

**Impact of institutional imprinting on the persistence of superior profits: A study of regulatory punctuation in India**

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## **ABSTRACT**

Drawing upon the literature on organizational imprinting, we examine how a firm's history impacts its performance in subsequent periods. In an emerging market context of India, we argue and find support that the degree of imprinting of the pre-liberalization era is negatively related to the persistence of superior performance in the post-liberalization period. Furthermore, we investigate the role of imprinting attenuators and we find support that firm's listing status and its degree of internationalization weaken this base-line relationship. Empirical results based on a large unbalanced panel data set of 18,202 firm-year observations of Indian firms during the period of 1991-2005 provide robust support to our conceptual model. Complementing the growing literature examining the impact of contemporaneous institutional changes on performance, this study aims to bring attention to the important role of institutional history of the firms from the emerging economies.

**Keywords:** Emerging markets, imprinting, institutions, persistence of performance

## **1. INTRODUCTION**

Over the last few decades, various emerging markets (EMs) including China and India have undergone substantial pro-market reforms and transitioned from an old institutional environment to a new market-based economy (Cuervo-Cazurra, Gaur, & Singh, 2019; Li, Cui, & Lu, 2014). Attesting the importance of these regulatory punctuations, an impressive body of research in the EM context has debated with regards to the impact of reforms on a firm's financial performance, survival, innovation (Chari, & Banalieva, 2015; Cuervo-Cazurra, & Dau, 2009; del Sol, & Kogan, 2007), and on counter-strategic actions in response to such changes (Perez-Batres & Eden, 2008; Popli, Akbar, Kumar, & Gaur, 2017). Though scholars have studied the relationship between contemporaneous institutional changes and firm performance (Chari & David, 2012; Dau, 2013; Park, Li, & Tse, 2006), however, the role of a firm's institutional history on its subsequent performance in the liberalized environment largely remains under researched. This is a surprising omission because being embedded in a protectionist environment, EM firms could not develop competitive capabilities, the effect of which became apparent in the post-liberalization era. To address this oversight, in this paper, we study the role of history on the performance of EM firms. Specifically, we analyse the impact of institutional imprinting of the pre-liberalization phase (Stinchcombe, 1965), a key organizational attribute that reflects organizational history (Greenwood, Raynard, Kodeih, Micelotta, & Lounsbury 2011), on the persistence of superior performance in the post-liberalization phase.

The theoretical underpinnings of organizational imprinting advance that the institutional environment during the firm's formative stages is stamped in the form of its capabilities, norms, and strategies that guide future action (Marquis & Tilcsik, 2013; Simsek, Fox, & Heavey, 2015; Stinchcombe, 1965). Prior to the economic liberalization, firms operating in the Indian economy faced an institutional set-up, generally referred as *License-raj* (Bhagwati & Echeverri-Gent, 1993). During this phase, the role of the state was dominant at

all stages of a firm's economic activity and it posed a huge hindrance to the development of advanced capabilities and corporate progress. Post balance of payment crisis in 1991, India began the liberalization process with the onset of product-market reforms. This transition from a closed era (pre-liberalization) to a market-oriented era (post-liberalization) is often termed as a regulatory punctuation in which the economy undergoes radical changes and reflects major discontinuities (Haveman, Russo, & Meyer, 2001). We believe that such context provides a rich laboratory setup to study the impact of previous era on incumbent firms operating in the market-oriented era.

We build on our core thesis that post-liberalization, organizations engendered by a constrained environment would have limited capabilities to function successfully in a highly competitive market economy and may struggle to exploit opportunities in an open-market economy (Bhoothalingam, 1993; Majumdar, 2004). We argue that this organizational heritage may generate resistance to change and may reduce the persistence of performance in the liberalized era. Accordingly, we hypothesize that the degree of imprinting in a closed regime would be negatively related to the persistence of superior performance post-liberalization.

Next, we focus on the boundary conditions that may help to mitigate the degenerative impact of imprinting on a firm's sustainability of superior performance. Drawing upon the imprinting literature (Marquis & Tilcsik, 2013; Simsek, Fox, & Heavey, 2015), we theorize the role of two decaying factors- listing status and degree of internationalization of the incumbent firm. We theorise that as compared to private firms, the impact of historical imprinting on the persistence of performance would be weaker for listed firms. Owing to a greater scrutiny by investors and analysts, a public listed firm would be more receptive to incorporate changes in its structure and develop novel capabilities. Accordingly, the impact of historical imprinting would be weaker in public listed firms. Further, we account for the level of internationalization of the incumbent firms. We surmise that internationalization, through exports and global

operations, would provide newer capabilities to local firms and thus we hypothesize that a firm's degree of internationalization may attenuate the negative effects of imprinting on the sustainability of superior performance.

Figure 1 depicts our conceptual model which we test on a large unbalanced panel data set of 18,202 firm year observations over a period of 15 years in the context of Indian manufacturing sector. As hypothesized, we find that the degree of imprinting negatively affects the sustainability of superior performance. Further, a firm's public listing status and its internationalization mitigate the negative effect of imprinting on the sustainability of superior performance. Our empirical analysis offers support for the theoretical model.

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Insert Figure 1 about here  
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This paper makes two important contributions to the literature on EMs. Complementing the research on the impact of pro-market changes in EMs (Chari & David, 2012; Dau, 2013), we demonstrate that a firm's history does have implications for firm performance. We showcase that institutional imprinting of a closed economy constitutes organizational inheritance in the form of capabilities which may drag the performance of the firms in the liberalized era. Though, a growing stream of research has started to examine the impact of imprinting in the EM context (Kriauciunas & Kale, 2006; Maksimov, Wang, & Luo, 2017, Wang, Du, & Marquis, 2018; Wei, 2017), we believe our study complements this stream of research by looking at the impact of institutional imprinting on firm performance. We also respond to the recent calls in literature (Simsek *et al.*, 2014) to open the 'black-box' of the imprinting process to unearth the mechanisms which could lead to decay or amplification of the imprints. To that end, we look at the decaying impact of firm's strategic choice of internationalization and also the role of external scrutiny when the focal firm is listed on the capital markets (Simsek, Fox, & Heavey, 2014).

The rest of the study is organized in the following manner: The background section discusses various phases of institutional framework in the Indian context. In the next section, we discuss theoretical underpinnings of the imprinting theory and develop hypotheses of this study. Following that, we detail the data, sources, variables and empirical results of our conceptual model. The final section concludes with the limitations of this study, implications for the practice and future research directions.

## **2. BACKGROUND**

### **Imprinting and Institutional change**

Imprinting is defined as “a process whereby, during a brief period of susceptibility, a focal entity develops characteristics that reflect prominent features of the environment, and these characteristics continue to persist despite significant environmental changes in subsequent periods” (Marquis & Tilcsik, 2013: 201). Imprinting constitutes three important facets which relate to a sensitive time period, environmental stamping, and persistence of imprints. The time period provides the duration of exposure so that the imprinting process may take place wherein the regulatory and industry characteristics of the environment get imprinted on the focal entity. Put together, all three entities – the environment referred to as the imprinter, the focal entity referred to as the imprinted, and the time period of exposure are key players in the imprinting process.

Early work on imprinting highlights the role of environment as a key antecedent to the imprinting process (Stinchcombe, 1965). Various environmental factors such as technological, institutional, cultural, and regulatory conditions during formative years have been found to influence organizational characteristics. Marquis and Tilcsik (2013) argue that technological and economic conditions at the time of founding, impact the firm’s organizational structure and its subsequent operating behaviour. Recently, Banalieva *et al.* (2017) discuss the impact

of the exposure to communist practices on work behaviour of the individuals. Similarly, informal institutions of culture are also an important source of imprints and research has examined its impact on organizational structure (Lamberg & Laurila, 2005).

Studies have found that founders and their knowledge levels may also influence the firm's behaviour. For example, Kriauciunas and Kale (2006) highlight that socialist imprinting impedes the changes in the knowledge sets even when external environment has changed. Firms which are spun-off from their parent organizations are found to inherit technical and market related knowledge influencing their nature at birth (Klepper & Sleeper, 2005). In a study of US commercial banks, Marquis and Huang (2010) observe that banks founded in states where branching was allowed, developed inherent organizational capabilities to manage multiunit business operations which in turn enabled them to pursue acquisition strategy post deregulation. Other studies have pointed towards the conditions at the time of founding, such as industry environment, which influence the chances of firm survival. Dobrev and Gotsopoulos (2010) argue that newer firms in early stage industries have a higher likelihood of failure compared to newer firms in a mature industry. Market conditions, firm strategies and GDP growth have also been found to impact firm survival (Geroski, Mata, & Portugal, 2010). Thus, not only firm characteristics at the time of founding but also the external environment leads to the creation of imprints which impact a firm's performance and survival.

In the context of EMs, a growing stream of research discusses the role of imprinting on various organizational outcomes. Wei (2017) studied the impact of imprinting on organization's board composition for Chinese firms. The study finds that state-owned firms founded during the socialist era would have lesser non-state directors compared to those founded in the market-oriented period. Similarly, Wang, Du and Marquis (2018) studied the effect of a politician's ideologies on the firm's securing political appointments. Further, Maksimov *et al.* (2017) study the influence of imprinting on the innovation. They find that

firms which are larger in size and those founded earlier have better innovation levels. This is because firms rely on relationship and network-based exchanges when market-oriented institutions are underdeveloped. In the Indian context Majumdar (2004) studied the impact of different time periods on the firm's routines and capabilities and how it affects the growth rate of firms. Marquis and Tilcsik (2013) argue that the transition of institutional environment in emerging economies provides a rich context for studying imprinting behaviour. To that end, we briefly explain the context and transition of institutional framework in India and establish the linkage of both epochs through our conceptual model.

### **Institutional transition and the Indian context**

The business environment in India, post its independence in 1947, may be broadly classified into three categories: Phase-I from 1956 to 1985, broadly represented an institutional framework of a command and control regime where a number of government agencies exercised major and comprehensive controls and clearances (Majumdar & Bhattacharjee, 2014; Majumdar, 2004). These controls included permissions related to entry into product markets, acquisition of raw materials, import of capital goods, foreign technology collaboration, and even final product distribution amongst others. Bhagwati (1993, p. 49) notes that "The Indian planners and bureaucrats sought to regulate both domestic entry and export competition, to eliminate product diversification beyond what was licensed, to penalize unauthorized expansion of capacity, to allocate and prevent the reallocation of imported inputs, and indeed define and eliminate virtually all aspects of investment and production through a maze of Kafkaesque controls". Under this epoch, the government, through various institutional agencies, dominated all strategic and operational activities and essentially left no space for firms to develop creative and innovative products and solutions. In such an environment, where government dictated all rules of business conduct, firms engaged and diverted their resources



from rent seeking and commercial activities towards management of bureaucracy, government agencies and politicians (Bhagwati & Echeverri-Gent, 1993; Tomlinson, 2013).

Next came a brief period between 1985 until 1991, phase-II, which is termed as a transition phase towards a market-based economy. In this period, though some of the restrictions were relaxed, however the domestic market remained mostly protected in terms of entry restrictions and controls related to imports and capital. In this phase, attempts to deregulate the economy did not succeed fully but rather created a confusion where firms had to manage greater political, bureaucratic and economic complexities (Majumdar & Bhattacharjee, 2013; Lal, 1999; Tomlinson 1993).

After two phases of a closed economy, the third and the most important phase started in 1991, where radical reforms were initiated. First set of these changes were in the form of economy wide broad scope changes that tried to steer the country towards a market-based economy, free from government controls (Panagariya, 2008; Ramamurti, 2000). Reinforcing the initial set of changes, reforms continued over the next 15 years including financial and banking reforms, industry sector-specific reforms, property rights, legal reforms and foreign exchange rules (Guha, 2017; Lal, 1999; Majumdar, 2008). This whole reform process led to a more efficient financial market, increased foreign direct investment (FDI) in product markets, stronger corporate governance practices, and liberalized labor laws. Though structural reforms facilitate a great deal of opportunities for both domestic and newer foreign entrants, it also challenges incumbent firms in their persistence of superior profits due to greater levels of competition (Porter, 1979). For example, post-liberalization many global firms entered India, with sophisticated technological, managerial and financial resources which posed a challenge for incumbent firms (Chari & David, 2012; Hermelo & Vassolo, 2010; Popli *et al.*, 2017).

Persistence of superior profits is a central concern in management and has been examined through various theoretical lens prominent being industrial organization and the resource-based view. A liberalized era leads to changes in the industry structure and incumbent firms need greater capabilities to respond to an increased competitive environment. Augmenting this stream of research, in this paper, we theorize how history — in terms of degree of institutional imprinting in a closed regime, would impact the persistence of superior performance of the incumbent firms post the regulatory punctuation (Jiang & Stening, 2013). Additionally, the post liberalization phase exposed the competitive limitations of the incumbent firms, which hitherto were masked by the protectionist regime and referred to as the ‘liability of localness’ (Perez-Batres, & Eden, 2008). These liabilities are associated with additional costs which arise due to changes in the regulatory environment and may impact firm performance. In the next section, we develop our hypothesis to argue that incumbent hindrances in adjusting to a new environment and hence it may impact their performance.

### **3. HYPOTHESES DEVELOPMENT**

#### **3.1 Institutional imprinting and persistence of superior performance**

Using the theoretical underpinnings of the imprinting lens (Stinchcombe, 1965), we posit that pre-liberalized phase of emerging economies would leave a stamp on firm’s capabilities, routines and knowledge sets (Kriauciunas & Kale, 2006). When the economy transitions and undergoes reforms, competition from foreign firms takes a leap and incumbent firms may find it difficult to adapt their existing routines and capabilities to the new environment (Majumdar, 2004). Accordingly, we theorize that the degree of institutional imprinting may negatively impact the persistence of superior performance.

The conditions at the time of a firm’s establishment may influence its future strategic actions and organizational change processes (Boeker, 1989). Organizational capabilities and

routines established during the initial years of the firm's life cycle persist during environmental changes and impact its future behaviour (Kogut & Zander, 2000; Tilcsik, 2010, 2014). This is because the organizational structures and capabilities are designed to align with the initial institutional environment at the time of founding of a firm. In pre-liberalized phase of emerging economies, most of the resources were state owned and firms had to comply with the quota systems decided by the governments. For example, in India, during the 'license raj', the state controlled several decisions on technology acquisitions, purchase of raw material inputs, raising domestic capital and even capacity requirements for firms (Majumdar, 2004). Moreover, pricing and distribution related decisions were also influenced by the state. Accordingly, firms adhered to these regulations and developed their expertise in working with the authorities. These skills and capabilities were of less use to firms post-liberalization as state control reduced and regulations strengthened.

Literature argues that the capabilities of a firm at the time of its founding are not easily changed and hence may act as a strategic barrier to adaptation thereby influencing firm performance (Ortel, Thommes, & Walgenbach, 2016; Schreyögg & Kliesch-Eberl, 2007). Older firms in China which were aligned to the socialist culture may focus less on profitability and risk taking (Yiu, Bruton, & Lu, 2005). Kriauciunas and Kale (2006) highlight that knowledge sets of firms operating in a socialist oriented environment negatively impacts the ability to change their operating knowledge in the new environment. Hence, we argue that institutional imprinting may lower the sustainability of firm performance. We submit that a longer exposure to a closed era may lead to greater levels of imprinting thereby making firms less flexible and resistant to change (Hannan & Freeman, 1984). In particular, we build on our basic premise that in the closed era Indian firms accumulated those capabilities, which were non-deployable in the post liberalization era, hence hindering their growth (Majumdar, 2004).

Liberalization and pro market reforms in EMs strengthen market regulations leading to increased competition for market-share (Chari & David, 2012). Even firms which were successful in earning superior performance may find it difficult to sustain such performance since their competencies of an older era are much less useful in the changed competitive landscape. Thus, the impact of non-deployable capabilities and increased competition from global players become apparent and it may challenge the persistence of superior performance for imprinted firms. As such, these firms may find it difficult to innovate, launch better or cheaper products or services as compared to their global counterparts. As a result, their profits and market share may begin to decline. Thus, we posit that the degree of institutional imprinting would negatively impact the persistence of superior performance.

*Hypothesis 1: In emerging markets, the degree of institutional imprinting in the pre-liberalization period is negatively related to persistence of superior performance in the post-liberalization period.*

### **3.2 Public listing and institutional imprinting**

In this hypothesis, we submit that capital market involvement of a firm would moderate the relationship between the degree of institutional imprinting and persistence of superior performance. As compared to private firms, publicly listed firms face greater scrutiny by investors, analysts and media and are also subjected to regulatory and disclosure requirements (Filatotchev & Bishop, 2002; Judge *et al.*, 2015; Luo & Han, 2009). We submit that this may mitigate the negative effects of imprinting because owing to such pressures, public firms are relatively more open to changes in their knowledge sets, routines and structures. In contrast, private firms may not be motivated to respond to market analysts and investors. This is because the information regarding a private firm is mostly not available to the market at large. Thus,

the need to change may be lower in the case of private firms which may strengthen the negative effect of institutional imprinting on firm performance.

In addition to the above, public firms have relatively easier access to capital which may enable investment in research and development leading to product and market innovation thus preventing the erosion in profits (Acharya & Xu, 2017). External capital also makes a firm more responsive to the changes in the investment opportunities (Gilje & Taillard, 2016). Access to such capital may enable EM firms to shed off older routines, to adopt new practices, and develop newer capabilities to synchronize with the flux in institutional environment (Popli *et al.*, 2017). Hence, public listed firms are more likely to bring changes to their resources and capabilities and strive for superior performance in order to be perceived positively by the market. Additionally, in the case of listed firms, directors' ties facilitate vicarious learning and contribute to boardroom discussions (Carpenter & Westphal, 2001; Haunschild & Beckman, 1998). Such information conduits help to remove competitive limitations by providing valuable information on various strategic actions and processes (Klarner, Yoshikawa, & Hitt, 2018; Tuschke, Sanders, & Hernandez, 2014). This may facilitate adoption and development of new capabilities and routines which may reduce the degenerative impact of imprinting for listed EM firms in the liberalised era. In contrast, private firms undertake less risky investments compared to public firms and therefore their propensity to major changes would also be lower.

Accordingly, we argue that public listed firms would incur greater changes to their structure and capabilities compared to private firms which may mitigate some of the issues of legacy institutional imprinting on the persistence of superior firm performance.

*Hypothesis 2: In emerging markets, the negative relationship between the degree of institutional imprinting of pre-liberalization period and persistence of superior*

*profits in post-liberalization period will be weaker for listed firms such that impact of imprinting will be weaker for public listed firms*

### **3.3. Degree of internationalization and institutional imprinting**

Apart from exogenous factors, we believe a firm's deliberate strategic choice(s) can also help to reduce the effect of imprints. Internationalization is one such deliberate strategic choice by firms to overcome the 'liability of localness' (Perez-Batres & Eden, 2008) by gaining new technical knowledge, novel and efficient production techniques. Accordingly, we argue that the negative impact of institutional imprinting may be mitigated by the focal firm's search for new knowledge outside the boundaries of its incumbent environment. Internationalization of incumbent firms through exports and operations in foreign markets would expose firms to an experiential knowledge set of efficient business operations, strategies of their competitors, product design and development as reforms in the home market continue to unfold which could potentially help them to overcome their competition limitations of the closed era.

Export of tangible goods leads to exchange of intangible knowledge and the received learning helps in increased productivity (Aw, Chung, & Roberts, 2000; Van Biesebroeck, 2005) as well as greater firm innovation output (Salomon and Shaver, 2005). The basic premise of this learning is that by being integrated in global value chain, EM firms receive more sophisticated requirements from their host nations which helps them in building additional capabilities (Alcacer & Oxley, 2014; Li, Chen, & Shapiro, 2014). Chittoor, Aulakh and Ray (2015), note that "Participation in international markets thus functions as an important tool for organizational learning, and it constitutes a route to new capability development" (pp. 137). This non-local search through internationalization would involve the search for new routines and this would challenge the existing knowledge sets and mental schemas of managers, thus dampening the imprints. So, we posit that higher the global exposure of firms through

internationalization, greater the strength of the countervailing force against the internal ‘traditionalizing forces’ leading to decay of imprints (Stinchcombe, 1965, pp. 169).

*Hypothesis 3: In emerging markets, the negative relationship between the degree of institutional imprinting of pre-liberalized phase and persistence of superior profits in post-liberalized phase will be weaker for firms with higher degree of internationalization.*

## DATA AND METHODS

### Data

We utilize the context of Indian manufacturing firms to empirically examine our conceptual model. This setting is unique because institutional reforms in the Indian business environment evolved in three distinct phases. The first two stages primarily represent a closed economy where almost all activities of firms were mostly under the control of the state (Majumdar & Bhattacharjee, 2014). Following a balance of payment crisis in 1991, the Indian government-initiated product-market reforms in 1991 which led to increased competition by arrival of foreign firms with better technological, financial and managerial resources (Gubbi, Aulakh, Ray, Sarkar, & Chittoor, 2010). Concurrently, the state retrenched its involvement in economic activities and started to drive the systems to a market-based economy. We believe that this regulatory punctuation presents a perfect set-up to examine the impact of pre-liberalized era in the form of institutional imprinting on the performance of incumbent firms in the post-liberalization era.

We extracted financial data on Indian firms from the *Prowess* database between 1991-2005 (Lamin & Ramos, 2016; Damaraju & Makhija, 2018). This database is maintained by the Centre for Monitoring Indian Economy, and it provides comprehensive firm level financial

information for Indian firms. We selected all manufacturing firms which were incorporated prior to 1991, the era of closed economy. We choose manufacturing firms because the point of inflection for our study is the regulatory punctuation of the Indian economy in 1991. Therefore, we need to identify firms which were present in both the pre-liberalization and post-liberalization era to understand the effect of imprinting. The Indian economy in the pre-liberalization era was largely driven by agricultural and other allied industries including steel and machinery sectors (Kim & Saravanakumar, 2012). In 1980s, manufacturing sector was amongst the leading sectors of the Indian economy accounting for two-thirds of exports (Nagaraj, 2011). Further, the services sector in India is relatively new compared to the manufacturing sector. This is because, information technology and related services industry grew largely post liberalization (Mukherjee, 2013). Hence, majority of pre-liberalization regulations may not be applicable to services sector and therefore we focus on only manufacturing firms. This is also in line with prior studies which have focused on the manufacturing sector (Chari & David, 2012).

Our initial sample comprised of a panel data with 52561 firm year observations representing 7998 firms between 1991 and 2005. To measure persistence of superior profits we dropped observations where profits in the prior year were not above the industry average (Choi & Wang, 2009; Roberts, 1999; Roberts & Dowling, 2002). Further, due to missing data points for some of our key variables, the final data set comprised of 18202 firm-year comprising of 3606 unique firms. To remove any confounding effects due to outliers, we winsorized all continuous variables at 1%.

## **Modelling Procedure**



In line with prior studies (Chacar & Vissa, 2005; Choi & Wang, 2009; Roberts & Dowling, 2002), we used an auto-regressive model to measure the sustainability of superior performance.

It is represented as-

$$\text{Return on assets}_{i,t} = b_0 + b_1(\text{Return on assets}_{i,t-1}) + e_{i,t}$$

*Return on assets*<sub>*i,t*</sub> is measured as return on focal firm's assets for the firm *i* at time *t*. The coefficient of lagged firm-specific performance *b*<sub>1</sub> measures the regression relationship between firm-specific returns across various time periods and is a measure of sustainability. The value of *b*<sub>1</sub> ranges between 0 and 1 with larger values indicating greater sustainability of profits. Here below, equation 1a represents our baseline Hypothesis and Hypothesis 2 and 3 are represented by equations 1b and 1c respectively.

$$\begin{aligned} \text{Return on assets}_{i,t} = & b_0 + b_1(\text{Return on assets}_{i,t-1}) + b_2(\text{Degree of imprinting}_i) + \\ & + b_3(\text{Degree of imprinting}_i \times \text{Return on assets}_{i,t-1}) + b_4(\text{Listing status}_i) + \\ & b_5(\text{Internationalization}_{t-1}) + \text{controls}_{i,t-1} + e_{i,t} \end{aligned} \quad (\text{Equation 1a})$$

$$\begin{aligned} \text{Return on assets}_{i,t} = & b_0 + b_1(\text{Return on assets}_{i,t-1}) + b_2(\text{Degree of imprinting}_i) + \\ & + b_3(\text{Degree of imprinting}_i \times \text{Return on assets}_{i,t-1}) + b_4(\text{Listing status}_i) + \\ & b_5(\text{Return on assets}_{i,t-1} \times \text{Listing status}_i) + b_6(\text{Degree of imprinting}_i \times \\ & \text{Return on assets}_{i,t-1} \times \text{Listing status}_i) + b_7(\text{Degree of imprinting}_i \times \\ & \text{Listing status}_i) + b_8(\text{Internationalization}_{t-1}) + \text{controls}_{i,t-1} + e_{i,t} \end{aligned} \quad (\text{Equation 1b})$$

$$\begin{aligned} \text{Return on assets}_{i,t} = & b_0 + b_1((\text{Return on assets}_{i,t-1}) + b_2(\text{Degree of imprinting}_i) + \\ & + b_3(\text{Degree of imprinting}_i \times \text{Return on assets}_{i,t-1}) + b_4(\text{Listing status}_i) + \\ & b_5(\text{Return on assets}_{i,t-1} \times \text{Internationalization}_{t-1}) + b_6(\text{Degree of imprinting}_i \times \\ & \text{Return on assets}_{i,t-1} \times \text{Internationalization}_{t-1}) + b_7(\text{Degree of imprinting}_i \times \\ & \text{Internationalization}_{t-1}) + b_8(\text{Internationalization}_{t-1}) + \text{controls}_{i,t-1} + e_{i,t} \end{aligned} \quad (\text{Equation 1c})$$

## **Variables and Measures**

**Dependent Variable:** We operationalized the dependent variable as the industry adjusted return on assets (Chacar & Vissa, 2005; Chari & David, 2012; Waring, 1996). It is represented as *Return on assets*<sub>*i,t*</sub><sup>1</sup> in equation 1.

**Independent Variables:** There are three key independent variables. To test our base-line hypothesis, we measure *Degree of imprinting* as the difference of years between 1991 and the incorporation year of the focal firm and is normalized by the cross-sectional maximum value. Measuring the imprinting in terms of time duration provide us a better measure of institutional imprinting and is an improvement over the binary measures which has been hitherto been used to evaluate impact of imprinting (Wei, 2017).

To test Hypothesis 2, we create the variable *Listing status* which is operationalized as a binary measure (Malhotra & Gaur, 2014). This variable takes a value of ‘1’ for the publicly listed firms, else it is assigned a value of 0. The term *Degree of imprinting*<sub>*i*</sub> × *Return on assets*<sub>*i,t-1*</sub> × *Listing status*<sub>*i*</sub> in equation 1b tests for Hypothesis 2. To test Hypothesis 3, we create the variable *Internationalization*<sub>*t*</sub>, which is measured as foreign sales as a percentage of total sales (Gaur & Kumar, 2009). The term *Degree of imprinting*<sub>*i*</sub> × *Return on assets*<sub>*i,t-1*</sub> × *Internationalization*<sub>*t-1*</sub> tests for Hypothesis 3.

**Control Variables:** We incorporate various firm and industry level controls to control for possible influence on the relationship between the degree of imprinting and persistence of superior performance of the firm in an emerging market context. First, we control for the firm-level capabilities which are generally proxied in literature as the marketing and research and development resources of a firm. To operationalize this, we calculated *Marketing Intensity* as

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<sup>1</sup> values greater than 0 indicate superior firm-specific profits

the ratio of marketing expenses and total sales and similarly *R&D intensity* is operationalized as ratio of research and development expenses and total sales (Haleblian, McNamara, Kolev,, & Dykes2012). In an emerging market context such as India, affiliation to a business group provides parenting advantages to the affiliate firms and help to fill the voids in the institutional framework (Khanna & Palepu, 2000, Carney, Gedajlovic, Heugens, Van Essen, & Van Oosterhout2011; Gaur, Kumar, & Singh, 2014). To control this, we operationalize the variable *Business group affiliation* as a dummy variable with a value of 1 when the focal firm is affiliated to a business group and 0 otherwise (Fuad & Sinha, 2018). The firm's *current ratio* may also impact its ability to meet its short-term obligations and liabilities. It is measured as the ratio of a firm's current assets to its current liabilities (Feldman, Amit, & Villalonga, 2016). Further, we control for the firm's slack resources which may impact its performance. The *free cash flow* to a firm is measured as the income from operations after accounting for debt, taxes and dividends (Haleblian *et al.*, 2012). We also control for the firm's exposure to debt by incorporating *Leverage ratio*, computed as ratio of long-term debt to total assets. Finally, *firm size*, is controlled by including natural logarithm of its total assets. To account for industry fixed effects, we also control for industry classification using the 2-digit National Industrial Classification codes<sup>2</sup> of India. We also include year dummies to control for year fixed effects in all our models.

## RESULTS

Table 1 reports descriptive statistics including means, standard deviations and correlations. We observe that correlations and variation inflation factors are within acceptable limits thereby suggesting that multicollinearity issues are absent (Burns & Bush, 2000). Table

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<sup>2</sup> These NIC codes are five digit codes used for classifying industries in India and are similar to the Standard Industrial Classification codes used in North America.

2 reports the results of least square regression analysis. Model 1 of Table 2 includes the control variables whereas Models 2-4 present the results of hypothesized variables.

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Insert Table 1 and Table 2 about here  
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Model-2, shows the interaction between Return on assets  $t-1$  and degree of imprinting. As predicted in Hypothesis 1, the coefficient of the interaction term is negative and significant ( $b_3 = -0.13, p < 0.05$ ) indicating that greater degree of imprinting is associated with lower sustainability of superior profits. This is consistent with the core argument that the presence of legacy resources and capabilities may be non-deployable in the liberalized era and it may lower the persistence of superior performance for imprinted firms.

Hypothesis 2 is tested in Model 3 where we interact, degree of imprinting, return on assets  $t-1$ , and listing status of the focal firm. The interaction term is positive and significant ( $b_6 = 0.23, p < 0.05$ ) suggesting that the listing status weakens the negative relationship between degree of imprinting and lagged firm specific return. This supports our argument that post-liberalization public listed firms are more open to change and engender several changes to their structure and capabilities which may help them mitigating some of the negative impact of institutional imprinting.

Finally, the results for our third hypothesis are presented in Model 3. Here, we interact degree of imprinting, Return on assets  $t-1$ , and internationalization variables. The interaction term is positive and significant ( $b_6 = 0.01, p < 0.05$ ) suggesting that the higher degree of internationalization weakens the negative relationship between degree of imprinting and lagged firm specific return. Hence, higher degree of internationalization may act as countervailing force against the internal ‘traditionalizing forces’ and help the firm to mitigate the negative

impact of imprinting on sustainability of superior performance. Hence, we find support for all three Hypotheses.

Figures 2-4 depict the interaction effects for each hypothesis. In Figure 2, we show the graphical representation of the negative effect of degree of imprinting effect on sustainability of superior performance. Figure-3 shows the three-way interaction effect of degree of imprinting, lagged performance, and public listing status. We observe that for non-listed firms sustainability of superior performance is lower when degree of imprinting is high. This effect weakens for listed firms supporting our hypothesis that capital market involvement of the firm weakens the negative impact of imprinting on sustainability of superior performance. In Figure-3, we present our results for firms with lower internationalization (lower quartile of internationalization) and higher internationalization (upper quartile of internationalization). Consistent with our Hypothesis 3, we observe that firms with lower degree of internationalization suffer from lower persistence of performance when imprinting is high. As hypothesized, firms in the upper quartile of internationalization show higher persistence of performance even when degree of imprinting is high. This is consistent with Hypothesis 3.

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Insert Figures 2-4 about here  
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### **Robustness checks**

We conduct several robustness tests to check for the robustness of our findings. First, we use alternate measures of our main explanatory variable of degree of imprinting. We normalize the degree of imprinting in two ways. In the first case, we divide the degree of imprinting using the sample mean and in the second instance we normalize the degree of imprinting by the maximum value of sample mean. In both these instances all the three hypotheses are supported, and results are consistent.

Second, we winsorize the degree of imprinting at 1% on both the upper and lower levels. This allows us to take care of firms with very high and very low degree of imprinting.

We find robust support for all three hypotheses. Third, we replace the internationalization variable with export intensity. This is because majority of the Indian firms used exports as their main vehicle of international business. We find consistent results to our earlier findings and all our hypotheses are supported.

Finally, we account for the endogeneity issues that may be prevalent in our estimation models. This is because managers do not make choices randomly and may choose certain strategic actions (Clougherty, Duso, & Muck, 2016) such as listing of the firm in a stock exchange or deciding the quantum of internationalization. Thus, we did two stage Heckman procedure (Heckman, 1979) to test Hypotheses 2 and 3. For Hypothesis 2, in the first stage a probit model is estimated to predict probability of being a listed firm. We included log of total assets as an instrumental variable in the first stage model (Wies & Moorman, 2015). The inverse mills ratio, derived from the first stage probit model, is then incorporated in the second stage model. Similarly, to test Hypothesis 3, we conduct a probit regression to predict whether the firm has internationalized or not by using import intensity variable (Cazurra, 2011) as the instrument variable. The inverse mills ratio, computed from the first stage model, was then included in the second stage model. The results were consistent in both the instances and are shown in Table 3.

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Insert Table 3 about here  
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## **DISCUSSION AND CONCLUSION**

Emerging economies such as India, China and other Latin-American nations have undergone institutional reforms in the last few decades from primarily a state-owned and state-controlled economies to market-oriented economies (Li & Nair, 2007). Yet, prior research on this transition is limited to examining the impact of contemporaneous institutional changes on EM

firms (Chari, & Banalieva, 2015; Cuervo-Cazurra, & Dau, 2009; Popli *et al.*, 2017), with very scarce attention to the influence of history or pre-liberalized phase of these economies post this transition. To redress this oversight, we in this paper, examine the impact of history on firm performance. Using the theoretical lens of imprinting (Marquis, 2003; Stinchcombe, 1965), we examine the impact of degree of institutional imprinting of pre-liberalization era on the persistence of superior performance in the post-liberalization era. Further, we analyze the impact of contextual factors which may mitigate the effect of imprinting on this base-line relationship between imprinting and persistence of superior performance. In the context of Indian manufacturing sector, we theorize and find empirical support for our theoretical arguments in a large dataset consisting of an unbalanced panel data of 18,202 firm year observations.

Prior to 1991, the Indian business context was primarily a state-controlled economy. During this period, any major business decision such as venturing into new products and or markets, procurement of raw materials, import of goods or technology, increase in production output, distribution of final goods, and virtually every aspect of business investment was under the control of state through various government agencies (Bhagwati, 1993; Majumdar, 2004; Lal, 1999). Literature has argued that such a controlled and protectionist policy regime engendered incumbent firms which failed to develop any competency related to production efficiency, supply chain management, new product development or innovation. However, the negative impact of these competitive limitations was not realized until 1991 when the Indian government, in order to overcome the balance of payment crisis, liberalized the economy with sweeping changes. These reforms led to a hyper-competition business environment due to the arrival of global multinational players with much better technological, managerial, financial and other resources (Majumdar & Bhattacharjee, 2014; Panagariya, 2008; Popli & Sinha, 2014).

We believe that this transition in the Indian context presents a perfect laboratory-setup to test the role of regulatory punctuation in the EM context. In the strategic management literature on EMs, while the empirical influence of liberalization era on firm-level outcomes is well recognized (Chari & David, 2012; Chari, & Banalieva, 2015; Dau, 2013; Popli *et al.*, 2017), however, we find that the impact of pre-liberalized era has not received much attention. To that end, in this paper, we use the theoretical underpinning of the imprinting theory (Stinchcombe, 1965) to develop a conceptual model for the impact of degree of institutional imprinting during the pre-liberalization stage on the persistence of superior performance in the post-liberalization era.

Stinchcombe (1965) postulates that organizations are imprinted by the prevailing institutional environment at their birth and during the formative years. We argue that competitive limitations engendered in the pre-liberalization era do not fade away and they persist to drag the performance even as the economic policies make a discontinuous and radical shift towards a market-based economy. Extant literature argues that a command and control regime economy in India resulted in divergence of resources in rent-seeking activities and constrained business initiatives by incumbent firms (Haksar, 1993; Majumdar & Bhattacharjee, 2013). Therefore, firms developed capabilities only in managing political economy rather than developing endogenous capabilities to manage a market economy (Das, 2002). Accordingly, we hypothesize and find support that degree of imprinting would engender competitive limitations leading to costs in adapting to the changed environment (Perez-Batres & Eden, 2008) and could even result in erosion of superior performance in the post-liberalization phase.

Our study makes two key contributions: First, we contribute to the literature on EM firms by incorporating the impact of history on the performance of EM firms. Complementing the research examining the impact of pro-market reforms on EM firms, we take a step further to incorporate the impact of the length of exposure of the closed era on the performance of the



incumbent firms. Prior work has dwelled on various theoretical arguments such as the industrial organization, institutions-based view, transaction costs economics and agency theory arguments (Chari & David, 2012; Cuervo-Cazurra, & Dau, 2009; Kim, Kim, & Hoskisson, 2010; Park, Li, & Tse, 2006) to examine the performance impact in the post-liberalization era. Building on the imprinting hypothesis, the evidence we provide, advances the notion that in the post-liberalization stage of EM context, multiple factors act concurrently, and a rich assortment of theoretical approaches is required to understand this phenomenon. By investigating the impact of institutional imprinting on firm performance, we complement the imprinting literature in the EM context which has hitherto looked at innovation (Maksimov *et al.*, 2017), board composition (Wei, 2017), competitive aspirations (Shinkle, & Kriauciunas, 2012), CEO and individual's imprinting (Banalieva *et al.*, 2017; Chen, Chittoor, & Vissa, 2015), and political appointments (Wang *et al.*, 2018).

Second, we also examine the moderating role of the contextual factors that could weaken the relationship between degree of imprinting and persistence of firm performance. We hypothesize and find support that publicly listed firms are less impacted by imprinting, as compared to private firms. Publicly listed firms, due to their capital market involvement, are more inclined to change their old routines and augment their capabilities during the shift towards market-based economy (Filatotchev & Bishop, 2002; Judge *et al.*, 2015). So, as compared to non-listed firms, public firms may overcome their competitive limitations faster and prevent erosion of their superior performance. Furthermore, we examine the role of a firm's internationalization and argue that by exporting and managing international operations, incumbent firms may get access to knowledge and capabilities (Salomon & Shaver, 2005) which can mitigate the impact of institutional imprints and prevent the erosion of superior profits. Thus, examination of these boundary conditions allows us to answer recent calls in the

literature to focus on the imprint life cycle and find out the factors responsible for the amplification or decay of the initial imprints (Marquis & Tilcsik, 2013; Simsek *et al.*).

### **Limitations and Scope for Further Research**

Our study has limitations that pave the way for future research. Though we focus on a large sample of Indian firms, however there may be a considerable variation among EMs (Hoskisson, Wright, Filatotchev, & Peng, 2013). Thus, future studies may examine the role of imprinting on sustainability of superior profits in other transition economies and help to generalize our findings. Future research may also address the moderating role of macro level factors such as industry competition or foreign competition, role of the micro-foundations of the managers of the incumbent firms such as whether CEO belongs to pre or a post-reform generation (Chen *et al.*, 2015). Also, beyond the performance metrics, research can also examine the impact of institutional imprinting on other firm level outcomes such as innovation and internationalization. Finally, case studies may be conducted to understand the process of imprinting and managerial decision making around change processes.

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**Table 1: Descriptive statistics: Means, minimum and maximum values, standard deviations and correlations**

	1	2	3	4	5	6	7	8	9	10	11
Return on assets $t$	1										
Degree of imprinting	-0.009	1									
Firm Size	0.059***	0.166***	1								
R&D intensity	0.051***	0.032***	0.129***	1							
Marketing intensity	0.011	0.055***	0.093***	0.080***	1						
Leverage ratio	-0.131***	-0.066***	-0.014*	-0.063***	-0.037***	1					
Internationalization	0.070***	-0.105***	0.112***	0.034***	0.01	-0.063***	1				
Current ratio	0.016**	-0.118***	-0.044***	-0.027***	-0.041***	0.016**	0.212***	1			
Free cash flow	-0.022***	-0.011	-0.176***	-0.003	-0.022***	0.015**	-0.029***	0.002	1		
Business group affiliation	0.065***	0.185***	0.398***	0.072***	0.059***	-0.024***	-0.055***	-0.100***	-0.047***	1	
Listing status	-0.032***	-0.096***	0.323***	0.035***	0.008	0.051***	0.034***	0.027***	-0.070***	0.144***	1
Mean	0.049	0.159	5.915	0.001	0.019	0.373	12.188	3.648	3.959	0.439	0.681
SD	0.078	0.152	1.526	0.006	0.029	0.258	22.534	4.458	26.598	0.496	0.466
Min	-0.586	0.008	-0.511	0	0	0	0	0.015	-1.637	0	0
Max	0.485	0.868	10.807	0.189	0.324	4.897	98.253	69	460.532	1	1

*N* = 18202\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 2: Results of auto regressive model. DV = ROA<sub>t</sub>**

	Model 1	Model 2	Model 3	Model 4
Constant	-0.0059 (0.006)	-0.0069 (0.006)	-0.0035 (0.007)	-0.0064 (0.006)
Return on assets <sub>t-1</sub>	0.5595**** (0.009)	0.5797**** (0.012)	0.5883**** (0.022)	0.5749**** (0.014)
R&D intensity	0.0900 (0.090)	0.0915 (0.090)	0.0932 (0.090)	0.0893 (0.090)
Marketing intensity	-0.0124 (0.018)	-0.0130 (0.018)	-0.0145 (0.018)	-0.0139 (0.018)
Leverage ratio	-0.0252**** (0.002)	-0.0254**** (0.002)	-0.0253**** (0.002)	-0.0250**** (0.002)
Internationalization	0.0001**** (0.000)	0.0001**** (0.000)	0.0001**** (0.000)	0.0001 (0.000)
Current ratio	-0.0002* (0.000)	-0.0002* (0.000)	-0.0002 (0.000)	-0.0002* (0.000)
Free cash flow	-0.0000 (0.000)	-0.0000 (0.000)	-0.0000 (0.000)	-0.0000 (0.000)
Business group affiliation	0.0045**** (0.001)	0.0045**** (0.001)	0.0045**** (0.001)	0.0046**** (0.001)
Listing status	-0.0045**** (0.001)	-0.0044**** (0.001)	-0.0078*** (0.003)	-0.0043**** (0.001)
Firm size	0.0035**** (0.000)	0.0034**** (0.000)	0.0033**** (0.000)	0.0035**** (0.000)
Degree of imprinting	-0.0112*** (0.004)	-0.0029 (0.005)	-0.0105 (0.009)	-0.0037 (0.006)
Degree of imprinting x Return on assets <sub>t-1</sub> (H1)		-0.1267** (0.056)	-0.2633*** (0.092)	-0.1658*** (0.062)
Return on assets <sub>t-1</sub> x Listing Status			-0.0148 (0.026)	
Degree of imprinting x Listing Status			0.0115 (0.011)	
Degree of imprinting x Return on assets <sub>t-1</sub> x Listing Status (H2)			0.2312** (0.116)	
Return on assets t-1 x Internationalization				0.0001 (0.000)
Degree of Imprinting x Internationalization				-0.0001 (0.000)
Degree of imprinting x Return on assets t-1 x Internationalization (H3)				0.0068** (0.003)
Year Fixed Effects	Yes	Yes	Yes	Yes

Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	18,202	18,202	18,202	18,202
R-squared	0.214	0.214	0.215	0.215
Adjusted R squared	0.212	0.212	0.213	0.212
F statistic	100.8****	98.86****	93.71****	93.55****

Unstandardized coefficients are reported, and standard errors are reported in parentheses.

\*\*\*\* p<0.001, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 3: Results of robustness check. DV = ROA<sub>t</sub>**

	Model 1	Model 2	Model 3	Model 4
Constant	0.0057 (0.006)	0.0043 (0.006)	0.0250**** (0.007)	0.0301**** (0.007)
Return on assets <sub>t-1</sub>	0.5552**** (0.009)	0.5783**** (0.012)	0.6029**** (0.022)	0.5663**** (0.014)
R&D intensity	0.1552* (0.090)	0.1560* (0.090)	0.0952 (0.090)	0.0371 (0.090)
Marketing intensity	-0.0053 (0.018)	-0.0060 (0.018)	-0.0150 (0.018)	-0.0535*** (0.018)
Leverage ratio	-0.0248**** (0.002)	-0.0251**** (0.002)	-0.0273**** (0.002)	-0.0215**** (0.002)
Internationalization	0.0001**** (0.000)	0.0001**** (0.000)	0.0001**** (0.000)	0.0000 (0.000)
Current ratio	-0.0002* (0.000)	-0.0002* (0.000)	-0.0003*** (0.000)	-0.0003** (0.000)
Free cash flow	-0.0001*** (0.000)	-0.0001*** (0.000)	-0.0000 (0.000)	-0.0000 (0.000)
Business group affiliation	0.0082**** (0.001)	0.0081**** (0.001)	0.0046**** (0.001)	0.0051**** (0.001)
Listing status	-0.0009 (0.001)	-0.0008 (0.001)	-0.0090**** (0.003)	-0.0056**** (0.001)
Degree of imprinting	-0.0000 (0.000)	0.0000 (0.000)	-0.0103 (0.008)	-0.0034 (0.005)
Degree of imprinting x Return on assets <sub>t-1</sub> (H1)		-0.0011*** (0.000)	-0.2140*** (0.080)	-0.1344** (0.054)
Return on assets <sub>t-1</sub> x Listing Status			-0.0160 (0.026)	
Degree of imprinting x Listing Status			0.0119 (0.009)	
Degree of imprinting x Return on assets <sub>t-1</sub> x Listing Status (H2)			0.1754* (0.100)	
IMR_1			-0.0219**** (0.002)	
Return on assets t-1 x Internationalization				0.0001 (0.000)
Degree of Imprinting x Internationalization				-0.0001 (0.000)
Degree of imprinting x Return on assets t-1 x Internationalization (H3)				0.0060** (0.003)
IMR_2				-0.0184****



				(0.002)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	18,202	18,202	18,202	18,202
R-squared	0.211	0.211	0.217	0.217
Adjusted R squared	0.209	0.209	0.215	0.214
F statistic	101.1****	99.24****	94.87****	94.76****

Unstandardized coefficients are reported, and standard errors are reported in parentheses. IMR\_1 and IMR\_2 are inverse mills ratios generated from the first stage of Heckman's two-stage estimation process to correct for selection bias arising from our moderating variables of listing status and internationalization respectively.

\*\*\*\* p<0.001, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Figure 1: Conceptual Model

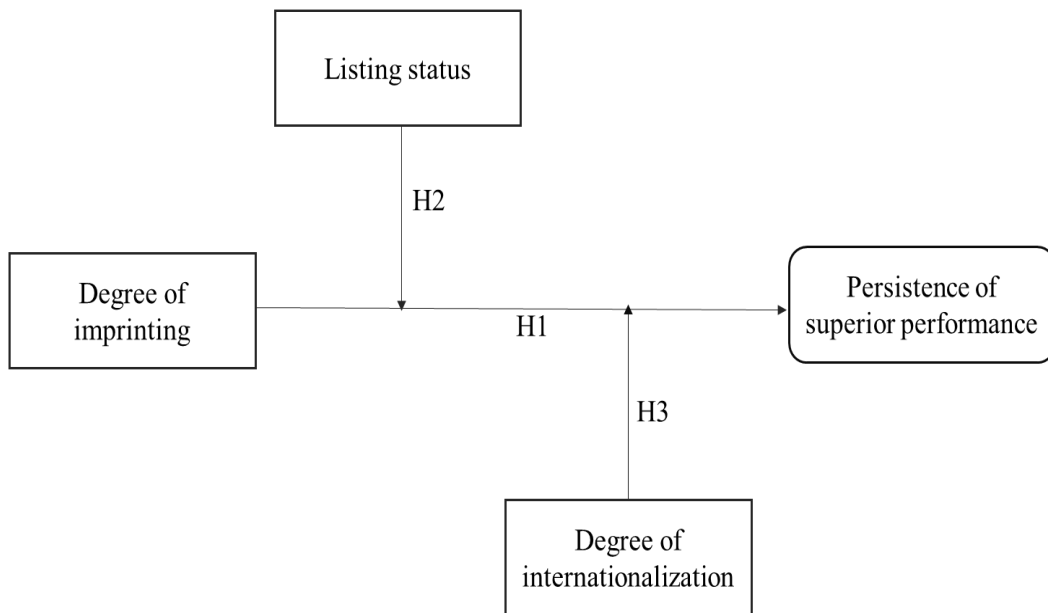


Figure 2: Impact of degree of imprinting on sustainability of superior performance (H1)

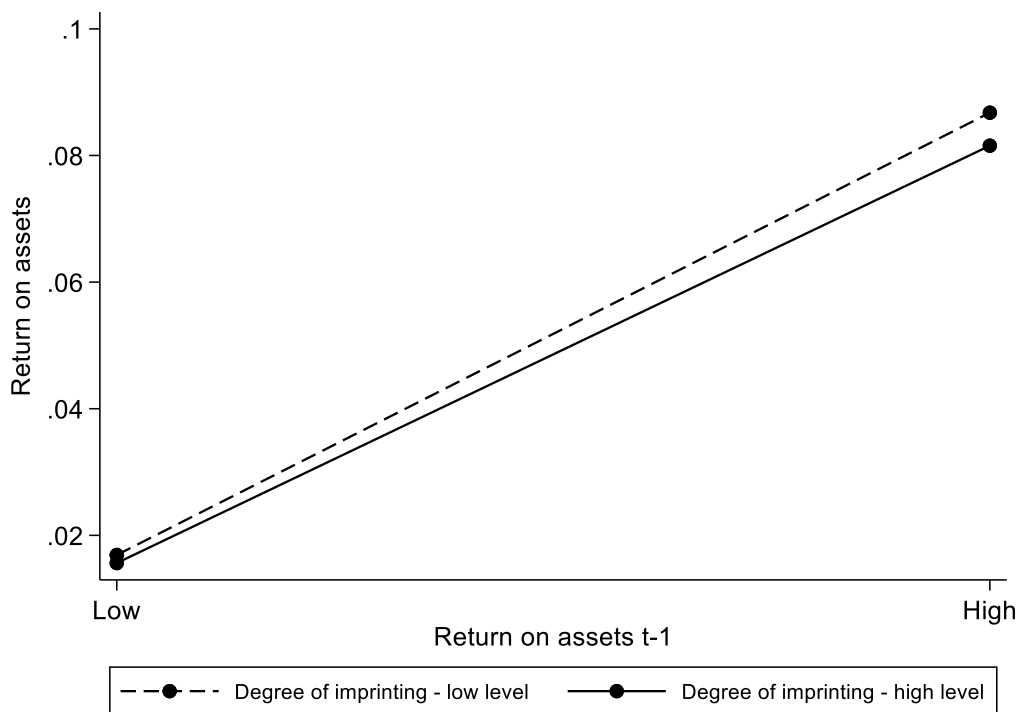


Figure 3: Impact of firm's listing status on the relationship between degree of imprinting and sustainability of superior performance (H2)

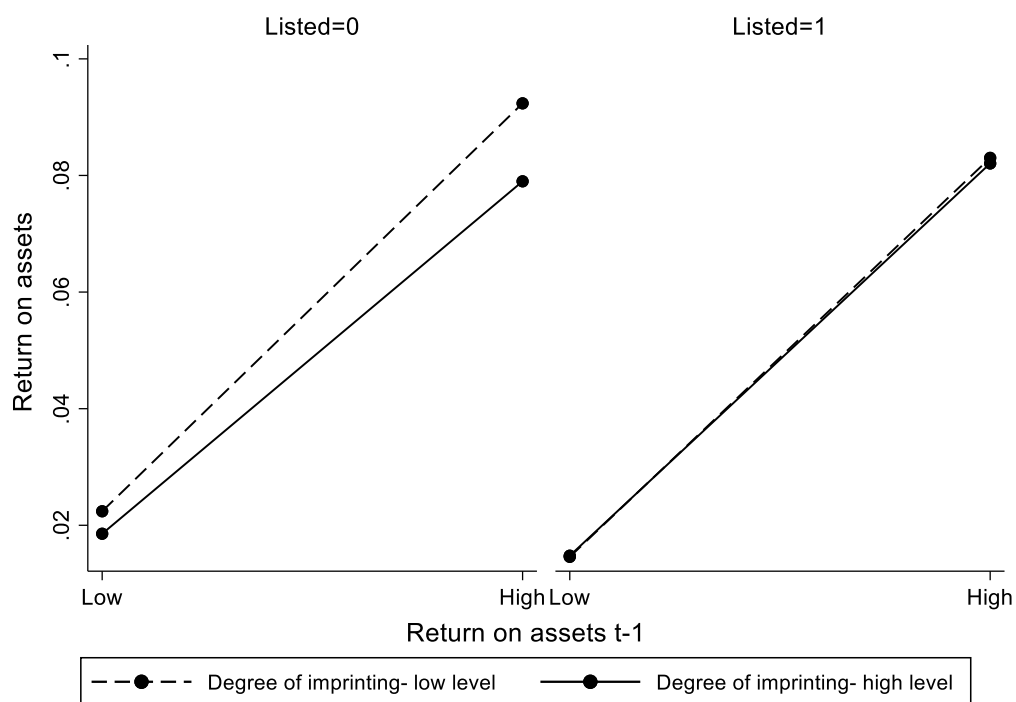


Figure 4a: Impact of firm's internationalization (lower quartile) on the relationship between degree of imprinting and sustainability of superior performance (H3)

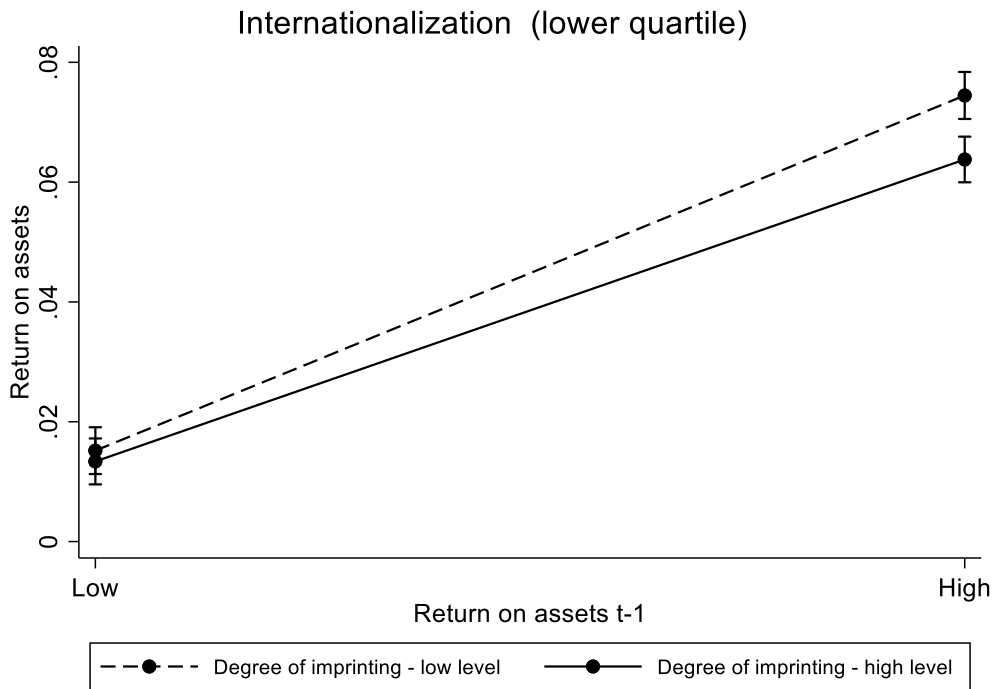


Figure 4b: Impact of firm's internationalization (upper quartile) on the relationship between degree of imprinting and sustainability of superior performance (H3)

