Styles of Financial Management

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Abstract
We examine the duties in financial management and link them to the firm's globalization strategies. Fundamentally, financial management consists of raising and allocating funds across the firm. Recent scholarship focuses on differences in styles of financial management across firms and regions based on economic incentives and governance. We raise another important issue, namely that these styles also reflect behavioral biases. Integrating behavior biases into the economics of financial management provides practical assessments into global competition, distortions in product markets, and the capacity to anticipate or account for future innovations. In particular, we deliver insights into global competition based on the assimilation of behavioral financial economics and the governance system.

1. Introduction

Financial economists analyze how managers raise and allocate funds. In the US and the UK this primarily consists of large, public firms managed by professional executives, deciding on the types and venues of various financial instruments to fund the firm. The officers and directors of the proto-typical Anglo-American firm design various mechanisms to determine how to allocate these funds across divisions and projects. All these activities ostensibly take place under a simple decision-rule, namely maximize shareholder wealth. To protect outsider shareholders from managers pursuing alternative goals, these firms enact formal governance mechanisms to evaluate capital acquisition and allocation decision. Over the past several years, a major emphasis in academic circles and the business press centers on the role of corporate governance in mitigating agency problems that arise in sourcing and allocating capital. Seeking to limit managerial opportunism, Anglo-American firms typically create a series of checks and balances that can impede decision speed. This ***democratic decision-making*** model underpins many modern financial management textbooks.

Yet, in most of the world, ownership structures substantially differ from this specific model, and instead, controlling shareholders lead large firms or firm groups (La Porta et al 1999, Morck et. 2000). For instance, founding families may control a single firm or an entire business group. State control of listed firms is also pervasive, either through direct government ownership (e.g. China and Germany) or through sovereign wealth funds (e.g. UAE and Singapore). Family firms (Tata Group), sovereign businesses (PetroChina), and sovereign wealth-controlled firms (Singapore Airlines) raise funds and allocate them with differing objectives. Family firms for instance may be concerned with family and personal legacies and wealth (Anderson and Reeb, 2003). Nevertheless, by the nature of family-concentrated control, family firms fit into the ***concentrated decision-***

making model. State-controlled businesses arguably focus on issues such as public policy objectives, e.g., employment, resource acquisition or political objectives. Due to government oversight, state-controlled firms often face governance checks and balances; yet a well-connected government official can help a firm overcome bureaucratic constraints. Thus, state-controlled firms could arguably fit into either democratic decision-making or concentrated decision-making models depending on the specific situation.

The market environment of the firm also influences financial management. In fast-growing emerging economies such as China, governments typically play important and direct economic roles via state-controlled banks and enterprises. Market institutions continue to evolve and provide only limited oversight. Similarly, efficient and effective enforcement of rules and regulations, external transparency and accountability, and internal corporate governance practices leave a lot to be desired in many fast-growing economies. Typically, the stock and corporate bond markets in these economies are still defining and developing their roles. Consequently, corporate funds primarily originate from private wealth, retained earnings, and bank financing; thus, the allocation of funds is tilted towards large established enterprises or government-controlled businesses. In this kind of environment, concentrated decision-making represents the norm rather than the exception, and financial management generally falls under the concentrated decision-making model.

A substantial academic literature focuses on the rational economic issues involved in raising and allocating capital in firms based on either democratic or concentrated decision-making. These differential ownership structures and institutional environments give rise to different agency conflicts either between management and diffused shareholders or between dominant shareholders and minority investors. An

important consideration in the study of financial markets centers on the role of arbitragers seeking to exploit investors who act based on behavioral biases. Yet a spate of recent research highlights that financial markets suffer price distortions due to decision heuristics and behavioral biases.

Behavioral biases drive financial management styles. Recent financial economics research examines how behavioral biases influence firm behavior. Well-known issues like "managerial overconfidence" or "status quo bias" have gained substantial traction in expanding our understanding of anomalies in the economics of financial management (e.g., Hirshleifer, Low and Teoh (2012), Malmendier and Tate (2005, 2008)). Transactions that occur within a firm stem from the hierarchal decision structure of the firm. Owing to information asymmetry between decision-makers and monitoring agents, behavioral biases are not easy to detect within a firm. In contrast, transactions that occur outside the firm involve arms-length prices, which act to limit economic deviations. That these behavioral biases arise more readily within a firm than in transactions outside the firm suggesting greater behavioral biases in the allocation of capital in economies with poorly developed capital markets.

Indeed, corporate governance influences behavioral biases. Checks and balances in governance systems in the US and UK style supposedly mitigate not just agency costs by rational agents, but also decision errors arising from behavioral biases. One may then argue these behavioral biases arise more readily in settings where managers have weak incentives or governance. For instance, it is much easier to become overconfident if someone else bears most of the downside risk, especially if there is only limited oversight. Yet, one needs to be cautious. Even an insightful manager may have to submit herself to collective board or investor bias. We therefore classify various behavioral biases under differing economic models of financial decision-making.

Financial management involves acquiring and allocating capital to meet the firm's goals. Although corporate goals can differ across ownership structures in a variety of ways, we focus on two representative corporate goals, namely maximize shareholder wealth or alternatively corporate sustainability. Using several prominent cognitive biases, such as overconfidence and status quo bias, we argue that different behavioral biases will fare differently under different ownership structures and corporate goals.

In the globalized economy, companies with two different styles of financial management compete across industries and countries. Firms domiciled in locations with mature capital markets tend to engage in numerous transactions outside the firm. Consequently, external market participants exploit and constrain behavioral biases in corporate decision-making. In addition, external pressure leads to the use of internal governance mechanisms that also serve to limit behavioral biases. In contrast, financial management in fast-growing economies often entails autocratic decision-making within the firm. Asymmetric information with external constituents limits the ability of the market for corporate control to limit behavioral biases. These differences lead to important considerations regarding the allocation of capital in the firm and society. Firms with both styles of financial management race to capitalize on innovations and business opportunities.

In the above context, we make strategic and management recommendations for both types of firms. We also delve into useful speculation on how decision idiosyncrasies based on behavioral biases may affect corporate competitors. Finally, we comment on the economic implications of the rise of Eastern firms in the global economy.

2. The Economics of Financial Management

Our understanding of the roles of economic and psychological incentives in financial management grew at different paces. The theory of corporate finance came to life in the 1960s when Modigliani and Miller argued that under a certain set of conditions, the firm's financial decisions regarding corporate policies such as capital structure and dividend payout are irrelevant. These conditions comprised the absence of any frictions including agency costs, information asymmetry, transaction costs, bankruptcy costs and taxes (among others). Soon after that, researchers started relaxing M-M assumptions. For example, an important feature in a corporation with diffused ownership is the separation of ownership and control. In other words, managers, who are decision-makers, often own miniscule fraction of shares. The capability of managers to potentially make decisions that bring *them* private benefits while not maximizing shareholder value has been dubbed "agency costs" as depicted in the seminal paper by Jensen and Meckling (1976). This notion of developing incentives and mechanisms to align managers' interest with shareholders' gives rise to corporate governance.

Traditionally, in the US and UK context, corporate governance is defined as "ways in which shareholders (suppliers of capital) assure themselves of getting the maximized return on their investments." From the perspective of the firm's managers, corporate governance refers to ways insiders can credibly commit to maximize the return and, hence, be able to attract capital from outsider investors. There are many ways managers may fail to act in the interest of shareholders:

Self-dealing – the most obvious agency cost – refers to the ways managers benefit their own interests through engaging in the activities or investments that benefit them personally. These activities range from illegal activities such as outright theft, bribery, accounting irregularities, or insider trading to less obvious methods such as cronyism and favoritism of their family members, political partners, or business partners in awarding

the business or employment contracts. (Djankov, La Porta, Lopez-de-Silanes and Shleifer, 2008). Self-dealing is closely associated with corruption. Figure 1 lists the Transparency International's Corruption Perception Index (2001) around the world.

Extravagant perks - another way managers do not maximize shareholder wealth is through consumption of extravagant perks. These include extravagant offices, private jets, memberships in expensive golf clubs, exaggerated entertainment bills, etc.

Shirking - this simply refers to the ways managers do not extend enough effort in doing their job. They may be less focused on maximizing shareholder value and more focused on the activities that bring them direct or indirect personal benefit (board memberships, consulting, personal investments, charity involvement, political activities, etc.).

Empire building - Roll (1986) proposed a "hubris" hypothesis and argued that managers may be driven by "empire-building" incentives. Since being a manager of larger firm is more prestigious, managers may undertake value-reducing mergers and acquisitions in order to create business empires.

Inappropriate risk taking - managers may be inclined to take investments with excessive risks, as potential adverse consequences are disproportionately born by outsider investors; or, they may be inclined to excessively avoid risks to protect their private benefits as losses may attract scrutiny (John, Litov and Yeung (2008).

<Insert Figure 1: Corruption around here>

2.1. Monitoring

Agency costs may be alleviated through mechanisms such as accountability and transparency. Specifically, firms are obliged to disclose company information following

government-stipulated rules and regulations and these reports require validation or certification by independent auditing firms. The accounting literature finds strong evidence that executives manage earnings and thus compromise accountability and transparency. Evidence also suggests that supposedly diligent and credible auditing firms relax their standards for other business purposes.

In addition to these internally driven and publicly validated disclosures, the business press and financial analysts arguably serve as important information intermediaries that uncover company mischief. However, the reliability and independence of both the business press and financial analysts remain an important concern. For example, unscrupulous investors might manipulate social media and spread stories that affect firm value, which they can take advantage of.

Boards represent another mechanism to control agency problems as they monitor and safeguard executives to dutifully carry out their fiduciary duties. They have the power to set executive compensation and remove CEOs. They also monitor the principal decisions by managers through the power to approve companies' critical investment and strategic decisions and such as large investments and divestments as well as takeover offers by other companies. Frequent criticisms of boards' effectiveness center on the notion that many "non-executive" directors are not truly independent and may be ineffective advisors or monitors. Of course board monitoring and advising requires both inside information, expertise, and objectivity.

Executive compensation contracts represent an important mechanism to align the objectives of managers with outside investors. Jensen and Murphy (1990) argued in a seminal (but controversial) paper that this sensitivity is insufficient as an average manager receives U$3.25 in compensation for every U$1,000 increase in shareholders' wealth. This 0.325% sensitivity seems insufficient incentive to eliminate agency costs. Moreover,

recent studies documented that managers manipulate incentive contracts through activities like "back dating" of stock options or that they can induce managers to manipulate market's perception of firm value.

Last, activist investors with sizeable shareholding may convince other investors that management change would be beneficial for shareholders' wealth. There is a considerable difference between investor activism in the Anglo-American system and the rest of the world, particularly in the East. Shareholder activism relies on substantial proportions of shares available to the public, such that outsiders can potentially influence corporate insiders. Shareholder activism can act as important disciplinary action whereby outside investors pressure for change. Of course, such activism can also entail disruptive activities by malcontents that disrupt long-term corporate operations.

<Insert Figure 2: Institutional Ownership and Governance around here>

2.2. Market for Corporate Control

The most extreme form of corporate governance is the market for corporate control. If the above-mentioned governance mechanisms fail to improve the performance, then a firm may find itself a target of takeover.[1] While most mergers in Europe and Asia are negotiated with management and often behind "closed doors," the Anglo-American mergers take various forms; a large number of these include hostile takeovers and leveraged buyouts.[2]

2.3. Ownership Concentration

[1] There were several merger waves in the US; the most visible one in 1980s (Holmstrom and Kaplan (2001)).
[2] The number of hostile mergers and LBOs has gone down since 1980s mostly due to the widespread adoption of anti-takeover defenses such as adoption of poison pills and supermajority rules.

The above discussion about "insiders vs. outsiders" naturally leads to the question of how widespread diffused ownership vs. concentrated ownership is; how severe are the consequences of each form, and whether there exist systematic differences across geographic regions. An early systematic effort to capture these differences can be found in La Porta, Lopez-de-Silanes, Shleifer and Vishny (1999) and Morck (2000). Subsequent studies indeed show substantial differences in ownership concentration among countries. Faccio and Lang (2002) provide a systematic analysis of European countries. They document that 44% of the firms in Europe are family controlled, while 37% are widely held. Among family-controlled firms, two thirds have a CEO from the controlling family. Classens, Djankov and Lang (2000) examine Asian countries and find that more than two thirds of the firms are family controlled. This fraction is even higher in countries such as Indonesia, Thailand and Vietnam.[3] Finally, Fogel (2006) documents the global prevalence of family groups and their control of substantive corporate resources. For a comprehensive survey of concentrated ownership and the consequence around the world, see Morck, Wolfenson and Yeung (2005).

<Insert Figure 3: Family Ownership Around here>

On the other hand, Shleifer and Vishny (1986) report that half of Fortune 500 firms in the US do not have a shareholder with more than 5% of shares. Anderson and Reeb (2003) find that family ownership in the US is more frequent than previously thought, albeit their definition of family control differs from that in studies on European or Asian firms (they define a firm to be family controlled if the fraction controlled by the family is larger than 5%). This definition is consistent with the notion that *effective* control

[3] Typical methods to enhance control in Asia (especially in Japan and Korea) include pyramid structures and cross-holdings between firms.

in the US requires lower percentage of ownership due to typically diffused ownership of firms in the US. Some authors (e.g., Morck 2007) argue that the current American environment is a direct product of radical steps that American government took to break up concentrated power within families. The historical evolution is beyond the scope of this paper.[4]

Ranked among the largest corporations in the world, state-controlled enterprises dominate economies previously under central planning, especially in Asia and Latin America. For example, 112 and 246 central state-owned enterprises (SOEs) exist in China and India, respectively (Kowalski, Buge, Sztajerowska, and Egeland (2013)). In both countries, SOEs are prevalent at both the central and state government levels. Some Chinese SOEs are now ranked among the largest corporations in the world. Moreover, in many economies these various state-controlled firms account for substantial portions of economic activity. Arguably, these firms influence the allocation of capital within their own economies and influence both procurement and allocation of capital by external competitors.[5]

<Insert Figure 4: State Ownership around here>

2.4 Interesting International Differences

Financial economists have been very active in investigating the variations in corporate governance and capital market system across countries. We only conduct a very brief and selective review of this voluminous literature.[6]

[4] Interested readers can refer to Morck and Yeung (2014) and Morck (2005).
[5] For a survey of the status of China' capital markets, see Fan, Morck, and Yeung (2012) and Morck and Yeung (2014).
[6] For more detailed surveys, please refer to Shleifer and Visny (1997) and Morck (2007).

Corporate governance mechanisms like those discussed in sections 2.1 and 2.2 need government enforcement of laws and regulations to protect investors' interest. However, many countries do not have strong state-enforced protection (Djankov, La Porta, Lopez-de-Silanes and Shleifer, 2008). Glaring examples are Latin American countries, Southern European countries and many countries in Asia. [7] Interestingly, countries with poor investor protections do not have a vibrant equity market. Coincidentally, these countries tend to have a strong presence of family business groups and most of them have a complicated web of subsidiaries with a controlling patriarch at the top (see, e.g., Fogel 2006).

The explanation is straightforward. When well-defined rights are absent and regulatory enforcement mechanisms have limited power, companies cannot credibly pre-commit to be conscientious agents / representatives of equity investors nor would investors have any reasons to trust them.[8] Also, the limited property rights lead to poorly compensated monitoring agents and potential candidates have little incentive to invest in human capital. Hence, the economy is stuck in an equilibrium without trust among potential equity fund users, equity providers, and monitoring specialists (e.g., lawyers, accountants, auditors). In such an environment, wealthy people become dominant shareholders, but at the same time, they have to retain strong decision rights. Hence, these "concentrated corporate decision makers" also have to monitor fund users – their employees and subsidiaries. In other words, corporate governance is personalized and internalized. Naturally, wealthy firm owners possess incentives to sustain their corporations' and families' financial health.

[7] La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) and Djankov, Lopez de Silanes, La Porta, and Shleifer (2005).
[8] See, La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997) and La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998).

International disparities in property rights are manifested in substantial differences in the relative size of the stock markets around the world. In 2012-2014, the UK and US enjoy well-developed stock markets with aggregate market capitalization at 115.5% (for both) of GDP. Countries with arguably more limited corporate governance mechanisms possess stock market capitalizations at about half of their respective GDPs (e.g., Japan and China have stock market capitalization equal to 62% and 50% of their respective GDPs).[9]

Differences in property rights and corporate governance also affect the quality and reliability of corporate disclosures to investors. Since investors have little interest in equity investment, getting firm specific information to "buy low, sell high" is limited (see Morck, Yeung and Yu, 2000). In such markets, investors are not willing to lend to corporations, nor can corporations gain trust easily. The corporate bond market, much like the equity market, does not fully develop and financing originates predominantly from bank intermediaries.

The characteristics of firms in economies with weak property rights and corporate governance are as follows: (i) corporate governance is rather ineffective, (ii) a large fraction of companies have dominant shareholder(s) with concentrated decision rights, (iii) investment funds are mostly drawn from personal savings, family wealth, retained earnings, and banks, and (iv) established corporations, especially those with government or bank connection, possess the best access to capital.

2.4 Stylization of Financial Management Objectives

At the danger of oversimplifying the subject matter, we propose to capture the goals of financial management using two extreme cases. At one extreme, firms in markets

[9] These data are readily available from the Worldbank http://data.worldbank.org/indicator/CM.MKT.LCAP.GD.ZS/countries.

with well-functioning corporate governance focus on maximizing shareholder value. At the other extreme, in firms operating in markets without strong property rights for effective corporate governance mechanisms, the dominant shareholder often focuses on corporate sustainability as the primary goal. While it may be a futile endeavor to search for a single corporate goal in any firm, discussions with family firms often boil down to sustainability of their wealth and influence. A large literature on cronyism builds on the assumption that family firms are geared to preserve their financial status quo.

In many large economies, such as China and India, SOEs' decision makers are subject to numerous bureaucratic hurdles. Governance checks and balances supposedly help direct decision makers toward value maximization. Yet they are often called upon to make decisions favorable to political agendas or governing bodies' government official political and personal interest. Indeed, decisions in SOEs are often heavily influenced by politically powerful individuals. Thus, concentrated decision-making and bureaucratic entrenchment may make SOEs focus on corporate "sustainability;" a common refrain among government employees that centers on doing no wrong.

While we propose these two extreme objectives of financial management, maximizing shareholder value vs corporate sustainability, to facilitate our subsequent discussion, we are fully cognizant that most firms lie somewhere between these two extremes.

One can draw some preliminary conclusions on the interactions between these two styles of financial management. The due diligence requirements and checks and balances procedures that arise in democratic decision-making systems to maximize shareholder value, likely impede managerial decision speed but result in decisions more in-line with shareholders' interests. In the case of concentrated decision-making, the

controlling owners preferences lead to quick and speedily executed decisions that reflect the personal preferences of the of the dominant decision-maker at that point it time.

Complicated dynamics can arise. For example, the slower decision-making in democratic decision-maker companies could hinder them from competing with concentrated decision-making firms for investment opportunities. Alternatively, the limited orientation on efficiency in concentrated-decision making firms potential affect their ability to raise equity capital or recognize subsequent investment opportunities. However, additional important considerations also play important roles, which we turn to next.

3. Behavioral Biases and Financial Management

Financial management and, more generally, economic behavior reflects decisions made by human beings. Historically, financial economists assumed that people are rational and reliably update their decisions. In the early 1970s, psychologists Amos Tversky and Daniel Kahneman (who later won the Nobel Prize in Economics in 2002) demonstrated that humans make intuitive judgments, often imperfect or even erroneous, and they often make decisions inconsistent with the rational expected utility framework. Active research on how humans make judgments in the real world, termed Heuristics and Biases, spread into studies into finance and economics. Undeniably, we are human and the artificial analytical framework, no matter how elegant and convenient, has to be challenged.

Modern-day finance does not reject the notion that people use less than fully rational decision rules. The efficient market hypothesis, which dominated finance research for decades, assumes that market players look for information and use the information to value assets as they seek profits. When an asset's price is different from

their estimation, they buy low or seek to sell high. The more informed and better users of information will make profits. Milton Friedman asserted "irrational traders will consistently lose money, won't survive and, therefore, cannot influence long run equilibrium asset prices." (Friedman (1953)). Thus, the Efficient Market hypothesis stipulates that well-traded assets have prices that reflect rational valuation based on the latest available information.

Paradoxically, "irrational traders" are critical to market efficiency, since an arbitrageur has to believe that she has superior private information or that others are not interpreting the information correctly (Grossman and Stiglitz (1980) and Black (1986)). Indeed, while rational investors should hold well-diversified portfolios and trade infrequently, empirical evidence documents that individual investors (presumably noise traders) hold poorly diversified portfolios, trade frequently and, in general, behave in less than rational ways (Barber and Odean (200X)). At the same time, there is growing evidence that prices occasionally deviate from their fundamental values.

Indeed, if arbitrage is risky, or if frictions in the market prevent arbitrageurs to take positions opposite to noise traders, the mispricings could potentially remain for extended periods of time. ***In fact, the argument is not whether less than fully rational traders make mistakes or if they individually survive in the market, but how long it takes arbitrage traders to bring prices back to fundamental values.***

<Insert Figure 5: Long Term Capital Management around here>

A Tale of Arbitrage Failure

Inefficiencies happen in seasoned stocks with perfect substitutes as well. Perhaps the most telling example of the limits to arbitrage is the case of Long Term Capital

Management (LTCM). The hedge fund – run by Nobel Prize winners in Economics – identified mispricings in the market and took opposite positions. Specifically, LTCM fund managers recognized an arbitrage opportunity in Royal Dutch / Shell shares. These two companies agreed on a constant 60-40 ratio in dividends (and all other financial interests) and, hence, share prices should reflect this 60-40 ratio. In other words, in efficient markets share price of Royal Dutch should always be 50% higher than the share price of Shell. As the prices diverged from the 60-40 ratio, LTCM took a long position in relatively undervalued stock and a short position in relatively overvalued shares. Even though LTCM made a correct decision (in the sense that prices were expected to converge to a 60-40 ratio in efficient markets), the prices continued diverging, creating even larger inefficiency. In fact, Froot and Dabora (1999) showed that Royal Dutch / Shell prices deviated as much as 40% from the 60-40 ratio. As a result of this bet and some other unfavorable developments, LTCM ran out of funds and had to liquidate, creating one of the more glaring crises in modern financial history.

Theoretical research conjectures and empirical research document that noise traders can survive as a group and cause prices to deviate from fundamental values. As a consequence, distortions in asset prices could last for an extended period of time, even in highly liquid and robust stock markets such as the US. In short, even highly liquid markets cannot eliminate price distortions due to decision heuristics and behavioral biases.[10]

[10] This is consistent with the noise-trader risk model developed by De Long, Summers, Shleifer and Waldmann (1990) and extended by Shleifer and Vishny (1997). In addition, arbitrageurs may be aware that noise traders can even exacerbate mispricing in the short run. Consequently, arbitrageurs may trade *in the direction* of mispricing to take advantage of noise traders and, in the process, *increase* mispricing in the short run. Hence, the combination of noise traders and the costs of arbitrage (including short sales constraints) may keep prices away from fundamental values for prolonged periods of time. See DeLong et al (1990), Shlerifer and Vishny (1997),Barberis, Shleifer and Vishny (1998) and Daniel, Hirshleifer, and Subrahmanyam (1998) for theoretical models. For empirical evidence, please refer to Lee, Shleifer and

Behavioral biases also influence the managers of the firm. The board of directors, shareholder activism, and the market for corporate control cannot completely eliminate behavioral decisions by firm executives. Due to information asymmetry between the decision makers and monitoring agents, heuristic biases are not easy to detect within a firm. Transactions outside the firm center on observable prices, while transactions in the firm arise within the hierarchal structure of the firm. We argue these behavioral biases arise more readily within a firm than in transactions outside the firm, where arbitragers can more readily mitigate these frictions. Moreover, due to difficulties in changing the decision-making style in the executive suite, many suboptimal behavioral managerial decisions will be executed before the market realizes their true (biased) nature.

That behavioral biases exist and survive in financial markets as well as in executive suites leads to intertwined considerations on financial management. The following questions naturally arise:

- How can executives incorporate investors' behavioral biases in their financial management decision?
- How does corporate governance mitigate or amplify various behavioral biases in executive suites? In other words, how will managerial behavioral biases be affected in corporations with different corporate governance systems and thus having different focus on value maximization vs. sustainability?
- Thus, how will these varied behavioral biases and style of financial management (democratic decision-making vs. concentrated decision-making and thus value maximization vs. sustainability) affect global competition?

Thaler (1991), Froot and Dabora (1999), Baker and Wurgler (2006) and Kumar and Lee (2006). Furthermore, Barberis and Thaler (2003), Baker and Wurgler, (2007, 2011) and Barber and Odean (2013) provide excellent surveys of the literature.

Before we turn to this discussion, we describe some important managerial behavioral biases.

4. Behavioral Biases of Managers

Among the numerous cognitive biases discovered in behavioral studies, we concentrate on the following five: overconfidence (often referred to as optimism), conservatism (often referred to as status quo bias), familiarity (often referred to as home bias), myopia and disposition effect. This non-exhaustive list appears appealing in our attempt to discuss differences between the East and West.

Overconfidence bias refers to one's belief that one's skills are higher than they actually are. The best-known variety of overconfidence bias ("better-than-average" effect) refers to the notion that most people consider their driving ability higher than the median driving ability of the peer group. This bias is present at the individual investor level as well as the manager level. At the individual investor level, researchers found strong evidence that overconfident investors trade more and experience lower returns on average (Barber and Odean (2000); Dorn et al (2005); Grinblatt and Keloharju (2009)).

<Insert Figure 6: Optimism of US vs. non-US Executives around here>

At the manager level, overconfident CEOs tend to underestimate the risks and overestimate future cash flows associated with an investment. In addition, overconfident CEOs feel that they have superior decision-making abilities.[11] Academic research

[11] Malmendier and Tate (2005) construct frequently used measures of overconfidence. First, they use the propensity of managers to hold in-the-money equity options and buy their company stock as their measure of managerial overconfidence. As a second measure, they record the number of press articles related to the firm that refer to the CEO using the following terms: "confident" or "confidence," "optimistic" or "optimism," "not confident," "not optimistic," and "reliable," "cautious," "conservative," "practical," "frugal," or "steady." They use a simple algorithm to classify CEOs based on the press description.

indicates that overconfident CEOs prefer internal financing over debt and that they prefer debt over equity. These preferences arise because overconfident managers overestimate future cash flows of the company and prefer to keep (mis)perceived upside potential within the firm. Malmendier, Tate and Yan (2011) document among US firms that overconfident CEOs issue roughly 33 cents more debt than comparable firms to cover an additional dollar of external financing.

Overconfident CEOs thus tend to overuse internal funds; they are not well disciplined by corporate governance mechanisms or by the capital market. In the case of insufficient internal funds, they underinvest, presumably, because they believe their equity is undervalued. Similarly, overconfident CEOs undertake value-destroying mergers, especially if they don't have to raise external funds. As a result, the market reacts more negatively to mergers undertaken by overconfident CEOs than for non-overconfident CEOs (Malmendier and Tate (2008)).

Theoretical models predict that overconfident managers can potentially achieve higher productivity by accepting good but risky projects (Goel and Thakor (2008); Gervais, Heaton, and Odean (2011)). Hirshleifer, Low and Teoh (2012) find overconfident CEOs have higher stock return volatility, consistent with their undertaking riskier projects and they invest more in R&D, and, hence, have more patents and citation counts.[12] Ferris et al (2006) document that *overconfident* CEOs typically come from the West.[13] More recently, Graham et al. (2013) report that western CEOs display greater optimism bias than their eastern counterparts. The implication is that confident eastern managers appear less rash than their western counterparts.

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12 This evidence applies only in innovative industries.

13 In addition to this, Ferris et al (2006) find that overconfident CEOs are more frequent in firms headquartered in Catholic and Protestant countries, countries with low uncertainty avoidance, countries with a high level of individualism and countries characterized by a low level of long-term orientation. We will (at the danger of oversimplifying) summarize abovementioned differences as "East vs. West" distinction.

Status quo bias, or conservatism, simply refers to the preference of not making changes (Samuelson and Zeckhauser (1988) and Kahneman, Knetsch and Thaler (1991)). Viable explanations include lack of required information or sheer reluctance to exert the effort to make changes. However, it could be a cognitive bias. First, decision makers are affected by the initial anchor. One may estimate the price of a new car by starting with a totally irrelevant number that just catches one's attention and mistakenly adjust from there. Thus, how one is "primed" matters and inevitably the current status represents "initial prime." Furthermore, when decision makers are prompted to weigh potential loses in contemplating a switch or change, they often choose to follow the maxim "if it ain't broken, do not fix it." Finally, one may simply fall into the sunk cost fallacy, as many studies have shown (Ho, Png and Reza (2014)).

Status quo bias can manifest itself in interesting and relevant ways. For example, status quo bias leads a person to demand higher price to *give up* an object than the price she would be willing to pay to *obtain* the identical object. This implies that one may not be willing to rationally relinquish investment/business. Alternatively, it leads one to resist disruptive changes in a business. Perhaps status quo bias may explain some well-documented difficulties in mobile phone companies like Nokia and Blackberry.

Familiarity / home bias refers to the individuals who prefer to invest in familiar industries or familiar locations. Researchers found that individual investors overweight their portfolios toward the stocks that are closely related to them in professional or geographical sense.[14] Kang and Stulz (1997) examine foreign portfolio equity ownership in Japan and conclude that "even though the barriers to international investment have fallen dramatically, foreign ownership of shares is still extremely limited and much smaller than one would expect in the absence of barriers to international investment." In

[14] See Massa and Simonov (2006) and Doskeland and Hvide (2011).

addition, Coval and Moskowitz (1999) and Huberman (2001) document that the home bias prevails in the US as well – people tend to invest in companies closer to home in spite of high level of information flow and corporate governance. This evidence stands in contrast to the diversification argument posed by the conventional finance theory. In other words, this phenomenon provides compelling evidence that people exhibit behavioral investing patterns, rather than investing according to a rational portfolio theory. The implication of such behavior elicits the classic observation in Feldstein and Horioka (1980) – location-by-location investment is correlated with savings in spite of globalization. From a business strategy point of view, home bias blindfolds managers from seeing changes arising from non-familiar industries or technology or geographic regions; home bias shields managers from seeing opportunities or needed adjustments.

The disposition effect refers to investors' tendency to sell winners and keep losers. A sizable literature uncovers the evidence of disposition effect in the U.S. (e.g., Shefrin, Hersh and Statement (1985), Odean (1998) and Ferris, Haugen and Makhija (1998)). The disposition effect has been found across countries and investor types (e.g., Frazzini (2006), Chen *et al.* (2007)). It is the most pronounced for unsophisticated investors and hard-to-value stocks and it declines with investor's experience. Thus, non-price transactions potentially suffer greater disposition bias. In-firm transactions likely suffer from the disposition effect relative to external market transactions. Moreover, the more unique the asset, the more pronounced the disposition effect. Consequently, the disposition effect can cause fixed assets like property to have sluggish downward movement. Firms suffering from the disposition effect may take too long to divest away from segments that they should exit.

Another pertinent bias is managerial myopia. Myopia is a behavioral bias in the sense that people give more weight to near term events than to more future events, even

after adjusting for normal discount rates; accordingly, this bias filters into asset valuations. There could be strong implications. For example, myopic shareholders potentially over react to near term earning reports and act with less than appropriate intensity to information on more distant considerations. Asker, Farre-Mensa and Ljungqvist (2015) document that US public firms tend to invest less than half as much as comparable private firms. Public firms' sensitivity to changing investment opportunities goes down and this discrepancy is particularly high in industries where stock prices are more sensitive to earning news. Note that even though this evidence refers to public firms' investors' impatience and preoccupation with quarterly earnings, it seems plausible that managers have a similar bias.

Critically, we aspire to connect behavioral biases to financial management and corporate governance within the context of globalized competition. We realize that our list of behavioral bias is by no means exhaustive. There could be other important considerations. We welcome suggestions.

5. Managerial behavioral biases, corporate governance and objectives

Extant research documents the prevalence of behavioral biases regardless of whether the decision-maker works under rigorous governance scrutiny or commits a serious amount of personal wealth. Two issues serve as our starting point. First, the boundaries of the firm matter in evaluating behavioral biases. Transactions within the firm undoubtedly involve greater potential for behavioral biases than arms-length transactions in highly liquid markets. Second, the effect of behavioral biases on corporate decisions depends on the effectiveness of governance and personal wealth commitment. For example, the relative focus on shareholder wealth maximization versus corporate

sustainability potentially influences how differing behavioral biases influence corporate decisions.

The interaction of objectives, governance, and behavioral biases and their impact on corporate decisions and financial management remains an under-researched area. It is therefore fruitful to set up a taxonomy to guide future research and managers in this area. We re-iterate the stylized differences in the structures of economies with diffuse ownership of firms vs. those with concentrated ownership. In economies with diffuse ownership and US/UK style corporate governance, democratic decision-making dominates the firm. Management and the board arguably focus more on shareholder value maximization than on corporate sustainability. In economies with concentrated ownership, corporate decision rights are concentrated and management often aims towards sustainability. We repeat here that we use these stylized extremes to facilitate discussion. In reality, most firms lie on a continuum between these two extremes—democratic decision-making vs. concentrated decision-making. We analyze how they interact with behavioral biases in the executive suite.

5.1. Behavioral Bias in the Firm

Intuitively, concentrated decision-making magnifies overconfidence because fewer people are involved in decision-making; but this is debatable as the dominate decision maker may not necessarily be over-confident. A democratic decision-making system with checks and balances requires greater incentive compensation to induce managers to take risks to maximize shareholder value[15]. A well-functioning board typically mitigates personal consumption while incentivizes the manager with share price-sensitive executive compensation. Note further that in tournament models – which

[15] Maximizing shareholder wealth and maximizing firm wealth represent two very different goals and risk profiles. Maximizing firm wealth corresponds more with corporate sustainability while maximizing shareholder wealth exemplifies a growth option framework.

dominate in the West – *successful* managers potentially exhibit higher appetites for excessive risk-taking. Hence, in economic democracies, decision makers likely attribute the firm's success to their own abilities, but they attribute potential failure to the environment / economic circumstances. This self-attribution bias can lead to overconfidence.

Additionally, overconfidence can reflect one's culture. Ferris et al (2006) and Harvey et al. (2013) find that overconfident CEOs typically come from the West. Putting these all together, we conjecture that overconfidence may be prevailing in markets like the US or UK (without precluding the possibility that some unique economic circumstances may create overconfident managers in both economic environments).

In democratic decision-making, corporate governance is geared toward maximizing shareholder wealth creates imperatives to embrace innovation and progressive practices. Consequently, managers with a tendency to focus on the status quo face a high risk of replacement by more innovative and progressive candidates. In contrast, in firms with concentrated decision-making, especially when the objective is corporate sustainability, status quo seeking is legitimized.

Ubiquitous home bias represents the most established bias in financial markets. Yet globalization favors enterprises that venture internationally and managers who push the limits and step outside their comfort zone. We conjecture that it is easier to *overcome* home bias in decisions made by one person, which is the case in concentrated decision-making environments, than in a group's decision. Following the same logic, executive suites in economic democracies are more likely to exhibit home bias. At the same time, in the case of concentrated decision-making, the factors that drive home bias are prominent – inadequate information and risk avoidance. We believe that at the end, home bias prevails in poor governance location.

Even though foreign expansion from these locations may seem like an argument against this conjecture and supports the absence of home bias, we conjecture that foreign expansion reflects the concentrated decision maker pursuing other personal goals or political agendas (as in the case of China's SOEs).

Following the same logic, democratic decision-making is more conducive to myopia. If the objective function of decision makers is shareholders' wealth maximization, managers will focus on share price. However, financial markets sometimes may have a tendency to incorrectly value benefits of long-term projects such as research and development. In such cases, managers may focus on increasing quarterly earnings at the expense of long-term projects (Bushee (1998, 2001)). This especially happens in the tournament models when managers may not even survive till the realization of future benefits of long-term projects.

On the other hand, the decisions of concentrated decision-makers are less affected by financial market actions and the objective of these decision-makers is to maximize corporate stability. Also, their longevity depends less on the markets. Hence, they can afford to wait till the realization of the long-term project. Consequently, they would be less affected by potential myopic market behavior. We note that such managerial behavior may result from behavioral bias or potentially represent a rational response to behavioral biases by investors in the markets.

Disposition effects are likely equally present in all firms. However, firms that focus on corporate stability seem less likely to recognize losses and suffer visible price volatility. Moreover, in economies where transactions occur more within the firm, relative to economies where transactions occur between firms, firms should exhibit greater problems with disposition bias. Sociologists argue that conglomerates exemplify the disposition effect, which led to their decline in the 1980s in the US (Davis et al.,

1994). Intuitively, conglomerates suffering from disposition effects reacted slowly to changing markets and continued to invest in weak opportunities. Ultimately, their values declined and corporate raiders eventually moved in to take advantage of these investments driven by behavioral biases.

5.2 Behavioral Biases in the Economy

Markets consist of firms. In some economies, transactions take place within the confines of a single firm, while others exhibit more transactions across firms. In economies with greater vertically and horizontally diversified firms, more transactions occur within the firm. In contrast, when the boundaries of the firm are fairly narrow and the firm transacts outside the firm for supplies, services, and customers, behavioral biases play a less important role. As in financial markets, arms-length negotiations serve to limit behavioral biases in decision-making, at least in the long term. Consequently, we posit the economies with more focused firms, relative to those with more diversified firms, behavioral biases will exhibit lower effects on the allocation of resources in the economy. Managers dealing with or competing in economies with more diversified firms should expect greater behavioral bias. Likewise, economies greatly affected by non-democratic public policy decision-making that sets investment trends are more likely to be affected by collective behavioral biases.

6. Differences in Decision Speed

Decision speed has an obvious relationship with financial management systems. A rigorous corporate governance system comprises many steps of checks and balances, e.g., due diligence and approval processes, regulatory compliances, etc. These deliberating processes make the sourcing and distribution of funds more time consuming than otherwise. On the opposite end, under a concentrated decision-making these

impediments can be expediently executed or even totally skipped. These differences are well expected. We draw readers' attention to the less obvious: behavioral biases influence financial management and in particular the speed of the decision process.

Consider, for instance, overconfidence bias. Recent research documents that CEO overconfidence leads to overinvestment. Overconfident managers arguably feel less need to engage in fact finding, due diligence, or recognize the true downside risk of a project. Overconfident managers, as opposed to confident managers, are more willing to invest without considering all the potential issues and problems. They don't worry about downside risk as much, so why bother to spend time and resources on estimating or evaluating it. Unfortunately, observing a lack of effort in assessing downside risk proves difficult for external constituents, even with the use of common governance mechanisms and processes.

Status quo bias, in contrast, arguably reduces the speed of corporate decision-making related to changes. One can say that the old US auto giants suffered from this, and so have famous companies like Wang Laboratories and Nokia, as well as numerous firms in Japan. Managers who are apprehensive of changes prefer to stick to the same business practices, product choices, corporate strategies, and technologies.

Home bias also potentially influences corporate speed. Managers focused only on the local market react too slowly to changes that occur elsewhere as they are focused primarily on their home market. Arguably, home bias may also affect the economic environment. Investors and managers in developed economies often pay limited attention to activities in developing economies. In contrast, investors and managers in emerging markets tend to appreciate even subtle changes that occur in the developed economies. Yet, one cannot be sure. The limited attention by developed economy managers to advances in emerging markets might arise due to the relative unimportance

of that market to the firm. This underscores the point that home bias leads to inadequate attention to fringe markets, distant industries and technological fields; the end result is a slow reaction to changes.

Myopic managers react too strongly to short-term trends and pressures. Managers focused on improving next-quarter profits, even at the expense of long-term profits, act quickly to institute changes. Anjan Thakor (1990), an early pioneer of behavioral finance, argues that managerial myopia substantively influences the internal organization of capital allocation decisions. Myopic managers prefer quick investments in property, plants, and equipment as opposed to long-term investments in R&D; the former has short term tangible results while the latter's results are less tangible and more distant in the future. Thus, myopic managers react to incremental changes in the competitive environment relatively quickly and with heavy focus on capital goods.

The disposition effect leads to under-reaction to negative news about a project's future prospects. Managerial reluctance to realize losses leads to suboptimal investment strategies, whereby the firm continues to work on projects that should be scrapped. Importantly, this bias limits managers' ability to react to other new opportunities and options. Consequently, the disposition effect has a direct impact on decision speed for negative news and an indirect effect on decision-speed for positive news. In general, the disposition effect leads to lagged investment strategies that produce sub-optimal outcomes. Managers that can recognize this behavioral bias are positioned to exploit this bias in competitors.

All of the above suggests that behavior biases significantly influence financial management. While our analysis focuses primarily on the allocation of capital, these behavioral biases also influence capital acquisition. Baker and Wurgler (2007, 2011) argue that managers should seek to exploit behavioral biases in investors by targeting the

source of capital that suffers from the greatest downward biases at a particular moment of time. Corporate capital structure emerges as an outcome of exploiting time variation in investor behavior and herding. Noise traders move among markets, which managers should recognize and capitalize upon.

Behavioral biases can make companies less in tune to changes by competitor and the marketplace. Opportunities or threats that are far away from the day-to-day operation of the business or their geographic territories receive limited attention. Thus, victims of certain behavioral biases (status quo, home bias, myopia) are underprepared and slow. Likewise, victims of disposition effect may exit their profitable investments prematurely, creating bargain prices for potential buyers and yet hold onto losing strategies. Behavioral biases can also make companies overreact to opportunities and overemphasize speed to get things done (overconfident). Standard economic arguments imply greater decision speed in the East relative to the West. However, considering the role of behavioral biases brings a different perspective. Below we summarize our conjectures on the role of prominent behavioral biases on financial management and their role in decision speed.

	Maximize Corporate Stability	**Maximize Shareholder Wealth**	**Impact on Speed of Financial Mgt**
Overconfidence	*Low*	*High*	*Accelerate*
Status Quo / Conservatism Bias	*High*	*Low*	*Impede*
Familiarity/Home Bias	*High*	*Low*	*Impede*
Myopia	*Low*	*High*	*Accelerate*
Disposition Effect	*High*	*Low*	*Impede*

7. Recommendations and Global Implications

Of course none of these biases are set in stone or even constant. Managerial awareness of their own potential behavioral biases is an important first step to counter-acting them. Perhaps more relevant for many firms is developing the ability to ascertain the biases of competitors in order for them to forge the best approaches to mitigate these effects on their own firm's competitive position.

Behavior biases in raising and allocating capital influence a wide range of financial issues. These behavioral biases lead to distorted asset prices, which influences investment choices of even completely rational investors. It also leads to distorted emphases on speed, sometimes too fast and other times too slow. Of course, the big issue here is that these deviations from rational investment choices, which are difficult to arbitrage away, lead to distorted resources allocations. Thus, economies that have greater within-firm transactions, relative to those with firm-to-firm transactions, will suffer greater biases and investment distortions.

We would like to emphasize that we have to consider behavioral biases within the context of capital market environment. In some fast-growing economies, firms have privileged and fast access to capital and are insensitive to the real cost of capital. As well, they have to act or react according to policy makers' political and economic agenda. At the same time, in well-established capital markets, post the great financial recession, investors are extraordinarily cautious. These factors can interact with behavioral biases. Systematic research has been sparse. While we find the challenge in drawing up reliable conclusions and implications for managers, we feel the need to draw attention to these issues.

7.1 Managerial Implications

A critical step is to recognize that behavioral biases know no boundaries. Yet, it is by nature hard to observe. Behavior biases arise because people by nature take short cuts in decision making. They (e.g., overconfidence, status quo, disposition, home bias, and myopia) stem from a lack of awareness, of due diligence, self-reflection, and independent voice. In that sense, the first recommendation is that rigorous internal corporate governance may mitigate internal behavior bias. However, one must recognize the paradox that tightening internal corporate governance slows down decisions and thus execution speed. Management and the governance board have to balance this trade-off. The solution is to spread intensive governance mindset into all levels of the corporation: inculcate a full time and wide spread culture of awareness, diverse and vertically connected discussions, judgment based on sound causal logic and factual evaluation, and internalization of corporate objectives in serving stakeholders.

In a world of high-speed globalization and disruptive changes, for better or worse, behavioral biases can inhibit the speed of recognizing new investments. There is an additional consideration: in some countries in the East, e.g., contemporary China and previously in Japan, because of preferential treatments, firms with investment funds are often not sensitive to the real cost of capital. The mix of behavior biases and insensitivity to cost of capital can lead to accelerate over investment, e.g., as a result of overconfident or myopia. Or, the mix can lead to a collaborator's prolonged insistence in pursuing a non-profitable strategy, say, as a consequence of disposition effect. Consequently, managers must defend against their own inability to see change, yet, to counter over-priced bids, hasty over-investment by competitors, or inertia due to membership in a vertically related business network. The positive side is that informed and rational management can take advantage of competitors' behavioral biases.

Developing sensible and well grounded managerial recommendation is necessary. An open dialogue amongst thoughtful and experienced business leaders and academics could be extremely useful.

One thought, however, is worthy of raising here. The value of a corporation is not just in owning current innovations but also in developing the ability to see future innovations (avoid status quo bias). This again raises the importance of internal preparation issues: (a) collection of information, i.e., well-known sequential strategy with learning, (b) getting ready in advance, i.e., get funds in advance and (c) recognizing that behavioral biases often stem from making short cuts in decision-making (intuitive rather than logical). Getting funds ready in advance often reflects the notion of taking advantage of investor behavioral biases by raising funds in hot markets with momentum.

<Insert a box: A way forward >

A way forward: "advanced strategic timing"

In this box, we present an example of a strategy built on ownership assignments, behavioral bias, and well known concepts in strategic management. The example leads to advanced strategic timing.

Analytics

Financial management is a part of a larger management scheme: develop capabilities, build and seize investment opportunities, raise and distribute funds, execute, and repeat the cycle. To use an example to build strategic thinking on this fundamental, we focus on investment opportunities stemming from technological innovations.

New technologies create revolution (R) and evolution (D); the resulting product package then reaches the final mature stage (M). At R, disruptive scientific and technological capabilities create a new product concept that serves hitherto unmet customer needs. At D, the related product designs and production processes evolve and rigorously compete. At M, the resultant product concept, production process and product functionality are well understood and received by customers.

The nature of competition clearly shifts with the process. At the R stage, competition centers on hard-core scientific and technological capabilities. At the D stage, product design, process management and branding shape the competitive environment. At the M stage, the nature of competition is on the ability to manage the production costs and distribution channels.

Corporations deep into R&D observe the emergence of disruptive new R. Indeed, the value of R&D intensity to the firm involves both owning the new innovations and the ability to foresee future disruptive innovations and shifts in competition. Yet investing in new R takes time and resources; resulting in the need for advanced planning.

Economists argue that the provider of critical content or efforts should be the owner (the residue claimant) of a value chain.[16] The research result roughly means that the owner of a business should be the one whose shirking causes most damage. Thus, the life cycle of the product suggests that the owner of a value chain should shift from the content provider of R to eventually the content provider of M. In the D phase, there could be some uncertainties as a good content provider in D has to be good at both R and M.

Ownership shifts lead to corporate control transactions, namely the buying and selling of strategic business units (SBU). While economic logic supports the selling of a unit from the R-content provide to the future M-content provider in the D phase, behavioral biases potentially arise and create impediments to firm success. For instance, there could be overpayments by a fast moving M-content provider who is not sensitive to the cost of capital and suffers from myopia (overweigh the importance of recent events) and overconfidence. Likewise, it is possible that the D-content provider is unwilling to sell because of the "status quo," "myopia" and "home bias" effects,

Building of a Strategy

A strategy thus can be built on the ability to identify new revolutions and to recognize shifts in ownership assignment in a timely manner.

1. First, build core competence in recognizing new "R" which can initiate the next round of disruptive (revolution) technology. In this strategy, as elegantly stated in Teece et al, 1997, a company's key competitive advantage is the ability to spot and get a head start on developing and exploring new innovation, not on owning an existing innovation per se.[17] Google for instance advocates this approach for their firm.

[16] For example, Grossman, Sanford J., and Oliver D. Hart. 1986. The costs and benefits of ownership: A theory of vertical and lateral integration. Journal of Political Economy 94(4): 691-719

[17] Teece, D., Pisano, G., Shren (1997). "Dynamic Capabilities and Strategic Management". Strategic Management Journal. 18 (7). 509-531

This approach requires senior managers to evaluate corporate prospects based not on product space, but, on the convergence of science, technology, and customer needs, be they recognized or not by customers.

Adopting this mindset, a corporation seeks to develop the ability to foresee shifts in ownership assignment (i.e., not to hold onto SBUs) and strategically sell ownership to those who possess a higher valuation.

Thus, at the end, recognizing the above the corporations tend to overcome "status quo, home bias and myopia" in its strategic thinking.

2. Second, sell old innovations and strategically invest in new innovations. Let us say the firm owns an existing innovation with a resultant product in the D phase. It can sell this to a potential M content provider and use the proceeds to invest in a new R. Several points are noteworthy. (a) A fast moving M content provider who buys when the market momentum is high may overpay due to behavior biases, e.g., overconfidence. (b) The selling firm can afford to be deliberate in choosing R because it is ahead of others. Thus, it is a "slow" decision maker starts planning ahead of others. (c) The company plays judo strategy – it is developing new R when its potential competitor is busily moving old innovations from the D to the M stage.

One may be able to find real cases that may fit the analytical example. For instance, the selling of the PC unit from IBM to Legend potentially fits this description.

Overarching recommendation

In the global economy firms compete in decision-speed. Differences in decision-making style among concentrated and democratic leadership, lead to disparities in raising and distributing funds for critically important opportunities. To be competitive, the key may not be on changing decision making style, but on taking advantage of rational strategic thinking and behavior biases.

The essence of the illustration above is that firms should build sequential and advanced timing strategy while recognizing intrinsic difference in decision speed and the impact of behavior bias. The success of the strategy relies on: (i) Building very upstream capabilities – the capability to innovate and see disruptive innovation possibilities ahead of others; (ii) Nurturing ability on being fundamental in strategic thinking based on long term corporate perspectives; (iii) Nurturing awareness and agility in identifying learning and opportunities; and (iv) Building preparedness – advanced fundraising (cash ammunition is not idle cash) and early analysis.

7.2 Global Implications

Throughout the article, we have established that investors' behavioral biases in equity markets create prolonged distortions. Specifically, asset prices' deviate from fundamentals due to various frictions and such (dis)equilibrium results in higher cost of capital. If distortions persist in highly liquid and robust equity markets such as the US, it seems indisputable that behavioral biases would play an even larger role in executive suites. In an ideal world, managerial biases would be corrected through boards' monitoring, shareholders' activism, and, in the extreme case, the market for corporate control. However, due to frictions such as information asymmetry, managerial entrenchment and infrequent (and inadequate) monitoring, distorted managerial decisions persist for prolonged time periods.

Increased globalization, accompanied with the surge of Asian MNCs, led to intense global competition in the last few decades. The increased competition fueled managerial risk appetite (i.e., reduced their risk aversion), and, in turn, increased managers' inclination for speed. However, making speedy (often too rushed) decisions provides fertile ground for decision heuristics and behavioral biases.

In addition, the expanding groups of international players who are insensitive to the cost of capital and driven by sustainability motives exacerbate the concerns about distorted investment. Because these new competitors have ability to act fast without conventional governance "checks and balances", they may inadvertently magnify the intensity of behavioral biases. Consequently, the evolving competitive pressures affected firms with the value maximization objective. Perhaps this is one of the concerns underlying the US's caution regarding the Asia Infrastructure Investment Bank.

In not-so-distant past, MNCs from Asia and their investments capabilities did not play a major role in the global markets. For example, Japan's GDP at its prime represented only about a third of the US economy. In fact, analysts in the 1980s

lamented Japanese firms' lower cost of capital and praised their "long term" view. Many claimed that the US companies lost competitive edge. Soon after, easy credit led to overinvestment and the misallocation of capital. After "noise" investors retreated, the asset bubble burst in Japan leading to infamous Japan's "lost decades."

In the last few decades, the long-standing international balance tipped in favor of Asian MNCs (predominantly from China). As an illustration, China's GDP is almost at par with the US. China's state-controlled enterprises, with limited monitoring, invest based on political motives and the most active players conduct excessive outward FDI. (Morck, Yeung, Zhao, 2008). This happens at the expense of players with value-creating FDI opportunities that face capital constrains. The distortions exist not only in asset prices and managerial decisions, but they also affect returns to human capital and R&D as well as global labor cost. For example, China's artificially depressed labor wages affect global labor wages.

<Insert Figure 7: GDP Growth – China vs. US vs. Japan (1960 – 2013) around here>

The current distortions may potentially have path-dependent outcomes, which may lead to permanent shift in global allocation of activities. The global imbalance was a cause of the financial bubble and crisis. After the crisis, the Chinese monetary stimulation and easy credit have created undesirable asset price inflation that keeps spilling into the rest of the world.

In conclusion, we argue that corporate governance and behavioral biases (and their interplay) may have unintended consequences on speed of executive decisions. This may further lead to biased decision-making and potentially suboptimal allocation of global resources. This article intends to provide a logical framework for further analysis

of the above conjectures and to encourage an academic and public debate on consequences and possible remedies.

References

Adams, R., H. Almeida & D. Ferreira, D., 2009. Understanding the relationship between founder-CEOs and firm performance. *Journal of Empirical Finance* 16 (1): 136-150.

Aggarwal, Reena, Isil Erel, Miguel Ferreira, and Pedro Matos. "Does governance travel around the world? Evidence from institutional investors." *Journal of Financial Economics* 100, no. 1 (2011): 154-181.

Anderson, R. & D. Reeb, 2003. Founding family ownership and firm performance: Evidence from the S&P 500. *Journal of Finance* 58, 1301-29.

Anderson, R. & D. Reeb, 2004. Board composition: Balancing family influence in S&P 500 firms. *Administrative Science Quarterly* 49, 209-237.

Anderson, R., A. Duru, and D. Reeb, 2009. Founders, heirs, and corporate opacity in the United States. *Journal of Financial Economics* 92, 205-222.

Anderson, R., D. Reeb & W. Zhao, 2012. Family-controlled firms and informed trading: Evidence from short sales, *Journal of Finance* 67, 351-385.

Asker, John, Joan Farre-Mensa and Alexander Ljungqvist, 2015, "Corporate Investment and Stock Market Listing: A Puzzle?" *Review of Financial Studies 28,* no. 2 (February 2015): 342-390

Baker, Malcom and Jeffrey Wurgler, "Investor Sentiment and the Cross-Section of Stock Returns" *Journal of Finance*, Vol. LXI, no. 4 Aug 2006.

Baker, M., and Wurgler, J., 2007. "Investor Sentiment in the Stock Market", *Journal of Economic Perspectives*, Vol. 21, No. 2, pp. 129-151

Baker, Malcolm, and Jeffrey Wurgler. Behavioral corporate finance: An updated survey. No. w17333. *National Bureau of Economic Research*, 2011.

Barberis, Nicholas, Andrei Shleifer, and Robert Vishny. "A model of investor sentiment." *Journal of Financial Economics* 49.3 (1998): 307-343.

Barberis, Nicholas, and Richard Thaler. "A survey of behavioral finance." *Handbook of the Economics of Finance* 1 (2003): 1053-1128.

Ben-David, I., J. Graham, and C. Harvey, 2013. Managerial miscalibration, *Quarterly Journal of Economics*, 128 (4), 1547-1584.

Bernardo, A. E., and I. Welch, 2001. On the evolution of overconfidence and entrepreneurs, *Journal of Economics and Management Strategy*, 10 (3), 301-330.

Bertrand, M., & A. Schoar, 2006. The role of family in family firms. *The Journal of Economic Perspectives*, 20(2), 73-96.

Black, Fisher (1986) . "Noise". *Journal of Finance* 41 (3): 529–543.

Burkart, M., & Panunzi, F. 2006. Agency conflicts, ownership concentration, and legal shareholder protection. *Journal of Financial Intermediation*, *15*(1), 1-31.

Burkart, M., F. Panunzi, & A. Shleifer, 2003. Family firms. *The Journal of Finance*, 58(5), 2167-2202.

Bushee, Brian J. "The influence of institutional investors on myopic R&D investment behavior." *Accounting review* (1998): 305-333.

Bushee, Brian J. "Do Institutional Investors Prefer Near-Term Earnings over Long-Run Value?." *Contemporary Accounting Research* 18, no. 2 (2001): 207-246.

Camerer, C., & D. Lovallo, 1999. Overconfidence and excess entry: An experimental approach. *The American Economic Review* 89(1), 306-318.

Chen, Gongmeng, Kenneth A. Kim, John R. Nofsinger, and Oliver M. Rui. "Trading performance, disposition effect, overconfidence, representativeness bias, and experience of emerging market investors." *Journal of Behavioral Decision Making* 20, no. 4 (2007): 425-451.

Coval, Jushua D and Tobias Moskowitz 1999, "Home Bias at Home: Local Equity Preference in Domestic Portfolios," *Journal of Finance*, vol LIV 6 Dec, 2045-2073.

Daniel, Kent, David Hirshleifer, and Avanidhar Subrahmanyam. "Investor psychology and security market under and overreactions." *Journal of Finance* 53, no. 6 (1998): 1839-1885.

Djankov, Simeon, Rafael La Porta, Florencio Lopex-de-Silanes and Andrei Shleifer, 2008, The Law and Economics of Self-Dealing, *Journal of Financial Economics*, 88 (3), pp. 430-465.

Døskeland, Trond M., and Hans K. Hvide. "Do individual investors have asymmetric information based on work experience?." *The Journal of Finance* 66, no. 3 (2011): 1011-1041.

Faccio, Mara, and Larry HP Lang. "The ultimate ownership of Western European corporations." *Journal of Financial Economics* 65, no. 3 (2002): 365-395.

Fan, Joseph, Randall Morck and Bernard Yeung, 2012. "Capitalizing China" in Capitalizing China, (Joseph Fan and Randall Morck eds.), NBER book 2012. (Also appear as "Capitalizing China," NBER Working paper 17687, Dec 2011)

Feldstein, Martin; Horioka, Charles (1980), "Domestic Saving and International Capital Flows", *Economic Journal* **90** (358): 314–329.

Ferris, Stephen, Robert Haugen, and Anil Makhija, 1988, Predicting contemporary volume with historic volume at differential price levels: Evidence supporting the disposition effect, *Journal of Finance* 43, 677–697

Ferris, Stephen P., Narayanan Jayaraman, and Sanjiv Sabherwal. "CEO overconfidence and international merger and acquisition activity." *Journal of Financial and Quantitative Analysis* 48, no. 01 (2013): 137-164.

Fogel, K. S., 2006. Oligarchic Family Control, Social Economic Outcomes, and the Quality of Government. *Journal of International Business Studies*, 37(5).

Frazzini, Andrea. "The disposition effect and underreaction to news." *The Journal of Finance* 61, no. 4 (2006): 2017-2046.

Friedman, Milton. 1953, The Case for Flexible Exchange Rates, *Essays in Positive Economics*, University of Chicago Press

Froot, Kenneth A., and Emil M. Dabora. "How are stock prices affected by the location of trade?." *Journal of Financial Economics* 53, no. 2 (1999): 189-216.

Goel, A., and A. Thakor, 2008. Overconfidence, CEO selection, and corporate governance, *Journal of Finance*, 63 (6), 2737-2784.

Grossman, S. J., and J. E. Stiglitz, 1980, On the impossibility of informationally efficient markets, American Economic Review, 70, 393-408.

Graham, J., C. Harvey, and M. Puri, 2013. Managerial attitudes and corporate actions, *Journal of Financial Economics*, 109 (1), 103-121.

Hirshleifer, David, Angie Low, and Siew Hong Teoh. "Are overconfident CEOs better innovators?." *The Journal of Finance* 67, no. 4 (2012): 1457-1498.

Huberman, Gur, 2001, "Familiarity Breeds Investment," *The Review of Financial Studies* Fall 2001 Vol. 14, No. 3, pp. 659–680

Ho, Teck and Png, Ivan P. L. and Reza, Sadat, Sunk Cost Fallacy in Driving the World's Costliest Cars, SSRN Working Paper, January 15, 2014, http://ssrn.com/abstract=2254483

John, Kose, Lubomir Litov, and Bernard Yeung, 2008. Corporate Governance and Managerial Risk Taking: Theory and Evidence, *Journal of Finance,* 63.

Kahneman, Daniel, Jack L. Knetsch, and Richard H. Thaler. 1991. "Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias." *Journal of Economic Perspectives*, 5(1): 193-206.

Kang, Jun-Koo and Rene Stulz, 1997, "Why is there a home bias? An analysis of Foreign Portfolio Equity Ownership in Japan," *Journal of Financial Economics*, 46 2-38.

Holmstrom, Bengt, and Steven N. Kaplan. Corporate Governance and Merger Activity in the US: Making Sense of the 1980s and 1990s. No. w8220. National bureau of economic research, 2001.

Kowalski, P., M. Buge, M.Sztajerowska, and M. Egeland (2013). State-owned enterprises: Trade effects and policy implications. Technical report, OECD Publishing.

Kowalski, Przemyslaw, Max Büge, and Monika Sztajerowska. "State-Owned Enterprises." 2013. OECD iLibrary.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny. 1997. "Legal Determinants of External Finance," *Journal of Finance* 52:3, pp. 1131 50.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny. 1998. "Law and Finance," *Journal of Political Economy*. 106:6, pp. 1113-55.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny. 1999. "Corporate Ownership around the World," *Journal of Finance* 54 (2).

Levine, R. and Y. Rubinstein, 2014. Smart and Illicit: Who Becomes an Entrepreneur and Does it Pay?, Working Paper UC Berkeley.

Malmendier, U., and G. Tate, 2005. CEO overconfidence and corporate investment, *Journal of Finance*, 60 (6), 2661-2700.

Malmendier, U., & G. Tate, 2008. Who makes acquisitions? CEO overconfidence and the market's reaction. *Journal of Financial Economics* 89(1), 20-43.

Malmendier, U., G. Tate, and J. Yan, 2011. Overconfidence and early-life experiences: The effect of managerial traits on corporate financial policies, *Journal of Finance*, 66 (5), 1687-1733.

Massa, Massimo, and Andrei Simonov. "Hedging, familiarity and portfolio choice." *Review of Financial Studies* 19, no. 2 (2006): 633-685.

Morck, Randall ed. Concentrated Corporate Ownership, U of Chicago Press, 2000.

Morck, Randall (ed.) A history of corporate governance around the world: Family business groups to professional managers, The University of Chicago Press, Chicago, 2007.

Morck, Randall, Daniel Wolfenson and Bernard Yeung, 2005. Corporate Governance, Economic Entrenchment and Growth," *Journal of Economics Literature.*

Morck, Randall, and Bernard Yeung, 2014. "Corporate Governance in China," *Journal of Applied Corporate Finance*, Vol. 26 No. 3 Summer, 2014

Morck, Randall, Bernard Yeung, Minyuan Zhao, "Perspectives on China's Outward Foreign Direct Investment,", *Journal of International Business Studies* Vol. 39, No. 3, April/May 2008, pp. 337-350.

Morck, Randall, and Bernard Yeung in "Enterprise Models: Freestanding Firms versus Family Pyramids", Ch. 7 in The Cambridge History of Capitalism: Volume II, The Spread of Capitalism, Jeffrey Williamson (ed.) Cambridge University Press, 2014 (b)

Odean, Terrance, 1998, "Are investors Reluctant to Realize their Losses?" *The Journal of Finance*, Vol. LIII No. 5 Oct 1775 – 1798.

Perez-Gonzalez, F., 2006, Inherited control and firm performance. *The American Economic Review* 96(5), 1559-1588.

Samuelson, W.; Zeckhauser, R. 1988. "Status quo bias in decision making". *Journal of Risk and Uncertainty* **1**: 7–59.

Shefrin, Hersh, and Meir Statman, 1985, The disposition to sell winners too early and ride losers too long: Theory and evidence, *Journal of Finance* 40, 777–790.

Shleifer , Andrei, and Robert Visny, "A Survey of Corporate Governance," *Journal of Finance*, Vol 52, n0. 2 Jun 1997,

Tversky, Amos; Kahneman, Daniel (1974), "Judgments Under Uncertainty: Heuristics and Biases", Science 185 (4157): 1124–1131, reprinted in Daniel Kahneman, Paul Slovic, Amos Tversky, ed. (1982). Judgment Under Uncertainty: Heuristics and Biases. Cambridge: Cambridge University Press. pp. 3–20. ISBN 9780521284141

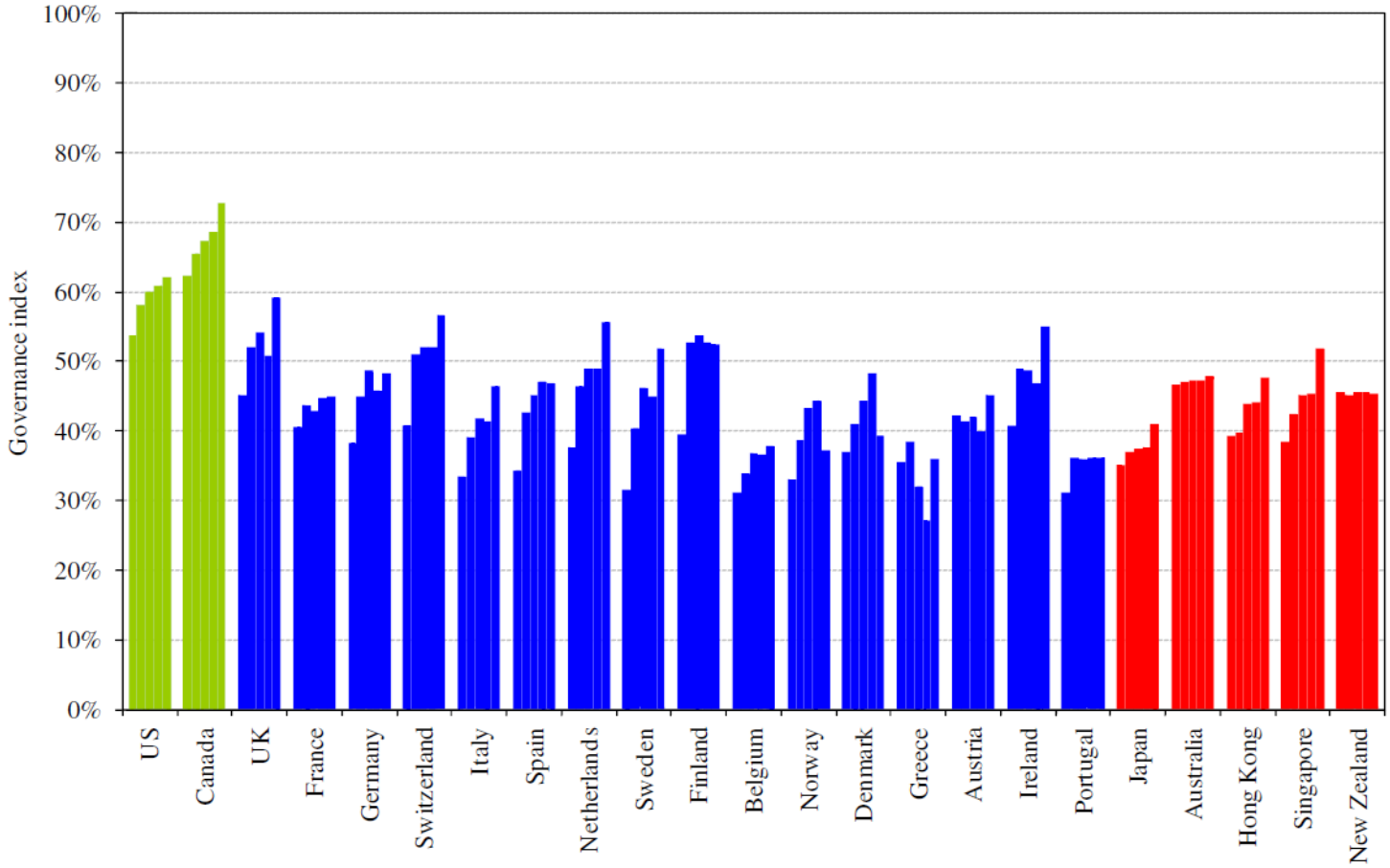
Villalonga, B. & R. Amit, 2010. Family control of firms and industries. *Financial Management* 39(3), 863-904.

Figure 1: Corruption around the World

RANK	COUNTRY/TERRITORY	SCORE
1	New Zealand	9.5
2	Denmark	9.4
2	Finland	9.4
4	Sweden	9.3
5	Singapore	9.2
6	Norway	9.0
7	Netherlands	8.9
8	Australia	8.8
8	Switzerland	8.8
10	Canada	8.7
11	Luxembourg	8.5
12	Hong Kong	8.4
13	Iceland	8.3
14	Germany	8.0
14	Japan	8.0
16	Austria	7.8
16	Barbados	7.8
16	United Kingdom	7.8
19	Belgium	7.5
19	Ireland	7.5
21	Bahamas	7.3
22	Chile	7.2
22	Qatar	7.2
24	United States	7.1
25	France	7.0
25	Saint Lucia	7.0
25	Uruguay	7.0
28	United Arab Emirates	6.8
29	Estonia	6.4
30	Cyprus	6.3
31	Spain	6.2
32	Botswana	6.1
32	Portugal	6.1
32	Taiwan	6.1
35	Slovenia	5.9
36	Israel	5.8
36	Saint Vincent and the Grenadines	5.8
38	Bhutan	5.7
39	Malta	5.6
39	Puerto Rico	5.6
41	Cape Verde	5.5
41	Poland	5.5
43	Korea (South)	5.4
44	Brunei	5.2
44	Dominica	5.2
46	Bahrain	5.1
46	Macau	5.1
46	Mauritius	5.1
49	Rwanda	5.0
50	Costa Rica	4.8
50	Lithuania	4.8
50	Oman	4.8
50	Seychelles	4.8
54	Hungary	4.6
54	Kuwait	4.6
56	Jordan	4.5
57	Czech Republic	4.4
57	Namibia	4.4
57	Saudi Arabia	4.4
60	Malaysia	4.3
61	Cuba	4.2
61	Latvia	4.2
61	Turkey	4.2
64	Georgia	4.1
64	South Africa	4.1
66	Croatia	4.0
66	Montenegro	4.0
66	Slovakia	4.0
69	Ghana	3.9
69	Italy	3.9
69	FYR Macedonia	3.9
69	Samoa	3.9
73	Brazil	3.8
73	Tunisia	3.8
75	China	3.6
75	Romania	3.6
77	Gambia	3.5
77	Lesotho	3.5
77	Vanuatu	3.5
80	Colombia	3.4
80	El Salvador	3.4
80	Greece	3.4
80	Morocco	3.4
80	Peru	3.4
80	Thailand	3.4
86	Bulgaria	3.3
86	Jamaica	3.3
86	Panama	3.3
86	Serbia	3.3
86	Sri Lanka	3.3
91	Bosnia and Herzegovina	3.2
91	Liberia	3.2
91	Trinidad and Tobago	3.2
91	Zambia	3.2
95	Albania	3.1

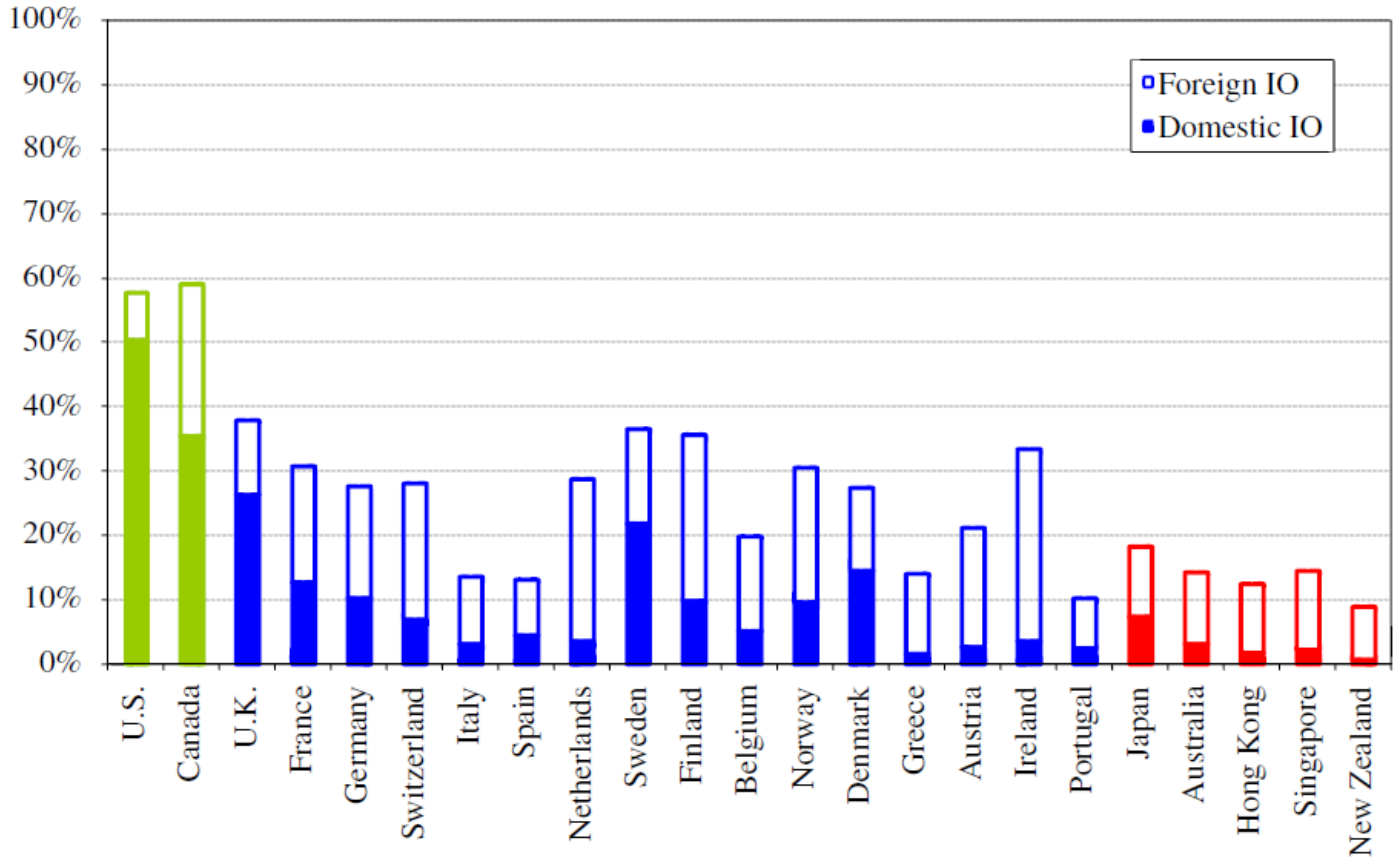
Source: Transparency International, Corruption Perception Index 2011

Figure 2A: Governance Index



Source: Aggarwal, Reena, Isil Erel, Miguel Ferreira, and Pedro Matos. "Does governance travel around the world? Evidence from institutional investors." Journal of Financial Economics 100, no. 1 (2011): 154-181.

Figure 2B: Institutional Ownership around the World (Foreign vs. Domestic)



Source: Aggarwal, Reena, Isil Erel, Miguel Ferreira, and Pedro Matos. "Does governance travel around the world? Evidence from institutional investors." Journal of Financial Economics 100, no. 1 (2011): 154-181.

Figure 3: Family Control around the World

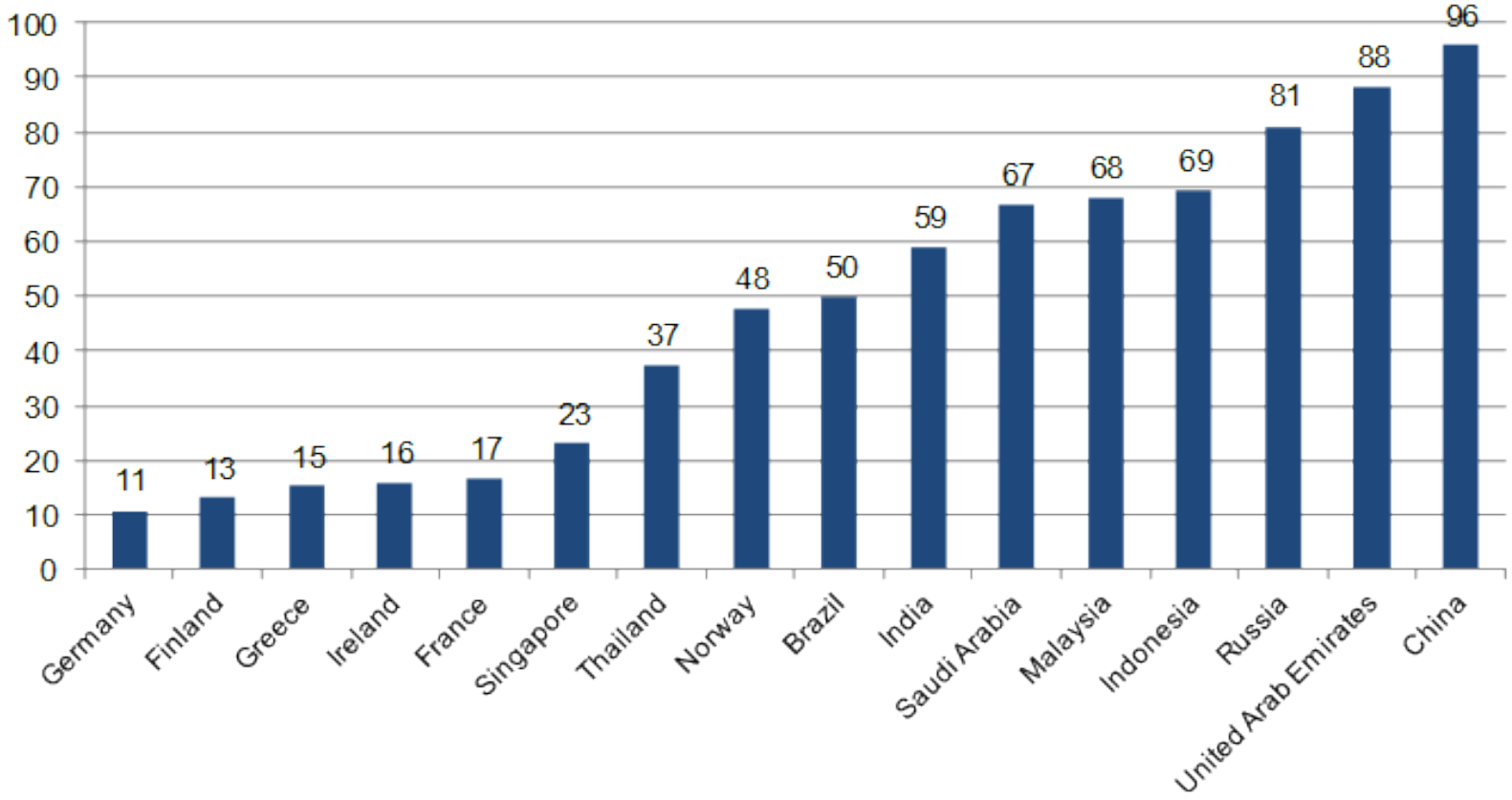
Table I. Family Control Indices

Family control indices are based on the largest ten conglomerates in the private sector, and are calculated as the fraction of firms that are majority-controlled by wealthy families in 1996. D_V and D_E are based on the largest ten domestically owned firms and are labor-weighted and equally weighted, respectively. P_V and P_E are based on the largest ten conglomerates including foreign subsidiaries, and are labor-weighted and equally weighted, respectively. Sample includes 41 countries.

	D_V	D_E	P_V	P_E		D_V	D_E	P_V	P_E
Argentina	0.852	0.7	0.749	0.6	Mexico	1.000	1.0	0.887	0.9
Australia	0.061	0.1	0.000	0.0	Netherlands	0.198	0.3	0.198	0.3
Austria	0.839	0.8	0.588	0.6	New Zealand	0.391	0.5	0.141	0.2
Belgium	0.895	0.9	0.738	0.7	Norway	0.334	0.5	0.286	0.4
Brazil	0.913	0.9	0.551	0.5	Pakistan	1.000	1.0	1.000	1.0
Canada	0.415	0.6	0.415	0.6	Peru	1.000	1.0	0.324	0.5
Chile	1.000	1.0	0.530	0.6	Philippines	1.000	1.0	0.681	0.7
Colombia	0.852	0.8	0.732	0.7	Portugal	0.960	0.9	0.869	0.7
Denmark	0.063	0.1	0.063	0.1	Singapore	0.158	0.3	0.000	0.0
Finland	0.250	0.3	0.250	0.3	South Africa	0.568	0.5	0.555	0.5
France	0.382	0.4	0.382	0.4	South Korea	0.614	0.5	0.614	0.5
Germany	0.066	0.1	0.066	0.1	Spain	0.468	0.5	0.414	0.4
Greece	1.000	1.0	0.959	0.9	Sweden	0.732	0.6	0.732	0.6
Hong Kong	0.427	0.7	0.367	0.6	Switzerland	0.145	0.3	0.145	0.3
India	0.963	0.9	0.917	0.8	Taiwan	0.728	0.7	0.655	0.6
Indonesia	0.699	0.9	0.651	0.8	Thailand	1.000	1.0	0.727	0.6
Ireland	0.279	0.2	0.279	0.2	Turkey	1.000	1.0	1.000	1.0
Israel	0.786	0.7	0.786	0.7	United Kingdom	0.159	0.2	0.159	0.2
Italy	0.671	0.5	0.671	0.5	United States	0.188	0.1	0.188	0.1
Japan	0.000	0.0	0.000	0.0	Venezuela	1.000	1.0	0.703	0.7
Malaysia	1.000	1.0	0.948	0.9					

Source:

Figure 4: State Ownership



Source:

Figure 5: Long Term Capital Management

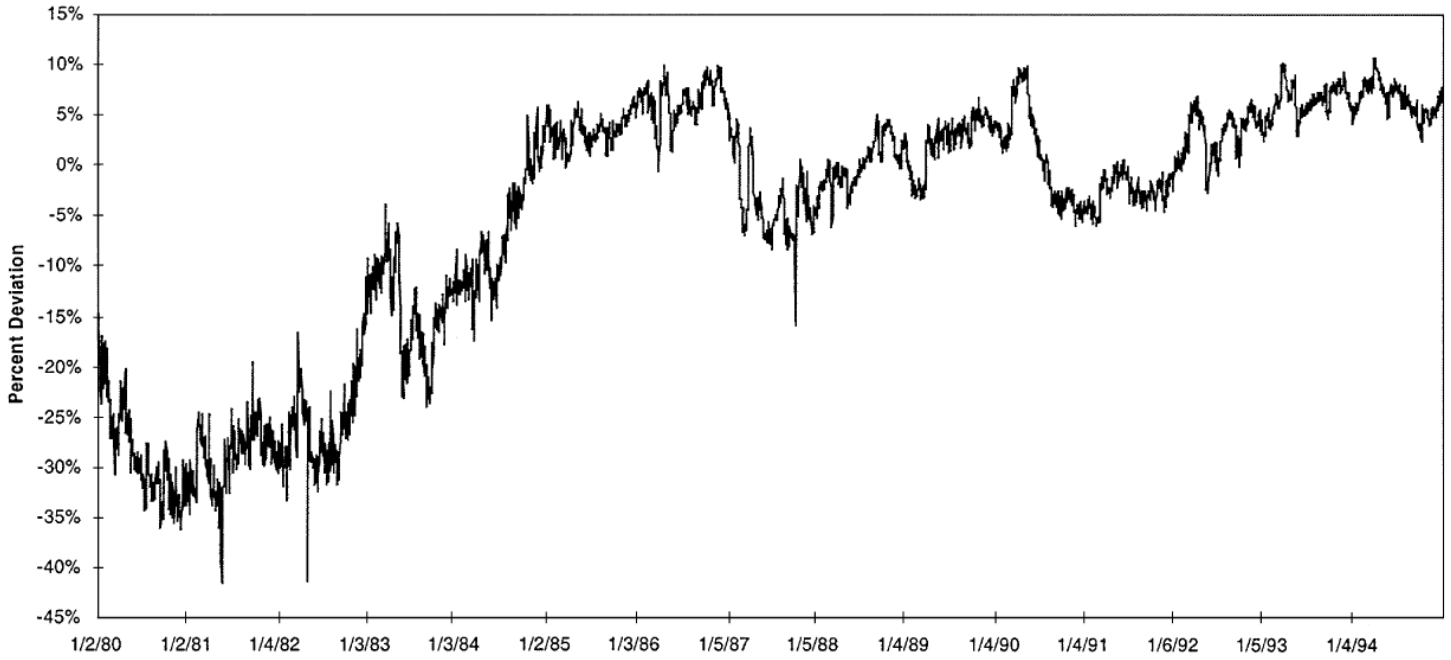


Fig. 1. Log deviations from Royal Dutch/Shell parity. Note: This figure shows on a percentage basis the deviations from theoretical parity of Royal Dutch and Shell shares and ADRs traded on the NYSE. Data are from the Center for Research in Security Pricing (CRSP).

Source: Froot, Kenneth A., and Emil M. Dabora. "How are stock prices affected by the location of trade?." *Journal of Financial Economics* 53, no. 2 (1999): 189-216.

Figure 6A: Optimism of US CEOs/CFOs vs. non-US CEOs/CFOs

Panel C: Comparisons between US CEOs and Non-US CEOs based on three sampling methods

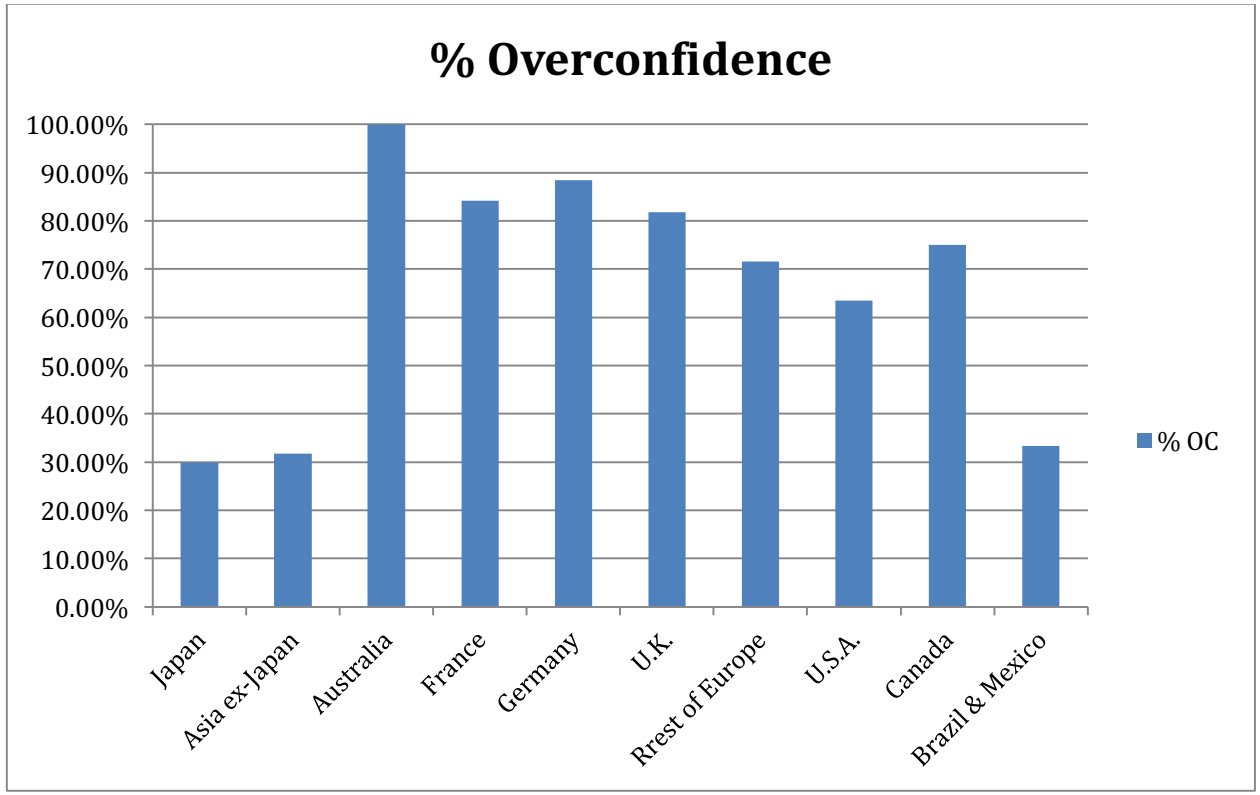
	(1) Unconditional ~ 1011 US / 162 Non-US			(2) Public/Private Matching ~ 120			(3) Size Matching ~ 153		
	US CEOs	vs	Non-US CEOs	US CEOs	vs	Non-US CEOs	US CEOs	vs	Non-US CEOs
Highly risk averse (%)	9.8		16.7***	5.8		17.6***	9.2		17.1**
MBA Degree (%)	34.9		48.2***	33.9		51.9***	39.9		48.9
Male (%)	92.3		94.4	92.5		95.0	94.7		94.7
Male Height (inches)	71.2		69.3***	70.9		69.7***	71.1		69.2***
Female Height (inches)	65.7		56.9***	67.1		53.1	66.8		55.7
Very Optimistic (%)	80.2		54.1***	80.7		57.6***	78.7		53.1***
Averse to sure losses (%)	8.5		19.7***	4.3		17.9***	8.6		19.7***
Impatient (%)	32.8		41.4**	28.3		38.7*	36.2		41.1
Focused in Fin. & Acc. (%)	15.6		25.3***	18.3		26.9	19.0		25.0
Age	54.1		50.0***	54.9		49.7***	52.9		49.7**
University SAT Score	1159.8		1208.7	1154.2		1189.6	1157.5		1201.5
Tenure (Years)	10.4		9.0*	10.0		8.0*	10.3		8.5*
Stock Ownership (%)	33.9		33.6	31.7		33.4	40.2		33.6

Panel D: Comparisons between US CFOs and Non-US CFOs based on three sampling methods

	(1) Unconditional ~ 534 US / 707 Non-US			(2) Public/Private Matching ~ 431			(3) Size Matching ~ 430		
	US CFOs	vs	Non-US CFOs	US CFOs	vs	Non-US CFOs	US CFOs	vs	Non-US CFOs
Highly risk averse (%)	8.4		13.9***	7.1		13.9***	7.7		14.9***
MBA Degree (%)	51.8		33.6***	52.0		31.7***	52.3		34.3***
Male (%)	90.4		87.6	92.6		90.0	90.2		89.3
Male Height (inches)	71.0		69.1***	70.9		68.7***	71.0		69.2***
Female Height (inches)	65.1		63.4	64.9		64.4	65.1		63.9**
Very Optimistic (%)	65.3		47.9***	65.1		47.7***	64.9		51.6***
Averse to sure losses (%)	13.2		13.9	13.3		14.1	13.6		12.8
Impatient (%)	26.4		37.9***	24.5		38.8***	26.8		35.3***
Focused in Fin. & Acc. (%)	86.7		85.3	85.5		85.2	86.4		87.0
Age	48.6		43.3***	48.8		43.5***	48.8		43.5***
University SAT Score	1113.5		1118.8	1117.6		1100.0	1115.1		1093.0
Tenure (Years)	6.8		5.9***	6.9		5.8***	6.7		5.5***
Stock Ownership (%)	3.8		6.1**	4.0		6.4*	3.9		5.3

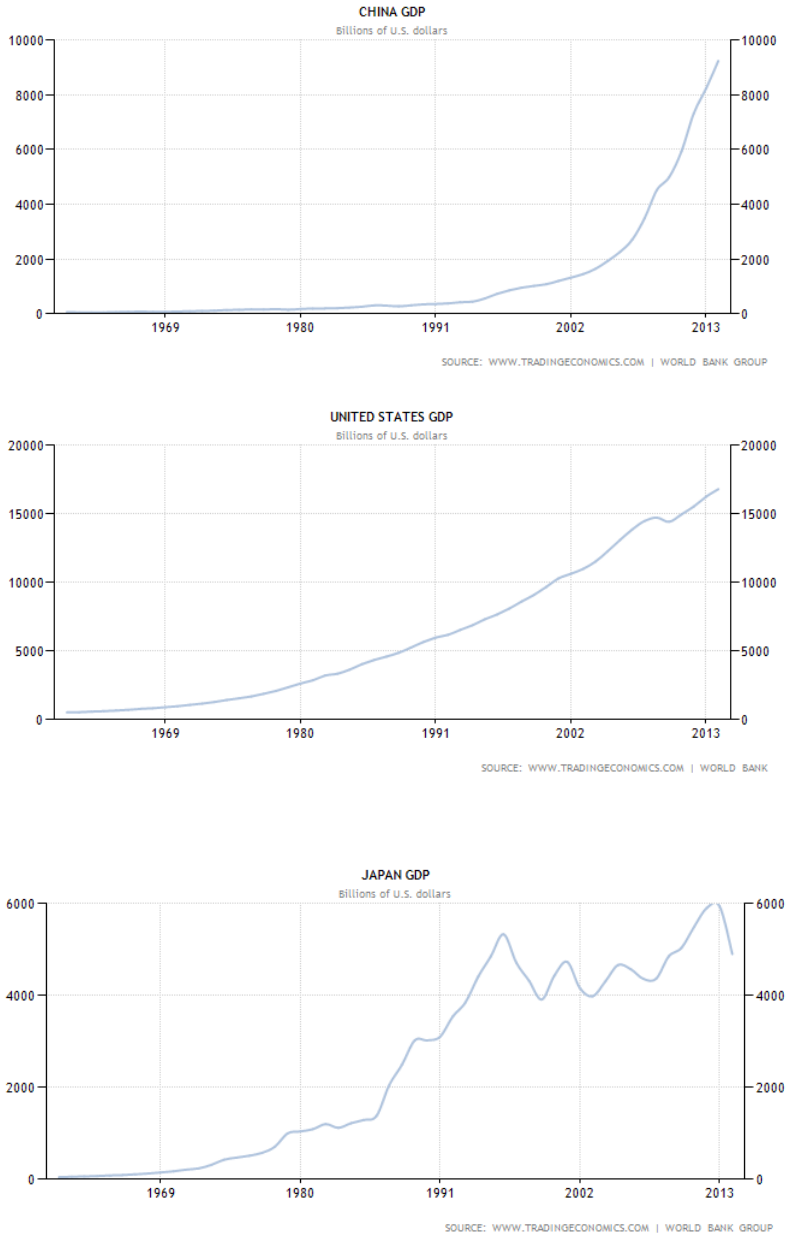
Source: Graham, J., C. Harvey, and M. Puri, 2013. Managerial attitudes and corporate actions, *Journal of Financial Economics*, 109 (1), 103-121.

Figure 6B: Overconfidence of CEOs around the World



Source: Ferris, Stephen P., Narayanan Jayaraman, and Sanjiv Sabherwal. "CEO overconfidence and international merger and acquisition activity." Journal of Financial and Quantitative Analysis 48, no. 01 (2013): 137-164.

Figure 7: GDP Growth – China vs. US vs. Japan (1960 – 2013)



Source: World Bank