Too Much of a Good Thing: the introduction of intermediaries to stimulate new firm growth

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Abstract

Our study focuses on supportive intermediaries, such as new stock markets, that are introduced to facilitate growth. We argue that unlike regulatory changes that enable or prohibit behaviors, new supportive intermediaries introduce conflicting norms for action that decouple the actions of a newly introduced intermediary from their intended ends. To empirically examine this idea, we take advantage of the introduction of new growth markets enacted to facilitate entrepreneurial growth. We find that investors follow their normative beliefs that motivated them to support the introduction of new growth markets, instead of following their previous norm to invest for best return. Thus, we find that the introduction of new growth markets focuses investment into new technology firms, yet the growth of these firms is lower where investment is focused. This happens because isomorphic, not economic, norms shape investment actions. In sum, our findings demonstrate that the now common story of influencing entrepreneurship with supportive intermediaries is less straightforward than the simple diffusion of such intermediaries.
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ABSTRACT

Our study focuses on supportive intermediaries, such as new stock markets, that are introduced to facilitate growth. We argue that unlike regulatory changes that enable or prohibit behaviors, new supportive intermediaries introduce conflicting norms for action that decouple the actions of a newly introduced intermediary from their intended ends. To empirically examine this idea, we take advantage of the introduction of new growth markets enacted to facilitate entrepreneurial growth. We find that investors follow their normative beliefs that motivated them to support the introduction of new growth markets, instead of following their previous norm to invest for best return. Thus, we find that the introduction of new growth markets focuses investment into new technology firms, yet the growth of these firms is lower where investment is focused. This happens because isomorphic, not economic, norms shape investment actions. In sum, our findings demonstrate that the now common story of influencing entrepreneurship with supportive intermediaries is less straightforward than the simple diffusion of such intermediaries.
INTRODUCTION

Literature at the intersection of institutional change and entrepreneurship is concerned with the institutional conditions that shape new firms and facilitate a new firm’s growth (David et al., 2016; Hwang et al., 2005; Tolbert et al., 2011). Recently, the focus of these studies has expanded to include work beyond regulatory effects to supportive institutional intermediaries such as incubators, government certification programs, and new stock markets (Ingram et al., 2010; Kenney et al., 2002; Posner, 2005; Sine et al., 2007). Intermediaries are defined as actors linking two or more parties to bring about activities that could not easily happen otherwise (Armanios et al. 2016; Dutt et al., 2016). These intermediaries are thought to facilitate new firm growth by facilitating flows of resources (Agarwal et al., 2007; Armanios et al.; Cohen, 2013; Eisenhardt et al., 1990; Hallen et al., 2014; Robinson et al., 2001). In addition, such new intermediaries can also promote firm growth by conferring legitimacy through endorsements and certifications (Sine et al., 2007). Of interest here are institutional intermediaries that link private entrepreneurial firms with investors in public markets via initial public offerings (IPOs).

Prominent among recent intermediaries are new growth markets – spawned from their primary stock markets – that are a growing global organizational phenomenon to encourage new firm growth. By easing the path to an IPO with relaxed listing rules, these markets are thought to stimulate additional investment into new firms in a virtuous flow of resources from investors to entrepreneurs and back to the investor to earn a return (Gompers et al., 1999; Stuart et al., 2003a; Ventresca et al., 2003). Early stage firms suffer from legitimacy deficits compared to firms nearing an IPO. New growth markets assist these late stage firms by easing listing requirements for IPOs. This indirectly assists new firms via the promise of swifter returns to investors that, in turn, motivates additional investment in new firms. Moreover, technology firms are assisted in
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their quest for legitimacy by focusing investors’ attention on them. In sum, the idea is that intermediaries intended to make IPOs easier in turn assist new firms in their quest for resources as offer increased liquidity to investors.

A contrasting view from the finance literature suggests that, because strict IPO listing requirements verify the quality of listing firms, relaxing those requirements in new growth markets lead to information asymmetries that reduce returns to reduce motivations to fund new firms (Chambers et al., 2009). Without the screening mechanism of strict IPO requirements, information asymmetries raise the potential that poor investments will be made, reducing return to investors to thereby reduce their motivations to fund new firm (Carpentier et al., 2010; Kogut et al., 2002). The consequence is that without the high listing standards; banks, private investors, and VC’s are less likely to fund a new firm’s growth. In sum, from the financial perspective, new junior markets that relax listing requirements might impede the growth prospects of new firms.

These conflicting views suggest an unresolved tension that this paper addresses. New growth markets are motivated by cognitive and normative beliefs that the creation of the markets will encourage the formation of high growth firms. However, with little evidence of the superior returns promised in their creation, do these intermediaries improve new firm growth? Indeed, the implication of the financial literature is that increased information asymmetries and lowered financial return potential restrict resources flows to new firms, possibly lowering their growth. Surprisingly, given the expansion of these intermediaries, this implication has, so far, been unexamined. Beyond stimulating more firms to undergo an IPO, we ask a different research question, and ground it in institutional theory for an explanation. We ask: whether institutional intermediaries aimed at connecting ventures and public market investors, (in this case, the establishment of growth IPO markets), benefit the growth of new firms (pre-IPO)?
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The objective of this paper is to uncover the reasons to explain the conflicting predictions of the effects of these intermediaries to discover how this type of institutional change – the introduction of an intermediary with lower listing requirements – affects new firm growth (pre-IPO). To explore this, we employ institutional theory, specifically the idea of conflicting institutional pluralities in order to understand how actors respond to new organizational pressures introduced into the entrepreneurial environment (Fisher et al., 2016; Greenwood et al., 2011; Kraatz et al., 2008). This literature helps us derive robust arguments that the introduction of a supportive intermediary to promote entrepreneurship, leads to conflicts and ambiguity as to the appropriate action between the motivations for the new intermediary and their prior economically driven templates. We will argue that the consequence of such institutional conflict will be ambiguity regarding the appropriate actions resulting in poor growth outcomes. In sum, while the introductions of intermediaries are intended to create favorable conditions for the growth of new firms, we address an open debate between research streams.

First, this study makes a theoretical contribution that supportive intermediaries engender institutional conflict because introduced practices may differ from existing practices. This institutional plurality causes ambiguity about the appropriate and legitimate behaviors among entrepreneurial actors that decouples them from the rationales behind previous behaviors. In the case of new growth markets, investors are likely to direct investments toward firms that conform to the purpose of the new market, an investment behavior that is decoupled the previous appropriate behavior of investing in the firms presumably motivated by the greatest risk-adjusted return potential. Second, our results indicate that while such intermediaries may shape entrepreneurial actor behaviors, they likely do not promote growth effectively and only benefit growth for particular firms. With these two contributions, our study responds to calls for theory
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to explain how institutional change can affect the growth of new firms and how the regulatory, normative, and cultural/cognitive aspects of institutions interact to shape entrepreneurial firm outcomes (Sine et al., 2010; Tolbert et al., 2011).

**BACKGROUND**

*Efforts to Ease Growth Barriers*

The regulatory environment to promote new firm growth has recently come under increased scrutiny raising interest in the precise effect and mechanisms (Eesley, 2016; Kerr et al., 2009; Van Stel et al., 2007). Such as in an example from China showing that the relaxation of regulations prohibiting private firms not only increased founding – as expected – but had secondary effects on what type of people founded firms and how they grew (Eesley, 2016; Eesley et al., 2016). Central authorities looking for ways to accelerate entrepreneurship often turn to regulatory changes (Djankov et al., 2002). For instance, the U.S. allowed the foundation of independent power plants, motivating new firms to start and also motivating increased founding in related fields that were legitimated as part of the new sector (Sine et al., 2005).

*Intermediaries that affect growth*

We focus on the effect of the introduction of new supportive intermediaries intended to promote new firm growth. While regulations can affect the growth of new firms, our question is motivated by the introduction of supportive intermediaries whose practices are intended to stimulate firm growth through generating support such as funding, or diffusing skills, licensing, etc. These include incubators, government funding agencies, and new stock markets. In the case of growth-stage stock markets as an intermediary, studies find that these new junior markets produce less liquidity for listing firms and offer smaller returns to investors than primary markets (Goergen et al., 2003; Klein et al., 2004). Related work finds that companies that list on the more
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Strictly regulated New York Stock Exchange perform better than firms listed on the NASDAQ exchange that has lower listing requirements (Pagano et al., 1998). This is consequential because earlier literature finds that firms seek IPOs in order to raise the capital to acquire other firms (Brau et al., 2006). Without sufficient liquidity, firms and investors will be less motivated. Few of the new IPO markets were particularly successful in terms of providing liquidity to new firms and investors. Indeed, several closed operations for this reason (Burghof et al., 2004). Yet, the implications of these results of the introduction of new stock markets for the growth dynamics of newly founded firms has not yet been explored (to the best of our knowledge).

Other examples of non-regulatory institutional intermediaries have been studied as well. Prior work has found that new business incubators are among the first policy tools that governments turn to when they perceive their economies are lagging (Ingram et al., 2010). Similarly, universities develop programs to train and fund academic entrepreneurs in the hopes of stimulating new firms and their growth (Patzelt et al., 2009). These organizational efforts differ from regulatory efforts in that they introduce practices instead of restraining or permitting behaviors. In other words, they intend to motivate entrepreneurial action through practices such as investment, social connections, and training to facilitate growth. Given the popularity of intermediaries such as incubators and new stock markets, there is a need for work to understand they alter the institutional environment and their effect on new firm growth.

Institutional Plurality

A third stream of relevant literature comprises the institutional theories institutional plurality when a new set of accepted practices are introduced into and incumbent institutional environment (Kraatz et al., 2008). First, organizations often copy the forms and strategies of successful organizations (Dimaggio et al., 1983). The effect of copied practices will depend on
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their interaction with the environment in which they were adopted. Second, these introduced norms and behaviors are likely to be different from the incumbent behaviors and norms. Professions, such as institutional investors or government bureaucrats, form epistemic communities of shared beliefs that bring a common set of problem perceptions and solutions to bear on social issues (Scott, 2008).

As new practices become established, they come into conflict with incumbent behaviors. These institutional interactions, or “institutional pluralism”, occur when an organization operates in more than one institutional environment. These conflicts can help explain the complex effects of introducing new practices such and new growth markets (Kraatz et al., 2008). Institutional pluralism may motivate investors to act in different ways depending on the norms of neo-economics versus the newer norms of supporting quick growth startups. Accordingly, investors, by creating the supportive intermediary, may act to restrict their investments to conform to the norms of the market they create, but still maintain legitimizing narratives of economic return to other audiences (Fisher et al., 2016; Lounsbury et al., 2001). A rich set of empirical studies support this idea. Haveman (1993), for example, demonstrated that new savings and loan associations emulate the structure and practices of the large and successful firms in the industry while maintaining the organizational forms that make them acceptable to local audiences. In another example, the diffusion of Anglo-American ideas of corporate governance led to common beliefs that shareholders mattered, which led to legal changes that motivated adoption of stock markets in the first place while older norms maintain investing for more traditional reasons in spite of the new markets (Bromley et al., 2012; Davis, 2012; Davis et al., 2005).

Practically then, the introduction of a supportive intermediary does not necessarily mean that it will work. Prior research argues that when institutional plurality is a factor, new practices
are often merely symbolically adopted, decoupling the intent of the practice from its intended outcome (Bromley et al., 2013; Bromley et al., 2012). For instance, Total Quality Management (TQM) was adopted to improve product quality. However, symbolic adoptions of TQM had little effect on quality as organizations simply kept records indicating conformity to TQM without changing actual practices (Westphal et al., 1997). Similarly, German firms, under pressure to adopt US corporate governance practices that elevate shareholder interests, found these proposed practices in conflict with the more communitarian German corporate governance model. The result was a symbolic adoption U.S.-style shareholder orientation in corporate documents while continuing the incumbent practice of community orientation in effect (Fiss et al., 2004). In sum, the introduction of an organizational practice can lead to conflicts with existing practices leading to symbolic actions decoupled from the technical merits of adoption.

Summary

Taken together, all these studies indicate that introducing the organizational norms of new growth markets may have unanticipated effects. Thus, it remains unclear whether the new supportive intermediaries, such and new stock markets, will assist or be a drag on investment in and growth of new firms. Our next step in advancing institutional theory, therefore, is to unpack how (if at all) this new intermediary – the formation of a new growth market -might influence the behaviors of early-stage investors and new firms’ outcomes.

HYPOTHESES

Initial Investment Effects

An institutional intermediary, such as new growth markets, is introduced in order to support the growth of new firms, particularly technology firms. Organizational literature provides support. First, from an institutional perspective, investors in other regions perceived the growth markets
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in the U.S., particularly NASDAQ, as a crucial element of generating the resources for new tech firms to flourish (Ventresca et al., 2003). As we indicated above, actors will copy the organizational practices of other organizations that are successful. These observations of successful markets inspired mimetic behaviors and new growth markets associated with the technology boom in the U.S. proliferated (Posner, 2005). Reflecting the perception of success in Silicon Valley, institutional actors embedded in the financial industry acted to create new IPO markets - that are subsidiaries of major IPO markets - with less stringent listing requirements than the primary market from which they derive (Goergen et al., 2003). In particular, the vibrant IPO equity markets in the U.S. were an exemplar for many Japanese observers (Hayase, 2015). Indeed, leaving little doubt as to its inspiration, one of these new IPO markets in Japan was even called “JASDAQ”. In sum, the success of the U.S. technology IPO markets inspired mimetic attempt to replicate growth markets in other national contexts.

Second, from the strategic view of organizations, healthy IPO activity is attributed with a virtuous low of resources from investor, to new firm, to exit and back to new firms (Black et al., 1998). IPO’s are a driving force that motivates all resource providers such as employees, families, founders, and institutional investors (Romanelli, 1989; Thornton, 1999). This happens because IPOs allow investors to “cash out” and are typically more lucrative than exits via acquisition (Graebner et al., 2004). Stuart and Sorenson (2003) show how IPO’s in particular geographic regions hold out the promise of success and return for entrepreneurs and resource providers. As a consequence, new firm foundings are encouraged where there are frequent IPO’s (Stuart et al., 2003b). The idea is that when late stage investors earn their returns during an IPO, this enables further investment in newer firms. In what Gompers and Lerner (2004) described as “the venture capital cycle” where entrepreneurs give up control of their company in return for
investment, and that they regain control contingent on an IPO or acquisition that the venture capitalist recycles to new firms (Gompers et al., 2004). Further research in this stream shows that venture capital depends on functioning IPO markets (Black et al., 1999). Taken together, the implication of these literature streams is that these new growth market intermediaries are expected to vitalize entrepreneurial activity as late stage investors obtain returns to fund early stage investments and the new markets provide the legitimated organization for entrepreneurial actions.

There is extensive empirical evidence that firms listing under lowered IPO requirements perform poorly because of selection effects that shift less capable firms to the new markets (Carpentier et al., 2010). For example, investors earn poor returns because firms that list on European growth markets rarely report positive earnings per share (Giudici et al., 2004; Goergen et al., 2003). Another study of firms listing on new junior AIM market in the UK shows that the thin trading volumes on the new markets reduces the liquidity a firm gains from an IPO, reducing the returns to investors (Brau et al., 2006; Ellul et al., 2006). Even on the vaunted U.S. NASDAQ’s experiment with lowered listing requirements resulted in the listing of poorly performing firms (Klein et al., 2004). Since with the presence of lower listing requirements and less lucrative exits for early stage funds, returns to investors are reduced, limiting their capability and motivation to engage in subsequent investment into new ventures thus blocking the virtuous cycle of resource provision (Black et al., 1998). In sum, new junior markets can discourage investment in new firms because they do not provide the information mechanisms to assure early stage investors of a reasonable expectation of a return should the firm be successful. This leads to the prediction that an opening of a new junior market will be met with lowered average initial investment raised by new firms:
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Taken together, the predictions of institutional literature of a virtuous cycle of investment, IPO return, and re-investment, can be broken by economic realities that lower listing requirements reduce returns to disrupt the returns and reinvestment cycle of resource provision to new firms. Overall, we predict that activity stimulated with the mechanisms of institutional arguments may occur, but this activity is soon tempered by expectations of potential lower returns.

_Hypothesis 1a: The introduction of new growth markets reduces initial investment raised by new firms compared to firms founded beforehand._

We now turn to our related predictions that investment preferences will favor technology sectors after the introduction of new growth markets. First, institutional theorists have long understood that organizational behaviors are shaped by the norms of professionals that share common beliefs about how problems are framed and solved (Scott, 2008). We use this idea to argue that the rules and behaviors in junior markets will be shaped by the norms of the investing profession. This follows because investment professionals that run or invest in the senior markets are the actors that introduce the new growth markets. To illustrate, in Japan, U.S.-based institutional investors acted as the professionals that advocated and communicated the organization of growth markets. In this event, foreign investors - particularly CALPERS, Blackstone, and Goldman-Sachs – invested in Japanese firms during Silicon Valley’s technology boom (Ahmadjian, 2007; Whittaker et al., 2009). These financial organizations then influenced Japanese exchange markets to establish of new growth markets patterned on the U.S. NASDAQ stock market – even naming one exchange “JASDAQ” leaving little doubt as to it organizational heritage. The idea behind this was to accelerate the return on these investments in similar ways
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that the U.S. – based market were providing to investors (Deakin, 2009). So, it follows that these growth markets influence early-stage investors to favor technology firms following their professional norms that the markets will provide liquidity for technology firm growth and return for investors.

Second, organizational norms shape the legitimacy of behaviors in an organizational field. Thus, when entrepreneurs seek to raise funding from investors, they must overcome concerns about their legitimacy as signals of underlying quality are difficult to obtain. Institutional theorists have long held that legitimacy drives both individual and organizational behavior (Suchman, 1995; Suddaby et al., 2016). Entrepreneurs that raise funding for technology companies, offer early stage investors signals of legitimacy in two ways. First, by following the practices associated with the growth markets, they gain social and cognitive legitimacy though conformance to recognized behaviors (Aldrich et al., 1994; Deeds et al., 2004). Second, the institutional environment also communicates information about what are appropriate ventures to start (Lounsbury et al., 2001; Sine et al., 2007; Suchman, 1995). The creation of new junior markets, being a consequence of changes in the normative and cultural beliefs about what kinds of firms are appropriate to fund, enables entrepreneurs in the technology sector to be more likely to raise initial funding and to raise larger amounts of initial funding.

Third, investors seek IPOs to signal their skill, satisfy their stakeholders with sufficient returns, and gain liquidity for future investments in subsequent opportunities, increasing the flow of resources to new firms. New growth markets are believed to increase the likelihood of an IPO for technology firms (Vismara et al., 2012). An IPO adds to an early stage investor’s legitimacy because the story of success that the founders told to stakeholders is verified (Gompers, 1996). Thus, new growth markets allow early stage investors to signal competence and status by more
frequently being an investor in a firm that achieved an IPO. For example, studies of start-ups with multiple financing offers demonstrates that an IPO enhances the reputations of early stage investors by signaling their success and skill (Denis, 2004; Hsu, 2004). Finally, many of the new growth markets introduced around the world restrict listing firms to only technology firms. In sum, indirect normative and legitimacy considerations, as well as direct rules, are likely to favor investment in technology firms.

Overall, it follows from institutional influences that early stage entrepreneurs starting technology-based firms are more likely to raise greater levels of investment because the IPO reform was adopted to emulate successful IPO systems that focus on the encouragement of high-growth technology firms.

Hypothesis 1b: The introduction of new growth markets increases initial investment raised by new technology firms compared to firms founded beforehand.

Growth Effects

A principal reason that new growth markets are introduced is to promote the growth of new technology firms. Relaxed listing requirements imply a swifter and more likely IPO facilitating returns to investors. In this way these markets motivate the flow of resources new firms to accelerate their growth. This begs the question of whether increased firm growth is observed in the wake of introducing this supportive intermediary. We start by drawing on ideas from resource-based views that more resources lead to better firm growth (Ahuja et al., 2004; Barney et al., 2001). First, financial resources facilitate hiring employees, fund expansion plans, enables innovation, and increases a firm’s chance of survival (Miller et al., 1996). For example, in a study of 91 U.S. restaurant chains, greater initial resources were associated with more aggressive growth strategies and better growth (Combs et al., 1999). Resources also enable ventures to
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withstand unexpected shocks and setbacks (Barney et al., 2001; Greenley et al., 1998). Secondly, new firms benefit from access to opportunities that come from early stage investors such as VCs. This support also includes access to social networks and business advice that assist a firm’s success (Hallen et al., 2014). Third, resources are linked to better growth because better-funded entrepreneurs can pursue higher return opportunities at a higher risk of loss that can generate superior - albeit highly variable - growth. For instance, a study used the variance of a firm’s forecasted growth as the measure of risk in 385 U.S. firms to find that more resources led to greater risk taking and growth (Wiseman et al., 1996). In these ways, the effects of financial and non-financial resources are associated with firm growth.

In this study, we hypothesized (H1a) that the introduction of new growth markets will decrease the flow of investment by early stage investors to new firms in most industries. Because resources facilitate growth, we expect the instruction of growth markets to lower overall growth.

_Hypothesis 2a: The introduction of new growth markets is negatively related to the growth of new firms_

New growth markets are introduced to support the growth of technology firms. While our earlier hypotheses predict initial investments will increase in new technology firms when new growth markets are introduced (H1b), it does not follow directly however that new technology firms will benefit from higher growth. As we argued earlier, the institutional pluralism that follows the introduction of the new intermediary decouples investment from previous economic templates. This channels investment to technology firms and, at least in part, away from more worthy non-technology investments. Moreover, if investor norms are biased toward technology investments it can attract marginal firms and increase competition. As such, average growth is attenuated as investors construct sub-optimal investment portfolios. Moreover, as the marginal firms enter,
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competition may increase in terms of both the search for additional resources and the acquisition of market share. These effects are likely to be particularly acute for technology firms.

Second, firms in technology fields operate in environments marked by elevated uncertainty and high information asymmetry between company and investor (Lerner, 2002). Prior research shows that the effect of additional resources on new firms depends on the context as well as idiosyncratic firm attributes (Katila et al., 2005). Thus, the effect of additional initial investment in technology firms is not straightforward because additional resources provided in a rapidly changing environment can lead to effects that impede growth. One reason is that resource uncertainty, combined with internal political conflict, leads to conflict over strategic direction (Eisenhardt et al., 1988). In addition, even without conflict, additional resources in technology companies can chase experimental initiatives that may not produce successful results (Greve, 2012; Nohria et al., 1996; Tan et al., 2003). Similarly,

Taken together, these streams of research lead us to argue that if additional resources flow to firms in the wake of new growth markets, less growth is expected in technology firms. In sum, while the effects of additional investment are complex and depend on the particular firm, the effect of both technology biased investing, and the complex effects of resources in technology firms, we argue that additional resource flows attenuate technology firm growth. Because we hypothesized that additional resources would be invested in technology firms after the creation of growth markets, we hypothesize that

*Hypothesis 2b: The introduction of new growth markets is negatively related to the growth of technology firms compared to technology firms founded beforehand.*
Effects on Heterogeneous Firm Capabilities

One reason that technology firm may grow less well when new growth markets provide additional resources is that investment may flow to technology firms uncoupled from strict economic templates. This implies that while average performance is attenuated, still, firms with better attributes might benefit from the additional flow of resources. In other words, the effects on firms that receive investment changes are unlikely to be heterogeneous. Should overall growth decrease, while particular firms benefit, it helps resolve the contradictory empirical evidence between the institutional and finance literatures. Prior literature indicates that firm growth is affected by environmental influences such as the norms of the community in which a firm is embedded, the particular circumstances of a firm’s industry, and the relative availability of the particular resources and support that it needs. Technology firms in particular are not monolithic and differ in their capabilities and ability to use resources (Zott, 2003). One key difference is the background of their founders. Explanations of variance in organizational growth often emphasize the skills that top management teams possess. One body of work in this arena, associated with upper echelon theories, argues that the top management team differ in their capacity to recognizing market opportunities and the capability of exploiting them (Gompers et al., 2010; Gruber, 2008). Such heterogeneity of skillsets can help explain how firms gain superior growth to help us understand performance differences after an institutional change (Eisenhardt et al., 2000; Rindova et al., 2001; Teece et al., 1997).

Prior research confirms that the type of individuals that found a firm is decisive in predicting superior growth. For instance, individuals with superior social and human capital are more likely to have access to superior opportunities and better resources through social connections that, in turn, improve the likelihood of superior growth (Davidsson et al., 2003;
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Stam et al., 2008). First, individuals with superior social and human capital are more likely to attract invested resources. This happens because the richness of their social connections and their intelligence increases the availability of resources to their firms (Hallen et al., 2012). Further, they can bring more of their own resources to their firms (Husrt et al., 2004). Second, as the resources flow into their firms in the wake of the creation of new growth markets, these high human and social capital individuals have advantages of identifying opportunities and successfully growing their firms. Individuals with higher education levels and experience in iconic firms that start ventures have better growth than others because they have greater skills to draw on (Burton et al., 2002; Roberts, 1991). Moreover, they are likely to conceptualize more fungible opportunities that relate to their own greater experience and skills (Boeker, 1989b; Eisenhardt et al., 1990).

Taken together, high human and social capital individuals can take better advantage of more resources than others, driving superior growth (Adler et al., 2002; Maurer et al., 2006). As additional resources reach more capable founders, the effect if new growth market intermediaries, by biasing their investments toward technology firms, can thus positively moderate growth. Thus, new growth markets, because they motivate investment in technology firms, will positively moderate our hypothesized (H2b) negative effects on technology firm growth when a founder with superior human and social capital is present.

Hypothesis 3: A founder with high human and social capital positively moderates the growth of firms in technology industries incorporated after the introduction of new growth markets

METHODS

Sample

Our sample consists of firms in the COSMOS3 database from Teikoku Databank, Ltd. (TDB).
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We selected firms for our analysis from the 2008 edition of the COSMOS 3 database that had a credit file. These firms were founded from 1995 – 2007. The data consists of cross-sectional records of each firm in 2007 as well as sales and financial data for 2005, 2006, and 2007 (or on the date of bankruptcy, see below). Because our interest focuses on firms with the potential to obtain an IPO, we also excluded 722 incorporated government entities, such as prisons. We also eliminated 665 banks because all major Japanese banks re-capitalized during a financial reform in the 1990’s and thus their IPO status is granted through regulatory mechanisms apart from market growth and underwriter guidance. For the same reason, we also excluded non-operating firms – i.e. that that had neither sales nor employees. To the remaining set of companies, we added 12,700 firms from TDB’s Bankruptcy Database, 2008 edition that include firms that declared bankruptcy over our observation period. The combined sample consists of 25,388 firms.

**Dependent variables**

For H1a, H1b, and we measure the dependent variable, initial capitalization \((initial\_capital)\), as the log value of the opening capital account at firm founding in thousands of constant 2009 yen and obtain these data from the COSMOS 3 database. We selected \(initial\_capital\) to represent the commitment of financial resource that providers and stakeholders make to the firm at its outset.

For H2a, H2b and H3, we assess pre-IPO growth using the compound annual growth rate of sales revenue since founding – \(growth\) – as the dependent variable. Consistent with past research, we use a standard compound annual growth rate calculation that takes the nth root of the total percentage growth rate, in which n is the number of years in the period considered using a beginning value of ¥1. We compute this measure for 2008 or, in the case of a bankrupt firm, for the bankruptcy year.

**Independent variables**
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*New IPO markets:* We use 2000 as the focal date of the creation of new growth markets because it was the year that firms were first able to list on them. We measure when the focal venture began relative to this reform with a binary variable, \( \text{reform} \), where \( \text{reform}=1 \) if the focal firm was founded during or after the year 2000 and \( \text{reform}=0 \), otherwise.

*Technology Firm:* We also measure whether a new venture is a technology firm with a binary variable, \( \text{technology} \), where \( \text{technology}=1 \) if the focal firm is engaged in a technical business and \( \text{technology}=0 \), otherwise.

*Elite University Alumni Founders:* In our hypotheses, we argued that the behaviors of investors could be altered by the formation of new growth markets. Should new junior markets bring additional investment into technology firms, prior literature indicates that the type of entrepreneurs founding those firms may also affects their growth. In Japan, a crucial source of elite status through human and social capital is attending a top university. We assess whether the founding CEO has an elite education by whether this individual is a graduate of one of Japan’s top universities: the seven former imperial universities (Tokyo, Kyoto, Hokkaido, Tohoku, Nagoya, Osaka, and Kyushu), the Tokyo Institute of Technology (the top national university in engineering) and the two leading private universities (Keio University and Waseda University) (Yonezawa, 2006). If a founding CEO is a graduate of one of the top universities, we code the variable \( \text{Elite Founder} \) as 1 and 0 otherwise. We obtain these data from the TDB database.

*Foreign Ownership:* We control for foreign ownership. Using data from COSMOS 3, we measure foreign ownership with a 1 if the focal firm has foreign ownership (individual or corporate) of 25% or more.

*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 GDP growth rate for the three years centered on a firm’s incorporation—in constant 2009 yen—using data from the Statistics Japan database (Statistics, 2011). Further, capital availability can vary via exogenous forces that influence national and international sources of funds. Thus, we control for this influence with a variable that measures the total funds invested in Japanese firms by venture capital firms, venture capital level. For H2a,b and H3, we add a control for firm size, as measured by the log of employee size, Employees (log). We do this because we expect that firms with more employees are more likely to pursue IPOs and to have higher growth. We also control for firm age because prior research indicates that firm growth tends to slow over time (Evans, 1987). We control for the age of the firm, firm age, and its square, firm age², to capture u-shaped quadratic growth compounded over time for our growth hypotheses.

Fixed Effects

Our models also include a full set of annual fixed effects, industry fixed effects, plus annual and yearly fixed effects. We define industry fixed effects with binary variables to represent the industry classification of each focal firm. We obtain this classification from the COSMOS3 database that assigns firms to industries using 4-digit SIC codes. One frequent concern in the use of SIC codes is that they may be inconsistently assigned and subject to the discretion of the firm (Folta et al., 2003). Another limitation of the 4-digit SIC code is that the many categories are often not logically sequenced. For example, firms that are coded by the Kaufman Firm Survey as technology firms span 266 different codes over four 2-digit industry classifications. These include codes for computer manufacturing, electronics fabrications, software development, and research laboratories. To attenuate these concerns, we further group the 4-digit industries into industry categories following sector classification system common to prior literature e.g. (Hitt et
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*al., 1991): primary industries (agriculture, mining); manufacturing, services, sales (wholesale and retail), banks, financial services, construction, and technology (see discussion above).

**Model specification and econometric issues**

We examine the investment level in new firms before and after new growth markets were introduced. We employ endogenous treatment effect methods to mitigate this concern (Clougherty et al., 2015). We conduct a maximum likelihood analysis via the *etregress* function in STATA. In this routine, the probability of being founded before or after new growth markets are formed is predicted with a subsidiary *probit* analysis. To do this we theorize that this probability depends on whether the CEO is elite, and whether the firm is a financial firm. Elite CEOs as well as CEOs of financial industry firms are more likely to have information about and understand the ramifications of investing before or after new growth markets are formed. This *probit* analysis report the average treatment effect of on the capital of new firm formed after new markets are present. The coefficient of this variable (Post Reform Founding) provides an estimate of the “experimental average treatment effect” (Heckman, 1990) on initial investments. This method also reports the average treatment effect of the treated that estimates the effect of the interaction of *Founded Post Growth Market* with industry binary variables. This allows us to determine the direction and significance of investment in new firms before and after the creation of new growth markets. As a robustness check, we also ran similar regressions using exogenous treatment effect techniques and found similar results.

*Difference-in-Differences Estimation:* To analyze H3, we use a difference-in-differences estimation method with fixed effects for both industry and time. One concern is that unmeasured change that is ever present in the business environment is rarely isolated. For instance, reforms to business regulation are varied, demographic changes are important, as is foreign trade stability,
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local business methods, and the political situation can affect venture growth (Sine et al., 2003). 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, in addition to comparison with a control group. Outcomes are observed for several time periods. This model structure can apply to repeated cross sections (Campbell, 1969; Forman et al., 2009; Wooldridge, 2007). A concern is that the unobserved but omnipresent effects in the business environment are often present. This can include, demographic changes, local business demand stability, labor practices, and regulatory change. Our quasi-experimental DID estimation accounts for these and other unobserved effects by considering unmeasured factors as affecting the treatment and control groups equally (Campbell, 1969; Forman et al., 2009).

A key assumption in this method is that the selected control group is unaffected by the creation of new growth markets but is affected by the general business conditions. To do this, we selected a control group does not experience the effects of IPO markets thus enabling an identification of the effect of the new markets on initial investment and growth (Bertrand et al., 2004). We use primary industries (farming, mining, etc.). These firms are part of the overall economy and are therefore affected by broad national trends or cultural shifts. However, they are generally family-owned enterprises which for generations persist with relatively stable earnings and rarely, if ever, seek an IPO and are thus unaffected by new junior markets. A second reason why primary industry firms are likely to be unaffected is that the diffusion of ideas that motivated the creation of new growth market are not instantaneous across spatial distances. Entrepreneurs and other actors have difficulty accessing ideas across distances and beliefs are often spatially concentrated because information that is constrained by social networks reply on long term social connections (Sorenson, 2005; Sorenson et al., 2001). Finally, local shared
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beliefs about what is an appropriate outcome of a business runs the gamut from a family operation that is passed down to the idea of a rapid IPO. It is likely that primary industry firms, whose past pattern is largely hereditary succession will interact with new beliefs only gradually. Indeed, local beliefs and understanding about appropriate business can interact with shared understandings of how business should run. A recent study showed how coercive institutions such as civil violence can alter the planning processes of firms (Hiatt et al., 2014). Similarly, the beliefs of the value of a rapid IPO can be moderated by their interaction with local beliefs focused on agriculture or mining. In sum, it is likely that primary firms that are subject to general business conditions are unaffected by new growth markets.

The next step is to calculate the differences in outcomes before and after reform for both groups and compare these. To accomplish this, we estimate coefficients using GLM regressions account for auto-correlation that may arise because there are repeated observations of the same firms over the study years (Liang et al., 1992). The differences-in-differences coefficients of interest are those for the Founded Post Growth Market X Primary Firm interaction that we then compare to the Founded Post Growth Market X Technology interaction coefficient. Graphs show that the parallel trends assumption is satisfied for our analyses, indicating that DID analysis is appropriate, (Figure 1). To estimate effects, we used the generalized linear model (GLM) regression method, which accounts for both heteroskedastic errors and auto-correlation that may arise because each firm is measured repeatedly across multiple years (Liang et al., 1992)

**Matching:**

One concern for us when employing a generalized linear model is that selection effects may drive our results because firms in different industries have differing likelihoods of an IPO. To address this, we use a coarsened exact matching (CEM) approach. CEM is a method to pre-
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process data to reduce the imbalance between “treatment” and “control” groups (Blackwell et al., 2010; Iacus et al., 2011). We match individual firms in the treatment and control groups. One concern is that the variable selected for matching should be unrelated to the creation of new IPO markets the likelihood of getting treatment) but related to firm growth, (the outcome). Initial conditions can determine initial advantages that compound over time and these attributes are not affected by IPO market creation (Boeker, 1989a; Burton et al., 2007). Accordingly, we matched on three dimensions of a firm’s attributes – initial capital, industry, and region where the firm is founded. Rather than assigning cut-points that may be arbitrary, we use the Coarsened Exact Matching implementation in STATA to determine the boundaries of matching.

RESULTS

We first analyze the univariate data to ask how equity market reform affects the number of IPOs, venture capitalization, and venture growth. Table 2 reports pooled summary statistics. With respect to variable correlation, Table 3, the correlation matrix indicates low correlations among study variable except between initial capital and employment. This is likely because larger firms with greater investment employ more. There is also an expected negative correlation between manufacturing and service firms. Consequently, we conducted separate regressions with these variables both separate and simultaneous, but our results were unaffected. We also analyzed the variance inflation factors (VIFs) for all independent variables (Menard, 2001), and all were less than 5.0, indicating that multi-collinearity is not a concern.

Table 4 presents the results of the endogenous entry choice probit model. The predicting variable includes an intercept constant and binary variables to indicate the presence of an elite founder, or whether then firm is a finance firm. Consistent with our arguments above, a firm in
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the finance industry predicts founding after the creation of growth markets. Unexpectedly, however, elite CEO’s are more likely to found firms before reform suggesting that they may anticipate that for most industries, the new growth market may discourage investment. Overall, the results from the probit model are largely consistent with previous studies examining entry choice. They indicate that firms systematically choose their entry based on their attributes and industry conditions.

Table 5 reports the results of our endogenous dependent variable maximum likelihood method to test initial investment in new firms before and after the formation of new growth markets, (H1a, H1b). Models 1 and 2 present estimates of specifications that do not control for endogenous entry selection because they do not estimate the difference effect of new growth markets. Column 2 differs from column 1 in that it includes industry fixed effects. As expected, firms with more employees and foreign ownership, obtain greater initial capital than other firms.

Next, we evaluate how the formation of new growth markets affects initial investment. First, we focus on the negative and significant coefficient on the Founded Post Growth Market variable in models 3 – 5. This indicates that after the markets are formed, overall capital invested in a new firms decrease when all industries are considered. This lends support to (H1a). These results are consistent not only with the idea that relaxed listing standards discourage investment in new firms, they are also consistent with our idea from the institutional view that investment in new firms will be focused toward technology firms and away from others (H1b). To test this, we check the average treatment effect of the treated, i.e. technology firms after growth markets form, and compare them the effect before reform. Model 4 shows that this comparison is positive and significant. That is, while overall average investment in new firms declined, investment in technology firms increased, confirming H1b. In particular, the initial
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capitalization of new firms in the technology industry increased after the reform by 1.26 million yen, which is 6% of the mean level before the reform (p < 0.001). In addition, we ran similar regression to examine the average treatment effect of each industry. In each case, the average treatment of the treated industry was negative or insignificant lending robust support to H1b. We illustrate this also with a line graph showing discontinuous levels of initial capital before and after reform for technology firms, but not for primary firms (our d-in-d control) (figure 1). Together with the regression results, our findings show that the technology industry attracted more investment after the formation of new growth markets, whereas investment in other industries remained stagnant or decreased.

-------------------------------------
Insert Table 4, 5 and 6 about here
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Table 6 reports the results of our CEM difference-in-differences analysis on firm growth using primary industries as a control. Model 1 reports control variables. As expected, firm growth is decreasing and diminishing with age. In addition, being led by elite CEOs, greater initial capital, employee level, and having foreign ownership were also positive influences on growth as expected. Model 2 reports our control interaction for our D-in-D analysis. We find that with the positive and significant coefficient on the Primary Industry × Founded Post Growth Market. Moreover, we compare the behavior of the control group growth to other industries to confirm our control group assumptions, (figure 2). This figure, along with the coefficients on the control interaction variable, confirms that our control group was not likely influenced by the IPO reforms.

Next, we examine difference effects. First, the insignificant coefficient on the Founded Post Growth Market variable in all models indicates that we do not find support for a positive
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effect on overall growth with the reform (H2a). Second, we are now interested in whether new technology firms’ growth in particular degraded after the reform (H2b). Model 3 reports the negative and significant interaction coefficient, (p<0.001) technology\times founded Post Growth Market in model 3 (p < 0.001). This, along with the positive and significant coefficient of the control interaction (p < 0.001) in Model 3, supports the finding that technology firm growth degrades after growth markets are formed (H2b). Overall, while we found that more capital was found in new technology firms, growth decreased.

Finally, we examine the moderating effects of elite CEOs. Table 6 also reports our interaction results for the moderating effect of the founding team. Inspection of Model 3 confirms the moderating effect as we find a positive and significant coefficient of the elite \times new IPO markets interaction (H3). In sum, the presence of a high human and social capital founder reverses the negative growth effect of new IPO markets. This implies that the flow of additional resources that flow to technology firms after the creation of new junior IPO markets improves growth when in the hands of elite founders.

DISCUSSION

This study extends research on institutional growth barriers to the growing phenomenon of supportive institutional intermediaries such as new stock markets. A central question of the study of entrepreneurship and institutions is the effect of institutional changes on entrepreneurial outcomes. Prior studies address important institutional influences on new firms such as regulatory changes encompassed by national efforts to promote entrepreneurship For instance, they have found that decreasing the regulatory difficulty associated with starting firms can invigorate new firm founding (Hsu et al., 2007; Klapper et al., 2006). Related work has examined the effect of regulatory changes and relaxation on impediments to the growth of firms
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and has extended to studies of regulatory changes at the end of a firm’s life – i.e. bankruptcy – to tease out effects of regulatory change on new firm growth (Eberhart et al., 2016; Eesley, 2016). Recently, attention on organizational phenomena that affect entrepreneurship has shifted some attention to supportive institutional intermediaries such as incubators, government programs, and new stock markets. The introduction of these intermediaries are of interest to scholars because they are unlike regulatory changes yet are intended by their creators to invigorate new firm founding and growth.

We examine the introduction of an institutional intermediary -, new growth markets - as our empirical laboratory. We find that after these intermediaries were introduced, investment in new firms increased in technology industry firms; yet investment in firms in other industries was not affected. These results support our explanation that the introduction of supportive intermediaries sets up institutional plurality over the accepted templates of action, creating uncertainty over the appropriate behaviors. Regulatory change, in contrast, constrains behavior avoiding institutional conflict. Institutional pluralism happens when the new markets are introduced because the normative behaviors to restrict investment in a narrow category, coincides with the economic templates of selecting only the best return. In this way, investors who created the supportive intermediary, act to restrict their investments to conform to technology firms, but still maintain legitimizing narratives of economic return to their stakeholders. Thus, conflict between the normative beliefs that led to the introduction of new growth markets can lead to sub-optimal choices as investment might be directed away from the best opportunity in order to favor more marginal technology investments.

**Contributions to theories of institutional change and entrepreneurship**
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Our study makes a theoretical contribution that organizational initiatives intended to reduce growth barriers have complex effects that can blunt their intentions. This explains the failure of many of the new markets as well as firms that list in them. Research focused on institutions that shape entrepreneurship predicts that supportive institutions, by increasing the legitimacy of its participants as well as facilitating resources flows, should increase investments and entrepreneurial growth. Studies of financial markets are finding that these new junior markets produce less liquidity for listing firms and offer smaller returns to investors than primary markets (Goergen et al., 2003). As such, financial literature predicts lowered investment in new firm to facilitate funding the best firms who will perform the best. Our results show that while investments in new technology firms in increased as predicted by institutional theory, new firm growth decreases overall and particularly so for technology firms that received the benefit of increased investment as predicted by the finance literature. This result lends support to our argument that investors, following the prescription of the new growth markets, biased their investments toward technology firms and restricting their choice to attenuate overall firm growth. Our explanation of institutional plurality in the entrepreneurial environment creates these cross-literature results. In this, we reconcile the seemingly divergent predictions of the institutional and financial views because while investment increases in a favored industry (institutional view), reduced growth follows in that industry because less capable firms are funded (finance view).

Our second theoretical contribution is to use the institutional perspective to reconcile institutional change theory predictions with finance-based predictions on the effect of context when change occurs in the business environment. As we explained above, investors respond to context when in an institutional pluralistic setting. They behave one way when acting in the intermediary context, and another when justifying behavior to stakeholders. For most firms, the
additional resources lead to weaker growth as excess slack and non-economic selection effects take hold. Indeed, some research in the resource-based view finds that too many resources in new firms can limit growth through complacency, opportunism, and inappropriate risk taking (Bromiley, 1991; Katila et al., 2005; Tan et al., 2003). However, in firms with more capable CEOs, the additional resources are likely devoted to successful strategies that result in improved growth. We find that the benefits of resource abundance emerge when they are in the hands of advantaged entrepreneurs such as elite individuals who are likely to have the talent and skill to exploit the benefits that munificent resources provide. What emerges is a deeper understanding of the duality of lowered growth barriers.

Overall, we contribute to an understanding of where institutional change will be effective and for whom. We also contribute a national contextual view to the literature on institutional theory. In the context that Japanese government and business leaders began reform by comparing themselves with and transferring practices from the U.S. during the boom in the late 1990’s, our findings inform us that institutions that are transferred directly to different countries are not likely to be equally effective in each country. Institutional environments differ more broadly in Japan compared with the U.S., resulting in differing levels of effectiveness. Therefore, we bring a more context-dependent view of institutional change to the literature on institutions and entrepreneurship. We conclude that institutional theory is a powerful lens that 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.
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Table 1 – IPO market differences

<table>
<thead>
<tr>
<th>Exchange</th>
<th>Minimum. shares offered</th>
<th>Minimum shareholders</th>
<th>Net asset requirement JPY</th>
<th>Profit requirement JPY</th>
<th>Market value minimum JPY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokyo – 1st section</td>
<td>20,000</td>
<td>800</td>
<td>1 billion</td>
<td>500 million</td>
<td>50 billion</td>
</tr>
<tr>
<td>MOTHERS</td>
<td>1,000</td>
<td>300</td>
<td>none</td>
<td>none</td>
<td>500 million</td>
</tr>
<tr>
<td>JASDAQ-Heracles</td>
<td>300</td>
<td>300</td>
<td>none</td>
<td>none</td>
<td>500 million</td>
</tr>
</tbody>
</table>

Table 2 – Summary statistics

<table>
<thead>
<tr>
<th>Univariate statistics</th>
<th>Pre-reform</th>
<th>Post-reform</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. dev.</td>
</tr>
<tr>
<td>IPO (%)</td>
<td>2.082</td>
<td>14.277</td>
</tr>
<tr>
<td>Foreign ownership (%)</td>
<td>0.632</td>
<td>7.928</td>
</tr>
<tr>
<td>Employees</td>
<td>97.299</td>
<td>202.008</td>
</tr>
<tr>
<td>Elite founder (%)</td>
<td>7.250</td>
<td>25.932</td>
</tr>
<tr>
<td>GDP growth (%)</td>
<td>1.067</td>
<td>0.781</td>
</tr>
<tr>
<td>Firm age (yr)</td>
<td>25.073</td>
<td>128.699</td>
</tr>
<tr>
<td>Observations</td>
<td>12,491</td>
<td></td>
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Table 3 – Correlation Matrix

<table>
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<tr>
<th>Variables</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
<th>(10)</th>
<th>(11)</th>
<th>(12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. GDP growth</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Employees</td>
<td>0.085</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Initial capital</td>
<td>-0.010</td>
<td>0.465</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Foreign own</td>
<td>-0.039</td>
<td>0.039</td>
<td>0.086</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Firm age</td>
<td>0.120</td>
<td>0.023</td>
<td>0.114</td>
<td>-0.015</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Elite founder</td>
<td>0.034</td>
<td>0.115</td>
<td>0.153</td>
<td>0.009</td>
<td>0.024</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Primary indus</td>
<td>0.001</td>
<td>-0.014</td>
<td>-0.015</td>
<td>-0.003</td>
<td>-0.002</td>
<td>-0.003</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Manufacturin</td>
<td>0.104</td>
<td>-0.033</td>
<td>-0.033</td>
<td>-0.024</td>
<td>-0.001</td>
<td>0.002</td>
<td>-0.012</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>9. Sales/service</td>
<td>-0.092</td>
<td>0.009</td>
<td>0.044</td>
<td>0.020</td>
<td>0.005</td>
<td>-0.004</td>
<td>-0.046</td>
<td>-0.856</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Finance</td>
<td>-0.015</td>
<td>0.017</td>
<td>-0.032</td>
<td>-0.006</td>
<td>-0.006</td>
<td>-0.002</td>
<td>-0.004</td>
<td>-0.074</td>
<td>-0.287</td>
<td>1.000</td>
<td></td>
<td></td>
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<tr>
<td>11. Technology</td>
<td>-0.086</td>
<td>0.025</td>
<td>0.002</td>
<td>0.030</td>
<td>-0.031</td>
<td>0.019</td>
<td>-0.006</td>
<td>-0.106</td>
<td>0.034</td>
<td>-0.035</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>12. After new m</td>
<td>-0.442</td>
<td>-0.057</td>
<td>0.002</td>
<td>0.036</td>
<td>-0.104</td>
<td>-0.004</td>
<td>-0.004</td>
<td>-0.077</td>
<td>0.070</td>
<td>-0.007</td>
<td>0.064</td>
<td>1.000</td>
</tr>
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Table 4 – Probit Analysis for Endogenous Selection of Founding Time

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV= Founded</td>
<td>Elite Founder</td>
<td>-0.126***</td>
</tr>
<tr>
<td>Post Growth Market</td>
<td>Financial Firm</td>
<td>0.203***</td>
</tr>
<tr>
<td>Probit Analysis</td>
<td>Constant</td>
<td>-0.904***</td>
</tr>
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Table 5 – *Initial capital effects*

<table>
<thead>
<tr>
<th>DV – Initial Capital GLM Endogenous Effects Analysis</th>
<th>Controls (1)</th>
<th>Industry Fixed Effects (2)</th>
<th>Tech Industry Interaction (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP growth</td>
<td>2.186***</td>
<td>3.007***</td>
<td>1.979</td>
</tr>
<tr>
<td></td>
<td>(0.469)</td>
<td>(0.882)</td>
<td>(0.468)</td>
</tr>
<tr>
<td>Competitive Density</td>
<td>0.000***</td>
<td>0.000***</td>
<td>0.000***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Venture Capital Level</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Elite Founder</td>
<td>0.891***</td>
<td>0.882***</td>
<td>0.955***</td>
</tr>
<tr>
<td></td>
<td>(0.070)</td>
<td>(0.068)</td>
<td>(0.052)</td>
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<tr>
<td>Foreign Ownership</td>
<td>1.395***</td>
<td>1.382***</td>
<td>1.348***</td>
</tr>
<tr>
<td></td>
<td>(0.057)</td>
<td>(0.057)</td>
<td>(0.058)</td>
</tr>
<tr>
<td>Industries</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Primary industry</td>
<td>-0.731***</td>
<td>-0.630**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.098)</td>
<td>(0.543)</td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-0.526***</td>
<td>-0.424***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.029)</td>
<td>(0.024)</td>
<td></td>
</tr>
<tr>
<td>Sales</td>
<td>-0.383***</td>
<td>0.322***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.035)</td>
<td>(0.029)</td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>0.128***</td>
<td>0.160***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.028)</td>
<td>(0.027)</td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>-1.143***</td>
<td>-1.081***</td>
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<td>(0.041)</td>
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<td>1.107***</td>
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<td>(0.054)</td>
<td>(0.048)</td>
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</tr>
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<td>Interaction</td>
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<td></td>
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<td></td>
<td>-0.350***</td>
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<td></td>
<td>(0.108)</td>
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<td></td>
<td></td>
<td></td>
<td>(0.088)</td>
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<td>11.225***</td>
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<td>Annual fixed effects</td>
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Standard errors in parentheses. * p < 0.05, ** p < 0.01, and *** p < 0.001.
Table 6 – Performance effects

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<th>(3)</th>
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<td>Diff-in-diffs GLM regressions</td>
<td>Controls</td>
<td>D-in-D interaction</td>
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<td>Employees</td>
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<td>Firm age</td>
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<td>Firm age(^2)</td>
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<td>(0.000)</td>
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<td>-0.065**</td>
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<td>(0.004)</td>
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<td>Primary × Founded after Growth Market</td>
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<td>(0.039)</td>
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<tr>
<td>Tech × Founded after Growth Market</td>
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<td>-0.059***</td>
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<td>(0.009)</td>
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Robust standard errors *** p<0.001, ** p<0.01, and * p<0.05
New IPO Markets – Too Much of a Good Thing?

FIGURE 1

**Initial Capital by Incorporation Year**

- **Tech**
- **Primary**

FIGURE 2

**Control Group Comparison**