

**CENTER ON JAPANESE ECONOMY AND BUSINESS**

---

日本経済経営研究所

Working Paper Series

July 2013, No. 322

---

# **How Making it Easier to Succeed Reduces Success: IPO Reform and New Firm Performance**

Robert Eberhart, Kathleen Eisenhardt, and  
Charles Eesley

This paper is available online at [www.gsb.columbia.edu/cjeb/research](http://www.gsb.columbia.edu/cjeb/research)

---

## **How Making it Easier to Succeed Reduces Success: IPO Reform and New Firm Performance**

June 30, 2013

### ABSTRACT

We examine how institutional changes that lower the *barriers to successful exit* influence the rate of IPO's, the initial capitalization, and the performance of subsequent ventures. Such IPO market reforms are widespread, but their effectiveness is unclear. To do so, we take advantage of a quasi-natural experiment in which the IPO listing requirements in Japan were dramatically reduced. Using a unique database of over 19,000 new firms incorporated after 1982, we find that IPO market reform is a powerful institutional lever that increases the rate of IPOs. But it is also a narrow instrument that influences only a few industries and triggers poor average performance in those industries. Overall, we find that IPO market reform is a complex institutional change. We conclude with contributions at the nexus of institutional theory and entrepreneurship that indicate where and for whom institutional change will be effective.

## INTRODUCTION

There is substantial global interest in institutional changes that stimulate entrepreneurial activity. As part of these efforts, a number of nations have introduced reforms that ease the listing requirements for an IPO in public equity markets. The U.S. and Canada, as well as European nations such as Germany and Asian nations such as Korea and Malaysia, have launched public equity markets with lowered IPO listing requirements to encourage IPOs and venture formation. For example, the JOBS Act in the U.S. relaxed SEC registration and Sarbanes-Oxley requirements to encourage new firms to seek IPO's. Similarly, Japan created several public equity markets with greatly reduced IPO listing requirements, allowing even unprofitable firms to "go public". The common logic behind these institutional reforms is that lowered barriers to successful exits such as IPO's attract investors, encourage individuals to start firms, and create an economic engine that drives job growth, recycles capital, and creates economic prosperity. But it is less clear whether IPO reforms actually achieve these objectives.

Institutional theory provides several strands of research that provide insight into this question. One strand emphasizes the influence of lowering barriers to entry on increasing the rate of entrepreneurship. For example, a cross-country comparison of European countries finds that streamlining procedures for obtaining licenses and permits for starting new firms increases venture formation (Klappoer, Laevena, & Rajan, 2006). Similarly, a study of approximately 43,000 MIT alumni from 1930 to 2005 argues that reducing the friction of industry deregulation increases venture formation in the deregulated industries (Hsu, Roberts, & Eesley, 2007). Similarly, when U.S. policy makers simplified the legal steps to start solar power ventures and provided financial resources to do so, the formation of new solar ventures increased (Meek, Pacheco, & York, 2010).

A second stream of research emphasizes that lowering barriers to growth makes it more likely the individuals with higher social and human capital will start firms. That is, individuals who have better employment opportunities based on their human and social capital are likely to choose entrepreneurship if lowered growth barriers raise the likelihood of a sufficiently high return (Sørensen & Chang, 2006; Stuart & Sorensen, 2007). For example, a study of the alumni of the leading technical university in China, Tsinghua University, examines the influence of lowering growth barriers by the Chinese government (Eesley, 2010). Specifically, the government removed the legal barriers that blocked entry into state-controlled industries that offered superior returns. This institutional change allowed elite individuals to form firms in the newly opened industries, and they did. Prior to this change, elite individuals usually chose employment in government and state-owned enterprises that were seen as more attractive careers than starting firms.

A third strand of research examines exits and their interplay with entry. For example, making it less onerous to declare corporate bankruptcy is likely to change entrepreneurs' evaluation of the likely consequence of starting a new firm – making starting a firm more attractive for individuals, particularly those who are risk averse or otherwise have more to lose (Eberhart, Eesley, & Eisenhardt, 2012; Peng, Yamakawa, & Lee, 2009b). In addition, exit in one domain may enable the recycling of assets into another domain. That is, the death of firms can also have effects by altering the entrepreneurial resource and opportunity environment. For instance, a study of the enactment of U.S. prohibition laws finds that this legislation and the related social movement forced the exit of alcoholic beverage producers, and yet simultaneously created opportunities in the soft drink industry. This was because alcoholic beverage producer exits enabled new soft drink firms to “repurpose” some assets of alcoholic beverage producers

(Hiatt, Sine, & Tolbert, 2009).

Overall, these strands of institutional theory research point to the likelihood that changes to the institutional environment influence the rate of entrepreneurship, the mix of entrepreneurs, and the performance of entrepreneurial firms. But several issues remain. First, IPO reform is more complex than the reforms studied in prior research – i.e., it is both a successful outcome which is likely to affect the rate of entrepreneurship and mix of entrepreneurs, and a firm exit which is likely to free up capital to be used for other purposes. This suggests a complex interplay of effects. Second, while prior research explores the implications of institutional change for entrepreneurship rates and mix of entrepreneurs (Sine et al., 2005; Hiatt et al., 2009), this work offers little insight into implications of such changes for venture performance despite the salience of performance for the economic outcomes that IPO reform attempts to create. Finally, recent literature connecting entrepreneurship and institutional theory argues that entrepreneurship is a social construct molded by shared beliefs of what is appropriate behavior (Sine & David, 2010). So while IPOs are widely accepted in the U.S., factors in other nations including the economic dominance by large business groups, preference for debt financing, strong family ties, and cultural proclivity to avoid risk may make IPO market reforms less influential (Chacar & Vissa, 2005; Rajagopalan & Zhang, 2008). Overall, there is a gap in our knowledge of how institutional changes that lower *barriers to successful exit* (such as IPO reforms) affect entrepreneurial performance. We address this gap.

We ask: *How do changes in the institutional environment that lower barriers to successful exit influence the performance of subsequent ventures?* Our setting is Japan. We take advantage of a quasi-natural experiment in which the IPO listing requirements in Japan were dramatically reduced in 2000. Using data on firms founded before and after the reform, we

examine how this reform influenced IPOs, capitalization, types of founders, and performance of subsequently founded firms. Japan is an appropriate setting for our study. On the one hand, as in many countries, the Japanese favor debt financing, large and established business groups, and low risk taking within a collectivist ideology (Franks, Mayer, & Miyajima, 2009). So there may be modest support for individualistic Western-style reforms such as lowering IPO barriers. On the other hand, also as in many countries, many Japanese believe that entrepreneurship, including IPO market reform, plays a key role in the economic prosperity of the West (Imai & Kawagoe, 2000) and could enhance their own flagging economy.

We contribute to the nexus institutional theory and entrepreneurship. Prior research examines entry, growth, and exit barriers and finds implications for the rate of new firm formation (Sine et al., 2005) and the mix entrepreneurs who launch firms (Eesley, 2010; Fan & White, 2003). But it leaves unexamined the question of barriers to successful exits like IPOs and their efficacy. Using institutional arguments and exploiting a quasi-natural experiment in Japan, we find that barriers to successful exit like IPOs have complex outcomes. On the one hand, IPO market reform is a powerful reform that increases IPOs, and enhances the capitalization and performance of ventures. On the other hand, IPO market reform is also a blunt reform that has no effect in many industries, damages performance where it does have an effect, and helps only particular entrepreneurs. Overall, we contribute to institutional theory with regard to when and how lowering barriers to successful exit increase (and decrease) venture performance.

## **BACKGROUND AND HYPOTHESES**

### **IPO Equity Market Reform in Japan**

The institutional environment of Japan was changed by an economic contraction that began after an asset bubble collapsed in 1990. This launched a prolonged era of declining Japanese asset values and a decade of stagnant business activity. Scholarly and popular assessments of Japan's business environment increasingly led to broad criticism that the Japanese institutional architecture for business was no longer relevant in a globalized setting (Eberhart & Hoetker, 2010; Storz, 2008). The Japanese business environment was unfriendly to entrepreneurial activity, beset by structural problems, and not keeping pace with emerging rivals (Anchordogy, 1997; Vogel, 2006). As Japanese policy makers and business leaders searched for remedies, many were struck by the entrepreneurial environment of the U.S., especially Silicon Valley, which was enjoying unprecedented prosperity. In particular, vibrant IPO equity markets in the U.S. were an exemplar for many Japanese observers. These markets were seen as exceptional with regard to the creation of wealth, especially in comparison with Japan's decade of post-bubble stagnation (Kneller, 2007; Schaede, 2008). In contrast, the paucity of IPO's in Japan prior to the reform that we study was explained in part by stringent high requirements for IPO in Japan (Liang & Huang, 2012; Rowen & Toyoda, 2002). Thus, interest arose in adoption of IPO market reform within Japan.

To understand this reform better, we briefly describe the evolution of Japanese business financing over the past century. For the first half of the 20<sup>th</sup> century, Japanese firms often used equity (Franks et al., 2009). But this financial model changed during the second half of the century with the rise of Japan as an economic power, and the success of the keiretsu business groups. Japanese firms favored debt financing through the banking system, and this became the norm (Franks et al., 2009). Further, new firms had particular difficulty raising money. The public equity markets with their onerous IPO requirements were unwelcoming and even inaccessible to

them. Private equity such as venture capital was tied to the large banks (Kenney, Han, & Tanaka, 2002) and difficult to obtain. The result was that the capital needs of most Japanese firms relied substantially on debt, and new firms had difficulty raising capital at all.

Given the Japanese stagnation and the success of public equity markets in the West, Japanese actors began to view the U.S. IPO system as more appropriate than the high barriers that existed on Japanese exchanges to obtain IPO's. Acting on these new beliefs, some Japanese began to act. Specifically, two new equity markets with lowered IPO listing requirements were created in 2000. An immediate aim was to take advantage of financial opportunities that might be similar to those in the ongoing IPO boom in the U.S., which had been very profitable for many (Harris, 2006). Moreover, Japanese public policy makers encouraged these efforts as a way to stimulate entrepreneurial activity.

Softbank (a major Japanese investor in the U.S.) and the U.S. National Association of Securities Dealers (NASD) established the first of these equity markets, NASDAQ Japan, in 1999. Trading began in June 2000. In contrast to the existing markets, the IPO listing requirements of NASDAQ Japan lowered the traditional minimum firm age requirement, and imposed neither net asset nor profitability requirements for candidate firms. Subsequently, this market became associated with one of the two major Japanese stock exchanges, the Osaka Stock Exchange. Similarly, the second major exchange, the Tokyo Stock Exchange, created a new public equity market, MOTHERS, with a similar drastic lowering of IPO listing requirements. Full trading began in early 2000 (Mizuno, 2006).

These two new equity markets sought to accommodate IPO activity, especially among young and growing ventures, by providing ready access to capital at early stages of their development – even before reaching scale and profitability. Thus, very small and new firms that



were losing money could now “go public” in Japan. Table 1 compares the listing requirements of these new public equity markets with the benchmark first section of the Tokyo Stock Exchange.

### **Hypotheses: Implications of IPO Equity Market Reform**

In our first hypothesis, we argue that the IPO market reform described above subsequently increased IPOs. That is, lowered barriers to successful exit did in fact increase this form of exit. This is likely to occur because many entrepreneurs and their investors seek IPOs, and so lowered barriers are likely to increase the number of IPOs.

To begin, many entrepreneurs and their investors regard an IPO exit as highly desirable and seek it for several reasons. First, an IPO provides investors and entrepreneurs with an opportunity to realize a tangible return on their investment. Thus, IPO offers liquidity for both investors and entrepreneurs such that they can diversify their risk and reinvest their capital elsewhere. In other words, they can “cash out”. Also, IPOs usually are more lucrative than a successful exit via acquisition (Graebner & Eisenhardt, 2004). Second, from the firm perspective, an IPO typically provides much needed capital for further investment, and so provides a basis for growth (Black & Gilson, 1998). Capital raised in the public equity markets is also often priced attractively relative to other financing. Third, an IPO is a signaling event in a firm’s history that conveys success and legitimacy to stakeholders such as customers, current and potential employees, and investors (Gompers & Lerner, 2010). It may even convey “rock star” status to the venture’s entrepreneurs and investors (Gompers, 1996). Overall, many entrepreneurs and investors seek IPOs.

Given that IPOs are often a desirable exit, lowering the barriers to IPOs through equity market reform is likely to trigger more IPOs. That is, by permitting IPO by firms with lower performance and other requirements, the population of eligible firms expands which leads to

more firms going “IPO”. For example, a study of IPO requirements in different sections of the Toronto stock exchange confirms increased IPO activity occurs where there are lower listing requirements (Carpentier & Suret, 2009). Overall, since entrepreneurs and investors often consider IPO’s to be highly desirable exits, lowered IPO’s barriers are likely to motivate them to seek IPOs and thus, increase overall IPO activity. We expect greater IPO activity after the reform.

*Hypothesis 1a: Establishment of lowered IPO requirements increases the likelihood that new firms obtain an IPO.*

We also expect that IPO market reform will particularly influence the industries in which expected increases in IPO’s will occur. As argued above, IPO market reform was adopted largely because of economic challenges and observation of the success of such markets, particularly in the U.S. Lower IPO requirements in U.S. equity markets seemed to be a “winner” for everyone – i.e., exchange owners, entrepreneurs, investors, and the entire economy. Not surprisingly, Japanese stock markets borrowed features from the U.S. template for IPO requirements when they established their own new equity markets (Deakin & Whittaker, 2009; Vogel, 2006). Indeed, Softbank (a frequent Japanese investor in the U.S. technology sector with venture capital offices in the U.S.) and NASDAQ (a U.S. stock exchange) combined to launch the first reformed market in 2000, reinforcing the link between these markets and the U.S. Moreover, the Japanese often equated IPOs with the technology sector because that was how the U.S. IPO equity markets were perceived (Anchordogy, 1997; Lynn & Kishida, 2004). So, although many companies outside of the technology industry “go public”, the most salient U.S. IPO names like eBay, Cisco, Google, and Yahoo were in the technology sector. Thus, using the logic of mimetic institutional change (DiMaggio & Powell, 1983; Rao, Monin, & Durand, 2003; Strang & Meyer, 1993), we argue that Japanese entrepreneurs and investors equated IPOs with

the technology sector since that was the association in the system they came to take as right and proper. This taken-for-granted understanding is particularly ironic since some of the strengths of the Japanese economy such as the manufacturing sector and the domestic services and retail sectors were then largely ignored as attractive IPO opportunities. Overall, we argue that the cognitive association of IPOs with the technology sector, and disconnect of equity financing and entrepreneurship from the usual Japanese business practices suggest that IPO market reform will have its greatest effects in the technology sector.

*Hypothesis 1b: Establishment of lowered IPO requirements increases the likelihood that new firms in the technology industry obtain an IPO.*

As noted earlier, before reforms, several facets of the Japanese institutional environment worked against IPOs. Japanese firms favored debt financing (Franks et al., 2009). Thus, Japanese executives were less conditioned to consider equity financing. This equity mindset is reinforced by the fact that many venture capital firms are extensions of banks (Kenney et al., 2002). Japanese public policy also traditionally favored large firms in addition to debt financing through major banks (Aoki & Patrick, 1994; Hoshi & Kashyap, 2001). Overall, before reform, IPO's were not viewed as a practicable or frequent successful exit option.

Beliefs about appropriate exits likely changed as IPO reform was adopted into this environment by stock exchanges in Japan. This occurred because observation of the success of U.S. NASDAQ stock markets in the 1990's as well as information and expectations from foreign investors, especially CALPERS, became important (Deakin & Whittaker, 2009). Reform thus occurred as beliefs changed about what is appropriate and proper for an IPO. It is likely that this cognitive change manifested first and primarily among elite individuals who through education and experience are exposed to international trade, work with foreign owned firms, and take an interest in the comparative US – Japan economic trajectories. Elite individuals are likely to have

better information and access to better market opportunities (Burt, 2000; Coleman, 1988). Through their social networks they may learn about opportunities that are unknown to others. Thus, since IPO reform was adopted from the U.S. (Vogel, 2006), we expect the associated beliefs and knowledge of its anticipated effects to begin among elites who will adopt the new strategy of exit through IPO and thus cause more frequent IPO event among firms led by elite individuals.

*Hypothesis 1c: Establishment of lowered IPO requirements increases the likelihood that new firms founded by alumni of elite institutions obtain an IPO.*

While the first hypotheses are essentially “manipulation checks” for the focal reform, the next hypothesis focuses on a key outcome of that reform. We argue that firms founded after the reform will have higher initial capitalization than firms founded before it. Two mechanisms underlie this argument.

First, since IPO market reform increases the likelihood of achieving an IPO and doing so quickly, such reform is likely to attract investors and motivate them to invest more capital in new firms. Indeed, the opportunity costs of not investing increase as greater and earlier returns become more likely. This reinforces the willingness of investors fund new firms. New investors are likely to be attracted and current investors are likely to invest again when they expect a reasonable chance of liquidity (Black & Gilson, 1998). A rich body of research supports this argument. For example, a study of U.S. venture capital funds shows that increasing IPO activity increases both the amount of money that VCs raise and the amount of money that they invest in new firms. Increased demand by investors for investments that tap into potential IPOs and matching demand for those funds by individuals attracted to founding firms by the lure of IPO are key drivers of these results (Gompers & Lerner, 1999). Similarly, using data from 21

countries, another study finds that lowered government regulation of IPOs is related to increasing IPO activity and triggers more VC investment (Jeng & Wells, 2000).

Second, more and more rapid IPOs are likely to increase the initial capitalization of subsequent ventures by recycling investment funds that are made liquid by prior IPOs. In other words, an IPO frees investment capital to invest again. When more IPOs occur and happen more quickly, investment capital becomes available and recycles more quickly. For example, a study in the U.S. biotech industry finds that more IPOs in local regions generate more subsequent biotech ventures in those regions, an outcome consistent with investment recycling in the VC industry where investment is often local (Stuart & Sorenson, 2003b). Overall, lowered IPO listing requirements are likely to increase the capitalization of ventures founded after reform:

*Hypothesis 2a: The establishment of new lowered IPO requirements increases the starting capital investment in firms that are newly incorporated after reforms.*

We hypothesized above that Japanese entrepreneurs and investors viewed IPOs as a feature of technology industry success and the reform of the IPO list requirements were motivated to adopt what were perceived as more successful practices to encourage technical IPO's. Thus, it is likely that the investments encouraged by more IPO activity, as argued above, would be focused in technology firms. First, technology firms are taken-for-granted to be the intended purpose of IPO reform because the intent of these reforms is to provide financial incentives to entrepreneurs to that might ignite innovations (Wonglimpiyarat, 2009). Second, technical firms reach IPO faster than other firms, increasing opportunity costs and reducing risk compared to other industries, (Gompers & Lerner, 2010; Kukies, 2002). Finally, investors tend to mimic other investors behavior because of concern about the appearance of appropriate investing among peers, (Iihara, Kato, & Tokunaga, 2001; Scharfstein & Stein, 1990). Overall, increased investment in the wake of IPO reform will likely be focused in technology firms.

*Hypothesis 2b: The establishment of new lowered IPO requirements increases the starting capital investment in technology firms that are newly incorporated after reforms.*

The prior hypothesis argues that the Japanese context will influence which industry sectors are most relevant for IPO market reform. In this hypothesis, we argue that the Japanese context will also influence which entrepreneurs are most likely to benefit from IPO market reform. We focus on elite individuals (i.e., those with superior human and social capital). We argue that firms founded by elites are especially advantaged by IPO market reform. Elite are more likely to found high performing firms creating opportunity costs that may encourage investment in new ventures started by elites.

Elite individuals are more likely to found high performing firms because they often have superior human capital. They often have better cognitive abilities that are sharpened through better education and more business experience at higher levels. As a result, they are better able to recognize market opportunities and manage their firms more effectively (Baum & Bird, 2010; Beckman, Burton, & O'Reilly, 2007; Gruber, 2008). Several studies support these arguments. For example, better educated (Eesley & Roberts, 2010) and more experienced (Eisenhardt & Schoonhoven, 1990) entrepreneurs are likely to launch higher-performing firms. More experienced entrepreneurs are also better able to identify superior business opportunities than novices (Baron & Ensley, 2006).

A second reason is that elite individuals often have superior social capital. Individuals acquire social capital through industry experience, professional ties, educational experiences, and social memberships (Shane & Stuart, 2002). Individuals with high social capital are likely to have access to better market opportunities (Burt, 2000; Coleman, 1988). Through their social networks they may learn about opportunities that are unknown to others. In addition, a founder's

social capital gives a new firm better access to essential resources, including complementary assets and financial resources that are crucial for success (Aldrich & Zimmer, 1986; Davidsson & Honig, 2003; Stuart et al., 1999; Stuart & Sorenson, 2003a). For instance, in a study of investment in internet security firms, founders with prior direct ties to prominent investors were more likely to receive VC funding (Hallen, 2008), which is linked to better performance. Thus, if elites founded firms grow faster than and reach IPO faster than other firms, it will increase opportunity costs of not investing in elite led firms and reduce risk compared to non-elite firms, (Gompers & Lerner, 2010; Kukies, 2002).

*Hypothesis 2c: The establishment of new lowered IPO requirements increases the starting capital investment in firms started by alumni of elite universities that are newly incorporated after reforms.*

The prior hypotheses argue that the IPO reform will increase the number of IPOs and the capitalization of new firms founded after the reform. The next hypothesis focuses on how the reform influences firm performance. Specifically, we argue that firms founded after the reform are likely to be higher performing than those founded before.

One reason is that more resources are likely to increase firm performance. As we argued in H2a,b,c when IPOs are more likely, they attract more investment that is likely to give new firms more financial resources. More financial resources are beneficial for obtaining other necessary resources such as human capital and intellectual property that are essential for developing new products (Brush, Greene, Hart, & Haller, 2001; Hallen, 2008; Stuart & Sorenson, 2003a). Thus, new firms need sufficient financial resources to hire employees, fund expansion and innovation, and even just to survive. Also, more resources enable ventures to withstand unexpected shocks and setbacks (Barney, Wright, & Ketchen, 2001). Thus, more financial resources are likely to improve the performance of new firms (Ahuja & Katila, 2004; Barney,

1991; Eisenhardt & Schoonhoven, 1990). Substantial evidence supports this argument. For example, in a study of 91 U.S. restaurant chains, greater initial resources are associated with more aggressive growth strategies and better performance (Combs & Ketchen, 1999). In a study of 210 British firms, more financial resources are associated with higher performance across diverse industries. In particular, firms with greater access to financial resources were better able to weather unforeseen circumstances and take advantage of unexpected opportunities (Greenley & Oktemgil, 1998). A number of studies also find that ventures with more alliance relationships are also higher performing (Baum & Bird, 2010; Baum, Calabrese, & Silverman, 2000; Ozcan & Eisenhardt, 2009). Here the argument is that, when ventures form alliances, they gain access to the financial resources and complementary assets of their partners. These increased resources then improve their performance.

More resources are also linked to better performance because they enable entrepreneurs to pursue “higher risk, higher return” opportunities that can generate superior, albeit highly variable, performance (Nanda & Rhodes-Kropf, 2011). This argument is supported in a study of the effects of additional resources on risk taking and performance in 385 U.S. firms. Using the variance of a firm’s forecasted performance as the measure of risk, the findings indicate that more resources led to greater risk taking and performance (Greve, 2012; Wiseman & Bromiley, 1996). Similarly, an examination of Japanese shipbuilding firms finds that firms with more resources are more innovative and subsequently higher performing as measured by sales growth (Greve, 2003). Finally, while it is possible to have too many resources such that performance is dampened (Katila & Shane, 2005), this seems unlikely in the Japanese context. The Japanese venture financing environment is less munificent than the United States venture environment such that excess resources seem unlikely to be problematic (Hoshi & Kashyap, 1999; Milhaupt,



1996). Thus, we argue that IPO market reform is likely to increase the performance of firms founded after the reform.

*Hypothesis 3a: The establishment of new lowered IPO requirements is associated with increased performance for new firms incorporated after reforms*

In H2b, we argued that technology firms in particular will acquire more resources because the focusing of taken-for-granted beliefs that the reform is most salient in the technology industry. The reforms were adopted to encourage the creation of new technology firms. Should additional resources be particularly provided to technology firms, for the reasons above we expect that technology firms' performance will be particularly augmented.

*Hypothesis 3b: The establishment of new lowered IPO requirements is associated with increased performance for new technology firms incorporated after reforms,*

While elites generally tend to found higher performing firms, elites are particularly likely to do so after IPO market reform. Our reason is that such individuals will be particularly able to take advantage of the increased capitalization that IPO reform is likely to provide. That is, they will have the skill and social connections to exploit extra resources effectively. The extra resources will also enable them to pursue larger potential opportunities with superior returns, and to weather downturns more effectively. This in turn is likely to make them more able to achieve higher performance.

Moreover, the human and social capital of founders is particularly relevant to new firm performance because they launch a virtuous cycle in which initially advantaged firms build on prior advantages and compound that advantage relative to others over time (Eisenhardt & Schoonhoven, 1990). For example, elite founders are more likely to obtain alliances with better partners which in turn open up more and better opportunities for their firms going forward. So

the human and social capital of founders is particularly relevant to superior firm performance and the ultimate trajectory of new firms (Barro, 2001; Burton, Sorensen, & Beckman, 2002). Thus, we argue that elite founders will be especially able to take advantage of the greater resources that IPO market reform provides, and so begin particularly high performing firms:

*Hypothesis 3c: The establishment of new lowered IPO requirements is associated with increased performance for new firms incorporated with alumni of elite universities after reforms*

## **METHODS**

Our sample consists of firms in the COSMOS 3 database from Teikoku Databank, Ltd. (TDB). TDB is a commercial credit rating firm in Tokyo (founded 1890), similar to Dun and Bradstreet and one of the two leading firms in Japan providing credit ratings to corporate clients. Since Japanese firms rely on this database for evaluating supplier and customer credit worthiness, it is particularly comprehensive and accurate in its capture of firms with any commercial activity. In addition, this database includes variables that are especially relevant for studying the founding, and performance of new firms such as their capitalization. Consistent with the quality of these data, Teikoku Databank data are used by numerous Japanese scholars in research (Miyamoto & Rexha, 2001; Schaede, 2008; Singleton & Globerman, 2002; Suzuki, Kim, & Bae, 2002; Takahashi & Nakamura, 2009), and public policy evaluation (ACCJ, 2010).

The 2012 edition of the COSMOS 3 Database consists of Japanese firms incorporated through 2011. These firms include the common legal forms of formal business organization in Japan excluding sole proprietorships and including partnerships, limited liability companies,

special corporations, and stock issuing corporations<sup>1</sup>. Each record in the database consists of initial firm measures including capitalization, CEO characteristics, incorporation date, legal form, and industry as well as current measures of the focal firm including employees and IPO status. The database also includes financial performance data for the most recent three fiscal years – e.g., revenue and profit. We begin our observations with firms incorporated in 1990 because that year marks the beginning of Japan’s post-asset bubble environment. We end the observation period in 2007 just prior to the 2008 financial crisis. Our sample consists of 18,653 firms.

### **Dependent Variables**

We examine H1a,b,c and using event history analysis in which the dependent variable event is the occurrence of an *IPO*. We code this event as 1 in the year that the firm experiences an IPO, and 0 if there is no IPO. We obtain these data from the TDB database.

For H2a,b,c, we measure the dependent variable, initial capitalization, as the log value of the opening capital account at firm founding in thousands of yen, *initial\_capital (log)*, in constant 2009 yen. As is common in the entrepreneurship literature, we designate founding as date of incorporation, and obtain these data from the TDB database.

For H3a,b,c, we measure the dependent variable, firm performance, as the compound annual sales growth rate, *growth*, of the focal firm. Sales growth is an appropriate measure of venture performance because sales growth is a salient measure of firm performance across all industries since firms ultimately require revenue to survive regardless of industry. Sales growth is also an antecedent financial outcome to other common and important financial measures such as profitability (Davidsson, Achtenhagen, & Naldi, 2007). Sales growth is commonly used in prior studies of venture performance (Baum & Bird, 2010; Chandler & Hanks, 1993; Eisenhardt

---

<sup>1</sup> These firms include stock issuing firms (*kabushiki kaisha* 株式会社), special non-stock issuing corporations (*tokurei yugen kaisha* 特例有限会社), limited partnerships (*goshi kaisha* 合資会社 and *godo kaisha* 合同会社), and general partnerships, (*gomei kaisha* 合名会社), and exclude firms with no commercial activity such as sole-proprietor hobby firms.

& Schoonhoven, 1990; Gersick, 1994; Hall, 1987; Hmieleski & Baron, 2009). Consistent with prior research (e.g., Baum & Bird 2010), we compute sales growth as compound annual growth rate that takes the  $n$ th root of the total percentage growth rate where  $n$  is the number of years in the period being considered using a starting value of “1”. We compute this measure from founding through 2007. As a robustness check, we also use a second performance measure, employment growth, with consistent results.

### **Independent Variables**

We hypothesize the effects of the Japanese IPO market reform in all of our hypotheses. We measure the occurrence of that reform as the year, 2000, when, as described earlier, firms were first able to list on Japanese public equity markets with dramatically lowered IPO requirements such that even young, small, and unprofitable firms could “go public”. Thus, we measure when the focal venture began relative to this reform with a binary variable, *reform*, that is 1 if the focal firm is founded during or after 2000, and 0 otherwise.

In hypotheses 1b, 2b and 3b, we test interaction effects of IPO market reform with technology ventures. TDB assigns firms to their initial industries using the well-known and widely used SIC codes (Robb & Reedy, 2009) at the 4-digit level. But since TDB sometimes assigns a firm to a 4-digit SIC code when their activities are more diverse, we conservatively use the 2-digit industry level. Following prior research, we then group these 2-digit industries into logical bins (Folta & O'Brien, 2003). That is, we classify each firm into one of six industry categories: *Primary*, *Manufacturing*, *Service/Sales*, *Finance*, *Construction*, and *Technology*. We test our hypotheses for the technology industry, but also include these other industries as fixed effects to enhance robustness and insight.

In H1c, H2c, and H3c, we hypothesize about the effect of IPO reform on firms founded by elites. In Japan, a crucial source of elite status through human and social capital is attending a

top university. Entry into the top universities is gained through success in national intelligence tests and is highly desired (Ishida, Spilerman, & Su, 1997). Indeed, prior research confirms that the individuals who attend the top universities in Japan have superior cognitive ability (Ishida et al., 1997). These individuals then improve their already high human capital through a better education with more talented professors and classmates. Once they graduate, these individuals have very privileged advantages in terms of access to the best job opportunities at the highest status and most influential firms and government agencies. They continue to accrue human capital through valuable experience gained in these highly desirable jobs. They also continue to accrue social capital through both their alma mater networks and their business networks developed in their advantaged jobs (Blinder & Krueger, 1996; Conrad, 2009). In fact, the alumni networks of top universities are unusually influential sources of social capital in Japan because their graduates strongly identify with their university and the top universities view establishing strong social networks for their graduates as central to their mission (Yonezawa, 2007).

We focus on the CEO as founder because this individual is most likely to organize the new firm including hiring others, imprinting personal values on the new firm, and affecting its subsequent performance. We assess whether this CEO is elite using education for several reasons. First, this measure is consistent with prior research on the sources of human and social capital in new firms (Beckman et al., 2007; Burt, 2000; Davidsson & Honig, 2003; Dencker, Gruber, & Shah, 2009b; Eisenhardt & Schoonhoven, 1990; Hallen, 2008). Second, as we argue above, education is a particularly strong marker of elite individuals in Japan that are closely associated with the human and social capital advantages that underlie the theoretical basis of our hypothesis. We assess whether the founding CEO has an elite education by whether this individual is a graduate of one of Japan's top universities. To determine the top Japanese universities, we focus

on the top ten including the seven former imperial universities (Tokyo, Kyoto, Hokkaido, Tohoku, Nagoya, Osaka, and Kyushu) as well as the Tokyo Institute of Technology (the top national university in engineering) and the two leading private universities (Keio University and Waseda University) (Yonezawa, 2007). These ten are consistent with top universities in other recognized rankings such as the London Times / QS rankings (Times, 2011) and are cited as such in recent academic research (Deem, K.H., & Lucas, 2008; Freeman, 2010). We obtain these data from the TDB database. If a founding CEO is a graduate of one of the top universities we code the variable, *Elite Founder*, as 1 and otherwise 0.

### **Control Variables**

***Foreign Ownership:*** We also control initial foreign ownership for several reasons. In the case of IPOs, empirical studies indicate that foreign investors have different expectations for return and speed of return than domestic Japanese investors (Deakin & Whittaker, 2009). Thus, they are likely to press for IPO sooner. It is also likely that foreign investors are not subject to the same social expectations and constraints as domestic investors. Japanese studies show that foreign investors select investments with different (shorter) time horizons and expect higher returns (Ahmadjian & Robbins, 2005; Asaba, 2005). Thus, foreign ownership is likely to increase the probability of IPO. Foreign ownership is also likely to increase the likelihood that firms have higher initial capitalization (H2a,b,c). Foreign ownership suggests that entrepreneurs with broad access to capital beyond domestic investors are likely to be able to raise more capital. Finally, firms with foreign ownership are more likely to have superior performance, especially sales growth (H3a,b,c). The underlying argument is, as above, that such investors often have more aggressive goals, and so will apply greater pressure on the new firm to grow quickly. In addition, foreign investors may open opportunities in their domestic markets that favor the new

firm, and may serve as a signal of the global presence of the firm (Kimura & Kiyota, 2004). These effects make high performance more likely. We measure, *foreign ownership*, by a “1” if the focal firm is initially 25% or more owned by foreign organizations or individuals. We obtain these data from the TDB database.

***Fixed Effects:*** We control for *industry fixed effects*. Industry influences the likelihood of IPO (H1a,b,c) because firms in some industries may need the additional resources that IPO provides, and some industries may be more attractive to public investors. Industry also is likely to influence factors such as the amount of capital needed to start a firm and the ability of firms to raise capital (H2a,b,c) and the rate of firm growth (H3a,b,c). Thus, we capture industry fixed effects, *industry*, and categorize the industries as described above. We control for *annual fixed effects* using annual binary variables following the methodology of estimating multiple control groups with sufficiently large sample sizes (Bertrand, Duflo, & Mullainathan, 2004). This enables us to control for differences in the macro-economic and business environments that might influence the likelihood of IPO, initial capitalization and performance.

***Other Effects:*** We control for the macroeconomic environment in all models because the conditions are likely to influence IPO exit, initial capitalization, and growth. We do so using the variable, *GDP Growth*, which is the cumulative average growth rate of GDP for the three years centered on a firm’s incorporation – in constant 2009 yen using data from the Statistics Japan database (Statistics, 2011). For H1a,b,c, and H3a,b,c, we control for firm size as measured by the log of employee size, *Employees (log)*. We expect that firms with more employees are more likely to IPO and to have higher growth. Finally, for H3a,b,c, we control for firm age since prior research indicates that the growth of firms tends to slow over time (Evans, 1987). We control for the age of the firm, *firm age*, and its square, *firm age<sup>2</sup>*, to capture diminishing quadratic growth

compounded over time for our performance hypotheses (Angelini & Generale, 2008).

### **Model Specification and Econometric Issues**

To analyze H1a,b,c we estimate the effects of IPO market reform on a firm's likelihood to complete an IPO before and after the reform. Because we are examining the effects of reform across two time periods, we adopt a piecewise Cox proportional hazards model that estimates the likelihood of an event before and after a chosen date so that we can compare likelihoods (Sørensen, 1999). In our case, our event of interest is an IPO and the reform date is 2000 as described earlier.

One advantage of this model is that it does not impose strong parametric assumptions with regard to the hazard rate. This allows variation between selected periods unlike standard proportional hazard models, and so allows us to estimate the effects of the coefficient of reform on our dependent variables for the time periods before and after IPO market reform (Blossfeld & Rohwer, 2002; Sørensen, 1999). Since our study includes firms incorporated in 1990 and thereafter, and our focal reform occurs in 2000, we define two time segments: 1990-1999 and 2000-2007. We test for IPO likelihood - operationalized with *IPO*. We report exponential coefficients (hazard ratios), and compare them for a statistical difference with unpaired t-tests.

We use difference-in-differences analysis to examine H2a,b,c, H3a,b,c,. In this method, we examine the effects of a treatment (in our case, IPO market reform) by comparing the outcomes of treatment groups after treatment with the outcomes of treatment groups before the treatment, and of a control group. Outcomes are observed for several time periods. This model structure can apply, as in our case, to repeated cross sections (Wooldridge, 2007). We use primary industries (e.g., farming, coal mining, and forestry) as our control group because firms in these industries are unlikely to be affected by IPO market reform, and yet still are affected by



the broader environment. These firms are likely to succeed by hereditary bequest instead of an IPO, and otherwise respond to the broader environment. In other words, we expect that the environmental effects of general social and macroeconomic trends on these firms will be similar to those of firms in other industries. But unlike other industries, firms in the primary industries will be less affected by IPO market reform since executives in these industries follow traditional, often hereditary career paths – e.g., starting a dairy farm – and do not typically seek to IPO. This approach allows us to determine whether the outcomes of the treatment group change differently from those of the control group because difference-in-difference estimation treats unmeasured factors as affecting the treatment and control groups equally (Campbell, 1969; Forman, Ghose, & Goldfarb, 2009). We follow the difference-in-differences method of (Bertrand et al., 2004; Hansen, 2007) because our analytic window has multiple time periods and industries. We followed their recommendation to group the pre and post time periods to address potential bias from serial correlation in differences in differences models. Following this method, our model includes a full set of annual fixed effects, a full set of industry fixed effects, an institutional change – *reform* – that marks the date of our focal IPO market reform, controls, plus interactions between the focal reform with industry fixed effects and yearly fixed effects. Of analytic interest are the coefficients on the interaction variables that allow us to discern the effects of the focal reform on industry-level capitalization, industry-level performance, and performance of firms. We estimate the effects of IPO market reform on initial capitalization (H2a,b,c) and on performance (H3,a,b,c). The reform “treatment” occurs in 2000. Because our data span distinct time periods, we mitigate the effects of heterogeneous distribution of independent variables by estimating these models with a generalized linear model using robust error estimation.

## RESULTS

We first analyze univariate data to ask how equity market reform affects IPO's, capitalization, and venture performance. Table 2a, 2b and 2c report summary statistics. Table 3 reports correlations. Univariate data is consistent with our hypothesis H1a that IPO's are more frequent after reforms with 2.45% of newly incorporated firms obtaining IPO after reform compared to 2.08% before reform. This is all the more notable because firms founded before reform have up to ten years more time to gain IPO than those founded after. Moreover, consistent with H1b, technology firms obtain IPO's at more than twice their proportion of total startups. With regard to H1c, the proportion of elite individuals founding firms that obtain IPO increase much more than their proportion of foundings after reform, to 35.9% from 22.1%. Since they comprise just 10% percent of founders after reform and yet over a third of IPO's, this adds support to our insight that not only are elites more likely to succeed in IPO, but that their rate of successful IPO's increases proportionately greater than for non-elites.

Median initial capital, table 2c, increased substantially for elite founders and technology firms after reform consistent with H2b, and H2c respectively. The overall initial capital, however, for non-elite and non-technical firms, increases less than 10% after reform. In terms of the performance of firms founded after reform, firms founded after reform seems to grow faster than firms founded before, but this univariate result is confounded by the early age of firms founded after reforms that tend to grow faster. Overall, the univariate data suggests that IPO's became more likely after reform, particularly among elite individuals and technology ventures. Yet, increased initial capital appears to change substantially only in technology firms and firms founded by elite individuals.

-----

Insert Tables 2a, 2b , 2c and 3 about here  
-----

Turning our attention to multivariate analyses, in H1a we argue that the IPO listing reform increases the likelihood of IPO. Table 4 reports the results of our Cox piecewise analysis. Model 1 is the controls result. As expected, GDP growth, number of employees, and larger amounts of initial capital increase the likelihood of IPOs ( $p < 0.001$ ). We support H1a by finding that IPO activity is significantly greater after the reform than before by comparing the coefficients of the 1990 through 1999 period to the 2000 to 2007 period for the *reform* variable which is significant at the  $p < .05$  level. In H1b, we argue that IPO market reform will particularly increase IPO likelihood in the technology industry. In Table 4, we examine the difference between IPO likelihood of types of firms before and after *reform* by comparing the coefficients of the industry variables across the two analysis periods. We find that only the technology coefficient differences in the two time periods are significant ( $p < 0.001$ ). Notable, no other firms industry classification was significantly different between time periods. This suggests, supporting H1b, not only did IPO market reform significantly increased IPOs in the technology industry sector, it was only in that industry that reform had a significant effect. We explore this result further in the discussion section. Finally, in H1c, we argue that firms founded by elite individuals will be particularly likely to IPO after reform. We find support for this in Table 4 where the coefficient of *Elite Founder* is significantly larger after reform, ( $p < 0.001$ ). In summary, in support of our first hypotheses, we find that IPO's are likelier overall, especially if an elite individual founds them, but that this effect is focused in the technology industry.

In H2a we argue that IPO equity market reform is likely to increase the initial capitalization of new firms founded after the reform. Table 5 reports the results of our difference-in-differences analysis, using primary industries as a control. Model 1 reports our controls results. GDP growth is positive as are ventures with 25% foreign ownership. We also examine the

coefficient of the interaction between reform and our control (*Primary Industry X Reform*). As we expected, this coefficient is negative and significant supporting our differences in difference control assumptions. However, the reform variable is not significant implying that overall, firms founded after reforms do not have higher initial capitalization after reform, not supporting H2a.

We test whether new technology firms obtained more capital after reform in model 3 that adds the *technology x reform* interactions and in model 4 where all industry group interactions with reform are included. The positive and significant coefficient on the *technology X reform* variable ( $p < 0.001$ ), along with the negative and significant coefficient on the control interaction, supports our hypothesis, H2b. Notably, no other industry group was significantly affected by reform, and the negative values on all non-technology industry interaction variables strongly suggests a focus on technology and implies that perhaps initial investment is being reduced in other industries to support that effect. The initial capitalization of the new firms in the *technology* industry increased after the reform by Y1.26 million or 6% of the mean level before reform ( $p < 0.001$ ). The implication is that the *technology* industry attracted more investment after the IPO market reform while investment in other industries remained stagnant or dropped, perhaps to support investment in *technology* firms.

We test whether firms founded by elites gather more initial capital after reform, H2c. The positive and significant coefficient on the *elite X reform* variable ( $p < 0.001$ ) in models 2 and 4, along with the negative and significant coefficient on the control interaction, supports our hypothesis. Nevertheless, including elite variables reveals a significant but negative effect on *reform* further suggesting that reform did not increase capital overall. Increasing the initial capital of elite founded firms could generate better performance in these firms as this gives more resources to individuals with greater human and social capital. We explore this in our next set of

hypotheses.

-----  
 Insert Table 4 and 5 about here  
 -----

In H3a,b,c, we argue that firms founded after the IPO market reform are likely to have higher performance than those founded before. We present the results in Table 6. In model 1, we examine the controls. As expected, firms with foreign ownership and more employees are better performing than other firms, but the effect diminishes with the age of the firm and there is an unexpected significant negative performance effect overall with reform. GDP growth is unexpectedly negative, but the effect is quite small given the magnitude of the coefficients and the slow growth rates in Japan during our study period and may simply be a consequence of economic recession in Japan during 2000-2002 and 2007.

Unexpectedly, we do not find support for a positive effect on performance overall with reform. First, the coefficient on the *reform* is significantly negative while the coefficient on our control industry interaction is positive and significant suggesting that reform had a negative effect on new firm performance. Looking to industries, where our interest is the interaction effects of particular industries with reform. We test whether new technology firms performed better after reform in model 4 that adds the *technology x reform* interactions, and in model 5 where all industry group interactions with reform are included. The negative and significant coefficient on the *technology X reform* variable ( $p < 0.001$ ), along with the positive and significant coefficient on the control interaction ( $p < 0.001$ ), does not support our hypothesis, H3b. It seems that technology firms, that after reform are both more likely to IPO (H1b) and obtain additional capital (H2b), nevertheless perform worse after reform. Notably, no other industry group was significantly affected by reform, suggests a performance effect where IPO reform effects were focused. Thus, our hypotheses H3a, and H3b are not supported. We find

instead that firms founded after the IPO market reform are not performing better. We explore these surprising results in the discussion section.

We find mixed support for our H3c that firms founded by elite individuals perform better after reform. The positive and significant coefficients on the *elite founder* variable in models 2 through 5 and on the *elite X reform* variable ( $p < 0.001$ ) in model 3,5 and 6, suggests that elite founded firms perform better overall and particularly better after reform. We examine this further in model 6, where we add the effect of initial capital to the interaction models. The *initial capital* variable is positive and significant ( $p < 0.001$ ) and we find that it eliminates the effect of elite founders and decreases the effect of the *elite X reform* variable. Moreover, the coefficient in the interaction between initial capital and elite founders, *initial capital x elite*, is positive and significant. Taken together with the elimination of the direct effect with the initial capital variable, this suggests that it is initial capital that is the mechanism that allows elite founders to obtain superior performance. Thus, the initial capital that IPO reform increased in elite founded firms (H2c) is likely the mechanism creating superior performance in elite firms after reform. It is notable that the effect of the elite founder with reform is not completely eliminated with the inclusion of the initial capital variable. This can imply that elite founders may find additional resources, say later rounds of venture capital, which we cannot directly measure. Overall, our results suggest a complex effect of IPO reform on newly founded firm performance. Not only does overall new venture performance overall decline after IPO reform, it particularly declines in the technology industry where our previous finding show that increased investment following reform was focused (H2b). On the other hand, it may be that the increased levels of initial capital that reform delivers to elite founded firms may allow those firms to perform better. The effect of IPO reform on new firm performance can be viewed as narrowly focused, and complex

within that focus.

-----  
Insert Table 6 about here  
-----

### **Robustness checks**

In results available from the authors, we also conducted a number of robustness checks and their results reinforce our findings. First, we examine whether broad trends might explain our results. We ran placebo regressions where we choose an artificial reform year for three years on either side of 2000 to determine whether the results are due to the actual reform or due to a general trend. These coefficients should not be significant, and indeed they are not. Second, we also examine an alternative specification of performance, employee growth. We found similar results to what report above.

Right censoring can affect our results, however the effect is conservative. New ventures that obtain IPO's in Japan typically are eight to ten years old upon IPO (Eberhart, 2012). This suggests that firms founded more recently in our sample are right censored since insufficient time is passed before the opportunity to IPO is manifest. However, the effect is conservative. Right censoring biases the likelihood of IPO after reform lower in our proportional hazards model. Thus, the detection of the hypothesized effect (H1a,b,c) is made more difficult. The bias is also likely to me smaller than this suggests. If reform causes shorter times to IPO, as we theorize, then this bias is mitigated. Overall, then, we do not expect right censoring of IPO's to alter our findings.

We also ran analyses controlling for other trends in GDP growth and macroeconomic factors, and found similar results. We tested for robustness to alternative control groups including bars, restaurants, spas and other industries that would have probably been unaffected

by the reform. These regressions provide similar results, reinforcing our findings. We also ran analyses to control for bankruptcy reform, and find that our results hold. Overall, our findings are robust to other sensitivity checks and alternative specifications.

## **DISCUSSION AND CONCLUSION**

Our central insight is that IPO market reform is a powerful institutional lever. Specifically, we find that lowering the barriers to successful exit by lowering IPO requirements makes IPO's more likely – an outcome favored by investors and entrepreneurs to raise new funds, “cash out”, and gain the prestige of being a “successful entrepreneur”. We also find that lowering the barriers to successful exit attracts more capital investment in subsequent ventures in some industries and improves some venture performance.

But IPO market reform is also a blunt institutional instrument– i.e., it has no effect in many industries, triggers poor performance among firms in the industry where it does have an effect, and enables superior performance but only for particular founders. Specifically, we find that lowering the barriers to successful IPO exit increases IPO's and increases the initial capitalization of firms founded after reform, but only in the technology industry. It either does not affect or may actually pull investment away from other sectors. Thus, investors ironically neglect sectors like manufacturing and domestic services and retail where Japan has traditional strengths. Finally, IPO market reform particularly helps elite founders to launch high-performing firms, but can damage the performance of firms founded by “average” entrepreneurs. Thus, IPO market reform is an unexpectedly complicated engine for economic prosperity.

### **Implications at the Nexus of Entrepreneurship and Institutional Theory**

We also contribute at the nexus of entrepreneurship and institutional theory (Sine & David, 2010; Tolbert et al., 2010). Our results for the Japanese technology sector are particularly



revealing here. First, we introduce the concept, *barrier to successful exit*. Prior research categorizes types of change that influence particular entrepreneurial activities (Romanelli, 1989; Sine & David, 2003). It identifies barriers to entry as well as barriers to growth and failure (Ciccone & Papaloannou, 2010; Peng, Yamakawa, & Lee, 2009a). In contrast, a barrier to successful exit combines several of these changes into one. A successful exit like IPO is similar to growth in that it is a *successful* financial outcome. But it is also like a failure in that it is an *exit* of capital and often individuals. Thus, lowering barriers to successful exit is a complex mix that is likely to have complicated outcomes.

Second, we indicate how lowering barriers to successful exit influences entrepreneurial outcomes. Prior research finds that lowering entry barriers increase new firm formation (Hiatt et al., 2009; Hsu et al., 2007), while growth and failure barriers shift the mix of who becomes an entrepreneur (Eberhart et al., 2012; Eesley, 2010). But, successful exit barriers are more complicated, and so not surprisingly, their outcomes are more nuanced. Such barriers improve the chances of superior performance for elite entrepreneurs who can take advantage of the opportunities that IPOs provide. But, they also reduce the success chances of “average” entrepreneurs, particularly when they gain resources. Thus, lowering successful exit barriers is a “two-edged” sword. It increases the performance of high performers, but lowers the performance of others. Thus, we contribute the insight that lowering the barriers to successful exit amplifies performance variance among new firms.

Third, we also contribute by clarifying why this “two-edged” sword emerges, and suggest one resolution of the tension between resources and performance. As we argued above, much research finds that more resources are beneficial to the performance of new firms. Indeed, new firms often require resources in advance of revenues (Gartner, Carter, & Reynolds, 2010; Hallen

& Eisenhardt, 2011; Pfeffer & Salancik, 1978). Substantial empirical evidence supports this argument, e.g., (Baum, Locke, & Smith, 2001; Cooper, Woo, & Dunkelberg, 1988; George, 2005). Yet in contrast, some other research finds that too many resources limit performance. Excess resources can reduce focus on rapid product commercialization, delaying effective performance (Katila & Shane, 2005). Excess resources can create opportunism and complacency within the management team, and enable excessive salaries and unnecessary costs (Tan & Peng, 2003). Excess resources can also encourage inappropriate risk-taking (Bromiley, 1991), and enable marginal firms in an industry to persist. Thus, there is a tension between too many and too few resources.

Our contribution is a possible resolution of this tension. We find that the benefits of many resources emerge when they are in the hands of advantaged entrepreneurs such as elite individuals who are likely to have the talent and skill to take advantage of the benefits that munificent resources provide. In contrast, less advantaged entrepreneurs appear to be less able to cope with the distractions that many resources bring. Overall, this finding reinforces the emerging literature that points to having the “right” type of entrepreneur in the “right” situation – e.g., Chinese returnee, user-founder, serial entrepreneur, etc. – at the helm of new firms (Dencker, Gruber, & Shah, 2009a; Eesley & Roberts, 2012; Fuller & Rothaermel, 2012). In our study, this “right” type of entrepreneur is an elite entrepreneur who can take advantage of higher capitalization.

Overall, we contribute at the nexus of institutional theory and entrepreneurship by providing a more complete and realistic view of the interrelationship between equity markets, investors, types of entrepreneurs and venture performance. What emerges is a deeper understanding of the duality of lowered barriers to successful exit. On the one hand, attracting

capital and the lure of success increase the likelihood that “superior” entrepreneurs will succeed. On the other hand, these same factors can damage the performance of “average” entrepreneurs. The result is to amplify the performance variance of new firms. A next step for future research is to examine the generalizability of this result in other settings.

### **Implications for Institutional Theory**

We contribute to the literature on institutional theory. It is understood that institutions - regulative, cognitive and normative - are important barriers faced by entrepreneurs. Much extant research, though, emphasizes the institutional environment at the start of a firm’s life (Sørensen & Chang, 2006). We extend institutional theory to the closing of a firm’s entrepreneurial life by clarifying that institutional change is likely to be effective when it changes the conditions at the *end* of a venture’s entrepreneurial phase. Indeed, recent work is coalescing around the insight that institutional changes at the end of a firm changes the types of entrepreneurs who start firms, as well as the venture’s subsequent performance. So, for example, elite founders start new firms with superior growth when corporate bankruptcy laws are made more lenient (Eberhart et al., 2012; Fan & White, 2003; Lee, Yamakawa, & Peng, 2007). Our results show that institutions that condition the successful exit of a firm have material effects on the amount invested in new firms, the kinds of firms that receive investments, and their subsequent performance. To this we add a more nuanced view of the common and blunt instrument of making it easier to IPO. We also show that the institutions affect new ventures through their effects on the behaviors of salient actors.

We also show evidence, consistent with cognitive and normative changes in beliefs, that Japanese actors compared their relative economic fortunes to the U.S. during the 1990’s, by observing that IPO market reform is more salient where individuals take-it-for-granted that it

applies – i.e., the technology sector. In other words, Japanese investors appear to have an “unexamined” understanding of IPOs as relevant in the technology sector where well-publicized U.S. IPOs occur and where those individuals who reformed IPO markets in Japan often gained their own experience. So, founders and investors in technology sector engage with the IPO market reform as expected – i.e., they have more IPO activity and invest more capital after the reform. But, founders and investors whose attention is *outside* the technology sector appear to either ignore the IPO market reform or have little understanding of its potential relevance to them. Thus, we find that Japanese entrepreneurs and investors imitate the technology sector emphasis of IPO markets in the U.S., even though IPOs may be more salient in other sectors of the Japanese economy including manufacturing where Japan has traditional strengths. Other than possibly siphoning investment to technology firms from other sectors, it acts as if (in the short run, anyway) the IPO market reform had never occurred in large sectors of the Japanese economy.

Second, we contribute to institutional theory by highlighting the role of *elites* for the implications of institutional change. We observe that IPO market reform is particularly beneficial for the Japanese elite who become entrepreneurs. Japanese elites are identified when they are young, and tracked into preferential universities and careers (Ariga & Okazawa, 2009). Thus, social mobility is locked in early on. If elite individuals become entrepreneurs, they are likely to found firms that perform particularly well because of their human and social capital advantages. Similar elites exist in other settings although the basis may be different – e.g., family in Indonesia and Communist Party ties in China – and may be endowed at birth. Yet they have “locked-in” advantages of superior social networks and human capital. Our general point is elites are likely to play a critical role in the success of institutional changes that seek to foster

entrepreneurial activity and economic prosperity. That is, when these individuals become entrepreneurs, they are likely to form more successful firms, and thus create the job growth and economic prosperity that institutional reforms often seek to achieve. Thus, our contribution is the insight that institutional changes that mobilize elites are likely to be most influential.

Overall, our findings indicate the relevance of institutional theory in understanding the consequences of institutional change on entrepreneurship. In particular, we find that institutional change to the conditions that end a firm's entrepreneurial phase has a powerful influence on the founding of other firms. This occurs because the expectation of likely outcomes is altered by the adopted beliefs that catalyzed the institutional change. For example, the changes are effective because they influence investment behavior. But that behavior is anchored in the beliefs associated with the technological investment context from which they were adopted. As a consequence, investors eschew Japan's context dependent investment opportunities in manufacturing and trade. In this way we add to the idea that entrepreneurial behavior and investment is socially constructed and can be constrained by beliefs to cause behaviors that can seem less optimal.

### **Implications for Public Policy**

A principal policy implication of our findings is the need for caution concerning IPO market reform. Lowering IPO requirements is likely to create more IPOs and attract more capital, but this reform may not necessarily benefit all industry sectors and all entrepreneurs. Rather, the reform may over-allocate investment into "popular" industries, and fail to support worthy but less "elite" entrepreneurs

A key to effective deployment of IPO market reform is understanding where executives and investors believe that IPOs are relevant, and for which entrepreneurs they are most beneficial.

Moreover, a central insight is that the primary influence of this reform from the public policy perspective is *not* the immediate effects of IPO. Rather, it is the more distant and subtle influence on attracting capital and affecting subsequent new firm performance. Lowering barriers to successful exit is thus a powerful - but unexpectedly complicated -institutional reform that can bring too much capital to the wrong entrepreneurs.

## **Conclusion**

We began with observation that lowering IPO requirements for listing on public equity markets is a widespread institutional reform that is being adopted in many nations around the globe to promote entrepreneurial activity and economic prosperity. Using institutional arguments, we find that IPO market reform is effective – i.e., it increases IPO activity, attracts investment, and improves the performance of some new firms founded by particular entrepreneurs. But we also find that this reform can have little effect outside of its focus, may waste capital, and may actually decrease new firm performance. Thus, this reform yields unanticipated effects, and tends to harm the performance among new firms in the technical industries that it is intended to help.

Overall, we contribute an understanding of where institutional change will be effective and for whom. We contribute to the literature on institutional theory in two ways. First, we show that institutional change was brought about due to changes in shared beliefs. As Japanese government and business leaders began comparing their economic performance and formal institutions to the U.S. during the boom in the late 1990's in the technology sector, they began to push for reform. Second, our findings suggest that institutions that are transferred directly to a different place are not likely to be equally effective in every country. Differing institutional environments more broadly in Japan as compared with the US result in differing levels of effectiveness. Therefore, we bring a more context-dependent view of institutional change to the

literature on institutions and entrepreneurship.

Broadly, we conclude that institutional theory is a powerful lens. It indicates both the general implications of lowered barriers to successful exit, and the particular nuances of how that institutional reform plays out. It also emphasizes that preparing the institutional environment for easier success, may make that success more elusive.

## References

- ACCJ. 2010. New Growth Strategies for Japan. In N. Benes (Ed.): American Chamber of Commerce in Japan.
- Ahmadjian, C. L., & Robbins, G. E. 2005. A Clash of Capitalisms: Foreign Shareholders and Corporate Restructuring in 1990s Japan. *AMERICAN SOCIOLOGICAL REVIEW*, 70(3): 451-471.
- Ahuja, G., & Katila, R. 2004. Where do resources come from? The role of idiosyncratic situations. *Strategic Management Journal*, 25: 887-907.
- Anchordogy, M. 1997. Japan at a Technological Crossroads: Does Change Support Convergence Theory? *Journal of Japanese Studies*, 23(2): 363-397.
- Angelini, P., & Generale, A. 2008. On the Evolution of Firm Size Distributions. *American Economic Review*, 98(1): 426-438.
- Aoki, M., & Patrick, H. T. 1994. *The Japanese main bank system : its relevance for developing and transforming economies*. Oxford [England] ; New York: Oxford University Press.
- Asaba, S. 2005. Do Foreign Shareholders Change Japanese Firms?, *AoM Annual Meeting*: 39. Hawaii.
- Barney, J. 1991. Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17: 99-120.
- Barney, J., Wright, M., & Ketchen, D. 2001. The resource-based view of the firm: Ten years after 1991. *Journal of Management*, 27: 625-641.
- Baum, J., & Bird, B. 2010. The Successful Intelligence of High-Growth Entrepreneurs: Links to New Venture Growth. *Organization Science*, 21(2): 397-412.
- Baum, J., Calabrese, T., & Silverman, B. 2000. Don't Go it Alone: Alliance Networks and Startup Performance in Canadian Biotechnology. *Strategic Management Journal*, 21(3): 267-294.
- Baum, J. A., & Rao, H. 2004. Evolutionary dynamics of organizational populations and communities. *Handbook of organizational change and innovation*: 212-258.
- Beckman, C., & Burton, M. D. 2008. Founding the Future: Path Dependence in the Evolution of Top Management Teams from Founding to IPO. *Organization Science*, 19(1): 3-24.
- Bertrand, M., Duflo, E., & Mullainathan, S. 2004. How Much Should We Trust Differences-in-Differences Estimates? *The Quarterly Journal of Economics*, 119(1): 249-275.
- Black, B. S., & Gilson, R. J. 1998. Venture capital and the structure of capital markets: banks versus stock markets. *Journal of Financial Economics*, 47(3): 243-277.
- Blossfeld, H., & Rohwer, G. 2002. *Techniques of event history modeling: new approaches to causal analysis*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Boeker, W. 1989. Strategic Change: The Effects of Founding and History. *The Academy of Management Journal*, 32(3): 489-515.
- Brush, C. G., Greene, P. G., Hart, M. M., & Haller, H. S. 2001. From Initial Idea to Unique Advantage: The Entrepreneurial Challenge of Constructing a Resource Base [and Executive Commentary]. *The Academy of Management Executive (1993-2005)*, 15(1): 64-80.
- Campbell, D. T. 1969. Reforms as experiments. *American Psychologist*, 24(4): 409-429.
- Carpentier, C., & Suret, J. 2009. The Survival and Success of Penny Stock IPOs: an Analysis of the Consequences of Low Listing Requirements, *CIRANO Working Papers*: CIRANO.



- Casper, S. 2000. Institutional Adaptiveness, Technology Policy, and the Diffusion of New Business Models: The Case of German Biotechnology. *Organization Studies*, 21(5): 887-914.
- Chacar, A., & Vissa, B. 2005. Are emerging economies less efficient? Performance persistence and the impact of business group affiliation. *Strategic Management Journal*, 26(10): 933-946.
- Chandler, G. N., & Hanks, S. H. 1993. Measuring the performance of emerging businesses: A validation study. *Journal of Business Venturing*, 8(5): 391-408.
- Chang, S. J. 2004. Venture capital financing, strategic alliances, and the initial public offerings of Internet startups. *Journal of Business Venturing*, 19(5): 721-741.
- Ciccone, A., & Papaloannou, E. 2010. Red Tape And Delayed Entry. *Journal of the European Economic Association*, 5(2-3): 444 - 458.
- Combs, J. G., & Ketchen, D. J., Jr. 1999. Can Capital Scarcity Help Agency Theory Explain Franchising? Revisiting the Capital Scarcity Hypothesis. *The Academy of Management Journal*, 42(2): 196-207.
- Dacin, M. T., Goodstein, J., & Scott, W. R. 2002. Institutional Theory and Institutional Change: Introduction to the Special Research Forum. *Academy of Management Journal*, 45(1): 43-56.
- Davidsson, P., Achtenhagen, L., & Naldi, L. 2007. What Do We Know About Small Firm Growth? , *The Life Cycle of Entrepreneurial Ventures*, Vol. 3: 361-398: Springer.
- Deakin, S., & Whittaker, D. 2009. *Corporate Governance and Managerial Reform in Japan*. New York: Oxford University Press.
- DiMaggio, P., & Powell, W. 1983. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48(2): 147-160.
- Eberhart, R. 2012. Corporate Governance Systems and Firm Value: Empirical Evidence from Japan's Natural Experiment. *Journal of Asia Business Studies*, 6(2): 176 - 196.
- Eberhart, R., Eesley, C., & Eisenhardt, K. 2012. Failure is an Option: Failure Barriers and New Firm Performance, *Rock Center for Corporate Governance at Stanford University Working Paper Series*. Stanford, CA: Stanford University.
- Eberhart, R., & Hoetker, G. 2010. 21st Century Innovation in Japan: An Institutional View. In D. Assimakopoulos, E. Carayannis, & R. Dossani (Eds.), *INNOVATION TECHNOLOGY & KNOWLEDGE MANAGEMENT*: Springer Book Series.
- Eesley, C. 2010. Who Has 'The Right Stuff'? Educational Elites, Entrepreneurship And Institutional Change In China: Stanford University.
- Eisenhardt, K., & Schoonhoven, C. 1990. Organizational Growth: Linking Founding Team, Strategy, Environment, and Growth Among U.S. Semiconductor Ventures, 1978-1988. *Administrative Science Quarterly*, 35(3): 504-529.
- Evans, D. S. 1987. The Relationship Between Firm Growth, Size, And Age: Estimates For 100 Manufacturing Industries. *Journal of Industrial Economics*, 35(4): 567-581.
- Fan, W., & White, M. 2003. Personal Bankruptcy And The Level Of Entrepreneurial Activity. *Journal of Law and Economics*, 46(October): 543 - 567.
- Folta, T., & O'Brien, J. 2003. ENTRY IN THE PRESENCE OF DUELING OPTIONS. *Strategic Management Journal*, 25(121-138).

- Forman, C., Ghose, A., & Goldfarb, A. 2009. Competition Between Local and Electronic Markets: How the Benefit of Buying Online Depends on Where You Live. *Management Science*, 55(1): 47-57.
- Franks, J., Mayer, C., & Miyajima, H. 2009. Equity Markets and Institutions: The Case of Japan, *RIETI Discussion Paper Series 09-E -039*. Tokyo, Japan: RIETI.
- Futagami, S., & Helms, M. 2009. Emerging Female Entrepreneurship in Japan. *Thunderbird International Business Review*, 51(1).
- Geroski, P., Mata, J., & Portugal, P. 2010. Founding Conditions And The Survival Of New Firms. *Strategic Management Journal*, 31: 510-529.
- Gersick, C. 1994. Pacing Strategic Change: The Case of a New Venture. *Academy of Management Journal*, 37(1): 9-45.
- Gompers, P., & Lerner, J. 1999. What Drives Venture Capital Fundraising?, *NBER Working Paper #6906*. Cambridge, MA: National Bureau of Economic Research.
- Gompers, P., & Lerner, J. 2010. Equity Financing. In Z. Acs, & D. Audretsch (Eds.), *Handbook of Entrepreneurship Research*: Springer.
- Gompers, P. A. 1996. Grandstanding in the venture capital industry. *Journal of Financial Economics*, 42(1): 133-156.
- Graebner, M. E., & Eisenhardt, K. M. 2004. The Seller's Side of the Story: Acquisition as Courtship and Governance as Syndicate in Entrepreneurial Firms. *Administrative Science Quarterly*, 49(3): 366-403.
- Greenley, G., & Oktemgil, M. 1998. A Comparison of Slack Resources in High and Low Performing British Companies. *Journal of Management Studies*, 35(3).
- Greve, H. 2003. A Behavioral Theory Of R&D Expenditures And Innovations: Evidence From Shipbuilding. *Academy of Management Journal*, 46(6): 685-702.
- Greve, H. 2012. Slack Resources In C. L. Cooper (Ed.), *The Blackwell Encyclopedia of Management*. : Blackwell Publishing.
- Griffy-Brown, C. 2010. Supporting the Emergence of Women's Entrepreneurship: Regulatory, Institutional and Technological Changes in Japan. *International Journal of Gendered Entrepreneurship*, 3(1).
- Guler, I., Guillen, M., & Macpherson, J. 2002. Global Competition, Institutions, and the Diffusion of Organizational Practices: The International Spread of ISO 9000 Quality Certificates *Administrative Science Quarterly*, 47: 207-232.
- Hall, B. H. 1987. The Relationship Between Firm Size and Firm Growth in the US Manufacturing Sector. *The Journal of Industrial Economics*, 35(4): 583-606.
- Hallen, B. 2008. The Causes and Consequences of the Initial Network Positions of New Organizations: From Whom Do Entrepreneurs Receive Investments? *Administrative Science Quarterly*, 53: 685 - 718.
- Hamao, Y., Packer, F., & Ritter, J. 2000. Institutional affiliation and the role of venture capital: Evidence from initial public offerings in Japan. *Pacific Basin Finance Journal*, 8: 529-558.
- Hansen, C. B. 2007. Generalized least squares inference in panel and multilevel models with serial correlation and fixed effects. *Journal of Econometrics*, 140(2): 670-694.
- Harris, D. 2006. The Impact of Hot Issue Markets and Noise Traders on Stock Exchange Listing Standards. *University of Toronto Law Journal*, 56(3): 223-280.
- Hart, M., Greene, P., Brush, C., & Saporito, P. 2001. Patterns of venture capital funding: is gender a factor. *Venture Capital*, 3(1): 63-83.

- Hiatt, S., Sine, W. D., & Tolbert, P. S. 2009. From Pabst to Pepsi: The Deinstitutionalization of Social Practices and the Creation of Entrepreneurial Opportunities. *Administrative Science Quarterly*, 54(2009): 635-667.
- Hmieleski, K., & Baron, R. 2009. Entrepreneurs' Optimism And New Venture Performance: A Social Cognitive Perspective. *Academy of Management Journal*, 52(3): 473-488.
- Hoetker, G., & Agarwal, R. 2007. Death Hurts, But It Isn't Fatal: The Postexit Diffusion Of Knowledge Created By Innovative Companies. *Academy of Management Journal*, 50(2): 446-467.
- Hoshi, T., & Kashyap, A. K. 1999. The Japanese Banking Crisis: Where Did It Come from and How Will It End? *Macroeconomics Annual*, 14: 129-201.
- Hoshi, T., & Kashyap, A. K. 2001. Corporate financing and governance in Japan the road to the future: xx, 358 p. Cambridge, Mass.: MIT Press.
- Hsu, D., Roberts, E., & Eesley, C. 2007. Entrepreneurial Ventures from Technology-Based Universities: Evidence from MIT. *Research Policy*, 36: 768-788.
- Iihara, Y., Kato, H. K., & Tokunaga, T. 2001. Investors' Herding on the Tokyo Stock Exchange. *International Review of Finance*, 2(1-2): 71-98.
- Imai, Y., & Kawagoe, M. 2000. Business Start Ups in Japan: Problems and Policies. *Oxford Review of Economic Policy*, 16(2): 114 - 123.
- Jeng, L. A., & Wells, P. C. 2000. The determinants of venture capital funding: evidence across countries. *Journal of Corporate Finance*, 6(3): 241-289.
- Katila, R., & Shane, S. 2005. When Does Lack of Resources Make New Firms Innovative? *The Academy of Management Journal*, 48(5): 814-829.
- Kenney, M., Han, K., & Tanaka, S. 2002. Scattering Geese: The Venture Capital Industries of East Asia: A Report to the World Bank, *UCAIS Berkeley Roundtable on the International Economy*. Berkeley: University of California Berkeley.
- Kenney, M., Patton, D., & Ritter, J. 2012. Post-IPO Employment and Revenue Growth for U.S. IPOs, June 1996-2010 *Kauffman Foundation Report*. Kansas City, MO.
- Kimura, F., & Kiyota, K. 2004. Foreign-owned versus Domestically-owned Firms: Economic Performance in Japan, *RESEARCH SEMINAR IN INTERNATIONAL ECONOMICS*. Ann Arbor, MI: University of Michigan.
- Klapper, L., Amit, R., & Guillén, M. 2010. Entrepreneurship and Firm Formation Across Countries. In J. Lerner, & A. Schoar (Eds.), *International Differences in Entrepreneurship*: 129-158. Chicago, IL: University of Chicago Press.
- Klapper, L., Laeven, L., & Rajan, R. 2006. Entry Regulation as a Barrier to Entrepreneurshipstar. *Journal of Financial Economics*, 82(3): 591-629.
- Kneller, R. 2007. *Bridging Islands: Venture Companies and the Future of Japanese and American Industry*: Oxford University Press.
- Kukies, J. 2002. The Effects of Introducing a New Stock Exchange on the IPO process, *Working Paper*. Chicago, IL: University of Chicago.
- Lee, S., Yamakawa, Y., & Peng, M. 2007. An Empirical Examination of 'Barrier to Exit': How Does an Entrepreneur-Friendly Bankruptcy Law Affect Entrepreneurship Development at a Societal Level?. Babson College Entrepreneurship, *Frontiers of Entrepreneurship Research 2007*. Babson Park, MA: Babson College Entrepreneurship Research Center.
- Liang, P., & Huang, Y. 2012. System Structure of Venture Capital Industry in Japan Business, Economics, Financial Sciences, and Management. In M. Zhu (Ed.), Vol. 143: 13-20: Springer Berlin / Heidelberg.

- Lounsbury, M., & Glynn, M. A. 2001. Cultural entrepreneurship: stories, legitimacy, and the acquisition of resources. *Strategic Management Journal*, 22(6-7): 545-564.
- Lynn, L., & Kishida, R. 2004. Changing Paradigms for Japanese Technology Policy: SMEs, Universities, and Biotechnology *Asian Business and Management*, 3(4): 459-478.
- Meek, W., Pacheco, D., & York, J. 2010. The Impact of Social Norms on Entrepreneurial Action: Evidence from the environmental entrepreneurship context. *Journal of Business Venturing*, 25: 493-509.
- Meyer, J. W., & Rowan, B. 1977. Institutionalized Organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83: 340-363.
- Milhaupt, C. J. 1996. Market for Innovation in the United States and Japan: Venture Capital and the Comparative Corporate Governance Debate. *Northwestern University Law review*, 91(3).
- Miyamoto, T., & Rexha, N. 2001. Determinants of three facets of customer trust: A marketing model of Japanese buyer-supplier relationship. *Journal of Business Research*, 57(3): 312-319.
- Mizuno, M. 2006. The Development of Initial Public Offering Markets for Emerging Companies in Japan. *Pacific Economic Review*, 11(4): 498-503.
- Nanda, R., & Rhodes-Kropf, M. 2011. Investment Cycles and Startup Innovation, *Harvard Business School Working Paper Series*: Harvard Business School.
- Ozcan, P., & Eisenhardt, K. M. 2009. Origin Of Alliance Portfolios: Entrepreneurs, Network Strategies, And Firm Performance. *Academy of Management Journal*, 52(2): 246-279.
- Peng, M., Yamakawa, Y., & Lee, S. 2009a. Bankruptcy Laws and Entrepreneur Friendliness. *Entrepreneurship Theory and Practice*, May: 517-530.
- Peng, M., Yamakawa, Y., & Lee, S. 2009b. *Entrepreneurship and the Barrier to Exit: How Does an Entrepreneur-Friendly Bankruptcy Law Affect Entrepreneurship Development at a Societal Level*. Chapel Hill, NC: Babson College.
- Rajagopalan, N., & Zhang, Y. 2008. Corporate governance reforms in China and India: Challenges and opportunities. *Business Horizons*, 51(1): 55-64.
- Rao, H., Monin, P., & Durand, R. 2003. Institutional Change in Toque Ville: Nouvelle Cuisine as an Identity Movement in French Gastronomy. *American Journal of Sociology*, 108(4): 795-843.
- Robb, A., & Reedy, E. J. 2009. Kauffman Firm Survey: Kauffman Foundation.
- Romanelli, E. 1989. Environments and strategies of organization start-up: Effects on Early Survival. *Administrative Science Quarterly*, 34(3).
- Rowen, H. S., & Toyoda, A. M. 2002. From Keiretsu to Startups: Japan's Push for High Tech Entrepreneurship, *Japan Political Economy Workshop*. Stanford University: Walter Shorenstein Asia Pacific Research Center.
- Schaede, U. 2008. *Choose and focus : Japanese business strategies for the 21st century*. Ithaca, N.Y.: Cornell University Press.
- Scharfstein, D. S., & Stein, J. C. 1990. Herd Behavior and Investment. *The American Economic Review*, 80(3): 465-479.
- Sine, W. D., & David, R. 2003. Environmental Jolts, Institutional Change, and the Creation of Entrepreneurial Opportunity in the U.S. Electric Power Industry. *Research Policy*, 32: 185-207.
- Sine, W. D., & David, R. (Eds.). 2010. *Institutions and entrepreneurship*. (Vol. 21). London: Emerald Group Publishing, Ltd.

- Sine, W. D., Haveman, H. A., & Tolbert, P. S. 2005. Risky Business? Entrepreneurship in the New Independent-Power Sector. *Administrative Science Quarterly*, 50(2): 200-232.
- Singleton, W. R., & Globberman, S. 2002. The changing nature of financial disclosure in Japan. *The International Journal of Accounting*, 37(1): 95-111.
- Sørensen, J. B. 1999. Stpiece: A program for the estimation of piecewise-constant rate hazard models in STATA 6.0: University of Chicago.
- Sørensen, J. B., & Chang, P. 2006. Determinants of Successful Entrepreneurship: A Review of the Recent Literature: Ewing Marion Kauffman Foundation.
- Statistics, J. B. o. 2011. Statistical Abstract of Japan.
- Storz, C. 2008. Dynamics in innovation systems: Evidence from Japan's game software industry. *Research Policy*, 37(9): 1480-1491.
- Strang, D., & Meyer, J. 1993. Institutional conditions for diffusion. *Theory and Society*, 22(4): 487-511.
- Stuart, T., Hoang, H., & Hybels, R. 1999. Interorganizational Endorsements and the Performance of Entrepreneurial Ventures. *Administrative Science Quarterly*, 44(2): 315-349.
- Stuart, T., & Sorensen, O. 2007. Strategic Networks And Entrepreneurial Ventures. *Strategic Entrepreneurship Journal*(1): 211-227.
- Stuart, T., & Sorenson, O. 2003a. The geography of opportunity: spatial heterogeneity in founding rates and the performance of biotechnology firms. *Research Policy*, 23(2003): 229-253.
- Stuart, T., & Sorenson, O. 2003b. Liquidity Events and the Geographic Distribution of Entrepreneurial Activity. *Administrative Science Quarterly*, 48(2): 175-201.
- Suzuki, K., Kim, S.-H., & Bae, Z.-T. 2002. Entrepreneurship in Japan and Silicon Valley: A Comparative Study. *Technovation*, 22: 595-606.
- Takahashi, T., & Nakamura, M. 2009. The impact of operational characteristics on firms' EMS decisions: strategic adoption of ISO 14001 certifications. *Corporate Social Responsibility and Environmental Management*, 17(4): 215-229.
- Tolbert, P. S., David, R., & Sine, W. D. 2010. Studying Choice and Change: The Intersection of Institutional Theory and Entrepreneurship Research. *Organization Science*, Articles in Advance: 1-13.
- Tolbert, P. S., & Zucker, L. G. 1983. Institutional Sources of Change in the Formal Structure of Organizations: The Diffusion of Civil Service Reform, 1880-1935. *Administrative Science Quarterly*, 28(1): 22-39.
- Vogel, S. K. 2006. *Japan remodeled : how government and industry are reforming Japanese capitalism*. Ithaca: Cornell University Press.
- Wiseman, R., & Bromiley, P. 1996. Toward a Model of Risk in Declining Organizations: An Empirical Examination of Risk, Performance and Decline. *Organization Science*, 7(5): 524-543.
- Wonglimpiyarat, J. 2009. The influence of capital market laws and initial public offering (IPO) process on venture capital. *European Journal of Operational Research*, 192(1): 293-301.
- Wooldridge, J. 2007. What's New in Econometrics? Lecture 10, Differences-in-Differences Estimation." *NBER Summer Institute*. East Lansing, MI: Michigan State University.

Table 1 – *Reformed IPO Market Changes*

Exchange	Min. Shares Offered	Min Shareholders	Net Asset Requirement JPY	Profit Requirement JPY	Market Value Minimum at IPO JPY
Tokyo – 1 <sup>st</sup> Section	20,000	800	1 billion	500 million	50 billion
MOTHERS / HECULES	1,000 / 500	300	none	none	500 million

Table 2a – *Summary Statistics*

<i>Univariate Statistics</i>	Pre-Reform		Post-Reform	
	Mean	Std. Dev.	Mean	Std. Dev.
IPO (%)	2.082	14.277	2.607	15.938
Foreign Ownership (%)	0.632	7.928	1.086	10.369
Employees	97.299	202.008	91.598	211.063
Elite Founder (%)	7.250	25.932	8.358	27.678
GDP Growth (%)	1.067	0.781	0.924	0.835
Firm Age (yr)	25.073	128.699	8.433	1.942
Observations	12491		6162	

Table 2b – *Summary Statistics IPO only firms*

<i>Univariate Statistics</i>	Pre-Reform		Post-Reform	
	Mean	Std. Dev.	Mean	Std. Dev.
Foreign Ownership	0.384	6.201	3.205	17.043
Employees	314.062	927.318	236.464	609.112
Elite Founder	21.154	41.918	35.256	47.396
Firm Age	16.004	3.001	8.775	1.899
Technology Firms	22.308	41.711	35.256	47.931
Observations	260		156	

Table 2c – *Summary Statistics Initial Capital*

<i>Univariate Statistics</i>	Pre-Reform	Post-Reform
	Median	Median
Primary Industry	22,390	10,500
Manufacturing	45,000	50,000
Sales/Service	42,000	50,000
Finance	41,500	50,000
Technology	72,000	88,000
Elite	74,333	100,000

TABLE 3

<i>Correlation Matrix</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
GDP Growth	1.000											
Employees	0.085	1.000										
Initial Capital	-0.010	0.465	1.000									
Foreign Owners	-0.039	0.039	0.086	1.000								
Firm Age	0.120	0.023	0.114	-0.015	1.000							
Elite Founder	0.034	0.115	0.153	0.009	0.024	1.000						
Primary Industry	0.001	-0.014	-0.015	-0.003	-0.002	-0.003	1.000					
Manufacturing	0.104	-0.033	-0.033	-0.024	-0.001	0.002	-0.012	1.000				
Sales/Service	-0.092	0.009	0.044	0.020	0.005	-0.004	-0.046	-0.856	1.000			
Finance	-0.015	0.017	-0.032	-0.006	-0.006	-0.002	-0.004	-0.074	-0.287	1.000		
Technology	-0.086	0.025	0.002	0.030	-0.031	0.019	-0.006	-0.106	0.034	-0.035	1.000	
Reform	-0.442	-0.057	0.002	0.036	-0.104	-0.004	-0.004	-0.077	0.070	-0.007	0.064	1.000

Table 4 IPO Likelihood (Periods 1990-1999, 2000-2007)

DV = IPO, Piecewise Cox Proportional Hazard Model				
	Controls	1990 – 1999	2000-2008	t-statistic
<i>GDP Growth</i>	0.000*** (0.000)			
<i>Employees</i>	0.618*** (0.025)			
<i>Initial Capital</i>	1.897*** (0.044)			
<i>Foreign Ownership</i>	0.979 (0.405)			
<i>Reform</i>		0.000*** (0.000)	0.000*** (0.000)	2.71*
<i>Elite Founder</i>		1.332 (0.279)	2.855*** (0.392)	9.45***
<i>Technology</i>		3.267*** (0.204)	7.300*** (1.193)	6.65***
<i>Primary Industry</i>		0.000 (0.020)	0.000 (0.015)	0.00
<i>Manufacturing</i>		0.601 (0.170)	0.849 (0.459)	0.10
<i>Service/Retail</i>		0.561 (0.423)	0.825 (0.426)	0.18
<i>Finance (non-bank)</i>		0.791** (0.129)	2.578 (0.766)	0.94
N		31,918		
Number of Subjects		18,653		
Number of failures (IPO's)		428		
$\chi^2$		10,919.45***		

Robust standard errors in Parentheses \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

Table 5 – *Initial Capital Effects*

DV – Initial Capital (log) GLM Differences-in- Differences	(1) Controls	(2) Elite Reform Interaction	(3) Tech Industry Interaction	(4) All Industry Interactions
<i>GDP Growth</i>	6.934*** (0.048)	7.008*** (0.048)	6.925*** (0.049)	6.987*** (0.048)
<i>Foreign Owners</i>	1.330*** (0.215)	1.210*** (0.216)	1.329*** (0.216)	1.205*** (0.215)
<i>Reform</i>	-0.110 (0.081)	-0.198* (0.081)	-0.148 (0.083)	0.284 (0.631)
<i>Primary Industry</i>	-1.422*** (0.340)	-1.363*** (0.333)	-1.429*** (0.336)	-1.187** (0.373)
<i>Primary X Reform</i>	-0.567** (0.179)	-0.496** (0.177)	-0.543** (0.179)	-0.986 (0.649)
<i>Elite Founder</i>		1.024*** (0.075)		1.024*** (0.075)
<i>Elite X Reform</i>		0.763*** (0.170)		0.758*** (0.170)
<i>Technology X Reform</i>			0.307*** (0.091)	0.304** (0.092)
<i>Manufacturing X Reform</i>				-0.182 (0.640)
<i>Sales/Service X Reform</i>				-0.554 (0.625)
<i>Finance X Reform</i>				-0.176 (0.656)
<i>Constant</i>	37.328*** (0.329)	37.545*** (0.321)	37.302*** (0.325)	37.290*** (0.363)
<i>Observations</i>	13,899	13,899	13,899	13,899
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes
<i>Yearly Fixed Effects</i>	Yes	Yes	Yes	Yes

Robust standard errors in Parentheses \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001



Table 6 – Performance Effects

DV – Growth GLM Differences- in-Differences	(1) Controls	(2) Elite Founder Variable	(3) Elite Reform Interaction	(4) Tech Industry Interaction	(5) All Industry Interactions	(6) Industry Interactions w/ Capital
<i>GDP Growth</i>	-0.094*** (0.024)	-0.093*** (0.024)	-0.092*** (0.023)	-0.093*** (0.024)	-0.093*** (0.023)	-0.055*** (0.012)
<i>Employees</i>	0.119*** (0.004)	0.118*** (0.003)	0.117*** (0.003)	0.118*** (0.003)	0.117*** (0.003)	0.103*** (0.001)
<i>Foreign Owned</i>	0.186*** (0.031)	0.178*** (0.031)	0.177*** (0.031)	0.179*** (0.031)	0.169*** (0.030)	0.117*** (0.011)
<i>Firm Age</i>	-0.133*** (0.010)	-0.133*** (0.010)	-0.134*** (0.010)	-0.133*** (0.010)	-0.132*** (0.010)	-0.172*** (0.006)
<i>Firm Age<sup>2</sup></i>	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
<i>Reform</i>	-0.047*** (0.013)	-0.049*** (0.013)	-0.065*** (0.013)	-0.044*** (0.013)	0.043 (0.094)	-0.084*** (0.009)
<i>Primary Industry</i>	0.027 (0.053)	0.030 (0.054)	0.030 (0.054)	0.031 (0.054)	0.066 (0.070)	-0.025 (0.162)
<i>Primary X Reform</i>	0.276*** (0.032)	0.277*** (0.032)	0.289*** (0.032)	0.274*** (0.032)	0.187 (0.097)	0.200 (0.162)
<i>Elite Founder</i>		0.078*** (0.009)	0.022*** (0.004)	0.078*** (0.009)	0.019*** (0.004)	-0.413*** (0.029)
<i>Elite X Reform</i>			0.182*** (0.027)		0.188*** (0.027)	0.130*** (0.011)
<i>Tech X Reform</i>				-0.035*** (0.010)	-0.014 (0.010)	
<i>Manufacturing X Reform</i>					-0.008 (0.096)	
<i>Sales/Service X Reform</i>					-0.132 (0.092)	
<i>Financial x Reform</i>					0.021 (0.098)	
<i>Initial Capital</i>						0.027*** (0.001)
<i>Initial Capital X Elite</i>						0.036*** (0.002)
<i>Constant</i>	2.331*** (0.288)	2.343*** (0.286)	2.365*** (0.287)	2.334*** (0.286)	2.295*** (0.287)	3.155*** (0.172)
<i>Observations</i>	14,159	14,159	14,159	14,159	14,159	13,808
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Yearly Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in Parentheses \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001