanation for this lies in the dominance of entrenchment effect initially up to the point of effective control and then the reduction of entrenchment thereafter. The relationship reported in this study can be used to describe the association between the ownership and information environments that potentially exists in Brazil. The ownership structure in Brazil is somewhat analogous to what exists in China with respect to the controlling owners' exercise of control over major corporate decisions including disclosure and reporting policies. Like China, the largest shareholders in Brazil on average hold more than 50% control rights. However, the ownership concentration measure (percentage of shares held by the largest shareholder) used in Gul's study might make the results not applicable to Brazil, since it only accounts for the ownership stake of the largest shareholders in the immediate control chain. In contrast, this study focuses on the control and cash-flow rights of the ultimate owners, after adjusting for their equity stakes at all levels along the control chain.

Based on the arguments put forward above, I predict a non-linear (concave) relationship between the ownership concentration of the ultimate owner (UCFR) and stock price synchronicity (SYNCH). This suggests that any increase in cash-flow stakes initially entrenches (extract private benefits) the ultimate owners. This entrenchment continues to the point at which they obtain effective control of the firm and prevents them from sharing high quality firm-specific information with outsiders (increase SYNCH). Once they achieve effective control (effective control) over a firm, any further increase in cash-flow stake will revert entrenchment behaviour; it will align their interests with those of minority investors, because diverting corporate resources to their personal advantage will cost them disproportionately more, inducing them to disclose more firm-specific information with minority shareholders (decrease SYNCH).

H1 (a): *Synchronicity (SYNCH) continues to increase (decrease) with the level of cash-flow rights of an ultimate owner up to (beyond) the point of effective control, Ceteris paribus.*

3.3.3 Divergence²⁹ between Control and Cash-Flow rights of Ultimate Owners, Entrenchment effect and Synchronicity

Apart from the cash-flow rights of ultimate owner, the separation (divergence) between control and cash-flow rights of ultimate owners also matters in shaping a firm's information environment. The literature below describes how control-ownership divergence entrenches the controlling owners and produces unfavourable implications for firms' information dissemination and reporting practices.

Theoretical studies by Grossman and Hart (1988) and Harris and Raviv (1988) contend that deviation from one share-one vote rule may not be socially and privately optimal as it promises more private benefits to the controlling shareholders (acquirers and aiders) and less benefits to the security holders (non-controlling security holders). By social optimality they mean the selection of efficient management, who in turn can maximize the value of outstanding securities referred to as private optimality. Harris and Raviv (1988), in particular, assert that entrepreneurs who choose to issue one set of securities with only cash-flow rights and no voting rights, and another with only voting rights but no cash-flow rights, compromise social optimality. Companies breaching the one share-one vote rule by issuing dual-class shares maximize shareholders' wealth, but usually have inferior quality management taking control of the enterprise. These two studies mention the use of multiple class shares as a mechanism for breaching the one share-one vote principle and causing disproportional ownership (also known as divergence between control and cash-flow rights). This divergence normally occurs because of securities that grant security holders either larger or smaller voting rights than their claims on the income streams of a company.

Surveying the international empirical literature on the causes and consequences of disproportional ownership, Adams and Ferreira (2008) document the use of dual-class shares, pyramidal structures and cross-holdings as explicit and frequent ways of separating control and cash flow rights. In contrast, takeover defences and fiduciary voting are mentioned in the study, as being more implicit and less common means of producing disproportional ownership. The situation in Brazil has some similarities to other areas in the world, as ultimate owners make frequent use of non-voting shares, pyramiding, cross-holdings and disproportionate board representation to enhance their

²⁹ Divergence, separation and wedge between control and cash-flow rights are used interchangeably in this study. Alternatively, the terms control-ownership divergence and control-ownership wedge refer to the same thing i.e., divergence between control and the cash-flow rights of the ultimate owner.

control, but they also use relatively rare methods of enhancing control, including shareholders' agreements and takeover defences incorporated as separate clauses into shareholders' agreements. It is important to note that the use of pyramiding and shareholders' agreement is mostly confined to family-owned companies, whereas non-voting shares seems to have been used by state-owned enterprises, in Brazil.

The divergence between control and the cash flow rights of ultimate owners resonates with the "divergence of interest" hypothesis advanced by Jensen and Meckling (1976) in the context of widely held ownership structures. Using a simple model they posit that with the decrease in managers' stakes, an incentive arises for managers to view the firm's resources as "other people's money" which motivates them to misallocate outside shareholders' money to their personal advantage. Such behaviour, implying "divergence of interest" between inside managers and outside shareholders, stems from the gap between the control they enjoy and the equity stake they have in the enterprise, and can lower the firm value.

Shleifer and Vishny (1997) argue that large controlling shareholders have both the ability and the incentive to treat themselves preferentially at the cost of other investors and employees. Their power to do so is greatly enhanced if their control rights exceed their cash-flow rights. The benefits that arise from preferential treatments are private benefits that accrue to large shareholders holding sizable equity stakes (i.e., majority) but not to minority investors. The private benefits extraction by controlling shareholders in concentrated ownership structures relate closely to managerial entrenchment in widely held companies. For example, Shleifer and Vishny (1989), in a theoretical model, assert that managers can entrench themselves by making manager-specific investments, including projects that are only valuable under the current managers and match their own academic background and professional skills. In doing so they make themselves indispensable for the success of the project, allowing them to demand higher compensation from the owners and making them more difficult for the shareholders to replace

Morck (1996) compared the entrenchment activities of managers in closely-held and widely- held companies, and found that in both structures, managers do indulge in entrenchment and reap private benefits, but the type of entrenchment varies under the two structures. For instance, in the case of closely held companies, the controlling managers mine political rents by seeking favours from politicians which put them ahead of their competitors. Also, by virtue of large stakes in the company, they are able to erect barriers

to outside disciplinary actions from the market for corporate control. On the other hand, managers at widely held firms gain personal advantage by indulging in excessive perquisite consumption, formulating hiring policies that enable them appoint their favourite people, and wasting money on undertaking “pet projects”.

The literature generally associates entrenchment behaviour (extraction of private benefits) of controlling shareholders with the amount of control rights they hold in a firm. In this connection, Bebchuk (1999) posits in his rent-protection theory of corporate structure, that controlling shareholders, in order to maximize their rent-extraction, prefer to maintain a lock on the firm if the private benefits of control are significant. This phenomenon was also noted by Shleifer and Vishny (1997), when they observed undiversified and immensely concentrated equity holdings by large controlling shareholders worldwide and explained that it occurs because the benefits from controlling the company far exceed the benefits from relinquishing control via diversification.

There is a great deal of empirical literature offering evidence that corporate control is valued by investors, and usually using the differential in the values (prices) of control shares and minority shares as a proxy for the value of control—private benefits. In US settings, Barclay and Holderness (1992) find that large blocks of controlling stock trade at a substantial premium relative to the trading price of minority shares. This shows that buyers of blocks enjoy some special private benefits that are not available to other small shareholders. More specifically, a study by Nenova (2003), on 661 dual-class firms in 18 countries including Brazil, notes the average value of a control-block varies between 48% of firm value in South Korea to 2.88% in Hong Kong. In Brazil, according to the study, it constitutes about one-quarter of the market capitalization of a company. Dyck and Zingales (2004), while estimating the private benefits of corporate control in 39 countries, provide further evidence of controlling shareholders’ entrenchment in Brazil as they report the highest private benefits of control in Brazil. They found that average control benefits, based on the difference between trading prices and prices paid for control blocks, account for 65% of equity value in Brazil.

Managerial entrenchment leading to opportunistic behaviour, commonly observed in diffused ownership setting might not be entirely relevant for Brazilian corporate ownership environment. Consistent with Boubakri and Ghouma (2010) and Faccio and Lang (2002), the problem of managers’ opportunistic behaviour in Brazil can typically be resolved by appointing controlling owners or their relatives as part of top management and as members of boards of directors, which serves to align their interests. The table in

Appendix L demonstrates that 86.7% of companies in my sample have ultimate owners who assume the role of managers by occupying either CEO or Chairman role on the board. Most of the ultimate owners take the role of chairman (66.67%) on the supervisory board³⁰ and as the heads of supervisory boards they control the appointment of members to the executive boards and influence major operational and strategic policies at executive board level.

The problem of entrenchment is even worse when the controlling shareholders enjoy disproportionately higher control over the firm than their respective cash-flow claims (cash-flow rights) on the firm's assets. Claessens et al. (2002), using a sample of 1,301 publicly listed companies from eight East Asian countries, find a positive association between the cash-flow rights of the largest shareholder and firm value, indicating incentive alignment, whereas the firm value declines with an increase in divergence between control and cash-flow rights of the largest shareholder, suggesting entrenchment of controlling owners.

Several empirical studies, for emerging countries in general and Brazil in particular, provide further evidence with regard to entrenchment activities pursued by large controlling shareholders. For instance, while studying 1433 firms from 18 emerging markets including Brazil, Lins (2003) finds that firms have a lower market value when they are controlled by a management group possessing more control rights than their cash-flow rights. The study also reports the worst divergence between control and cash-flow rights of the management group (5.53) and the lowest Tobin's Q (0.81) for 59 Brazilian companies in the sample. The plausible explanation for this is that investors discount firms with potentially severe managerial agency problems stemming from misaligned incentives and managerial entrenchment.

There is evidence that large shareholder's entrenchment extends to crisis period as well as more normal periods. Lemmon and Lins (2003), in a study of 800 firms from eight Asian countries, report that firms controlled by managers having more control rights relative to their cash-flow rights show 10-20 percentage points lower stock returns during financial crisis compared to other firms.

The evidence relating to the entrenchment behaviour of controlling owners in Brazil is even more resounding. Luz (2000) mentioned in his speech at the Institute of International

³⁰ Brazilian companies have a two-tier board structure composed of supervisory and executive boards. The supervisory board, aka board of directors, is the apex board usually headed by the chairman and is responsible for the appointment of the executive board, which is headed by the CEO.

Research that expropriations of minority shareholders by controlling shareholders is very common in Brazil and occurs largely through “Tunnelling”—that is, below market sale of corporate assets to firms controlled by directors of the parent company. Also, excessive salaries paid to the controlling directors or their family members on the board, and the appointment of unqualified and incompetent professionals to management positions were highlighted as other ways of squandering corporate resources. Recently, Pinto and Leal (2013), in a sample of 315 Brazilian listed companies, empirically affirmed the anecdotal evidence of Luz (2000) regarding the private benefits of control extraction by the ultimate owners, when they found that boards with controlling groups or their relatives as directors were paid relatively more than others. In the case of family-controlled companies, the CEOs are said to have been paid more than the amount paid as compensation to the whole managerial team.

The literature above unanimously suggests that concentrated control power coupled with a divergence between control and cash-flow rights of large shareholders entrenches shareholders and create incentives to reap private benefits. Entrenched controlling shareholders engaged in self-serving behaviour and wanting to cover up their egregious opportunistic behaviour, may opt for disclosing less and low-quality information to outside minority investors. To extract maximum rent for their personal advantage they might choose to withhold unfavourable information, opportunistically time the release of value-relevant information to the market, publish incomprehensible, irrelevant and stale information and at times limit the flow of proprietary information to outsiders. This undermines the quality of the corporate information environment³¹. Moreover, entrenched controlling shareholders with greater voting stakes may prefer to resolve information asymmetry by resorting to the use of private communication channels thus impairing the firm’s information environment.

A myriad of empirical studies offer evidence in support of information-impeding behaviour by large controlling shareholders when they are entrenched, either by holding excessive voting rights or by virtue of divergence in their control and cash-flow rights. Fan and Wong (2002) noted a substantial decline in the informativeness of earnings for 977 East Asian companies controlled by shareholders with a huge discrepancy between their control and cash-flow rights. In their view, this happens because the large controlling

³¹Alternatively, the information asymmetry existing between large controlling shareholders and minority shareholders may be solved by resorting to private communication channels instead of relying on public disclosure.

shareholders responsible for firm's accounting and reporting policies report accounting information for self-interested reasons, to hide their outright expropriation, when they are entrenched. Outside investors, while trading the company's stock, also attach less importance to such accounting information as they see it as manipulative rather than a reflection of true underlying economic performance. Consistent with this, Haw et al. (2004) document the increased tendency of insiders (i.e., controlling shareholders and top executives) to manage accounting income if their control rights exceed their cash-flow rights. Attig et al. (2006) using a sample of Canadian firms, demonstrate that large deviations between the control and ownership rights of ultimate owners encourages them to pursue self-interested agendas, which prevents them from sharing value-relevant information with minority shareholders. They note that such behaviour exacerbates information asymmetry and therefore constitutes a large component of bid-ask spreads, reflecting poorly on stock liquidity. Bona-Sanchez et al. (2011) examining Spanish companies, also documented a negative relationship between control-ownership divergence of ultimate owners and timely recognition of losses. According to the authors, this occurs because separation of control and cash-flow rights of controlling shareholders enables them to extract private benefits and the fear of losing these benefits deters them from raising external capital. Instead they turn to internal capital markets to raise funds, which limits the use of external contracts, resulting in less demand for conservative earnings which would otherwise be demanded by external contracting.

Overall, there is a consensus in the studies outlined above that the separation of control and cash-flow rights of controlling shareholders impairs the quality of firm's accounting and financial information, and reduces the willingness of large shareholders to share firm-specific information with outside investors. The limited and less accurate firm-specific accounting information available to investors leads to opacity in such firm's information environments— as measured by stock price synchronicity (SYNCH).

Jin and Myers (2006b), in their theoretical model, envisage that the relationship between a firm's opaqueness and stock price synchronicity is a function of firm-specific cash flows captured by inside managers relative to outside investors. In their view, in the case of opaque firms whose performance is not completely known to outside investors, inside managers prefer to harness private benefits by capturing more cash-flows from profitable ventures and share less cash-flows with outsiders. Thus, inside managers internalize more of the firm-specific aspects (by capturing more cash flows) of the total risk and share a smaller fraction of the risk with outsiders. Since outsiders only have access to market

information they will trade on that and therefore the stock prices will reflect market information rather than firm-specific information (hence higher stock price synchronicity). The authors tested the model empirically, using stock price and governance data from 40 countries, and confirmed the premise that greater firm opaqueness leads to higher stock price synchronicity.

There are many empirical studies suggesting that firm's information opacity influences stock price synchronicity. Haggard, Martin, and Pereira (2008) show that firms pursuing poor voluntary disclosure policies, proxied by lower Association for Investment Management and Research (AIMR) rankings, display higher stock price synchronicity. The underlying reason is that reduced voluntary disclosures enhance information acquisition costs for the investors and contribute to firms' opaqueness, which in turn prevents the incorporation of firm-specific information into stock prices, causing higher stock price synchronicity. Hutton et al. (2009) also note higher stock price synchronicity and a greater likelihood of stock price crashes for opaque firms. Based on a sample of 183 firms from Chile, Khanna and Thomas (2009) demonstrate that firms interrelated through shared equity, common controlling shareholders or shared directors across the chain, are considered to be less transparent and have higher stock price synchronicity. A notable study by Gul et al. (2010), using a large sample of Chinese companies observes an increase in synchronicity as long as the largest shareholder keeps increasing its stake to the point where it achieves effective control over the firm. Boubaker et al. (2014), using a sample of 654 French companies, report that increase in the gap between control and cash-flow rights of the largest shareholders leads to greater stock price synchronicity, signifying information asymmetry between controlling and non-controlling shareholders.

The literature presented indicates there is a widespread agreement on the premise that divergence between control and cash-flow rights fosters entrenchment behaviour among the controlling shareholders by enticing them to expropriate private benefits. To hide their self-serving expropriatory practices, the controlling managers resort to lower-quality financial reporting and limited disclosure of information to outsiders. In effect, this keeps the firm-specific information from being impounded into stock prices and results in greater stock price synchronicity. This monotonic positive (negative) relationship envisaged between control-ownership divergence and stock price synchronicity (firm's information environment) might not hold when the level of cash-flow rights held by the largest shareholders is brought into perspective. The equity stake of the largest shareholder(s) represents their level of financial commitment to the company. Control-

ownership divergence, essentially, could entrench ultimate owners only if their financial commitment (cash-flow rights) in the firm stays below majority (less than 50%), since that is going to place a lower incidence of minority shareholders' expropriation on them relative to outside minority investors. The negative (positive) monotonic relation between control-ownership divergence and firm's information quality (stock price synchronicity) is grounded in the theoretical argument advanced by Fan and Wong (2002).

The above argument, also supported by Boubaker et al. (2014), is based on the premise that the voting rights of the largest shareholders always entrench shareholders, while their cash-flow rights in turn align their interest with the minority investors. Therefore, when there is a divergence i.e., voting-rights exceed cash-flow rights, the entrenchment effect surpasses the alignment effect, resulting in greater extraction of private benefits and less incentive to disclose high-quality value-relevant financial information. This argument assumes that each level of control-ownership divergence will entrench controlling shareholders and cause them to exploit minority investors, without having to do with the level of cash-flow stakes of the largest shareholder. While, I argue that two divergences of equal size can have varying implications on the incentive of owners to exploit minority investors, conditional on whether they hold majority or minority ownership stakes in a company. Consider, for instance, the scenario of two companies in Brazil, *Vigor Alimentos SA* and *Petroleo Brasileiro SA.*, owned by the *Batista family* and the *State* respectively. Though both the ultimate owners have somewhat similar control-ownership divergences (25% for the former and 19.77% for the latter), they may have distinct incentives to entrench themselves subject to their majority (*Batista family*=65.99%) and minority stakes (*State*=34.29%), respectively (See Appendix G and Figure 3.2 for detailed calculations). In the former case, every \$100 expropriated from the company would cost the *Batista family* \$65.99, whereas in the latter instance it would cost only the *State* \$34.29. Thus, one can say that as long as the largest shareholders have a minority stake in the company it will be economically viable to reap private benefits, given their divergence between control and cash-flow rights. In order to hide their value-destroying practices they may choose to disclose limited and low-quality firm-specific information to outside investors, causing higher stock price synchronicity. Additionally, one may argue that minority stock investors might only be concerned about the divergence, and accordingly not rely on the firm-level accounting and financial information provided by ultimate owners, when they learn that the largest shareholder does not have enough (50% or more) stake in the company. Based on this, I posit the following hypothesis:

H1 (b): Synchronicity (SYNCH) increases with an increase in divergence between control and cash-flow rights of the ultimate owner until effective control is secured.

3.3.4 Listing Segments of Bovespa and Firm's Information Environment

In this section, I argue how the association of synchronicity with cash-flow rights (UCFR) and Control-ownership Divergence (Divergence-Ratio) as conceived in hypotheses 1(a) and 1(b) is moderated by the listing quality³² of a company.

In 2000, in the wake of a loss of trading volume to other markets, BM&FBovespa (Bovespa henceforth), recognizing a lack of minority investor protection, non-independent boards of directors and low levels of disclosure as the main reasons for the decline in volume (low liquidity), introduced three “special governance listing segments”: Level 1 (L1), Level 2 (L2), and Novo Mercado (NM). These specially designed listing segments featuring “good governance practices” address these concerns and rank companies based on their commitment to disclosure practices, minority investor protection and board practices. Admission to these listing segments by companies is voluntary and implies strong commitment by companies to better corporate governance practices mainly by assuring enhanced protection to minority investors, strong enforcement of investor rights and producing high-quality financial reports. The protective provisions contained in these listing segments are relatively stricter than those required in current legislation i.e., Corporate Law and CVM (Brazilian Securities Commission).

Of the three segments (L1, L2, and NM), two segments (L2 and NM) are stricter and quite similar to each other, as far as requirements regarding protection of minority investors, board quality and information disclosures are concerned. Both promise: 1) tag-along rights – guaranteeing the same price to non-controlling shareholders, as received by controlling shareholders, in case of sale of control block; 2) to buy shares at economic value from minority shareholders in the event that controlling shareholders decide to delist or cancel the registration of the company; 3) to constitute a board of at least five members with at least 20% independent directors; 4) to prepare annual balance sheets according to International Financial Reporting Standards (IFRS) or the US generally accepted accounting principles (US GAAP); 5) to take any disputes between shareholders and the company to the Market Arbitration Panel; and 6) to keep a minimum float at 25%

³² Since firms voluntarily choose to list on one of the four segments of BM&FBovespa, a firm's listing quality can be taken at par with its governance quality.

of the capital³³ (See Appendix M for a detailed description of the provisions for the respective segments). The only provision that sets Novo Mercado (NM) apart is its strict adherence to the “one-share one-vote rule” which prohibits companies from issuing non-voting stocks, as opposed to what is allowed for companies listed in the level 2 (L2) segment of the market (Bovespa). A detailed comparison of the provisions of all segments is provided in the table in Appendix M. To help with easy comparison of the respective provisions of these segments I have included a table, in Appendix M, which shows how closely L2 and NM segments resemble each other in terms of provisions relating to minority investor protection, board independence and information disclosures. Overall, these indicate the high-quality investor protection afforded to minority investors and evidence of the same is shown in an empirical study by Black, De Carvalho, and Sampaio (2014), who grouped L2 and NM as a proxy for better corporate governance, and reported that non-L2&NM companies that imitated corporate governance practices recommended for NM and L2 showed a substantial increase in their market value. In the present study, companies belonging to these two segments are considered to have high-quality investor protection, better board practices and improved financial reporting and disclosure environment. Therefore, like previous studies, I have combined firms belonging to L2 and NM into one group, referred to as *High Corporate Governance Quality (HCGQ)*.

Among the three special listing segments, the listing requirements for Level 1 are the least stringent. This segment was launched in order to facilitate and encourage companies to take an initial step towards improving their governance standards, rather than imposing the best corporate governance practices immediately. A slight improvement in reporting and disclosure practices can allow a company to be listed on Level 1 without having to make any changes in its ownership structure or altering the way it treats its minority investors. This is why the majority of companies from the standard (Traditional) segment choose to list here, because it avoided making many changes in their board and ownership structures and in their approach to protecting small minority investors, in particular. Gorga (2009) confirms this phenomenon by recording the largest (61.5%) migration of companies listed in the standard segment to Level 1, the least strict segment, reflecting their reluctance to avoid losing control over the companies and their boards.

³³For easier understanding of the listing segments, I have grouped their provisions into two broad corporate governance categories: Minority Investor Protection and Information Disclosure. Other studies use more narrow segmentation of provisions ranging from 6 (i.e., One-share one-vote, Minimum Float, Tag-along, Board practices, Board term, Financial disclosures) used by Braga-Alves and Shastri (2011) to more than 6 categories used by (Gorga, 2009), namely Disclosures, Free Float, Capital Dispersion, Board of Directors, Corporate Rules, Arbitration, Annual Calendar.

In addition to the companies listed in the “three special corporate governance segments”, there are companies listed in the Traditional (aka, standard) segment of the market that provide the least protection to minority investors and rank even worse in terms of their disclosure practices as they comply with the minimum disclosure and governance requirements laid out in the Brazilian Corporate Law and CVM. The traditional segment is the basic segment of the capital market, which has existed for a long period of time. Firms already listed on the standard market can voluntarily opt to migrate to one of the special segments of the market. In contrast, it is mandatory for new companies, wanting to raise capital through IPOs, to list in one of the three special segments i.e., Level 1, Level 2 or Novo Mercado (NM). Just as L2 and NM segments share common features, the Traditional and L1 segments seem to go together because of their lower level of protection for minority investors and their lax requirements on financial reporting and information disclosure practices. The major similarities, as highlighted in Appendix M, mainly involve issues relating to the protection of rights of minority investors such as lack of tag-along rights; not relying on market arbitration panel for the resolution of company-shareholder conflict; not providing voting rights to preferred shareholders on major corporate decisions such as spin-offs, mergers and takeovers; no guarantee to buy shares at economic value if the controlling shareholders decide to delist or cancel the registration; and no mandatory requirement of 5-member board with 20% independent directors. However, with respect to disclosure requirements the L1 segment is a step higher than the Traditional segment: it requires a mandatory disclosure of contracts exceeding R 20,000 between the company and any related party; mandates the monthly disclosure of insiders’ securities trading to the exchange; and requires publication of quarterly consolidated financial statements. Appendix M highlights these commonalities in detail.

The companies listed in the Traditional and L1 segments are similar in terms of their ownership and governance structures including: 1) being owned by large controlling shareholders, generally wealthy families who have strong political connections; 2) tight control over the company exercised by large controlling shareholders who choose to adhere to lower quality governance practices so that they can keep reaping pecuniary and non-pecuniary private benefits of control, and 3) less reliance on the capital market for solving capital shortage issues, as these companies are quite large and can source funds either internally or via governmental financing. Overall, the Traditional and Level 1 segments display inferior quality governance practices, especially with respect to

shareholder protection provisions, board independence and financial reporting disclosures according to IFRS or US GAAP. For these reasons, and following Black et al. (2014), I merge the two segments (Trad and L1) as *Lower Corporate Governance Quality (LCGQ)*, denoting companies with inferior governance and reporting practices.

3.3.5 Moderating Effect of Corporate Governance Quality on the Relationship between Cash-Flow rights (UCFR) and Stock Price Synchronicity (SYNCH)

This section highlights the potential influence that a firm's corporate governance quality in general and firm-specific investor protection in particular, may have on its information environment. It is argued that the non-linear concave relationship hypothesized earlier will transform because of the incremental role that the company's governance quality, measured by its listing status on Bovespa, might play. To comprehend this transformatory role of a company's "governance listing status" in relation to cash-flow rights and stock price synchronicity, insight is sought from the theoretical and empirical literature for developing hypothesis, outlined below.

Numerous studies, conducted worldwide, document the effect of firm-level governance quality and firm-specific investor protection environment on stock returns (Cremers & Nair, 2005; Gompers et al., 2001), liquidity (Brockman & Chung, 2003), cost of capital (Francis, Khurana, & Pereira, 2005), investment efficiency (Wurgler 2000) and firm's information environments (Ferreira & Laux, 2007). More specifically, in this section I hypothesize the moderating effect of the corporate governance quality of Brazilian listed firms on the relationship between cash-flow rights and synchronicity, and the grid presented in Figure 2.1 lays out the basic framework for developing the hypothesis.

Brazil ranks very low, in the world in terms of its institutional and legal environment protecting minority investors. Nenova (2003), measuring the quality of institutional and legal environments for 49 countries, ranked Brazil in 43rd position for its enforcement of law, and 40th and 24th positions for its accounting practices and investor rights, respectively. Low-quality shareholder protection and lack of enforcement of property rights creates an opportunity for controlling shareholders to extract private benefits at the expense of minority investors (Shleifer & Vishny 1997). To address the ills of poor quality investor protection, an increase in ownership stakes by the large shareholders is suggested as a widespread remedy to the problem in the property rights literature. For example, Shleifer and Vishny (1997) assert that large shareholders, with control rights matching the proportion of their cash-flow rights, can protect their rights very well on

their own, unlike minority investors who depend on the legal system of the country for the enforcement of their rights. Shleifer and Vishny (1997) also assert that large shareholders holding majority votes may substitute for the legal system of the country, because governing through majority votes does not require enforcement by the court. This links to the argument by Porta et al. (1998), that “with poor investor protection, ownership concentration becomes a substitute for legal protection, because only large shareholders can hope to receive a return on their investment” (p.417). Connected to this, Lins (2003), in the context of emerging countries, finds that the lack of institutional protection for minority investors and concentrated ownership structure co-exists because the non-controlling shareholders wish to transform themselves into controllers in order to safeguard themselves against exploitation by controlling shareholders. Overall, these studies view corporate ownership structures as property rights arrangements whereby owners of the shares are entitled to three property rights: 1) voting rights, which empower shareholders to deploy corporate assets; 2) cash flow rights, meaning shareowners’ claims over cash-flows of a company, e.g., the right to receive dividends and share in corporate resources; and 3) transferability of shares, meaning the right to transfer or sell shares to another party at mutually acceptable terms. The enforcement of these rights is usually carried out by both the shareholders and the state. If the state is ineffective in enforcing property rights, then enforcement by individuals becomes inevitable. One may predict greater enforcement by individuals (shareholders) in economies where property rights are not properly enforced by the state. In fact, La Porta et al. (1999), in a study of corporate ownership structures of 27 wealthy nations find that concentrated ownership structures, as measured by the shareholdings of the three largest shareholders, are commonly found in countries characterized by low-quality shareholder protection and weak institutional environments. Claessens et al. (2002) and Faccio and Lang (2002) note higher equity stakes by large shareholders in East Asian and Western European countries, respectively, characterizing weaker legal regimes. The existence of moderately concentrated ownership structure in Brazil might also be a natural outcome of weak legal systems, poor law enforcement and corruption. The above literature advocates for the substitution role performed by ownership concentration in environments where shareholders are less protected by regulatory frameworks, but this substitution normally takes effect, more robustly, when large shareholders are large enough to exercise their power by means of their significant equity stakes or more specifically through their majority stakes in companies. A list of studies demonstrating that large equity stakes by controlling shareholders substitute for poor investor protection environment, is provided in Table 3.1.

Table 3.1 Theoretical and Empirical Literature Outlining the Substitution Role of Ownership Concentration in the case of Low Investor Protection.

Topic of study	Name(s) of Author(s)	Sample	Sample Period	Findings
Managerial ownership accounting choices and informativeness of accounting earnings	Warfield et al. (1995)	1,582 firms	US 1988-1990	Managerial ownership is positively associated with the explanatory power of earnings with returns whereas it is inversely related to magnitude of discretionary accrual adjustments. However, they also report that ownership does not matter in the case of regulated companies because managers' accounting practices are monitored by regulation.
Investor protection and corporate valuation	La Porta, Lopez-de-Silanes, Shleifer, et al. (2002)	539 firms from 27 wealthy economies	large 1995-1996	Ownership concentration (proxied by the cash-flow rights held by the largest shareholder) is positively associated with firms' performance. However, the positive impact of the cash-flow rights of the largest shareholder is even larger on firms' performance in civil law countries with weaker regimes.
The reputational consequences of ownership concentration of largest shareholder on stock prices.	Gomes (2000)			This theoretical model contends that when large controlling shareholders hold significant equity stakes they are able to build a reputation among outside investors for not expropriating them and therefore relatively higher stock prices have been noted for such firms, reflecting the reputation effect. The reputational component is even greater in the stock prices of firms in emerging markets with weak legal protection.
International Corporate Governance	Denis and McConnell (2003)	Not applicable	Not applicable	Ownership concentration is a substitute for lack of investor protection.

Agency conflict, Burkart and Panunzi (2006)	Not Applicable	Not Applicable	The theoretical model indicates that inadequate laws protecting shareholders from expropriation by inside managers would call for monitoring of managers by large outside shareholders who in order to perform their monitoring role will accumulate large stakes in the company. Therefore, ownership concentration and legal protection are inversely related.
Role of ownership concentration and investor protection in post-privatization corporate governance.	Boubakri et al. (2005)	209 from 39 countries including Brazil.	Ownership concentration has a more (less) pronounced effect on firm performance when the level of investor protection is low (high).

Table 3.1 shows that ownership concentration of the largest shareholder(s) serves to substitute for lack of investor protection, and the extent of substitution varies with the degree of investor protection offered by any specific institutional and legal regime. Gomes (2000) and Boubakri et al. (2005) find that ownership concentration matters most in low investor protection environments, documenting a relatively stronger reputational effect of large equity stakes of controlling shareholders on stock prices and firm performance, respectively, when investor protection is poorer. Gomes (2000) posits in his model that large shareholders in countries lacking formal protection for minority investors can build goodwill among minority investors for not extracting high private benefits of control. If controlling managers with majority stakes unexpectedly indulge in excessive extraction of private benefits, the minority investors will discount the stock price, which will lead to the largest reduction in the value of shares held by controlling owners. A theoretical study by Burkart and Panunzi (2006) also argues for the substitution of ownership concentration for inadequate investor protection and suggests an inverse relationship between the two. Durnev and Kim (2005) supply more direct evidence in favour of the substitution role of ownership concentration of the largest shareholder in emerging countries, including Brazil and Russia. They note a positive association between the cash-flow rights of the largest shareholder and investor protection score. This relationship is strongest in countries with weaker legal regimes. They argue that in the absence of legal protection for minority investors, ownership concentration matters most in solving agency conflict between controlling and minority investors. With weak investor protection the monitoring of management may be lacking, which in turn forces shareholders to accumulate large holdings to be able to oversee and monitor inside managers.

These studies also suggest that the ownership stakes of large shareholders should be largely irrelevant in highly regulated and more investor-protective environments as most of the independence in choosing accounting policies and reporting practices is removed by rigorous regulations. Warfield et al. (1995) note that informativeness of earnings and earnings manipulations (measured by the magnitude of absolute discretionary accruals), tend to be positively and negatively associated, respectively, with the level of managers' equity stakes, and that these associations are less strong in companies operating under stricter regulatory environments. The explanation they propose is that strict regulations extend monitoring over managers' activities and their accounting choices and therefore the importance of ownership starts to disappear.

Several of these studies concluded for the substitution role of ownership concentration of the largest shareholder for inadequate investor protection based on either statistically not significant results (La Porta, Lopez-de-Silanes, Shleifer, et al., 2002) or statistically weak results (Durnev & Kim, 2005). The statistically non-significant negative coefficient (-0.0946), found by La Porta et al (2002) for the interaction term between “CF Rights and Common Law” (p.1168) suggests that the increase in firm performance due to the largest shareholder’s cash flow rights, in countries with strong investor protection is lower than the increase in firm performance in civil law countries known for weak investor protection. A possible reason for the statistically insignificant result could be that the study assumes a uniform substitution effect at all levels of cash-flow rights of the largest shareholder. This result may become statistically significant if only the increase in cash-flow rights of the largest shareholder at higher cash-flow levels are considered, because the substitution effect may potentially exist at larger cash-flow stakes of the largest shareholder: as Shleifer and Vishny (1997) suggest, only large shareholders with significant equity stakes are able to push for their rights and establish better governance systems. Similarly, Durnev and Kim (2005)³⁴ advocate that large shareholders’ commitment to enforcing better governance practices and strengthening investor protection is contingent upon their desire to steal from themselves. In other words, they claim that only large shareholders with large shareholdings will commit to not stealing money from themselves and be willing to resolve agency conflict between controlling and minority investors in weakly protected countries such as Argentina, Brazil, Turkey, and Russia.

Several firm-level governance characteristics, referred to as unobserved firm-heterogeneity in a theoretical study by Himmelberg et al. (1999), are said to play a role in providing protection to minority investors. Klapper and Love (2004) report considerable variation in corporate governance practices across firms in emerging countries, based on the level of protection provided to minority investors. They indicate that voluntary governance initiatives from firms such as improved disclosures, setting up

³⁴Durnev and Kim (2005) also report a weakly statistically significant negative coefficient (-0.030) (10% significance level) for the interaction term between *OWN_CASH* and *LEGAL*, referring to the observation that ownership concentration plays a less important role in providing protection to investors in countries with high quality investor protection. This statistically weak result stems from treating all ownership concentrations, i.e., smaller or larger, uniformly when estimating the regression model, because the insignificant effect of small cash-flow concentrations on investor protection possibly dilute the overall significance. Interacting only larger cash-flow concentrations (e.g., above the country’s average cash-flow rights) with *LEGAL* may produce highly significant results, indicating the substitution effect occurring at higher cash-flow levels of the controlling shareholder.

effective boards populated with independent directors, and disciplinary mechanisms that deter inside controlling managers from expropriation, could offer varying degrees of protection to minority investors. Furthermore, they conclude that voluntary corporate governance reforms by firms, though perhaps not a perfect substitute for a country's legal infrastructure, still improve investor rights and provide better safety to minority shareholders as a second best alternative. Durnev and Kim (2005) support this view that there are disparities in firm's corporate governance practices within a country, and these variations happen to be decreasing in the strength of country's legal protection for investors. A similar scenario can be envisioned for Brazil, which is infamous for weak laws regarding property rights and investor protection (Musacchio, 2008) and allows firms to opt for certain levels of corporate-governance quality and investor protection, subject to their decision to list in one of the four segments of BOVESPA (Traditional, L1, L2, NM).

There is a general consensus in the literature outlined above and the studies included in Table 3.2 that both country-level investor protection laws and firm-level governance practices insulate minority shareholders from the expropriations of controlling shareholders and therefore could lead to higher market value, investment efficiency and better corporate transparency.

Table 3.2 Cross-country and Single-country Studies on the Relationship between Firm-level Governance Practices and Protection of Minority Investors and its Implications for Firm Value, Stock Returns and Liquidity.

Topic of study	Name(s) of Author(s)	Sample	Sample period	Findings
Corporate governance and its effect on stock prices	Johnson, Boone, Breach, and Friedman (2000)	9 East Asian countries	1997-1998	Managers in countries with weak-investor protection laws are prone to pursue more expropriation and thus a greater reduction in assets prices.
Role of Investor protection laws in checking expropriations by controlling shareholders.	La Porta, Lopez-de-Silanes, Shleifer, et al. (2002)	539 firms from 27 wealthy economies	1995-1996	Better shareholder protection is associated with higher market value (Tobin's Q) because countries characterized by better investor protection limit private benefit extraction by controlling shareholders.
Role of legal environment, law enforcement, investor protection, take-over regulations and corporate charter provisions in explaining private benefits of control (control-benefits).	Nenova (2003)	661 dual class-firms from 18 emerging countries including Brazil	1997	The study reports a negative relationship between the level of investor protection and the value of controlling-block of shares, a proxy for private benefits. This implies that benefits from expropriation, as measured by the value of the control-block, are lower in countries with strong protection for investors.
The economic consequences of firm-level corporate governance initiatives	Leuz and Verrecchia (2000)	German Companies	1993-1998	Voluntary firm-level governance initiatives provide greater monitoring over managers and lead to lower bid-ask spreads reflecting less information asymmetry between insiders and outsiders.
Value implications of foreign firms that subscribe to improved governance regimes	Doidge, Karolyi, and Stulz (2001))	1167 firms from 40 countries	1997	The market value of foreign companies listed in the US exceeds those firms from the same country not listed in the US. The underlying reason for this is that controlling shareholders of firms listed in the US cannot extract private benefits from control, as compared to their counterpart

				shareholders in firms, not listed in the US. There is also a better alignment-of-interest of controlling shareholders with minority investors for foreign cross-listed firms.
Firm-level corporate governance quality and effect on stock returns	Gompers, Ishii, and Metrick (2001)	1500 firms from the US	1990-1999	Strong firm-level governance practices, measured by strong shareholder rights and less antitakeover defence provisions, curtail managers' entrenchment and result in higher stock returns. They also report that weak shareholders rights result in lower profits, lower sales growth and higher capital expenditures.
Corporate governance, investor protection and performance in emerging countries	Klapper and Love (2004)	14 emerging countries (including Brazil)	2000	Voluntary firm level governance initiatives offer improved protection to minority investors. A higher quality corporate governance- proxied by a high ranking on CLSA- is positively associated with firm's operating performance and stock returns. This relationship is even stronger for countries in weak legal environment.
Governance practices, ownership concentration and implications on firm value	Durnev and Kim (2005)	494 companies in 27 countries		Good corporate governance practices are opted for as a remedy for weak legal environments. High quality governance activities have a positive impact on firm value. This relationship is even stronger in less investor-friendly countries. This implies that corporate governance is valued more when it is scarce, especially in weaker legal regimes. Also, in an environment of poor investor protection, ownership concentration solves agency conflicts between controlling and minority shareholders.
Impact of Firm-level corporate governance and market value	Black, Love, and Rachinsky (2006)	Russia	1999-2005	A statistically and economically significant positive relationship between corporate governance and market value is recorded.

Corporate governance and firm value	Carvalhal da Silva and Leal (2005)	131 firms listed on Bovespa (Brazil)	1998-2002	There is a positive relationship between the quality of a firm's corporate governance practices and the firm value. The corporate governance quality is measured by a corporate governance index covering four broad areas: shareholder rights, board functioning, ownership concentration and disclosure practices.
Investor protection and firm value	De Carvalho and Pennacchi (2012)	42 companies from Brazil that migrated to better listing segments	2000-2006	Brazilian firms that migrated to better corporate governance segments on the Bovespa exchange reported a reduction in premium between voting and non-voting shares, signifying a decrease in private benefits. Their analysis also shows that migration of companies to premium listing segments (N2 and NM) produces abnormal returns for shareholders and these returns are even higher if the firm did not have a prior cross-listing in the US.

The theoretical and empirical studies in Table 3.2 document the favourable role of firm's corporate governance quality and investor protection laws in curbing private-benefits extraction by controlling shareholders. This phenomenon was recorded by La Porta, Lopez-de-Silanes, and Shleifer (2002) for worldwide firms and by Nenova (2003) and Klapper and Love (2004) for firms in emerging countries. These checks on rent-extraction activities tend to reduce agency costs and result in higher stock returns (Gompers et al., 2001; Johnson et al., 2000), greater market values in Russia and Brazil (Black & Khanna, 2007; Carvalhal da Silva & Leal, 2005), and reduction in information asymmetry between insiders and outsiders as reflected in narrower bid-ask spreads reported by Leuz and Verrecchia (2000). More specifically, Carvalho and Pennacchi (2007) in a notable study in the Brazilian context, report a substantial drop in the price-differential between voting and non-voting stocks of companies that voluntarily choose to list on better governance segments (*L2* and *NM*). The lower price-differential, implying lower private benefits of control, points to the less severe expropriation of minority investors by controlling shareholders in companies that commit to the better governance listing segments of the exchange. De Carvalho and Pennacchi (2012) note a substantial improvement in the corporate behaviour of 42 Brazilian companies that choose to list on premium segments of Bovespa. This improvement manifests in the form of abnormal stock returns for the shareholders and greater growth potential for the companies. Such cost-effective voluntary commitment to better governance practices yields even better abnormal returns for the shareholders of companies that commit to the highest governance standards as mandated in the *NM* and *L2* segments.

The extraction of private benefits by controlling shareholders, coupled with lack of investor protection, plays a significant role in the opacity of firms, with severe implications for their accounting and information quality. For instance, Leuz et al. (2003), using a sample of 8,616 non-financial firms from 31 countries including Brazil, note that inside controlling managers tend to extract more private benefits of control when investor protection is weak. These managers, with the aim of concealing the firm's true underlying economic performance from outsiders, engage aggressively in earnings management practices. These results indicate firms' accounting information quality (earnings management) to be decreasing with the increasing private benefits of control and increasing with the rising levels of investor protection. Morck et al. (2000) relate weak investor protection to less credible and less useful firm-specific information for arbitrageurs (informed traders), who consequently reduce their participation in the market

and are crowded out by un-informed (noise) traders. With less credible firm-specific information, (Saito & Silveira, 2010) the noise traders “herd” and trade the market index, rather than trade individual stocks, based on market information. Hence weak investor protection could influence R^2 in two ways. First, because of the increased reliance of investors on market-information, it could amplify the market-return volatility component relative to the firm-specific rerun volatility in R^2 . Second, weak investor protection, as posited by Jin and Myers (2006), may exacerbate the effect of a firm’s opaqueness, by allowing inside managers to retain an excessive amount of operating cash-flows internally and transfer firm-specific risk from outside minority investors to inside controlling managers. Jin and Myers (2006) believe that firm’s opaqueness and inadequate protection for investors’ property rights go together in practice. They think that these two are mutually reinforcing as lack of sufficient property rights entices inside managers to increase their capture of firms’ operating cash flows (private benefits). This capture is even greater when the firm is opaque and outside investors cannot see the exact amount of cash-flow extraction by insider managers. This scenario of increased capture of cash-flows by insiders with no recourse available because of poor investor protection laws shifts relatively greater amounts of firm-specific risk to insiders than to outsiders. As a result, opaqueness coupled with the lack of investor protection will lead to lower firm-specific risk borne by outsiders, and in the process those with access only to market information will be forced to trade on that information, which may translate into relatively higher synchronicity. This framework can be used to gauge the moderating effect of corporate governance segments (*LCGQ* and *HCGQ*) on corporate information environment (*SYNCH*) given the varying degrees of opaqueness and investor protection in these segments.

Brazilian companies listed on the HCGQ segment, as compared to LCGQ, are considered more transparent and guarantee greater investor protection because of : 1) strong investor protection in the form of tag-along rights for minority investors or guaranteeing the economic value of shares to investors in the event of company’s delisting, and resolving shareholder disputes through market arbitration panels (CVM); 2) more effective boards being dominated by independent outside directors and independent chairpersons (see Table 3.3); and 3) preparing and reporting financial statements in accordance with IFRS and US GAAP.

Table 3.3. Board Independence and Board Composition in Lower (LCGQ) and Higher Corporate Governance Segments (HCGQ) of BM&FBovespa.

Bovespa Segment	Independent Chairperson (N)	Independent Chairperson (%)	Independent Directors (%)	Average Board Size	Directors Nominated by Controlling Shareholders (%)
LCGQ	1	2.07	17.21	5.32	79.34
HCGQ	17	21.23	37.23	7.96	61.32

The first characteristic of tag-along rights (previously known as mandatory bid rule- the obligation to buy shares from minority shareholders at the same price as paid to the controllers) is widely known to have been associated with strong protection for the minority investors, in the extant empirical studies on Brazil, that helped arrest the level of rent extraction and private benefits by controlling shareholders. For instance, Nenova (2006) observed weakening of minority shareholders' rights when mandatory bid rule (now known as tag along rights) was taken away from minority investors, resulting in an increase in the value of control for controlling shares. A number of other studies in Brazil also provide the evidence in favour of the investor protection role of tag-along rights. da Silva and Subrahmanyam (2007) note a significant decline in the quality of investor protection as a result of revocation of mandatory bid rule. Saito and Silveira (2010) report a substantial reduction in the difference in prices between voting and non-voting shares for companies granting tag-along rights to their shareholders, pointing to strong investor protection and lower private benefits of control. Carvalhal (2012), using a sample of 88 Brazilian firms with SAs among their shareholders, documents a positive association between market value and SAs containing fewer restrictions on the transferability of shares including tag-along rights as an element of shareholder protection.

The implications of strong rights for investors extend to the corporate information environment as well. Ferreira and Laux (2007) assert that firms that offer better protection to investors have superior quality governance practices, which reduce the possibility of insiders (controlling shareholders and managers) expropriating outside investors and enable such firms to be more open in sharing information with outsiders. They note that firms with fewer antitakeover provisions (a proxy for investor protection) display greater degrees of idiosyncratic risk (firm-specific components in stock prices), private information flow and information about future earnings in stock prices. DeFond, Hung, and Trezevant (2007) supplement this by arguing that firms operating in countries with strong investor protection institutions have high quality and more credible earnings,

which they empirically confirm by documenting a higher proportion of information content in their earnings and swifter incorporation of their earnings into stock prices.

The other two attributes of HCGQ companies – corporate boards being dominated by independent outside directors or independent chairperson (see Table 3.3) and adoption of IFRS and US GAAP for reporting of annual financial statements –primarily refer to the greater corporate transparency and less opaqueness. Taken together, these features are said to reduce the information asymmetry between inside managers and outside investors and also tend to provide effective monitoring over the managers who are responsible for preparing and reporting financial information. Several empirical studies have examined corporate transparency in the presence of independent corporate boards and document an improvement in financial reporting and accounting quality. For instance, Dechow, Sloan, and Sweeney (1996) report that firms with fewer independent directors on the board are more prone to manipulate earnings. Beasley (1996) shows that firms with more independent boards, greater proportions of outside directors and longer-serving directors have less financial statement fraud. This has also been the case in an emerging market. Chen et al. (2006) observed a low incidence of fraud in Chinese companies with better boardroom characteristics, including having a greater percentage of outside directors and chairmen with longer tenure. Similarly, Klein (2002) affirms the existence of more effective monitoring of quality of information contained in financial reports by boards dominated by independent outside directors. The quality of information, measured by the extent of earnings management (abnormal accruals), was found to be positively associated with the degree of board independence. These findings were complemented by Ajinkya, Bhojraj, and Sengupta (2005) who note that management in firms with more outside directors on the board and greater institutional ownership are likely to issue more accurate and more conservative earnings forecasts. Consistent with this, Karamanou and Vafeas (2005) document an increased tendency of managers to make and update earnings forecasts when overseen by effective and independent boards, and these forecasts are considered to be more accurate and are more favourably received by investors in the market. More specifically, in China, an emerging market, Lo et al. (2010) show that effective governance structures in general, and improved board characteristics in particular, play a significant role in monitoring management and constraining inside controlling managers from engaging in opportunistic behaviours (via transfer pricing manipulations). Using data from 266 listed companies from Shanghai Stock Exchange, they find that firms with high quality board practices, including higher percentages of

independent directors, lower percentages of parent directors (i.e., those representing parent companies) and the CEO and chairman being different persons, exhibit improved monitoring abilities in their boards of directors. This results in lower levels of earnings manipulations via transfer pricing decisions.

The last of the three characteristics that makes HCGQ companies superior to their counterpart companies in LCGQ is the requirement to prepare and report annual balance sheets under IFRS and US GAAP (See Appendix M). A vast literature confirms the information-improving role of IFRS adoption by firms in both international and Brazilian settings. In a study on 14 EU countries, Beuselinck, Joos, Khurana, and Van der Meulen (2009) observe a reduction in stock price synchronicity around the time of adoption of IFRS. Kim and Shi (2010), using firm- level data from 34 countries, show that IFRS adoption facilitates the incorporation of firm specific information into stock prices as they noted a significantly lower synchronicity for IFRS-adopters (firms) compared to non-adopters. More recently in the Brazilian context Santana, Sarquis, Lourenço, Salotti, and Murcia (2014), using a sample of 51 firms included in Ibovespa index, record a significant reduction in the stock price synchronicity of firms reporting financial statements under IFRS.

In summary, firms listed under higher corporate governance segment (HCGQ) exhibit better investor protection and less opacity. Together, these factors are expected to have a positive influence on the information environments of companies. Separately and jointly, as demonstrated in the earlier literature, improved investor protection and reduced opacity are known to have positive effects on the information and reporting quality. More recently, Lau, Shrestha, and Yu (2015), using a comprehensive governance index measuring firm-level governance quality in 21 countries, based on firms' investor protection and disclosure practices, report an increase in the information content of earnings announcements for firms with better corporate governance rating. The corporate governance index in the study was constructed based on 44 governance attributes available in RiskMetrics database covering four aspects of firm-level governance practices: board practices, audit quality, executive compensation and ownership structure. Of these, sound board practices have the most profound effect on informativeness of earnings announcements.

By contrast, the co-existence of poor investor protection and greater opaqueness in the lower corporate governance segment (LCGQ) reduce firms' reporting and information quality. Lack of adequate property rights for investors in this segment will entice ultimate

owners (inside managers) to capture disproportionately greater proportions of firms' operating cash-flows, which will remain largely hidden from minority investors because of the relatively poor disclosure practices specific to these companies. In addition, the inferior quality boards of these companies, containing fewer independent board members (see Table 3.3), will be unable to provide effective monitoring of management activities and reporting practices, which in turn may further compromise the quality of firm-specific accounting information and exacerbate the information environment further.

However, the magnitude of the information-improving impact of better investor protection and firms' transparency may transform when the ownership concentration (cash-flow rights) of the largest shareholder is factored into the discussion. As argued previously, the ownership concentration (cash flow rights) of the largest shareholder serves as a substitute for the lack of property rights in weak investor protection regimes and this substitution comes into effect more profoundly when the largest shareholder has significant or majority (>50%) cash-flow stakes. The way in which a firm's governance quality, denoted by its listing status (LCGQ or HCGQ), in Brazil may affect the relationship between the *cash-flow rights of an ultimate owner* and *stock price synchronicity* is outlined in the matrix in Figure 3.1.

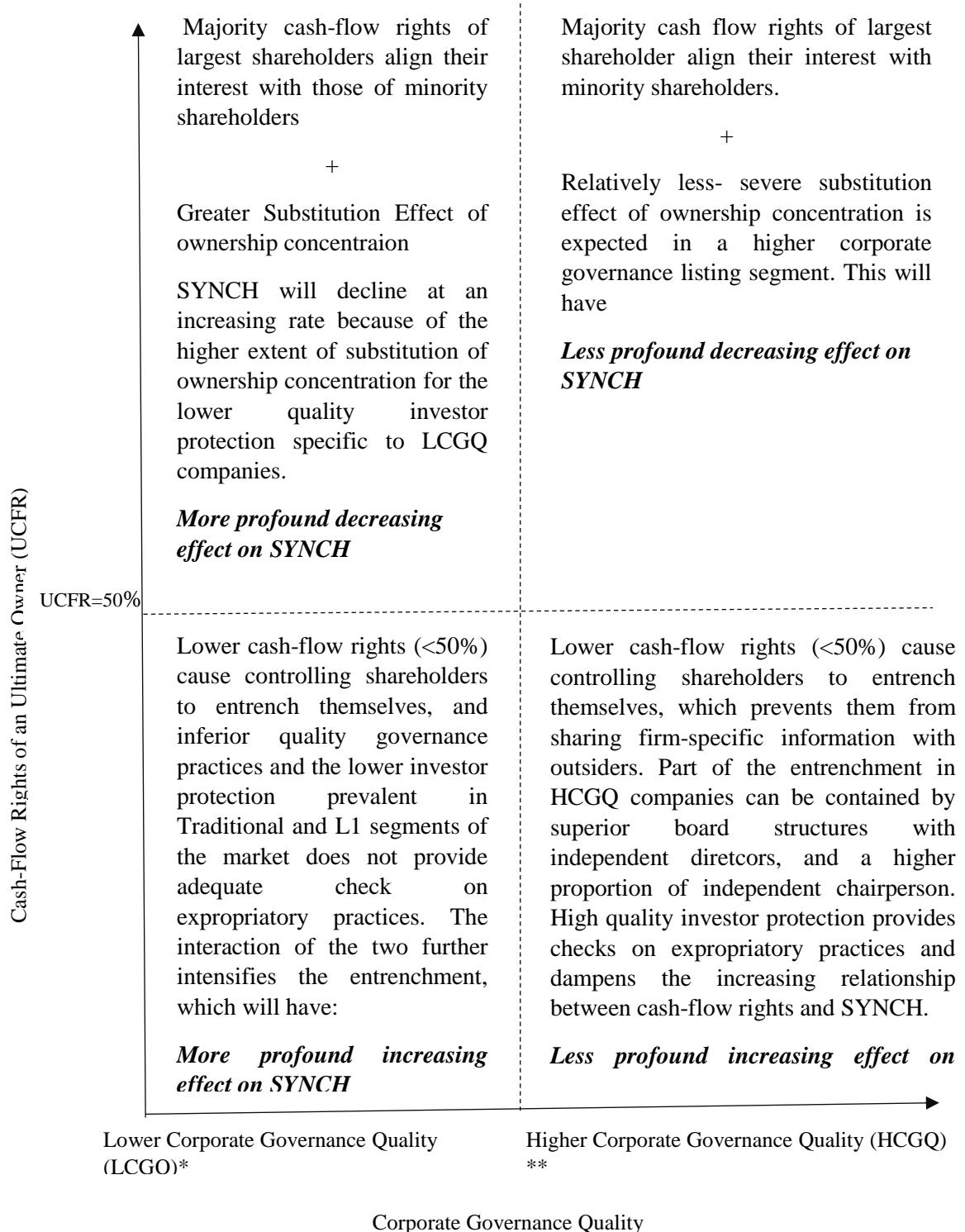


Figure 3.1: The moderating effect of a firm's governance quality on the association between ownership concentration (UCFR) and stock price synchronicity (SYNCH). Companies listed on Traditional and L1 segments (L2 and Novo Mercado) of the BM&FBovespa Exchange are grouped into LCGQ (HCGQ).

3.3.5.1 Minority Cash-Flow Rights and Low Corporate Governance Quality (LCGQ)

The 2X2 matrix presented in Figure 3.1 breaks the joint effect of firm-level governance quality and ownership concentration of the ultimate owner (UCFR) on firms' information environments (SYNCH) into four quadrants. The bottom-left quadrant illustrates the incremental effect that a firm's poor governance quality has on the relationship between the cash-flow rights of the ultimate owner and stock price synchronicity (SYNCH). The increase in cash-flow rights of ultimate owners, when they hold below-majority equity stakes in companies listed on LCGQ segment, can lead to two effects: 1) the increase of equity stakes (cash-flow rights) induces entrenchment behaviour on the part of controlling shareholders and may also be perceived as a control accumulation exercise by minority investors; and 2) companies characterized by weak investor protection and greater opaqueness might enable inside controlling shareholders to extract disproportionately higher operating cash-flows, who as a result, will have even greater incentives to hide value-destroying activities from outsiders. Taken together, a less-than-majority (<50%) stake entrenches controlling shareholders and their desire for entrenchment becomes even more intense, as advocated by Jin and Myers (2006), when it remains unchecked owing to the lack of sufficient investor protection and opaque corporate board structures peculiar to LCGQ companies. Greater capturing of cash-flow will shift the firm-specific risk to the insiders and these companies with relatively inferior-quality reporting practices (non-IFRS and non-US GAAP financial statements) may further impair the quantity and quality of firm-specific information released to outsiders. Therefore, increased cash-flow rights for controlling shareholders in companies with weaker investor protection and opaque board practices, in aggregate, can adversely affect the flow of firm-specific financial information and exacerbate the increasing relationship between cash-flow rights and stock price synchronicity as shown in Figure 3.1.

3.3.5.2 Majority cash Flow Rights and Low Corporate Governance Quality (LCGQ)

The upper left quadrant demonstrates the effect on synchronicity of increasing equity stakes by the largest shareholders once they have already acquired majority cash-flow rights in companies operating in the (LCGQ) segment of BM&FBovespa. The increase in cash-flow rights of ultimate owners in companies, where they hold majority stake, creates two effects: 1) discouraging expropriation on the part of ultimate owners as each dollar expropriated will now leave a relatively larger dent in their own wealth compared

to the loss of wealth faced by minority shareholders, thus an alignment-of-interest effect will become more likely; and 2) the majority cash-flow stake of large shareholders in companies that are plagued with weak investor protection, will activate a stronger substitution effect, as evidenced in the literature already reviewed (Boubakri et al., 2005; Durnev & Kim, 2005; Gomes, 2000). As argued by (Durnev & Kim, 2005) one does not steal money from oneself. Together, a greater alignment-of-interest and a relatively stronger compensation for the lack of investor protection will prevent large inside controlling shareholders from undertaking further wealth-expropriating activities. This will not only incentivise controlling shareholders to disseminate more value-relevant, firm-specific accounting information, but also such information will be perceived to be more reliable and more credible by outside investors. Consequently, the increased amount of stock trading by outside investors on more and high-quality firm-specific financial and accounting information will result in even larger firm-specific component in stock prices, and a more profound decreasing impact on *SYNCH* can be expected.

3.3.5.3 Minority Cash-Flow Rights and High Corporate Governance Quality (HCGQ)

The lower right quadrant of Figure 3.1 illustrates the incremental effect, on stock price synchronicity of ultimate owners' enhancement of equity stake in companies listed under the higher governance segment of Bovespa (HCGQ). The accumulation of ownership stake, when the largest shareholder has a minority cash-flow stake, makes entrenchment economically viable for the owner as each marginal dollar siphoned off costs less to the controlling owner as compared to the cost shifted to the rest of the shareholders holding the remaining fraction of the equity (majority stake). To hide self-serving egregious behaviour controlling owners choose to disseminate less firm-specific information, hence higher *SYNCH*. The vast majority of empirical evidence provides support to the notion that better investor protection (Ferreira & Laux, 2007), independent boards as monitors of financial reporting quality (Ajinkya et al., 2005; Karamanou & Vafeas, 2005; Klein, 2002) and IFRS compliant annual reports improve corporate information quality (Beuselinck et al., 2009; Kim & Shi, 2010; Santana et al., 2014). In summary, these positive influences of good governance practices on firm's information disclosure practices can partly dampen the steep rising trend in stock price synchronicity associated with entrenchment, and thus a less-profound increasing trend in synchronicity may eventually set in.

3.3.5.4 Majority Cash-Flow Rights and High Corporate Governance Quality (HCGQ)

The top-right quadrant in Figure 3.1 alludes to the moderating effect of firm's high listing quality (HCGQ) on the relationship between cash-flow rights and synchronicity. The effect is predicted to be less intense in terms of the decreasing relationship between cash-flow rights and synchronicity.

The increasing cash-flow stake of ultimate owners, subject to their already existing majority ownership in HCGQ companies, is expected to align their interests with those of minority investors, which will motivate them to publish high-quality firm-specific information to outsiders and therefore result in lower *SYNCH*. However, the majority (>50%) cash-flow rights of the largest shareholder in better protected companies serves as a less than perfect substitute for the quality of protection provided to investors, so the substitution effect of cash-flow rights is not as strong as it is in the case of less protected companies in LCGQ. Consequently, the negative relationship between *cash flow rights* and *SYNCH* may weaken because of less severe substitution effect coming into play for HCGQ companies (i.e., companies with high-quality investor protection and less-opaque boards). The weaker substitution effect of ownership concentration will ultimately slow down the rate of decline in *SYNCH*.

Combining all four quadrants, the moderating effect of corporate governance quality on the concave relationship between the *cash-flow rights* of an ultimate owner and *stock price synchronicity*, hypothesized in H1(a), is predicted to be more intense (less intense) for companies listed in LCGQ (HCGQ) segments of Bovespa. This reduces to the following hypothesis:

H2: *The concave relation between synchronicity and cash-flow rights of an ultimate owner is more (less) pronounced for firms with Lower Corporate Governance Quality (Higher Corporate Governance Quality).*

3.3.6 Shareholder Agreements and its Effect on Stock Price Synchronicity

SAs are commonly used by block holders (>5%) in Brazilian listed companies to either enhance control over the company by pooling their voting rights or for governing relationships among shareholders by specifying rights and duties beyond what is stipulated by the corporate law and regulatory institutions (CVM). In general, SAs include the following clauses, among others, regulating shareholders' rights and duties: a *right of first refusal* that mandates a signatory shareholder, wanting to sell his stake to third parties, to first offer his shares to other shareholders; *provision of control* that binds participants' votes in the shareholders' meeting for major corporate decisions requiring either simple majority, supermajority or consensus agreement; a *dispute resolution mechanism* that outlines the arbitration procedure for solving disputes among shareholders; *restricted transfer of shares* that forbids shareholders in the agreement to sell their shares without the prior approval of all shareholders (e.g., often pre-emptive rights are granted to the participants); *board composition* that permits participating shareholders to elect members to the supervisory and executive boards in an agreed manner, (sometimes supermajority voting is imposed in certain board decisions); *non-competition* that restricts the signatory shareholders from competing with the firm; and *governance and disclosure provisions* that aim at protecting investors' money and their rights by mandating the disclosure of executive compensation, restricting and disclosing related party transactions, and prohibiting management from engaging in actions that could impair corporate governance quality (e.g., prohibition on downgrading the firm's listing quality).

Prior literature suggests that SAs, in Brazil, vary in terms of their emphasis on the aforementioned clauses that in turn define their role as either an instrument of coordination³⁵ or an instrument of expropriation of minority investors (see Carvalhal, 2012; Masullo, 2015). The coordination role is said to have been fulfilled when SAs contain more clauses pertaining to investor protection, streamlining decision making among a group of similar signatory shareholders (e.g., within a controlling family), lay out dispute resolution procedures, and restrict related party transactions. In contrast, SAs geared towards expropriating resources from minority investors include provisions that tend to enhance the controlling power of the coalition shareholders disproportionately to

³⁵SAs serving a coordination role in this essay are similar to those in US family firms being used as a commitment device by the founding family members for internalizing the value consequences of their actions Villalonga and Amit (2009).

their voting rights by electing more board members on the supervisory board, binding directors' votes in preliminary shareholders' meetings, or introducing restrictions on the transfer of shares by coalition shareholders.

The former agreements seeking coordination among block holders and ensuring superior investor protection represent those companies where there is an ultimate owner at the 25% threshold who nonetheless enters into an agreement with other significant block holders, mainly domestic and foreign institutional investors, for raising finances. Such SAs in this essay are called *SAs-with an ultimate owner (controlling shareholder)*. In contrast, the latter agreements characterize companies where no single block holder qualifies as an *ultimate owner* at the 25% control threshold, and therefore several block holders holding voting rights in the range of 5% to 25% form coalitions to control companies as a group. This collusion allows them to scale up their collective voting rights to 25% or higher and enables them to exercise joint control over the company by having majority representation on the supervisory board. Such coalitions in this study are termed as *SAs-without an ultimate owner* (earlier known as *Jointly Controlled through shareholders' agreements*)³⁶.

Both types of SAs differ in their emphasis on the types of clauses included, owing to the peculiar differences in the two arrangements in terms of dispersion among the voting rights of signatory block holders, contestability of the largest participating shareholder, aggregate cash-flow committed by the coalition shareholders in the agreement and affinity among the participating shareholders. These factors jointly determine whether these agreements are used as instruments for enhancing control with the objective of expropriating minority investors or as vehicles for organizing relationships among block holders and granting greater rights to minority investors.

3.3.6.1 Related Literature and Hypothesis Development

A survey of the theoretical and empirical literature on block holders suggests that blockholders are motivated by two factors to form coalitions: shared benefits of control; and private benefits of control (Holderness, 2003). The shared benefits of control emanate from the superior quality management or effective monitoring performed by the coalition as a result of the collocation of decision rights and wealth effects associated with the

³⁶ *Jointly controlled* companies in this section refers to shareholders' agreements without a controlling shareholder however *SAs with an ultimate owner* denote companies having SAs with a controlling shareholder.

coalition. As the ownership stake of the block holders increases they will have greater incentive to enhance firm value, and the extent of their willingness to share the benefits of the incremental value with minority shareholders, ultimately, constitutes shared benefits of control. Private benefits arise when block holders form coalition(s) by pooling their voting power to consume corporate resources and extract corporate benefits that are not shared with minority shareholders.

Several studies highlight various characteristics of coalitions that lead them to choose shared benefits of control over private benefits of control. For example, Shleifer and Vishny (1997) stress the shared benefits of control by arguing that “when the control rights are concentrated in the hands of a small number of investors with a collectively large cash-flow stake, concerted action by investors is much easier than when control rights, such as votes, are split among many of them.” (p. 753). Here, the authors allude to the convenience of initiating legal action by combined shareholders with only minimal help from the courts as a potential benefit that could be shared among all investors. Bennedsen and Wolfenzon (2000), in their theoretical model, put forward the notion of an “alignment effect” that predicts shared benefits of control for the controlling coalition only when the coalition possesses greater cash-flows and internalizes the significant costs of its actions. Hence coalitions, with higher aggregate cash-flow stakes, would refrain from extracting costly private benefits with a view to avoiding internalizing most of their costs. Consistent with this, Gomes and Novaes (2005) show that sharing control is efficient in firms with projects that are hard for outsiders to evaluate, and when firms’ financing requirements are large. They note that the benefits of sharing control are particularly pronounced in jurisdictions with less legal protection for investors and less transparent firms. In contrast to the shared benefits of control, Bennedsen and Wolfenzon (2000) discuss a negative “coalition formation effect” where they expect controlling coalitions with a small number of cash-flow rights to be extracting private benefits at the expense of non-participating shareholders. In the Brazilian context SAs with an ultimate owner fit the above scenario where one large controlling shareholder, often having majority cash-flow rights, has signed an agreement with minority institutional investors for raising finances. These may include the State-owned Development Bank (BNDES), government employees’ pension fund (PREVI) and pension funds of other government-owned institutions i.e. (Petros and FUNCEF). The table in Appendix P clearly shows that the combined cash-flows of signatory shareholders in these SAs are considerably higher (69.6%) than the cash-flow stakes of signatory shareholders in SAs without an ultimate

owner (42.07%). Also, these agreements denote companies that show heavy reliance on external funds as reflected in the leverage ratios of 65.3% and 57.3% for SAs with an ultimate owner and SAs- without an ultimate owner respectively. The provisions contained in the *shareholder agreements with an ultimate owner* seem to be geared towards achieving shared benefits of control.

In Brazil companies that have shareholder agreements with an ultimate owner fit the arrangements set out in the research above as these coalitions represent a vast majority of the cash flow. Also, the type of block holders and contestability of the largest shareholder participating in the coalition matter in terms of whether the benefits of control are to be shared among shareholders. The type of block holders and the contestability of the largest shareholder link with the monitoring function performed by some of the block holders included in the coalition. Pagano and Roel (1998), in their theoretical paper, assert that a controlling shareholder needing capital chooses to sell shares to private investors and trades the cost of going public for the close monitoring offered by the large private block holders. Volpin (2002), using a sample of Italian firms, finds that when control of the largest shareholder is contestable, as is the case with a company controlled by a voting syndicate (agreements), the shareholders are less prone to reap private benefits and thus contribute to enhance the firm's value. Maury and Pajuste (2005) elaborate the notion of contestability by showing that families with managerial and board representation in Finnish family-controlled firms are more prone to extract private benefits if not monitored by another strong block holder. They also conclude that apart from the size of the non-controlling block holder, non-affinity among the block holders in the coalition plays a role in curbing private benefits of control, as they note the highest level of contestability when the first and second largest shareholder in the coalition are family and institutional investors respectively. Contestability plays even more effective role in checking the control power of the largest shareholder in coalitions in family-controlled companies when other block holders are of a non-family type. Jara-Bertin, Lopez-Iturriaga, and Lopez-de-Foronda (2008) and Sternberg et al. (2011), in separate studies on European and Brazilian firms, note a greater amount of contestability in the coalition of family-controlled firms when among different types of shareholders that as a result contribute to their higher market values. Baglioni (2011), analysing SAs in Italian listed firms, notes that the agreements play an instrumental role in diluting the excessive voting power of the largest contracting shareholder by including "supermajority" or "Unanimity" clauses in the agreements, for approval of major corporate decisions. The study further adds that

supermajority and unanimity rules, i.e., rules requiring the approval of at least two-thirds of shareholders (or two-thirds of board members) and all of the shareholders respectively, significantly limit the control of the first shareholder in the agreement as he/she has to gain the support of some (or all in case of unanimity) other participants.

In the context of Brazil, *SAs- with an ultimate owner* frequently contain Supermajority and Affirmative vote (the equivalent of unanimity in Italy) rules that are imposed by the institutional and corporate investors participating as minority shareholders in such coalitions. These rules, in Brazil, have also been quite successful in limiting the control of the largest shareholder, as illustrated in the SAs of a mining company, Vale S.A., and a fertilizer company, Fertilizantes Heringer S.A. Vale S.A. is the second largest mining company in the world and is controlled by a holding company, Valepar. The majority control in Valepar rests with the Federal Government (with 60.55% voting rights), which has signed a shareholders' agreement with the two minority investors, Bradespar and Mitsui, with stakes of 21.21% and 18.24% respectively. The SA signed by the three shareholders contains a "supermajority clause" which mandates the election of the CEO to be approved by at least 75% of votes. This supermajority clause protected the minority investors against the politically motivated appointment of a CEO by the federal government in 2011. The Federal government, despite having a majority vote, could not install its own CEO and had to eventually agree on the appointment of Mr. Murilo Ferreira, who the market believed had strong mining and international experience, as a consensus CEO with the two other signatory shareholders in the agreement (Carvalhal, 2012).

Fertilizantes Heringer SA, a leading fertilizer company in Brazil, presents another example of an *SA with an ultimate owner*, where the controlling shareholder (Heringer Family) holding 51.48% voting rights, has entered into an SA with a minority foreign investor, PCS sales, with a 9.5% voting stake. This agreement also has incorporated myriad of clauses, including an affirmative vote, striving to protect the minority investors and achieve shared benefits of control. The affirmative vote requires a nod from PCS Sales on all major corporate decisions undertaken in general meetings and board meetings pertaining to the election and dismissal of independent auditors, the initiation, amendment and termination of related party transactions, the acquisition of property exceeding the value of ten million Reals, and the acquisition of new debt beyond the threshold of 40% of Gross Revenue etc. As a result, PCS Sales, having the right of affirmative vote on significant corporate matters, enjoys far greater voting power (i.e., 50%) than would be

expected from its smaller equity stake (about 10%). Another clause ensuring a high level of investor protection and good governance practices requires the “termination of the agreement upon changing the listing segment from Novo Mercado to any lower-quality governance segment (L2, LI or TB) at BM&FBovespa exchange.”

Furthermore, the agreement contains no provision for pre-shareholder or pre-board meetings among signatory shareholders that binds directors’ votes. All in all, the coalition of shareholders, reflected in the agreement, has all the characteristics that help to accomplish shared benefits of control by granting greater voting power to minority investors (via an affirmative vote); mandating the company to remain listed on a higher governance segment of the market; maintaining the independence of elected directors by not requiring pre-shareholders and pre-board meetings in the agreement; and demonstrating a greater contestability or monitoring of the largest shareholder because of non-affiliations between the contracting shareholders (the controlling shareholder, the Heringer family, has no affinity with PCS Sales, a foreign institutional investor). Also, the company has one-third independent directors on the board as the SA exclusively mandates the appointment of a at least three independent directors to the supervisory board.

SAs, when used as coordination instruments for regulating and governing relationships among shareholders, are driven by the shared benefits of control. In contrast, if agreements are used as expropriation (control enhancement) tools, they serve to separate control from ownership for the controlling shareholder and tend to include clauses that aim to achieve private benefits at the cost of small non-controlling shareholders. In a theoretical paper, Chemla et al. (2007) model the coordination role of SAs by analysing various clauses of SAs from a moral hazard perspective. They contend that SAs allow contracting shareholders to make efficient ex-ante investments, as they do not have to renegotiate their payoffs in the presence of clearly laid out rights and duties committed in the agreements. According to the authors this happens partly because SAs preclude parties in the agreement from value-destroying ex-post wealth transfers at the expense of other parties and reduce the likelihood of rejection of value-increasing takeovers by outsiders. Comparing the coordination vs expropriation (control enhancement) role of SAs in Italy, Jara-Bertin et al. (2008) find that SAs that were meant to enhance control pervasively contained provisions relating to restriction on transfer of shares that consequently allowed the signatory shareholders to retain power in their own hands, enabling them to separate control from ownership and impede value-improving takeovers by outsiders. Carvalhal

(2012), empirically confirms the coordination role of SAs, for a sample of 88 Brazilian listed companies, by noting a higher market value for firms that used SAs for regulating working relationships among shareholders. Relating to this, the SAs signed among members of the same family, in my sample, seem to fit the coordination role as they are dominated by clauses that serve to organize the working relationship and avoid conflicts among signatory family members and at times are devoid of clauses restricting transfer of shares. A classic example in this regard is Grendene SA, a footwear manufacturing company, ultimately controlled by Grendene family through a network of three holding companies: Grendene Negocios S.A, Alexandre G. Bartelle Participacoes S.A, Verona Neg e Participacoes S.A (See Appendix H for complete control structure). The Grendene family, represented by twin brothers Mr Alexandre Grendene Bartelle and Pedro Grendene Bartelle, and their blood relatives wholly control these holding companies and have initialled SA among themselves. The main focus of the clauses in the shareholders' agreement (See Appendix N), appears to be to manage the working relationships among the family members. For instance, there is a clause (clause d) in the agreement that mentions Mr Alexandre Grendene Bartelle (the elder brother) as the "lead member" of the family who is entitled to exercise votes on behalf of the entire family in the shareholders' meeting. The same clause entitles the younger brother, Mr Pedro Grendene Bartelle, to exercise control on behalf of the family, if and when Mr Alexandre Grendene Bartelle becomes unable to function due to his legal incapacity or death (Grendene, 2015). Moreover, the agreement has clauses that mandate the appointment of directors with the consent of signatory shareholders in a prior shareholders' meeting (i.e., Clause e); however, directors are free to vote independently and their votes are not bound by any clause (No prior-board meeting requirement—see Clause g). Moreover, the clauses (f and h) imposing no restriction on the transferability of shares (i.e., posing no barrier to the sale of company shares to value-enhancing shareholders) and requiring related party transactions to be executed on price and terms as followed with third parties, further reinforce the role of the agreement as one pursuing *shared benefits of control*. Also, consistent with Bennedsen and Wolfenzon (2000), the significant amount of cash-flow (66.3%) committed by the family in the agreement also serves to align their interests with the minority shareholders and may yield benefits which are shared among all the shareholders (see Appendix H).

Another element that separates a coordination (investor protection) agreement from one that expropriates wealth from minority investors (expropriation agreement) is the

inclusion of clauses in the agreement that bind the directors' votes to the votes cast in a "prior shareholders' meeting" among the signatory shareholders. The requirement for directors to vote in accordance with the outcome of a preliminary³⁷ meeting may jeopardize their ability to act independently and result in corporate decisions that fail to protect the interests of all shareholders. Such provisions are ubiquitous in agreements that are signed among multiple non-controlling block holders who strive to attain and enhance control over the company by extracting private benefits. Moreover, the presence of institutional investors, as non-controlling block holders, in the agreements may also play a critical role in monitoring the largest shareholder and can prevent him/her from undertaking activities that benefit him/her privately. A vast majority of the international literature provides support for the monitoring role of large institutional investors (Ajinkya et al., 2005; Pergola & Verreault, 2009) and their incentive to monitor is even stronger when they have large shareholdings in the company (Kahn & Winton, 1998) and have long-term investment horizon. Such institutional investors, chiefly involving pension funds, investment companies, mutual funds and developmental financial institutions are recognized as "dedicated institutional Investors" by Chen et al (2013).

In Brazil, pension funds (PREVI³⁸, PETROS³⁹), developmental financial institutions (BNDES), venture capital firms and other investment companies, on account of their large equity stakes and long-term investment horizons, assume the role of Dedicated Institutional Investors. There is empirical evidence in Brazil for the active monitoring role of institutional investors, in general, and even more so for the Dedicated Institutional Investors (pension funds (PREVI, PETROS) and Brazilian National Bank for Economic and Social Development (BNDES in Portuguese)). A notable case relates to PREVI's intervention in case of Brasmotor SA, a company which wanted to delist itself from the stock exchange and whose controlling shareholder, Whirlpool Group, was not willing to offer appropriate share price to the non-controlling shareholders. PREVI, as a large shareholder of Brasmotor, got together with other minority shareholders and put pressure

³⁷"Preliminary meetings" or "prior meetings" are meetings of shareholders or boards that can be held before any shareholders' or board of directors' meetings. The decisions taken in these meetings become binding for the participating shareholders or participating directors.

³⁸ PREVI is a closed end pension fund and its participants are employees of the state-owned bank, *The Bank of Brazil* and the employees of PREVI itself. In 2007, PREVI held an asset portfolio worth R13742 billion, two-thirds of which were invested in the equity capital, directly or indirectly, of leading business groups in Brazil (Aldrichi & Postali, 2010).

³⁹ PETROS was founded by Petrobras SA (a state-owned oil company) in July 1970. It is the second largest pension fund in Brazil and a pioneer in the supplementary pension market in the country. It is maintained by monthly contributions from sponsoring companies and their employees, and associations, trade unions or councils and their associates.

on the controlling shareholder, Whirlpool Group, for a higher price. This proved successful and eventually forced the controlling shareholder to negotiate a better price with the group of minority shareholders (Oman, 2003). The efforts of pension funds in pushing for higher governance and disclosure standards resulted in the launch of higher governance listing segments at Bovespa such as Novo Mercado (Musacchio & Lazzarini, 2014), which confirmed their monitoring role even further. Similarly BNDES, through its investment subsidiary, BNDESPAR, participates as a minority shareholder (average 17% stake in Brazilian Listed companies) in the equity of Brazilian companies and monitors the activities of their management representing majority shareholders by appointing professionals to the boards of these companies (Inoue, Lazzarini, & Musacchio, 2013). Since these institutions predominantly participate as minority investors, mostly in family-controlled companies and very rarely in state-owned and foreign-owned companies, their monitoring role becomes even more important as explained in the studies below.

The incentive for block holders to collude with or monitor the largest shareholder in a coalition also depends on the affinity among the block holders. Maury and Pajuste (2005) assert, in their theoretical model, that coalitions of block holders of the same type (e.g., two families) can make expropriations easier compared with coalitions among non-family block holders. This was empirically affirmed when they discovered that a large equity stake by another family is negatively related to firm value in family-controlled firms, while a higher equity stake by a non-family block holder (especially financial institutions) is positively related to firm value in a family-controlled firms. Sternberg et al. (2011) in the case of Brazilian companies recorded a strong contestability for the family-controlled firms when the second-largest shareholder is not related to the family i.e., financial institutions.

In summary, the above literature suggests that coalitions⁴⁰, reflected in SAs, have certain characteristics that help differentiate them into either a means of expropriating minority investors (control-enhancing tool) or an instrument of ensuring smooth and effective coordination among the block holders. Those coalitions that strive to produce shared benefits, as opposed to private benefits, for all shareholders irrespective of whether they are participating in the coalition are said to have higher amounts of cash flow tied in the

⁴⁰ In this part of the study “coalition of blockholders” and “shareholders’ agreements” are used interchangeably. Indeed shareholders’ agreements are realized coalitions, specifying the rights and duties of participating block holders through contractual arrangements.

coalition by the block holders; pose greater contestability to the largest shareholder (via supermajority rule or affirmative vote) in the coalition; and exhibit lower affinity among the block holders and enhanced monitoring of the largest shareholder by the institutional block holders.

In Brazil, the equivalent of such coalitions are SAs signed between an ultimate owner (mostly Family however occasionally State or Foreign Company) and minority block holders who are usually institutional investors. These shareholders' agreements, *SA with an ultimate owner*, can be referred to as "investor protection" (coordination) instruments as they already have an explicit controlling shareholder at the 25% threshold, who still enters into an agreement with other minority block holders, most commonly financial institutions, for raising finances on easy terms and in turn promises them enhanced safety of capital by including protective clauses in the agreement. These shareholders' agreements, perhaps because of greater aggregate cash-flow invested by the signatory parties, increased participation of dedicated institutional investors (PREVI, PETROS, BNDES and FUNCEF) and lower affinity among the signatory parties, incorporate clauses that benefit all the shareholders. These clauses mainly assure greater contestability of the largest shareholder (i.e., supermajority rule or affirmative vote); impose less restriction on the transfer of shares; put no restriction on directors' votes in prior meetings among signatory shareholders; provide detailed procedures for related party transactions; ensure disclosure of executive compensation and related party transactions; establish arbitration procedures for resolving disputes; and warrant better governance practices by requiring the appointment and replacement of independent auditors. SAs with an ultimate owner, in essence, sound like "coordination" instrument, geared at delivering shared benefits partly because, as proposed by Chemla et al. (2007), they contain provisions that tend to organize working relationship among block holders (especially when signed among members of the same family), and partially consistent with Gomes and Novaes (2005), they have clauses that equip large block holders in the coalition to monitor the largest controlling shareholder.

In contrast coalitions involving lower aggregate cash-flow stake committed by the coalition partners, greater affinity among the block holders and scant presence of dedicated institutional investors resonate with SAs signed among multiple non-controlling block holders in Brazil. These coalitions, *SAs without an ultimate owner*, largely equate with the control-seeking and enhancing endeavours of several minority block holders who pool their voting rights with a view to expropriating resources either

by self-dealing or colluding with the management at the cost of minority shareholders. Typically, these agreements, with higher affinity (i.e., the largest and second largest signatories being families) among signatories and the lack of participation by dedicated institutional investors (i.e., PREVI, BNDES, PETROS and FUNCEF), are prone to include clauses that facilitate private benefits and preclude effective monitoring of management. Such clauses include restricting the voting freedom of shareholders by nominating pre-determined individuals as CEO or board members; binding the directors' votes in preliminary meetings of signatory shareholders; covenants that secure disproportionate control over the supervisory board for the controlling shareholder; provisions that inhibit the transfer of shares in case of takeovers by outsiders; and covenants that limit the distribution of dividends. *SAs without a controlling shareholder* sound more like Bianchi, Bianco, and Enriques's (2001) and Gianfrate's (2008) "control-enhancing" devices, focused on harnessing private benefits for the coalition block holders, by separating control from ownership for the participating shareholders via clauses that allow them to appoint more directors to the board, and restrict the voting authority of shareholders and directors. Gorga (2009) and Masullo (2015), analyzing 86 and 64 SAs of Brazilian companies respectively, find that block holders in companies without a controlling shareholder employ shareholders' agreements, known as "control agreements", primarily to ensure and enhance control by including clauses that mandate holding prior shareholders' meeting to decide upon the orientation of directors' voting and outline procedures of appointment of directors that favour the selection of directors nominated by them on executive and supervisory boards.

The SAs signed between the Randon Family (46.7%) and two institutional investors, PREVI (22.5%) and Petros (8.48%) in the case of Fras-Le SA, and among three unrelated families i.e., the Alves De Querioz Family (20.18%), Maiores Family (14.7%), Goncalves Family (5.47%) in Hypermarcas SA, are classic examples of *SA with an ultimate owner* and *SA without an ultimate owner*, respectively. The underlying characteristics of the coalition, between a controlling owner, the Randon Family (46.7%) and two non-controlling institutional investors, PREVI (22.5%) and Petros (8.48%) in the shareholders' agreement of a vehicle parts manufacturer, Fras-Le SA, make it a more of a "coordination instrument" set to grant more protection to the minority investors and secure shared benefits of control (see Appendix I). For instance, the substantial amount of aggregate cash-flow of 77.28% (46.7%+22.5%+8.48%) committed in the agreement by the three signatory parties show their serious commitment to the company and will

help align their interests. Also, PREVI and PETROS, being the minority Dedicated Institutional Investors, are jointly able to elect three members onto the seven-member supervisory board which allows them to exercise far greater control (42.85%) over the company compared to their voting stake of only 30.98% (22.7%+8.48%). In addition, the sheer presence of Dedicated Institutional Investors in the agreement seem to have guaranteed clauses (clauses e, f and g) that assure monitoring of the management and contest the control power of the largest shareholder, the Randon Family. For example, as per clauses e and f, respectively, there is no binding or restriction on the appointment of directors in a specific way and no restriction or binding on the voting rights of directors. Clause g in the agreement explicitly mandates related party transactions to be carried out on price and terms at par with the market and forces its disclosure. Overall, these clauses strive to protect minority investors and reap benefits that can be shared by all the investors.

In contrast, the SA among three families i.e., Alves De Querioz Family (20.18%), Maiorem Family (14.7%), Goncalves Family (5.47%) in Hypermarcas SA, a pharmaceutical company, signifies a “control-enhancing” or “expropriation” instrument since it is a contractual aggregation of the voting rights of the three minority owners to jointly control the company, given that no single family, on its own, qualifies as an ultimate owner at the 25% threshold. The peculiar structure of the coalition and the provisions contained in the agreement (

See Appendix O) clearly hint that the participating families aspire to secure and enhance control, as opposed to protecting investors, with a view to reaping maximum private benefits for the participating shareholders. For instance, the lower amount of *aggregate cash-flow* 40.37% (20.18%+14.7%+5.47%) committed by the participating shareholders may trigger a “negative coalition effect”, whereby the controlling coalition with a small amount of cash-flow invested in the company may lead them to extract private benefits at the cost of minority non-participating shareholders. The lack of participation of institutional investors and the greater affinity among the type of block holders (three families) in the agreement can compromise the contestability of the control power of the largest shareholder and inhibit monitoring of the management. This lower contestability and increased desire for extracting private benefits and enhancing control manifest in the kind of clauses included in such agreements (i.e., *SA without an ultimate owner*). The main clauses of the SA for Hypermarcas SA, shown in Appendix O, that point towards control-seeking and private benefits extraction are: the need for participating families to

control the firm jointly and vote as a block; restriction on the transfer of shares via pre-emptive rights; the requirement for holding preliminary meetings among the families before any shareholders' and board meetings. Also, the agreement is devoid of clauses that could potentially curb the controlling power and expropriatory activities of the controlling coalition of three families. No procedure for related party transactions is laid out and no detailed procedure for dealing with the disputes among the shareholders is included. Also, the controlling coalition (three families) can elect 100% of the members (9 out of 9) of the board, in comparison to their aggregate cash-flow stake of just 40.37%. Altogether, such clauses substantiate the role of the agreement as “control-enhancing” or “expropriatory”.

The implications of SAs on the firms' information environments, as measured through stock price synchronicity, can be elaborated in the light of Jin and Myers' (2006) notion, which implies that information opacity combined with managers' abilities to capture firms' operating cash-flow causes higher R^2 . Poor investor protection and limited information drive managers to capture more of the firm's cash flow, thus internalizing more of the firm-specific variance, which in turn can lead to higher R^2 . However, the managers' ability to extract cash flow can be greatly reduced with the strength of the monitoring offered by investors and mechanisms that curtail opportunities for extracting private benefits. Investor monitoring consists of both gathering firm-specific information and influencing controlling managers to safeguard minority investors' rights (Chen, Harford, & Li, 2007). The incentive to monitor is even stronger in the case of “*Dedicated Institutional Investors*”, with large equity stakes and long-term investment horizon which prevent managers' capture of firm cash-flow and therefore less-firm specific risk absorbed by the inside managers and lower synchronicity (An & Zhang, 2013).

SA with an ultimate owner represents a coalition that curtails controlling shareholders' ability to reap private benefits because of the considerable cash-flow stake of the participating block holders and investor protective clauses, i.e., “supermajority rules”, less restriction on the transfer of shares, fast and efficient dispute resolution mechanisms, and detailed procedures for related party transactions. This is supplemented by the strong monitoring supplied by the increased participation of “*Dedicated Institutional Investors*” (PREVI, BNDESPAR, PETROS etc.) and the greater independence of directors' decision making because of the absence of binding of directors votes in preliminary meetings. Therefore, *SA with an ultimate owner* being a “coordination” or “investor protection” instrument can greatly reduce controlling managers' ability to extract cash-flow. As a

result, less firm-specific risk is absorbed internally, which results into lower R^2 and lower *synchronicity*. On the other hand, *SA without an ultimate owner* being a coalition of small non-controlling block holders, denotes a contractual partnership whereby signatory shareholders aim to secure and enhance control over the company with a view to extracting private benefits. Hence, *SAs without an ultimate owner* are “control-enhancing” arrangements focused on separating ownership from control and achieving private benefits given less-cash flow stake of the coalition, fewer investor-protective clauses, lower contestability of the largest shareholder because of greater affinity among the block holders (mostly families collude with other families), and weaker monitoring of management because of negligible participation of institutional investors. Overall, these attributes fail to curb extraction of private benefits by the inside controlling managers and result in more internalization of firm-specific risk and higher R^2 and higher synchronicity. This reduces to the following hypothesis:

H3: *SAs with an ultimate owner* may exhibit lower synchronicity as compared to the *SAs without an ultimate owner (jointly controlled companies)*.

3.4 Data, Sample and Methodology

In this section I describe the sources of ownership, accounting and stock price data, outline the sample selection procedure and present the methodology used for testing the hypotheses presented in the earlier sections.

3.4.1 Data and Sample

The initial sample consists of 364 companies listed on various segments of Sao Paulo Stock Exchange (Bovespa, now called BM&FBovespa) in 2014. Of these, 100 companies listed on the over-the-counter market (OTC) and the alternative market (Bovespa Mais-BM)⁴¹, have been excluded as they do not pass the liquidity test of trading for calculating stock price synchronicity—that is 30 weeks of stock trading. After removing these companies, my sample reduces to 264 companies from the four major segments of the BM&FBovespa Exchange i.e., *Traditional Bovespa* (Standard Market), Level 1, Level 2 and Novo Mercado (NM). Out of 264 companies, 143 further eliminations are made because of:

- 1) being financial companies including banks, insurance companies, real-estate investment companies, investment companies, mutual funds and mortgage companies;
- 2) negative effects associated with financial distress, firms with negative book-to-equity ratios (Fifteen companies);
- 3) illiquid stocks, having less than 30 weeks of trading and lacking sufficient accounting and financial data (See Appendix A for a list of companies excluded from the sample);
- 4) being holding companies with equity stakes in subsidiaries and not having their own operating revenues or assets (See Appendix A for a list of companies excluded)

After making the above adjustments, my final sample reduces to 121 companies. The salient characteristics of companies listed on the four listing segments of the market are outlined in Table 3.4.

⁴¹ Bovespa Mais, a fifth segment of BM&FBovespa, was introduced in 2008, and is where only small companies, wanting gradual access to the capital market, are listed. As of 2014 only 5 companies were listed in this segment and are not included in the sample because these companies have no tradeable shares. These companies can remain listed on this segment for seven years without offering shares to the public through IPOs.

Table 3.4. Listing segment-wise Distribution of Sample

Listing Segment	No of firms	% of sample	Market Cap (Mill BRL)	Sales (Mill BRL)	Total Assets (Mill BRL)
Traditional ⁴²	21	17.21	499193.02	511583.16	1092849.86
Level 1	17	13.93	243235.7	412230.82	925853.66
Level 2	11	9.02	42663.99	67949.92	94695.71
Novo Mercado	72	59.5	565353.47	545121.62	720281.00
Total	121	100	1350446.18	1536885.52	2833680.23

Table 3.4 shows that the market capitalization of firms included in my sample is BRL1,350,446.18 million, while the market capitalization of all the non-financial firms listed on BM&FBovespa is BRL1,812,052.82 million (Bloomberg, 2014). The sample can be considered a good representative of the listed companies in Brazil since it accounts for 74.5% of the stock market capitalization (excluding financial firms) in 2014. Additionally, the sample contains a reasonable cross-section of companies from the four major corporate governance segments of the market. It is important to note that most of the companies excluded from my sample, based on the aforementioned criteria, are from the Traditional and Novo Mercado segments of the market, because these two segments are extensively dominated by holding and financial companies (See Appendix A). Hence, the percentage contribution of these segments in my sample in Table 3.4 may be slightly different from their real proportional representation in the market. Table 3.4 also indicates that companies included in the Traditional Segment are relatively larger in size, which is why that segment's total assets (BRL 1092849.86 million) exceed the total assets (BRL 511583.16 million) held by companies in the NM Segment. This occurs because the two largest companies, Petrobras and CSN SA, belonging to the oil and gas, and steel sectors respectively, are included in this segment. Appendix B outlines the industry-wise frequency distribution of my sample. For this study, I use BM&FBovespa's industry classification scheme, whereby a firm is classified into one of nine non-financial industries based on two-thirds of its total revenue coming from that particular sector. Appendix B shows that most of the firms in my sample are concentrated in sectors such as utilities (21.31%), basic materials (13.93%), and capital goods and services (11.98%), where assets are largely tangible and can easily be monitored, and a very small fraction of firms belong to sectors where assets are intangible and therefore difficult to monitor such as information technology (2.46%) and telecommunications (4.13%). This

⁴²Traditional, standard and regular represent the same segment on the Brazilian main exchange, BM&FBovespa.

disproportionate distribution of firms' assets between easy-to-monitor and difficulty-to-monitor industries perhaps occurs in situations when inside managers have higher tendencies to expropriate assets and firms, in response, prefer to concentrate their assets in easy-to-monitor industries (utilities, basic materials, capital goods and services). Throughout this study, I stick to this industry-classification scheme, except in situations where I chose to merge certain industries to improve on degrees of freedom for multivariate regression analyses in subsequent sections.

Most prior ownership structure studies rely on the immediate owners, representing the shareholders (i.e., individuals, state, institutions, corporations) holding direct equity stakes in the subject company. However, in the case of Brazilian listed companies, immediate shareholders substantially differ from the real owners actually controlling the company, indicated as ultimate owners in Appendix C, because of the extensive use of indirect ownership schemes (pyramids or cross-ownerships) and shareholder agreements. This study thus focuses on ultimate owners and the computation of their control and cash-flow rights.

To trace the identity of ultimate owners and compute their control and cash flow rights I rely on Reference Forms (Formulário de Referência) filed by listed companies in 2015⁴³ with Comissão de Valores Mobiliários (CVM), which are available in Bloomberg Professional. However, these Reference Forms are in Portuguese and I translated them into English using Google Translate. Specifically, the Organograma do Grupo Econômico (Organization Chart of the Economic Group) and Controle (Control) sections of Reference Forms were consulted to extract detailed information about the identity of shareholders and their respective equity stakes where they hold more than a 1% stake. For companies with foreign listings via ADRs, I use ownership information in 20F filings to produce control chains and calculate control and cash-flow rights.

Additionally, for companies where establishing the identity of ultimate shareholders was based on their proportionate representation on the board, I use board of directors' data provided by Bloomberg Professional and data contained in the "composition of supervisory board" section ("Composição e experiência profissional da administração e do conselho fiscal" in Portuguese) of the Reference Forms. I also obtain data on block holders with 2% or more direct equity stake in a company from these forms. I categorize

⁴³ Supplements filed in 2015 by companies actually contain detailed information about their shareholding structures relating to 2014.

the ultimate shareholder as Manager, if he/she occupies either the Chairman position on a supervisory Board or the *CEO/president* position on an Executive board. To identify and analyse the type of clauses agreed among the colluding shareholders participating in the agreement, I resort to the shareholder agreement section of the Reference Form. These clauses, available in Portuguese, are translated into English via Google Translate.

3.4.2 Research Methodology

In this section, I first define the ownership and information variables and demonstrate how they are incorporated into empirical models for testing the four hypotheses studying the effects of ownership concentration, control-ownership divergence, firms' listing quality and shareholder agreements on stock price synchronicity H1(a), H1(b), H2 and H3) outlined earlier.

3.4.2.1 Measurement of Variables

Below I define the concept of an ultimate owner and outline the criteria for establishing ultimate ownership under various scenarios, followed by the computation of control and cash-flow rights.

3.4.2.2 Ultimate Owner and Ownership and Control Rights Measurement

3.4.2.3 Ultimate Owner

An ultimate owner is someone who has substantial voting power⁴⁴ in the company and is not controlled by anybody else. Under Brazilian corporate law, publicly listed companies are permitted to issue voting and non-voting shares. These two constitute total capital: however, non-voting shares cannot exceed more than 50% of the total capital. Assuming a company has used the maximum allowable limit (50%) for non-voting shares, then the remaining portion (50%) represents its voting capital. To be able to gain majority control in such a company, shareholders need to buy fifty percent of the voting capital, which translates to just a 25% equity stake (cash-flow rights) in the total capital. Hence, for establishing who ultimately controls the company I have used a 25% control (voting capital) threshold. The underlying reasons that justify using about 25% voting rights as a

⁴⁴ Control rights and voting rights need not always be equal. Control rights can exceed voting rights if the controlling shareholder enjoys more control over the company's board than his/her voting-rights. In fact, 91% of the companies in my sample have ultimate owners who are able to elect more directors on the board than their voting rights would suggest. Hence, it would be inappropriate to use voting rights as a proxy for the ultimate owners' control in Brazilian listed companies.

threshold for tracing ultimate owner are: 1) following Bradley and Kim's (1985) finding that companies that are controlled at a 20% control threshold have less chance of being acquired by outside raiders through tender offers; 2) empirical evidence, specifically in Brazil, establishes that the largest shareholders typically control companies listed on the Novo Mercado segment of the market, by holding, on average, a 26.23% stake in total capital (Gorga, 2009).

If there are multiple owners holding 25% voting rights in a company I consider the one with the highest voting rights as the ultimate owner and classify him/her, consistent with La Porta et al. (1999) and Faccio and Lang (2002), into one of the following categories.

Family: includes ultimate ownership by local or foreign persons (individuals, founding members, relatives of controlling shareholders). I do not attempt to penetrate the structure of these families.

State: includes ownership by Brazilian Federal, Regional and District governments and equity ownership by foreign governments.

*Jointly controlled through Shareholders agreements*⁴⁵ (*JC through SA*): this denotes a group of shareholders who combine their voting rights through shareholders' agreements, and gain majority control⁴⁶ (50%) over the company. In order to be able to exercise significant control jointly it is necessary that they hold at least 50% of the voting rights. These coalitions are mostly formed among block holders holding voting rights in the range of 5 to 25% in companies listed on the *Novo Mercado (NM)* segment.

Widely Held: represents companies where no shareholder holds 25% voting rights individually, and no group holds more than 50% control over the company, collectively, either by having majority control on the board or through shareholders' agreements among the remaining small block holders (See Embraer's Example in the next section).

Management: In the case of family-owned companies, if the chairman of the Supervisory board and/or CEO of the executive board are from the controlling family, I consider that the management and ultimate owners are the same. For state-owned companies, if the chairman of the supervisory board/CEO of the executive board are current or former

⁴⁵ *Jointly controlled through shareholder agreements* represent coalitions among shareholders where no shareholder alone qualifies as an ultimate owner and therefore the blockholders, with voting rights between 5 and 25%, join their voting power mostly through Shareholders' agreements and scale up their voting rights beyond 25%, collectively. These arrangements are later referred to as companies having shareholder agreements without an ultimate owner—*SAs without an ultimate owner*.

⁴⁶ It is important to note here that contro

government employees, or ministers in the current or former government then the ultimate owner and management are considered the same. For companies owned by other corporations, if the CEO/Chairman of the board are executives of the parent company, then management and ultimate owner are treated as the same in this study (See Appendix L for detailed descriptives).

3.4.2.4 Board Control Test for Ultimate Owner

In some cases, the voting rights⁴⁷ (25%) criterion fails to determine the real ultimate owner of the company, especially in circumstances where the largest shareholder has less than a 25% voting stake and yet enjoys significant or even majority control over the supervisory board. This can happen in companies where inactive minority shareholders in the shareholding structure are not able to elect members on the supervisory board in proportion to their voting stake and as a result cede their voting power to the largest shareholder. In order to avoid the risk of wrongly classifying these companies as Widely Held solely based on voting rights criterion, I augment the 25% voting rights criterion with a “boards’ control” test that looks for the ultimate owners based on their majority representation, i.e., 50%, on the supervisory board. The ownership structure of Petro Rio SA, an oil and gas company, offers the most suitable example in this regard as its largest shareholder, Mr Nelson Tanure, who happens to be a founding member, holds just 19.8% of the voting stock (capital), and thus fails the voting-rights criterion for ultimate owner. However, considering his representation on the board, he turns out to be the ultimate owner as 50% of the board seats in Petro Rio SA⁴⁸ are occupied by his relatives and directors associated with a company controlled by him. Several Brazilian listed companies, including Cia Hering, Iochpe Maxion SA, have been reclassified from *widely Held* to being family-controlled using the boards’ control criterion. Other companies with unusual ownership structures are dealt with in the following section.

3.4.2.5 Treatment of unconventional ownership structures

⁴⁷ Usually, the 25% voting rights criterion is breached at the apex layer in case of companies arranged in pyramidal structures.

⁴⁸ The control chain of Petro Rio SA shows that the largest shareholder, Mr Nelson Tanure, owns 19.8% voting rights in the company through his wholly owned company in the apex layer i.e., Dacos investimentos. Despite having less than 25% voting rights, Mr Nelson Tanure is able to exercise majority control by electing three out of six members on the company’s supervisory board. These three directors, Mr Helio Costa-chairman, Mr Vinicius Nascimento Carrasco-vice chairman and Mr Ronaldo Carvalho Da Silva associated with his fully owned company i.e., Dacos investimentos.

There are instances where no single owner (family, institution or government) holds 25% voting rights. Rather, it is a consortium of two or more owners that collectively own 25% or more voting rights in aggregate that may achieve significant (or majority) control over the company. In that case, to determine whether the group jointly exercises significant control and thus can be considered an ultimate owner, I require the group to meet either of the conditions: a) it jointly owns a 50% voting stake, or; b) it has both, 50% or more elected members on the board and holds 25% of the voting rights in aggregate. The reason for 50% board representation, in the latter case, to define the ultimate owner, is based on the argument, that having a 25% voting stake alone might not be sufficient for the group to secure and maintain significant control over the company, especially if the subject company's shareholding structure has the presence of other block holder(s) holding similar voting rights.

There are three companies in my sample (WEG SA., Localiza Rent A Car SA. and Paranapanema SA.) where no single individual (family) is the ultimate owner at a 25% control threshold. Rather it is two or more founding members (families) that jointly share the control without having a formal voting agreement between them. Such companies are classified as family controlled rather than jointly controlled⁴⁹. The reason(s) for classifying these companies as owned by a single controlling family is (are) either: 1) they have founding members, consistent with Anderson and Reeb (2003), in their controlling structure who choose to work together; or 2) the founding members are friends and have stayed or worked together for a long period of time (e.g., more than 30 years) without notable disputes reported in the press; or 3) the name of the company has letters from the founding members' names; or 4) there is an intermediary company (publicly listed, privately held or unlisted) above the subject company, which is jointly controlled by the founding members⁵⁰, or 5) founders or member(s) of their family are officers, directors or chairman of the board, in line with the criterion proposed in separate studies by Anderson et al. (2009) and Anderson and Reeb (2003).

The shareholding structure of WEG SA, the largest producer of electric motors in Latin America, is a classic example where three founding members, Werner Ricardo Voigt, Eggon João da Silva and Geraldo Werninghaus, jointly share the control of the company,

⁴⁹ La Porta et al. (1999) classify companies without a single controlling shareholder as "Miscellaneous".

⁵⁰ The criterion of requiring an intermediary company, which has a majority stake in the voting capital of the subject company, to be jointly owned by the founding members is strict enough to classify a company as being family owned, since the intermediary company, (especially if it is unlisted) has to vote as a single shareholder on behalf of its controlling family (ies) in the shareholders' meetings of the subject company.

and is therefore classified as family controlled (See Appendix D). It is classified as family controlled since its ownership structure meets many of the conditions set out above. First, all three shareholders are founding members. Second, the first letters of the founding family members' names form the company name, WEG. Third, these founding members have worked together for more than 30 years since the founding of the company in 1961. Fourth, the three founding families have elected two members each on the supervisory board. Fifth, these founding members have an equal voting stake (33.33%) in an intermediary unlisted company, WPA Participacoes, which in turn owns 50% of the voting capital of the subject company (WEG S.A.). Last, the chairman of the supervisory board, Mr Decio Da Silva, is the son of one of the founder members, Mr Eggon João da Silva. Localiza Rent A Car SA⁵¹, in Appendix E, has a similar situation and therefore classified as family-controlled.

3.4.2.6 Companies with Golden Shares

In the case of Embraer SA, an aeronautical company, deciding who ultimately owns the company is not straight forward. Apparently, the Brazilian Federal Government controls the company by virtue of its direct and indirect stakes. The direct stake relates to its possession of a golden share, which grants it veto rights over certain matters regarding any change of the company's name or change of corporate control and also gives the government the right to appoint one member to the board. Its indirect stake (12.34%) involves the 6.7% and 5.34% equity stakes of PREVI and BNDESPAR respectively, which in turn are 100% owned by the government-controlled Banco do Brasil and Banco Nacional de Desenvolvimento Econômico e Social–BNDES, respectively. To be considered as the ultimate owner it is necessary for the controlling shareholder to hold at least 25% of the voting capital single-handedly, which is not the case here even if I combine the equity stakes of two federally-controlled institutions (PREVI and BNDESPAR)⁵². Alternatively, considering the federal government to be the ultimate owner solely based on its golden share might not be plausible, because closer examination of the rights attached to the golden share reveals that the government cannot elect majority members to the board by merely possessing a golden share⁵³. Also, the likelihood of

⁵¹ This company, as well as WEG SA, has all of the divergence between control and cash-flow rights arising out of disproportionate representation on the board by the founding members, as no other instruments of enhancing control involving pyramiding and shareholders' agreement are used.

⁵² Combining the equity stake of these two independent financial institutions might not be realistic as there is no formal agreement between the two regarding the casting of votes in block.

⁵³ Issuance of a "golden share" to the federal government was more a requirement of the regulations governing the privatization of Embraer in 1994 rather than a matter of retaining control over the company,

exercise of a veto power by the federal government seems very remote, as such powers relate to circumstances that do not occur quite frequently e.g., change of company's name or logo and seeking approval from the federal government regarding the creation and alteration of military programmes. Analysis of Embraer's board structure also points to the government's lack of control over the board, because PREVI, BNDESPAR and the Federal Government collectively appoint less than 50% of the members on the board. Hence, Embraer SA fails both the voting rights (25%) and the Board Control Test for ultimate owner, and is thus considered as being widely held.

Though the federal government is one of the significant shareholders, it does not qualify as the ultimate shareholder according to the criteria outlined earlier. So Embraer SA and companies alike for this study are classified as being widely held, where no single block holder either, holds more than 25% of voting rights or have majority representation on the board. Such companies extract all of their control leverage by putting more members on the board than what their equity stake suggests.

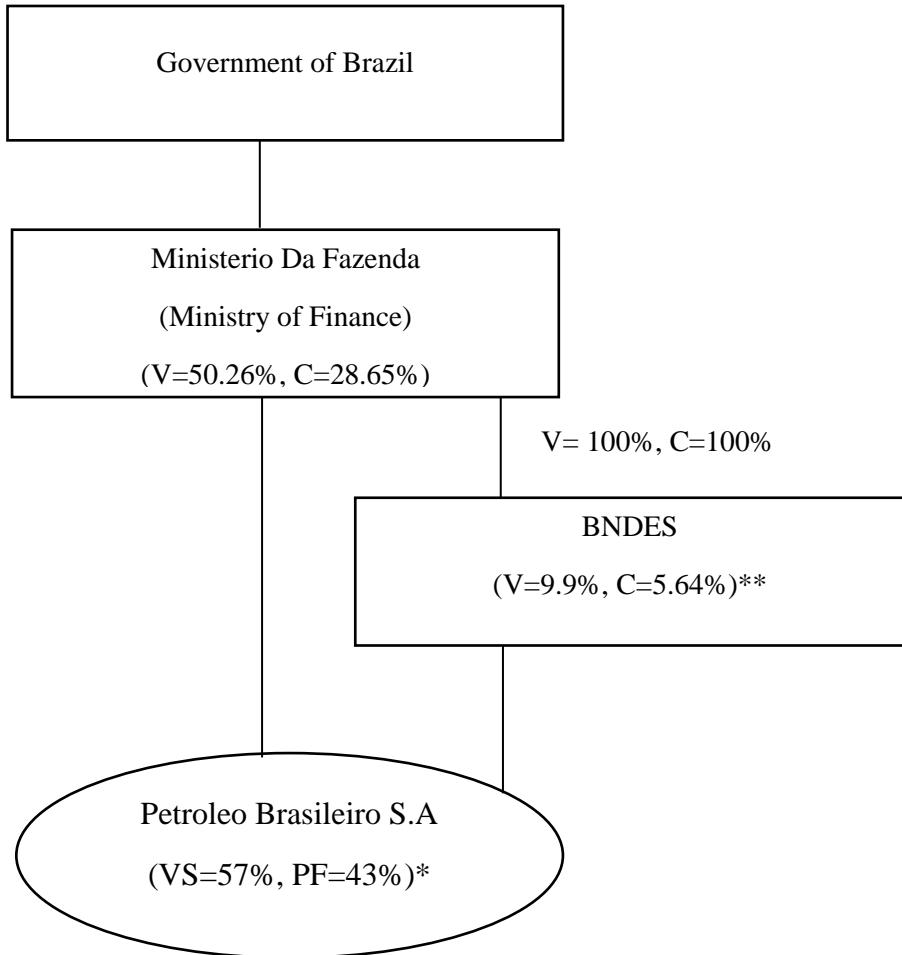
3.4.2.7 Calculation of Control and Cash-flow rights

Corporate ownership is represented by the cash-flow stake of a shareholder i.e., the equity stake held by the shareholder in total capital, whereas corporate control is measured by the voting rights. Voting (common) shares assure both voting rights and cash-flow rights over the assets and profits of the company, whereas non-voting shares assure only cash-flow rights without the right to elect members to the board. When ultimate owners want to keep control over the company without having to increase their cash-flow stakes, they issue non-voting shares to outsiders and keep the voting shares themselves. This allows them to extend their control beyond their cash flow stake in the company and creates a separation⁵⁴ (divergence) between their ownership stake and the control they enjoy. In Brazil, this type of separation is specific to the companies listed on Traditional, Level 1 and Level 2 segments of the BM&FBovespa exchange, since only these segments allow preference shares as part of the total capital up to the limit set by corporate law. The use of non-voting shares is particularly famous in Brazilian state-owned companies. This is because the state sells non-voting shares to outsiders and keeps the majority control in its own hands in strategic industries such as petrochemicals, mining, metallurgy, public

since the federal government needed the power of veto over certain military-related programs of the company.

⁵⁴ In this study the terms "divergence", "separation" and "wedge" between control and cash-flow rights are used interchangeably.

utilities and banking. In Figure 3.2, I use Petroleo Brasileiro's (Petrobras) control structure, the largest petrochemical company in Brazil, to illustrate how non-voting shares are used by the state to separate control and cash-flow rights.



*VS signifies voting stock (capital), PF denotes preference capital (non-voting shares)

** V denotes voting rights and C refers to cash-flow rights.

Figure 3.2. Control Chain of Petroleo Brasileiro S.A.

As can be seen in the Figure 3.2, the company's total capital consists of voting shares (57%) and non-voting shares (43%). Of the total voting stock (57%), the state holds 60.16% of the voting rights, represented by 50.26% and 9.9% of voting shares held by the Ministry of Finance and the Brazilian Development Bank (BNDES) respectively. To compute the state's voting rights, I add the two voting stakes ($50.26\%+9.9\%=60.16\%$), since BNDES is wholly owned by the Brazilian Federal Government.

The state achieves 60.16% voting control (rights) in Petrobras by investing just 34.29% ($60.16\%\times57\%$) of the cash flow. This 25.87% excess control over the cash flow stake of 34.29% is attributed to the use of non-voting shares. The higher the proportion of non-

voting shares, the greater is the separation between ownership and control rights⁵⁵. Moreover, the state's voting rights in this case coincidentally correspond to the real controlling power (control rights) it enjoys over the company since the state elects 60% (5 of 8) of the directors on the supervisory board. In reality for the majority of companies in Brazil, the ultimate owners' real controlling power does not coincide with their voting rights as they are able to exercise more control⁵⁶ by electing more directors onto the boards relative to their voting rights. Under those conditions, using voting rights as a proxy for the controlling power of the ultimate owners might underestimate the true control power of the ultimate owners. To compute true control and cash-flow rights of the ultimate owner and address several complications around computing control and cash-flow rights, I develop a comprehensive framework in the subsequent section.

3.4.2.8 Framework for computing Control-ownership divergence

The framework in the previous section, taken from the earlier dual-class studies (DeAngelo & DeAngelo, 1985; Gompers et al., 2010), equates fractional equity ownership of ultimate owners (all classes of shares held by the shareholder as a fraction of total shares outstanding) with their cash flow rights, and their share in the voting stock (i.e., voting rights) as an estimate of their corporate control (i.e., control rights). However, using fractional equity ownership as a proxy for cash-flow rights and voting rights as a proxy for estimating ultimate owner's control might not suffice if other means for leveraging control are used by the ultimate owner, such as indirect ownership through pyramiding, electing disproportionate, (usually more), numbers of directors to the board compared to what is suggested by their respective voting rights and by forming voting coalitions through shareholder agreements.

In the earlier example of Petrobras, the voting rights of the ultimate owner could be taken as control rights since only one method of enhancing control (Non-voting shares) is used. In the case of companies where owners leverage control indirectly through partially owned intermediary companies, voting rights are computed using La Porta et al's. (1999) and Faccio and Lang's (2002) approach⁵⁷. This involves taking voting rights at the

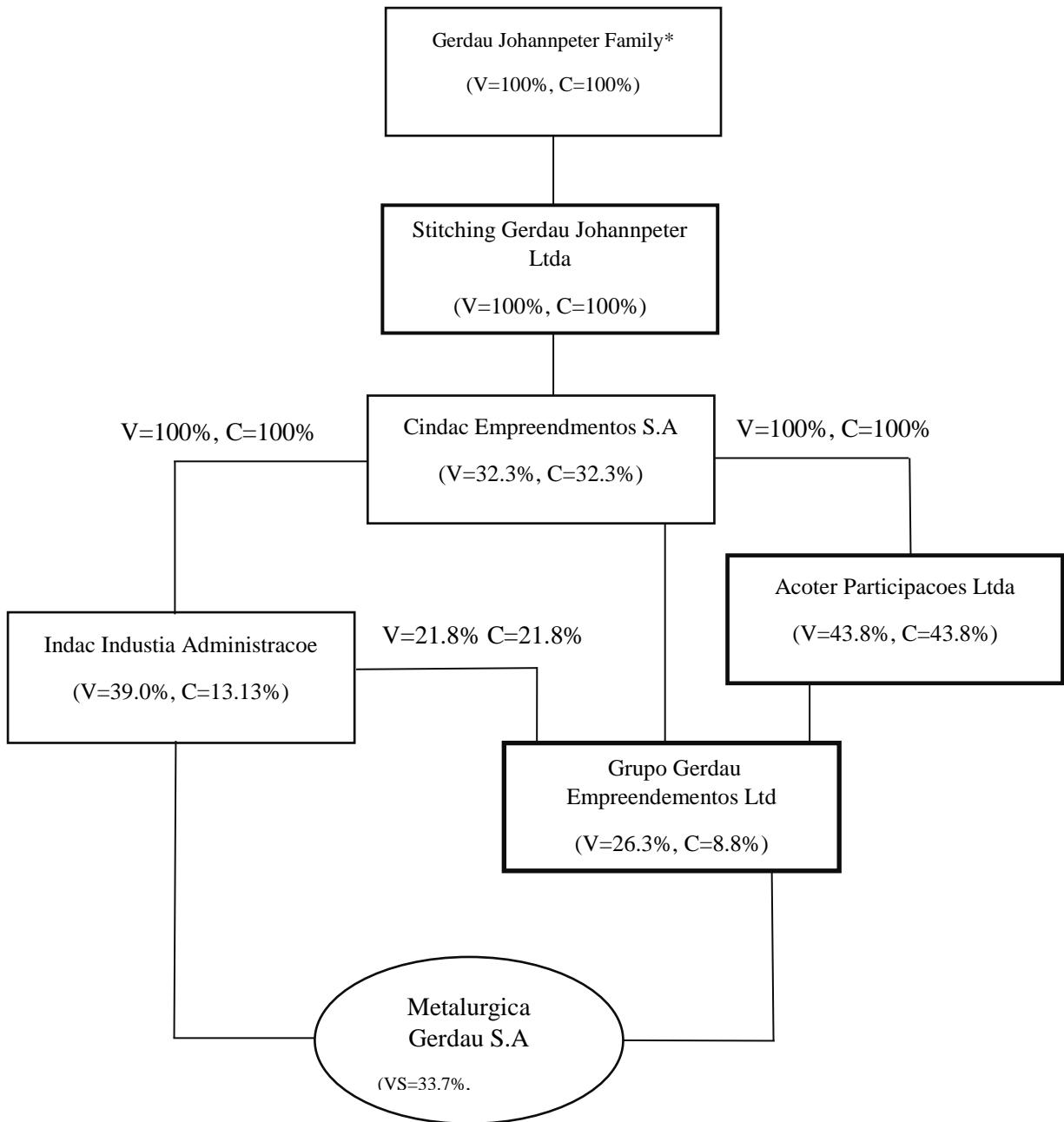
⁵⁵ Here I use voting and control rights interchangeably because the state's real control over the company is via its representation on the board.

⁵⁶ About 91% of the companies in my sample have ultimate owners who manage to exercise more control by electing more directors on the board relative to their voting rights.

⁵⁷This approach is largely used in ultimate ownership studies that start with La Porta et al. (1999) and substantially differ from the dual-class stock studies' approach for computing control and cash-flow rights. Both sets of studies differ in terms of calculations of cash-flow and voting rights. Under dual-class stock studies cash-flow rights are computed as a percentage of all shares outstanding of all classes held by the

“weakest link” (lowest percentage) along the control chain as a proxy for the voting rights of the ultimate owners, while cash-flow rights are calculated as the product of the equity stakes (ownership stakes) along the control chain. In Figure 3.3, I illustrate the application of “weakest link” and “product of equity stakes” approaches while computing control, voting and cash-flow rights of the ultimate owners of Metalurgica Gerdau SA, which has a complex control structure and employs three methods of enhancing control: pyramiding, disproportionate board representation and dual class shares.

shareholder while voting rights are measured as the ratio of the number of votes associated with the shares held by the shareholder to the total number of votes outstanding. In the case of ultimate ownership studies, voting rights are measured as the “weakest link” in the control chain and cash-flow rights are calculated as the product of equity stakes along the control chain.



*VS= Voting stock (shares), PF= Preference shares

Figure 3.3. Control structure of Metalurgica Gerdau S.A, depicting control-ownership divergence due to disproportionate board representation, pyramiding and non-voting shares.

This ownership structure demonstrates that the Gerdau Johannpeter family, is an ultimate owner at the 25% threshold and they maintain significant control by owning 25% voting rights throughout the chain. There are two layers of intermediate companies (Listed and Unlisted) between the subject company and the ultimate owner, Gerdau Johannpeter Family, thus signifying pyramiding⁵⁸ with two layers in the structure. The companies in bold boxes are unlisted private companies. The divergence between control and cash-flow rights occurs due to non-voting shares, pyramiding and disproportionate board representation. The

⁵⁸ If companies have multiple control paths leading to the same ultimate owner, they are treated as a pyramidal company.

cash flow rights (C) inside the boxes represent the equity stake of owners at the respective level, and are computed as the product of voting stake and the voting capital issued by the subject company i.e., Metalurgica Gerdau SA. For example, at level 1, an intermediary company, Grupo Gerdau Empreendimentos Ltd, secures 26.3% voting rights in Metalurgica by just holding, (26.3% \times 33.7%), 8.8% equity stake (cash-flow stake) in the company .

Gerdau Family's Control and Cash-Flow Rights in Metalurgica Gerdau SA	Divergence Source	Control Enhancing Method	Total Divergence
UCO (<i>7 of 9 directors elected</i>)=77.77%	(UCO-UVR)=6.74%	Disproportionate Board Representation	
UVR - (The weakest link along the control chain)= 71.03%	(UVR-UCFRP)=16.98%	Pyramiding	
UCFRP (Product of voting stakes at pyramiding layers with less than 100% =76.1% \times 71.03%=54.05%)	(UCFRP-UCFR)=35.91%	Non-voting Shares	
UCFR (product of cash flow stakes at all the layers of pyramid)=76.1% \times 23.84%=18.14%			(UCO-UCFR)=77.77%-18.14%= 59.63%

In Figure 3.3, the control chain of Metalurgica Gerdau SA has more than one path at the 25% threshold leading to the same *ultimate owner* as illustrated below:

First path: Grupo Gerdau Empreendimentos Ltd —Acoter Participacoes Ltda — Cindac Empreendimentos S.A—Stitching Gerdau Johannpeter Ltda

Second path: Grupo Gerdau Empreendimentos Ltd— Cindac Empreendimentos S.A— Stitching Gerdau Johannpeter Ltda

Third path: Gerdau Empreendimentos Ltda — Indac Industria Administracao — Cindac Empreendimentos S.A— Stitching Gerdau Johannpeter Ltda

Fourth path: Indac Industria Administracao — Cindac Empreendimentos S.A— Stitching Gerdau Johannpeter Ltda

Such control structures are classified as “Control through multiple chains” by Faccio and Lang (2002, p. 366), “if it has an ultimate owner who controls it via a multitude of control chains, each of which includes at least 5% of voting rights at each link”. Claessens et al. (2000) treat such structures as “Cross-holdings”. However, in this study, such structures are treated as Pyramids as long as there is at least one publicly listed or privately held

company, owned at less than 100%⁵⁹, between the firm and the ultimate owner in the chain of voting rights. Because, only those intermediate companies, that are not wholly owned, create a divergence between control and cash-flow rights and thus can be considered as vehicles for enhancing control. Numerous companies in my sample with pyramidal structures have a control pattern like that shown for Metalurgica Gerdau SA. Computing voting and the cash-flow rights of ultimate owners, using the “weakest link” and “product of equity stakes along the control chain” approaches respectively, in a control structure where several control paths lead to the same ultimate owner, as depicted in Metalurgica Gerdau SA, becomes very daunting. Conventionally, in previous studies, ultimate voting rights and ultimate cash-flow rights in such control structures are measured as “the sum of the weakest links across all four paths” (Boubaker et al., 2014; Feng et al., 2016) and “the sum of the products of direct cash-flow rights across four paths” (Boubaker et al., 2014), respectively. These methods treat all the control paths separately and perform computations individually along these control chains which may result in unrealistic voting and cash-flow rights computations. For example “the sum of the weakest links across four paths” produces more than 100% ultimate voting rights (1.13), for Gerdau family SA, which is not plausible (see Appendix F for detailed computations). Similarly, “the sum of products of direct cash-flow rights along the chain” ignores the indirect cash-flow rights at the respective layers of the pyramid, and can underestimate the true cash-flow rights of the ultimate owner. In order to overcome these shortcomings, I devised a method that allows us aggregation voting and cash-flow rights at each layer of the distinct control chains and then, using these aggregate voting and cash-flow rights⁶⁰, subsequently a “unique ultimate control chain” can be created. The unique ultimate control chain consequently becomes the basis for computing the ultimate voting rights and ultimate cash-flow rights of the largest shareholder using the “weakest link” and “product of cash-flows” approaches respectively. A step-by-step demonstration of the method, based on Metalurgica Gerdau SA’s control structure, is presented in Appendix F.

In short, Metalurgica Gerdau SA’s ownership structure provides a perfect example of how control and cash-flow rights are separated using disproportionate board representation, dual-class and pyramidal structures, and is an illustration of control and cash-flow rights

⁵⁹ For example, in Figure 3.3, the intermediary companies Cindac Empreendimentos S.A and Stitching Johannpeter Ltda are fully-owned companies and therefore do not count towards pyramiding.

⁶⁰ This allows us to combine various individual voting rights at each layer of the distinct control chain into one *aggregate voting rights* and one *aggregate cash-flow rights* number at each layer.

calculations thereof. It is evident from the above diagram that the Gerdau Johannpeter family controls Metalurgica Gerdau SA at 25% threshold, via several layers of intermediary companies (both publicly listed and privately held) that in turn are controlled with less than 100% ownership. Apparently there are four layers between the ultimate owner and the subject company. None of the four layers meet the minimum criterion for pyramiding, set out by La Porta et al. (1999) and Faccio and Lang (2002), which requires the intermediary companies, and the companies controlling intermediary companies to be owned at less than 100% stakes, because controlling companies down the control chain through fully-owned intermediary companies does not facilitate the ultimate owners in leveraging control beyond their cash-flow rights. Considering this, the number of layers that result in pyramiding for Metalurgica Gerdau SA reduces to just two (see Appendix F).

In this ownership structure the controlling family have used three ways to increment their control beyond their cash-flow stake. First, they have used the maximum allowable limit of non-voting shares: two non-voting shares for every voting share, permissible only for companies listed before 2001. Second, the controlling family dominates the supervisory board as it has elected seven of the nine board members, including the election of two of their own family members, Gerdau Johannpeter and Klaus Gerdau Johannpeter, as chairman and vice-chairman of the board⁶¹. Last, they use Level 2 pyramiding, i.e., there are two layers of intermediary companies along the control chain between the controlling family and the subject company. In order to compute the overall control-ownership divergence and capture the contribution of each of these control-enhancing tools to the control-ownership divergence, I devise a framework which outlines the definitions of relevant terms and concepts and their usage in the formulae as follows:

*Ultimate Control Rights (UCO)*⁶²= Percentage of seats controlled by the ultimate owner on the supervisory board.

*Ultimate Voting Rights (UVR)*⁶³= The voting stake (direct and indirect) held at the weakest link along the control chain if pyramiding is used by the subject company; otherwise it represents percentage of voting stock (capital) held directly by the ultimate

⁶¹ For this study, the word “board” refers to the “Supervisory Board”, unless stated otherwise.

⁶² UCO is measured the same as Board seats controlled (B) in the control-ownership decomposition framework suggested by Villalonga and Amit (2009) for US family controlled companies.

⁶³

owner out of the total voting capital (common shares) (See Appendix F for an illustration of direct and indirect voting rights calculations).

*Ultimate Voting Rights Shareholders Agreement (UVRSA)*⁶⁴ = the sum total of percentages of voting stock held by a coalition of shareholders in a shareholders' agreement. In particular, this denotes the voting rights of a consortium of shareholders in *Jointly Controlled* companies. In companies where the largest shareholder is an ultimate owner on a stand-alone basis (that is, meets either the 25% voting rights or greater than 50% board's control criterion), UVRSA would involve the percentage of voting rights controlled by the ultimate owner through the shareholders agreement.

*Ultimate Cash-flow Rights Pyramiding (UCFRP)*⁶⁵= the product of voting rights along the control chain. This is computed only for companies having group or pyramidal structures with all links lower than 100%.

*Ultimate Cash-Flow Rights (UCFR)*⁶⁶= the product of equity stakes or ownership stakes along the control chain, in the case of pyramiding; otherwise it is proxied by the fraction of equity the stake held by the ultimate owner out of the total capital (that is, all classes of shares held by the shareholder as a fraction of total shares outstanding including voting and non-voting shares).

Using these notations, I compute the total divergence between control and cash-flow rights as the difference (or ratio) between UCO and UCFR. This control-ownership wedge is different from the one used in the ultimate ownership literature, which is conventionally measured as the difference (or ratio) between UVR and UCFR. The measure used in this study stands out because it accounts for the ultimate owners' leverage in control due to, disproportionate board representation and their participation in shareholder agreement(s).

The total control-ownership Divergence (UCO-UCFR), measured as a difference, can be broken into four additive parts as shown in Eq 3.1, 3.2, 3.3, 3.4 and 3.5:

⁶⁴

⁶⁵ UCFRP in the dual-class stock literature would represent voting rights used for computing the contribution of dual-class shares, (i.e., UCFRP-UCFR), in the total control-ownership wedge.

⁶⁶ UCFR is equal to Shares Owned (O) in Villalonga and Amit's (2009) study. Shares owned (O) is measured as shares held by the family or block holder with investment power (with or without voting power), in sole form, as a percentage of total shares outstanding.

$$\begin{aligned}
& \text{Control} - \text{ownership Divergence}^{67} - (\text{UCO} - \text{UCFR}) \\
& = (\text{UCO} - \text{UVRSA}) + (\text{UVRSA} - \text{UVR}) + (\text{UVR} - \text{UCFRP}) + (\text{UCFRP} \\
& - \text{UCFR})
\end{aligned} \tag{3.1}$$

$$\begin{aligned}
& \text{Divergence} - \text{Disproportionate Board Representation (DDBR)} \\
& = \text{UCO} \\
& - \text{UVRSA}
\end{aligned} \tag{3.2}$$

The leverage in control due to disproportionate board representation (DDBR) in Eq 3.2 will be negative when ultimate owners elect less members on the board relative to their voting rights, and positive if they elect more board members. The measurement of DDBR will reduce to (UCO-UVR) in Eqs 3.1 and 3.2 for companies whose ultimate owners do not use shareholders' agreements to enhance control—as shown earlier in Figure 3.3 for Metalurgica Gerdau SA.

In the case of companies where there is an ultimate owner who has a majority stake (>50%) but enters into voting agreements with other minority shareholders, UVRSA in Eq 3.2 represents voting rights of the largest party in the shareholder agreement rather than the voting rights of all the signing parties in the agreement (For illustration, see Energisa SA control structure in Figure 3.4 below).

$$\begin{aligned}
& \text{Divergence} - \text{Shareholders Agreements (DSA)} \\
& = \text{UVRSA} - \text{UVR}
\end{aligned} \tag{3.3}$$

Typically, voting agreements allow transfer of voting power from one shareholder to another shareholder, which usually results in either excess or lower representation on the boards for the participating shareholders⁶⁸. Eq 3.3 measures only a fraction of the leverage in control via SAs, perhaps accounting for a portion of the leverage pertaining to the

⁶⁷ Control-ownership divergence when measured as a ratio (UCO/UCFR)

$$\frac{\text{UCO}}{\text{UVRSA}} \times \frac{\text{UVRSA}}{\text{UVR}} \times \frac{\text{UVR}}{\text{UCFRP}} \times \frac{\text{UCFRP}}{\text{UCFR}}$$

⁶⁸Amit and Villalonga (2009) used proxy statements for measuring the transfer of voting rights by non-family owners to family owners, as a proxy for the contribution of SA in the control-ownership wedge. However, SAs in Brazil exclusively specify the number of directors to be elected by each participating shareholder in the agreement. Therefore, a better proxy for computing control-ownership divergence due to SA would be to take the difference between the number of directors the ultimate owner is entitled to elect under the agreement and the percentage of votes committed by the ultimate owner in the agreement.

transfer of voting rights from smaller shareholders to larger shareholders. The other part of the leverage is reflected in the disproportionate board representation and needs to be accounted for. Thus, throughout this study, (especially for hypothesis 3), I use a holistic measure, TDSA in Eq 3.4, the sum of disproportionate board representation (DDBR) and (DSA), as a proxy for control leverage via shareholders' agreements.

Total Divergence Shareholders Agreement (TDSA)

$$= \text{DDBR} + \text{DSA} \quad \text{Eq (3.4)}$$

Eq 3.2 accounts for calculating disproportionate board representation when companies have no ultimate owner rather are jointly controlled by a consortium of shareholders through shareholder agreements (*Jointly controlled through SA*). It is important to note that shareholders, with less than majority voting stakes, form coalitions through SAs with a view to gaining maximum representation on corporate boards. Therefore, the leverage in control achieved through SAs by the coalition of controlling shareholders is going to manifest in more than proportionate representation on the boards. DSA, in Eq 3.3 specifically, measures the additional board control enjoyed in *Jointly controlled* companies.

Divergence – Pyramiding (DP)

$$= \text{UVR} - \text{UCFRP} \quad \text{Eq (3.5)}$$

Divergence – Non – Voting shares (DNV)

$$= \text{UCFRP} - \text{UCFR} \quad \text{Eq (3.6)}$$

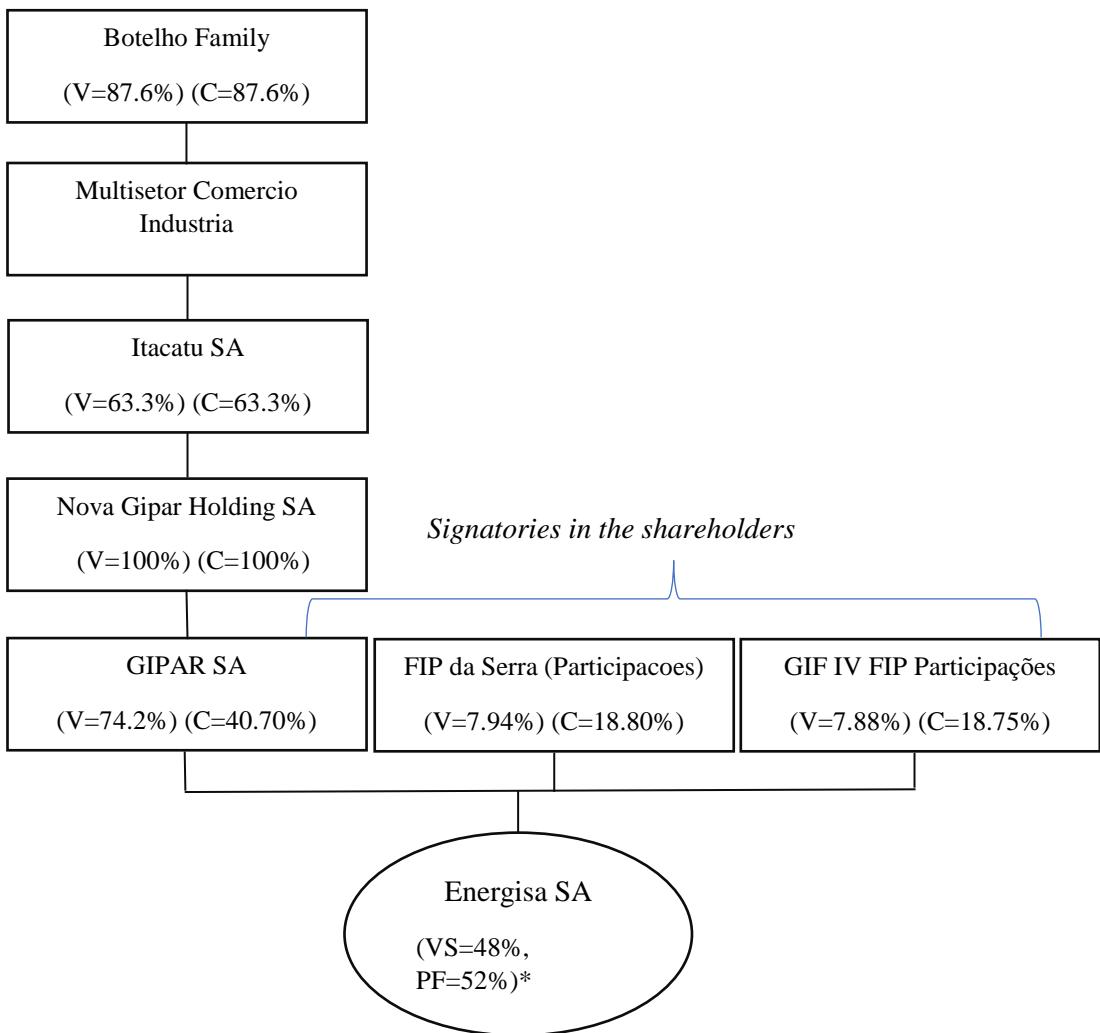
The framework for measuring control-ownership divergence in Eq 3.1 can cater for any type of ownership structure, however the number of terms will change in response to the combinations of control-enhancing methods used by each company. For instance, in the case of Gerdau SA in Figure 3.3, it reduces to three additive terms measuring the individual contribution of three control-enhancing tools used by the company: disproportionate board representation, pyramiding and non-voting shares. As illustrated in Figure 3.3 Gerdau Johannpeter Family, being ultimate owners, are able to secure 77.77% control rights (UCO) by electing seven of nine supervisory board members at Gerdau SA, whereas they commit just 18.14% cash flow to the company (UCFR) (i.e., the product of equity stakes at all of the pyramid levels). The total divergence, measured as the difference between control and cash-flow rights is (UCO-UCFR) =77.77%-18.14% = 59.63%, is the sum of (UCO-UVR) =77.77%-71.03% =6.74% divergence

arising because of disproportionate board representation, (UVR-UCFRP) =71.03%-54.05% =16.98% divergence attributable to pyramiding, and (UCFRP-UCFR) =54.05%-18.14% =35.93% divergence attributable to non-voting shares.

3.4.2.9 Full-scale Application of control-ownership divergence framework

The full-scale application of the above framework in calculating control-ownership divergence is demonstrated for Energisa SA, an electric utility company, in Figure 3.4. The control path indicates that the Botelho family ultimately controls the company at the 25% threshold. In addition, they also maintain majority control throughout the chain by holding more than 50% voting rights. They have entered into shareholders' agreement via GIPAR SA (a company indirectly controlled by Botelho Family) with two investment companies, *FIP da Serra* and *GIF IV FIP Participações*, holding minority stakes of 7.94% and 7.88% respectively. This SA does not seem to have been used for gaining control by the Botelho family as they already hold majority control over the company. Instead it seems to be serving the purpose of protecting the rights of minority institutional investors⁶⁹. (The individual clauses of the shareholder agreement promising more investor rights are discussed in the later section). Additionally, the control structure indicates the extensive use of pyramiding as there are four layers of intermediate companies with less than 100% cash-flow stakes in the companies down the chain.

⁶⁹One of the clauses from the agreement reads “This Agreement does not impose any restriction on the sale, assignment or transfer, at any time Shares of the Company held by the Shareholders, which may be freely Sold, transferred or transferred to third parties, in any way”.



*VS=Voting Stock, PF=Preference shares

Figure 3.4. An example of a family-controlled structure including a shareholder agreement with two (privately held) investment companies having minority stakes, FIP da Serra and GIF IV FIP Participações.

Botelho Family's-Control and Cash-flow Rights in Energisa SA	Divergence Source	Control Enhancing Method	Total Divergence
UCO=57.14%	(UCO-UVRSA) =-16.88%	Disproportionate Board Representation	
UVRSA=74.20%		Shareholders Agreement	
UVR=63.3%	(UVRSA-UVR) =10.87%	Pyramiding	
UCFRP=29.76%	(UVR-UCFRP) =33.57%	Non-Voting shares	
UCFR=16.29%	(UCFRP-UCFR) =13.47%		UCO - UCFR=40.85%

Figure 3.4 shows that the Botelho Family manages to acquire 57.14 % control (UCO) over Energisa SA by electing four members onto a seven-member board and their total cash-flow rights (UCFR) in the company amount to 16.29%, thereby granting them excess control (UCO-UCFR) of 40.85%. This divergence between control and cash-flow rights can be tracked to the four control-enhancing instruments: 1) negative divergence ($UCO-UVRSA = -16.88$), associated with election of directors on the board as the family could elect less board members (57.14%) relative to their voting rights ($UVRSA=74.2\%$) committed in the SA; 2) positive divergence ($UVRSA-UVR=10.87\%$), as a result of signing a shareholders agreement with minority investors; 3) a large amount of divergence, ($UVR-UCFRP=33.527\%$), from the extensive use of pyramiding structure, as there are four layers of intermediate companies between the family at the apex level and the subject company on the bottom layer; and 4) leverage in control (13.57%) due to non-voting shares is measured by $UCFRP-UCFR$.

In order to calculate the total amount of leverage in control due to SA, I aggregate the divergence-disproportionate board representation ($DDBR= -16.88\%$) and Divergence-shareholder agreement DSA (10.87%) and arrive at total divergence due to SA ($TDSA= -6.01\%$). The control-ownership divergence attributed to the SA in Energisa SA, owned by an ultimate owner with a significant stake, is quite small (-6.01%)⁷⁰ relative to other control-enhancing measures only because the voting coalition between GIPAR SA and two investment companies is aimed at safeguarding the interests and rights of smaller block holders in the agreement: FIP da Serra and GIF IV FIP Participações have been guaranteed one board member each which allows them to secure 14.28% control over the board against their modest cash-flow stakes of 7.98% and 7.88% respectively. This excess control granted to the minority participants becomes a loss in board control for the largest shareholder the *Botelho Family*.

⁷⁰The negative control-ownership divergence due to the SA in Energisa S.A. is justifiable since the Botelho Family appears to lose its share of board seats to the other two participants via a clause promising one board seat each to FIP da Serra and GIF IV FIP Participações. One board seat in a seven-member board grants each of them 14.28% control over the board which is much greater than meager cash-flow rights of 7.94% and 7.88% respectively.

3.4.2.10 Measurement of Stock Price Synchronicity and Model Specification

3.4.2.11 Stock Price Synchronicity

I use stock price synchronicity (SPS), initially suggested by Roll (1988) and later developed by Morck et al. (2000) and Fernandes and Ferreira (2008), as a proxy for the information environment of a company. It measures the extent to which firm-specific information relative to industry and market wide information is incorporated into stock prices. To measure stock price synchronicity, I first compute R^2 for firm i in year t from the modified market model. To estimate the modified market model, I regress weekly stock returns of each company in my sample on the existing and previous weeks' value-weighted market return as well as the existing and previous weeks' industry return. The model, consistent with Fernandes and Ferreira (2009); Morck et al. (2000) and Roll (1988a), is estimated as follows:

$$RET_{i,k,t} = \alpha + \beta_1 MKTRET_{t-1} + \beta_2 MKTRET_t + \beta_3 INDRET_{k,t-1} + \beta_4 INDRET_{k,t} + \epsilon_{it} \quad \text{Eq. 3.7}$$

Where RET_{it} is the stock return of firm i in industry k in week t , $MKTRET_t$ is the weekly value-weighted market return based on the Bovespa Index (Ibovespa). Bovespa Index (Ibovespa) is a total return index (TRI), which tracks changes in the prices of actively traded stocks and is a better representation of the Brazilian stock market. $INDRET_{k,t}$ represents the return of industry k in week t , where k varies from 1 to 9 based on Bovespa's industry classification. The weekly industry returns are calculated as the log-difference of weekly sectoral price indices available in Datastream.⁷¹ I categorize firms into one of nine industries based on the Bovespa-industry classification scheme. The main categories are Basic Materials, Capital Goods and Services, Construction and Transportation, Consumer Cyclical, Consumer Non-cyclical, Information Technology, Oil, Gas and Biofuels, Telecommunications and Utilities. These categories are considered as the best representatives of the overall stock market and assemble firms into well-balanced samples for each industry. To address the problem of auto-correlation among

⁷¹ The Datastream sectoral indices (i.e., DS Basic Mats, DS Inds Gds & Svs, DS Cons & Transport, DS Technology, DS Oil & Gas, DS Telecom and DS Utilities) provide a perfect match for the seven categories of industries under Bovespa's classification scheme except for two industrial categories Consumer Cyclical and Consumer Non-cyclical sectors. When calculating industry returns for companies operating under Consumer Cyclical and Consumer Non-cyclical categories I used the log-difference of weekly DS Consumer Gds- price index, being the closest DataStream sectoral index proxy for Consumer cyclical and Consumer Non-cyclical.

weekly returns, lagged returns for the market ($MKTRET_{t-1}$) and industry ($INDRET_{k,t-1}$), are also included in Eq (3.7). I use weekly returns to overcome the problem of thinly traded stocks.

3.4.2.12 SYNCH

R^2 obtained from Eq (3.7) is the most widely used measure of synchronicity in the literature. It measures the market-specific variation in stock returns. A higher R^2 implies that more industry- and market-wide information is impounded in stock prices. This alternatively suggests that stock returns are less *responsive* to firm-specific unique events. However, R^2 (*Coefficient of Determination*) from the modified market model in Eq. 3.7 is bounded between zero and one. To convert a positive measure into one that is continuous (- ∞ and ∞), a logistic transformation is used. Therefore, the resulting measure (*SYNCH*), a measure of firm-specific information relative to market-and-industry-wide information, is calculated as follows:

$$\text{SYNCH}_i = \ln \left(\frac{R^2}{1-R^2} \right) \quad \text{Eq 3.8}$$

A higher value of *SYNCH* indicates a lower degree of firm-specific information incorporated in the stock prices compared with market- and industry- wide information.

3.4.2.13 Model Specification-Hypotheses 1(a) and 1(b): Effect of Cash-flow rights and Divergence between control and cash-flow rights of an ultimate owner on firms' information environments

To test the effects of cash-flow rights concentration and control-ownership divergence of the ultimate owner on stock price synchronicity, as proposed in hypotheses H1(a) and H1(b), I estimate several specifications of the following regression model;

$$\begin{aligned} \text{SYNCH}_i = & \beta_0 + \beta_1 \text{UCFR}_i^2 + \beta_2 \text{UCFR}_i + \beta_3 \text{Divergence}_i + \sum_{j=1}^8 \beta_j \text{Controls}_i \\ & + \gamma_k + \epsilon_i \end{aligned} \quad \text{Eq. 3.9}$$

Where the subscript i denotes a firm and j represents a set of firm-level control variables that range from 1 to 8. SYNCH_i is a proxy for the stock price synchronicity as computed in Eq 3.8. UCFR_i denotes the percentage of cash-flow rights held by the ultimate owner in firm i as described earlier in section 3.2. In order to test the non-linear concave

relationship between SYNCH and the cash-flow rights of the ultimate owner, as hypothesized in (H1 (a)), I include quadratic term $UCFR_i^2$ in Eq 3.9. In case of concave relationship such as an entrenchment effect that continues to the point of effective control and alignment effect sets after the point of effective control (at 50% UCFR), the beta coefficient for the quadratic term is expected to be negative ($\beta_1 < 0$). In contrast, the beta coefficient for the corresponding cash-flow rights term, $UCFR_i$, is expected to be positively ($\beta_2 > 0$) associated with SYNCH under an entrenchment effect, and negatively ($\beta_2 < 0$) associated with SYNCH in an incentive-alignment scenario. $Divergence_i$ is a proxy for divergence between control and the cash-flow rights of the ultimate owner, and in effect it demonstrates whether ultimate shareholders are entrenched when they have a less than majority stake (<50%) in a company as mentioned in hypothesis H1(b). The beta coefficient of $Divergence_i$ is expected to positive throughout, but expected to be statistically significant for the levels of cash-flow rights ultimate owners below 50% ($\beta_3 > 0$). Several variants⁷² of $Divergence_i$, defined as *Divergence-Diff* and *Divergence-Ratio* and *Scaled Divergence*, are employed in the regression. $\sum_{j=1}^8 \beta_j Controls_i$ ⁷³ is a set of firm-specific variables that affect stock price synchronicity and are explained in detail in the subsequent paragraphs. Finally, γ_k captures the industry fixed effect for k industries, and ϵ_i is the unexplained variation in SYNCH for the *i*th firm. To account for industry fixed-effects in the regression model, some of the industries do not have sufficient firms (See Panel A of Appendix B). In order to enhance the degrees-of-freedom for such industries I merge them with other closely matching industrial categories. For instance, Telecommunications (5 firms) is combined with Utilities (26 firms) and constitute a category called Telecom and Utilities (31 firms) and similarly Oil, Gas and Biofuels (2 firms) and Basic Materials (17 firms) are grouped into a separate sector called Basic Materials and Oil & Gas (19 firms), and so on (See Panel B of Appendix B for other groupings).

The literature identifies several factors other than ownership structure that influence the stock price synchronicity (SYNCH), which have also been included as control variables

⁷² Divergence-Diff (Divergence-Ratio) is defined as the difference (ratio) between the control (UCO) and cash-flow rights (UCFR) of the ultimate owner, i.e., Divergence-Diff (UCO-UCFR), Divergence-Ratio (UCO/UCFR). Scaled Divergence is (UCO-UCFR)/UCO.

⁷³ Unlike Gul et al (2010) and Kim and Shi (2010) , I did not control for Audit quality, proxied by Big-4 Auditors, because Brazilian listed companies lack Cross-sectional variation in terms of audit quality. Only 7 out of 121 companies in my sample are audited by non-Big-4 audit firms.

in the above regression model (Eq 3.9). A brief summary of each of these variables follows.

Firm Age: Older firms are expected to have greater stock price synchronicity, as theorized and empirically tested by Dasgupta, Gan, and Gao (2010). The underlying reason for this is that as firms get older, investors in the market learn more about firms' core qualities which are referred to as time invariant firm-specific information, and result in higher stock price synchronicity. In order to account for this, I include FirmAge, representing the number of months since the company's date of incorporation, as a control variable in Eq 3.9.

Size: Size of a firm tends to be positively related with stock price synchronicity (SYNCH) as large firms' stock returns are more synchronous with the market (Roll, 1988b). Furthermore, Fernandes and Ferreira (2009) argue that public announcements from firms with larger market capitalization may act as leading macro-economic indicators for small firms which causes higher stock price synchronicity. Therefore, I control for Size, using the natural log of a firm's total assets at the end of the last financial year.

Leverage: Previous studies (e.g., He, Li, Shen, & Zhang, 2013; Ng, Wu, Yu, & Zhang, 2011) assert that financial leverage plays an important role in stock-price synchronicity (SYNCH). Ng et al. (2011) and He et al. (2013) propound that higher financial leverage tends to shift risk from equity- to debt-holders, who absorb greater firm-specific risk, resulting into lower stock price synchronicity. Leverage is calculated as the ratio of book values of total liabilities and total assets at the start of the year.

Diversification: Fernandes and Ferreira (2009) argue that firms with diversified businesses may be less prone to macroeconomic shocks. They may not reflect their primary industry information in stock prices and may exhibit lower R^2 (higher stock price informativeness). A proxy for firm diversification is computed as the number of GICS (Global Industry Classification System) industries a firm operates in. GICS data is downloaded from OSIRIS. In contrast, Roll (1988) argues for higher R^2 for diversified firms, because they tend to resemble diversified portfolios which generally track market-indices more closely.

Volume: Volume, being a proxy for stock liquidity, has had witnessed a mixed relation with stock price synchronicity in the prior literature. Chan and Hameed (2006) indicate a positive relationship between stock trading volume and stock price synchronicity. They believe that liquid stocks, having frequent trading react swiftly to market information,

and experience no delay in incorporating market-wide information, which translates into greater stock price synchronicity. In contrast, other studies suggest positive impacts of stock liquidity on stock price synchronicity because stock liquidity promotes market informational efficiency by facilitating the incorporation of private firm-specific information into stock prices (Chordia, Roll, & Subrahmanyam, 2008), and therefore translates into lower stock price synchronicity (Boubaker et al., 2014). Volume, in this study, is the total of number of shares traded in a fiscal year, divided by the total number of shares outstanding in that particular year. I expect the relationship for volume to go in the direction suggested by Chan and Hameed (2006), since their proxy for liquidity is similar to the one employed in this study.

Volatility: I also control for volatility, as Bebchuk, Cohen, and Ferrell (2009) argue that firms with higher return volatility generally produce more firm-specific information and are less affected by the market and industry-wide information. Volatility is measured as the standard deviation of daily stock returns of firm i in the current fiscal year.

Free Float: Chan and Hameed (2006) claim that in emerging countries, companies with high investability (a proxy much similar to Free Float is defined as the percentage of shares available for public investing), attract wider coverage by analysts, who in turn facilitate the incorporation of industry-and market-wide information into stock prices, leading to higher stock price synchronicity. Controlling for this, I include Free Float in Eq 3.9, denoting the percentage of total shares issued, excluding the shares counted as strategic holdings (5% or more), available to ordinary investors.

ADRs: Brazilian companies make third position, after UK and Japan, on the list of countries that have issued ADRs on the NYSE (Source: www.adr.com). By electing to cross-list in the US, via ADRs, firms agree to comply with the stricter disclosure and reporting standards (US GAAP) required by the US SEC (Securities and Exchange Commission). In effect, added disclosures and thorough scrutiny by regulators in the host country should enhance a firm's information environment and reduce stock price synchronicity. This association of ADRs with stock price synchronicity may revert when analyst coverage is factored in. In emerging countries, according to Chan and Hameed (2006) and Fernandes and Ferreira (2008), the cross-listing invites added coverage by analysts which helps in the production and creation of market and industry-wide information and therefore has a negative effect on stock price synchronicity. The category

variable *ADR*⁷⁴, is coded as one when a company has either level II or Level III ADRs listed on the NYSE, otherwise zero.

3.4.2.14 Regression Model-Hypothesis 2

To test the moderating effect of a firm's governance listing quality on the relationships between cash-flow rights of an ultimate owner and SYNCH (i.e., hypothesis 2), I estimate the regression model in Eq 3.9 three times: once for the whole sample (121 companies) followed by two separate regressions for 37 and 84 companies listed in the LCGQ and HCGQ segments of BM&FBovespa, respectively. In the regression for the 37 LCGQ companies the beta coefficient (β_1) of the quadratic term, $UCFR_i^2$, is expected to be smaller than the beta coefficient (β_1) for the entire sample, signifying a more pronounced effect of firm's listing quality on the firm's information environment (SYNCH). In the regression model for the 84 HCGQ companies the beta coefficient for the quadratic term, $UCFR_i^2$ is expected to be greater than that for the whole sample (121), indicating a less pronounced effect on SYNCH.

3.4.2.15 Regression Model-Hypothesis 3—Effect of Shareholders' Agreements on Firms' Information Environments

To test the effect of SA on firms' information environments (SYNCH) I specify the following regression model:

$$SYNCH_i = \beta_0 + \beta_1 UCFR_i^2 + \beta_2 UCFR_i + \beta_3 Divergence_i + \beta_4 SA_i + \sum_{j=1}^8 \beta_j Controls_i + \gamma_k + \delta_l + \epsilon_i \quad Eq\ 3.10$$

All the terms in the above model are the same as in Eq 3.9 except SA_i and δ_l . SA_i is a categorical variable that equals one for firms with *SA- with an ultimate owner* and zero for firms with *SA- without an ultimate owner (jointly controlled companies)*. The beta coefficient, β_4 for SA_i is expected to be smaller than the intercept, signifying the positive role of *SA- with an ultimate owner* on firm's information environment. This is consistent with the "coordination" or "investor protection" role of SA, which resolves conflict of interest among the shareholders and deliver benefits that are shared among all

⁷⁴ADR is not included in the regression model, used for Russia, only because most of the Russian companies (with exception to two companies) that have ADRs, use level 1 ADRs which trade on the OTC market. These ADRs do not require full SEC registration and do not require companies to report accounting results according to the US GAAP.

shareholders. δ_l controls for the firm's listing status on BM&FBovespa, where subscript l varies with lower corporate governance quality (LCGQ) and higher corporate governance quality (HCGQ) companies. δ_l allows to exclude the effect of common governance provisions, on SYNCH, that are present in both in the SA and the in the listing regulations of the respective segments. For instance, the requirement to elect 20% independent directors to the board is incorporated both in the listing requirements of NM segment and in the SAs of the companies listed in it. In the above model, SA_i as a categorical variable treats all the agreements within each category as the same, i.e., *SAs-with an ultimate owner* and *SAs- without an ultimate owner*, which isolates its effect on the information environment (SYNCH) in a binary fashion as being either favourable or unfavourable. In reality, every firm in each category might experience a different impact on its information environment so I employ Scaled DSA, measured as control-ownership divergence attributable to shareholders' agreement (TDSA) scaled by control rights of ultimate owner (UCO), as an alternative proxy for firm's agreements' quality and re-estimate the model in Eq 3.11 separately for the sub-samples of 30 *SA-with an ultimate owner* and 29 *SA-without an ultimate owner* companies.

$$\begin{aligned} SYNCH_i = & \beta_0 + \beta_1 UCFR_i^2 + \beta_2 UCFR_i + \beta_3 Divergence_i + \beta_4 Scaled\ DSA_i \\ & + \sum_{j=1}^8 \beta_j Controls_i + \gamma_k + \delta_l \\ & + \epsilon_i \end{aligned} \quad Eq\ 3.11$$

To avoid multicollinearity between $Divergence_i$ and $Scaled\ DSA_i$ in Eq 3.11, I leave out divergence due to shareholders' agreement and include control-ownership divergence attributable only to non-voting shares and pyramiding in $Divergence_i$.

3.5 Empirical Results

3.5.1 Summary Statistics

Table 3.6 Descriptive Statistics

The table presents the descriptive statistics for information variables, ownership variables, and explanatory variables. R^2 and *SYNCH*, as proxies for companies' information environments, measure the level of firm-specific information relative to industry and market-wide information. *UCO* and *UCFR* are ownership variables that measure the levels of control and cash-flow rights of an ultimate owner, respectively. *Divergence-Diff*, *Scaled Divergence* and *Divergence-Ratio* capture the level of discrepancy between control and cash-flow rights of ultimate owners. The sample consists of 121 companies listed on the BM&F Bovespa exchange in 2014.

Variables	Mean	Median	Std Dev	Min	Max	Skew	Kurt
R^2	0.336	0.286	0.224	0.024	0.997	0.674	-0.224
<i>SYNCH</i>	-0.851	-0.917	1.345	-3.726	5.761	0.967	3.960
<i>UCO</i>	0.718	0.751	0.242	0.085	1.000	-0.709	-0.132
<i>UCFR</i>	0.399	0.361	0.205	0.028	0.995	0.437	-0.293
<i>Divergence-Diff</i>	0.312	0.296	0.217	-0.207	0.935	0.468	-0.037
<i>Scaled Divergence</i>	0.431	0.402	0.496	-1.449	4.785	5.242	5.907
<i>Divergence-Ratio</i> (<i>UCO/UCFR</i>)	2.433	1.750	2.627	0.408	23.613	5.649	39.547
<i>FirmAge-Months</i>	476.23	504.0	338.69	24.00	1704.0	0.774	0.505
<i>Size</i>	8.860	8.796	1.410	5.810	13.580	0.333	0.440
<i>Leverage</i>	0.599	0.590	0.186	0.125	1.033	-0.117	-0.223
<i>DIV</i>	2.413	1.000	2.231	1.000	9.000	1.632	1.644
<i>Volume</i>	1.617	0.531	9.725	0.000	107.343	10.887	119.312
<i>Volatility</i>	39.024	34.344	14.177	17.160	90.843	1.506	2.442
<i>FreeFloat</i>	51.897	48.480	27.251	0.250	100.0	0.087	-0.785
<i>ADR</i>	0.455	0.000	0.500	0.000	1.000	0.185	-1.999

Table 3.6 shows that ultimate owners in Brazil on average hold majority control rights (*UCO*) of 71.8%, which is far greater than their cash-flow stakes (*UCFR*=39.99%) in a company. Considering their less-than-50% equity stake (*UCFR*), and more than 50% control, the ownership structure in Brazil can be described as similar to Bebchuk's controlling-minority structure (CMS). About two-thirds (77 out of 121) of companies in my sample are controlled at less than 50% of cash-flow rights by a family, which makes them quite similar to family-controlled CMS structures found in Sweden and Korea (Cronqvist & Nilsson, 2003; Song, 2002). This implies that controlling shareholders control majority of the companies with just minority cash-flow investment in a company. The proportion of cash-flow rights of the largest shareholders in Brazil complements Laporta's (1999) finding that shareholders do not require more than a 50% equity stake to maintain lock-in control of the firms. As in Laporta's findings, the share of financial institutions as an ultimate owner is also negligible or less common or less popular in

Brazil. More specifically, the cash-flow concentration ($UCFR=39.9\%$) of an ultimate shareholder is in line with the equity stake (42%) of the largest shareholder reported by Rapaport and Sheng (2010b). The difference in the results is due to the difference in sample periods (2006-2008) covered in that study and also the sample size (192 companies were used by Rapport and Sheng). Comparing the control-ownership divergence of the largest shareholder reported in earlier studies by Rapoport and Sheng (2010) (23.4%) and Aldrichi and Neto (2005) (24%) there seems to be an increase in deviation between control and cash flow rights of the controlling shareholders over the years. This could partly be because of the different proxies used for measuring control rights in the two studies, which calculate the divergence by taking the difference in voting and cash-flow rights of the three largest shareholders instead of computing it only for the largest shareholder.

Turning to the information variables (R^2 and $SYNCH$) in Table 3.6, the mean and median R -square are 0.336 and 0.286 respectively, while the mean and median for the dependent variable $SYNCH$, are -0.851 and -0.917 respectively. The mean R^2 of 0.336 for Brazil, compared with average R^2 reported in the USA (0.021) and the UK (0.062) (Morck et al., 2000) and an average R^2 more recently recorded for the UK (0.18) by Fernandes and Ferreira (2008), is significantly higher, which is indicative of a relatively poor corporate information environment in a typical emerging economy. Also, mean $SYNCH$ (-0.851) in Brazil, measuring the degree of firm-specific information relative to industry-market-specific information impounded in stock prices, is significantly higher than what was noted for the USA (-1.74) by Piotroski and Roulstone (2004). The two information variables, R^2 and $SYNCH$, suggest that the stock prices of Brazilian listed companies incorporate more industry- and market-wide information relative to firm-specific information. The mean $SYNCH$ (-0.851) in this study, compared to the mean $SYNCH$ (-0.51) witnessed by Santana et al. (2014) in 2012 for a sample of 51 Brazilian companies, seems to suggest an improvement in the corporate information environment over time. Moreover, the relatively high standard deviations of 0.224 and 1.345, for R^2 and $SYNCH$ respectively, denote a considerable variation in the information environment across the cross-section of companies included in my sample. Given that all firms in my sample are from the same country, the remarkably high variation in stock price synchronicity hints at the widespread differences in information dissemination behaviour across firms within the country. The skewness (0.967) and Kurtosis (3.96) for the dependent variable,

SYNCH, suggest that the variable is normally distributed, which is imperative for the econometric robustness of the regression results.

3.5.2 Bivariate Statistics

Table 3.7 presents the pairwise Pearson correlation coefficients for ownership, information and control variables for the entire sample (121 companies) used in the study. Several correlations in Table 3.7 warrant attention. First, both the information measures (R^2 and SYNCH) are significantly positively correlated with the cash-flow rights (UCFR) of the ultimate owner, at the 1% significance level. The positive correlation is consistent with the general belief that ownership concentration detriments a firm's information environment. Econometrically, this result seems to have occurred due to the dominant set of CMS companies (77 of 121 companies) in my sample which are owned at less than 50% cash-flow rights. The positive correlation in that case provides preliminary confirmation to the part of H1(a) which proposes that any increase in cash-flow rights of ultimate owners in CMS companies invite entrenchment which dissuades largest shareholder from sharing firm-specific information with outsiders resulting in higher synchronicity. Second, two measures of control-ownership divergence, Divergence-Diff and Divergence-Ratio, show a strong positive correlation with both the information variables, R^2 and SYNCH. The negative correlation between control-ownership divergence of an ultimate owner and stock price synchronicity (SYNCH) provide initial support to the entrenchment phenomenon predicted in hypothesis H1(b).

Control variables such as Size, Volatility, Free Float and ADRs are significantly correlated with the SYNCH, generally in the expected directions, except ADRs, as documented in the earlier literature. Consistent with the prior literature, Size has a strong positive correlation with SYNCH at the 1% significance level. This happens either because large firms tend to incorporate more industry-and market-wide information than smaller firms, satisfying Roll's (1988) notion; or large firms tend to be more diversified, therefore they track market index more accurately than smaller firms; or bigger firms, in Brazil, have more weight in the Bovespa index therefore they are more likely to co-move with the market index; or large firms', according to Piotroski and Roulstone (2004), accounting and economic events generally coincide with macroeconomic events and therefore more macroeconomic information (as opposed to firm-specific information) is impounded in the stock prices, leading to greater stock price synchronicity.

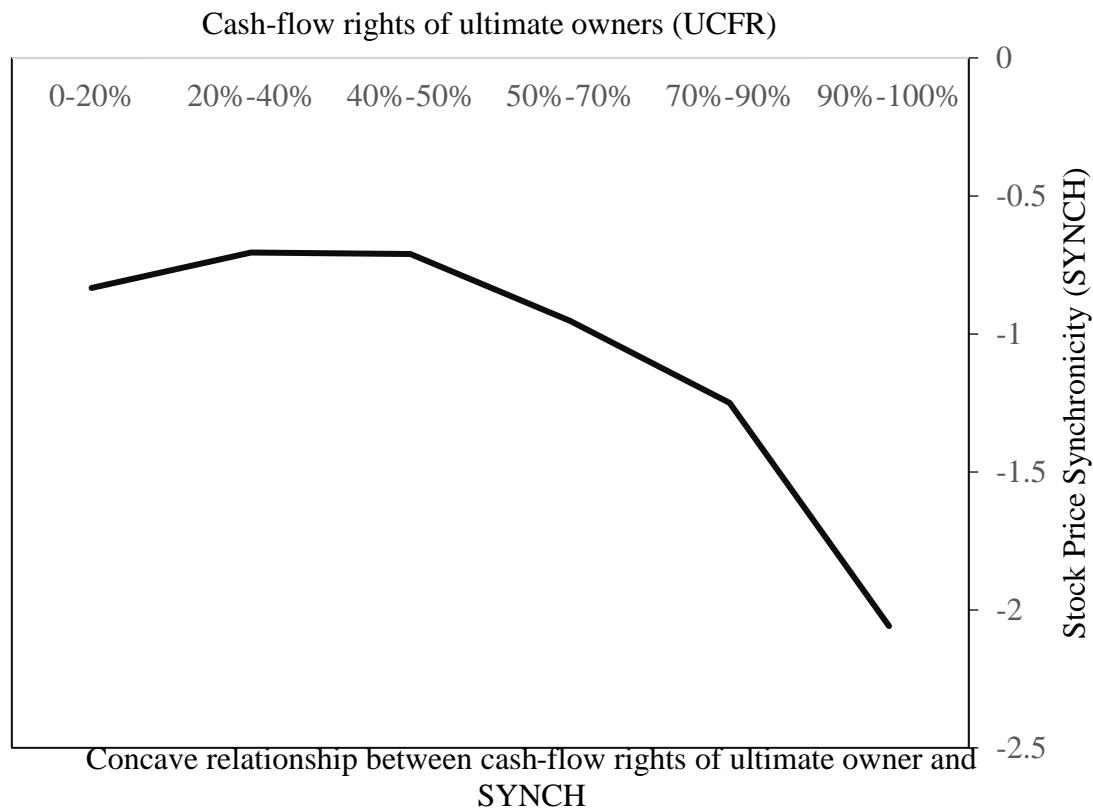
The statistically significant positive correlation (0.369) between *ADR* and *SYNCH* seemingly indicates a negative impact of cross-listing on the information environment of Brazilian companies. However, this result cannot be a true representative of the relationship between firms' cross-listing and information environments unless I control for other factors affecting firms' information environments. In fact, this relationship does not hold and is no longer statistically significant, when I control for firm's age, Size, Leverage and so on, in the regression model, as shown in Table 3.8 in the next section

Table 3.7 Pearson Correlation Matrix

This table reports Pearson pairwise correlation coefficients for the key variables used in the study. The sample contains 121 companies listed on BM&FBovespa in 2014. R^2 and SYNCH refer to the R^2 statistic and the stock price synchronicity measures, respectively that measure the co-movement of firm's stock returns with the industry- and market returns. SYNCH, as a main proxy for stock price synchronicity, is computed as a logistic transformation of R^2 obtained from the modified market model regression outlined in Eq. 3.7. Divergence-Diff and Divergence-Ratio are separate proxies for the divergence between ownership and control rights of the largest controlling shareholder (ultimate owner). Divergence-Diff (Divergence-Ratio) are defined as the difference (ratio) between the control (UCO) and cash-flow rights (UCFR) of the ultimate owner, i.e., Divergence-Diff (UCO-UCFR), Divergence-Ratio (UCO/UCFR). UCFR is a proxy for the ownership concentration of the largest controlling shareholder. A brief description of all other variables is provided in Appendix Q

Variables	R^2	SYNCH	UCO	UCFR	Diverg- Diff	Diverg- Scaled	Diverg- Ratio	Firm Age	Size	Leverage	Divers	Volume	Volatility	Free Float
Information and Ownership Variables														
R^2	1													
SYNCH	0.962 ^a	1												
UCO	-0.041	-0.042	1											
UCFR	0.438 ^b	0.432 ^b	0.535 ^b	1										
Divergence-Diff	0.247 ^b	0.328 ^b	0.488 ^a	-0.349 ^a	1									
Divergence-Scaled	0.052	0.047 ^b	0.1597 ^b	-0.574 ^a	0.694 ^a	1								
Divergence Ratio	0.461 ^b	0.428 ^b	0.103	-0.471 ^a	0.530 ^a	0.589 ^a	1							
Control Variables														
Firm Age	-0.043	-0.008	0.049	-0.162 ^c	0.168 ^c	0.235 ^a	0.177 ^b	1						
Size	0.704 ^a	0.721 ^a	0.032	-0.174 ^b	0.176 ^b	0.068	0.219 ^b	0.068	1					
Leverage	-0.097	-0.085	0.019	0.024	-0.004	-0.023	-0.072	-0.008	-0.274 ^a	1				
Diversification	0.009	0.016	-0.018	0.056	-0.075	-0.105	-0.079	-0.16	-0.032	-0.082	1			
Volume	-0.03	-0.011	0.001	0.082	-0.073	-0.064	-0.047	-0.104	0.003	-0.063	-0.054	1		
Volatility	-0.181 ^b	-0.154 ^c	0.077	0.041	0.004	0.098	0.195 ^b	-0.180 ^b	-0.070	-0.185 ^b	-0.051	0.348 ^a	1	
Free Float	0.220 ^b	0.226 ^b	-0.445 ^a	-0.436 ^a	-0.02	0.086	0.039	0.135	0.099	0.051	-0.119	-0.038	-0.166 ^c	1
ADR	0.369 ^a	0.364 ^a	-0.157 ^c	-0.276 ^a	0.05	-0.008	0.075	-0.06	0.571 ^b	-0.088	-0.132	0.121	-0.069	0.353 ^a

a- statistical significance at the 1% level, b-statistical significance at the 5% level, c-statistical significance at the 10% level



Cash-Flow Rights (UCFR) (%)	0-20	20-40	40-50	50-70	70-90	90-100
SYNCH	-0.834	-0.705	-0.710	-0.952	-1.250	-2.059
No of Companies (%)	27 (22.31)	40 (33.05)	13 (10.74)	33 (27.27)	6 (4.95)	2 (1.68)
Cumulative N (%)	27 (22.31)	67 (55.36)	80 (66.10)	113 (93.37)	119 (98.32)	121 (100)

Figure 3.5 The concave-relationship between Stock Price Synchronicity and the Cash-flow Stake of the Ultimate Owner.

In order to provide a pictorial representation of the association between the cash-flow rights of an ultimate owner and stock price synchronicity, I compare the mean SYNCH against different levels of cash-flow rights of the ultimate owner, in Figure 3.5. Figure 3.5 shows how the mean SYNCH keeps increasing up to the range of 40-50% cash-flow stakes (reflecting an entrenchment and information-impairing role) and beyond the 50% threshold it keeps falling for the remaining three cash-flow rights' ranges i.e., 50-70%, 70-90% and 90-100% (indicating an alignment-of-interest and information improving role). Comparing the steepness of the rising and falling part of the curve, one may argue for an asymmetric impact of the increase in ownership stakes on stock price synchronicity. The relatively less steep rising part of the curve means that the magnitude of entrenchment as a result of an increase in cash-flow rights before the point of effective

control (the peak) is lower than the magnitude of alignment-of-interest reflected afterwards in the more steep falling part of the curve. Consistent with the premise in hypothesis 1(a), this supports the premise that the information-impairing role of entrenched ultimate owners persists at all cash-flow levels below 50%. The opposite, information-improving role, corresponding to incentive-alignment of ultimate owners, prevails at all cash-flow rights levels beyond the 50% threshold. Simply put, synchronicity appears to be a concave function of the cash-flow stake of the largest shareholder in Brazil, as propounded in hypothesis 1(a).

The fourth row in the table underneath Figure 3.5 affirms the belief that ownership structure in Brazil is similar to a controlling-minority structure (CMS), as the vast majority of the companies (66.10%) in my sample are controlled by ultimate owners having less than 50% cash-flow rights (equity stakes). In contrast, as shown in the third row of the table, only 33.9% i.e., $(27.27\% + 4.95\% + 1.65\%) = 33.9\%$ of the companies in my sample are owned by ultimate owners holding majority equity stakes ($>50\%$). The cumulative frequencies (percentages) in row 4 of the table show that about 78% of the companies in my sample belong to ultimate owners holding 20% or more of the capital, highlighting a reasonable level of equity commitment by the controlling shareholders in Brazil.

The inverted U-shaped curve, in Figure 3.5, demonstrates a concave relationship between stock price synchronicity and the cash-flow rights of the ultimate owner. The rising part of the curve suggests that stock price synchronicity rises with increases in the ownership stake of the ultimate owner, involving an entrenchment effect, and after reaching its peak, this changes to a negative relationship between synchronicity and ownership concentration of the largest controlling shareholder (an Incentive-alignment effect). The peak of the curve in Figure 3.5 indicates the point of “effective control” or “majority control” beyond which any increase in cash-flow rights tends to align the interests of the ultimate owners, thereby preventing them from exploiting minority investors, resulting in more firm-specific disclosures and lower synchronicity. This inflection point, i.e., point of effective control, (depicting the maximum synchronicity), is computed by taking the first-derivative of SYNCH with respect to UCFR (Cash-flow rights of the largest shareholder), expressed mathematically as follows:

$$\frac{\partial \text{SYNCH}}{\partial \text{UCFR}} = \beta_1 \text{UCFR}^2 + \beta_2 \text{UCFR} = 0$$

This simplifies to

$$\partial SYNCH / \partial UCFR = 2\beta_1 UCFR + \beta_2 = 0$$

or $UCFR =$

$$-\frac{\beta_2}{2\beta_1} \quad Eq\ 3.12$$

Taking the estimated beta coefficients for $UCFR_i^2$ (-5.481, -5.7134), and $UCFR$ (5.114, 5.6126), in Table 3.8, under Full Models 1 and 2 and plugging them into Eq 3.12, I get $UCFR$ values of approximately 47% and 50% respectively. This shows that the cash-flow rights of ultimate owners, in the proximity of 50%, tend to shift the relationship with $SYNCH$ from being positive (entrenchment) to one which is negative (incentive-alignment). This result confirms the notion that controlling owners in Brazil prefer to extract private benefits only while they have minority stakes in the company (<50%), so the entrenchment effect leads the alignment-effect at this stage. However, beyond the 50% control threshold, any increase in control, via increase in their cash-flow stakes, leaves no incentives for them to expropriate outside investors and therefore the incentive-alignment phenomenon comes into effect. These findings thus confirm the relationship envisaged in hypothesis 1(a).

In order to test the hypotheses outlined in section 3.3, relating to the effects of cash-flow rights ($UCFR$) and control-ownership divergence (Divergence) on stock price synchronicity, I estimate several specifications of Eq 3.9 using a pooled Ordinary Least Squares method (OLS) including industry fixed effects. The regression results presented in columns 2 and 3 are for the Full Sample based on entire sample (121 companies) whereas those reported under columns 4 and 5 relate to the two samples fragmented based on 50% cash-flow rights. The p-values reported in parentheses are based on robust standard errors, corrected for cross-sectional heteroscedasticity and firm-level clustering.

In Table 3.8, the negative beta coefficients (-5.481 and -5.7134) for $UCFR^2$ and positive beta coefficients (5.114 and 5.612) for $UCFR$ under columns 2 and 3, empirically confirm the concave relationship between cash-flow rights and stock price synchronicity as predicted in hypothesis 1(a). Both the coefficients, for the quadratic term ($UCFR^2$) and the linear term ($UCFR$), are statistically significant at the 1% level. This statistically significant non-linear (inverted U-Shaped) relationship (quadratic) demonstrates that synchronicity initially keeps increasing until it achieves its maximum at a point where the

ultimate owner secures effective control, and after that point, once the ultimate owners assumes a majority stake, it tends to decline with each incremental increase in cash-flow rights. The increasing (decreasing) relationship between SYNCH and cash-flow rights of the largest shareholder corresponds to entrenchment behaviour (incentive-alignment behaviour).

3.5.3 Regression Results and Discussion- Impact of Cash-flow rights and Control-ownership Divergence of an Ultimate Owner on Stock Price Synchronicity (Hypotheses 1(a) and 1(b))

Table 3.8 Regression of SYNCH with Cash-flow Rights and Control-Ownership Divergence

Regression results, indicating the concave relationship between the cash-flow rights of the largest shareholder (UCFR) and stock price synchronicity (SYNCH), and the entrenchment effect of control-ownership divergence (UCO-UCFR/UCO) on stock price synchronicity. The dependent variable is *SYNCH*, estimated using Eq. 3.8. The results in the table below are based on OLS regression model provided in Eq 3.9.

Independent Variables	Full Sample (1)	Full Sample (2)	UCFR < 50%	UCFR >= 50%	Economic Impact-Standardized Beta Coefficient s)
Panel A: Ownership Variables					
<i>UCFR</i> ²	-5.481 ^a (0.0008)	-5.7134 ^a (0.0020)			
<i>UCFR</i>	5.114 ^a (0.0011)	5.6126 ^a (0.003)	2.0619 ^c (0.0848)	-2.5661 ^c (0.100)	0.1256* -0.3033**
<i>Divergence-Diff</i>	0.4729 ^c (0.1025)				0.0762
<i>Divergence-Ratio</i>		0.01251 ^c (0.0761)	0.0028 ^c (0.0998)	0.1047 (0.8539)	0.1333
Panel B: Control Variables					
<i>Firm Age</i>	-0.0003 (0.1964)	-0.0003 (0.1471)	-0.0001 (0.6282)	-0.0005 (0.3924)	-0.0942
<i>Size</i>	0.7663 ^a (<0.0001)	0.7490 ^a (<0.0001)	0.8486 ^a (<0.0001)	0.6168 ^a (0.0010)	0.8045
<i>Leverage</i>	0.1221 (0.1396)	0.1147 (0.1682)	0.1597 (0.2617)	0.0811 (0.4869)	0.0917
<i>Diversification</i>	0.0161 (0.6634)	0.0191 (0.6058)	0.0017 (0.9699)	0.06305 (0.3842)	0.0224
<i>Volume</i>	0.0023 (0.7956)	0.0029 (0.7492)	0.3263 ^b (0.0229)	0.0017 (0.8775)	0.019
<i>Volatility</i>	-0.0061 (0.3293)	-0.0069 (0.2929)	-0.0153 ^c (0.0646)	-0.0017 (0.9034)	-0.0745
<i>Free Float</i>	0.0111 ^a (0.0022)	0.0122 (0.2474)	0.0060 (0.2202)	0.0108 (0.1379)	0.225
<i>ADR</i>	-0.2383 (0.230)	-0.2171 (0.3039)	-0.2749 (0.2938)	-0.4294 (0.3455)	-0.0846
<i>Intercept</i>	-8.78 ^a (<0.0001)	-8.970 (<0.0001)	-9.086 ^a (<0.0001)	-5.2117 ^c (0.0622)	
<i>Industry Dummies</i>	Included	Included	Included	Included	Included
<i>N</i>	121	121	77	44	121
<i>Adjusted R</i> ²	58.68%	58.20%	66.66%	30.90%	59.80%
<i>F-Statistic</i>	16.49	16.19	16.2	3.92	17.2

a-statistical significance at the 1% level, b-Statistical significance at the 5% level c-statistical

significance at the 10% level *represents economic impact on SYNCH when UCFR<50%, ** shows the impact when UCFR>50%

Using beta coefficients for $UCFR^2$ and $UCFR$ under Full Models 1 and 2 and plugging these into Eq 3.12 , I compute the inflection points (47% or 50%) which show the point of effective control where synchronicity as an increasing function of cash-flow rights changes into one that is decreasing with the cash-flow rights of the ultimate owner. These inflection points, especially $UCFR=50\%$, indicating the equity stake at which ultimate owners secure effective control, become the basis for splitting the sample to separately analyse *the entrenchment effect* particular to companies owned with less-than-majority equity stakes, and the incentive-alignment effect associated with companies owned with more than 50% equity stakes.

To segregate the entrenchment effect from the incentive alignment effect, I ran two separate full model regressions using samples of 77 and 44 companies owned by ultimate owners holding *minority* ($UCFR<50\%$) and *majority* cash-flow rights ($UCFR>=50\%$), respectively. The results for these regressions are presented in columns 4 and 5, of Table 3.8, representing companies owned at less-than-50% ($UCFR<50\%$), and more-than-50% cash-flow rights ($UCFR>=50\%$), respectively. The statistically significant ($p=0.0848$) positive beta coefficient (2.0619) for $UCFR$ in column 4 implies that an increase in ownership stakes by ultimate owners, when they have minority stakes ($UCFR<50\%$), tends to entrench them (so they can reap private benefits). Such expropriation and value-destroying behaviour inhibit ultimate owners from disseminating firm-specific information to the market, thus leading to higher stock price synchronicity (SYNCH). Alternatively, it could imply that any increase in ownership stakes by ultimate owners, in the wake of their below-50% cash-flow rights, is interpreted as a control-amassing exercise by minority investors who, considering them entrenched, place less confidence or credence on the firm-specific accounting and financial information released by the firm when pricing stock, which results in more synchronous stock prices.

Looking at the statistically significant negative coefficient (-2.5661) for $UCFR$ in column 5, there happens to be an information-improving role, for increasing cash-flow rights of ultimate owners once they achieve effective control, as reflected in declining stock price synchronicity. Intuitively, this indicates that with an increase in cash-flow stakes by the ultimate owners after hitting the ownership limit necessary for maintaining control ($UCFR=50\%$), any entrenchment or self-serving behaviour will cost disproportionately more for the ultimate owners. This, rather, promotes incentive-alignment behaviour that entices them to disclose more and better quality firm-specific information to the outsiders, resulting into lower synchronicity. Taken together, the two results provide convincing

evidence in support of the notion that enhancement in cash-flow rights of ultimate owners initially entrenches them and impairs information environment, but later triggers the *incentive-alignment* behaviour (improve information environment), beyond the effective control threshold. This finding supports a concave relationship between *SYNCH* and *UCFR* as envisaged in hypothesis 1(a).

Extending the initial evidence depicted in the positive correlation coefficients for control-ownership divergences, the positive beta coefficients for various proxies of control-ownership divergence (Divergence-Diff (0.4729) under Full Sample 1) and (Divergence-Ratio (0.01251), under Full Sample 2) in Table 3.8 signify an entrenchment of the largest shareholder in the presence of a disparity between their control and cash-flow rights. The result partially confirms the argument provided in H1(b) that control-ownership divergence, on average, encourages controlling owners to pursue self-interested agendas. These agendas cause them to share less firm-specific information with the market participants and therefore prevent firm-specific information from being incorporated into stock prices causing higher stock price synchronicity.

Taking this result as final for all companies in the sample (121 in total) might not be plausible since the reaction of minority investors to expropriatory practices by inside controlling managers, based on the divergence between their control and cash-flow rights, may vary in response to the level of cash-flow invested by the ultimate owners. The statistically significant positive beta coefficient (0.0028), for *Divergence-Ratio* in column 4 of Table 3.8, for the 77 companies owned by ultimate owners with minority stakes (*UCFR*<50%) indicates that only under such circumstances are the entrenchment activities by the ultimate owners deemed “real entrenchment” and essentially important for the owners in deciding about the level and quality of firm-specific disclosures to outsiders. This is because any entrenchment initiatives bringing private benefits in the wake of minority cash-flow rights seem economically justifiable for the ultimate owners as they bear the minority burden (<50%) of such activities relative to other dispersed minority shareholders. Minority investors, being aware of the small cash-flow stakes of the ultimate owners and their rent-extraction activities, might also question the reliability of the firm-specific information supplied to them, which limits the extent of firm-specific information incorporated in stock prices, translating into a greater *SYNCH*. *SYNCH* is not only positively associated with control-ownership divergence but also positively related to the *UCFR* (2.0619 0.0848) at a less than 50% threshold (see column 4). This signifies extreme entrenchment associated with CMS structures, where inside controlling

shareholders' incentive to misappropriate resources from minority investors stems from both their minority cash-flow stakes and also from their ability to escape the pro rata consequences of their economic decisions because of the separation between their control and ownership rights. Consequently, "extreme entrenchment" yields "extreme information asymmetry" in CMS structures.

However, this information-impairing relationship between control-ownership divergence and *SYNCH* is statistically not significant, as can be seen from the coefficient for *Divergence-Ratio* in column 5, when large controlling owners hold majority stakes (*UCFR*>=50%). This probably occurs because investors, being aware of the majority stakes of the ultimate owners, appear to show no concern for the extraction of private benefits arising out of separation of control and cash-flow rights, realizing that the greater portion of the expropriation cost will be borne by those ultimate owners. Overall, these two results in aggregate tender empirical support to the idea that information implications of control-ownership divergence differ given the degree of ownership interest by the ultimate owners in a company. The asymmetric impact of control-ownership divergence on synchronicity, i.e., a statistically-significant increase in synchronicity for those companies (77) owned at less than 50% cash-flows, and no statistically significant relationship for the companies (44) owned with majority stakes, points to the fact that the information-impairing impact of control-ownership divergence is regulated by the equity stakes held by the largest shareholder, as posited in hypothesis 1(b).

Now I interpret the results for the control variables. The positive and statistically significant ($p<0.0001$) beta coefficients for *Size*, in Table 3.8, are consistent with the prior literature (Boubaker et al., 2014; Gul et al., 2010), showing that large firms tend to mirror the market- and industry-indexes in emerging markets, and therefore reflect more industry- and market- wide information in stock returns (Chan & Hameed, 2006; Roll, 1988a). *Free Float* also seems to play a role in shaping firms' information environments in Brazil, as reflected in the positive coefficient (0.0111) under Full sample 1, which is statistically significant at the 5% level. This information-deteriorating role of *Free Float* can perhaps be explained using Chan and Hameed's (2006) proposal that in emerging countries those companies having high investability (otherwise known as *Free Float*) attract considerable attention from analysts, who further facilitate the incorporation of industry- and market-wide information into stock prices relative to firm-specific information. Also positive, but statistically not significant beta coefficients for *Volume*, consistent with Chan and Hameed's (2006) findings, indicate a greater and faster

incorporation of market- and industry-wide information for highly liquid stocks. The coefficient for *Volume*, in column 4, is statistically significant at the 5% level, signifying that companies owned by controlling owners with less than 50% cash-flow stakes will have a large proportion of shares available for trading by minority investors, thus are significant enough to have an impact on stock price synchronicity. The coefficients of other control variables including *FirmAge*, *Leverage*, *Diversification*, *Volatility*, and *ADR* are not statistically significant, but suggest an association with synchronicity in directions consistent with the prior literature. For instance, *Leverage* and *Diversifications* show a positive association with synchronicity consistent with Rajgopal and Venkatachalam's (2011) argument that levered firms, being more financially distressed, render stock returns more volatile and Roll's (1988) logic that diversified firms replicate market indices and exhibit higher co-movement with stock market indices. *FirmAge*, *Volatility* and *ADR*, with negative coefficients, indicate a negative association with synchronicity, pointing for the favourable impact on firms' information environments.

In the last column of Table 3.8, I report the economic impact of ownership and control variables on synchronicity, based on estimates from Eq 3.9. Among the ownership variables, it is the ownership concentration (UCFR) of the largest shareholder that matters most in shaping a firm's information environment, as shown in the two estimates: 0.1256 and -0.3033 for *UCFR* under scenarios of *UCFR<50%* and *UCFR>50%*, respectively. From these estimates one can infer the asymmetric economic impact for an increase in cash flow rights on synchronicity. The results (0.1256 and -0.3033) suggest that a one standard deviation increase in cash-flow rights leads to a 12.56% increase in synchronicity when the largest shareholders hold a minority stake (*UCFR<50%*), and a 30.33% reduction in synchronicity when the controlling owners' ownership exceeds 50% (*UCFR>50%*). Intuitively, it suggests that the investors' magnitude of favourable response (30.33%) to the marginal increase in ownership stakes exceeds their magnitude of the unfavourable responses (12.56%) when the ultimate owners hold minority stakes. This asymmetric impact is logical in the context of the ownership environment in Brazil, where high levels of cash-flow rights beyond the control level are expected to provide a significant substitution for the lack of minority investor protection.

Additional results, provided in Appendix K with an alternative proxy for control-ownership divergence (the difference between the control (UCO) and ownership rights (UCFR) of the ultimate owner), provide additional support in favour of hypotheses 1(a) and 1(b).

3.5.4 Empirical Results: Hypothesis-2

Table 3.9 Listing Segment-Wise Descriptive Statistics for SYNCH, UCO, UCFR, Divergence-Diff and Divergence Ratio

BM&FBovespa Segment	N	% of Sample	UCO	UCFR	Divergence-Diff	Scaled Divergence	Divergence Ratio	SYNCH
			Mean	Mean	Mean	Mean	Mean	Mean
Panel A								
<i>Traditional and Level 1(LCGQ)</i>	37	30.57	0.82	0.39	0.41	0.51	3.1	-0.74
<i>Level 2 and Novo Mercado (HCGQ)</i>	84	69.43	0.67	0.4	0.27	0.4	2.18	-0.9
<i>Total</i>	<i>121</i>	<i>100</i>						
<i>T Test(LCGQ and HCGQ)</i>		<i>p-</i> <i>value</i>			<i>0.0004*</i>	<i>0.0412**</i>	<i>0.0432**</i>	<i>0.045**</i>
Panel B								
BM&FBovespa Segment								
<i>Traditional</i>	20	16.52	0.81	0.45	0.36	0.45	2.34	-0.62
<i>Level 1</i>	17	14.04	0.83	0.33	0.48	0.59	3.78	-0.53
<i>Level 2</i>	11	9.09	0.75	0.36	0.39	0.53	4.51	-0.83
<i>Novo Mercado</i>	73	60.34	0.66	0.41	0.25	0.37	1.83	-1.33
<i>Total</i>	<i>121</i>	<i>100</i>						

** Statistical significance for one-tailed t-test at the 5% level, * Statistical significance for one tailed t-test at the10% level

Table 3.9 (Panel A) shows that the average control rights ($UCO=82\%$) of ultimate owners in the LCGQ (Traditional&L1) segment exceed those reported for the HCGQ (L2&NM) segment ($UCO=67\%$). This happens primarily because of the excessive participation of controlling owners or their families in the boards of these companies and also alludes to the lack of independent outside directors' participation in the boards of companies belonging to the Traditional&L1 segment (in about 80% of the companies, the UCO is computed based on ultimate owners' participation and representation in corporate boards). The statistically significant one-tailed t-test, in panel A, for *Divergence* and *SYNCH* measures indicates that companies in the *LCGQ* and *HCGQ* segments differ in terms of ownership structures and information quality. In particular, the statistically significant higher control-ownership divergence in LCGQ companies e.g., Scaled Divergence (0.51) and Divergence Ratio (3.1), arises from the massive use of non-voting shares, permissible in Traditional and L1 segments of the market. This confirms the notion that ultimate owners in Brazil, especially state and family, deliberately choose to deploy the more creative control-enhancing methods available in LCGQ to enhance their control beyond their cash-flow stakes that in return leave minority investors more vulnerable to expropriation and exploitation.

The significantly higher *SYNCH* (-0.74), in the last column of Panel A, for LCGQ companies indicates a high proportion of firm-specific information incorporated into stock prices, signifying an inferior-quality information environment. This finding could serve as preliminary evidence to the argument that financial and accounting information produced by LCGQ firms, with weak-investor protection, fewer independent directors on the board and more opportunities for enhancing control (dual-class shares), is considered less credible and trustworthy by outside minority investors. In contrast, the smaller SYCNH (-0.92) for the HCGQ companies, which have more independent boards, strong investor rights (tag-along) and lower control-enhancing tools, indicates a greater confidence of investors entrusted in the firm-specific information produced by such firms.

In Panel B, *SYNCH* values for the individual segments (Traditional (-0.62), Level 1 (-0.53)) within LCGQ are greater than the individual segments (Level 2 (-0.83), Novo Mercado (-1.33)) in the HCGQ sector. Consistent with the aggregate results for LCGQ and HCGQ, the lowest *SYNCH* (-1.33) for Novo Mercado and highest *SYNCH* (-0.53) for Level 1 demonstrates that firm's information quality is increasing in the degree of investor protection and the level of firm's transparency associated with the two segments respectively.

3.5.5 Effect of Firm's Listing Quality on the Concave Relationship between SYNCH and the Cash-flow Rights of the Ultimate Owner

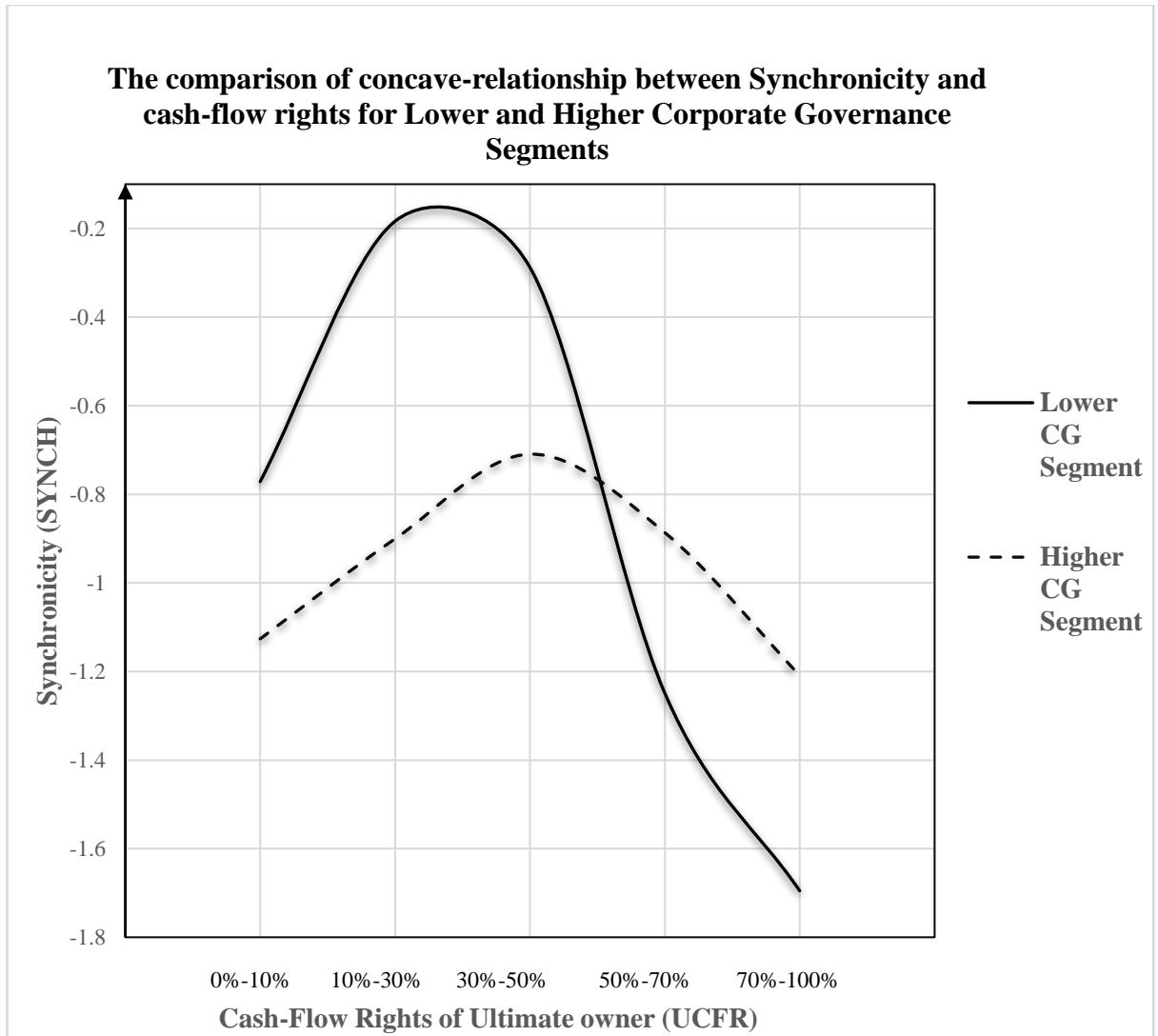


Figure 3.6 The relationship between Cash-Flow Rights and Synchronicity for companies listed in the lower and higher corporate governance segments of BM&FBovespa i.e., LCGQ and HCGQ respectively.

Figure 3.6 shows mean SYNCH plotted against various levels of cash-flow rights of an ultimate owner. The thick steeper inverted U-curve denotes the concave relationship between *cash-flow rights* of an ultimate owner and *SYNCH* in the lower governance segment (LCGQ) of the Brazilian stock market, while the relatively less steep dotted curve captures the concave relationship between cash-flow rights and *SYNCH* in the higher corporate governance segment of Bovespa (HCGQ). Both the curves display a non-linear concave relationship between *SYNCH* and *cash-flow stakes* of the ultimate owners, which implies an increase in *SYNCH* with the increase in *cash-flow rights* until owners attain *effective control*, while beyond the point of effective control *SYNCH* starts

falling with the increase in cash-flow rights. Because of the availability of more control-enhancing tools (i.e., especially preference shares) in the Traditional and L1 segments, ultimate owners in LCGQ companies are able to gain effective control, as denoted by the inflection points in Figure 3.6, with a relatively smaller amount of cash-flow commitment (the inflection point at 10-30% for LCGQ Vs 30-50% for HCGQ).

The difference in the steepness of the two curves lends support to the notion that a firm's listing quality, being representative of minority investor protection and the level of the firm's opacity, has a distinct effect on the relationship between *SYNCH* and *cash-flow rights* in the *lower* and *higher corporate governance segments*. The steeper (flatter) curve offers diagrammatic evidence to support hypothesis 2(a) that the rate of response of *SYNCH* to *cashflow rights* of the ultimate owner is more pronounced (less pronounced) for the firms listed on the *lower-quality governance segment* (higher-quality governance segment). The relatively steeper rising part of the curve for LCGQ companies suggests that the rate of increase of *SYNCH*, in response to *the increase in cash-flow rights* of an ultimate owner, exceeds the rate of the increase of *SYNCH* in *HCGQ* companies. This happens because of two forces, operating in LCGQ companies: First, ultimate owners with a cash-flow stake below the point of effective control find entrenchment economically viable as each dollar expropriated costs less to the controlling owners as compared to the costs borne by outside investors; and second, because of the weak investor protection, less independent boards and insider-chairpersons associated with LCGQ companies, entrenchment behaviour remains unchecked, further exacerbating the problem. Therefore, the more severe entrenchment prevalent in LCGQ companies allows insider managers to harvest a great deal of operating cash-flows which, consistent with Jin and Myers (2006), serves to shift more of the firm-specific risk to insiders and thus intensifies the positive relationship between *SYNCH* and *cash-flow rights*. In contrast, the level of entrenchment by ultimate owners in *HCGQ* companies is dampened by the oversight offered by stronger investor protection and more independent boards and less-related chairpersons. This results in less-severe effect on the positive relationship, as represented in the flatter rising part of the *HCGQ* curve, between *SYNCH* and *Cash-flow rights*.

Similarly, the negative relationships between *SYNCH* and *Cash-flow rights* of an ultimate owner, indicated in the falling part of the curves in Figure 3.6, behave differently in relation to the firm's listing quality in Brazil i.e., *SYNCH* falls faster in response to rising cash-flow rights of an ultimate owner in LCGQ companies as compared to its *rate of fall*

in HCGQ companies. This pictorially supports the theoretical premise, propounded in sections 3.3.5.2 and 3.3.5.4, of hypothesis 2, that any increase in cash-flow stake beyond the point of effective control⁷⁵ (majority stake) renders expropriations costlier for the controlling shareholders and such large cash-flow commitments thus result in an *alignment-of-interest* between *controlling* and *minority shareholders*, so a higher incentive to disclose firm-specific information and lower *SYNCH* sets in. Such reasoning contributing to the fall in *SYNCH*, thus far, is common for both sets of companies either belonging to LCGQ or HCGQ. However, the swifter decline in *SYNCH* in LCGQ companies arises strictly because of greater “substitution effect” of the *cash-flow concentration* of the largest shareholder in weakly protected companies.

All in all, the steeper (flatter) curve for LCGQ (HCGQ) companies provides pictorial evidence in support of hypothesis 2 that the firm’s listing segment, signifying its governance quality, modifies the concave relationship between *SYNCH* and the cash-flow rights of an ultimate owner. More specifically it depicts a more intense (less-intense) effect on the relationship between *SYNCH* and *cash-flow rights* of ultimate owners in LCGQ (HCGQ) companies i.e., a higher (lower) rate of response of *SYNCH* to increases in cash-flow rights in LCGQ (HCGQ) companies.

⁷⁵ Effective control (majority control) in LCGQ companies can be acquired by holding just 25% equity stake, purely because of allowance of 50% non-voting shares for Traditional and L1 segments.

3.5.6 Results of Multivariate Regressions-Hypothesis 2

Table 3.10. Regression results showing the modified concave relationship between *cash-flow rights of ultimate owner* (UCFR) and *Synchronicity* for the companies listed in the lower (LCGQ) and higher governance segments (HCGQ) of BM&FBovespa (H2). The dependent variable is *SYNCH*. These results are obtained by estimating the OLS regression model in Eq 3.9 three times: once for the entire sample (121 companies), and the other two separately for 37 LCGQ and 84 HCGQ companies, respectively.

Independent Variables	Full Sample	Lower Governance Segment (LCGQ) (Traditional and LI)	Higher Governance Segment (HCGQ) (L2 and Novo Mercado)
Panel A: Ownership variables			
<i>UCFR</i> ²	-5.7134 ^a (0.0020)	-6.0701 ^a (0.0390)	-4.0529 ^a (0.0349)
<i>UCFR</i>	5.6126 ^a (0.0031)	3.6450 ^b (0.0448)	3.8021 ^b (0.0372)
<i>Divergence-Ratio</i>	0.01251 ^c (0.0761)	1.9390 ^c (0.0998)	0.2945 ^c (0.0695)
Panel B: Control variables			
<i>Firm Age</i>	-0.0003 (0.1471)	0.0002 (0.6131)	-0.0006 ^a (0.0310)
<i>Size</i>	0.7490 ^a (<0.0001)	1.0379 ^a (<0.0001)	0.64279 ^a (<0.0010)
<i>Leverage</i>	0.1147 (0.1682)	0.1618 (0.2844)	0.0604 (0.5204)
<i>Diversification</i>	0.0191 (0.6058)	0.3857 ^b (0.0445)	-0.0286 (0.4249)
<i>Volume</i>	0.0029 (0.7492)	-0.4205 (0.4474)	0.0016 (0.8441)
<i>Volatility</i>	-0.0069 (0.2929)	-0.0101 (0.4418)	-0.0111 (0.1362)
<i>Free Float</i>	0.0122 (0.2474)	0.0054 (0.4445)	0.0088 ^b (0.0481)
<i>ADR</i>	-0.2171 (0.3039)	-0.5705 (0.3463)	-0.2014 (0.3484)
<i>Intercept</i>	-8.970 (<0.0001)	-6.7459 ^a (0.0003)	-10.233 ^a (<0.0001)
<i>Industry Dummies</i>	Included	Included	Included
<i>N</i>	121	37	84
<i>Adjusted R</i> ²	58.20%	76.12%	48.65%
<i>F-Statistic</i>	16.19	11.43	8.15

a-Statistical significance at the 1% level, b-Statistical significance at the 5% level c-statistical significance at the 10% level

Table 3.10 presents regression results based on equation 3.9 providing further insight into the moderating effect of a firm's listing quality on the relationship between the firm's information environment and ownership concentration, as hypothesized in H2. Column 1 reports pooled regression results for the whole sample combining lower quality (LCGQ) and higher quality governance (HCGQ) firms, whereas columns 2 and 4 display regressions result for 37 LCGQ and 84 HCGQ companies, respectively. P-values are reported in parentheses using adjusted t-values corrected for firm-level clustering and cross-sectional dependency.

The statistically significant smaller (greater) beta coefficient -6.0701 (-4.0529), relative to the full-sample -5.7134, for $UCFR^2$ for LCGQ (HCGQ) companies in column 2 (3) empirically complements the pictorial evidence, in Figure 3.6, in support of hypothesis 2, suggesting a more pronounced (less-pronounced) impact of firm's listing quality on the concave relationship between *SYNCH* and cash-flow rights of the ultimate owner. Ignoring the sign, and just considering the size of the coefficient for $UCFR^2$, the larger coefficient (6.0701) for LCGQ companies and the smaller coefficient (4.0529) for HCGQ companies offer numerical justification for the narrower and flatter shaped curves that go with these segments respectively. These results are consistent with the premise in hypothesis 2 that firms in the lower corporate governance segment (LCGQ), which have weak investor protection and opaque boards, experience a faster rate of response of *SYNCH* to the increase in cash-flow stakes of ultimate owners (narrower curve), while firms listed on the higher governance segment (HCGQ), which feature better investor protection and less opaque boards, exhibit a slower rate of response of *SYNCH* in relation to the increase in ultimate owner's cash-flow rights (wider curve). The inflection points (27.17% 47%), computed using the respective coefficients for $UCFR^2$ and $UCFR$ in Eq 3.10, indicate that the ultimate owners in LCGQ companies achieve effective control with a very low level of cash-flow investment (27.17%) as compared to the level of cash-flow commitment displayed by the ultimate owners in HCGQ companies (47%). As explained earlier, and demonstrated in the smaller range (10-30%) of the LCGQ curve in Figure 3.6, achieving effective control with just 27.17% cash-flow investment is possible because of the pervasive use of non-voting shares by *state-* and *family-owned* companies listed in the *Traditional* and *L1* segments⁷⁶.

⁷⁶ Interestingly, the percentage of cash-flow stake (27.17%) for effective control implied by the inflection point is consistent with the stylized percentage of cash-flow commitment (25%) required for securing effective control, if the company uses the maximum allowable limit of preference shares in *Traditional* and *L1* segments---i.e., one non-voting share for each voting share.

Jointly, the statistical and pictorial results address each component of the theoretical underpinning of hypothesis 2, outlined in Figure 3.1. For instance, the larger coefficient, on UCFR², coupled with the steeper curve for LCGQ companies affirms the belief, propounded in the lower- and upper-left quadrants of Figure 3.1, that firms listed in the poor governance segment show more profound impact on the positive (*negative*) relation between SYNCH and cash-flow rights of an ultimate owner before the point of effective control (*after the point of effective control*). The findings therefore support the underlying reasons, for the more pronounced positive and negative effects on *SYNCH*: any increase in equity stake of the largest shareholder, below the point of effective control (27.17%), entrenches him/her as each dollar of expropriation shifts more burden to the minority investors and such expropriation aggravates when it remains unchecked because of the weaker investor protection and opaque boards found in LCGQ companies, so *severe entrenchment* leads to a severe increase in *SYNCH* in response to the increase in cash-flow rights. In contrast, beyond the point of effective control an accumulation of equity stake by the largest shareholders tends to make expropriation more expensive for the controlling shareholder, instead an alignment-of-interest comes into effect which keep the inside controlling owners from reaping operating cash-flows and internalizing much of the firm-specific risk. This motivates them to share more and better quality firm-specific information with outsiders and results in the decline of *SYNCH*. However, the rate of decline of *SYNCH* is accelerated with greater cash-flow commitment entrusted to the company by the ultimate owner, serving as a “greater substitution” for the lack of adequate investor rights in poorly protected companies.

The smaller beta coefficient for UCFR², along with the flatter curve for HCGQ companies empirically substantiates the theoretical premise, proposed in the lower- and upper-right quadrants of Figure 3.1, suggesting that firms listed in the better governance segment exhibit a slower rate of response of *SYNCH* in relation to increases in cash-flow stakes of the ultimate owner. These results are consistent with the logic presented thereof for the slower *positive and negative* relationship between *SYNCH* and cash-flow rights i.e., any increase in cash-flow rights below the point of effective control entrenches the controlling shareholders, which lets them harvest operating cash-flows and this restricts them from disseminating accounting and financial information to outsiders, hence *SYNCH* rises. The rate of increase of *SYNCH* is partially arrested in HCGQ companies due to the monitoring and oversight offered by their independent boards and independent chairpersons over the harvesting of operating cash-flow by inside controlling managers.

Also, the increase in the cash-flow stake of the largest shareholder beyond the point of effective control (47% in case of HCGQ) discourages expropriatory practices, because they become uneconomical. Instead large cash-flow investments of ultimate owners align their interests with those of the minority investors, which encourages inside controlling managers to disseminate more firm-specific information, so *SYNCH* begins to fall. This rate of fall in *SYNCH* is not as rapid as it is in LCGQ companies since the cash-flow concentration of the largest shareholder is considered a less-than-perfect substitute in better protected companies (HCGQ).

Intuitively these findings imply that Brazilian firms' information quality, proxied by *SYNCH*, either deteriorates or improves at an increasing rate in response to rising equity stakes of ultimate owners in the inferior governance segment (LCGQ) of the Brazilian stock market, whereas in the superior governance segment (HCGQ) it deteriorates or improves at a decreasing rate against equity stakes of ultimate owners.

3.5.7 Empirical Results-Impact of Shareholder Agreement on Stock Price Synchronicity (SYNCH)

Table 3.11 Summary statistics for shareholders' agreement with a controlling shareholder

and without a controlling shareholder (Jointly Controlled Companies).

<i>Panel A Distribution of shareholders Agreement based on listing segments</i>				
Listing segment (Bovespa)	<i>SAs-With Ultimate owner</i>	<i>SAs without an ultimate owner- Jointly Controlled</i>	Total	%age of Sample
NM	17	19	36	61.1
L2	3	4	7	11.83
HCGQ Companies	20	23	43	72.93
L1	6	2	8	13.53
TB	4	4	8	13.53
LCGQ Companies	10	6	16	27.07
Grand Total	30	29	59^{77**}	100

<i>Panel B Types of shareholders' agreement</i>				
Shareholders agreement- with an Ultimate Owner	N	%age	%age of Inst Inv as 2nd Largest Signator y in SA (N)	%age of Inst Inv as 3rd Largest Signatory in SA (N)
Family*	21	70	52 (11)	71.4 (5)
State-Federal, Regional or District	4	13.33	50 (2)	0
Foreign Company	5	16.67	100(5)	NA
Sub-total	30	100		

Shareholders agreement- without an ultimate owner-Jointly Controlled Companies	N	%age	%age of Inst Inv as 2nd Largest Signator y in SA (N)	%age of Inst Inv as 3rd Largest Signatory in SA (N)
Between unrelated families	22	72.4	9.09(2)	
		5		
Between Industrial Companies	4	13.7	0(0)	
		6		0
Consortium of institutional owners	3	10.3	100(3)	
		4		
Sub-total	29	100		

<i>Panel C: Two-tailed t-test of equality of SYNCH for SA- with an ultimate owner (-1.125) and SA-without an ultimate owner (-0.78)</i>	<i>T-test for equality of SYNCH -(p-values)</i>	<i>0.0015*</i>
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*9 of these represent SAs signed among members of the same family, holding 5% or more equity stakes.

**The total does not include *Kroton Educacional S.A*, a company whose shareholders did enter into SA but were not able to secure control (>50%) over the board, hence the company was classified as widely held.

⁷⁷ All of the agreements have been filed at the headquarters of the respective company which enhances the likelihood of their enforcement manifold against the signing parties.

Table 3.11, (Panel A) shows that 59 companies employed a shareholders' agreement, which constitutes about 49% of my sample (121). Out of 59 companies, about half (30) of the companies have an ultimate owner in the agreement whereas the remaining half (29) lack an ultimate owner and are thus *jointly-controlled* by several block holders pooling their voting rights in SA, shown as *shareholders' agreement without an ultimate owner* in Table 3.11. Consistent with Gorga's (2009) and Black et al. (2010) findings, about three-fourths of the agreements (72.93%) were initialled among the block holders of companies listed on the higher corporate governance segment (HCGQ) and even within the HCGQ segment about two-thirds of these agreements are concentrated in the NM (61.11%) segment. A considerable proportion of *shareholders' agreement without an ultimate owner* (23 out of 29) belong to HCGQ in Table 3.11, suggesting that they are predominantly used as a mechanism to secure and enhance joint-control in diffusely held companies commonly found in the NM and L2 segments.

Panel B of Table 3.11 reveals that family participation (70%) as ultimate owners, is highest in *SAs-with an ultimate owner* followed by *foreign company* (16.67%) and *state* (13.33%). Such excessive participation of families in these agreements goes back to their partnering with dedicated institutional investors in the 1990s for winning over corporate bids during the privatization (Da Silveira & Saito, 2008). This can be confirmed by the exceptionally greater presence (52% and 71.4%) of dedicated institutional investors as second- and third-largest signatories respectively, in panel B. However, these results (52% and 71.4%) underestimate the participation of institutional investors as second and third-largest signatory since they have been computed as a percentage of all the SAs having family as an ultimate owner (21) without adjusting for 9 agreements which were signed purely among the members of the same family⁷⁸ aiming to coordinate and regulate working relations. All in all, the significantly large participation of institutional investors as second- and third-largest signatory across all types of ultimate owners in *SA with an ultimate owner*, indicates extraordinary non-affinity among the participating shareholders and better monitoring of the largest shareholder that eventually manifests in more contestability clauses being introduced in these agreements (as shown in Table 3.12).

In contrast, *SAs-without an ultimate owner*, in the lower part of panel B, exhibit far greater affinity among the signatory shareholders and negligible participation of dedicated

⁷⁸ The notable examples of these agreements are those signed among members of: Feffer family in Suzano Papel SA; Ioschpe family in Ioschpe Maxion SA; Simoes family in JSL SA, Goldfarb family in Maria Lojas SA.

institutional investors. The greater affinity, accruing from the same type of first and second-largest shareholders participating in the agreement, can be seen in exceptionally large (72.45%) percentage of SAs signed between families, followed by 13.79% signed between industrial companies and 10.34% signed between institutional investors. Such agreements might fare poorly in the incremental clauses, aside from what are given in the corporate law and CVM regulations that could curb the expropriation potential of the largest shareholders (see Table 3.12).

Table 3.12 Types of clauses in shareholders' agreements.

Types of clauses (in addition to provisions required of LCGQ and HCGQ)	SA with an ultimate owner	%age of SA-with an ultimate owner	SA-without an ultimate owner	%age of SA-without an ultimate owner
<i>Supermajority Rule</i>	21	70	2	6.89
<i>Affirmative vote</i>	8	26.67	3	10.344
<i>Appointment of Lead Member</i>	10	33.33	7	24.13
<i>Prohibition of listing on the lower segment</i>	17	56.66	6	20.68
<i>Disclosure of executive compensation</i>	24	80	5	17.24
<i>Procedure for RPT*</i>	21	70	10	33.33
<i>Arbitration Procedure</i>	22	73.33	10	34.48
<i>Dividend >25%</i>	15	50	5	17.24
<i>No restriction on directors' votes</i>	23	76.67	7	24.13
<i>No Restriction on shareholders' votes in Preliminary shareholders meeting</i>	10	33.33	8	27.58

*RPT is Related Party Transactions.

The distribution of clauses in Table 3.12 clearly demonstrates that *SAs with an ultimate owner*, relative to *SAs- without an ultimate owner*, are rife with *contestability clauses* that substantially curb the control power of the largest participating shareholder in the agreement, as reflected in the widespread use of *supermajority* (70%) and *affirmative vote* rules (26.67%). Also, the increasing use (33.33%) of a “*Lead Member*” clause in *SAs with an ultimate owner* highlights the effective use of such agreements for organizing and managing working relationships among members of the same family. Across all types of clauses, *SAs-with an ultimate owner* persistently offer more to minority investors in terms of governance and disclosure clauses (i.e., clauses, which relate to prohibition on downgrading a listing to a lower segment (56.66%); disclosure of executive compensation (80%); Procedure for Related party transactions (70%); and arbitration (73.33%); dividend clauses (50%); and absence of clauses that bind the directors' votes to the outcome of preliminary meetings (76.67%). In aggregate, the orientation of clauses of *SAs-with an ultimate owner* seems to coincide with the “coordination role” that was

envisioned in hypothesis 3, which tends to curtail the expropriation potential of inside controlling managers and therefore results in a better reporting and information environment, and lower SYNCH.

Panel C reports a lower *SYNCH* (-1.125) for *SAs-with an ultimate owner* relative to the *SYNCH* for *SAs with an ultimate owner* (-0.78). The statistically significant two-tailed t-test (0.0015) suggests that the two *SYNCH* levels are different (meaning -0.78 is different (greater) than -1.125) and thus provides preliminary support for the “coordination or “investor protection role” of *SAs with an ultimate owner* that results in better firm information environments and improves information asymmetry among the investors.

3.5.8 Results of Multivariate Regressions-Hypothesis 3—Effect of SA on SYNCH

Table 3.13. Regression Results Showing the Incremental Effect of SA on Firm's Information Environment.

These results are obtained by estimating the OLS regression models in Eq 3.10 and Eq 3.11. The dependent variable is *SYNCH*. SA is a categorical variable that takes the value of 1 when the firm has shareholders' agreements with an ultimate owner (*SA-with an ultimate owner*) and 0 for firms having shareholders' agreements among several non-controlling block holders (*SA- without an ultimate owner*). The full sample includes 59 companies with shareholders' agreements. P-values are presented in parentheses.

Independent Variables	Full Sample	SA with an Ultimate Owner	SA without an ultimate owner-Jointly controlled companies
Panel A: Ownership variables			
<i>UCFR</i> ²	-4.9250 ^a (0.0070)	-5.0701 ^a (0.0030)	-3.0237 ^a (0.0014)
<i>UCFR</i>	4.6315 ^a (0.003)	2.5436 ^b (0.0358)	2.1487 ^b (0.0451)
<i>Divergence-Ratio</i>	1.2510 ^c (0.0861)	1.2489 (0.1998)	1.9245 ^c (0.0755)
<i>Scaled DSA</i>		-1.4220 ^c (0.0961)	-0.5047 ^c (0.0943)
<i>SA</i>	-0.8260 ^c 0.0871		
Panel B: Control variables			
<i>Firm Age</i>	-0.0002 (0.1171)	-0.0008 (0.4299)	-0.0011 ^a (0.0060)
<i>Size</i>	0.5958 ^a (<0.0001)	0.5523 ^b (0.0286)	1.0013 ^a (<0.0001)
<i>Leverage</i>	0.1095 (0.1702)	0.1883 (0.3196)	0.0359 (0.8569)
<i>Diversification</i>	0.0151 (0.6583)	0.0396 (0.6777)	-0.0341 (0.5944)
<i>Volume</i>	0.0034 (0.6312)	-0.2214 (0.6482)	0.0094 (0.2851)
<i>Volatility</i>	-0.0072 (0.1882)	-0.0272 (0.2565)	-0.0261 ^b (0.0368)
<i>Free Float</i>	0.0134 (0.2682)	0.0226 (0.1565)	0.0075 (0.2965)
<i>ADR</i>	-0.2534 (0.1998)	-0.3741 (0.4798)	-1.0968 ^a (0.0029)
<i>Intercept</i>	-6.970 (<0.0001)	-5.5793 ^a (0.0053)	-9.0933 ^a (<0.0001)
<i>LCGQ</i>	0.4225 (0.116)	0.4326 (0.1256)	0.4126 (0.1356)
<i>HCGQ</i>	-0.5113 ^c (0.0619)	-0.5123 ^c (0.098)	-0.5236 ^c (0.087)
<i>Industry Dummies</i>	Included	Included	Included
<i>N</i>	59	30	29
<i>Adjusted R</i> ²	45.32%	26.31%	80.63%
<i>F-Statistic</i>	14.31	7.43	13.07

a-statistical significance at the 1% level, b-Statistical significance at the 5% level c-statistical significance at the 10% level

Table 3.13 shows regression results based on the models outlined in Eq 3.10 and Eq 3.11 that help us contrast the information implications of *SAs-with an ultimate owner* from *SAs- without an ultimate owner*, as envisaged in hypothesis 3. Column 1 in Table 3.11 reports multivariate regression results, using Eq 3.10, for an entire sample of 59 companies having SAs in their ownership structure. The intercept (-6.970) denotes the synchronicity level associated with the companies having *SA- without an ultimate owner*. The statistically significant negative beta coefficient (-0.8260) for *SA*, in column 1, signifies that *SAs-with ultimate owners* have 0.8260 units lower synchronicity, than those reported for companies having *SA without an ultimate owner (Jointly Controlled Companies)*. This is consistent with the notion that *SAs with an ultimate owner* seem to coincide with a “coordination” role that strives to regulate the relationships among shareholders and deliver benefits that are shared among all the shareholders. These additional benefits improve information quality over and above what is offered by the firm’s listing quality. This incremental effect on information quality appears to stem from the extra clauses, supplemental to what are stipulated in Brazilian corporate law and Bovespa’s listing requirements, offering better investor protection, less affinity among the signatory block holders and greater participation of dedicated institutional investors (e.g., *BNDES*, *PREVI*, *PETROS* etc.) in these agreements. The chief investor protection clauses, incorporated in *SAs-with an ultimate owner*, apparently responsible for the incremental effect are: *contestability clauses* including *supermajority rule* and *affirmative vote clauses*; *better governance and disclosure clauses*, assuring enhanced disclosure of executive compensation, explicitly defined procedures for related party transactions and dispute resolutions; and *directors’ independence clauses*, which guarantee greater autonomy to the elected directors in exercising their votes because there is no restriction placed on them in the preliminary shareholders’ meetings.

Columns 2 and 3 of Table 3.13 report regression results based on Eq 3.11 using a continuous variable, *Scaled DSA*, as a proxy for the firm’s SA quality. The significantly greater negative beta coefficient (-1.4220) for *Scaled DSA* under *SAs-with an ultimate owner* relative to its value (-0.5047) under *SAs without an ultimate owner* shows that firms with an ultimate owner in the agreement tend to have lower synchronicity and hence a better information environment. This incremental reduction in synchronicity or marginal improvement in a firm’s information environment, independent of the firm’s listing quality, further strengthens the evidence in favour of hypothesis 3. Overall, these results indicate that *SAs with an ultimate owner* (*SAs without an ultimate owner*) perform

more of a *coordination (expropriation)* role owing to the *lower* (greater) *affinity* among the signatory block holders, greater (lower) participation of dedicated institutional investors and incremental investor protective clauses. Taken together, these characteristics work toward curtailing the largest shareholder's (and managers) potential for expropriation and yield benefits that are shared among all shareholders, producing lower synchronicity and an improved information environment.

3.6 Conclusion

This essay examines how firm-level and institutional-level corporate governance characteristics unique to Brazil affect the dissemination and incorporation of firm-specific information into stock prices, as measured by stock price synchronicity. The firm-level governance variables examined are three aspects of ultimate ownership structures of listed companies: the ownership concentration of the ultimate owner (UCFR); control-ownership divergence of the ultimate owner; and the type of colluding shareholders participating in the shareholder agreements. The institutional-level feature analysed relates to the variation in investor protection arrangements associated with higher (i.e., NM and L2) and lower (Traditional and L1) quality listing segments of the Bovespa Exchange. The major findings and contributions of this essay are as follows:

First, the essay finds a concave relationship between SPS and the level of equity investment committed by the controlling shareholder: as the level of cash-flow rights increases, synchronicity increases at a declining rate until it reaches its maximum, beyond which it starts to fall. This is consistent with the view that low levels of cash flow rights, unless effective control is achieved (UCFR=50%), invite entrenchment behaviour by inside controlling managers, which motivates them to produce and share less firm-specific accounting and financial information with outsiders. In contrast, higher levels of cash-flow commitments, beyond the point of effective control, make expropriation unviable for the controller and instead encourage alignment-of-interest, which removes the incentive to hide firm-specific information from the glare of outsiders, thus triggers fall in the SYNCH.

Second, the essay notes that both control-ownership divergence and the cash-flow rights of the ultimate owner are significantly positively related with synchronicity when the ultimate owner holds below-majority cash-flow rights. This result supports the idea of severe managerial entrenchment producing severe information asymmetry in CMS structures since ultimate owners' incentives to entrench emanate not only from their

minority equity interest but also from their ability to elude the proportional consequences of their corporate decisions owing to the large divergence between ownership and control rights.

Third, this study observed a more pronounced concave relation between synchronicity and cash-flow rights in companies in the lower governance listing segments as compared to the higher governance listing segments of the Bovespa exchange. By expanding the finding, it suggests that a firm's information environment *deteriorates* (ameliorates) at a faster rate in response to an increase in the cash-flow rights of the ultimate owner *below the point of effective control* (above the point of effective control) in companies listed on Traditional and L1 segments, while for companies listed on NM and L2 segments, the information environment *deteriorates* (ameliorates) at a slower rate against the increase in cash-flow rights *below the point of effective control* (above the point of effective control). The slower deterioration in the information environment of firms listed in higher quality governance segments, below the point of effective control, can be attributed to the reduced entrenchment opportunities available for controlling shareholders due to the greater oversight provided by more transparent boards, strong investor protection and strong enforcement of shareholders' rights. However, beyond the point of effective control, the benefits from the reduction in private benefits due to the better investor protection arrangements in the NM and L2 segments cannot outweigh the perceived benefits of substitution of large cash-flow stakes for the weak investor protection in the inferior listing segments, which results in the faster increase in information asymmetry in the lower listing segments of the market. Overall these results show that effective institutional-level governance mechanisms regulate the entrenchment incentives of ultimate owners and consequently influence the extent to which firm-specific information is capitalized into stock prices.

Finally, the SAs signed between a controlling shareholder and several small non-controlling shareholders have lower synchronicity relative to the agreements signed by a coalition of several non-controlling block holders. This reveals the efficacy of SAs in facilitating the incorporation of firm-specific information into stock prices and improving information asymmetry when the controlling shareholder is participating in them, as they offer extra protection to investors relative to Corporate Law and listing regulations.

CHAPTER 4: OWNERSHIP STRUCTURES AND STOCK PRICE SYNCHRONICITY IN RUSSIA

4.1 Introduction

This study investigates the impact of cash flow and control rights of ultimate controlling shareholders on the information environment of publicly traded companies in an emerging capital market, Russia. Stock returns incorporate two types of information: market-level and the firm-level. The former represents common financial and non-financial information which is publicly available to the vast majority of outside investors in the market simultaneously. The latter relates to information regarding firm-specific activities such as accruals, real level of earnings, and return on assets. Such information is communicated to the market by managers through financial reports. The inclusion of market-wide information relative to firm level information into stock prices, known as stock price synchronicity, depends on the extent of information asymmetry between insiders and outsiders. The greater the access of outsiders to firm-specific information the lower the information asymmetry between insiders and outsiders (French and Roll (1986); Roll (1988a)).

Several studies indicate that the factors that inhibit informed trading and thus affect stock price synchronicity in the market are grounded in differences in country-level and firm-level governance characteristics. Morck et al. (2000) find that emerging countries with weak investor protection and less-developed financial markets face more barriers to informed trading, experience higher stock price synchronicity and less informative stock prices. Consistent with this, Daske et al. (2008) report less improvement in the information environment of emerging economies adopting IFRS compared to IFRS-adopters from the developed markets. Fernandes and Ferreira (2008) find less reduction in synchronicity as a result of cross-listing of firms in developing countries, including Russia. Kim and Shi (2010) confirm that stock price synchronicity is higher in emerging countries, including Russia, than in developed countries.

Studies that examine the effect of firm-level governance characteristics on stock price synchronicity include accounting transparency (Jin & Myers, 2006b), voluntary disclosures (Haggard et al., 2008), audit quality (Gul et al., 2010), and the adoption of IFRS (Kim & Shi, 2012b), among others. These studies do not consider that the aforementioned factors are significantly shaped by the incentives of the large controlling

shareholders who are responsible for the operating, financial and strategic decisions of a company. In essence, it is the ownership structure that matters in shaping firm's information environment. Prior research has found a robust association between ownership structure and the firm-level accounting and reporting quality; e.g., earnings informativeness (Fan & Wong, 2002; Warfield et al., 1995) and reporting conservatism (Lafond & Roychowdhury, 2008). However, these studies use an association between earnings and total return as a proxy for firms' earnings informativeness and earnings quality, which exhibit the relevance of only accounting information for stock returns. Whereas, this study focuses on the effects of ownership structures on stock price synchronicity, a more comprehensive measure, reflecting the incorporation of all sorts of firm-specific information into stock prices: accounting or non-accounting.

Both country-level and firm-level barriers to informed trading, as outlined earlier, are the hallmark of Russian governance structure. At a country level, the common barriers are weak investor protection, insufficient legal enforcement of regulations (Shleifer & Vishny, 1997), an underdeveloped market for corporate control (Sugiura, 2007), and highly illiquid and underdeveloped capital markets with few listed companies (Lazareva et al., 2009). At the firm level, the ownership structure, as the most important governance characteristic, is rife with the dominance of large controlling shareholders, namely Oligarchs and State, who commonly have majority stake. The increased concentration of ownership in the hands of a few large shareholders creates an agency problem between large controlling shareholders and small minority outside investors. The immediate cost of agency problem manifests in the form of information asymmetry between the large inside shareholders and small outside minority shareholders. The level of information asymmetry in turn is driven by the incentive for extracting private benefits by the controlling shareholders at the cost of small investors. While the incentive for private benefits extraction are high in countries like Russia, which has poor legal protection for the investors (Nenova, 2003), these large shareholders, in order to reap private benefits, entrench themselves beyond their ownership stakes by organizing companies into pyramidal structures, issuing multiple class shares or using golden shares. This entrenchment creates a divergence between the control they enjoy and the cash flow interest they represent in the companies. The large divergence may further exacerbate the information asymmetry between controlling and non-controlling investors. In addition the use of nominees and foreign offshore companies by the ultimate owners in Russia, in

order to hide their identities, make the ownership environment more opaque and non-transparent, which might cause further information asymmetry.

Unlike several prior cross-country studies (e.g., Fernandes & Ferreira, 2009; Jin & Myers, 2006b; Morck et al., 2000) that suggest that countries with weak poor investor protection have poor information environment, this paper investigates whether there are discernible differences in the information environment based on within-country variations in ownership structures of firms in Russia. Given the unique ownership environment of Russian listed companies, I explore whether ownership structure matters in explaining a market-based measure of firms' information environments; i.e., stock price synchronicity. In particular, this study emphasizes three aspects of ownership structure peculiar to Russia: the divergence between control and cash-flow rights⁷⁹ (Excess Control-Dif) of the controlling shareholder⁸⁰; the ownership concentration of the largest shareholder (UCFR); and the distinct types of owners in the ownership structure, i.e., *State, State-Control through holding corporations, transparent Oligarchs* and *Non-transparent oligarchs*.

Using a sample of 117 companies listed on MICEX-RTS in 2013, I find that stock price synchronicity is increasing in the degree of divergence between voting and cash-flow rights of the largest controlling shareholder. This result supports the idea that when controlling owners have more voting rights than their cash-flow stake in the company, it increases the incentive for extraction of private benefits and in turn motivates them to communicate less firm-specific information to the market. The ownership concentration of the largest shareholder (UCFR), in contrast, documents a reduction in stock price synchronicity, which validates the notion that higher levels of equity investments make expropriations costlier and align the interests of controlling and non-controlling shareholders, which fosters the dissemination of firm-specific information. While investigating the effect of types of ultimate owners on stock price synchronicity, this study notes lower synchronicity for firms controlled indirectly by the *state through holding corporations* relative to those controlled directly by the *state*. This is consistent with Shleifer and Vishny (1994) argument that state ownership offers poor protection to the minority investors and promotes less transparent financial disclosures. State

⁷⁹Since corporate control is measured by voting rights I use the terms control rights and voting rights interchangeably in this essay. I also use divergence between control and cash-flow rights, control-ownership wedge and separation of voting and cash-flow rights as alternatives.

⁸⁰The terms controlling shareholders, ultimate owners and largest shareholders are used interchangeably in this study.

ownership thus results in stock prices less reflective of firm-specific information relative to industry and market-wide information. Finally, the study reports that stock price synchronicity for *transparent oligarchs* is significantly lower than that for *non-transparent oligarchs*. This affirms the notion that the use of nominees and foreign offshore companies in the ultimate control chains by non-transparent oligarchs lead to ownership opacity. Which creates additional incentives for insiders' misappropriations and these misappropriations remain undetectable by the outsiders, which cause an incremental negative effect on firms' information environment. Thus ownership opacity causes information opacity.

The primary contribution of this essay is to trace the identities of the real controlling shareholders in an opaque and non-transparent ownership environment specific to Russia. Using this unique firm- specific governance characteristic, its implications for firms' information environment are investigated. Despite the fact that the ownership structures of Russian companies have been widely investigated in the international corporate governance literature, systemic empirical studies are almost non-existent. All the earlier ownership studies rely on survey data, account for immediate ownership and fail to consider the contribution of nominees and foreign-offshore holdings to firm's ownership opacity. This essay makes the first systematic attempt to trace the identities of highly elusive ultimate owners hiding behind the covers of convoluted intermediate companies registered as nominees or as foreign off-shore holdings. It also contributes to the literature in several other ways. First, it empirically tests the effect of the important firm-level governance characteristic in the Russian context of Russia, i.e., ownership structure, on stock price synchronicity. In particular, it describes the information effect of the divergence of control and cash flow rights and ownership concentration of the largest controlling shareholders as entrenchment and incentive-alignment effects. Second, this study attempts to discern the distinct effects of transparent and non-transparent oligarchs on stock price synchronicity. This essay relies on the authentic empirical ownership data from credible sources such as OSIRIS, Annual reports, Bloomberg Financial, Annual reports, 13D and 20F filings: most of the earlier studies on ownership structure in Russia have used survey data whose authenticity can be somewhat questionable. Lastly, the results of this study may be deemed more relevant and current as they are based on the post-GFC period when the ownership environment in Russia saw a substantial increase in state participation because of the acquisition of bankrupt companies, or the purchase

of strategically important companies by the government to counter the fear of sale to foreigners.

The rest of the essay is structured as follows. Section 4.2 defines the scope of the ownership structure for this study. Section 4.3 highlights the key institutional and regulatory features affecting the ownership environment. Section 4.4 outlines the conceptual framework that sets out the underlying theme of the study and reviews the literature used to develop the research hypotheses. Section 4.5 describes the data, and explains the construction of information and ownership variables used in an empirical model peculiar to Russia. Section 4.6 reports summary statistics and the results of the main regressions. Section 4.7 tests the validity of synchronicity as a measure of firm-fundamental information in Russia. Section 4.8 concludes the essay.

4.2 Background and Institutional Environment

In this section I outline the concept of ownership structure in general and its characteristics in Russia, in particular, based on its unique institutional and legal settings.

4.2.1 Concept of Ownership Structure

Ownership structure means different things to different people. It has as many definitions as there are firms in the world. However, in view of notable studies, including those of Jensen and Meckling (1976), Demsetz and Lehn (1985), and Shleifer and Vishny (1986), it is understood to be a shareholding distribution in terms of votes and capital by different types of shareholders. The distribution of votes determines control structure and the amount of capital invested refers to the ownership rights of the shareholders. Alternatively, these are referred to as control and cash-flow rights in the literature. Ideally, cash-flow and control rights of the owners should be equal, but that equality is infringed by the violation of one share-one vote rule as advocated by Grossman and Hart (1988), and Adams and Ferreira (2008). This notion of ownership structure is referred to as divergence between control and cash-flow rights of shareholders (Demsetz & Lehn, 1985; La Porta et al., 1999). Further, ownership structures based on controlling owners' identities, classified as corporate owners, family owners, government ownership, institutional ownership and financial institutions, also vary and can have varying impacts on firm value depending on their own objectives. For instance, government investors may

be interested in pursuing their own political ends, financial institutions may focus on short term returns, and corporate owners may focus on establishing long-term relationships.

The concentration of shareholders, being another determinant of ownership structure, defines the nature of the agency problem facing an organization. According to Berle and Means (1932), and Jensen and Meckling (1976) a dispersed ownership structure with several atomistic investors creates an agency problem between managers and shareholders. Hence an agency problem associated with a less concentrated ownership structure is termed as a *separation of ownership and management*. On the other hand, more concentrated shareholding may lead to an agency problem predominately between controlling and minority shareholders as proposed by Shleifer and Vishny (1997). This phenomenon is referred to as separation of ownership and control. Taken together, the consensus definition of ownership structure, in the literature, revolves around three dimensions: the type or identity of controlling owners; their shareholdings; and the degree of divergence between cash flow and voting rights of controlling shareholders. Using these dimensions as the basic framework I describe, in sections 4.2.2 and 4.2.3, the evolution of the Russian corporate ownership environment in the light of its unique Institutional and legal settings.

4.2.2 Evolution of Ownership Structure in Russia

The current state of ownership structures in Russia is an outcome of the three-stage privatization programme that started two decades ago during the transition from a centrally planned economy to a market economy. In the first episode of mass privatization (*also known as Voucher Privatization*) from October 1992 to June 1994, about two-thirds of medium and large state-owned enterprises were transformed into Joint-stock companies. Distribution of free vouchers to all citizens, including employees, resulted in an increased ownership of companies by insiders, i.e., managers and employees (La Porta et al., 1999; Sprenger, 2011). At this stage, ownership by small outside minority investors was limited mainly because the government still retained significant number of shares in strategic industries such as oil and gas, metals and mining, and electric utilities. Some companies were just transferred from federal government to the regional and local governments in return for loans from the local governments. In order to reap the maximum benefits of privatization most of the companies were listed on the Moscow Exchange⁸¹, mainly those involved in metals and mining, oil and gas, electric utilities and

⁸¹ Moscow exchange was reorganized in 2011 and alternatively named as MICEX-RTS.

telecom sectors, as can be seen in column 2 of Table 4.1. The ownership structure, as a result of mass privatisation, was characterized by widely dispersed insider owners, and the state still remained the dominant shareholder in most strategic industries. The typical agency problem, in general, and the information asymmetry, in particular, between owners and managers at this stage was not much of a concern as most of the holdings belonged to small insiders who had access to all the inside corporate information.

Massive ownership by employees in Russia could not ensure effective monitoring of dominant inside managers, as inside managers either convinced workers to vote with the management or coerced them to sell their shares to the management (Lazareva et al., 2009). As a result, two trends arose: a) more concentration of control in the hands of inside managers; and b) surge in the holding of block holders. These two trends gave rise to increases in ownership concentration not only at the company level but also at the aggregate level. The subsequent stage of money privatization from 1995 to 1997 enabled the government to receive loans from banks by using state-owned shares in leading oil and gas, metals and mining companies as a collateral. However, the government defaulted on the loans and sold shares in eleven companies, largely from oil and gas, metals and mining, and electric utilities sectors, to banks at throwaway prices (see column 3, of Table 4.1). Banks later sold these shares in a non-transparent auction process to well-connected business groups. This resulted in the transfer of several natural monopolies to financial-industrial business groups controlled by rich Oligarchs. This increase in ownership by oligarchs is witnessed by Guriev and Rachinsky (2009). They show that nearly 40% of Russian companies are owned by the 22 largest business groups, which are controlled by Oligarchs. Following money privatization, the ownership structure in Russia became increasingly concentrated and the typical agency problem between owners and managers transformed into one between large inside controlling shareholders (oligarchs) and small minority outside shareholders. Some oligarchs, in order to achieve corporate control, sought to hide their identities by using nominee registers and setting up obscure offshore private limited companies in British Virgin Islands, Bahamas, Panama, Cyprus.

Subsequent stages of privatisation in Russia proceeded on a case-by-case basis in response to the expansionary requirements of the companies and the budgetary constraints of the government. Due to rising levels of consumer expenditure and an average GDP growth rate of 7% over the period from 2000 to 2008, companies' demands for new capital increased markedly. As a result more companies were privatized through the listing of new securities on capital markets. Likewise, the number of listings on the

Moscow Exchange increased steeply during that period, as shown in columns 4 and 5 of Table 4.1.

All of these episodes of case-by-case privatizations increased the participation of outside oligarchs who began exploiting small minority investors, enhancing their control by organizing companies into group structures and opting for obscure control mechanisms such as the use of nominees and foreign off shore companies. This translates to more ownership concentration and a greater divergence between the cash-flow and control rights of controlling shareholders.

Table 4.1. Listing of Companies on MICEX-RTS.

Industry	Mass Privatization	Money Privatization	Case-by- case Privatization 2001-2004	Case-by- case Privatization 2005-2008	Total
Chemicals	7		1		8
Consumer Goods	9	3	3	2	16
Electric Utilities	8	3	7	19	37
Industrials	6	1	1	2	10
Metals and Mining	13		7		20
Oil and Gas	11	4	1		16
Telecoms	4				4
Transport	7			1	9
Total	65	11	20	24	120

Chernykh (2008) notes that 70.67% of voting shares in Russia belong to blocks over 5% and that there are significant gaps between the voting percentages of largest, second largest, and third largest shareholders. He also finds that federal government, being the largest ultimate shareholder in 48.1% of the sample firms, achieves control through pyramidal structures.

4.3 Current Institutional Environment

4.3.1 Legal Corporate Structure

In Russia companies can be incorporated as one of three types: Limited Liability Company (LLC, OOO in Russian); Closed Joint-Stock Companies (CJSC, ZAO in Russian); and Open Joint-Stock Companies (OJSC, OAO in Russian). LLCs are not allowed to sell shares publicly and are exempt from registration with the Federal Financial

Markets Service (FFMS)⁸². However, Joint-Stock companies, being closed or open, as opposed to LLCs, are allowed to sell shares to third parties and need registration with the FFMS. Also, OJSCs are permitted to list on the Moscow Exchange and are required to comply with a host of regulations including the information disclosure requirements of the FFMS. Of the 60,000 JSCs, only over 200 are listed on MICEX-RTS. The vast majority of the remainder are CJSCs, which, essentially represent start-up companies. Among the JSCs, the OJSCs in general and listed-companies in particular are very large and consist of the country's industrial output; mainly the oil and gas, electric utilities, telecom, industrials, metals and mining sectors.

4.3.2 FFMS Regulations

FFMS regulations permit the use of one or more types of voting and non-voting shares for OJSCs in Russia. However, the percentage of non-voting shares (preference shares) cannot exceed 25% of the company's share capital. The FFMS, being responsible for regulating ownership disclosure requirements mandates the reporting of cash flow and voting rights separately for each category of owner. This reporting requirement relates to immediate owners holding 5% or more of the cash flow or voting rights. Furthermore, the immediate reported owners, including LLCs must report the identity of their largest shareholders at a 20% threshold to FFMS in their fourth quarter financial statements.

In aggregate, these regulations ensure high standards of ownership disclosure for Russian publicly listed companies. However, the lack of regulations in some areas may help controlling shareholders obscure their real ownership in these companies. For instance, FFMS does not require companies to disclose the identity of their ultimate or beneficial owners in their quarterly and annual reports. Consequently, minority shareholders may not know who controls a company. Additionally, the absence of regulation on translating the Quarterly Financial Reports into English can make access to ownership information difficult for naïve foreign investors.

4.3.3 Listing Rules and Information Disclosure

Aside from FFMS regulations, the even stricter listing rules and procedures of the Moscow Exchange⁸³ also govern the ownership, reporting, disclosure and corporate

⁸² Prior to 2004, FFMS was known as the Federal Commission for Securities Markets (FCSM). On 1 September 2013, FFMS (Russia's Securities Commission) regulation, control and supervision powers were transferred to the Central Bank of Russia.

⁸³The Moscow Exchange was established in December 2011 by uniting the two principal stock exchanges in Russia, the Moscow Interbank Currency Exchange (MICEX) and the Russian Trading System (RTS).

governance environment of Russian publicly traded companies. These listing rules classify all securities into two general categories; Listed Securities and Unlisted Securities. Listed securities involve companies included in one of the five Quotation Lists⁸⁴ (A1, A2, B, V and I) whereas unlisted securities represent stocks trading in the OTC market with infrequent trading. Securities included in the Quotations Lists are those with more frequent trading, feature large companies, and are arranged in descending order of ownership, information disclosure and corporate governance quality. For example, A1 is a list of companies where the major shareholder should not own more than 75% of the company stock, along with mandatory requirement to prepare and audit annual financial statements in compliance with IFRS or US GAAP, and the company must have a monthly trading volume of 25 million Roubles. In essence, companies in A1 and A2 are similar except the latter represents smaller companies with a paid-up capital of more than 3 billion Roubles but less than 10 billion Roubles. In contrast, Quotation list B includes at least one year-old companies with a paid-up capital between 1.5 and 3 billion Roubles, in which the largest shareholder must not hold more than 90% of the company's voting stock. Clearly, A1 and A2 represent highly liquid companies with less concentrated ownership structures and better quality reporting and governance structures. Those in B list tend to be more concentrated, less transparent, poorly governed small companies. The other categories of quotation lists are not relevant to this study. Companies in my sample are listed in A1, A2 or B.

4.3.4 Golden Share

A unique feature of Russian companies owned by Federal or Regional Governments is the use of golden Share. It enables Federal or Regional governments to appoint a certain percentage of representatives to a company's supervisory board and board committees. It grants the ability to veto or block the decisions of shareholders relating to matters regarding change in share capital, amendments to the company charter, and liquidation or reorganization of the company. This special right usually has an indefinite term. The golden share was used quite extensively in the 1990s during mass privatization when the state wanted to retain control in partially privatized strategically important industries such

⁸⁴As a result of listing reforms at the Moscow Exchange in June 2014, the five Quotation Lists and Unlisted Securities have been re-organized into three tiers. The *First Tier* (top tier), includes the securities that were previously listed in the A1 and A2 quotation Lists, the *Second Tier* comprises securities that were previously part of the B, V and I Quotation Lists while *Unlisted Securities* and Securities Admitted to Placement sections have been regrouped into the *Third Tier*.

as oil and gas, electric utilities, telecommunication, and metals and mining (Chernykh, 2008).

4.3.5 Nominees

Russian Joint-Stock Company Law allows two types of investors to appear on a shareholders' register: *Owners* and *Nominees*. Nominees are licensed depositories who mediate in their own names with the company on behalf of their clients i.e., real shareholders. Maintaining confidentiality of the real owners is obligatory, except in certain cases when they are required to disclose the identities of real owners. These include cases relating to voting at Annual General Meetings, Extra Ordinary General shareholders meeting. However, they can avoid this disclosure by creating off-shore private companies and reporting those as the real owners. Such practices make it difficult for the company and other minority shareholders to determine the identity of the actual owners under one or more nominees.

Nominee can be both, a physical or legal person (company, trust, foundation) which hold shareholding or executive position⁸⁵ in the intermediary company (usually offshore company) on behalf of beneficial owners and perform tasks and activities that are told by beneficial owners. Nominees usually issue three documents⁸⁶ in the name of beneficial owners (real owners) including declaration of trust, nominee services agreement and a deed of transfer, which evidence that nominees are only trustee holders in favour of beneficial owners and are not entitled to dispose of shares and participate in the company's business without the written consent of the beneficial owners.

Lack of public disclosure by nominees, regarding the change in ownership by its clients, may jeopardize the transparency of ownership for the listed companies, as the acquisition and disposal of shares by shareholders keeps the owners under the same nominee with no changes reflected in the shareholders' register. Moreover, initiatives by owners themselves, including shifting the holding to another nominee, splitting their blocks across several nominees, or sharing one nominee with other block holders can further undermine the quality of ownership disclosures. All of these increase the information

⁸⁵ When they hold shares on behalf of beneficial shareholders, these nominees are called nominee shareholders and when they act as an executive body on the written/oral instructions of beneficial owner in the intermediary company (offshore company) they are called nominee directors.

⁸⁶ The equivalent of these documents in case of nominee directors are nominee director declaration, power of attorney and an undated director's resignation letter.

asymmetry not only between majority and minority shareholders but also between domestic and foreign investors.

4.3.6 Foreign Off-shore Companies

The use of foreign offshore private companies in ownership structures is so widespread in Russia that they are mistaken for foreign companies. In reality, these companies represent Russian capital invested in Russian companies by oligarchs. It is very common for Russian companies to have several foreign offshore companies in their immediate ownership structure. The setting up of foreign off-shore companies by controlling shareholders eliminates the need for ownership disclosure versus mandatory ownership disclosure for LLCs holding 20% or more. Holdings of these offshore companies are normally split into small blocks of less than 20%. These smaller holdings by foreign off-shore companies at first glance might indicate a widely held (i.e. having no controlling shareholder) ownership structure at the 20% threshold. However, closer examination of the beneficiary owners of these offshore private limited companies reveals either a single or a group of oligarchs behind them. This, in turn, gives rise to a fraction of companies in my sample that are not owned by a single owner but rather by a group of oligarchs. Such companies are considered as being held by *Jointly-Controlled Oligarchs* and are classified under the Non-transparent Oligarchs category. Figure 2, in Appendix R, illustrates the ownership structure of OJSC Novatek, a typical company jointly controlled by two Russian Oligarchs.

In the light of the institutional, regulatory and governance framework presented earlier, it is reasonable to assume that the overall ownership structure in Russia is opaque and non-transparent, being concentrated in the hands of few large controlling shareholders. This opaqueness mainly stems from the use of nominees and foreign-offshore private companies. The incentives for masking the identities of real owners under the Nominees and Foreign off- shore companies may involve: tax avoidance, reluctance to uncover the identity in a related party transaction, protecting illegally-gained money, unwillingness to disclose affiliation with companies involved in tunnelling and asset stripping, thwarting the threat of takeover, political risks, and personal security. Also, through the use of preference shares, golden shares and group structures, these owners leverage their control over and above their ownership stake which creates a divergence between voting and cash-flow rights.

4.4 Related Literature and Development of Hypotheses

The corporate ownership environment in Russia is characterized by the presence of highly concentrated large controlling shareholdings. The large controlling shareholders are typically Oligarchs and State, who enjoy majority ownership (i.e., more than 50%) and are heavily involved in the management. Such ownership structures are in stark contrast with the Berle and Means' (1932) concept of modern corporations which are widely owned by dispersed and passive shareholders. Thus, a typical Jensen and Meckling's (1976) Principal-Agent conflict, more common in Anglo-American countries, between less concentrated small outside shareholders and inside managers that control the company, is not relevant for Russia. In contrast, an agency conflict predominantly between large controlling and small minority shareholders, where the majority shareholders expropriate returns and resources away from the minority investors (La Porta et al., 1999; Lemmon & Lins, 2003), is at play in Russia, shown as Principal-Principal Agency conflict in Figure 4.1.

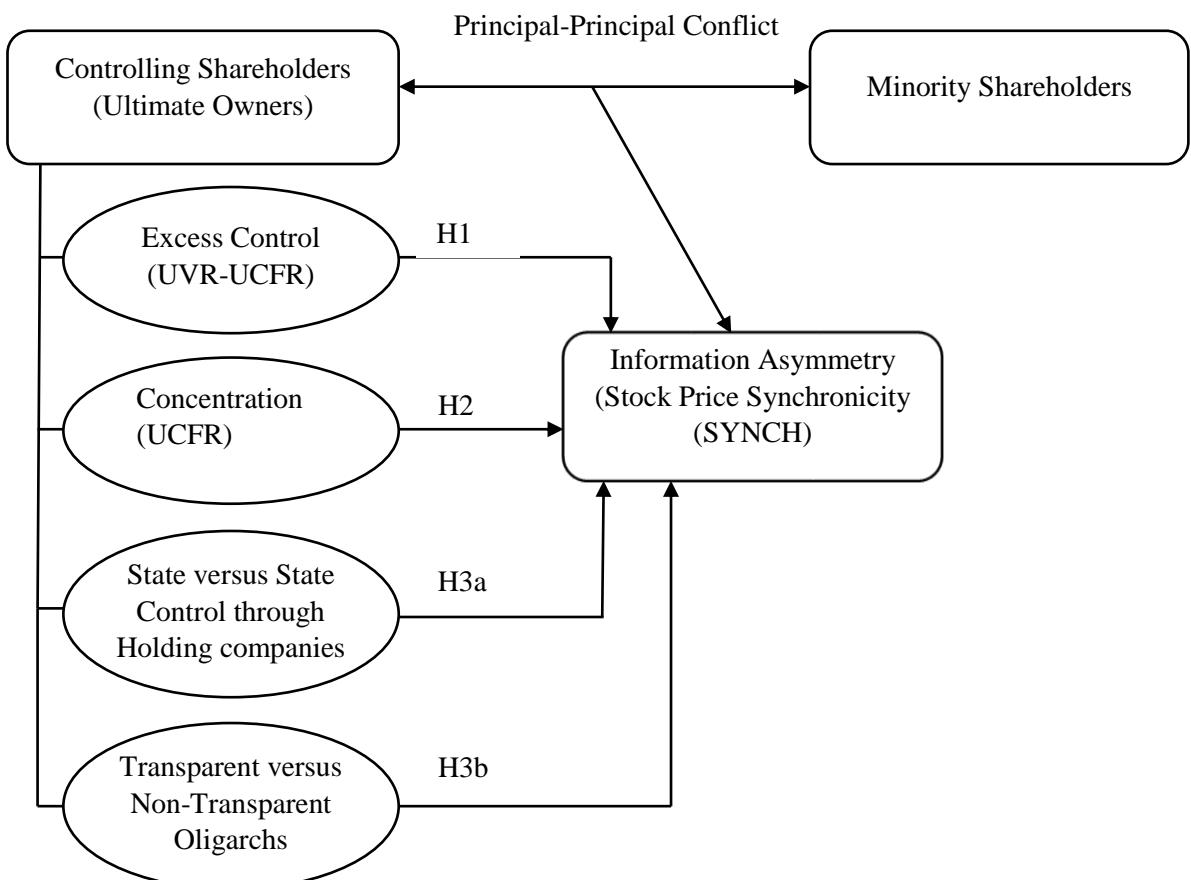


Figure 4.1. Hypotheses and Theoretical Framework

The ownership structure as explained in the previous section, being the product of legal and institutional settings, has condensed to mean three things: divergence between voting

and cash-flow rights of the controlling shareholders, ownership concentration and the identity of controlling owners⁸⁷. In this section, I review the literature and develop hypotheses about the effect of ownership structure on the extent to which stock returns incorporate publicly available market- and industry-wide information relative to firm-specific information.

4.4.1 Divergence between Voting and Cash-flow Rights and Stock Price Synchronicity

The ownership structure literature notes a widespread divergence⁸⁸ between control and cash-flow rights of controlling shareholders for firms around the world. La Porta et al. (1999), in a study on ownership structures of firms from 27 wealthy economies, find that firms are typically controlled by one large shareholder who enjoy significantly higher control relative to their cash-flow rights. Claessens et al. (2000), and Lemmon and Lins (2003) examine the separation of ownership and control for emerging and transition economies in East Asia and report frequent divergence between voting rights and cash-flow rights due to the pervasive use of pyramid structures and cross-holdings. The separation of voting and cash-flow rights that provides excess control to dominant shareholders occurs essentially as an infringement of the one share-one vote rule envisaged by Grossman and Hart (1988) and later empirically tested by Adams and Ferreira (2008).

Excess control, acquired by violating one share-one vote rule, is an outcome of control enhancement measures employed by the controlling shareholders. Such measures include, but are not limited to, the use of multiple class shares (dual-class shares), pyramidal structures, cross-ownerships and disproportionate participation in management by the controlling shares. A growing body of theoretical and empirical literature pinpoints the entrenchment effect of separation of cash-flow rights from the voting rights. For instance, Grossman and Hart (1988) report that violation of the one share-one vote rule results in a socially-suboptimal outcome because it produces more private benefits of control for the controlling party relative to the minority security holders. Similarly, Shleifer and Vishny (1997) and Morck et al. (2000) contend that as the ownership of controlling shareholders exceeds a certain level, it provides them with an incentive and opportunity to expropriate firm's resources away from outside investors. The intensity of

⁸⁷ The terms controlling shareholders, ultimate owners and largest shareholders are used interchangeably in this study.

⁸⁸ In this study terms such as divergence between voting and cash-flow rights, separation between voting and cash-flow rights, control-ownership wedge, and excess control are used synonymously.

expropriation becomes more severe in the presence of divergence between ownership and control rights (Claessens et al., 2002). The entrenchment effect can manifest in many forms, including: controlling shareholders maintaining a lock on the control of the firm if the private benefits of control are large (Bebchuk et al., 2000); distortion in investment decisions (Morck, 2005); empire building and formation of monopolies by managers (Khanna & Yafeh, 2005); tunnelling (Friedman, Johnson, & Mitton, 2003); and excessive salaries and perks for managers (Yermack, 2006).

In the Russian context, several studies show value destroying behaviour of the entrenched controlling shareholders. Kuznetsov and Muravyev (2001), for a sample of 103 publicly listed blue chip companies, report a negative association between the concentration of voting power of the controlling shareholders and firm performance (Tobin's Q). In their view, such a relationship exists due to the expropriation and extraction of private benefits by the concentrated shareholders. Similarly, Filatotchev, Kapelyushnikov, Dyomina, and Aukutsionek (2001) witness a "control premium" extraction by the entrenched largest controlling shareholders in a sample of 120 companies.

Based on the above evidence of entrenchment behaviour by controlling owners, it is safe to assume that significant control-ownership divergence may impair the corporate information environment as well. The information-impeding behaviour of entrenched ultimate owners emanates from their dire need to hide their opportunistic, self-serving behaviour from small, outside minority investors. It could, potentially, involve withholding the value-destroying information, delaying the timely recognition of losses, reducing the overall quantity of voluntary disclosures, or publishing irrelevant and untimely financial information. A great deal of empirical evidence in support of this is discussed below.

Kim and Yi (2005), using a large sample of Korean listed companies, report an increase in the opportunistic earnings-management behaviour as the discrepancy between control and ownership rights gets bigger. They associate real-earnings' camouflaging behaviour of controlling shareholders with the incentive to hide the adverse consequences of their opportunistic behaviour. Consistently, Lafond and Roychowdhury (2008), in the USA find a negative association between financial reporting conservatism and the control rights of insider managers, while Haw et al. (2004) note an increased tendency for aggressive income management in the presence of disparity between control-ownership rights of dominant shareholders in East Asian and European countries. In a notable study, Fan and Wong (2002) note that the control-ownership divergence, acquired through

pyramidal and cross-holding structures, creates an incentive and opportunity for the controlling owners to report accounting information in an opportunistic manner, which results in reducing its credibility to outside investors. Similarly, Francis et al. (2005) also document a reduction in the credibility of earnings for firms with large divergences between voting and cash-flow rights due to dual class ownership structures.

Additionally, Attig et al. (2006), using a sample of Canadian firms, witness an information constraining behaviour by ultimate owners when there is a discrepancy between ownership and control rights. They assert that such behaviour results in greater information asymmetry component in bid-ask spreads and poor stock liquidity. Recently, Bona-Sanchez et al. (2011) argue that in the presence of huge gap between cash-flow and voting rights, firms tend to defer the recognition of losses. Excess control rights create higher expropriation risks, thus higher cost of external funds, which motivates them to deter timely recognition of accounting losses. This encourages large dominant shareholders in these companies to resort to internal financing which in turn compromises the need for conservative income reporting.

It can be safely deduced from the above arguments that at large divergence between cash-flow and voting rights of the ultimate owners leads to low-quality and less-accurate accounting information. This in turn makes the firm's information environment more opaque and increases the cost of acquiring credible firm-specific information for outside investors. The greater cost of private information may discourage informed trading, which consequently prevents firm-specific information from being impounded into stock prices (Fernandes & Ferreira, 2009; Morck et al., 2000). Less firm-specific information is said to be associated with less informative stock prices and higher stock price synchronicity. This association of lower stock price informativeness (higher stock price synchronicity) with firm opaqueness is attributed, by Jin and Myers (2006b) in their theoretical model, to the degree of firm-specific risk sharing between inside managers and outside investors. They assert that the inside managers in non-transparent firms have greater incentives to hide positive firm-specific information, when they reap larger share of cash-flow from a positive-firm specific information. This results in insiders absorbing more firm-specific risk than the outsiders and, therefore translates to higher stock price synchronicity. Jin and Myers (2006b), using a large sample of firms from 40 countries, confirmed the assertions of their theoretical model by providing empirical support in favor of positive association between information opacity and stock price synchronicity.

Much empirical research in different settings provides consistent results. For example, Haggard et al. (2008) report that firms exhibiting higher information opacity, as measured by the Association for Investment Management and research rankings, tend to have higher stock price co-movement, and Hutton et al. (2009) also note higher stock price synchronicity and greater likelihood of stock price crashes for opaque firms. Gul et al. (2010) contend that firms having higher-quality auditors facilitate the dissemination of more reliable and authentic information to outsiders, and thus demonstrate lower stock price synchronicity.

This literature indicates that firms with excess voting rights have more entrenched controlling owners with a greater incentive to exploit minority investors, and are likely to disseminate low-quality firm-specific financial information. The lack of high quality, timely and less accurate financial information creates an information asymmetry between controlling and minority shareholders, and lowers the firm-specific variation in stock returns relative to market- and industry-wide variation. It makes stock prices more synchronous with the market and results in increased stock price synchronicity. More recent studies, Boubaker et al. (2014) in the French, and Feng, Hu, and Johansson (2015) in the Chinese contexts, document an information impairing role (higher stock price synchronicity) of large controlling shareholders who increase the divergence between cash-flow and voting rights.

Overall, it can be concluded that the Principal-Principal agency conflict, as depicted in Figure 4.1, can result in information asymmetry between large highly concentrated controlling shareholders and small minority investors as it is the controlling shareholders (also managers) who possess inside information and exercise control over the timing and quality of accounting information released to the public (Fan & Wong, 2002). The extent of information asymmetry between the ultimate owners and minority investors is assessed by the stock price synchronicity, a measure which shows the degree of firm-specific information relative to market- and industry-wide information reflected in the stock prices. In a nutshell, larger information asymmetry means greater stock price synchronicity (SYNCH). There are two contrasting effects of the largest shareholder ownership concentration on information asymmetry, namely entrenchment or an incentive alignment effect. The degree of information asymmetry depends on which of the two dominates. The entrenchment effect sets in when the ultimate owners enjoy more control over the company relative to their ownership stake (excess control) and, therefore, indulge in opportunistic self-serving activities that bring private benefits, which do not

accrue to the minority investors. In order to hide their expropriatory behaviour, the controlling shareholders might choose to hold or delay the publishing of negative information or to disseminate low quality accounting information. The entrenchment effect leads to greater information asymmetry, i.e., higher stock price synchronicity (SYNCH). In Russia, such entrenchment perils regarding information asymmetry can be attributed to the ultimate owners who typically leverage their control over and above ownership stake (Excess Control) by resorting to the use of holding companies, stock-pyramids, dual class shares and golden shares. This phenomenon together with arguments from the prior literature leads to the following hypothesis:

H1. *Stock price synchronicity is positively associated with the control-ownership divergence of the ultimate owner.*

4.4.2 Ownership concentration of the Ultimate Owner and Stock Price Synchronicity

The preceding section investigates the effect of controlling shareholders' incentive to exploit on stock price synchronicity. This section examines the effect of controlling shareholders' ability-to-exploit (a.k.a. incentive-alignment effect) on stock price synchronicity. The proxy for the ability to exploit is based on the cash-flow rights of the largest controlling shareholders. The literature on the alignment effect of ownership concentration is outlined below.

Several studies provide evidence in support of an incentive-alignment role of controlling shareholders, as their increasing ownership concentration is said to mitigate the agency problem between controlling and minority shareholders (Demsetz & Lehn, 1985; Grossman & Hart, 1980; Lins, 2003; Mitton, 2002; Shleifer & Vishny, 1986). For instance, Grossman and Hart (1980) report that firms with concentrated ownership structure face improved supervision by controlling shareholders. Similarly, Demsetz and Lehn (1985) and Shleifer and Vishny (1986) note that large controlling shareholders mitigate the extraction of private benefits and improve monitoring over managers. Mitton (2002) documents better stock returns during the Asian financial crisis for companies with greater ownership concentration. Claessens et al. (2002), using data on East Asian firms, note a significant increase in firm value in relation to increase in cash-flow ownership of dominant shareholders. Consistently, Bennedsen and Nielsen (2010), in the European context, find a significantly smaller discounts in firm values when the cash-flow concentration is greater.

Gomes (2000) suggest that increased ownership concentration is a commitment to not expropriating the interests of outside minority investors. Controlling shareholders may not pursue opportunistic self-serving behavior in order to preserve their goodwill. Also, this might encourage them to disseminate high-quality firm-specific information for the benefit of minority shareholders. This easy availability of inexpensive private information facilitates informed trading and allows more firm specific-information to be incorporated into stock prices. Consistent with the proposition of Grossman and Stiglitz (1980b), that the cheap access to financial information improves price informativeness, a firm's stock might enjoy more price informativeness or lower stock price synchronicity.

The theoretical model of Diamond (1989) suggests that the reputation of controlling shareholders disciplines the financial markets. It helps reduce the agency problem and also curbs information asymmetry between inside managers and outside minority investors. Controlling shareholders, therefore, tend to pursue value-maximizing activities as their positive efforts become visible in the market through stock prices (Faure-Grimaud & Gromb, 2004). The literature above indicates that large dominant shareholders are less prone to hold and hide information when they have large stakes in a firm. Instead, they tend to disseminate more information to the outsiders. Empirically, Yafeh and Yosha (2003) and Veldkamp (2006) report increase in earnings informativeness and decrease in discretionary expenditures with rising levels of ownership stake.

In a theoretical model, Veldkamp (2006) argues, that for valuing securities the investors' access to less-expensive firm-specific information, reduces the need for market and industry-level information. This in turn leads to lower stock price synchronicity or higher price informativeness. Similarly, Fernandes and Ferreira (2009) propound that stock price synchronicity is contingent on the relative informational advantages of different market participants. They assert that large blockholders have higher access to firm-specific information, which encourages informed trading, thus leads to higher price informativeness or lower synchronicity. Brockman and Yan (2009) demonstrate that blockholders enjoy informational advantage over small atomistic investors, and are able to access private firm-specific information in a cost-effective manner. This firm-specific information then leads to higher idiosyncratic volatility and probability of informed trading (PIN) and less stock price synchronicity. Most recently, for a sample of 662 French companies, Boubaker et al. (2014) also document a reduction in stock price synchronicity with an increase in cash-flow rights of the ultimate controlling shareholders.

Drawing on the above theoretical and empirical research, this incentive-alignment effect relates to the concentration of equity investment by the largest shareholder beyond achieving effective control. The increase in equity investment of the ultimate owners, denoted by ultimate cash flow rights (UCFR), beyond securing control of the firm, will align the interests of controlling and minority investors as the cost of expropriation will now be higher. Consequently, this might improve the information asymmetry and decrease the stock price synchronicity (SYNCH), posited as H2 as follows:

H2. *Stock price synchronicity is negatively associated with the cash-flow rights of the largest shareholder.*

4.4.3 Ultimate Owners' Identity and Stock Price Synchronicity

Another unique feature of the Russian corporate environment is the dominance of the state and Oligarchs as the controlling owners. State participation in Russia is still large despite distinct episodes of voucher and cash privatizations in the 90s. It can be classified into two categories: 1) The State, being the less prominent one, represents companies directly controlled by federal and regional governments through an organ of the Ministry of Economic Development called Federal Agency for the Administration of State Property (FAASP). These companies have little or no private owners in their ownership structure and are typically run by bureaucrats who are keen to pursue their political and social objectives rather than pursuing economic objectives; and 2) state control through holding companies⁸⁹, in contrast are more prevalent, and are controlled indirectly by the state through intermediary publicly listed companies that also have oligarchs in their ownership structure. Indirect control allows the state to enjoy large control rights in subsidiary companies with relatively small cash flow rights. State ownership through state-controlled companies is mostly confined to open Joint-stock companies from the electricity and telecommunication sectors.

The ownership structure of Russian companies is dominated mainly by the state and oligarchs at the 50% threshold. State control manifests in two forms. The first category includes those controlled by the Federal and Regional Governments by having direct stakes. These, controlled directly by regional governments, represent companies which were transferred by the federal government in return for loans owed to the regional governments. Mostly these companies are run by state-appointed bureaucrats. The second

⁸⁹ *State-controlled through Holding companies and state control through OJSC are used interchangeably.*

form involves an indirect stake through state-controlled holding companies or state controlled Joint-Stock companies.

State-owned companies are entities featured with highly concentrated control rights with no cash-flow rights (Shleifer & Vishny, 1997). The concentrated control rests in the hands of the bureaucrats while the cash-flow ownership is distributed over many tax-payers throughout the country. These bureaucrats have no incentive to monitor managers as they typically pursue their own personal and political objectives (Shleifer, 1998). La Porta, Lopez-de-Silanes, and Shleifer (2002) find a negative association between state-ownership and firm value for a sample of firms around the world. They suggest these findings are an outcome of prioritizing social and political objectives above the profit- and value- maximization objectives on part of the state-owned companies. Pedersen and Thomsen (2003), using a sample of the largest European companies, note that the increasing ownership concentration by the government erodes firm value as measured by market-to-book value of equity. Additionally, Lijun and Yiqiang (2005) report that value implications are even worse for Chinese firms when controlled by local and state governments. Extending the scope of research on the value implications of state ownership to areas such as investment efficiencies and earnings management, Chen, Sun, Tang, and Wu (2011) demonstrate that any state invention in SOEs, either through increased ownership stakes or political appointments, leads to lower investment efficiency and increased earnings management.

In the Russian context, studies on the role of state provide mixed empirical results. For instance, Kapelyushnikov (2001) shows that direct state ownership results in excessive spare production capacities, increased production of loss-making products and reduction in profits. In the same vein Sprenger (2010), using data covering the period from 2001 to 2008, also confirms the increased pursuit of social and political objectives by federally owned state companies. It is important to note that all of the above results regarding the impact of the state on firm performance, investment efficiency and earnings management, either in international or Russian settings, hint at negative implications in the case of direct ownership stake.

However, in the following paragraphs I present the literature that illustrates the positive influence of state when it owns companies both directly and indirectly as one of the dominant shareholders among other shareholders. Notable studies, including that of Kuznetsov and Murav'ev (2001), suggest that state control through holding companies is desirable because they are found to be more efficient, profitable and more prone to hire

professional managers. Wright, Filatotchev, Buck, and Bishop (2003) find that state control through holding companies serves as an effective monitor over dominant insiders and thus helps to mitigate the expropriation of minority shareholders.

In a recent study, Chernykh (2008) provides evidence for an incentive-alignment role for the state companies controlled indirectly through holding companies. He notes significant improvement in firm performance when state and private investors simultaneously co-own companies with substantial control rights. A plausible explanation for this relates to the cross-complementary monitoring role performed by the two for each other. For instance, private controlling shareholders can restrain the state from pursuing sub-optimal political and social objectives, while the state can inhibit private investors from engaging value-destroying opportunistic self-serving activities. Before extending the findings of Chernykh (2008) to the information role of indirect state participation in Russia, a study in the Chinese setting, by Hou et al. (2012), examining the change in the information role of state companies after a split share programme, provides a useful parallel. Comparing share price informativeness before and after the split share structure reform (SSR) for state owned companies (SOE), Hou et al. (2012) report a substantial increase in share price informativeness and a reduction in information asymmetry for SOEs with more restricted shares. It is important to note that SOEs with more restricted shares before SSR can be considered equivalent to federally controlled state companies in Russia, while SOEs after the SSR with fewer restrictions on trading are parallel to state companies owned indirectly through Joint-stock companies in Russia.

These two forms of state ownership in Russia are expected to have distinct effects on the entrenchment and alignment effects of stock price synchronicity. State control through holding companies means that companies that are essentially structured in the pyramidal and group form, will have greater divergence between the control and cash-flow rights and therefore might exhibit exacerbated entrenchment effect relative to companies owned directly by the state. More entrenchment translates into higher information asymmetry and higher stock price synchronicity. However the incentive alignment effect of companies controlled indirectly by the state may be more profound compared to companies owned directly by the state, as these companies experience the correcting and monitoring role of oligarchs present in the ownership structure. Greater incentive alignment translates into less information asymmetry and lower stock price synchronicity. This relationship, highlighted as H3a in the conceptual framework in Figure 1, is tested as the following hypothesis.

H3a. *Stock price synchronicity for companies controlled through indirect state participation is lower than that for federally-controlled state companies.*

4.4.4 Ownership Transparency and Stock Price Synchronicity

Another dominant class of ultimate owners is Oligarchs. They can be further classified into *Transparent (Traceable) Oligarchs* and *Non-transparent (Non-traceable) Oligarchs*. Transparent oligarchs own relatively transparent companies, controlled by individuals and families whose identities can be traced along the control chain, and they typically own fairly stable companies concentrated in oil and gas, metals and mining, chemical and utility sectors. These industries produce and sell fairly standard products that require less innovation, which makes them operate in a less competitive product market. Earlier studies, such as Braguinsky (2009), refer to these as “insider oligarchs” who acquired control in large corporations as insider managers and these oligarchs are said to have existed as *nomenklatura (representing those who held key administrative positions in Soviet Union era)*, before the fall of the soviet union communist regime in 1991.

In contrast, non-transparent oligarchs feature in companies with non-transparent ownership structures that resort to the excessive use of *Nominees* and *Foreign-Offshore companies* to mask the identities of ultimate owners (See Table B2., Appendix B). Typically, the use of nominees and foreign offshore go together, because once foreign offshore companies are declared as ultimate owners in the nominee registers, there is no legal requirement to reveal the real owners behind them⁹⁰. Alternatively, some of these oligarchs prefer using foreign offshore companies in the immediate layer of the control chain of Russian companies and appoint nominee shareholders or nominee directors as the front runners of the offshore companies. These nominees and foreign offshore companies substantially undermine ownership transparency when they show up in the ultimate control chains of the companies. It prevents the local and foreign investors from identifying the true owners, may increase the asymmetric information, as exhibited in the control structure for the biggest Russian energy company, JSC T-Plus, sourced from OSIRIS (See Appendix U). The thick line in the control structure shows the ultimate control chain at 20% voting rights threshold. The individual at the apex layer, Mrs Maria-Christina Stefanou, is allegedly known to be controlling the company via a Cyprus-based

⁹⁰ This is because the Russian securities regulator, FFMS (now the Central Bank of Russia), cannot force foreign entities (including both legal and natural persons) to disclose beneficial ownership. However, they have the power to obtain information on beneficial owners within their own jurisdiction. If the nominee is a foreign entity then FFMS requires disclosing only the name of such an entity, even if it is a nominee.

foreign-offshore company, Integrated Energy Systems Limited. Imagining a Cyprus-based woman as being the ultimate owner in a Russian energy giant is implausible because almost 100% of the oligarchs in Russia are men. So, I suspect her to be a nominee shareholder (cum nominee director)⁹¹ rather than the beneficiary owner of Integrated Energy systems, because in Cyprus it is very common to appoint local directors on the board for claiming tax benefits. In search for the beneficiary owner (s) (real owner) of Integrated Energy Systems I looked for its linkages with other companies on publicly available databases including OpenCorporates, Relationship Science and Bloomberg. The search shows that Integrated Energy Systems is a subsidiary of a Bahamas-based company, Renova Group, which in turn is beneficially owned by a Russian Oligarch, Mr Viktor Vekselberg⁹². Hence the ultimate owner of PJSC T Plus is Mr Viktor Vekselberg⁹³. After establishing the real owners, the estimates of voting (32.34%) and cash-flow rights (32.34%), provided in the OSIRIS, of the ultimate owners are also updated based on the new linkages.

Using the voting and cash-flow rights' estimates along the ultimate control chain reported in OSIRIS, leading to Maria-Chrisitina, the ultimate control and cash-flow rights turn out to be 34.25%⁹⁴. This misstates the true ultimate control and cash-flow rights because it does not account for other subtle linkages in the control structure that lead to the same ultimate owner (Mrs Maria- Christina Stefanou), in the second control chain at 20%. In the second chain, the Cyprus-based company, Brook Weed Trading Ltd, is shown to be controlled by Integrated Energy Systems, but the voting and cash-flow stake of the Integrated Energy Systems in Brook Weed Trading is missing. The close examination of the box containing, Brook Weed Trading Limited shows that it has only one shareholder, which implies, the company above it, is the sole owner (100%) of it (that is Integrated Energy Systems). Hence, I add the voting and cash-flow rights along the two chains, which produce the ultimate control rights to be 100% and Cash-flow rights to be 52.81% for the real owner (Mr Viktor Vekselberg).

⁹¹ Nominee shareholder because the structure in Appendix U reports that she holds 100% share ownership in a company (Integrated Energy Systems).

⁹² See <https://relationshipscience.com/integrated-energy-systems-ltd-cyprus-o1904191>
<https://www.bloomberg.com/billionaires/profiles/viktor-vekselberg/>

⁹³Mr Viktor Vekselberg qualifies the classic image of outsider oligarchs, who emerged in the post-communist era, did not hold any high-level positions in the State-owned entities and was recently tasked with the responsibility of modernizing Russian economy through information technology.

⁹⁴The ultimate owner's control rights is the minimum voting rights along the chain (i.e. 32.34%) whereas the ultimate owner's cash-flow rights is the product of cash-flow rights along the chain (i.e., 32.34X100%X100%).

Similarly, the use of nominees and foreign offshore companies in the control structure of TNS Energo (See Appendix V) falsely lead to the two panama-based individuals, Mr Itzamara Madrid and Mrs Elizabeth Cornejo Penalba, as ultimate owners. These two individuals seem to be nominee directors of a Panama-based offshore company rather than ultimate owners, because their shareholdings are missing which are very likely in situations when beneficial owners hire nominee directors in offshore companies to obscure their identity. The ultimate ownership of TNS Energo is believed to be held under the joint ownership of a Russian oligarch, Dmitry Arzhanov and an unknown individual, via a Cyprus-based company Sunflake Limited. These discrepancies between the reported ultimate owners (in OSIRIS) and the real ultimate owners cast doubt on the quality of ownership structures provided in OSIRIS; as they are inherently incomplete in terms of identifying all possible layers of ownership and are lacking in terms of reporting the appropriate control and cash-flow rights.

The use of nominees and foreign offshore companies may not only pose challenges for the minority investors in assessing the potential agency conflicts related to the identity of controlling shareholders and directors but may also constrain them from estimating the true agency costs due to their inability to estimate true control and cash-flow rights.

In essence, current and potential foreign or domestic investors cannot find who really owns these companies. The non-transparent category of oligarchs is split into, Jointly Controlled Oligarchs, Unknown-offshore and Industrial companies. The Jointly Controlled and Unknown-offshore ultimate owners represent more opaque ownership structures as these are registered as foreign off-shore companies in the British Virgin Islands, Panama, Cyprus, Bahamas, the Cayman Islands and Luxembourg. Industrial companies, being the other non-traceable category of oligarchs, refers to corporations holding controlling stake along the control chain and could potentially have oligarchs behind them. These are considered less opaque relative to the unknown-offshore as these ultimate owners still reside and have registered offices within the country. Overall, non-transparent oligarchs are identified as “outsider oligarchs” in the prior literature, and are said to have emerged in the post-communist era in the mid-1990s. They own companies in the consumer goods, transport and service sectors that have highly competitive product markets for their highly innovative products (See Table B3., Appendix S).

Oligarchs and ownership by families (individuals) are usually taken to mean the same thing, in the literature, on the basis that they both represent individuals. However, following Guriev and Rachinsky (2005), Oligarchs stand out from families in that they

include businessmen⁹⁵ who enjoy sufficient control over the firms, in terms of sales, assets, and the number of people employed, to enable them to amass enormous political power. Non-transparent oligarchs specifically are identified with excessive political lobbying, and with young, better educated entrepreneurs who run companies facing greater competition in the market for their innovative products. Not only that, they have higher access to bank credit and thus higher leverage (For Leverage, See Table B1, Appendix S). All of these attributes lead to opaqueness in the ownership and information environment for these companies. Empirically, the greater likelihood of outsider oligarchs (Non-transparent Oligarchs), pursuing political offices and acting as secret owners of businesses, has been documented by Braguinsky (2009) for Russia. Similarly in Bulgaria, Mueller, Dietl, and Peev (2003) indicate an opaqueness on the part of offshore owners in the form of increased political rent-seeking behaviour, non-transparent corporate governance structures and increased shifting of capital to the outside countries.

Given the enhanced political rent-seeking activities and severe product market competition faced by non-transparent oligarchs there is a higher incentive to hide ownership and accounting information from the public, as predicted by the “information hypothesis” put forward by Fan and Wong (2002). The hypothesis involves opacity being a favourable strategy for firms, concerned with the leakage of proprietary information to competitors for their innovative products and also confronting the risk of political or social scrutiny for the political favours. Theoretically, Jensen and Meckling (1992) and Christie, Joye, and Watts (2003) propose that firms possessing proprietary information and product-specific knowledge, should concentrate their ownership and decision rights in the managers having competitive firm-specific knowledge. Allocating decision-making rights to the managers with proprietary information tends to diminish the risk of business sensitive information being leaked to the public and potential competitors. Studies by Linck, Netter, and Yang (2008), and Iwasaki (2008) in the US and Russian settings, respectively, find that firms actively engaged in product development and innovation appoint more inside directors to their boards. Another reason for the impaired transparency in the ownership and information environment of non-transparent oligarchs relates to their greater engagement in political rent-seeking activities. Morck (1996) offer two reasons for closely held firms, especially privately-held firms, being ideal for political lobbying both for the owners and politicians and these reasons are applicable to non-

⁹⁵All the businessmen identified as oligarchs in this study match with those in the list compiled by Guriev and Rachinsky (2005).

transparent oligarchs⁹⁶ as well. First, the lack of separation between owners and managers for closely held firms allows firms to operate in greater secrecy which helps them erect entry barriers for new competitors, and also ensures secrecy for politicians, who are quite conscious of their public reputations. Second, the controlling owners are considered more reliable in returning favours to politicians and bureaucrats, because they do not face the risk of being sacked by a board of directors dominated by outside directors as is the case in widely-held firms. Altogether, these unique features of non-transparent oligarchs suggest that it is in their interest to hide and withhold information from outsiders. Such behaviour by non-transparent oligarchs has been highlighted by Braguinsky (2009), who notes that outsider oligarchs choose to disclose much less information about their actual incomes compared to insider oligarchs (transparent oligarchs). In summary, the information hypothesis suggests that non-transparent oligarchs holding firm-specific proprietary information and with heavy involvement in political rent-seeking will have greater willingness and motivation to hold back information; this will result in lower firm-specific return component in stock prices, and thus there will be higher stock price synchronicity compared to transparent oligarchs, as hypothesized below:

H3b. *Stock price synchronicity for companies controlled by non-transparent-oligarchs is greater than those controlled by transparent-oligarchs.*

4.5 Research Methodology

4.5.1 Sample

I begin with an initial sample of 531 publicly listed financial and non-financial companies available in OSIRIS in 2013. However, out of 531 companies, only 203 are active on the Moscow Exchange. The difference of 328 companies represents largely those companies that have either delisted, merged with other companies or have become bankrupt over the years. Of these three categories, a majority (190 of 328 companies) are either delisted companies that trade as unlisted securities on over-the-counter-market at the Moscow Exchange, while the remainder (138 of 328) have either declared bankruptcy or been acquired by other companies. The *Unlisted Securities* (also known as Third Tier

⁹⁶*Non-transparent oligarchs* are Braguinsky's (2009) equivalent of *outsider oligarchs*, representing young, educated and entrepreneurial businessmen who emerged in the post-communist era of mid-90s, and hold ownership stakes in the technology and consumer-oriented businesses requiring more research and development. *Transparent oligarchs* and *insider oligarchs* derive their status by being associated as *nomenklatura* (holding key administrative positions in the government) in the Soviet era. They acquired ownership stakes in large public corporations, which are concentrated in fairly stable industries e.g., oil and gas, metals and mining, and utilities.

Securities), have been excluded from the sample because of the insufficient financial and ownership data. This insufficiency of data largely stems from the restrained ownership and financial information reporting with the Exchange by these companies. Of the 203 active companies, I removed twenty-seven banking and financial companies, as they operate under a distinct regulatory and reporting environment mainly controlled by the Central Bank of Russia. This reduces my sample to 176 industrial companies listed on Moscow exchange. A further fifty-six companies were dropped from the sample due to the illiquidity (less than 30 weeks stock trading), or insufficient financial and ownership data in OSIRIS, Datastream and Bloomberg Professional. The final sample used in this essay reduces to 120 companies. The non-availability of data, in part, results from the non-reporting of financial statements in English language. All of the financial and accounting data for the 120 companies in my sample have been sourced from the OSIRIS and Bloomberg databases, while weekly firm- and market-level return data have been obtained from Datastream International (DSI). I used the OSIRIS database for preliminary ownership data, i.e., Global Ultimate Owners, Domestic Ultimate Owners and direct and indirect stakes of ultimate owners. However, ownership data in OSIRIS fails to report the real ultimate owners when companies have nominees and foreign offshore companies in the ultimate control chains. To correct for these inconsistencies and to verify the real identities of ultimate owners, I used several other sources of information, including annual reports, company websites, 13D and 20F filings with SEC, search engines (Google), and local Russian newspapers with English translations available on their websites (Few of these are Kommersant, Vedomosti, RBK Daily, Rucriminals.com). A detailed discussion of the inconsistencies in ultimate owners' identity is provided in the preceding section. An industry-wise breakdown of my sample is reported in Table 4.2.

Table 4.2 Industry-wise Break Down of Sample.

Industry	No of Firms	Percent of Sample	Market Cap (Bil USD)	Total Assets (Bil USD)	Sales (Bil USD)
Chemicals	8	6.56	21.26	26.96	16.23
Consumer Goods	16	13.11	39.86	31.20	48.69
Electric Utilities	39	31.97	27.17	217.44	124.52
Industrials	10	8.2	6.80	34.54	24.29
Metals and Mining	20	16.39	72.43	111.81	74.16
Oil and Gas	16	13.11	368.25	1042.78	609.12
Telecoms	4	3.28	45.99	44.77	33.34
Transport	9	7.38	8.42	25.47	23.25
Total	120	100	590.17	1534.96	953.59

Table 4.2 shows that the selected sample is dominated by firms from the Electric Utilities (31.97%) Metals and Mining (16.39%), Oil and Gas (13.11%) and Consumer goods (13.11%) sectors. The market capitalization of firms included in my sample is \$590.17 billion, whereas the equity market capitalization of companies listed on MICEX-RTS is \$771 billion. These companies are a good representation of MICEX-RTS but cannot be considered representative of Russian Joint-Stock Companies. In terms of market capitalization, (\$590.17 billion) these companies can be considered representative of firms listed on MICEX-RTS (\$777.1 billion)⁹⁷. The annual sales and total assets of the companies in my sample constitute 30% and 50% of nominal Russian GDP respectively.

4.5.2. Ownership Structure Variables

To trace the identity of ultimate owners I utilize La Porta et al. (1999) and Faccio and Lang (2002) methodology. This involves, for each layer in the control chain, identifying the direct owners for a corporation, the owners of these direct owners, and so on. This procedure stops once I reach the real ultimate owner. La Porta et al. (1999) used 10% and 20% voting rights criterion for establishing all the possible control chains; however such lenient criteria might not be appropriate for Russia where the free float is about 20% (See Table 4.4), and the ownership is highly concentrated. Most of the companies in Russia are controlled, by controlling shareholders, with 50% ownership⁹⁸. However, to avoid failing to trace the real ultimate owners in loosely held companies, I used the 20% voting rights criterion⁹⁹ for identifying possible control chains. In the case of multiple control chains, at 20% voting rights, I choose the one with the highest voting rights as the ultimate control chain and the entity (individual) at the apex layer of the ultimate control chain qualifies as the real ultimate owner.

Ultimate owners fall into one of four categories and are coded as indicator variables as follows:

⁹⁷ Source: Moscow Exchange, based on securities market presentation 2014.

⁹⁸ A study by the Institute for Industrial and Markets Studies at the Higher School of Economics in Moscow shows that 70% of Russian Joint-Stock Companies are controlled by dominant shareholders holding more than 50% of the shares. In a recent corporate governance survey conducted by Deloitte on 131 Russian listed companies, it was noted that 61% of the companies had a single ultimate owner who held a 64% ownership stake, on average. For the entire sample the average equity stake came to about 49% (See Deloitte, 2012).

⁹⁹ The 20% voting rights criteria for establishing control coincides somewhat with the recent “ultimate beneficial owner” definition provided in Russian Federal Law on “combating money laundering and financing terrorism as someone (“legal” or “physical person”) who ultimately controls (directly or indirectly) 25% of the capital in a Russian company.”

State-Federal and Regional: Equals zero if a national, state or regional government is the ultimate owner. In essence a direct ownership stake of federal government in public corporations is denoted by the Federal Agency for the Administration of State Property (FAASP). The agency carries out several functions by acting on behalf of the Russian Federation: 1) It recommends the potential candidates as representatives of the Russian Federation to the government for appointments to the boards of companies; 2) It prepares proposals for the government about exercising the right of veto in the case of golden shares; and 3) It also plays a key role in major company decisions relating to issues such as changes to the constitution, reorganization of the company and acquisition and disposition of major assets.

State Control through Holding companies: Equals one, for companies where the state control is exercised both directly and indirectly through the use of pyramids and have oligarchs as the second largest shareholders in the company, otherwise zero. Most of the state companies, controlled indirectly through holding companies, belong to strategically important industries, i.e., oil, gas, telecommunication etc., which came into existence as result of privatization.

Transparent Oligarchs: Equals one, if an oligarch or oligarchic family is the largest ultimate owner and their identity can be traced clearly along the control chain, otherwise zero.

Non-transparent oligarchs: Equals one, if the ultimate control chain has nominees or foreign offshore companies, otherwise zero. These chains usually either have industrial companies, individuals from offshore jurisdictions, offshore companies, two or more oligarchs sharing control jointly (*aka. Jointly-Controlled*), at the apex layer. The presence of these categories at the apex layer renders the tracing of the identities of real owners (i.e., Oligarchs) extremely challenging.

4.5.2.1 Calculation of Cash-flow Rights of the Ultimate Owners (UCFR)

In order to calculate the cash flow rights of the ultimate owners (UCFR) I used the methodology of Faccio and Lang (2002) and Rogers et al. (2007) methodology; i.e., the sum of direct and indirect cash-flow rights. They suggest a product approach for computing indirect cash-flow rights, which is a multiplication of ownership stakes along the control chain as illustrated for Gazprom below.

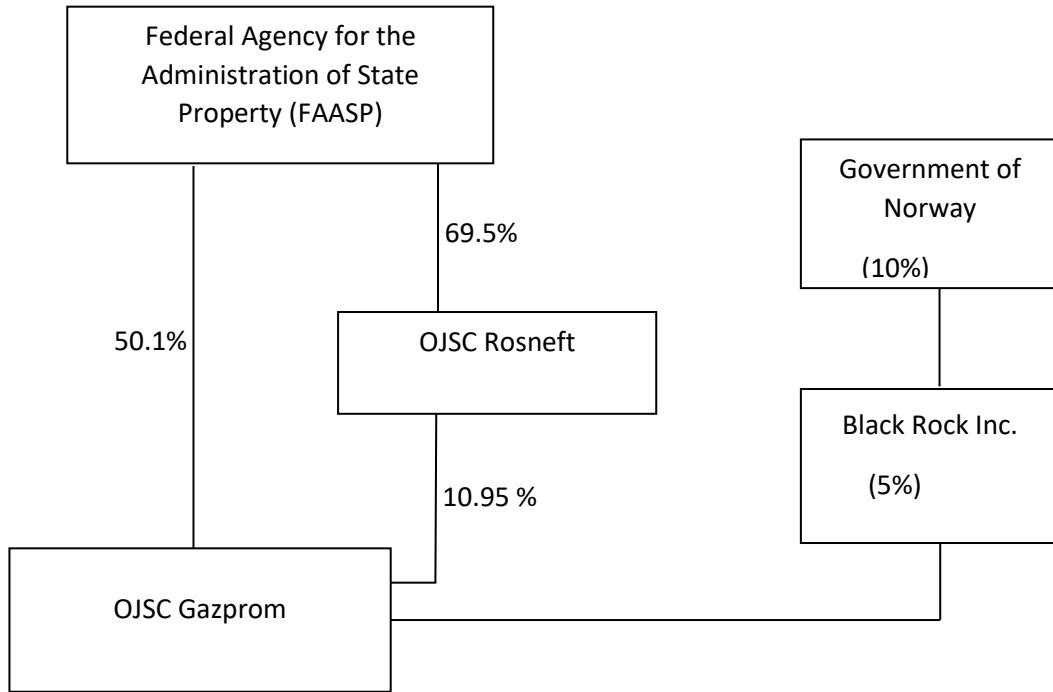


Fig 4.2 An excerpt from the control chain for OJSC Gazprom, owned by the state directly through the Federal Agency for Administration of State Property (FAASP) at 50% control threshold.

In the above example, the total cash flow rights of the ultimate owner (UCFR), State-Federal (FAASP), have two components: direct cash-flow rights (50.1%) and indirect cash-flow rights (7.61%). The indirect cash-flow rights are computed using the product method i.e., $69.5\% \times 10.95\% = 7.61\%$. Taken together, the total cash flow rights (UCFR) of FAASP amount to 57.71% ($50.1\% + 7.61\%$).

4.5.2.2 Calculation of Voting Rights (UVR)

The extent of control enjoyed by the ultimate owners is governed by the extent of their voting rights in the company (UVR). Prior literature highlights the use of Claessens et al.'s (2002) method of percentage of share-ownership at the weakest link along the control chain as a proxy for the Voting Rights of the controlling shareholders. That method of calculating voting rights is suitable for firms with less than 50% ownership by ultimate shareholders (See the example of OJSC Polyus Gold in Fig 4.3). However, most of the companies in my sample have Ultimate Owners with more than 50% ownership along the control chain, which enables them to enjoy absolute control over the operating, investing and financing policies of a company. Hence, I assume 100% (1) control for such controlling shareholders. I also assign 100% (1 in decimal) voting rights (UVR) to companies, if they are ultimately owned by Regional or Local governments holding a

Golden Share. For instance, OAO Tatneft, is a typical example where the Republic of Tatarstan being the ultimate owner (Republic of Tatarstan is a Federal Subject of Russia) has less than 50% ownership (38.37% Ownership) but enjoys full control over the company by holding a golden share.

Similarly, the voting rights (control rights) of ultimate owners (UVR) for companies with preference shares were scaled up by the percentage of preference shares issued by that particular company. This adjustment was not necessary for most of the companies where the ultimate owner maintained more than 50% ownership along the control chain because, the control rights (voting rights) cannot exceed 100% or 1 for any of the companies in my sample. For instance, OJSC Bashneft with 17.01% preference shares outstanding appears to be a classic example of such a situation, where no adjustment to the control rights (UVR) of the ultimate owner, regarding the preference shares, was needed. The ultimate owner, Mr Vladimir, holds more than a 50% stake, and therefore gets 100% control rights (UVR).

Finally, for a limited number of companies the ultimate owner maintains 50% control for most of the path, but along the chain there is one link where the rule of 50% is breached. For such companies, Claessens et al. (2002)'s criteria of weakest link for control rights is invoked. OJSC Polyus Gold's ownership structure, among others, presents such a situation as demonstrated in Fig 4.3.

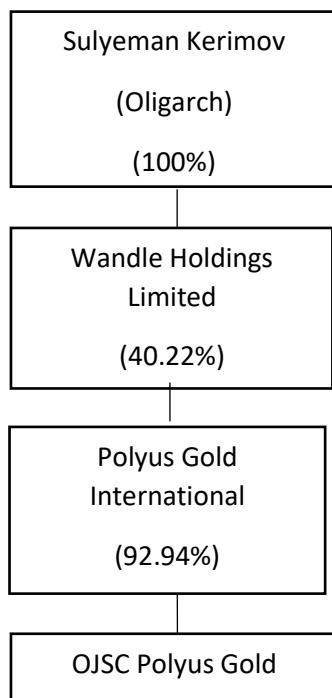


Fig 4.3 OJSC Polyus Gold with 40.22% control rights (UVR) assigned to the Ultimate Owner: Mr Suleyman Kerimov.

In Fig 4.3, the threshold ownership of 50% along the control chain is breached at Wandle Holdings Limited, therefore the control (voting) rights of the ultimate owner, Mr Suleyman Kerimov, is 40.22% (0.422), and the cash flow rights corresponding to the ultimate owner under the product method is 37.38% (100% X 40.22% X 92.94%).

4.5.2.3 Excess Control

Excess control denotes a discrepancy between the cash-flow and voting rights of the largest ultimate shareholders. It arises in companies with pyramid structures, cross-holdings or multiple class shares. Excess control is measured by two proxies: Excess Control-Dif and Excess Control-Rat. Excess Control-Dif is the difference between the voting and cash-flow rights of the largest ultimate shareholder i.e., UVR-UCFR (see Eq.4.1). The larger the difference, the higher the incentive for expropriation and the lower the stock price informativeness. In contrast, Excess Control-Rat is the ratio of voting rights of the largest ultimate shareholder (UVR) divided by the cash-flow rights (UCFR) as shown in Eq.4 2.

$$\begin{aligned} \text{Excess Control - Dif} \\ = \text{UVR} - \text{UCFR} \end{aligned} \quad \text{Eq 4.1}$$

$$\begin{aligned} \text{Excess Control - Rat} \\ = \frac{\text{UVR}}{\text{UCFR}} \end{aligned} \quad \text{Eq 4.2}$$

4.5.2.4 Ownership Concentration of the Ultimate Shareholders

Ownership concentration of the largest shareholder is measured by the cash flow rights of the ultimate owner (UCFR) as calculated earlier in section 4.5.2.1. Cash-flow rights, in essence, determines the extent of the equity stake of the ultimate owners in a company. The higher the stake, the costlier it gets for the controlling shareholders to appropriate resources away, as each dollar of expropriation will harm them more relative to minority investors.

4.5.3 Measurement of Stock Price Synchronicity and Model Specification

4.5.3.1 Stock Price Synchronicity and SYNCH

To estimate *stock price synchronicity* and *SYNCH*, I use the same procedure as outlined earlier in the sections 3.4.2.11 and 3.4.2.12 respectively, except $MKTRET_t$ and $INDRET_{k,t}$ in Eq 3.7 now represent weekly market returns based on the RTS-index and weekly industry returns based on the RTS-industry classification scheme respectively. The main industry categories under the RTS-scheme are Chemicals and Industrials, Oil and Gas, Metals and Mining, Electric and Telecom Utilities, Consumer Goods and Transport.

4.5.3.2 Model Specification

To test the relationship between the ownership concentration, control-ownership divergence and stock price synchronicity proposed in hypotheses H1 and H2, I estimate several specifications of the following regression model;

$$\begin{aligned} \text{SYNCH}_i = & \beta_0 + \beta_1 \text{UCFR}_i + \beta_2 \text{ExcessControl}_i + \sum_{j=1}^6 \beta_j \text{Controls}_i \\ & + \gamma_k + \epsilon_i \end{aligned} \quad \text{Eq. 4.3}$$

where the subscript i denotes a firm and j represents the set of firm-level control variables¹⁰⁰ that range from 1 to 6 including Size, Leverage, Diversification, Volume, Volatility and Free Float. SYNCH_i is a proxy for the stock price synchronicity as computed in Eq (3.8) and UCFR_i is the proportion of cash-flow rights held by the largest shareholder in firm i as described earlier in section 4.2.4. UCFR_i is expected to have a negative association with SYNCH as a result of incentive-alignment between the controlling and minority investors. ExcessControl_i is a proxy for divergence between the cash-flow and control rights of the largest ultimate shareholder, and in effect it shows the extent of entrenchment by the largest controlling shareholder. Both variants of ExcessControl_i , defined as Excess Control-Dif and Excess Control-Rat in Eqs. 4.1 and 4.2, are employed in the regression. $\sum_{j=1}^8 \beta_j \text{Controls}_i$ is a set of firm-specific variables

¹⁰⁰ For the definitions and detailed descriptions of these variables, refer to section 3.4.2.13 and Appendix Q.

that affect stock price synchronicity and are explained in detail in the subsequent paragraphs. Finally, γ_k captures the industry fixed effect for k industries, and ϵ_i is the unexplained variation in SYNCH for the i th firm.

4.5.3.3 Empirical Model for Testing the Effect of Ownership Type on Stock Price Synchronicity (SYNCH).

In order to test hypotheses H3a and H3b about the difference in the effect of ultimate owners' type on Stock Price Synchronicity, the above model in Eq. 4.3 is transformed into Eq. 4.4 by including three ownership indicator variables as defined earlier in section 4.5.2.

$$\begin{aligned} \text{SYNCH}_i \\ = \beta_0 + \beta_1 \text{UCFR}_i + \beta_2 \text{ExcessControl}_i + \sum_{g=1}^3 \beta_g \text{Ownership Type}_i + \sum_{j=1}^6 \beta_j \text{Controls}_i \\ + \gamma_k + \epsilon_i \end{aligned} \quad \text{Eq. 4.4}$$

$\sum_{g=1}^3 \beta_g \text{Ownership Type}_i$ is a set of three indicator variables representing three types of ultimate owners: state control through holding companies; Transparent oligarchs, and Non-transparent oligarchs. They are one when true and otherwise zero. Zero, being the reference case, refers to companies controlled directly by the State, either federal or regional. The intercept, β_0 , in Eq. 4.4 captures the synchronicity level associated with companies directly controlled by the State (federal or regional). All of the other variables are the same as in Eq. 4.3.

4.6 Results

4.6.1 Ownership Variables

Table 4.3 presents voting rights, cash-flow rights, and the difference between voting and cash-flow rights for several categories of ultimate owners. These are proxies for control rights, ownership rights and divergence between the control and ownership rights of the ultimate owners, separately. The average voting rights in Russia are 89%, which indicates an extremely high concentration of control being exercised by the ultimate owners. The average cash-flow rights (54%) suggest that the ownership environment in Russia is overwhelmed by majority- owned companies, making them comparable to “Concentrated (Controlled) Structures” theoretically envisaged by Bebchuk et al. (2000) and empirically found in most continental European countries including France, Germany, and Sweden. These results are qualitatively similar to Chernykh’s (2008) average control right of 53.88% for Russia because both point out a high concentration of control rights. However, the marked difference between the two results stems from the distinct control rights’ calculation methodology employed by the two studies. Estimates of control rights in this study tend to be upwardly biased owing to the assigning of 100% (1) control rights to ultimate owners having more than 50% control. Additionally, this result is consistent with highly concentrated control rights documented in Continental European countries such as Italy, Germany and Austria. Among these countries, Italy has the highest control rights (56.4%) followed by Germany (54.5%) and Austria (53.52%) (Faccio & Lang, 2002; Franks & Mayer, 2001; Volpin, 2002). These countries share similar reasons with Russia for higher control rights by the ultimate owners. The increased control rights in Germany and Austria originate from excessive use of non-voting stocks¹⁰¹ and pyramids, whereas in Italy it is caused by the greater participation of family and state in the corporate ownership structure.

¹⁰¹In Germany and Italy non-voting stock may not exceed 50% of stock capital. While, in Austria, there is no cap on the non-voting stock.

Table 4.3 Ultimate owners' cash-flow and voting rights in Russia.

Ultimate Owners	Firms	CF-Rights (UCFR) (%)		Voting Rights (UVR) (%)		Excess Control-Dif UVR-UCFR (%)		Excess Control-Rat UVR/UCFR		
		N	%	Mean	Median	Mean	Median	Mean	Median	
State-Federal and Regional	16	13.7	74	51	95	98	21	18	1.33	1.18
State-through holding Corporations	30	25.6	61	53	91	96	30	31	1.55	1.46
Transparent Oligarchs	43	36.8	58	54	87	93	29	29	1.49	1.48
<i>Non-Transparent Oligarchs</i>										
Industrial Companies	10	8.55	54	56	85	92	26	25	1.58	1.64
Jointly Controlled	10	8.55	41	38	83	93	24	22	1.64	1.68
Unknown Off-Shore	8	6.84	61	65	90	91	26	26	1.5	1.53
Subtotal-Non transparent Oligarch	28	23.9	51	53	86	92	35	29	1.58	1.59
Total	117	100	58	54	89	94	26	25	1.5	1.46

4.6.2 Control-Ownership Divergence of Ultimate owners

Table 4.3 also reports the divergence between Control and ownership rights for all categories of ultimate owners, measured as Excess Control-Dif and Excess Control-Rat (Voting-to- Cash-Flow rights ratio)¹⁰². It clearly shows that the ultimate owners hold more control rights than the cash-flow rights with a mean (median) 89% (94%) versus 58% (54%) - that enables them to have a mean (median) Excess Control-Dif of 26% (25%). The control-ownership divergence (25%) indicates likely possibilities of entrenchment and private benefits extraction by controlling shareholders; however, the majority of the negative effects of entrenchment is expected to be internalized due to the majority shareholdings of the controlling shareholders in “concentrated structures” in Russia (Bebchuk et al., 2000).

The divergence, expressed as Voting- to-cash-flow ratio i.e., Excess Control-Rat, also indicates a significant gap between the voting and cash-flow rights. The mean (median)

¹⁰² Excess Control, Excess voting rights and Voting-to cash-flow rights ratio correspond to divergence between voting and cash-flow rights of the largest controlling shareholder. Each of these proxies is calculated slightly differently e.g. Excess Control or Excess voting rights is the difference between voting and cash-flow rights while voting-to-cash-flow rights ratio is the ratio of voting and cash flow-rights.

Excess Control-Rat of 1.50 (1.46) have declined as opposed to the mean (median) Excess Control-Rat of 1.59 (1.70), documented earlier in an empirical study by Chernykh (2008). This decrease in voting-cash-flow rights ratio over the years can be associated with the substantial reduction in the state's voting-cash-flow rights ratio, resulting from the state's accumulation of higher equity stakes in companies affected by GFC.

Between types of ultimate owners, as shown in Table 4.3, the divergence between control and ownership varies. The control-ownership divergence is highest for companies controlled through state holding companies, whereas it is lowest for those directly controlled by the State. This is highlighted in the mean (median) excess control for the state (21% (18%)) and state holding companies (30% (31%)). This apparent dichotomy within the state category can be partly explained by the excessive use of preference shares, pyramiding, nominees and foreign offshore companies in the ownership structure of companies controlled through state holding companies. These control-enhancing schemes allow ultimate owners to leverage control over and above their cash flow rights.

In terms of magnitude of excess control, next in line are Oligarchs, both transparent and non-transparent. Their mean excess control, though the same, is very high (26%) for all types including Transparent Oligarchs, and Industrial Companies and Unknown Off-Shore companies as non-transparent Oligarchs. The identical excess control across several types of Oligarchs has occurred for a number of reasons. For example, in the case of Transparent Oligarchs and Industrial Companies (non-transparent oligarchs), the considerably high excess control has arisen because of lower cash-flow control rights. The lower average cash-flow rights of the Transparent Oligarchs (58%) and Industrial Companies (54%) as ultimate owners in part is due to increased participation of minority equity investors in these companies. This is plausible as these companies, being relatively more transparent, attract a range of outside equity investors, which is demonstrated in their higher free-floats (Transparent Oligarchs (23.04%), see Table B1, Appendix S). In contrast, unknown off shore companies derive their divergence between control and ownership rights largely because of greater average control rights (90%). Excessive large control rights for off-shore companies may create additional incentives and desires of oligarchs, being de-facto owners, not to share information about operations with outsiders.

4.6.3 Ownership Concentration of Ultimate Owners

The main proxy for ownership concentration of the largest controlling shareholder is the percentage of cash-flow rights (UCFR) held by the ultimate owner. The degree of cash-flow rights held by controlling shareholders determines the incentive-alignment or convergence of interest between the insiders who control the company and small outside investors. The mean (median) cash-flow rights is 58% (54%) across the sample (see column 3 of Table 4.3). This shows a much higher concentration of cash-flow rights compared to Chernykh's (2008) 33.84% average cash-flow rights reported for Russia. The apparent difference in the two results, in part, can be attributed to the distinct sample periods covered by the two studies. Chernykh (2008) study relates to the pre-Global Financial Crisis (GFC) period in 2008, whereas this study is based on the post-GFC period. A considerable difference between the two sample periods is that the former is characterized by low state participation, while the latter showed an increase in state participation. This increased state participation after 2008 emerged as a result of renationalization of companies afflicted by the GFC (Fiedorczuk & Grabowiecki, 2014). There is consistent evidence for this, as shown in Table 4.3 in the form of the highest cash-flow rights reported for companies controlled by the State (74%) and State control through holding corporations (61%).

Another notable observation from Table 4.3 is that the *unknown off-Shore* category of ultimate owners tends to have very high concentration of cash-flow rights with a mean (median) of 61% (65%). The primary reason for this could be that such owners plausibly make non-transparent ownership structures of companies and therefore find it hard to raise equity from external investors. Lower participation by outside equity investors is partially reflected in the extremely low free-float (10.6%) reported for these companies (see Table B1., Appendix S). Consequently, these companies tend to rely more on debt capital as displayed in the high leverage (58.96%) shown in Table B1. in Appendix S. Secondly, unknown off-shore companies have oligarchs behind them, who may deliberately prefer not to share ownership with outsiders as it enables them to keep their questionable exploitative practices under cover.

4.6.4 SYNCH and Control Variables

This section presents the summary statistics and a matrix of Pearson pairwise correlations for all the variables used in the paper. Table 4.4 shows R-squared and SYNCH, the two measures that estimate the degree of stock return variation explained by the market and

industry-wide returns. The mean and median R-square values are 0.252 and 0.191, respectively. These statistics are similar to the average R-squares of 0.23 and 0.21 reported for Russia in separate samples studies by Jin and Myers (2006a), and Fernandes and Ferreira (2008). The negligible discrepancy, if any, in the R-squares among the studies is due to the difference in time periods and sample sizes. For instance, Jin and Myers' (2006a) R-square estimates are based on the period ranging from 1990-2001, whereas those of Fernandes and Ferreira (2008) relate to a sample of 43 companies over 1980-2003. However R-square in Russia are much higher when compared with that of the developed countries e.g., US (0.02) and the UK (0.062). Similarly, the reported mean (-1.392) and median (-1.444) values of the dependent variable SYNCH are much greater than those documented by Piotroski and Roulstone (2004) for the US; i.e., mean (-1.742) and median (-1.754). The higher values of R-square and SYNCH clearly indicate that the stock prices of listed firms in an emerging market like Russia tend to incorporate more market- and industry-wide information in comparison to those of the developed markets such as the USA. This hints at a more opaque information environment prevailing in Russia, where less firm-specific information is either released or reflected in stock returns. Table 4.4 reports higher standard deviations, 0.200 and 1.239 respectively, for both R-square and SYNCH. These relatively high standard deviations are indicative of extensive cross-sectional variations in information environment across the firms within the sample. In other words this implies that the flow of firm-specific accounting information to the capital market varies considerably within Russia. Skewness and Kurtosis for SYNCH within the range of +1 and -1 suggest normality, which is a necessary requirement for the estimation of unbiased beta coefficients under Ordinary Least Squares (OLS) regressions.

Table 4.4 also shows that the largest controlling shareholders on average hold more control rights (0.89 (0.94)) than cash-flow rights (0.578(0.535)), as exhibited in the mean (median) for UVR and UCFR respectively. This divergence between control rights and cash-flow rights has resulted in an Excess Control-Dif of 0.259 and an Excess Control-Rat of 1.508, a measure for the voting to cash-flow rights ratio. Both measures of divergence between ownership and control rights i.e., Excess Control-Dif and Excess Control-Rat, suggest that the largest controlling shareholders enjoy much higher control than their ownership stake in the listed companies. The Excess Control-Dif and Excess Control-Rat have a standard deviation of 0.163 and 0.362 respectively. Higher standard deviations for Excess Control-Dif and Excess Control-Rat imply considerable cross-

sectional variation in divergence between cash and voting rights among the corporate ownership structures in Russia. This variation can be associated with the varying levels of divergence exhibited by the various owners types such as unknown off-Shore (non-transparent oligarchs) and state control through holding companies, which among the state category, recorded the highest divergence in ownership and control rights as mentioned earlier in section 4.6.2.

Table 4.4 also provides evidence in favour of relatively highly-levered companies in Russia as reflected in the mean leverage of 0.521. The increased leverage ratio for Russian firms indicates heavy reliance on bank borrowings alongside their inability to raise long-term equity capital from underdeveloped capital markets. In addition, the leverage has a standard deviation of 0.240, which shows that my sample has both low and high-levered firms. Similarly, in terms of size and diversification, my sample includes a cross-section of small and large firms (with a mean and standard deviation for size of 6.893 and 1.869, respectively) which are well diversified across several business segments as highlighted by the mean (2.73) and standard deviation (2.612) for Diversification. Finally, companies with a free float of only 0.2 (20%) may face the lack of depth in stock trading and suffer from low liquidity. These in turn could delay the speed of price adjustment and thus produce less synchronous stock prices i.e., low SYNCH. Earlier studies on Russia such as those by Wright et al. (2003) and Lazareva et al. (2009) estimated average free floats of 26.2% and 25% respectively. The fundamental reasons for the reduction in free-float in recent times are concerned with the increased renationalization of companies in core industrial sectors by the government and excessively high reliance on internal equity financing by the existing listed companies. The renationalization episode by the government was initiated in order to counter the risk of oligarchs selling strategic industrial companies to foreigners.

Table 4.4 Summary Statistics-Ownership, SYNCH and Control variables.

Variables	Mean	Std. Dev	Lower Quartile	Median	Upper Quartile	Skewness	Kurtosis
R-Squared	0.252	0.200	0.090	0.191	0.368	1.087	0.565
SYNCH	-1.392	1.239	-2.319	-1.444	-0.541	0.196	0.208
UVR	0.890	0.524	0.510	0.940	0.910	-3.476	4.321
UCFR	0.578	0.207	0.473	0.535	0.734	0.094	-0.661
Excess Control-Dif	0.259	0.163	0.123	0.252	0.413	0.032	-1.293
Excess Control-Rat	1.508	0.362	1.190	1.465	1.830	0.366	-0.625
Diff Cash-flow (UCFR1-UCFR2)	0.430	0.281	0.215	0.390	0.646	0.363	-0.890
Diff Cash-flow (UCFR1-UCFR2-UCFR3)	0.373	0.326	0.134	0.345	0.598	0.186	-0.809
Size	6.893	1.869	5.494	6.765	7.935	0.286	-0.357
Leverage	0.521	0.240	0.370	0.498	0.703	0.223	-0.591
Diversification	2.733	2.612	1.000	1.000	5.000	1.760	3.784
Volume	104.950	183.606	6.369	27.305	98.248	2.594	7.369
Volatility-Std. Dev Returns	2.357	1.639	1.154	1.967	2.910	1.893	4.565
Free Float	0.200	0.125	0.105	0.180	0.265	0.843	0.365

This table provides summary statistics of all the variables including ownership, stock price synchronicity and control variables. The sample contains 117 companies listed on the Moscow Exchange in 2013. R-squared and SYNCH refer to the R^2 statistic and the stock price synchronicity measures, respectively, that measures the co-movement of firm's stock returns with the market and industry returns. SYNCH, as a main proxy for stock price synchronicity, is computed as a logistic transformation of R^2 obtained from the modified market model regression outlined in Eq. 3.7. Excess control is a proxy for the divergence between the ownership and control rights of the largest controlling shareholder (ultimate owner). It is defined as the difference between the voting and cash-flow rights of the ultimate owner i.e., Excess Control-Dif (UVR-UCFR). UCFR is a proxy for the ownership concentration of the largest controlling shareholder. A brief description of all other variables is provided in Appendix Q.

Table 4.5 Pearson Correlation Matrix.

Variables	R-Squared	SYNCH	UCFR	Excess Control-Dif	Excess Control-Rat	Diff (1-2)	Diff (1-2-3)	Size	Leverage	Diversific	Volume	Volatility
R-squared	1											
SYNCH	0.9581 ^a	1										
UCFR	-0.3233 ^a	-0.3530 ^a	1									
Excess Control-Dif	0.1689 ^b	0.1818 ^a	-0.2133 ^a	1								
Excess Control-Rat	0.2457 ^a	0.2589 ^a	-0.5699 ^a	0.6721 ^a	1							
Diff (1-2)	-0.1524 ^b	-0.1808 ^b	0.9398 ^a	-0.2063 ^b	-0.4918 ^a	1						
Diff (1-2-3)	-0.1556 ^b	-0.1854 ^b	0.9394 ^a	-0.1871 ^b	-0.4844 ^a	0.9855 ^a	1					
Size	0.5075 ^a	0.4401 ^a	-0.1057	-0.0150	0.1359	-0.0568	-0.0262	1				
Leverage	-0.2118 ^b	-0.2025 ^b	-0.0784	-0.0064	-0.0955	-0.0727	-0.0980	-0.3279	1			
Diversification	0.3005 ^a	0.2876 ^a	-0.1877 ^b	0.0430	0.1305	-0.0986	-0.1153	0.4658 ^a	0.0214	1		
Volume	0.6172 ^a	0.5554 ^a	-0.0997	-0.0631	0.0890	-0.0078	-0.0176	0.4103 ^a	-0.0765	0.2113 ^b	1	
Volatility	-0.3346 ^a	-0.3585 ^a	0.1322	0.0775	-0.0183	0.0740	0.0610	-0.4310	0.2835	-0.2489	-0.2282	1
Free Float	0.2821 ^a	0.2925 ^a	-0.4530 ^a	0.1668 ^b	0.3498 ^a	-0.3436	-0.3092	0.3169	0.0022	0.2715	0.2902	-0.2139

This table reports Pearson pairwise correlation coefficients between the key variables used in the paper. The sample contains 117 companies listed on the Moscow Exchange in 2013. R-squared and SYNCH refer to the R^2 statistic and the stock price synchronicity measures, respectively that measure the co-movement of firm's stock returns with the market and industry returns. SYNCH, as a main proxy for stock price synchronicity, is computed as a logistic transformation of R^2 obtained from the modified market model regression outlined in Eq. 3.7 Excess control is a proxy for the divergence between the ownership and control rights of the largest controlling shareholder (ultimate owner). It is defined as the difference between the voting and cash-flow rights of the ultimate owner, i.e., Excess Control-Dif (UVR-UCFR). UCFR is a proxy for the ownership concentration of the largest controlling shareholder. A brief description of all other variables is provided in Appendix Q.

a-Statistical significance at the 1% level.

b-statistical significance at the 5% level.

c-statistical significance at the 10% level.

Table 4.5 reports pairwise Pearson correlation coefficients for information, ownership and control variables used in this essay. SYNCH is significantly negatively correlated with ownership concentration measure, i.e., UCFR ($r = -0.3530$), and is positively correlated with divergence of ownership and control measures, i.e., the Excess Control-Dif and Excess Control-Rat with correlations of 0.1818 and 0.2589 respectively. This negative relationship of SYNCH with ownership concentration, and a positive correlation with the divergence of ownership and control rights of the largest controlling shareholder measures, lend initial support to the incentive alignment and entrenchment effects envisaged in H1 and H2. In short, these correlations suggest that stock price synchronicity tends to decline when large shareholders increase their stake in the company (incentive alignment effect), and it behaves otherwise if the large shareholders have higher divergence between their voting and cash-flow rights. Additionally, the alternative measures of ownership concentration of the largest controlling shareholder (ultimate owner), i.e., Diff (1-2) and Diff (1-2-3), happen to have significant negative correlations with SYNCH (e.g. for Diff (1-2) r is -0.1808, and for Diff (1-2-3) r is -0.1854). These correlations serve as an additional support to the incentive alignment effect of the largest controlling shareholders. All the control variables are reported to have statistically significant correlations with SYNCH and their directions of relationship are consistent with the previous literature.

4.6.5 Regression Results and Analyses

In order to test the hypotheses outlined earlier in section 4.4 about the effect of ownership structure on stock price synchronicity, I estimated several specifications of Eq. 4.3 and Eq. 4.4 using a pooled ordinary least squares (OLS) method with an industry fixed effect. Regression results are presented in Columns 1 to 5 of Table 4.6, where results in columns 1, 2, 3, and 4 are based on Eq. 4.3 and Column 5 shows results estimated from Eq. 4.4. The t-statistics reported in parentheses are computed using robust standard errors corrected for heteroscedasticity and firm-level clustering.

To investigate the effect of divergence between control and cash-flow rights of the largest shareholder (H1) and ownership concentration of the largest controlling shareholder (H2) on stock price synchronicity (SYNCH), I begin with the most basic model, shown as Baseline model in column 1. The baseline model is estimated by regressing stock price synchronicity against ownership concentration and divergence between control and cash-flow rights of the ultimate owner after controlling for firm size. In line with initial

evidence provided by the positive correlation coefficient for Excess Control-Dif, a proxy for control-ownership divergence, the beta coefficient for Excess Control-Dif is positive and statistically significant at the 5% level of significance under the baseline model. This result confirms the argument provided in H1, that the divergence between voting and cash flow rights entrenches the controlling shareholders and encourages them to take self-interested actions, which motivate them to restrict the flow of firm-specific information to the market. Given less and limited quantity of firm-specific information being available, minority investors resort to industry- and market-wide information for pricing stocks, which ultimately results in higher stock price synchronicity.

When I estimate the full model by regressing stock price synchronicity against ownership structure variables along with all the firm-specific control variables (See Columns 2, 3, 4 and 5 in Table 4.6), the beta coefficient for Excess Control-Dif persistently remains positive and statistically significant at the 5% and 10% thresholds. These positive beta coefficients for Excess-Control-Dif suggest that the information asymmetry between the controlling and minority shareholders, as reflected in greater stock price synchronicity, worsens when there is a divergence between the control and cash-flow rights of the ultimate owner. This result is comparable to the findings of two recent studies, in civil-law countries, by Feng et al. (2015) and Boubaker et al. (2014) in China and France, respectively. They document that divergence between voting and cash-flow rights of the largest shareholder increases the stock price synchronicity, leading to a poor information environment for the company.

Next, the UCFR coefficients in Table 4.6 provide results for H2, investigating the effect of ownership concentration of the largest controlling shareholder on stock price synchronicity. UCFR, being a proxy for ownership concentration, is negative and statistically significant at the 5% significance level, under both baseline and various specifications of the full model. The slight differences in the magnitude of coefficients for UCFR in the Full model in columns 2, 3, 4 and 5 relate to the distinct composition of the models employed. The full model in Columns 2 and 3 shows the results for the two separate regressions that included only one ownership variable at a time between UCFR and Excess Control-Dif, whereas the full model in column 4 is estimated using both of the ownership variables simultaneously. The negative association between UCFR and Stock price synchronicity suggests that stock returns for firms with higher ownership stakes by the ultimate owner tend to incorporate more firm-specific information relative to industry and market-wide information, and have lower stock price synchronicity. This

result favours the notion of incentive-alignment proposed in H2, which contends that when controlling shareholders have a high cash-flow stake in a firm it will align the interest of controlling shareholders with those of outsiders and make the expropriation of minority shareholders more expensive. With less expropriation of minority shareholders, the incentive for hiding firm-specific information is reduced, and as a result a greater component of stock returns represent firm-specific information, translating into lower stock price synchronicity. This result also supports the argument that ownership concentration, in countries like Russia, can substitute for weak investor protection environment by reducing the information asymmetry between the controlling and non-controlling shareholders.

Finally, column 5 in Table 4.6 reports the results for the remaining hypotheses, H3a and H3b, examining the effect of the presence of several kinds of ultimate owners on the information environment of a company. The intercept (-0.1050) denotes the stock price synchronicity level associated with companies directly controlled by the state. The statistically significant negative beta coefficient (-0.0109) for *State-through Holding Corporation* suggests that companies, controlled indirectly by the state through holding companies, have 0.0109 units lower stock price synchronicity than those reported for companies controlled directly the state (intercept= -1.050). This finding supports the idea outlined in H3a that the presence of oligarchs, in the ownership structure of the companies controlled indirectly by the state improves the overall information environment of the company as they keep a check on the activities of bureaucrats responsible for running such companies and inhibit them from pursuing sub-optimal political objectives.

Subsequently, in column 5, the statistically significant beta coefficients of -0.2419 and -0.1779 for transparent oligarchs and non-transparent oligarchs offer evidence in support of H3b. The values show that the magnitude of synchronicity for companies owned by transparent oligarchs are 0.2419 units less than for those controlled by the state, whereas the non-transparent oligarchs show 0.1779 units, a relatively smaller reduction in synchronicity relative to the state. These findings indicate that companies with clear and traceable control chains, i.e., transparent oligarchs, have a better information environment than companies with non-traceable and obscure ownership chains such as are used by non-transparent oligarchs. The excessive use of nominees and unknown offshore companies in the ownership structure of non-transparent oligarchs constrains these companies from disseminating firm-specific information publicly. Thus, lower firm-specific component in stock returns relative to the market and industry-wide component

translates to higher stock price synchronicity. These findings provide support to those of Hutton et al. (2009) and Jin and Myers (2006b) who note that higher firm opacity forces investors to rely on publicly available market and industry; which contributes to higher stock price co-movement with market and industry factors and less informative stock prices.

Table 4.6. The Effect of Ownership Concentration, Voting and Cash-flow Rights Divergence and Ultimate Owner Type on Stock Price Synchronicity (SYNCH).

Independent Variables	Predicted Sign	Baseline Model	Full Model				Economic Impact (Standardized Beta Coefficients)
		(1)	(2)	(3)	(4)	(5)	
<i>Panel A: Ownership variables</i>							
<i>UCFR</i>	-	-0.8332 ^b (-2.05)	-0.9959 ^b (-2.15)		-0.8860 ^b (-1.97)	-0.9006 ^b (-2.03)	-0.1495
<i>Excess Control-Dif</i>	+	0.3040 ^b (1.97)		1.1093 ^b (2.23)	0.97861 ^b (1.78)	0.9394 ^c (-1.98)	0.1244
<i>State -Through Holding Corporation</i>	-						-0.0109 ^c (-1.87)
<i>Transparent Oligarchs</i>	-						-0.2419 ^b (-2.01)
<i>Non-Transparent Oligarchs</i>	+						-0.1779 ^b (-1.99)
<i>Panel B: Control variables</i>							
<i>Size</i>	+	0.2708 ^a (2.96)	0.0840 ^b (2.07)	0.0802 ^b (2.13)	0.0866 ^b (2.18)	0.0797 ^c (1.78)	0.1198
<i>Leverage</i>	-		-0.5389 ^b (-2.10)	-0.4382 ^b (-1.99)	-0.4800 ^c (-1.87)	-0.4916 ^c (1.89)	-0.0960
<i>Diversification</i>	+/-		0.0345 (0.85)	0.0377 (0.93)	0.0317 (0.79)	0.0397 (0.96)	0.0842
<i>Volume</i>	+		0.0028 ^a (5.25)	0.0029 ^a (5.34)	0.0029 ^a (5.43)	0.0029 ^a (5.19)	0.4332
<i>Volatility</i>	-		-0.1172 ^c (-1.73)	-0.1377 ^b (-2.00)	-0.1362 ^b (-2.00)	-0.1362 ^b (-1.97)	-0.0564
<i>Free Float</i>	+		-0.0231 (-0.03)	0.3944 (0.48)	-0.2453 (-0.28)	0.0682 (0.94)	-0.0069
<i>Intercept</i>		-3.2441 (-4.42) ^a	-1.2269 ^a (-2.69)	-2.167 ^a (-3.78)	-1.5082 ^b (-2.22)	-1.050 ^c (-1.76)	
Industry dummies		Not Included	Included	Include	Include	Include	Included
N		117	117	117	117	117	117
Adjusted R ²		22.72	38.72%	38.59%	39.78%	38.77%	
F-Statistic		12.37	11.29	11.23	10.92	10.53	

This table reports results for the several specifications of the Ordinary Least Squares (OLS) regression model provided in Eq.4.3 and Eq.4.4. These results are based on a sample of 117 listed companies from the Moscow Exchange in 2013. The dependent variable is SYNCH, which is computed as a Logarithmic transformation of R² obtained from a modified regression model in Eq.3.7 Values in parentheses denote t-statistics computed using robust standard errors corrected for heteroscedasticity and clustering at the firm-level. Subscripts a, b and c represent 1%, 5% and 10% significance levels, respectively. All other variables are as defined in Appendix Q.

Now I turn to the interpretation of control variables. Size coefficients are positive and significant at the 1%, 5% and 10% levels separately. This suggests that, because of more publicly available information, larger firms tend to incorporate more industry- and market-wide information as compared to smaller firms (Chan & Hameed, 2006; French & Roll, 1986). There tends to be more publicly available information for larger firms. Similarly, the coefficients for Volume are positive and statistically significant throughout at the 1% level, indicating that actively traded stocks incorporate market- and industry-level information on a timely basis and make the stock prices more synchronous. Size and Volume results, together, are in agreements with the Fernandes and Ferreira (2009) idea of that public announcements from large firms serve as a leading macro-economic indicator for small firms and this availability of market-wide public information gets incorporated into stock returns faster through the increased trading volumes. Finally, Leverage beta coefficients are negative and significant at the 5% and 10% level. This highlights the fact that highly geared companies in Russia have lower stock price synchronicity. Such reductions in stock price synchronicity cannot be attributed to the release of more firm-specific information but rather to a shift of firm-specific risk from equity holders to the debt-holders as witnessed by Hutton et al. (2009).

In addition to statistical significance reported earlier, the economic significance of ownership and control variables is also estimated using Eq.4.3 and is reported in the last column of Table 4.6. Of the two ownership variables, the ownership concentration of the largest shareholder (UCFR) has the highest economic impact on synchronicity followed by the voting-cash-flow rights divergence. One standard deviation increase in UCFR leads to a 14.95% decrease in stock price synchronicity on average. This amounts to an approximately 0.2081 (0.1495×1.392) decrease in the mean SYNCH of 1.392 provided in Table 4.6. Following UCFR, separation of control and cash-flow rights, i.e., Excess Control-Dif has an economic significance of 0.1244. This indicates that one standard deviation increase in Excess Control-Dif results in a 12.44% increase in stock price synchronicity. This comes to about a 0.1731 increase in the SYNCH, computed as $0.1244 \times 1.392 = 0.173154$. Among the control variables the volume, being a proxy for liquidity, has the greatest economic impact on stock price synchronicity followed by firm leverage and size. These three firm characteristics should in principle matter the most for the information environment of less developed capital markets, such as Russia, which have a few large listed companies that trade infrequently on the stock market.

4.6.6 Robustness Checks

In this section I check the reliability of results by employing alternative proxies for ownership structure variables. First, I substitute *Diff Cash-Flow (1-2)* and *Diff Cash-Flow (1-2-3)*, denoting the difference in the cash-flow rights of the two- and three-largest shareholders respectively, as proxies for the ownership concentration of the largest shareholder in Eq.4.4, because, typically, listed companies in Russia have 2 to 3 block holders in their ownership structures who hold more than a 5% stake (mean block holders- 2.487-see Appendix B). The larger disparity in the cash-flow stakes of the largest, second-largest and third-largest shareholder can indicate a higher ownership concentration of the controlling shareholder. Second, some may argue that it is not the absolute difference between the voting and cash-flow rights of the controlling shareholders that drives the level of entrenchment; rather, it is every unit of marginal control relative to the cash-flow rights that matters. Thus, *Excess Control-Rat*, calculated as the ratio of voting and cash-flow rights of the largest shareholders have been included in Eq. 4.4 as a proxy for divergence. Last, results for non-transparent oligarchs earlier in Table 4.6 recorded the information implications for the entire group as a whole without considering the subtle differences in synchronicity among the three sub-categories such as Industrial Company, jointly Controlled and *Unknown off shore Company*. These categories vary in the degree of transparency of tracing the identities, hence three indicator variables representing each of these, instead of non-transparent oligarchs has been substituted in Eq. 4.4. Following these substitutions Eq 4.4 is re-estimated as Eq.4.5 as follows.

$$\begin{aligned}
 \text{SYNCH}_i = & \beta_0 + \beta_1 \text{Diff CashFlow}_i + \beta_2 \text{Excess Control - Rat}_i \\
 & + \sum_{g=1}^5 \beta_g \text{Ownership Type}_i + \sum_{j=1}^6 \beta_j \text{Controls}_i \\
 & + \gamma_k \\
 & + \epsilon_i
 \end{aligned} \tag{Eq. 4.5}$$

The *Ownership Type*_i in Eq. 4.5 differs from the one in Eq 4.4 by replacing non-transparent oligarchs with the three indicator variables that constitute non-transparent oligarchs; *Industrial Company*: equals one, if a non-financial company is at the apex layer of the ultimate control chain with nominees or foreign offshore, otherwise zero; *Jointly-controlled (JC)*: equals one, if two or more oligarchs jointly control the company at the apex layer of the ultimate control chain, otherwise zero; *Unknown Off-Shore Company*: equals one, if an offshore company is at the apex layer of the ultimate control chain, based in the British Virgin

Islands, Panama, Bahamas, Cyprus, Cayman Islands¹⁰³, Bermuda, or Luxembourg, otherwise zero.

The regression results for Eq. 4.5 are provided in Table 4.7. The results are qualitatively equivalent to those produced earlier in Table 4.6. *Excess Control-Rat* coefficients, being positive and significant at the 5% level under columns 4-6, provide additional evidence in favour of entrenchment behaviour of large controlling shareholders (H1). This positive association between *Excess Control-Rat* and stock price synchronicity hints at the information hiding behaviour of the largest shareholders when there is a greater divergence between voting and cash-flow rights of the largest shareholder. The coefficients for *Diff cash flow (1-2)* and *Diff cash-Flow (1-2-3)* are negative and significant at 5% and 10% thresholds throughout columns 1, 2 and 4-6. These results for the two separate proxies of ownership concentration add further support to the incentive-alignment effect under H2, implying that the rising difference between the ownership stakes of the first, second and third largest shareholders tends to decrease the stock price synchronicity. Among the non-transparent oligarchs the beta coefficients, in column 6 for *Jointly Controlled (-0.2014)* and *Unknown Off shore companies (-0.1538)*, are negative and significant at the 5% and 10% thresholds respectively. Unknown offshore oligarchs are the least transparent and show less reduction in the stock price synchronicity i.e., -0.1538 points, relative to jointly controlled companies (-0.2014 points) that are relatively more transparent. These results confirm initial results about mean SYNCH for the two categories in Appendix B.

The mean SYNCH for unknown offshore (-1.384) is greater than the mean SYNCH for jointly controlled companies (-1.536) (See Appendix B). Having the most opaque ownership structure, Unknown off shore are either unable or unwilling to raise funds externally to avoid dilution in their control, as reflected in their lowest free float (See Appendix B). Overall, this highlights the fact that the level of synchronicity among different categories of non-transparent oligarchs is not homogenous; rather, it varies with the level of opaqueness in the ownership structure. The relatively less non-transparent ownership structures such as jointly controlled depict a better information environment compared to the more non-transparent companies such as *Unknown off shore*.

¹⁰³ About 95% of the foreign offshore companies in the control structures of non-transparent companies in this study belong to the jurisdictions that have high offshore orientations, as highlighted in bold in Appendix T, with flexible financial regulations, zero or very low taxation and high economic crime.

Table 4.7 Effect of Alternative Measures of Ownership Concentration, Voting Cash-Flow Divergence on Stock Price Synchronicity (SYNCH)

Independent Variables	Predicted Sign	Baseline Model			Full Model		
		(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: Ownership variables</i>							
UCFR	-	-0.6560 ^b (-2.02)					
Excess Control-Dif	-		-0.5945 ^b (-1.99)		-0.2802 ^c (-1.76)	-0.3039 ^c (-1.90)	-0.3271 ^c (-1.94)
Excess Control-Rat	+			0.4404 ^b (2.28)	0.6284 ^b (2.19)	0.6213 ^b (2.10)	0.6016 ^b (2.03)
State -Through Holding Corporation	-					-0.0301 ^c (-1.95)	-0.0138 ^c (-1.69)
Transparent Oligarchs	-					-0.2478 ^b (-1.97)	-0.2543 ^c (-1.83)
Non-Transparent Oligarchs	+					-0.2271 ^c (-1.69)	
Industrial Company							0.0236 (1.32)
Jointly Controlled							(-0.2014) ^b (-2.15)
Unknown Off Shore							(-0.1538) ^c (-1.64)
<i>Panel B: Control variables</i>							
Size	+	0.0790 ^b (1.99)	0.0841 ^c (1.83)	0.0763 ^c (1.88)	0.0880 ^b (2.04)	0.0785 (1.48)	0.1067 (1.50)
Leverage	-	-0.5295 ^b (-2.09)	-0.5407 ^b (-2.04)	-0.3633 ^c (1.92)	-0.4410 ^c (-1.78)	-0.4499 ^c (-1.86)	-0.3376 ^c (-1.71)
Diversification	+/-	0.0399 (0.99)	0.0366 (0.91)	0.0358 (0.89)	0.0306 (0.77)	0.0382 (0.93)	0.0366 (0.89)
Volume	+	0.0029 ^a (5.33)	0.0029 ^a (5.30)	0.0028 ^a (5.25)	0.0029 ^a (5.49)	0.0029 ^a (5.25)	0.0028 ^a (5.06)
Volatility	-	-0.1221 ^c (-1.79)	-0.1221 ^c (-1.80)	-0.1404 ^b (-2.05)	-0.1421 ^b (-2.11)	-0.1451 ^b (-2.09)	-0.1363 ^c (-1.95)
Free Float	+	0.1689 (0.20)	0.2021 (0.24)	0.0663 (0.08)	-0.0476 (-0.06)	0.1109 (0.13)	0.3006 (0.34)
Intercept		-1.5397 ^b (-2.56)	-1.6243 ^a (-2.79)	-2.4815 ^a (-4.09)	-2.6627 ^a (-3.58)	-1.4583 ^b (-2.09)	-1.4481 ^c (-1.91)
Industry dummies		Included	Included	Included	Included	Included	Not Included
N		117	117	117	117	117	117
Adjusted R ²		38.45%	38.72%	39.40%	40.81%	39.87%	39.62%
F-Statistic		11.17	11.29	11.59	10.82	9.53	9.98

This table reports results for the several specifications of the Ordinary Least Squares (OLS) regression model provided in Eq.4.5. These results are based on a sample of 117 listed companies from MICEX-RTS in 2013. The dependent variable is SYNCH, which is computed as a logarithmic transformation of R² obtained from a modified regression model in Eq.3.7 Values in parentheses denote t-statistics computed using robust standard errors corrected for heteroscedasticity and clustering at the firm-level. Subscripts a, b and c represent 1%, 5% and 10% significance levels, respectively. All other variables are as defined in Appendix Q.

4.7 Does stock price synchronicity represent firm-specific accounting information?

The extant literature is divided over the information versus noise interpretation of stock price synchronicity measure (SPS). The information interpretation, supported by Morck et al. (2000), Durnev et al. (2003), Piotroski and Roulstone (2004), and Hutton et al. (2009), implies that R^2 measures the extent of firm-specific information reflected in stock prices and firms with low-synchronicity will have stock prices that capture relatively more firm-specific information. In contrast, the noise interpretation argues that stock price synchronicity is more a measure of noise than of the degree of firm-specific non-public information incorporated into stock prices. The latter view is shared by Alves et al. (2010), Li et al. (2014), and Skaife et al. (2006), among others. In this section, I test whether stock price synchronicity validly reflects the incorporation of measures of firm-specific information. In doing so I have utilized absolute discretionary accruals as a proxy for firm-specific information, which has been widely used as a measure for firm-level accounting opacity (Hutton et al., 2009) and financial reporting quality (Biddle, Hilary, & Verdi, 2009) in prior studies. Absolute discretionary accruals, being a proxy for opportunistic earnings management, are expected to be positively related to SPS. Since inside controlling managers enjoy ultimate control over accounting practices and estimating discretionary accruals, I can also test as to how *incentive alignment* and *entrenchment effects* associated with large shareholders' ownership concentration (UCFR) and control-ownership divergence influence stock price synchronicity, a proxy for information asymmetry between inside controlling managers and outside minority investors.

The primary function of financial statements is to convey insider information about the firm's true performance. Under accrual accounting, earnings or net income is widely accepted as a performance measure by the investors. Earnings, comprising of cash flows and accruals, is an estimate of all the current and expected future cash flows associated with economic transactions in earlier reporting periods. Behind the estimation of earnings lies the accruals, such as accounts receivables and depreciation, which are used to allocate revenues to the accounting period in which they are earned and expenses to the period in which they are incurred. Management has primary responsibility for estimating accruals and earnings correctly, as they are management's estimates of expected future net cash flows reported to outsiders. Over the life of the firm, accruals must sum to zero and earnings must equal net cash flow, however, during specific financial periods there could be a gap between earnings and cash flows which denotes the amount of accruals. Under certain conditions the deviation between earnings and cash flows is reasonable, e.g., arising from growth in credit sales. These

unbiased accruals, also known as *normal accruals*, are usually followed by cash flow realizations that remove or reverse initial accrual (e.g., accounts receivables are reduced when cash is received from credit customers). At other times, the disparity between earnings and net cash flows arises because of earnings manipulations and these inaccurate or *discretionary accruals* are reversed out by oppositely signed accruals rather than through cash flow realizations.

Sloan (1996) finds that the accrual component of earnings is relatively more erroneous compared to the cash flow component and it also obscures some information about firm fundamentals. The management's magnitude of error in estimating accruals reflects the quality of accruals and earnings (Dechow & Dichev, 2002). This error can be either intentional or unintentional; however, in either case it is indicative of the quality of a firm's accounting information consistent with FASB's criteria for a high-quality information, being free from error and bias and providing a faithful representation, outlined in SFAC No 2¹⁰⁴. In essence, lower errors in accruals estimations imply high quality accounting information as they will allow investors to map closely to past, current and future cash flows, and therefore are deemed highly relevant and reliable for making investment decisions with regard to stocks¹⁰⁵.

Healy and Wahlen (1999), in their survey of the literature on earnings management, discovered that informed investors attach more importance to abnormal accruals relative to normal accruals when valuing stocks, because they see it as a sign of earnings management—an intentional manipulation of reported earnings. Several other studies also document the information role of discretionary accruals and find that it provides information about the future profitability and cash flows of firms to current and potential stock investors (see e.g., DeFond & Park, 1997; Fairfield, Whisenant, & Yohn, 2003). Overall, high discretionary accruals are taken at par with earnings management and this very earnings management, in turn, is mostly considered detrimental to the accounting and financial reporting quality. Theoretical studies assert that a firm's accounting policies for estimating earnings, its disclosure policies and its financial reporting quality can influence the firm information environment by affecting the firm-specific component of return volatility (see e.g., Easley &

¹⁰⁴ The Financial Accounting Standards Board (FASB) defines quality of earnings in Statements of Financial Accounting Concepts (SFAC) No. 2 Glossary and Terms as “The quality of information that ensures that information is reasonably free from errors and biases and faithfully represents what it purports to represent”.

¹⁰⁵If financial information is to be useful, it must be relevant and faithfully represent what it purports to represent. The usefulness of financial information is enhanced if it is comparable, verifiable, timely and understandable. (IASB 2010, paragraph QC4)

O'hara, 2004; O'Hara, 2003) and this was empirically investigated by Hutton et al. (1999) who found that earnings management, measured by absolute discretionary accruals, being a proxy for accounting opacity and poor financial reporting transparency, are associated with higher R², thus indicating less reliance of investors on inferior quality firm-specific information. In summary, inside managers can use accrual accounting to manipulate earnings which is reflected in the discretionary accruals. Higher discretionary accruals, when intentional represent opportunistic earnings management on the part of managers who intend to hide true firm performance or their self-serving behaviour in securing them private benefits, from outside investors. In contrast, discretionary accruals, arising from unintentional errors in estimating accruals and earnings imply a low quality accounting and reporting environment, which makes accounting information less relevant and reliable for investors. Either way, in the former case when perceived as a proxy for earnings management by the investors or in the latter case, being a gauge for opaque and low quality accounting information, it will increase information asymmetry between inside managers and small outside shareholders and consequently raise stock price synchronicity.

To test the information effect of absolute discretionary accruals on stock price synchronicity, I used modified Jones model (Dechow, Sloan, & Sweeney, 1995) which enabled me to disentangle the normal and discretionary accruals from the total accruals. Discussing the pros and cons of various accrual estimation models, Dechow, Ge, and Schrand (2010) claim that modified Jones model produce accurate results in estimating abnormal accruals under the situations where firms are involved in revenue manipulation. The modified jones model may accurately estimate abnormal accruals as they frequently indulge in revenue manipulation for tax purposes (Goncharov & Zimmermann, 2006). In estimating abnormal accruals, I first estimate the following cross-sectional regression equation (Eq.4.6) for each of the four industries¹⁰⁶.

$$\frac{TA_{i,t}}{Assets_{i,t-1}} = \alpha_0 \frac{1}{Assets_{i,t-1}} + \beta_1 \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + \beta_2 \frac{PPE_{i,t}}{Assets_{i,t-1}} + \epsilon_{i,t} \quad Eq. 4.6$$

¹⁰⁶Because there were fewer firms in certain industries e.g., 4 companies in Telecoms, and 8 and 9 companies in the Chemicals and Transport sectors, respectively, it was not possible to estimate industry-wise regression. Therefore, industries with smaller number of firms were combined with similar industries having relatively greater number of firms. Consequently, the total number of industrial groups reduced to four, after combining chemicals with industrials, Telecoms utilities with electric utilities, Metal and Mining and oil and gas, and Transport with Consumer Goods.

where $TA_{i,t}$ denotes the total accruals from firm i in year t (2013)¹⁰⁷, estimated as income before extraordinary items minus cash flow from operating activities adjusted for extraordinary items and discontinued operations. $\Delta Sales_{it}$ is the change in sales for firm i in year t . PPE_{it} denotes property, plant, and equipment for firm i at the end of year t .

Next, I compute the non-discretionary accruals ($NDA_{i,t}$) for each firm in Eq. 4.7, by using the industry-wise parameter estimates from Eq.8 for α_0 , β_1 and β_2 . The presence of $\Delta Rec_{i,t}$ in Eq. 4.7 is the standard modification of Jones (1991), which controls for changes in sales because of aggressive recognition of credit sales by management.

$$NDA_{i,t} = \hat{\alpha}_0 \frac{1}{Assets_{i,t-1}} + \hat{\beta}_1 \frac{\Delta Sales_{i,t} - \Delta Rec_{i,t}}{Assets_{i,t-1}} + \hat{\beta}_2 \frac{PPE_{i,t}}{Assets_{i,t-1}} \quad \text{Eq. 4.7}$$

Finally, I compute discretionary accruals $DiscAccruals_{i,t}$ as the difference between Total accruals scaled by lagged total assets and $NDA_{i,t}$ as given below in Eq. 4.8:

$$Discaccruals_{i,t} = \frac{TA_{i,t}}{Assets_{i,t-1}} - NDA_{it} \quad \text{Eq. 4.8}$$

The discretionary accruals from the above equation can be either positive or negative. Positive values indicate income increasing earnings management and negative ones signify otherwise (i.e., income decreasing). Since earnings management is conventionally measured by the extent of discretionary accruals in absolute terms I therefore, consistent with prior studies (e.g., Gabrielsen, Gramlich, & Plenborg, 2002; Klein, 2002; Rajgopal & Venkatachalam, 2011), took the absolute value of discretionary accruals ($AbsDiscAccruals_{it}$) and use it as a proxy for earnings and accounting information quality.

4.7.1 Interactive effect of Ultimate Owners' Ownership Concentration, Voting-cash flow Divergence and Discretionary Accruals on Stock Price Synchronicity

I then turn my attention to understanding the incremental effect of ownership concentration and voting-cash flow divergence of the largest controlling shareholders on earnings management practices, and its impact on stock price synchronicity. Roll (1988) argues that the arrival of private and non-public firm-specific information contributes to reducing R^2 . Accounting estimates and the disclosure of financial information is private to managers

¹⁰⁷ The subscript t in Eqs.4.6, 4.7 and 4.8 does not indicate the change in time as the study used one year data; rather it refers to the current time period i.e., 2013.

unless disclosed to outside minority investors. The degree of incorporation of private firm-specific information into stock prices is contingent upon the level of trust exhibited by arbitrageurs in the firm-specific information, and that trust in turn, according to Morck et al. (2000), is a product of level of country's investor protection. Similarly, countries with less investor protection have less credible firm-specific information and therefore discourage informed trading in the market, which leads to higher stock price synchronicity. However, in a country like Russia, consistent with the notion advocated by Shleifer and Vishny (1997) and La Porta et al. (1999), that the lack of investor protection faced by investors and the weak legal and institutional infrastructure can be compensated by the ownership concentration of the largest shareholder, which is commonly used as a mechanism for private enforcement of property rights. This advocated by the confidence they entrust to the information the more informed the trading ill credibility and usefulness of firm specific information for the arbitrageurs to trade on if the investor protection in the country is low. In the presence of less informed traders and more noise traders the firm-specific information for the arbitrageurs in particular is determined by the strength earnings management, is negatively associated with higher idiosyncratic volatility hence higher stock price synchronicity.

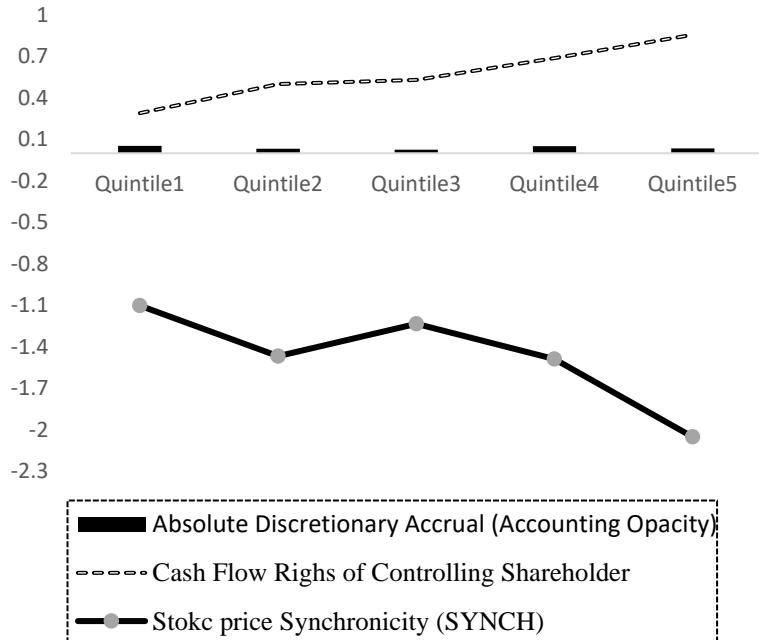
In case of entrenchment effect in the presence of large divergence between voting and cash flow rights firms have stock have been having selfish agenda and therefore the bid-ask spreads have large component of information asymmetry in them. To gauge the *standalone* effect of earnings quality, and its *combined* effect with *cash-flow concentration* and *voting cash flow divergence* of the largest controlling shareholders, on stock price synchronicity, I estimate the regression model outlined in Eq. 4.9.

$$\begin{aligned} \text{SYNCH}_i = & \text{UCFR}_i + \text{ExcessControl}_i + \text{AbsDiscAccruals}_i + \text{UCFR}_i \\ & * \text{AbsDiscAccruals}_i + \text{ExcessControl}_i * \text{AbsDiscAccruals}_i \\ & + \sum_{j=1}^6 \beta_j \text{Controls}_i + \gamma_k + \epsilon_i \end{aligned} \quad \text{Eq. 4.9}$$

In the above equation, AbsDiscAccruals_i denotes absolute discretionary accruals for firm i , and being a proxy for poor earnings and accounting quality, I expect a positive sign for its coefficient which will confirm the information role of Stock price synchronicity. While it is the magnitude that matters for beta coefficients of $\text{UCFR}_i * \text{AbsDiscAccruals}_i$ and $\text{ExcessControl}_i * \text{AbsDiscAccruals}_i$ since it allows me to measure the incremental effect of ownership concentration and voting-cash flow divergence of the largest shareholder on

Stock Price Synchronicity via absolute discretionary accruals - a measure of earnings and accounting quality. Finally, to address the issue of high multicollinearity among absolute discretionary accruals and terms involving interactions with absolute discretionary accruals and ownership variables, all the variables have been mean adjusted by subtracting their respective means from each observation. Despite using values with deviations from the mean for each variable, some multicollinearity exists between the interaction terms. I ran two separate regressions by including only one interaction term at a time, as shown under models 1 and 2 in Table 4.8.

Relationship among median Cash Flow Rights, Absolute Discretionary Accruals and SYNCH



Relationship among median Voting-cashflow divergence, absolute discretionary accruals and SYNCH

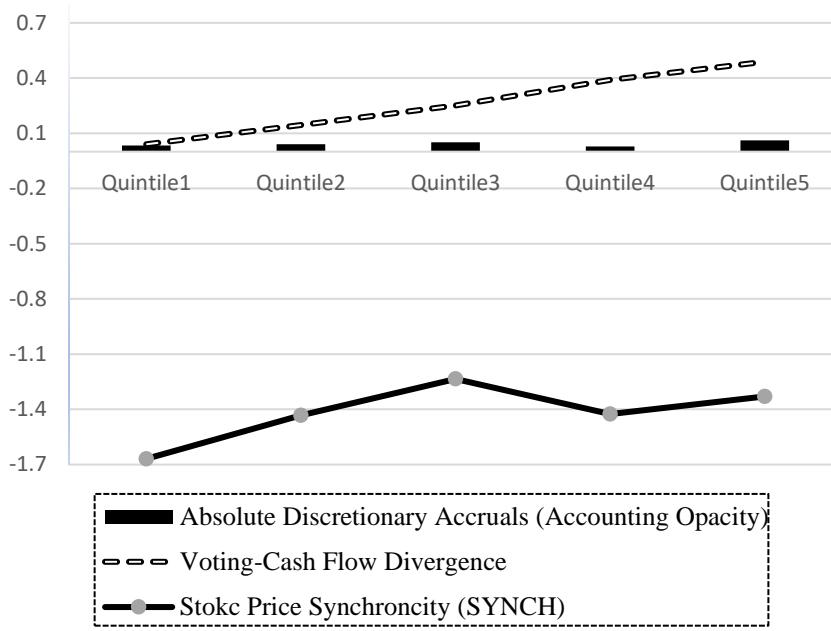


Table 4.8 Separate and Combined Effects of Absolute Discretionary Accruals, Ownership Concentration and Voting-Cash Flow Divergence on Stock Price Synchronicity.

Independent Variables	Model 1	Model 2	Economic Impact (Standardized Beta Coefficients) (Model 1 and 2)
<i>Panel A: Ownership and Accounting Variables</i>			
<i>UCFR</i>	-0.9060 ^a (-2.94)		-0.1586
<i>Excess Control-Dif</i>		1.6479 ^a (2.83)	0.2283
<i>AbsDiscAccruals</i>	1.8695 ^c (1.72)	1.2664 ^c (1.79)	0.1528
<i>UCFR*AbsDiscAccruals</i>	0.7319 ^b (1.99)		0.1116
<i>Excess Control-Dif*AbsDiscAccruals</i>		9.8413 ^c (1.81)	
<i>Panel B: Control variables</i>			
<i>Size</i>	0.0705 ^c (1.86)	0.0238 ^c (1.83)	0.0529
<i>Leverage</i>	-0.3115 ^b (-2.09)	-0.1040 ^b (-2.04)	-0.0744
<i>Diversification</i>	0.0742 ^c (1.67)	0.0730 ^c (1.72)	0.1605
<i>Volume</i>	0.0037 ^a (5.48)	0.0039 ^a (6.09)	0.5161
<i>Volatility</i>	-0.0786 ^c (-1.79)	-0.1521 ^b (-1.98)	-0.0964
<i>Free Float</i>	-0.3171 (-0.31)	-0.1389 (-0.16)	-0.0310
<i>Intercept</i>	-1.6713 ^a (-2.66)	-1.5955 ^a (-2.68)	
Industry dummies	Included	Included	Included
N	106	106	106
Adjusted R ²	40.12%	45.31%	
F-Statistic	9.81	9.38	

This table reports regression results from testing the information role of Stock Price Synchronicity based on several specifications of Ordinary Least Squares (OLS) model provided in Eq.4.9. These results are based on a sample of 106 listed companies from MICEX-RTS in 2013. The dependent variable is SYNCH, which is computed as a logarithmic transformation of R² obtained from the modified regression model in Eq.3.7 *AbsDiscAccruals_i* denotes absolute discretionary accruals estimated based on a modified Jones model (Dechow et al., 1995), and measures the firms' earning and accounting information quality. Values in parentheses denote t-statistics that are computed using robust standard errors corrected for heteroscedasticity and clustering at the firm-level. Subscripts a, b and c represent 1%, 5% and 10% significance levels (two-tailed), respectively. All other variables are as defined in Appendix Q.

The coefficient estimates (1.8695, and 1.2664) for AbsDiscAccruals in Table 4.8 are both positive and significant at the 10% threshold. This suggests that investors perceive firms with higher absolute discretionary accruals as being plagued by opportunistic

earnings management practices of insiders who pursue self-interested agenda and with a view to hide their self-interested agendas, prefer to disclose limited and low-quality firm-specific information to outsiders. Alternatively, firms with more absolute discretionary accruals are interpreted as having lower management accuracy in estimating accruals which, reflecting poorly on their accounting quality, makes firm-specific accounting information less relevant and reliable for investors. Therefore, they are reluctant to use such firm-specific information for investment decisions and rely more on authentic market-wide information for taking positions in stocks, hence there is higher stock price synchronicity. These findings are consistent with the information interpretation of stock price synchronicity which suggests that it captures the amount of firm-specific information incorporated into Russian stock prices.

The interactive effect of ownership concentration and absolute discretionary accruals on stock price synchronicity is demonstrated in the beta coefficient of $UCFR_i * AbsDiscAccruals_1$. The beta coefficient of 0.7319 is lower than the beta coefficient of $AbsDiscAccruals$ (1.8695), and is significant at the 5% level. This implies that the cash-flow concentration of ultimate controlling shareholders in Russian companies tends to discourage opportunistic earnings management and earnings manipulations, which are deciphered as a symbol of improved firm-specific accounting quality, and therefore translates into less severe increase in Stock Price synchronicity. This result provides evidence that ownership concentration improves the accounting and reporting quality, which invites capital market participants to a greater use of high-quality of firm fundamentals information, hence results in improving the information asymmetry between controlling inside managers and small outside investors.

4.8 Conclusion

Russia, being a civil law country, presents a unique country-level and firm-level governance setting. On a country level, it is known to have weak protection for minority investors and less-developed capital markets, which have few large listed companies that trade quite infrequently. On a firm level, its governance structure is known for highly concentrated opaque ownership structures. Drawing on these features this study, in general, examines the association between the ownership structure and stock price synchronicity using a sample of 117 companies listed on Moscow Exchange. In particular, the relationship between three separate attributes of ownership structure: ownership concentration (UCFR); divergence between voting and cash-flow rights

(Excess-Control-Dif); and the type of the ultimate owners, and stock price synchronicity, is empirically tested. The four main conclusions are discussed below.

First, the divergence between control and cash-flow rights of the ultimate owner has a positive association with stock price synchronicity. This finding is consistent with the argument that when ultimate owners enjoy more control than cash flow rights, it motivates them to entrench themselves by exploiting small minority investors. In order to hide their entrenched behaviour they prefer sharing less firm-specific information with outsiders, and thus minority investors rely more on industry- and market wide information for valuation of stock, hence there is higher stock price synchronicity.

Second, the ownership concentration of the ultimate owner has documented a reduction in stock price synchronicity. This suggests that higher cash-flow stake of the largest shareholder discourages expropriating behaviour on part of the controlling shareholders as their interests are closely aligned with the minority investors. Therefore, alignment of interests between the controlling and minority investors promotes a better information environment and facilitates the capitalization of firm-specific information into stock prices.

Third, the presence of oligarchs in companies controlled indirectly by the state through holding corporations reported to produce lower stock price synchronicity relative to those directly controlled by the Federal or Regional governments (state-federal or regional). The plausible explanation for such a finding is that the oligarchs' presence in the ownership structures of companies controlled by the state ensures effective monitoring of bureaucrats and prevents them from undertaking self-interested agendas. Given less opportunistic activities by bureaucrats, the desire to hide firm-specific information is greatly reduced and consequently an improved information environment is achieved, as reflected in higher stock price synchronicity.

Last, oligarchs with stakes in firms having traceable control chains, i.e., transparent oligarchs, are shown to have lower stock price synchronicity than those characterized with non-traceable ownership paths (Non-transparent Oligarchs). Based on these findings, I conclude that, aside from accounting opacity, it is the ownership structure opacity that matters in determining stock price synchronicity.

Despite some valuable findings produced by this study there are some areas that need further investigation. For instance, how does a firm's information environment behave when the joint effect of ownership type and ownership stakes on information asymmetry

is accounted for. Next, the increasing ownership stake of the largest controlling shareholder is reported to have a favourable effect on stock price synchronicity but the implications of overall concentration of the shareholding on information asymmetry are still unknown. Finally, to what extent do other corporate governance measures, such as audit quality, cross-listing and analyst coverage, matter in improving or exacerbating the information asymmetry between controlling and minority shareholders.

CHAPTER 5: CONCLUSION OF THE THESIS

Section 5.1 summarizes the whole thesis, contextualizes the results in the light of the separate ownership and institutional-level settings of Brazil and Russia and discusses the policy implications of the results. Section 5.2 outlines the limitations of the study. Section 5.3 points out future research opportunities.

5.1 Summary and Conclusions of the Thesis

The purpose of this thesis is to empirically examine the link between ownership structures and firms' information environments in Brazil and Russia, and to expand the current knowledge on the topic by focusing on the distinct ownership- and institutional-level characteristics unique to the two largest emerging economies. Specifically, the study explores the effects of the varying aspects of ultimate ownership on stock price synchronicity in the two countries, considering the subtle dissimilarities in their ownership structures, as follows. First, the ownership structures in Brazil are dominated¹⁰⁸ by family-controlled controlling-minority structures whereby the ultimate owners enjoy majority control by committing less than 50% of the cash-flow investment, whereas ownership environment in Russia is overwhelmed by the majority-owned companies that are either controlled by Oligarchs or State with more than 50% equity interest. Second, the ownership structures of Russian Listed companies are more opaque as compared to Brazilian listed companies as there is a widespread use of nominees and foreign-offshore companies in the control chains. Third, the ubiquitous use in Brazil of shareholder agreements among the large colluding block holders, either for efficient coordination of decision making or for enhancing control, further adds to the disparity in the ownership structures of the two countries. Beyond ownership, the high-quality corporate governance institutions in Brazil, especially the tiered listing segments of the Bovespa Exchange, set it apart from Russia as they are known to be quite effective in subverting the controlling power of ultimate owners, improving shareholder's rights, diluting expropriations, and enhancing corporate behaviour (De Carvalho & Pennacchi, 2012; Estrin & Prevezer, 2011).

The study contextualizes these differences while testing their impact on the information content of stock prices (information asymmetry), internalize them in deriving hypotheses,

¹⁰⁸ About two-thirds of companies in my sample are controlled by ultimate owners with less than fifty percent cash-flow rights (see Table 3.7 for details).

and seek guidance from them for interpreting the divergent results in the two settings in terms of the effects of ownership concentration, control-ownership divergence, types of ultimate owners and shareholder agreements on stock price synchronicity as follows:

First, the study finds that ownership concentration of the ultimate owners has a discrete influence on the corporate information environment in the two ownership settings, as reflected in a linear negative and concave relationships between cash-flow rights and synchronicity in Russia and Brazil, respectively. The study conjectures that the former result is very likely in the majority-owned ownership structures of Russia because every percentage increase in cash-flow rights in an environment where the ultimate owners have majority stake, triggers only alignment-of-interests effect, which fosters the dissemination of firm-specific information. In contrast, the latter concave relationship connects more closely with Brazilian settings that have a mix of CMS and majority-owned companies, because a percentage increase in cash-flow rights of ultimate owners in CMS companies that are controlled with below-majority cash-flow rights invites entrenchment, and negatively affects firms' information environments.

Second, this investigation finds that both control-ownership divergence and cash-flow rights are linearly positively associated with synchronicity in CMS companies in Brazil, whereas in Russia control-ownership divergence alone is positively related to synchronicity. These results highlight that agency conflict, moral hazard and the associated entrenchment are more severe in CMS structures in Brazil relative to Russian majority-owned companies, because the incentive to entrench emerges not only from the minority cash-flow interests but also from the ability to escape the proportional consequences of corporate decisions due to control-ownership divergence, which produces extremely unfavourable consequences for firms' information quality and information asymmetry.

Third, the study finds that aside from firm-level investor protection (i.e., ownership), institutional-level investor protection arrangements also contribute to firms' information and reporting environment, as witnessed in the more profound (less profound) concave relationship between cash-flow rights and synchronicity for the firms listed on the lower governance segments (higher governance segments) of the Sao Paulo Exchange. This finding shows that higher (lower) listing quality curtails (exacerbates) the entrenchment endeavours of the controlling shareholders in firms listed on the L2&NM (Trad&L1) segments, which slows down (expedites) the rate of deterioration of information quality. Such findings inform that the association of institutional-level protection and

synchronicity in Brazil is not a direct one, as noted in the US and Chinese settings previously (e.g., Ferreira & Laux, 2007; Gul et al., 2010), but rather an indirect one, achieved by regulating the entrenchment and incentive-alignment incentives of ultimate owners. Also, this finding adds to the existing stream of studies that testify to the efficacy of Bovespa's higher listing segments (NM&L2) in areas such as improved corporate behaviour (Estrin & Prevezer, 2011); enhanced economic performance (Black et al., 2014); and improved stock returns (De Carvalho & Pennacchi, 2012), by showing that better listing regulations enhance the credibility of accounting information in the eyes of outside investors and contribute to informational efficiency and transparency in an emerging capital market.

Fourth, this study notes that Russian firms controlled by non-transparent oligarchs have higher levels of synchronicity than those controlled by transparent oligarchs. This implies that the use of nominees and foreign-offshore companies in the control chains, which sabotages the ability to trace the identity of real ultimate owners (i.e., non-transparent oligarchs), impairs firm-level transparency and inhibits outsiders from policing and accessing information on the controlling shareholders' opportunism. This produces an incremental negative affect on firms' reporting and disclosure practices, keeping cash-flow rights and control-ownership divergence constant. Overall, this result affirms that the presence of nominees and foreign offshore companies in control chains has a central role in causing ownership and information opacity in Russian settings. This introduces academicians and regulators to a new aspect of ownership opacity in addition to well-known sources of firm-level accounting, ownership and information opacity elsewhere including business group affiliation in Korea (Kim & Yi, 2006), and equity interlocks, shared owners and shared directorships along the control chain in Chile (Khanna & Thomas, 2009).

Finally, this study looks into the information role of somewhat special¹⁰⁹ practice of signing shareholder agreements among large block holders in Brazilian companies. It finds that shareholder agreements containing controlling shareholders as participants tend to have a lower synchronicity compared to the agreements signed by many non-controlling colluding block holders. This affirms that a coalition between a controlling shareholder and non-controlling shareholders, participating in the former agreement,

¹⁰⁹Brazil is one of the few countries where shareholders of listed companies frequently sign shareholder agreements and disclose them publicly by filing them with the relevant regulatory body, such as the Securities and Exchange Commission (CVM). The other countries in the league are predominantly large western European countries including France and Italy (Baglioni, 2011; Belot, 2010)

utilize SA as an “investor protection” rather than a “control-enhancing” device by incorporating extra investor protective clauses such as supermajority rule, dispute resolution procedures, and related party disclosure clauses. These clauses produce benefits for all shareholders, and thus have a favourable impact on the firms’ information environments and information asymmetry.

Such findings indicate that aside from firm-level and institutional-level investor protection arrangements (i.e., ownership structures and listing quality respectively), voluntary contracts (i.e., shareholder agreements) also regulate the quality of investor protection and corporate behaviour, which ultimately affects the corporate information environment and information asymmetry. Most importantly, the effect on investor protection and the information environment is expected to be favourable if the agreements feature the presence of a controlling shareholder.

Overall, the results presented in this study indicate that the extent of firm-specific information incorporated into stock prices is significantly related to two common aspects and one unique aspect of ultimate ownership in Brazil and Russia: ownership concentration and control-ownership divergence in both countries; and uniquely, shareholder agreements in Brazil and ownership transparency in Russia. In Brazil, the institutional-level governance arrangements denoted by firms’ listing quality also significantly affects the information content of the prices. Consistent with synchronicity studies in other settings (Boubaker et al., 2014; Gul et al., 2010), ownership concentration (control-ownership divergence) facilitates (detriments) the incorporation of firm-specific information into stock prices in both the jurisdictions. The interpretation of these results demands some caution. Very high levels of ownership concentration might force controlling shareholders to resort to private communication channels for resolving information asymmetry rather than arm’s length public disclosures of firm-specific information which might impair the firm’s information quality (Ball et al., 2003). Also, shareholder agreements lacking participation of the ultimate owner and ownership transparency resulting from the use of nominees and foreign offshore companies, as the unique corporate governance feature of Brazilian and Russian companies respectively, impair the information environment.

Intuitively, the study informs academicians, regulators and policy makers that insiders’ incentive to disseminate firm-specific information and the market’s incentive to interpret firm-specific information are conditional only on the ownership environment in Russia and on ownership and the institutional environments in Brazil.

The findings in this study have direct policy implications for regulators as they point toward the importance of further improvements in corporate transparency in Brazil and Russia, which could help domestic and foreign investors value companies appropriately and allocate capital efficiently. This might resonate more profoundly in Russia, where listed companies are frequently blamed for undervaluation and the sparse participation of foreign and institutional investors (See e.g., Lazareva et al., 2009). Specifically, the policy measures need to be directed at achieving one share-one vote rule, whose absence counts as the main cause of poor information quality and information asymmetry both in Brazil and Russia. This could involve some harsh measures, such as outlawing non-voting shares (like Korea) or subtle measures including introducing inter-corporate taxes on profit transfers; revising down the allowable limits of non-voting shares; and encouraging companies to list at Novo Mercado segment of the Sao Paulo Exchange that prohibits non-voting shares. The selection between these measures is contingent upon the economic, political and legal environment of each country. In Russia, apart from one share-one vote violations, lack of ownership transparency due to the excessive use of nominees and foreign offshore companies also poses as a serious threat to the information environment and needs urgent attention from policy makers. Mandating the disclosure of ownership details for foreign offshore companies in the control chains, irrespective of their ownership stakes, may put Russian companies on Bushman et al.'s (2004) path of higher governance transparency leading to higher corporate transparency.

Also, these results may be beneficial for regulators, in understanding the information implications of ownership structures, in other emerging countries with similar ownership and institutional environments i.e., limited participation of institutional and foreign strategic investors, high private benefits of control, less number of quoted companies, weak investor protection.

5.2 Limitations of the Thesis

The thesis is subject to some limitations: The first limitation is the lack of ability to use similar constructs for control rights of ultimate owners in Brazil and Russia. The study used percentage of board seats and weakest voting rights along the control chain as proxies for control rights in Brazil and Russia respectively. Using the percentage of board seats controlled might seem a significant deviation from the traditional voting rights approach used in earlier studies (Claessens et al., 2002; La Porta et al., 1999) for measuring control, but it aptly depicts the real controlling power in Brazilian settings,

where 95% of ultimate owners have more representation on the board than their voting rights. Russia confronts a similar situation where Oligarchs and the State put more directors on the board¹¹⁰. Due to the poor board-level disclosures¹¹¹ in Russia, finding which director was elected by whom was virtually impossible, thus this study was confined to using voting rights as an alternative, which could understate or misrepresent the true control power.

Second, the prior literature shows that Brazilian family-controlled group companies are controlled not only through formal equity arrangements but also via non-equity arrangements (i.e., appointing family members to the management and boards of intermediary companies in the control chain, or the use of interlock directors) (Perkins & Minefee, 2015). Plagued by the unavailability of director-level data of the unlisted intermediary companies, this study could only account for equity ties while computing voting rights (i.e., by taking the product of voting rights along the control chain), which might understate the true control power and the associated control-ownership divergence in these family-controlled companies.

Third, the research question for this study needs to be examined cross-sectionally. Most of emerging markets undergo major institutional and regulatory changes over time including the adoption of IFRS, changes in taxation laws, changes in governance and ownership disclosure practices¹¹². These are separate issues to research and will require a separate set of studies.

Finally, the study is limited to the ownership data of 2013 and 2014 in Russia and Brazil respectively which may invite criticism about the generalizability of the results. This limitation might not bear much significance especially when the earlier literature informs us that the ownership structures in emerging countries are fairly stable (Claessens & Yurtoglu, 2013)

¹¹⁰Fiedorczuk and Grabowiecki (2014) claim that dominant owners, in Russia, actively participate in the management of the companies and enjoy absolute control by electing themselves as President of the management boards, commonly known as boards of directors in Russia.

¹¹¹On the contrary, in Brazil, the ownership- and board-related disclosures are comprehensively laid out in *Reference Forms* filed with the CVM.

¹¹²Subsequent to the sample period in this study (2013), Russian law, as of 21 December 2016, mandated listed companies to identify ultimate beneficiaries and collect and keep information about the owners with them. However, disclosure and reporting of these ultimate owners to state bodies is still awaiting implementation (see “*Russian Companies Now Required to Identify Ultimate Beneficiaries*” on www.lexology.com).

5.3 Opportunities for Future Research

This study investigates the impact of aggregate levels of control-ownership divergence on the information dissemination practices of firms which might mask the individual effects of control-enhancing instruments such as non-voting shares, pyramids, disproportionate board representation, on firms' information environments. Future research can extend the study by disaggregating the individual effect of each control-enhancing instrument on firms' information environments in general, and on disclosure, reporting and accounting practices in particular. This might produce some insightful results especially in relation to pyramidal structures in Brazil, where the intermediary unlisted companies in the control chains are seemingly used as investment vehicles, rather than for enhancing control, by dedicated institutional investors such as pension funds (PREVI) and developmental financial institutions (BNDES). The presence of such investors may ensure close monitoring of the controlling owners and prevent tunnelling, which could enhance the ultimate owners' incentives for better reporting and disclosure practices. Such analysis is only possible subject to the availability of information on ownership structures of unlisted companies in the control chain of listed companies.

Another natural extension of the study could be to evaluate the value consequences of stock price synchronicity in Brazil and Russia as it is believed that stock prices that track firm-fundamentals information in a timely and accurate manner, are priced fairly. Addressing the question of whether firms with better information quality (lower synchronicity) have properly valued stocks in Brazil and Russia could enlighten regulators for better policy making; investors for better investment decisions; and academia for confirming or refuting the relevant theories of market efficiency.

Lastly, this study stopped at investigating the effect of ownership structure on stock price synchronicity. There is also a huge potential to investigate how opaque ownership structures contribute to the stock price crashes, in Brazil and Russia, reflecting on the holding of negative information by inside managers. Such investigation will enrich the existing empirical evidence about ownership opacity and stock price crashes available in developed countries and common law settings (An & Zhang, 2013; Hutton et al., 2009).

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Appendices

Appendix A: A list of Financial, Holding and Illiquid Companies excluded from the Sample.

S. No	Company	Reason(s) for removing the company	Segment of Exchange*
1	Neoenergia S.A.	Price data not available because of illiquid stock or, both ordinary and preferred stock price data are missing.	TB
2	Investimentos E Participacoes Em Infra-Estrutura S.A. - Invepar E Controladas	Data not available because of illiquidity. Both, ordinary and preferred stock data are missing.	TB
3	Mrs Logistica S.A.	Data not available because of illiquid or OTC stock.	TB
4	Companhia Energetica Do Maranhao	Both the ordinary and preferred stock data are missing.	TB
5	Litel Participacoes S.A	Data not available because of illiquid or OTC stock.	NM
6	Wembley Sociedade Anonima	Data is fixed meaning prices not changing variance is zero. Standard deviation is very low	TB
7	Bb Seguridade Participações S.A.	This company is either a financial or an insurance company or a real estate investment company or a bank.	NM
8	PDG Realty S.A. Empreendimentos E Participacoes	Companies are either financial or insurance companies or real estate investment companies or banks.	NM
9	Mrv Engenharia E Participacoes Sa	Companies are both financial and insurance companies or real estate investment companies and banks.	NM
10	BM&FBovespa S.A. - Bolsa De Valores, Mercadorias E Futuros	Companies are both financial or insurance companies or real estate investment companies and banks.	NM
11	Ferronorte On 1000 Dead - Takeover.	This company has been acquired and is now dead.	TB
12	Evora SA	Holding company- This company does not have net income from its own operations; it relies on the income from operation of its subsidiaries.	
13	Alupar Investimento SA	Stock prices not available	N2
14	Santos Brasil Participacoes S.A.	This company's ordinary stock is non-variant or not changing stays at 1 Real	N2

S. No	Company	Reason(s) for removing the company	Segment of Exchange*
15	Tsms.Alianca Enela. On	Data is fixed meaning prices not changing: variance is zero and standard deviation is very low (Both ordinary and Preference shares are not changing variance is zero).	N2
16	Bradespar S.A.	Company is either a financial or insurance company or a real estate investment company or a bank.	N1
17	Metalfrio Solutions S.A.	A company for which price data is available; however, fundamental data are not sufficiently available.	NM
18	Lupatech S.A.	A company for which price data is available; however, fundamental data is not sufficiently available.	NM
19	Consorcio Alfa De Administracao S.A.	Companies are either financial, insurance companies or real estate investment companies or banks.	TB
20	Financeira Alfa S.A.- Cred Financ E Invs	Companies are either financial or insurance companies or real estate investment companies or banks.	TB
21	Alfa Holdings S.A.	Companies are either financial or insurance companies or real estate investments companies or banks.	TB
22	Aetatis Securitizadora S.A.	Companies are either financial or insurance companies or real estate investment companies or banks.	TB
23	Siderurgica J. L. Aliperti S.A.	This company's ordinary stock is non-variant or not changing, stays constant at 1 Reals (30 weeks of trading is missing)	TB
24	Suzano Holding S.A.	Holding Company	TB
25	Ferrovia Centro-Atlantica S.A.	This company's preferred and ordinary stocks both are non-variant and constant at 1 Reas (no 30 weeks of trading). The stock price does not change even once.	TB
26	Aliansce Shopping Centers S.A.	Companies are both financial or insurance companies or real estate investment companies and banks.	NM
27	Bb Seguridade Participações S.A.	Companies are both financial or insurance companies or real	NM

S. No	Company	Reason(s) for removing the company	Segment of Exchange*
28	Brasil Insurance Participações E Administração S.A.	estate investment companies and banks. Companies are both financial or insurance companies or real estate investment companies and banks.	NM
29	Brasil Brokers Participações S.A.	Brokerage Firm	NM
30	Br Malls Participações S.A.	Companies are both financial or insurance companies or real estate investment companies and banks.	NM
31	Br Properties S.A.	Companies are both financial or insurance companies or real estate investment companies and banks.	NM
32	Alupar Investimento S.A	This company's stock is non-variant and the prices are not available for the whole 30 weeks.	N2
33	Aes Sul Distribuição Gaúcha De Energia S.A.	This is a holding company.	TB
34	Bbas Brasil	Real Estate Holding company	NM
35	Aetatis Securitizadora S.A.	Holding company	TB
36	Aes Sul Distribuição Gaúcha De Energia S.A.	This is a Utility Holding company.	TB
37	Brasilagro - Companhia Brasileira De Propriedades Agrícolas	This is a real estate finance company.	NM
38	Cetip	This is a company with no liquid stock and also a financial company.	NM
39	Cielo S.A.	This is a financial company.	NM
40	Cosan Logística S.A.	Not enough trading in 2014.	NM
41	Cyrela Commercial Properties S.A	This is a financial company.	NM
42	General Shopping Brasil S.A	Companies are either financial or insurance companies or real estate investment companies or banks.	NM
43	Iguatemi Empresa De Shopping Centers S.A	Companies are either financial or insurance companies or real estate investment companies or banks.	NM
44	International Meal Company Alimentação S.A.	Holding Company	NM
45	Itausa-Investimentos Itau-Pr	Holding Company	NM
46	Integritas Participações S.A	Holding Company	NM
47	Aes Elpa S.A.	Holding Company	NM

S. No	Company	Reason(s) for removing the company	Segment of Exchange*
48	Brasmotor Sa	Holding Company	NM
49	Camargo Corrêa Investimentos em Infra-estrutura	Holding Company Real Estate Developer	TB
50	Banco Calssico SA	Bank	NM
51	Mahle Industriebeteiligungen GmbH	Holding Company	NM
52	Wembley Socidade Anonima	Holding company	NM
53	Alexandre G Bartelle Participacoes SA	Holding Company	TB
54	Rio Minas Energia Participacoes SA	Holding Company	NM
55	Fundo de Investimento em Participacoes Da Serra	Financial and Investment Company	NM
56	Regimar Comercial S.A	Real Estate Finance Company	NM
57	Pátria Investimentos Ltda	Investment Holding company	NM
58	Banco Itau Holding Finaceira S.A.	Holding Company	NM
59	Banco Estado do Rio Grande	Bank	NM
60	Mangels Industrial S.A.	A holding company with subsidiaries, the Comrolled steel, bottled gas cylinders, car wheels, iron buckets, and equipment electricity distribution.	TB
61	Unibanco Holdings S.A	Holding Company for Unibanco	NM
62	Brasil Insurance Participações E Administração S.A	Financial Company	NM
63	Fpc Par Corretora De Seguros S.A.	Insurance, Life and Multi-line	NM
64	Porto Seguro S.A.	Insurance, Life and Multi-line	NM
65	Sao Carlos Empreend E Participacoes S.A.	Real Estate	NM
66	Sonae Sierra Brasil S.A.	Real Estate	NM
67	Tarpon Investimentos S.A.	Diversified Financial Services	NM
68	Ultrapar Participacoes S.A.	Holdings - Diversified	NM
69	Aetatis Securitizadora S.A.	Asset-backed Securitization	TB
70	Consorcio Alfa De Administracao S.A.	Financial Intermediaries	TB
71	Financeira Alfa S.A.- Cred Financ E Invs	Financial Intermediaries	TB
72	Alfa Holdings S.A.	Holding Company	TB
73	Battistella Adm Participacoes S.A.	Holdings - Diversified	TB
74	Mgi - Minas Gerais Participações S.A.	Insufficient Stock and Accounting data	TB

S. No	Company	Reason(s) for removing the company	Segment of Exchange*
75	Cia Participacoes Alianca Da Bahia	Insurance, Life and Multi-line	TB
76	Monteiro Aranha S.A.	Holdings - Diversified	TB
77	Cia Habitasul De Participacoes	Holdings - Diversified	TB
78	Correa Ribeiro S.A. Comercio E Industria	Real Estate	TB
79	Octante Securitizadora S.A.	Asset-backed Securitization	TB
80	Polo Capital Securitizadora S.A	Asset-backed Securitization	TB
81	Rj Capital Partners S.A.	Investment Company	TB
82	Sweet Cosmeticos S.A.	Investment Company	TB
83	Cemepe Investimentos S.A.	Investment Company	TB
84	Polpar S.A.	Asset Management Company	TB
85	Investimentos Bemge S.A.	Investment Company	TB
86	Itaitinga Participacoes S.A.	Financial Company	TB
87	Bahema S.A.	Holdings - Diversified	TB
88	Grucai Participacoes S.A.	Illiiquid Stock	TB
89	Industrias J B Duarte S.A.	Holdings - Diversified	TB
90	BCO Alfa De Investimento S.A.	Bank	TB
91	BCO Amazonia S.A.	Bank	TB
92	BCO Estado De Sergipe S.A. - BANESE	Bank	TB
93	BCO Estado Do Para S.A.	Bank	TB
94	BRB BCO De Brasilia S.A.	Bank	TB
95	BCO Btg Pactual S.A.	Bank	TB
96	BCO Santander (Brasil) S.A.	Bank	TB
97	BCO Nordeste Do Brasil S.A.	Bank	TB
98	BCO Mercantil Do Brasil S.A.	Bank	TB
99	BCO Mercantil De Investimentos S.A.	Bank	TB
100	Valepar Holdings	Holding Company	NM
101	IDIA Partiticipacoes SA	Investment Company	NM

* Represents companies listed on four major segments of BM&FBOVESPA Exchange. TB denotes *Traditional Bovespa* or standard segment, whereas N1, N2 and NM are *Level 1*, *Level 2* and *Novo Mercado* segments of the Sao Paulo Exchange respectively.

Appendix B: Distribution of Sample by Industry

I use BM&FBOVESPA's industry classification system which allocates a firm to one of nine non-financial industrial sectors based on its contribution to total revenue. Two-thirds of total revenue, coming from a particular sector, is required to be classified into a particular sector.

Panel A

Industry Type	No of Firms	% of sample
Basic Materials	17	13.93
Capital Goods and Services	14	11.48
Construction and Transportation	17	13.93
Consumer Cyclical	21	17.21
Consumer Non-Cyclical	17	13.93
Information Technology	3	2.46
Oil, Gas and Biofuels	2	1.64
Telecommunications	5	4.13
Utilities	26	21.31
Total	121	100

In order to enhance degrees of freedom in the regression analyses, I merged certain industries from Panel A in the above Table and reduced the number of groups: e.g., Consumer Cyclical, Consumer-Non Cyclical and Information Technology (grouped as Consumer Goods), Basic Materials and Oil, Gas and Biofuels (grouped as Basic Materials & Oil and Gas), Telecommunications and Utilities (grouped as Telecom and Utilities) and Capital Goods and Service and Construction and Transportation (grouped as Capital Goods and Construction).

Panel B

Industry Type	No of Firms	% of sample
Basic Materials & Oil and Gas	19	15.70
Capital Goods and Construction	31	25.61
Consumer Goods	41	33.06
Telecom and Utilities	31	25.61
Total	121	100

Appendix C: Discrepancy between immediate and ultimate owners due to control-enhancing mechanisms- Pyramiding and Voting Agreements. The table below indicates how the use of the two most commonly used control-enhancing tools creates a discrepancy between the identity of the immediate and ultimate owners using a 25% control threshold.

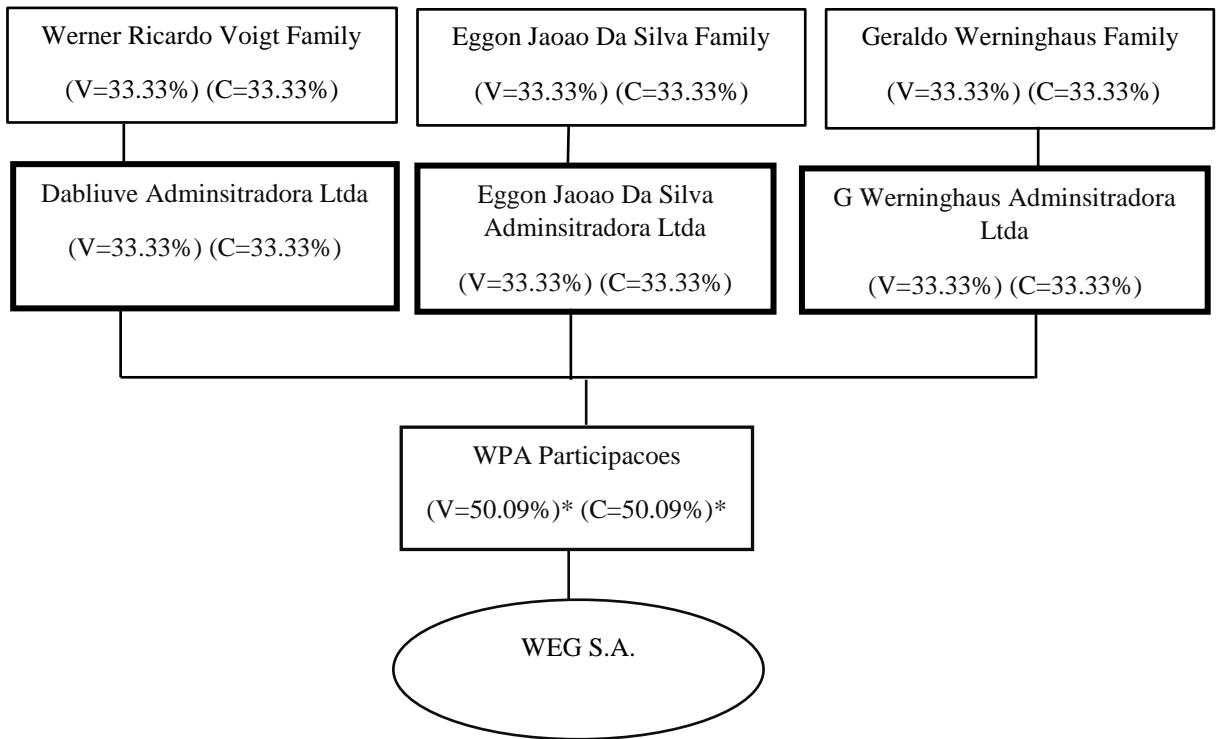
Immediate Owner	Ultimate Owner	No of firms	Use of Pyramids (%)	Use of SA* (%)	Use of Pyramids and SA (%)
State-Federal, Regional or State-Federal, District	Regional or District	10	0	5	3.57
Widely Held	Widely Held	10	0	1.67	0
Individual	Individual	1	0	0	0
Foreign investment(Holding) Company	Foreign Company				
		3	4.3	3.33	7.14
Widely Held	Jointly Controlled	12	11	20	17.87
Widely Held	Family	4	2.17	6.67	0
Listed, Unlisted or Investment Company	Family	32	39.13	23.33	28.57
Listed, Unlisted or Investment Company	Jointly controlled Families	15	19.56	25	25
Foreign Holding Company	Family	4	6.52	0	0
SC**, Govt Dev Inst, Govt Pension Fund	Jointly Controlled through SA	10	6.52	10	14.28
Others	Miscellaneous	20	11	5	3.57
Total		121	100	100	100

*Shareholders Agreement ** State-controlled Company

The first three rows of Appendix C indicate no discrepancy in the identity of immediate and ultimate owners by reporting the immediate and ultimate owners as the same—that is State-controlled (Federal, Regional or District) or widely-held companies and those owned by individuals. This happens because these type of ultimate owners have either used no pyramiding or a very limited use of shareholders agreements to enhance their control beyond their cash-flow rights. It is important to note that these shareholders' agreements only cause discrepancies between the identity of immediate and ultimate owners, when there are no controlling shareholders at a 25% control threshold and several

block holders collude to aggregate control by signing a voting agreement. Also, there are 5% of state-controlled companies and 1.67% of *widely held* companies that have shareholder agreements among the block holders yet this does not change the identity of ultimate owners. In the case of state-owned companies these shareholder agreement are entered into by the State as a majority owner with other minority non-controlling block holders. In contrast, for widely held companies, it refers to shareholder agreements that was entered by the shareholders of Kroton educional, but they jointly could not amass enough control (This is explained in detail in later sections). Another important thing to consider, in row 5 of the above table, is that there are companies that are widely held when we look at its immediate ownership, but have become *Jointly Controlled* because of the widespread use of shareholder agreement (20%) for coordinating control.

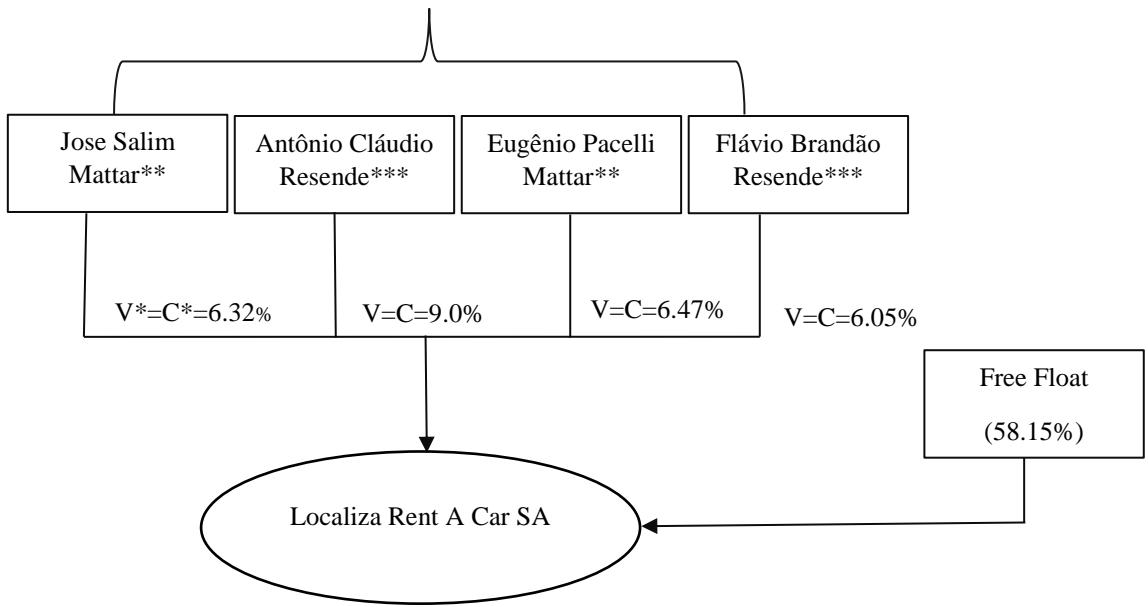
Appendix D: Control Structure of WEG SA- Since this firm is controlled by three founding families, it has been classified as a *family*-controlled company. These controlling families have worked together since the founding of the company in 1961, and the first letter of their names forms the company name (WEG). The three families have equal representation on the supervisory board, with two board members elected by each family. This company does not employ pyramiding, dual class shares or shareholder agreements. Separation between control (UCO) and Cash-flow rights (UCFR) of the ultimate owner is achieved only by appointing disproportionate numbers of board members. Companies in thick boxes represent unlisted privately held companies.



*V= Voting rights, C= Cash flow rights

Appendix E: Ownership Structure of Localiza Rent A Car SA.

Four founding members, (representing the Mattar and Resende families) jointly own 27.98% of the voting capital.



*V= Voting Rights C=Cash-Flow Rights

**Jose Salim Mattar and Eugenio Pacelli Mattar are siblings and together constitute Mattar family.

*** Mr Antônio Cláudio Brandão Resende and Miss Flávio Brandão Resende are brother and sister and together represent the Resende family.

Appendix F: Step-by-step demonstration of the procedure used for determining the number of pyramiding layers in the control structures, with several control paths leading to the same ultimate owner. The following procedure has been illustrated using Metulargica Gerdau SA's control structure, in Figure 3.3

First, if there are two or more intermediary companies holding equity stakes (below 100%) in the same company down the control chain, then these companies (situated above the controlled company) are considered as being in the same layer.

For instance, in Figure 3.3 Grupo Gerdau Empreendimentos Ltda and Indac Industria Administracaoe are in the same layer (Layer 1) as both of these have (ownership) equity stakes in Metalurgica Gerdau S.A. Also, at a higher layer (Layer 2), Acoter Participacoes Ltda and Cindac Empreendimentos S.A stand at the same level as they share control of the company, Grupo Gerdau Empreendimentos Ltd, in the lower layer (layer 1) of the control chain.

Second, I calculate voting rights at each layer (link) by adding the direct and indirect voting rights at the respective layers. The direct voting rights are the voting stakes (V) of the controlling companies in the controlled companies where there are no intermediary companies along the path, whereas indirect voting rights are voting stakes in the company via other companies.

For example, the total voting rights (71.03%) at layer 1 of the control chain are calculated by adding direct voting rights (65.3%) (i.e., Grupo Gerdau Empreendimentos Ltd (39%) and Indac Industria Administracaoe (26.3%)) and indirect voting rights (5.73%) ($21.8\% \times 26.3\%$) of Indac Industria Administracaoe through Gerdau Empreendimentos Ltd in Metalurgica Gerdau SA. The total voting rights (76.1%) in layer 2, in contrast, only consist of direct voting rights ($32.3\% + 43.8\%$); there is no indirect ownership involved at layer 2 since Acoter Participacoes Ltda is a wholly owned subsidiary of Cindac Empreendimentos S.A.

Third, I count the number of pyramidal layers. Only the links with intermediary companies controlled at less than 100% voting stake are counted as pyramidal layers.

For instance, the Metalurgica Gerdau SA control structure involves **two layers** of pyramiding because, only layers 1 and 2 have intermediary companies that are controlled at less than 100%, i.e., 71.03% 76.1%. An intermediary company, Stichting Gerdau

Johannpeter Ltda, above the second layer, does not contribute towards pyramiding levels, as it is wholly owned by the Gerdau Johannpeter family.

Fourth, I turn to computing cash-flow rights at each layer of the pyramid by adding *direct* and *indirect cash-flow rights*. The voting rights and cash-flow rights at these layers of the pyramid differ only if the controlled company (ies) in the lower layer has non-voting shares in their total capital. To calculate cash-flow rights at the respective layer I voting stake for the non-voting shares issued by the company below that layer.

The direct cash-flow rights at layer 1= Indac Industia Administracoe (13.13%) + Grupo Gerdau Empreendementos Ltd (8.8%) =**21.93%**

Indirect cash-flow rights at layer 1= product of Indac Industia Administracoe's cash-flow rights in Grupo Gerdau Empreendementos Ltd (21.8%) and Grupo Gerdau Empreendementos Ltd's cash-flow rights in Metalurgica Gerdau SA (8.8%), i.e., **1.918%**

Total cash-flow rights at level 1= 21.93% +1.918%= 23.85%

Shortcut method of computing cash-flow rights at a specific layer of the pyramid

Figure 3.3 shows that at level 1, two companies Indac Industia Administracoe and Grupo Gerdau Empreendementos hold a combined voting stake of 71.03% in Metalurgica Gerdau SA, which in turn, has non-voting shares as part of its total capital. This voting stake (71.03%) represents the percentage of the stake in the voting capital, for this to be able to represent cash-flow rights, I adjust it by multiplying it by the amount of voting shares issued by the subject company. This calculation yields a 23.84% (71.03% X 33.7%) cash-flow stake or equity stake at level 1. Note that voting rights (76.1%) for the intermediary companies, at the second layer and higher, will not diverge from cash-flow rights because there is no use of non-voting shares.

Last, after establishing the pyramidal layers and computing the respective voting rights and cash-flow rights at each of these layers, I create a unique ultimate control chain to compute the ultimate voting rights (UVR) and ultimate cash-flow rights of the ultimate owner (UCFR).

For *Metalurgica Gerdau SA* the *unique ultimate control chain* is as follows:

Metalurgica Gerdau SA—Layer 1 (V=71.03%, C=23.84)—Layer 2 (V=76.1%, C=76.1%)

—Stitching Gerdau Johannpeter Ltda (V=100%, C=100%) - Gerdau Family (V=100%, C=100%)

Ultimate cash-flow rights (UCFR) are calculated by taking the product of cash-flow rights across the two layers of the *unique ultimate control chain* i.e., $(23.84\% \times 76.1\%) = 18.15\%$

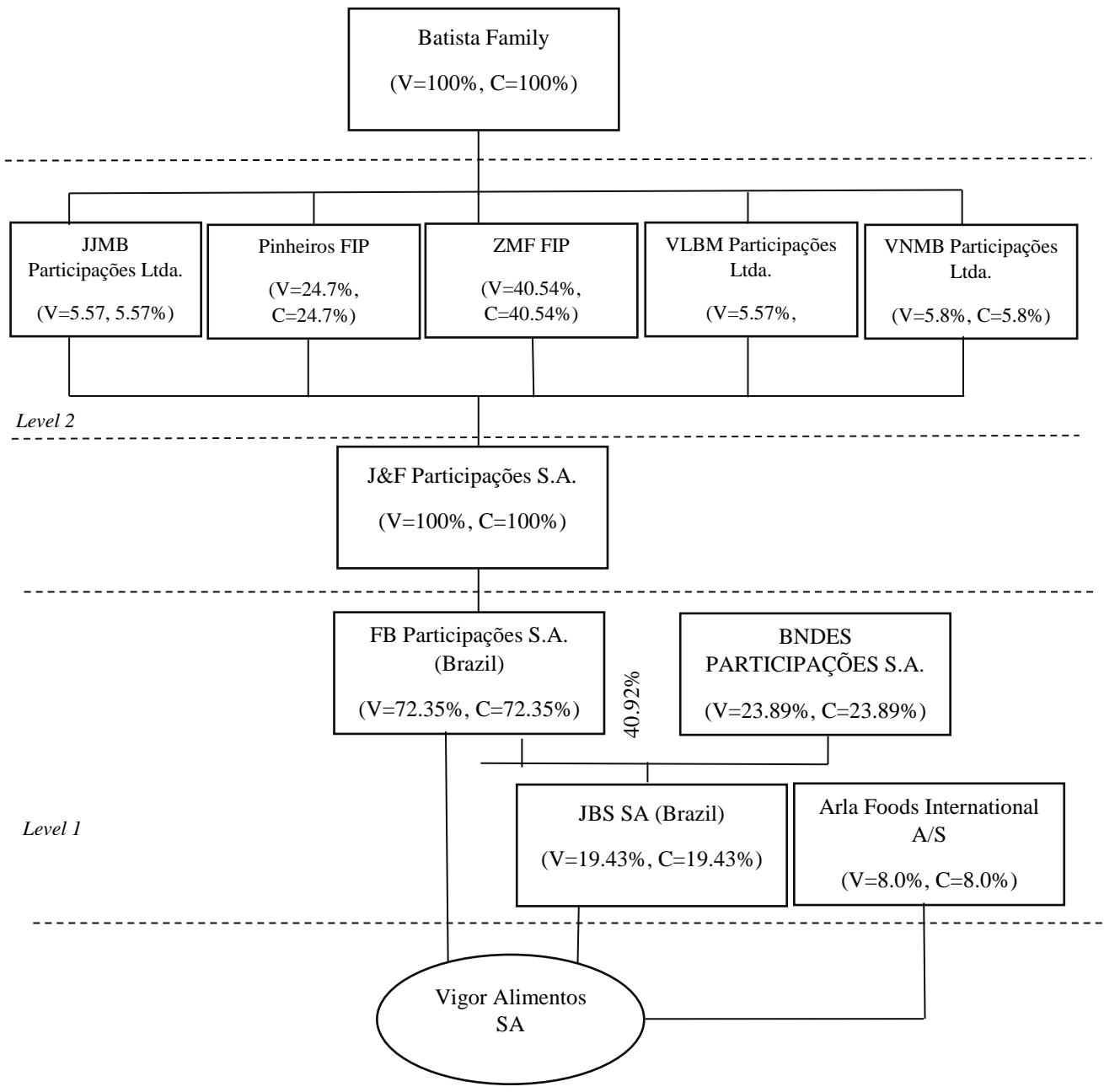
Ultimate voting rights (UVR) are computed as the weakest link in the unique ultimate control chain, i.e. $\min(71.03\%, 76.1\%, 1, 1) = 71.03\%$

Boubaker' Method of computing ultimate voting rights (UVR) and ultimate cash-flow rights (UCFR)

Boubaker's Method of Computing ultimate cash flow rights for Metalurgica Gerdau SA					Product of cash-flow rights across four layers
Cash-flow rights on path 1	0.1313	1	1	1	0.1313
Cash-flow rights on path 2	0.088	0.218	1	1	0.019184
Cash-flow rights on path 3	0.088	0.323	1	1	0.028424
Cash-flow rights on path 4	0.088	0.438	1	1	0.038544
Ultimate cash-flow rights (<i>sum of the products of direct cash-flow rights along the four paths</i>)					0.217452

Boubaker's Method of computing ultimate Voting rights for Metalurgica Gerdau SA					Minimum of voting rights across four layers
Voting rights on path 1	0.39	1	1	1	0.39
Voting rights on path 2	0.263	0.218	1	1	0.218
Voting rights on path 3	0.263	0.323	1	1	0.263
Voting rights on path 4	0.263	0.438	1	1	0.263
Ultimate control rights of the largest shareholder (<i>sum of the weakest links across four paths</i>)					1.134

Appendix G: Ownership structure of Vigor Alimentos SA, controlled by Batista family via FB Participacoes SA and JBS SA and there exists shareholder agreement between FB Participacoes, JBS SA and Arla Foods SA.



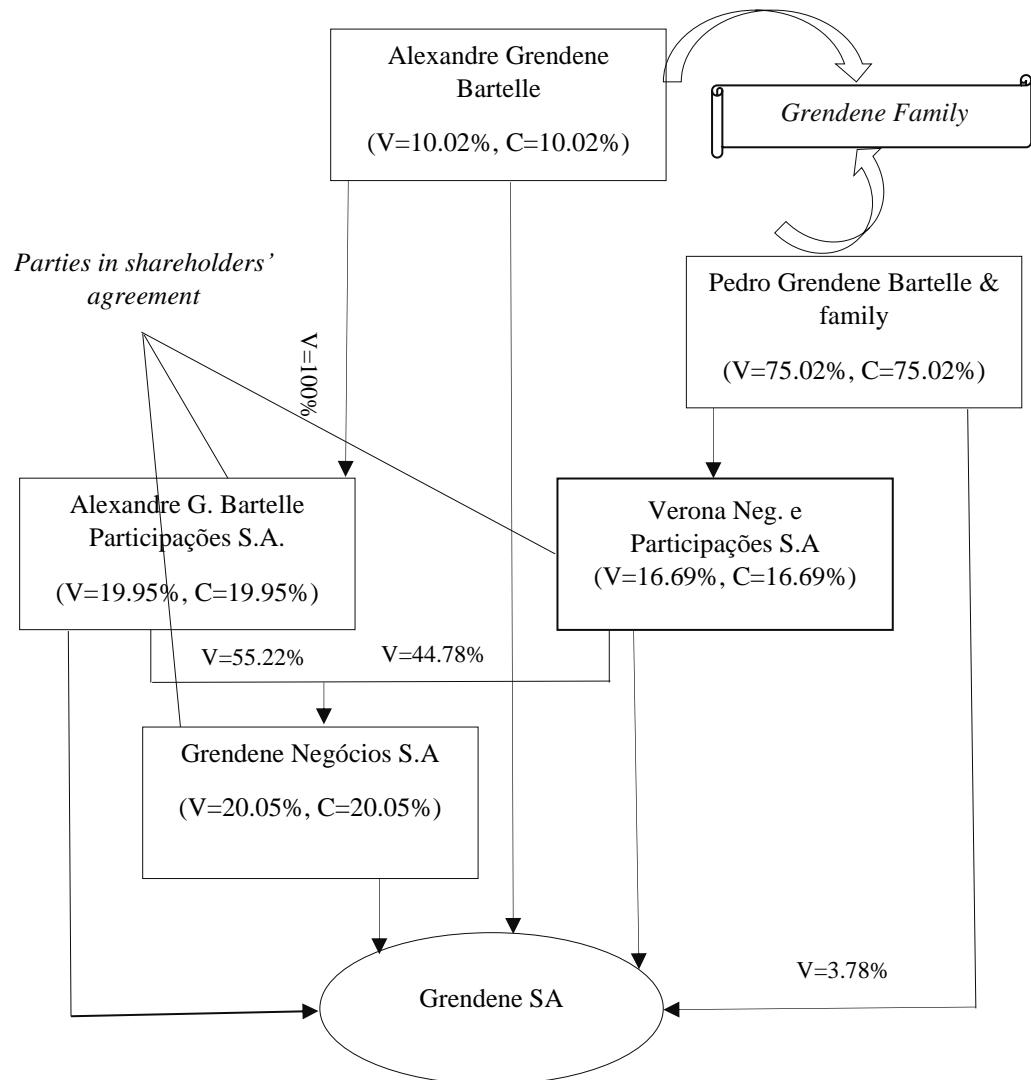
Batista' Family -Control and Cash-flow Rights in Vigor Alimentos SA	Divergence Source	Control Enhancing Method	Total Divergence
UCO=85.7%	(UCO-UVRSA) = 5.4%	Disproportionate Board Representation	
UVRSA=80.3%		Shareholders Agreement	
UVR=80.3%	(UVRSA-UVR) =0.00%	Pyramiding	
UCFRP=65.99%	(UVR-UCFRP) =14.31%	Non-Voting shares	UCO-UCFR=19.77%
UCFR=65.99%	(UCFRP-UCFR) =0.00%		

In the above structure six out of seven board members are elected by Batista family and three board members including the chairman, Mr Wesley Mendonca Batista, belong to Batista family. Based on board representation the ultimate control rights (UCO) of the Batista Family amount to 85.7%. Only one member, Mr Tim Oerating Joergensen, has been appointed by the second party in the shareholder agreement i.e., Arla Foods International A/S. The minority investor happens to enjoy more control over the board relative to its voting rights (8.0%), which is only possible because the shareholder agreement in this company is being used to safeguard the interests of the minority shareholder (detailed discussion of clauses is included in the shareholder agreement section). The agreement in this company has an ultimate owner participating in it.

Along the control chain, two companies that are also part of the shareholder agreement, FB Participações S.A. and JBS SA, signify the control of the Batista family in Vigor Alimentos. To calculate of UVRSA, I aggregate the direct and indirect voting rights of the two companies participating in the shareholder agreement because simply adding the voting rights of two companies will overstate the control rights for the Batista Family. Hence, I adjust the voting rights for the indirect stake (40.92%) of FB participcoes SA in Vigor Alimentos SA through JBS SA. The total voting stake (80.3%) of the two companies in Vigor Alimentos SA includes the sum of direct stake (72.35%) by Fb Participcoes SA, and indirect voting stake ($40.92\% \times 19.43\% = 7.95\%$), via JBS SA.

In the above structure using the weakest link criterion for computation of UVR, I obtain 80.3% Voting Rights. The divergence due to the shareholder agreement is zero 80.3% (UVRSA) minus UVR (80.3%). In contrast, UCFRP is the product of voting rights at different levels of pyramid; there are two levels where a less than 100% equity stake or voting stake is maintained by the controlling shareholder, so UCFRP is the product of 80.3% (the Level 1 voting stake) and the Level 2 voting stake, which is the sum of all the intermediaries controlled by Batista family at level 2 (82.18%). So UCFRP is $80.3\% \times 82.18\% = 65.99$. As there are no non-voting shares in the capital structure of the company, there is no discrepancy between UCFRP and UCFR in this situation. The total divergence (19.71%) is the difference between UCO (85.7%) and UCFR (65.99%).

Appendix H: Control structure of *Grendene SA*, a shoe-making company, controlled by the *Grendene family*. The shareholders agreement was initiated among members of the Grendene Family. The lead member of the family is *Alexandre Grendene Bartelle*, who is also chairman of the company. The second lead member of the family is *Pedro Grendene Bartelle*, who is the Vice Chairman of the administrative council (Supervisory Board). This shareholder agreement is unique as it includes clauses which aim to regulate working relationships (management and governance practices) among the family (for details see the shareholders' agreement section). Also, the agreement contains fewer restrictive clauses that could affect the voting or control structure of the company (Enhance control of the family) as the agreement binds the decisions undertaken in shareholders' meetings (Annual general or extra-ordinary general meetings) to the resolutions passed in preliminary meetings of signatories of the shareholder agreement (before Shareholders meetings). However, the agreement says nothing about casting votes in board meetings according to the outcome of preliminary meetings held prior to board meetings (thus there is no restriction on board voting rights, and restrictions only relate to shareholders' voting rights in annual general meetings). The shareholders' agreement for the Grendene Bartelle family has no clause dealing with the issue of transfer of shares and no clause regulating the transfer of shares or preferences enjoyed by any party in case of transfer of shares (in essence, this agreement deals with or attends to regulating the working and governance issues around or surrounding Grendene family members controlling the company).

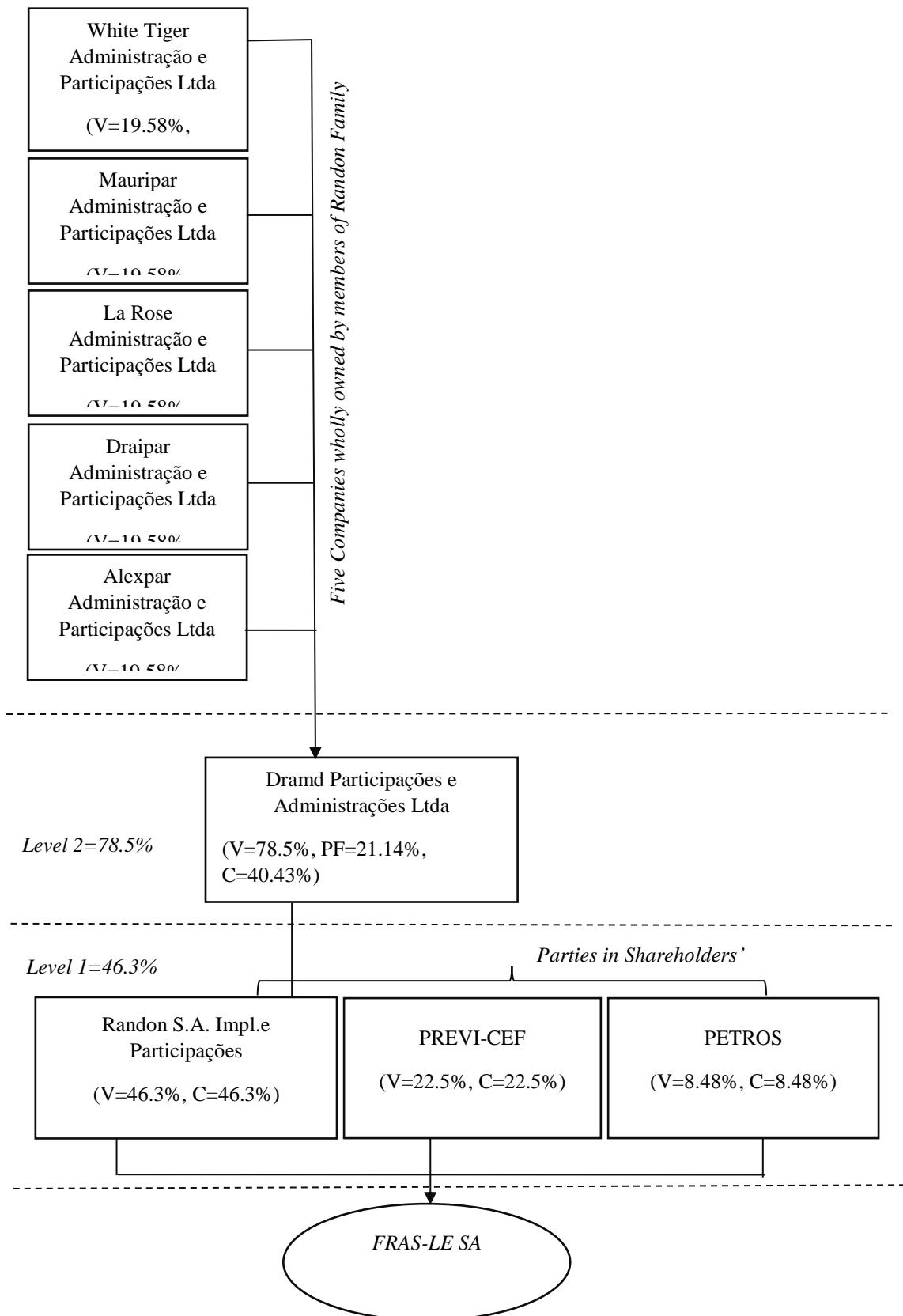


Grendene's Family Control and Cash-flow Rights in Grendene SA	Divergence Source	Control Enhancing Method	Total Divergence
UCO=83.33%	(UCO-UVRSA)= 17.01%	Disproportionate Board Representation	
UVRSA=66.32%		Shareholders Agreement	
UVR=66.32%	(UVRSA-UVR)=-0.0%		
UCFRP=66.32%	(UVR-UCFRP)=0.0%	Pyramiding	
UCFR=66.32%	(UCFRP-UCFR)=0.0%	Non-Voting shares	UCO- UCFR=17.01%

In the above structure the Grendene Family elects 5 out of 6 members on the board, including the Chairman and Vice Chairman positions held by twin brothers, Mr Alexandre Grendene Bartelle and Mr Pedro Grendene Bartelle respectively. This company was co-founded by Alexandre Grendene Bartelle and Pedro Grendene Bartelle. The total stake they have committed in the shareholders' agreement is the sum of the direct and indirect stakes represented by the Grendene Family, including the stakes of the two brothers. The son of Pedro Grendene Bartelle, also called Pedro Bartelle, has a stake in the company called Verona Neg e as indicated above. In this company all of the leverage accrues from TDSA (Shareholders agreement). In this case the UVRSA, UCFRP and UCFR are the same because the equity interest committed in the shareholders agreement by the Grendene family is the sum of the direct and indirect equity stakes. The direct stake is the sum of 10.02% (Mr Alexandre Grendene Bartelle) +20.05% (Grendene Negócios S.A) + 19.95% (Alexandre G. Bartelle Participações S.A.)+ (Mr Pedro Grendene Bartelle) 3.78% =53.8% and the indirect equity or voting stake= 75.02%X16.69%=12.52%

Total Stake=53.8%+12.52%=66.32%

Appendix I: Control structure of Fras-Le SA, a vehicle parts manufacturer, controlled by Randon family. Randon Family has initialled shareholders' agreement with two government pension funds, PREVI and Petros.



Randon's Family Control and Cash-flow Rights in <i>FRAS-LE</i> <i>SA</i>	Divergence Source	Control Enhancing Method	Total Divergence
UCO=57.14%	(UCO-UVRSA)= 10.84%	Disproportionate Board Representation	
UVRSA=46.3%		Shareholders Agreement	
UVR=46.3%	(UVRSA-UVR)=-0.0%	Pyramiding	
UCFRP=36.3%	(UVR-UCFRP)=10.0%	Non-Voting shares	
UCFR=18.71%	(UCFRP-UCFR)=17.5%		UCO- UCFR=38.43%

SA with an ultimate owner—Excerpts from the shareholders' agreement signed among an ultimate owner (Randon Family) and non-controlling institutional investors (PREVI and Petros)

a. Partes (Parties)

Randon S.A. Implementos e Participações (“Randon”); José Maria Pedrosa Gomes, Erino Tonon, Ottomar Vontobel, Norio Suzuki, DRAMD Participações Ltda. (“Acionistas Minoritários”); PREVI-CEF e Petros

b. Data da celebração (Date of celebration – Start Date)

The agreement was entered into on November 12, 2013—Translated from portuguese to English through *Google Translate*

c. Prazo de vigência (Period of Validity)

The agreement will be valid until any of the following events occur:

- i) If no amendment is made within 120 days of the date of signature in the following terms within this period;
- ii) Caso a Randon adquira a titularidade de ações ordinárias de emissão da Companhia, com efetivo aumento de sua participação no capital social votante da Companhia de modo que lhe garanta o exercício intérumpido do controle acionário da Companhia por maioria absoluta da titularidade das ações com direito a voto;
- iii) Pelo transcurso de prazo de 5 (cinco) anos contados da data de assinatura, caso a Randon não obtenha sucesso em recompor sua participação no capital social votante da Companhia, nos termos da alínea precedente. Adicionalmente, após a passagem de 2 (dois) anos contados da data de assinatura ficam autorizados os acionistas titulares das ações vinculadas a reduzirem as respectivas posições acionárias vinculadas, à razão de 15% de redução a cada período de 6 (seis) meses, encerrando-se integralmente o vínculo ao final da vigência de 5 (cinco) anos.

**d. Descrição das cláusulas relativas ao exercício do direito de voto e do poder de controle
(Description of Clauses relating to the exercise of voting rights and control power)**

The minority shareholders undertake to vote in general meetings of the company in strict council and have to notify their vote to the Randon—Translated through *Google Translate*

e. Descrição das cláusulas relativas à indicação de administradores (Description of Clauses relating to the appointment of directors)

In addition to the clauses referring to the exercise of voting rights and the power of control described above, there is no clauses relating to the appointment of directors—translated through *Google Translate*

f. Descrição das cláusulas que restrinjam ou vinculem o direito de voto de membros do conselho de administração. (Description of clauses restricting or binding the right to vote of members of the board of directors/management)

There are no clauses restricting or binding the voting rights of members of board of directors

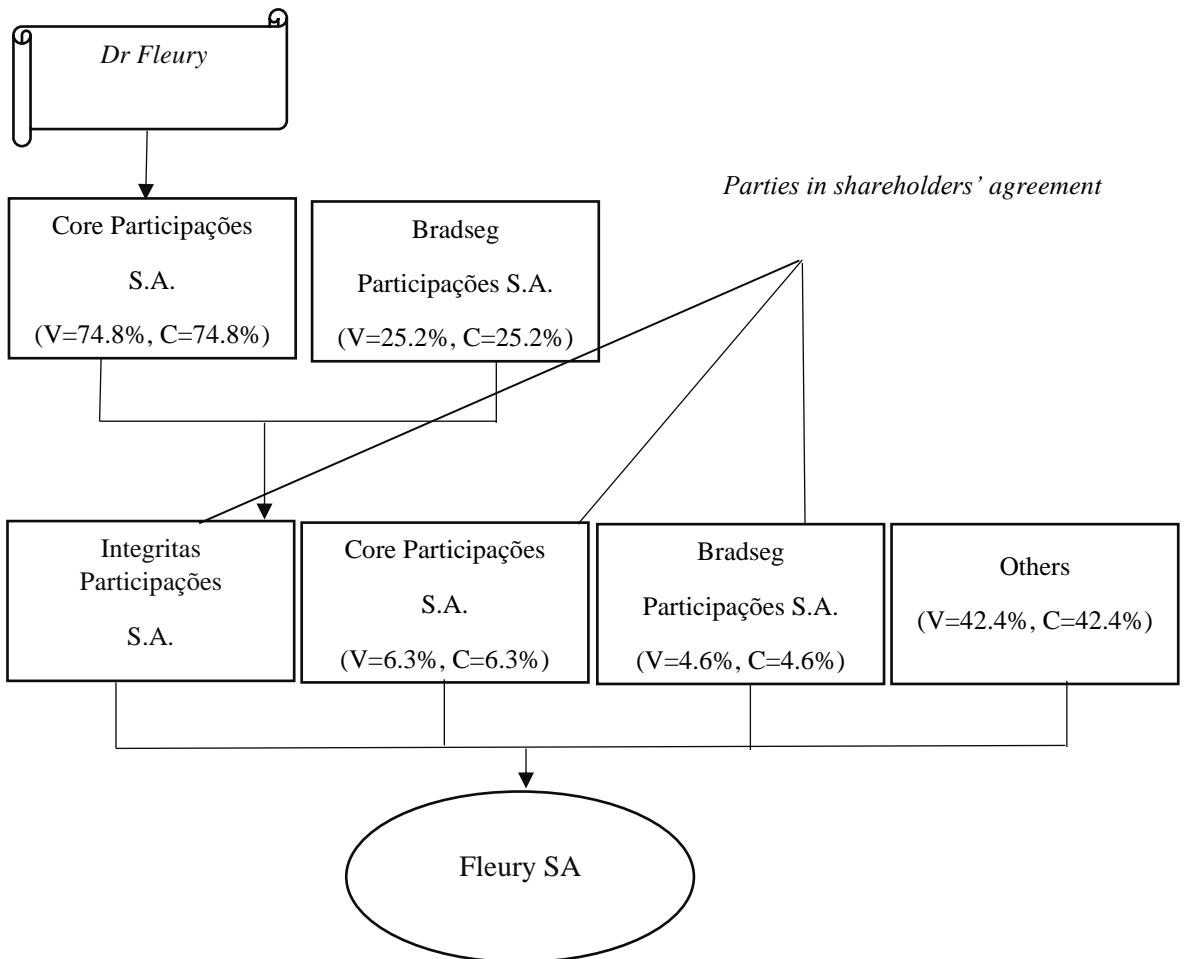
g. Descrição das regras, políticas e práticas do emissor quanto à realização de transações com partes relacionadas (Description of the issuers rules, policies and practices regarding the execution of transactions with related parties)

In the ordinary course of business, the company entered into transactions with related parties under conditions similar to those which would have been obtained if such operations had been concluded with third parties. The company does not adopt specific rules, policies, or practices regarding the execution of transactions with parties however the mechanisms offered by the Brazilian corporate law are sufficient and efficient for this purpose

As a rule, transactions with related parties consist of (i) Sales of goods to subsidiaries for markets where they are based, and sales of inputs used in plants located in the United States of America and China; (ii) purchase of inputs used in the production process of the company and (iii) loan agreements entered into with the parent company, the subsidiaries and other related parties

The agreement includes clauses targeted at improving governance practices and not restricting voting rights of administrative council or supervisory board of the company. There is an exclusive disclaimer in the agreement about not having any provisions or clauses in the agreement placing restrictions or conditions in the board members voting rights or decisions. At the apex level the member of Randon family holds position in company's board being a chairman, Mr Raul Anselmo Randon. Four out of seven board members are elected by Randon's Family thereby giving them a control of (UCO) of 57.14% over the board. The ultimate voting rights based on the weakest link (UVR) = 46.3%. The voting rights committed by the controlling family amounts to 46.3% and there are two levels of pyramiding in the structure. Transfer of share sis not restricted i.e. no drag along rights or rights of first refusal. Also, the agreement is silent on the number of board members to appointed by each signatory in the agreement. And there is no provision in the agreement which retrains the minority shareholders from selling shares and minority shareholders have to seek prior permission before disposing shares in agreement or Fras Le. There is fewer restrictions on exercise of vote as shareholders agreement binds the minority shareholders only to vote in accordance of the written voting instructions provided by Randon to the minority shareholders 48 hours. Randon family has to notify the minority shareholders 48 hours before the general meeting about the voting instructions. However this agreement does not bind the director votes the directors are somewhat independent (this is very common practice when family has less than majority stake but higher than the threshold 25% control they tend to have clause which fall between the two extremes of strictest and the most lenient. They are neither strict nor lenient so in this case they have restricted shareholders vote but no restriction on votes of directors.

Appendix J: Ownership Structure of Fleury SA, a medical service company, controlled by a family of physicians with majority stake and also having shareholders agreement with an institutional investor, Bradseg Participacoes SA (A subsidiary of Bradespar).



Dr Fleury's Family Control and Cash-flow Rights in Grendene SA	Divergence Source	Control Enhancing Method	Total Divergence
UCO=50.0%	(UCO-UVRSA)= 3.30%	Disproportionate Board Representation	
UVRSA=46.7%		Shareholders Agreement	
UVR=46.7%	(UVRSA-UVR)= 0.0%		
UCFRP= 41.23%	(UVR-UCFRP)= 5.47%	Pyramiding	
UCFR= 41.23%	(UCFRP-UCFR)= 0.0%	Non-Voting shares	UCO-UCFR=8.77%

Overall it reflects on better governance practices as a result of shareholders agreement among the shareholders agreement exclusively mentions about the disclaimer, that the agreement contains no provisions governing the exercise of voting rights. The agreement also specifies the number of independent directors to be appointed on to the board (An excerpt from the shareholders agreement- “The members of our board of directors shall be nominated and elected by the Shareholders in proportion to their shares being at the date of the shareholders' agreement, two directors appointed by Bradseg and Estonia four appointed by Core and also three independent directors”. The controlling owners have appointed five out of 10 board members including chairman and vice chairman onto to the board. This grants them 50% control over the board. The counterparty in the agreement have installed three members on the board from (Bradesg) and they have equity of voting stakes of just 16.36%.

Appendix K: Additional results using alternative measures of control-cash flow divergence, robustness checks or sensitivity analysis. In the main results section I have reported the impact of control-ownership divergence on synchronicity using the ratio of control to cash-flow rights for the ultimate owner. Here the threshold for splitting the sample is different (47%) because the beta coefficients for $UCFR$ and $UCFR^2$ vary subject to the proxy used for control-ownership divergence. Therefore, the threshold or inflection point at which the relationship between ownership concentration of the largest shareholder and stock price synchronicity reverses varies. The dependent variable SYNCH in Eq 3.9 is computed by performing a logistic transformation on the R^2 obtained from the modified market model given in Eq. 3.8

Independent Variables	Full Model	$UCFR < 47\%$	$UCFR \geq 47\%$
Panel A: Ownership variables			
$UCFR^2$	-5.481 ^a (0.0008)		
$UCFR$	5.114 ^a (0.0011)	1.4465 ^a (0.0181)	-2.372 ^c (0.0723)
<i>Divergence-Diff</i>	0.4729 ^c (0.1025)	0.7986 ^c (0.0888)	0.3904 (0.6965)
Panel B: Control variables			
<i>Firm Age</i>	-0.0003 (0.1964)	-0.0001 (0.6867)	-0.0004 (0.2873)
<i>Size</i>	0.7663 ^a (<0.0001)	0.8833 ^a (<0.0001)	0.5713 ^a (0.0008)
<i>Leverage</i>	0.1221 (0.1396)	0.1758 (0.2259)	0.0682 (0.5408)
<i>Diversification</i>	0.0161 (0.6634)	0.0029 (0.9502)	0.0264 (0.6927)
<i>Volume</i>	0.0023 (0.7956)	0.2782 ^b (0.0556)	0.0029 (0.7819)
<i>Volatility</i>	-0.0061 (0.3293)	-0.0140 ^c (0.0875)	-0.0078 (0.5180)
<i>Free Float</i>	0.0111 ^a (0.0022)	0.0059 (0.2404)	0.0096 (0.1587)
<i>ADR</i>	-0.2383 (0.230)	-0.3798 (0.1570)	-0.1957 (0.6203)
<i>Intercept</i>	-8.78 ^a (<0.0001)	-8.953 ^a (<0.0001)	-4.577 ^b (0.0396)
<i>Industry Dummies</i>	Included	Included	Included
<i>N</i>	121	71	50
<i>Adjusted R²</i>	58.68%	68.02%	34.18%
<i>F-Statistic</i>	16.49	15.89	3.5

The above threshold (47%) is computed based on the following equation:

Appendix L: Ultimate owners as managers: Ultimate owners are treated as managers when they occupy CEO/ Chairman positions on corporate boards (For a detailed description, see Section 3.4.2.3). Panel B of the table presents the number and percentage of companies having independent chairman on its boards.

Ultimate Owners	No of Companies (N)	% of sample
<i>Panel A: Ultimate Owners as</i>		
Managers	105	86.77
Non-Managers	16	13.23
Chairman	77	63.63
CEO	44	36.36
Both CEO and Chairman	16	13.23
<i>Panel B: Companies with</i>		
Independent Chairman	18	14.87
Non-independent Chairman	103	85.12

Appendix M: The table shows the principal listing provisions for the four segments of the main Brazilian exchange, (BM&FBovespa). These provisions have been grouped into three categories for this study: *Minority Investor Protection*, *Boards Quality* and *Disclosure Practices provisions*, for easier comparison of the segments. The listing provisions in the original form, available at www.BM&FBovespa.com.br, do not follow any categorization scheme of this sort.

Main Listing Provisions (Requirements)	Traditional	Level 1(L1)	Level 2 (L2)	Novo Mercado (NM)
<i>Minimum Free-Float be maintained at 25% of capital</i>	No	Yes	Yes	Yes
Provisions about shareholders' protection (i.e., Minority Investors Protection)				
<i>The capital of the company should solely be comprised of common shares</i>	No	No	No	Yes
<i>In case of disposal of control by majority shareholders, majority shareholders and minority shareholders are to be treated the same (i.e., assuring the same price for shares held by non-controlling shareholders —Tag Along)</i>	No	No	Yes	Yes
<i>Admission to the Market Arbitration Panel for resolution of conflicts between minority Investors and the company Tag along rights for the preferred shareholders i.e., 80% of the price is paid to the preference shareholders in level 2 companies, in case of sale of control by the controlling shareholders</i>	No	No	Yes	Yes
<i>Voting rights granted to preferred shareholders in circumstances such as incorporation, spin-off, merger and approval of contracts between the company and other firms of the same holding group.</i>	No	No	Yes	Not Applicable
<i>Controlling shareholders obligated to make a tender offer to minority shareholders at economic value, in case the company decides to delist, or opts for cancellation of its registration.</i>	No	No	Yes	Yes
<i>Public offerings should use mechanisms that promote capital dispersion and broader retail access of the stock. The economic value of shares in case of tender offer is to be determined by an independent appraiser. The appraiser is appointed by minority shareholders from a three-member nominee list submitted by company's board of directors.</i>	No	Yes	Yes	Yes
Board's Quality provisions				
<i>20% of board members should be independent</i>	No	No	Yes	Yes
<i>Minimum Board size is restricted to 5 members, and should be elected for at least 2-year unified term.</i>	No	No	Yes	Yes
Provisions about Disclosure Practices				
<i>Disclosure of Annual Balance sheet according to IFRS and US GAAP</i>	No	No	Yes	Yes
<i>Quarterly Financial statements should be presented in English or prepared in accordance with the US GAAP or IFRS</i>	No	No	Yes	Yes
<i>Improvements in Quarterly financial reports, including consolidated financial statements and a review report from the Independent Auditor</i>	No	Yes	Yes	Yes
<i>Monthly disclosure of trading in securities and derivative by company's insiders and controlling shareholders.</i>	No	Yes	Yes	Yes
<i>Disclosing the details (to BOVESPA) of any contracts between the company and any related party that exceed R\$200,000 or one percent of company's net worth in a 12-month period</i>	No	Yes	Yes	Yes

Appendix N: The shareholders' agreement of Grendene SA, signed among the members of controlling family—Grendene Family.

Acordo de acionistas arquivado na sede do emissor ou do qual o controlador seja parte

a. Partes (Parties)

Alexandre G. Bartelle Participações S.A., Verona Negócios e Participações S.A., Grendene Negócios S.A., Alexandre Grendene Bartelle, Pedro Grendene Bartelle, Maria Cristina Nunes de Camargo, Pedro Bartelle e Giovana Bartelle Velloso.

b. Data de celebração (Date of Celebration---Start Date)

06 de outubro de 2004 (06 October 2004)

c. Prazo de vigência (Validity Period)

17 de outubro de 2023 (17 October 2023)

d. Exercício do direito de voto, do poder de controle (Exercise of the right to Vote, control power)

Os acionistas Alexandre G. Bartelle Participações S.A., Verona Negócios e Participações S.A. e da Grendene Negócios S.A. concordam em votar e fazer com que seus representantes votem em toda e qualquer Assembleia Geral de Acionista da Grendene S.A. de acordo com a deliberação aprovada pela Reunião Prévias. O poder de controle será exercido pela Alexandre G. Bartelle Participações S.A. caso venha ocorrer a perda da capacidade jurídica ou falecimento do Sr. Alexandre Grendene Bartelle e desde que o Sr. Pedro Grendene Bartelle esteja plenamente capaz e detenha o poder de Controle da Verona Negócios e Participações S.A., durante os 5 (cinco) primeiros anos que sucederem o falecimento ou a perda da capacidade jurídica do Sr. Alexandre Grendene Bartelle, os acionistas da Alexandre G. Bartelle Participações S.A. e Grendene Negócios S.A. deverão exercer o seu direito de voto em conformidade com os votos a serem proferidos pela Verona Negócios e Participações S.A. nas Assembleias Gerais e Reuniões Prévias da Companhia.

e. Descrição das cláusulas relativas à indicação de administradores

The appointment of administrators will be the Preliminary Meeting of the Shareholders—*Translated from Portuguese to English through Google Translate*

f. Descrição das cláusulas relativas à transferência de ações e à preferência para adquiri-las (Description of the clauses relating to the transfer of shares and the preference to acquire them)

There is no clause requiring the transfer of shares and the preference to acquire them

g. Descrição das cláusulas que restrinjam ou vinculem o direito de voto de membros do conselho de administração

There is no restriction or binding on the exercise of the right to Vote—*Translated from Portuguese to English through Google Translate*

h. Descrição das regras, políticas e práticas do emissor quanto à realização de transações com partes relacionadas (Description of the issuer's rules, policies and practices regarding the performance of Related party transactions—*Translated through Google Translate*

Transactions with related parties are carried out under conditions of prices and terms equal to those practiced with third parties—*translated from Portuguese to English through Google Translate*

Appendix O—SA without an ultimate owner: Excerpts from the shareholders' agreement of Hypermarcas SA, signed among three unrelated families- Alves De Querioz Family (20.18%), Maiorem Family (14.7%), Gonçalves Family (5.47%)

On June 23, 2010, our shareholders, Alves De Querioz Family, Maiorem ("Maiorem"), Marcelo Henrique Limírio Gonçalves ("Marcelo Henrique"), Cleonice Barbosa Limírio Gonçalves ("Cleonice"), Marcelo Henrique Limírio Gonçalves Filho ("Marcelo Filho"); Luana Barbosa Limírio Gonçalves de Sant'anna Braga ("Luana" and, together with Marcelo Henrique, Cleonice and Marcelo Filho, the "Gonçalves Family"); Nelson José de Mello ("Nelson"); and Claudio Bergamo dos Santos ("Claudio") (hereinafter jointly defined as "Parties", or each one of them, as "Party") entered into a shareholders' agreement ("Shareholders' Agreement"), which is Filed at our head office, under the terms and for the purposes of article 118 of Law 6404, dated 15 December 1976, as amended ("Law of S.A."). The Shareholders' Agreement is the only one in force with respect to the Company's shares—translated from portuguese to English through *Google Translate*

The Shareholders' Agreement provides, among other usual provisions for this type of document, the governing the exercise of the right to vote of the holders of shares related to the shareholders, the election of members to our Board of Directors, as well as the Transfer of shares and exercise of preemptive rights in the transfer of related shares to the Shareholders' Agreement. — translated from portuguese to English through *Google Translate*

The Parties shall always vote as a block, jointly exercising control of the Company. The Parties shall have the power to decide any and all matters within the competence of the Shareholders' meeting by Law of S.A., by the Company's Bylaws or by the Shareholders. Except in the special cases provided for in the Brazilian Corporate Law, any Shareholders' meetings shall be approved by a majority of the votes of those present. — translated from portuguese to English through *Google Translate*

Thus, under the terms of the Shareholders' Agreement, the Parties have undertaken to: (a) Efforts to attend all of our shareholders' meetings; And (b) exercise their rights in accordance with the provisions contained in the Shareholders' Agreement in order to: (i) maximize our Long-term value, in accordance with commercial and business principles; and (ii) always seek the highest levels of efficiency, productivity, competitiveness and profitability. The shareholders' meetings will be called by the Company's Board of Directors Whenever convenient or necessary, or at the request of shareholders in situations Indicated in art. 123 of the Law of S.A. — translated from portuguese to English through *Google Translate*

The Parties shall hold preliminary meetings ("Preliminary Meeting of Shareholders") to be Convened by any of the shareholders, by the Chairman or Vice-Chairman of the Board of Directors Of the Company, with a minimum of four (4) and at most six (6) days prior to the date of any shareholders' meeting and shall decide on the vote to be cast by all shareholders. Parties to the respective meeting— translated from portuguese to English through *Google Translate*

And Maiorem, as well as the Gonçalves Family, will each have the right to indicate a Representative to participate in the Preliminary Meeting of Shareholders, which may be substituted for any time by the one who indicated it. Each shareholder may also invite two Observers. The Shareholders' Agreement also provides for the appointment of members of the Board of Directors of Company, which shall be composed of at least nine (9) and at most eleven (11) members of the (I) three (3) members appointed by Alves De Querioz Family , one of them being the President; (II) 2 (two) members appointed by Maiorem; (III) 2 (two) members designated by the Family Gonçalves; And (IV) two (2) remaining members elected in accordance with the Brazilian Corporate Law and Regulation BM & FBOVESPA S.A. - Stock Exchange, Commodities and Futures Exchange, two of which must be Members, as a minimum, to be

Independent Directors. The members of the Board of have one-year terms and may be re-elected. Shareholders may also appoint an alternate for each member of the Council—— translated from portugese to English through Google Translate

In addition, the Gonçalves Family undertakes not to nominate as a member of the Board of Directors Any person who participates in the management of any companies in which and compete with the Company's activities ("Corporate Remnants "). If, for any reason, even in the event that the minority shareholders exercise their rights Pursuant to article 141 of the SA Law, the Parties can not indicate the number of Directors Provided, each Party shall be entitled to indicate, among the Directors to be appointed by the Parties, Excluding the Independent Directors, in proportion to their participation in total Control Block Shares. At least two (2) days prior to any meeting of the Board of Directors, the Parties shall to hold a preliminary meeting ("Preliminary Meeting of the Board of Directors") to decide on the Votes to be given by the Directors appointed by them for each of the Matters submitted for discussion at the respective meeting of the board of directors. Decisions The preliminary meeting shall require the affirmative vote of the Parties representing 60% (sixty Percent) of the total Control Block Shares, unless a qualified quorum is required—— translated from portugese to English through Google Translate

The Gonçalves Family agrees that in the event of a conflict of interest vis-à-vis the Company's As a result of the Remaining Business, it shall abstain from voting at any Meeting Preliminary Board of Directors. Pursuant to the Shareholders' Agreement, the Company will have an Executive Board composed of at least 3 (Three) and at most five (5) Officers, and the Shareholders agreed that Mr. Marcelo Son should exercise the non-statutory function of Chief Executive Officer of the Medicines Division, For a period of two (2) years as of the date of its appointment, which occurred on March 2, 2010, While the Gonçalves Family held shares representing at least 10% (ten percent) of the total Block Control Shares—— translated from portugese to English through Google Translat

All Directors shall be elected for a term of office of 3 (Three) years, and may be re-elected. The Shareholders' Agreement also provides for rules on the right to transfer, in whole or in part, the Control Block actions, such as preemptive rights to the other Parties in the case of their Provision. The pre-emptive right shall be exercised in proportion to the number of shares in the Of the Control Block Shares, excluding the Shares of the Provider. The offer for the exercise of the preemptive right shall be made by means of written notification, With a copy to the Chairman of the Board of Directors, in the event that: (i) the Offering Party receives A firm and bona fide offer from any third party; Or (ii) the Offering Party intends to unlink the Shares offered by the controlling block and thes Shareholders' Agreement. The transfer of the shares offered Any third party that is not a party to the Shareholders' Agreement will not result in the transfer of Any rights provided for in the Shareholders' Agreement, nor will it allow any third party to join the Pursuant to the Shareholders' Agreement—— translated from portugese to English through Google Translate

The notification of the offer mentioned above shall be made at market value, Shareholders, within a period of fifteen days, to express their views in writing on the Exercise their right of first refusal. If the Parties have no interest in exercising such right, the Shareholder will have 90 (ninety) days to make the sale to third parties. Any Party that holds 10% (ten percent) or less of the total number of Shares of the Will be automatically excluded from the Shareholders' Agreement. It should be noted that in the mentioned percentage, individuals members of the Gonçalves Family will be considered as a single block, as well as Igarapava, Claudio and Nelson. The Shareholders' Agreement has a term of ten (10) years and will have its expiration date automatically Be extended for additional periods of 10 (ten) years if neither Party notifies the other Parties in writing of its decision not to extend the Shareholders' Agreement, which notice is Must be delivered at least six (6) months in advance—— translated from Portuguese to English through Google Translate

Appendix P: Separate and combined cash-flow commitment of the largest, second-largest and third-largest shareholders participating in the agreements. Financial leverage and diversification levels of *SAs-with an ultimate owner* and *SAs-without an ultimate owner*.

	<i>SAs- with an ultimate owner</i>	<i>SAs- without an ultimate owner</i>	Overall
N	30	29	59
Average stake of the largest signatory	50.65	21.64	39.34
Average stake of the second-largest signatory	18.95	17.43	18.2
Average Stake of the third-largest signatory	5.53	11.76	9.62
Average stake of the fourth-largest signatory	6.25	6.76	6.64
Average stake of the fifth-largest signatory	6.25	5.12	6.61
Average stake of 2-largest signatories	69.6	42.07	52.32
Average stake of 3-largest signatories	75.13	53.83	63.2
Financial Leverage	65.74	57.35	61.23
Diversification	3	2	2.5

Appendix Q. Dependent and Independent Variables Definitions.

Variable	Definition
Information Environment Variables	
<i>R-squared</i>	R^2 is the coefficient of determination estimated from the modified market model in Eq.3.
<i>SYNCH</i>	Logarithmic transformation of R^2 obtained from the modified market model, computed as $SYNCH_i = \ln\left(\frac{R^2}{1-R^2}\right)$.
<i>AbsDiscAccruals</i>	It represents the absolute discretionary accrals estimated using modified Jones model (Dechow et al., 1995), and used as a proxy for firms' earning and accounting information quality.
Ownership Structure Variables	
<i>UCFR</i>	The ultimate cash flow rights held by the largest controlling shareholders at the start of the year (For calculation methodology see section 4.2.1).
<i>UVR</i>	Voting rights of the ultimate owner or largest controlling shareholder (See Section 4.2.2)
<i>Excess Control-Dif</i>	Excess Control is a proxy for the divergence between the voting and cash-flow rights of the largest controlling shareholder. It is computed as the difference between the Voting and cash flow rights, i.e., UVR-UCFR.
<i>Excess Control-Rat</i>	An alternate proxy for the divergence between the control and cash-flow rights of the largest controlling shareholder (ultimate owner). It is calculated as the ratio of voting and cash-flow rights of the largest shareholder, i.e., UVR/UCFR
<i>Diff Cash Flow (1-2)</i>	An alternate measure for the ownership concentration of the largest controlling shareholder computed as difference between the cash flow rights of the largest- and the second-largest shareholders, i.e., UCFR-UCFR2
<i>Diff cash Flow (1-2-3)</i>	Another proxy for the ownership concentration of the largest controlling shareholder calculated as the difference between the cash-flow rights of the largest, the second- and the third-largest shareholders (UCFR-UCFR2-UCFR3).
Control variables	
Size	The natural log of firm's total assets at the start of the year.
Leverage	Financial Leverage, Ratio of book value of total liabilities and total assets (all at the start of the year).
Diversification	The number of GICS industries the firm operates in.
Volume	A proxy for liquidity, computed as the ratio of total number shares traded in a year and the total number of common shares outstanding at the end of the financial year.
Volatility	It is the standard deviation of daily stock returns in the current financial year.
Free Float	Fraction of common shares outstanding available for trading in the stock market (measured in percentage).

Appendix R: Ownership Structure of a Jointly Controlled Company- OJSC Novatek

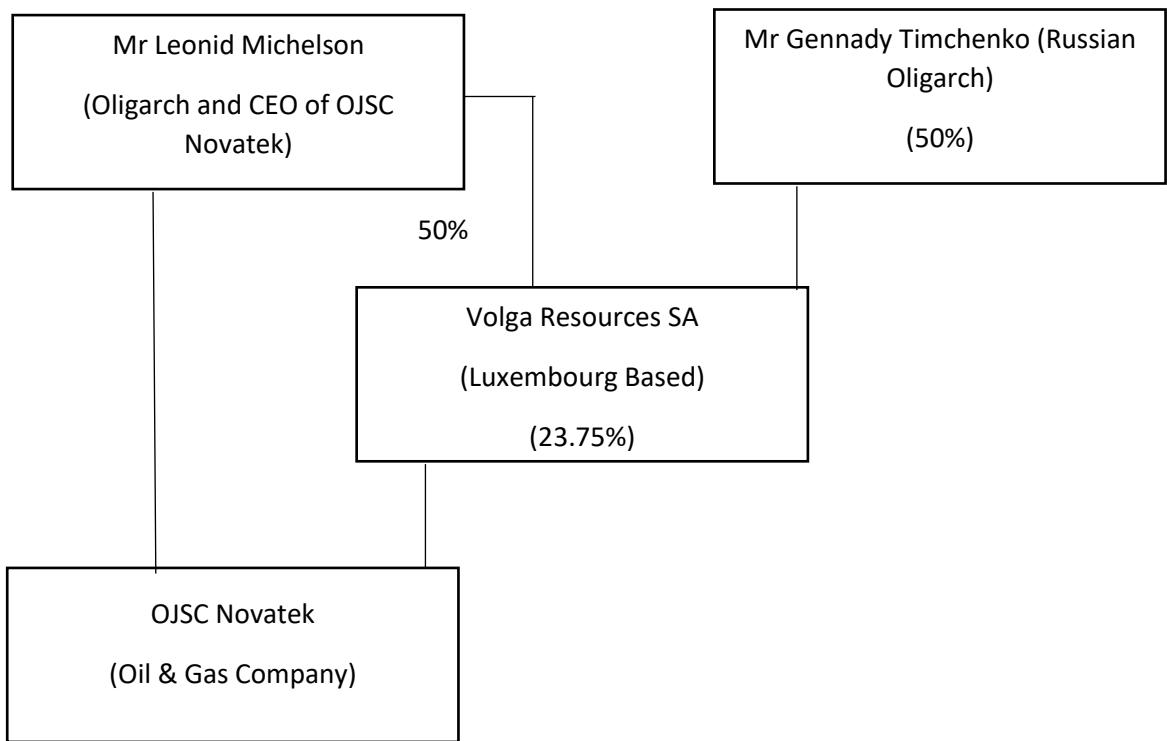


Figure 2. OJSC Novatek- *Jointly Controlled by Oligarchs through an off-shore company*

Figure 2 clearly indicates that Mr Leonid Michelson, CEO of OJSC Novatek, directly controls 28% stake in Novatek and shares control with another Russian Oligarch, Mr Gennady, through Volga Resources, an off-shore private company based in Luxembourg. Two oligarchs jointly control more than 50% of the company through an off-shore private company that in turn, clearly holds less than 25% stake. The Sharing an ownership in an off-shore company by the oligarchs, implies that the control is also jointly shared in the companies owned by that particular off-shore company. I follow La Porta et al. (1999) and Barca and Becht (2001) methodology to deal with the issue of joint control/voting as illustrated in the subsequent example for Microsoft. Microsoft ownership structure presents a typical case of Joint control, where Bill and Melinda Gates, Paul Allen and Steven Ballmer report their stakes separately (38% in total), and also provide a disclaimer about having no commitment to voting jointly. In this situation La Porta et al. (1999) consider all four individuals while Barca and Becht (2001) deem Bill and Melinda to be the Joint-owners of Microsoft. Apart from having the ownership stakes of the joint owners, I supplemented their methodology by including the need for verifying the history of joint voting for the controlling owners from Bloomberg News, Google and Factiva.

Appendix S Table B1. Summary statistics for the Key variables by Ultimate owner's Type.

Ultimate Owner	Free Float		SYNCH		Leverage		Blockholders (>=5%)	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
State-Federal or Regional	0.185	0.128	-	1.581	0.518	0.200	2.12	1.087
	0.22	0.167	1.227	-	1.363	0.498	0.194	2.466
Transparent oligarchs	0.230	0.230	1.329	-	1.117	0.512	0.240	2.418
			1.458	-		1.212		1.074
Non-transparent oligarchs			1.321	-		0.605	0.447	2.600
			1.451	-		0.331	1.264	
Industrial Company	0.185	0.075	1.451	-	1.690	0.634	0.296	3.20
			1.536	-		0.320	1.032	
Jointly Controlled	0.286	0.129	1.384	-	0.790	0.589	0.292	2.625
			1.384	-		0.296	1.187	
Unknown -off Shore	0.106	0.048	1.384	-	0.790	0.589	0.292	2.625
			1.392	-		0.296	1.187	
Total	0.200	0.124	1.392	-	1.239	0.520	0.240	2.487
				-		1.126		

Table B2. Use of Nominees and Foreign Offshore companies by each type of Ultimate owner.

Ultimate Owner	Percent of Foreign Off shore companies n the control chain	Average Percentage of shares held by foreign off shore	Percent of companies having Nominees	Average Percentage of shares held under Nominees
State-Federal or Regional	25	23	43	41
State control-through Holding Companies	41	28	48	42
Transparent Oligarchs (Insider Oligarchs)	72	29	37	45
<i>Non-Transparent Oligarchs</i>	83	65	45	49
Industrial Company	70	62	25	15
Jointly Controlled	80	56	40	82
Unknown Offshore	100	78	-	-

Table B3. Industry-wise breakdown of ultimate owners.

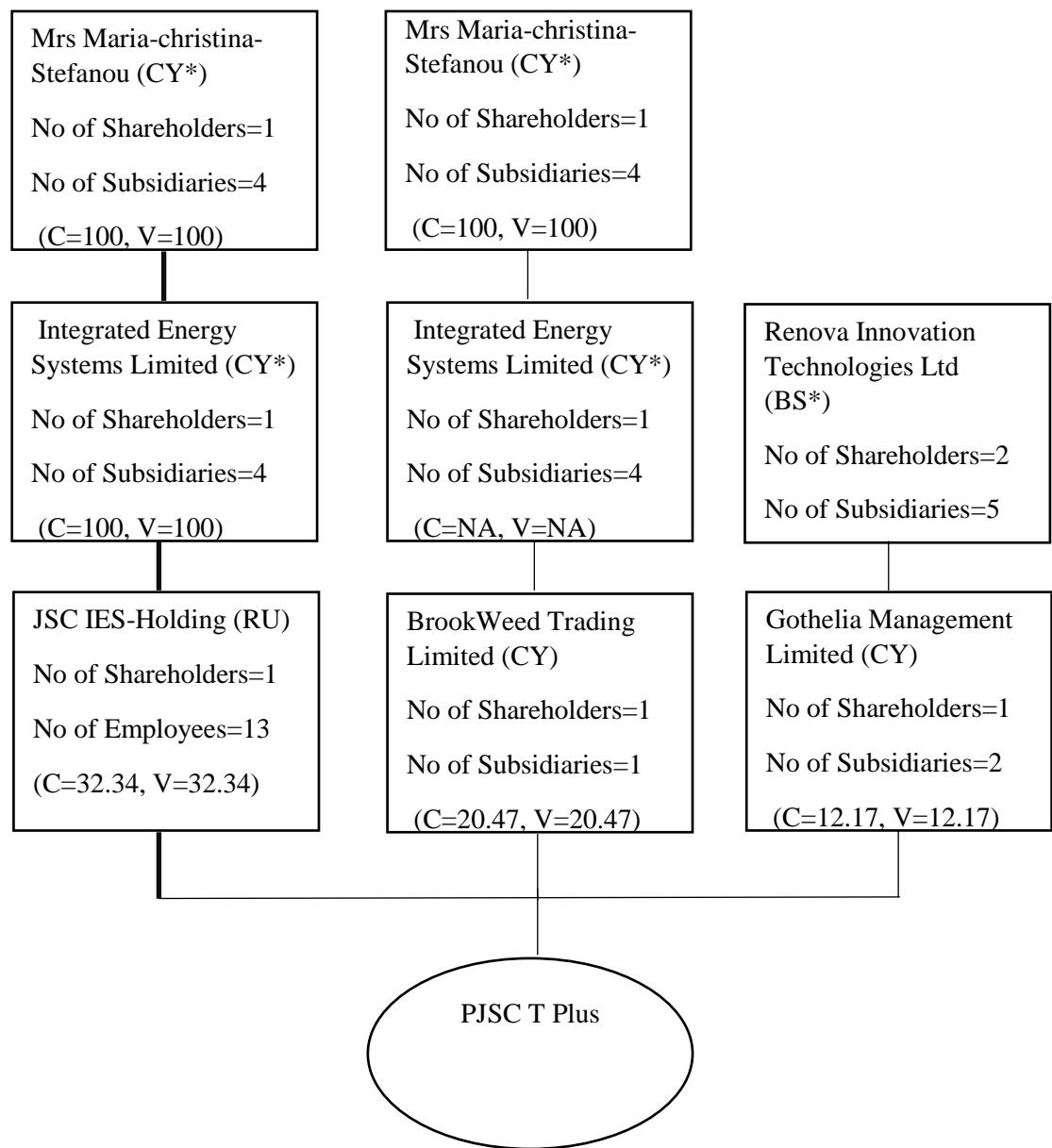
Ultimate Owner	Chemicals and Industries (%)	Electric and Telecom Utilities (%)	Oil and Gas, Metals and Mining (%)	Transport and Consumer Goods (%)
State-Federal or Regional	18.75	31.25	31.25	12.5
State control-through Holding Companies	3.3	63	26.67	6.67
Transparent Oligarchs (Insider Oligarchs)	16	21	37	25
<i>Non-Transparent Oligarchs</i>	35	25	16.67	46.67
Industrial Company	30	30	10	40
Jointly Controlled	40	-	10	50
Unknown Offshore	-	20	30	50

Appendix T: IMF-nominated foreign offshore centres and their attitude indices. Higher values of attitude index exhibit very high OFC orientation (opaque jurisdiction) with flexible financial regulations, lower or zero taxation regimes and higher economic crime.

<i>Offshore Financial Center (OFC)</i>	<i>Osiris Country Code</i>	<i>Offshore Attitude Index</i>
Andorra	AD	2
Anguilla	AI	3
Bahamas	BS	5
Bahrain	BH	3
Bermuda	BM	2
Barbados	BB	3
Belize	BZ	4
Cayman Islands	KY	4
Cost Rica	CR	2
Cyprus	CY	4
Dominica	DM	3
Gibraltar	GI	3
Hong Kong	HK	1
Ireland	IE	0
Jordan	JO	1
Latvia	LV	1
Lebanon	LB	3
Liechtenstein	LI	5
Luxembourg	LU	1
Liberia	LR	4
Malta	MT	2
Marshall Islands	MH	5
Mauritius	MU	3
Monaco	MC	3
Netherlands Antilles	AN	4
Panama	PA	5
Saint Kitts and Nevis	KN	5
Saint Lucia	LC	4
Saint Vincent and The Grendines	VC	5
Singapore	SG	2
Switzerland	CH	0
Vanuatu	VU	4
Virgin Islands (British)	VG	4

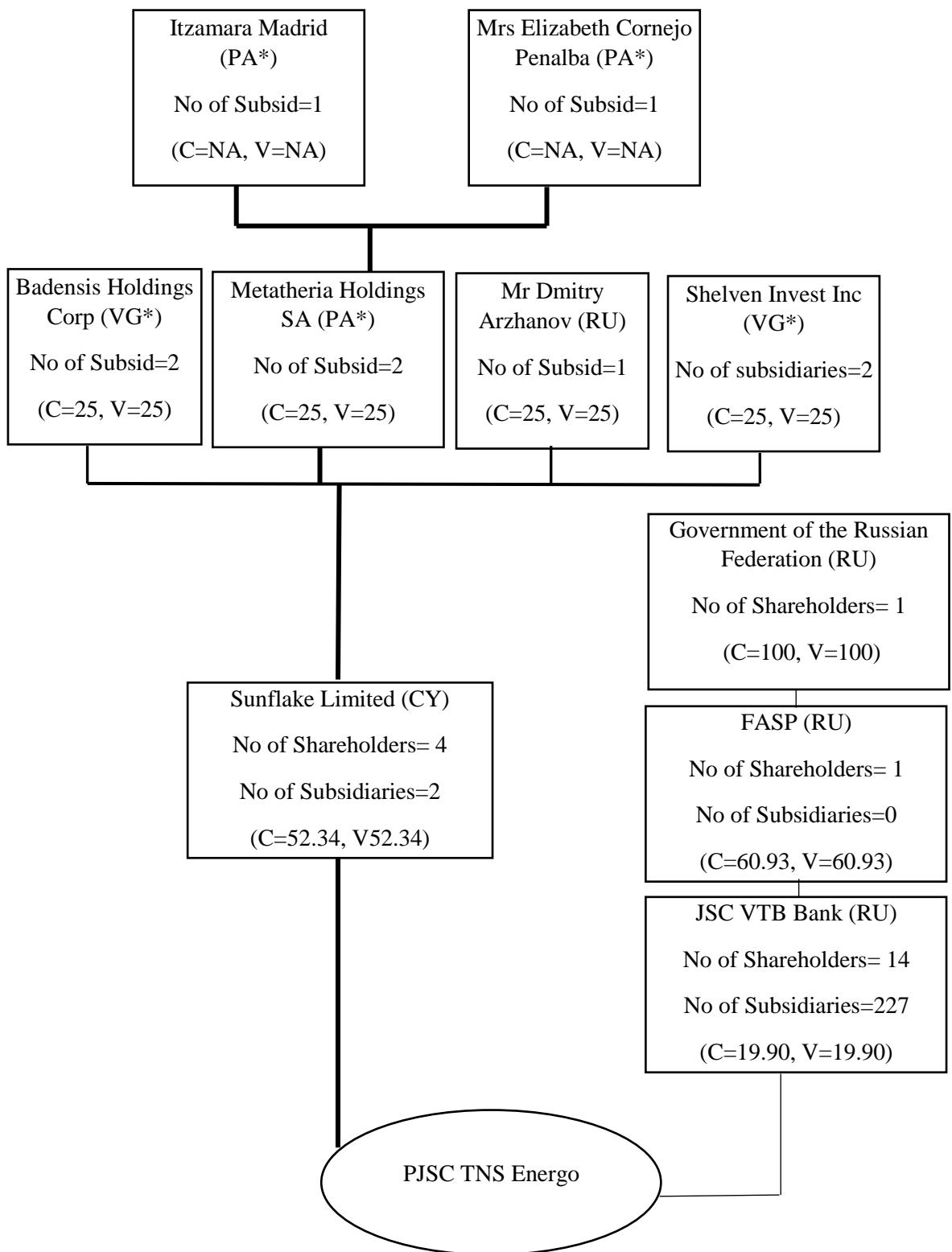
Data Source: *The BVD OSIRIS, IMF working paper on Offshore Financial Centres* (2000) and Masciandaro (2008)

Appendix U: Non-transparent Control Structure of JSC T Plus containing foreign offshore companies and Nominees in the ultimate control chain. (Source: OSIRIS)



*BS: Bahamas, CY: Cyprus, VG: British Virgin Islands

Appendix V Non-transparent ownership structure of TNS Energo with foreign offshore companies and nominees in the ultimate control chain. (Source: OSIRIS).



*PA: Panama, CY: Cyprus, VG: British Virgin Islands