SUSTAINING SUPERIOR PERFORMANCE IN AN EMERGING ECONOMY: AN EMPIRICAL TEST IN THE INDIAN CONTEXT

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Running head: Research Notes and Commentaries.

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Abstract

We demonstrate a negative relationship between pro-market reforms and the sustainability of superior profits in an emerging economy. The decline in sustainability of superior profits shows that pro-market reforms bring significant threats in addition to the various opportunities such as greater availability of production factors and greater freedom to enter and operate businesses highlighted in the extant literature. Our study thus contributes to a more complete conceptual understanding of the performance consequences of pro-market reforms in emerging economies. We also show that investment in R&D and greater investments in marketing and advertising are firm level resources that provide a measure of protection against the erosion in sustainability of superior profits associated with pro-market reforms.

Introduction

Emerging economies have initiated pro-market reforms to transition their economies from closed socialistic systems to open market based systems (Hoskisson *et al.*, 2000). The reforms are enacted through changes in laws and regulations to improve the functioning of product and factor markets, including liberalization of product market entry, strengthening of shareholder and creditor protections, and liberalization of labor laws (Cuervo-Cazurra and Dau, 2009a; Khanna and Palepu, 2000a; Melo et al., 1996; Panagaria, 2008; Ramamurti, 2000). Because they present a historic opportunity to study the effects of fundamental changes in country contexts, pro-market reforms have attracted considerable scholarly attention (Peng, 2003).

Extant research has highlighted a number of opportunities that arise in emerging economies following reform initiation. For example, following liberalization of entry into product markets, both local and foreign firms gain greater freedom to enter and operate businesses (Kale and Anand, 2006; Mujumdar, 2008; Piramal, 1996). The rollback of direct state participation in the economies through privatization opens up markets that were previously closed to private sector firms (Panagaria, 2008; Ramamurti, 2000). These liberalization measures provide firms with growth opportunities, including greater access to large swaths of middle class customers in emerging economies (Khanna and Palepu, 2006; Prahalad and Lieberthal, 2003). Similarly, strengthening shareholder protection increases access to capital in the economy at reduced prices (La Porta *et al.*, 1997). Further, the influx of competitors following reforms enables better comparison of managerial behavior by market participants, raising productivity and efficiency which in turn can contribute to greater firm profits (Cuervo-Cazurra and Dau, 2009a).

Unlike the emphasis on opportunities following reform initiation in the extant literature, we argue that the reform process also brings threats in the form of greater competition, with implications for firm performance that require further investigation. Specifically, while liberalization of entry indeed provides greater opportunities for incumbents to enter and exploit

previously closed and less accessible markets, these opportunities can also be exploited by their current rivals and potential entrants. Similarly, while the strengthening of shareholder and creditor protections provides the opportunity of greater access to production factors at lower prices, the opportunity is available not only to incumbents but also to their current rivals and potential entrants. Therefore, while the reform process does indeed create opportunities that can lead to greater profits as highlighted in the extant literature (Cuervo-Cazurra and Dau, 2009a), it also strengthens competition in the economy, which we argue leads to a decline in the sustainability of superior profits[1]. A decline in the sustainability of superior profits is important because, as Porter (1991:96) notes, a firm's success is manifested in attaining 'superior and sustainable financial performance.'

Rather than a onetime event, pro-market reforms are a process that unfolds over time. Reforms are initiated with a set of changes in laws and regulations aimed at strengthening markets, which are subsequently reinforced with more changes that further strengthen the functioning of markets as the reform process progresses (Ramamurti, 2000). The extent of pro-market reforms in a country thus increases as the reform process unfolds over time. We exploit differences in the extent of pro-market reforms as the reform process has unfolded in one large emerging economy, India, to test the relationship between pro-market reforms and sustainability of superior profits. Using firm level data we demonstrate a negative relationship between pro-market reforms and sustainability of superior profits, such that greater pro-market reforms are associated with lower sustainability of superior profits. By drawing attention to the adverse effect on sustainability of superior profits, we bring greater balance to the literature on emerging economies which highlights various opportunities arising from the reform process. Our study also makes a related contribution by identifying firm level resources that provide a measure of protection against the decline in sustainability of superior profits.

[1] We define sustainability of superior profits as the ability of firms to sustain financial performance that is above the industry norm across time periods. We use the terms superior performance and superior profits interchangeably.

Pro-market Reforms in Emerging Economies and in India

Pro-market reforms in emerging economies are a *process* with an initial set of changes in laws and regulations to strengthen the functioning of markets followed by subsequent changes that reinforce the original changes (Ahluwalia, 2002; Fischer and Gelb, 1991; Kornai, 1986; Panagaria, 2008; Ramamurti, 2000). The initial set of changes in laws and regulations are broad ranging and sufficiently important to signal a clear departure from prior economic policies, and hence serve as a clear and identifiable start or initiation of the reform process. As argued by Ramamurti (2000), the move away from socialistic systems toward privatization, or market oriented economic activity, has strong political implications and is therefore pursued cautiously. Governments pursue the transformation gradually with favorable feedback from the first round of decisions strengthening their commitment to further movement along the reform path as favorable outcomes reduce doubts and resistance from vested interests and other forces opposed to reforms (Ramamurti, 2000).

In 1991 the Indian government initiated pro-market reforms with the implementation of a new pro-market industrial policy which abolished the need for licenses for entry and expansion of domestic firms, liberalized entry for foreign firms, and sought to strengthen the capital market (GOI, 1991). The initial set of changes were economy wide and initiated a fundamental shift towards a market based economy away from the previously closed and highly government controlled system (Panagaria, 2008). In addition, underscoring the government's intent for the changes to be part of a process that will continue, the new industrial policy declared that the

> 'Government will continue to pursue a sound policy framework encompassing encouragement of entrepreneurship, development of indigenous technology through investment in research and development, bringing in new technology, dismantling of the regulatory system, development of capital markets and increasing competitiveness for the benefit of the common man' (GOI, 1991:2).

Consistent with the Government's declaration of intent and the theoretical conceptualization of reforms as a process that unfolds over time, the reform process in India has been ongoing since its initiation in 1991. Each new set of changes in laws and regulations have

progressively reinforced the previous changes aimed at strengthening the functioning of markets (Ahluwalia, 2002; Panagaria, 2008). The extent of pro-market reforms therefore has increased as the reform process has progressed in India.

Reforms and the Sustainability of Superior Profits

How firms sustain superior profits is a fundamental question in strategic management (McGahan and Porter, 2003; Rumelt et al., 1994). Sustaining superior profits is thought to be difficult because competition will erode the profits (Ghemawat, 1986). Competition, along with its corrosive effect on sustainability of superior profits, is therefore central to all traditions of strategic management theory, including the industrial organization (IO) tradition and the resource based view (RBV). In the IO tradition, for example, competition is assumed to erode superior profits to the extent industry structure attributes such as entry barriers do not dampen competition (Porter, 1979). In the RBV, competitor efforts at imitating or substituting resources that yield superior profits erode sustainability of the superior profits unless the resources are isolated from such efforts and kept rare (Barney, 1991; Rumelt, 1998). Since greater competition implies greater efforts to imitate and substitute superior profit yielding resources, the extent to which resources remains rare, contributing to sustainability of superior profits, depends on the level of competition as well as on factors that isolate the resources from imitation and substitution (Peteraf, 1993).

Both the IO tradition and RBV emerged in developed country contexts, and the institution based view of strategy holds that their application to other country markets may need to recognize differences across country contexts (Peng et al., 2009; Peng et al., 2008). For example, a country's laws and regulations on trade and foreign investments can also dampen competition, in addition to other entry barriers typically recognized in the IO tradition (Peng et al., 2008). Similarly RBV originated in developed country contexts where competitive markets are fairly ubiquitous. Competitive markets, however, cannot be assumed in all countries, particularly in developing countries, because formal laws and regulations may severely constrain

or even preclude competition (Peng, 2003:277). In country contexts with negligible competition, because of fewer and less intense efforts by competitors to imitate and substitute resources that yield superior profits, many or all firm resources that produce superior profits may remain rare and help sustain the profits (Brouthers et al., 2008). In contexts with greater competition, however, because of greater and more intense efforts by competitors to imitate and substitute resources that yield superior profits, at least some of these resources would cease to be rare and therefore insufficient to sustain superior profits; sustainability of superior profits would consequently be lower (Brouthers et al., 2008). The institution based view therefore emphasizes that laws and regulations that promote competition can influence sustainability of superior profits for firms in an economy. Consistent with the institution based view, cross country studies have found some evidence that persistence (i.e., sustainability) of abnormal profits differs across country contexts (Chacar and Vissa, 2005; Mueller, 1990; Yamawaki, 1989) and is lower when laws and regulations in a country promote greater competition (Chacar et al., 2010).

Building on the theoretical arguments reviewed above, we propose that by changing laws and regulations to improve the functioning of product, labor, and capital markets, pro-market reforms increase competition in the economy and thereby results in lower sustainability of superior profits. Specifically, in product markets, liberalization of firm entry causes a concomitant increase in the actual entry, and the threat of entry, of firms into industries (Mujumdar, 2008). The influx of new entrants increases competition in the industry as more firms compete for customers (Porter, 1979). The influx of new entrants also increases the intensity of competition as greater numbers of competitors facilitate comparison of managerial effort and consequently the design and use of more effective incentives to reward superior performers and remove poorly performing managers (Hart, 1983; Nicodeme and Sauner-Leroy, 2004). In addition to the actual entry of firms, increase in the threat of entry also increases competition as firms respond to the threat by lowering prices (Geroski, 1990).

In the labor market, labor regulations including severance laws and restrictions on using temporary workers raise the costs of hiring and firing employees. These restrictions in turn

inhibit the expansion and contraction of firms, entrepreneurship, and the pursuit of risky but innovative strategies, all of which limit competitive pressures in the economy (Baughn et al., 2008; Saint-Paul, 1997; Tybout, 2000). Simulation studies have shown that greater costs of adjusting the labor force imposed by labor restrictions 'raise the degree of persistence' in firms' market shares and profits (Tybout, 2000:21). Liberalization of labor regulations, consequently, would raise competitive pressures in the economy by enabling incumbents to restructure their labor force to challenge superior performers, by increasing entrepreneurship, and by facilitating new entrants as well as incumbents to challenge superior performers using innovative strategies.

Changes in laws and regulations to better protect the rights of shareholders and creditors broaden and deepen the equity and debt markets resulting in increased access to capital at reduced prices (Galindo and Micco, 2004; La Porta *et al.*, 1997). Greater access to capital facilitates entrepreneurs with ideas for superior products or processes to start and operate businesses and thereby increases competition.

Pro-market reform measures in both product markets and factor markets, therefore, increase the level of competition in an economy. Theoretical arguments from both the industrial organization tradition and the resource based view, as well as arguments from the institution based view of strategy, indicate a negative relationship between the extent of competition and sustainability of superior profits. We therefore hypothesize the following.

Hypothesis 1: Pro-market reforms are negatively related to the sustainability of superior profits, with greater reforms associated with lower sustainability.

Firm Resources that Protect Superior Profits in the Changing Context

Even as greater competition associated with pro-market reforms lowers sustainability for firms in general, some firms may possess resources that are inimitable and non-substitutable which isolate and protect their superior profits (Barney, 1991; Rumelt, 1998). Identifying these resources is critical to develop effective strategies for the changing competitive context of emerging economies (Hoskisson et al., 2000). We examine two relationship based resources,

namely business group affiliation and foreign firm affiliation, and two market based resources, R&D and marketing and advertising, as potential resources that protect against the decline in sustainability of superior profits.

Business groups are collections of 'firms in a wide range of industries, with significant amount of common ownership and control, usually by a family' (Khanna and Palepu, 2000b: 867). Business group affiliation provided advantageous access to production factors through internal markets that were difficult for non-business group affiliates to match or substitute through the underdeveloped external markets before reform initiation (Khanna and Palepu, 2000b). Following reform initiation, non business group affiliates gain greater access to production factors through the evolving external markets resulting in an erosion of the performance advantages to internal markets within business groups (Hoskisson et al., 2000). Reforms, on the other hand, also bring some new advantages. Because of their traditionally dominant positions in the economy, for example, business groups have benefited the most from reform measures granting access to foreign capital (Khanna and Palepu, 2000b; Manos et al., 2007). Their dominant positions also enable business groups to buffer their affiliates from uncertainties associated with the reform process (Toulan and Guillen, 1997). Consistent with the declining value of internal markets, Lee *et al.* (2008) found that the value premium enjoyed by affiliates of conglomerate business groups eroded following reforms and eventually turned negative as markets evolved in Korea. Research on India indicate that Indian business groups have actively restructured by divesting unrelated businesses and strengthening their core businesses following reforms (Ghemawat and Khanna, 1998). Moreover, Indian business groups have taken advantage of reforms to upgrade the technologies and strengthen the competitiveness of their affiliates (Khanna and Palepu, 1999; Piramal, 1996). Indian business groups thus appear to have positioned themselves to minimize the negative effects of reforms even as they leverage their new advantages. Based on the above, we expect the advantages of business group affiliation to continue, and provide a measure of defense against the erosion of sustainability brought on by the reform process.

Hypothesis 2: The negative association between reforms and sustainability of superior profits will be weaker for business group affiliates.

Emerging economy subsidiaries of foreign firms (i.e., foreign firm affiliates) had access to tangible and intangible resources of the foreign firm as a whole which provided advantages that were not easily matched or substituted by domestic firms prior to reform initiation (Khanna and Palepu, 2006). Similar to business group affiliation, reforms erode some advantages to foreign firm affiliation while providing new advantages. Specifically, advantages in access to capital and other tangible production factors erode as the evolution of local markets provide domestic firms with better access to these resources. In contrast, liberalization of foreign firm ownership has enabled foreign firms to convert their emerging economy operations from partially owned to wholly owned subsidiaries, which in turn increases the foreign firm affiliates' access to the intangible resources of the entire foreign firm (Kale and Anand, 2006; Kogut and Zander, 1993). Since intangible resources, such as experience with operating in multiple country markets, are less likely to be imitated than tangible resources (Barney, 1991), we expect the advantages of foreign firm affiliation to continue and provide a measure of defense against the erosion of sustainability brought about by the reform process.

Hypothesis 3: The negative association between reforms and sustainability of superior profits will be weaker for foreign firm affiliates.

R&D investments facilitate the development of technological innovations and innovation capabilities (Roberts, 1999). Imitation of technological innovations can be prevented through the patent system. While firms can and do invent around patents of a competitor, patents often make such attempts difficult and risky (Reitzig et al., 2007). These arguments suggest that investments in R&D would enhance sustainability of superior profits and this relationship has been empirically tested and found significant in developed countries (Eklund and Wiberg, 2008).

There are, however, some differences in emerging economies. Specifically, intellectual property (IP) protection regimes in emerging economies were traditionally weak (Orozco, 2007). Reflecting weak IP protections, many emerging economy firms, including Indian firms, did not

invest in R&D. With the initiation of reforms, however, emerging economies including India have strengthened IP protection including patent protection. Empirical surveys in India show that more firms have taken to investing in R&D after reform initiation, although firms with R&D investments are still rare relative to firms in developed countries (Bowonder and Richardson, 2000; Pradhan, 2002). Given the continuing rareness of R&D investments among Indian firms, and the greater IP protection, we expect that investing in R&D will provide a measure of defense against the corrosive effect of reforms on sustainability of superior profits.

Hypothesis 4: The negative association between reforms and sustainability of superior profits will be weaker for firms investing in R&D.

Investment in marketing and advertising helps differentiate products and creates brand identify. By lowering consumer search costs, product differentiation and brand identity can build barriers to substitutability of firms' products and thereby protect superior profits from competitive erosion (Barney, 1991; Jacobsen, 1988). Empirical support for the relationship between marketing and advertising investment and sustainability of superior profits has been found in developed country contexts (Jacobsen, 1988). Although investment in marketing and advertising is more prevalent among Indian firms than investment in R&D (Ghoshal et al., 2001), the traditionally weak IP protection regime in India meant that brands and brand identities did not always enjoy protection from competitive imitation (Orozco, 2007; Wilke and Zaichkowsky, 1999). As reforms strengthen IP laws, the protection for brands and brand identities would increase creating incentives for firms to invest more in marketing and advertising (Orozco, 2007). We therefore expect that greater investments in marketing and advertising will provide a measure of protection against the erosion of sustainability stemming from the reform process.

Hypothesis 5: The negative association between reforms and sustainability of superior profits will be weaker for firms with greater investment in marketing and advertising.

Analytical Methods, Measures, and Data

We follow prior studies on persistence or sustainability of abnormal (superior and below normal) profits and use models based on the autoregressive properties of firms' profit time series (Chacar and Vissa, 2005; Choi and Wang, 2009; Mueller, 1990; Roberts, 1999; Roberts and Dowling, 2002; Waring, 1996). The basic approach is to estimate the first order autoregressive model of firm profits of the following general form.

$$FSR_{i,t} = b_0 + b_1 * FSR_{i,t-1} + e_{i,t} \qquad \text{(Model 1)}$$

$FSR_{i,t}$ in Model 1 is the firm specific returns, or firm specific profits, for firm i at time t, defined as the firm's profits minus normal profits in the industry. The coefficient of lagged firm specific returns b_1, which measures the regression relationship between firm specific returns across time periods, is the measure of sustainability. Estimates for b_1 in the literature range between zero and one, and larger values indicate greater sustainability of abnormal profits (i.e., a lower rate of decay or convergence towards the industry norm). Our interest is in superior or above normal profits. We therefore follow the approach in Roberts (1999), Roberts and Dowling (2002), and Choi and Wang (2009), and model sustainability of superior profits. The parameter b_1 in our model therefore represents sustainability of superior profits rather than sustainability of all abnormal profits. Our hypotheses relate to factors that change sustainability. We therefore modify model 1 as follows and use firm fixed effects dynamic panel regressions and Nickell's (1981) bias correction to test the hypotheses (Chacar and Vissa, 2005; Chacar *et al.*, 2010; Choi and Wang, 2009).

$$FSR_{i,t} = b_0 + b_1 * FSR_{i,t-1} + b_2 * RIndex_t + b_3 * FSR_{i,t-1} * RIndex_t + \sum_{j=1}^{J} b_{4,j} * FSR_{i,t-1} * RIndex_t * FLR_{i,t} + \sum_{k=1}^{K} b_{5,k} * FLR_{i,t} + \sum_{l=1}^{L} b_{6,l} * FLR_{i,t} * FSR_{i,t-1} + \sum_{m=1}^{M} b_{7,m} * FLR_{i,t} * RIndex_t + \sum_{c=1}^{C} b_{8,c} * Controls_{i,t} + e_{i,t} \qquad \text{(Model 2)}$$

$RIndex_t$ is the value in year t of an index that measures the extent of pro-market reforms and $FLR_{i,t}$ represents firm level resources of firm i in year t. Hypothesis 1 expects sustainability

of superior profits to be lower with greater extent of reforms, and we test this by introducing an interaction term between lagged firm specific returns and the reform index. A negative and significant coefficient b_3 for this interaction term will support the hypothesis. Hypotheses 2-5 expect firm level resources to moderate (weaken) the negative relationship between reforms and sustainability of superior profits. To test these hypotheses we introduce interaction terms involving each firm level resource variable, lagged firm specific returns, and the reform index. Positive and significant coefficients b_4 with respect to each of the four firm level resource variables, coupled with a significant and negative coefficient b_3, will lend support for hypotheses 2-5. Appropriate tests for third order interaction terms must also include lower order terms, and we therefore also include these terms in model 2 (Aiken and West, 1991). Further, following Aiken and West (1991), we mean center the variables before creating interaction terms to minimize multicollinearity. Model 2 also includes control variables for time as well as for time varying effects of firm size and industry.

Firm specific returns are measured as firms' return on assets (ROA) for the year less the industry norm ROA for the year (Chacar and Vissa, 2005; Waring, 1996)[2]. Firm specific ROA values greater than zero indicate superior firm specific profits (Roberts, 1999; Roberts and Dowling, 2002). We measure the extent of pro-market reforms using an index that tracks pro-market changes in laws and regulations governing product, capital, and labor markets. The index is described in greater detail in the appendix and is based on established measures that track liberalization of FDI regulations, tariff reductions, strengthening of IP laws, strengthening of shareholder and creditor protections, and the liberalization of labor laws and restrictions. Business group affiliation and foreign firm affiliation are indicator variables with value 1 for firms classified as affiliates of a business group and foreign firm respectively by the Center for Monitoring the Indian Economy (CMIE), and 0 otherwise (Chacar and Vissa, 2005; Khanna and Palepu, 2000b). Investment in R&D is an indicator variable with value 1 for firms reporting non-

[2] We use 3 digit NICs as our industry definition. NIC refers to the National Industrial Classification system used in India. The 3 digit NICs are roughly comparable to the 3 and 2 digit SICs in the US. We used the median ROA in the industry as the industry norm. Results do not change when the industry mean is used instead.

zero R&D expenses in the year and 0 otherwise. Greater marketing and advertising investment is measured as an indicator variable with value 1 for firms reporting marketing and advertising expenses that are greater than the industry mean in the year, and 0 otherwise. Firm size, a control variable, is measured as the ratio of firm sales to industry sales in the year (Roberts and Dowling, 2002). Industry heterogeneity, a control for industry, is an entropy measure of the sales weighted diversity of firm types (business group affiliates, foreign firms, independent firms, and state owned enterprises) in the industry in the year.

We test our hypotheses using data on manufacturing firms in the Indian economy for the entire period since reforms began in 1991, up to and including 2007. We obtained data from CMIE. The CMIE data is fairly comprehensive in its coverage of Indian firms and has been used extensively in prior research (Chari and Gupta, 2008; Khanna and Palepu, 2000b). We begin with the population of all manufacturing firms for which data is available for the years 1991--2007 (62,537 observations pertaining to 8,259 firms). While the vast majority of this data is annual, 2,929 observations were data reported for periods greater or lesser than 12 months, and we dropped these observations to ensure comparability. We also dropped 1,567 observations where return on assets were artificially high (above 50%) or artificially low (below -50%) since these observations likely involve large asset selloffs or purchases (Waring, 1996)[3]. In addition, since sustainability analyses require non-missing data for the prior time period (Roberts, 1999; Roberts and Dowling, 2002), we dropped observations that lack data for the previous year. Of the remaining 47,844 observations pertaining to 7,779 firms, since our focus is on persistence of superior profits, we dropped 22,909 observations where profits in the prior year were not above the industry norm (Choi and Wang, 2009; Roberts, 1999; Roberts and Dowling, 2002). Of the remaining observations 543 pertained to state owned enterprises (SOEs). SOEs may be insulated from competitive forces owing to government support. We therefore dropped these observations. Our final sample thus includes 24,392 observations pertaining to 5,492 firms.

[3] We also checked sensitivity to using a more conservative cutoff of +/- 75 percent, which absorbs a majority of the dropped observations back into the sample, and find that our results do not change.

Results

Table 1 shows means, standard deviations and correlations for the variables. Correlations between independent variables are low indicating no significant collinearity problems. Table 2 shows results of the hypotheses tests. Model 1 is the base model with just the control variables and lagged firm specific returns. The model has a significant F statistic and the coefficient for lagged firm specific returns is significant and positive suggesting that superior profits are sustainable for a period of time before they decay and converge towards the industry norm. In model 2 we add the reform index and its interaction with lagged firm specific returns. The coefficient of the interaction term is significant and negative indicating that greater reforms are associated with lower sustainability of superior profits. Hypothesis 1 is therefore supported.

We introduce the interaction terms involving each firm level resource variable, lagged firm specific returns, and the reform index in models 3 to 6, along with their respective lower order terms. Model 3 shows that the coefficient for the interaction between business group affiliation, lagged firm specific returns, and the reform index is not significant. Hypothesis 2, which expects business group affiliation to moderate (weaken) the negative relationship between reforms and sustainability of superior profits, is therefore not supported. The coefficient for the interaction between foreign firm affiliation, lagged firm specific returns, and the reform index, in model 4 is also not significant. Hypothesis 3, therefore, is also not supported. In contrast, the interaction between R&D, lagged firm specific returns, and the reform index is significant and positive in model 5 indicating that investment in R&D weakens the negative relationship between reforms and sustainability of superior profits. Hypothesis 4 is therefore supported. Similarly, the interaction between marketing and advertising, lagged firm specific returns, and the reform index is positive and significant in model 6. Greater investment in marketing and advertising therefore weakens the negative relationship between reforms and sustainability of superior profits, supporting hypothesis 5. Model 7 shows that the results hold when all of the hypotheses are tested together. Results for control variables are as expected, with sustainability

of superior profits being greater for larger firms and varying across industries (Roberts and Dowling, 2002; Waring, 1996).

Discussion and Conclusions

Results show that sustainability of superior profits declines with pro-market reforms. Market based resources, i.e., investment in R&D and greater investments in marketing and advertising, help protect superior profits from the decline while relationship based resources, i.e., business group affiliation and foreign firm affiliation, have no effect. The decline in sustainability of superior profits is not only statistically significant it is also substantive dropping 26 percent across the range of the reform index values. As reforms continue to progress in India, sustainability of superior profits can be expected to decline even further. The decline in sustainability of superior profits shows that pro-market reforms bring significant challenges for firms in addition to the various opportunities highlighted in extant research (e.g., Cuervo-Cazurra and Dau, 2009a). Our study thus brings greater balance to the literature on strategy in emerging economies. Our finding also provides complementary support for the institution based view of strategy. Specifically, while extant research provides some evidence that sustainability of abnormal profits differs across country contexts (Chacar and Vissa, 2005) and varies with *cross-country differences* in laws and regulations that promote competition (Chacar et al., 2010), our finding shows that sustainability of superior profits declines *within the same country* as pro-market reforms change laws and regulations to promote greater competition in the economy.

Our finding of a decline in sustainability of superior profits supports observations in the literature on the need for greater attention to strategies in emerging economies. Specifically, Peng (2003:277) observed that 'it was not long ago that competition was all but absent. Markets were closed, industries protected, and strategizing not necessary. In contrast, pervasive changes are now the striking feature, thus calling for firms to employ diverse strategies to navigate the turbulent waters…' In developing strategies for emerging economies, Hoskisson *et al.* (2000: 253, 256) urge us to identify strategies that lead to 'sustainable competitive advantage' and to

focus on understanding the relationship between firms' 'assets and the changing nature of the countries institutional infrastructure.' Our findings for firm level factors are important in this context, as these resources protect superior profits from the corrosive effect of reforms on sustainability of superior profits. Our findings show that the two market based resources, investment in R&D and greater investments in marketing and advertising provide a measure of protection against the negative effect of reforms on sustainability of superior profits, while the two relationship based resources—business group affiliation and foreign firm affiliation--do not.

Efforts by Indian business groups to restructure and upgrade the competitiveness of their affiliates observed by Khanna and Palepu (1999) and Ghemawat and Khanna (1998) appear insufficient to protect business group affiliates from the corrosive effect of reforms on sustainability of superior profits. Results for Indian business group affiliates thus are more consistent with the decline in the advantages of Korean business groups observed by Lee *et al.* (2008). Greater access to intangible resources that accompany greater foreign ownership does not appear sufficient to protect foreign firm affiliates from the reform related erosion in sustainability of superior profits. The strengthening of IP protection on the other hand appears successful, providing firms with investment in R&D and greater investments in marketing and advertising a measure of protection from the reform related decline in sustainability of superior profits. This pattern of results is consistent with Peng's (2003) observation that as markets evolve with reforms and the protection for market based assets increases, the relative value of relationship based advantages for firm performance would weaken and that of market based advantages would increase. Our findings imply that regardless of whether their businesses are independent, affiliated to business groups, or affiliated to foreign firms, managers should develop strategies using market based assets through investment in R&D and greater investments in marketing and advertising.

For policy makers, our findings show that reforms have been successful in stimulating greater competition in the economy, and have strengthened incentives for firms to develop market based assets rather than continue to draw on non-market relationships.

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Table 1: Descriptive statistics

		Mean	S.D	1	2	3	4	5	6	7	8
1	Firm Specific Return	0.05	0.08								
2	Firm Specific Return$_{t-1}$	0.07	0.07	0.54							
3	Industry Heterogeneity	0.92	0.20	0.05	0.05						
4	Firm Size	0.02	0.06	0.07	0.04	-0.23					
5	Reform Index	-0.37	2.34	0.03	0.04	-0.00	0.00				
6	Business Group Affiliation	0.37	0.48	0.02	0.00	-0.05	0.09	-0.11			
7	Foreign Firm Affiliation	0.09	0.28	0.17	0.16	0.08	0.13	-0.03	-0.23		
8	R&D	0.27	0.44	0.11	0.07	0.07	0.12	0.04	0.20	0.18	
9	Marketing and Advertising	0.31	0.46	0.04	0.03	0.00	0.04	-0.03	0.07	0.07	0.12

N=24,392. Correlations larger (smaller) than +(-) 0.01 are significant at $p<0.01$.

Table 2: Hypotheses test results

	H#	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Firm Specific Return$_{t-1}$ (FSR_{t-1}) × Reform Index	1		-0.02**	-0.02**	-0.02***	-0.03***	-0.03***	-0.04***
FSR_{t-1} × Reform Index × Business Group Affiliation	2			0.01				0.01
FSR_{t-1} × Reform Index × Foreign Firm Affiliation	3				-0.01			-0.01
FSR_{t-1} × Reform Index × R&D	4					0.02**		0.01^{+}
FSR_{t-1} × Reform Index × M&AD	5						0.02***	0.02**
Lower order terms[a]								
FSR_{t-1}		0.41***	0.44***	0.42***	0.42***	0.41***	0.42***	0.35***
Reform Index ($\times 10^{-1}$)			-0.03***	-0.03***	-0.04***	-0.03***	-0.03***	-0.04***
Business Group Affiliation × FSR_{t-1}				0.05**				0.06***
Business Group Affiliation × Reform Index				-0.00				0.00
Foreign Firm Affiliation × FSR_{t-1}					0.10***			0.11***
Foreign Firm Affiliation × Reform Index ($\times 10^{-1}$)					0.05***			0.05***
R&D						0.00		0.00
R&D × FSR_{t-1}						0.12***		0.09***
R&D × Reform Index ($\times 10^{-1}$)						0.02***		0.01^{+}
M&AD ($\times 10^{-1}$)							-0.03*	-0.03*
M&AD × FSR_{t-1}							0.05***	0.03*
M&AD × Reform Index ($\times 10^{-1}$)							0.01*	0.01^{+}
Controls[b]								
Industry Heterogeneity		0.01^{+}	0.01^{+}	0.01^{+}	0.01	0.01	0.01^{+}	0.01
Firm Size		0.12***	0.13***	0.13***	0.14***	0.13***	0.13***	0.14***
FSR_{t-1} × Industry Heterogeneity		0.23***	0.23***	0.24***	0.19***	0.18***	0.22***	0.16***
FSR_{t-1} × Firm Size		0.95***	0.97***	0.95***	0.83***	0.76***	0.93***	0.63***
Constant		0.05***	0.05***	0.05***	0.05***	0.05***	0.05***	0.05***
F		76.62***	74.43***	68.85***	70.71***	69.01***	67.86***	57.06***
Within R^2		0.1182	0.1213	0.1218	0.1247	0.1249	0.1230	0.1292

N=24,392. H# refers to hypothesis number. Results are from firm fixed effects panel regressions. [a]The direct effects of business group affiliation and foreign firm affiliation, because of their time in-varying nature, are encompassed by the firm fixed effects rather than estimated separately. [b]All models included dummy variables for each year and their interactions with FSR_{t-1} to control for time. Results for these controls are not included in the interest of brevity. R&D= variable indicating investment in research and development; M&AD= variable indicating greater investment in marketing and advertising; $^{***}p<0.001$, $^{**}p<0.01$, $^{*}p<0.05$, $^{+}p<0.10$; All two tailed tests.

Appendix: Reform Index

We track liberalization of FDI regulations, tariff reductions, and the strengthening of intellectual property protection laws, each year to measure the extent of reforms in the product market[4]. We use Agosin and Machado's (2006) measure of FDI openness, modified to increase granularity, and data on actual regulations obtained from the Indian government, to track FDI liberalization[5]. Tariff reductions are measured using the average nominal tariff rates in effect and data from the World Trade Organization. Intellectual property (IP) laws were changed in three substantial and rather equal steps executed in 1999, 2002 and 2005 to strengthen IP protection and bring them in line with international standards (EOI, 2000; Ram, 2006). We code IP protection laws as 0 for years before 1999 to reflect no changes to these laws from the pre-reform period, and 1 for 1999-2001 period, 2 for 2002-2005 period, and 3 for 2005 to the end of our sample period in 2007. We use the indices of shareholder protection and creditor protection in India, compiled by the Center for Business Research (CBR) using the relevant Indian laws and regulations, to measure reforms that strength capital markets (Armour *et al.*, 2009). We use CBR's labor regulations index for India, which measures labor market restrictions based on Indian labor laws and regulations, to track liberalization of labor markets (Armour et al., 2009). The CBR indices are available for all years up to 2005. We updated these indices for 2006 and 2007 by examining changes in each of the laws and regulations on which the indices are based. Significant liberalization in Indian labor laws and regulations have included more pro-business judicial interpretations of the laws and their liberalized enforcement (Bhattacharjea, 2006). To capture these additional aspects of labor regulations, we use a survey item from the World Competitiveness Yearbook which measures the extent to which labor laws and regulations hinder business activities in India.

[4] We considered including a measure of changes in antitrust laws. We did not include the measure because antitrust laws were changed only once at the outset of reforms with ambiguous impact on product markets. Although a new competition law was enacted in 2002, none of its substantive provisions came into effect during our sample period because of constitutional challenges to the law in the Supreme Court (Mazhuvanchery, 2010). A survey item from the world competitiveness yearbook that measures the effectiveness of antitrust legislation in preventing unfair competition also indicates very little change in the impact of antitrust provisions in India during the sample period.

[5] While Agosin and Machado (2006) use a binary code to measure the presence or absence of restrictions on FDI with respect to the approval process, ownership percentages, sectoral restrictions, and repatriation of capital, we use a wider scale to measure the extent of restrictions in each of these areas. For example, restrictions on ownership percentages are coded 0 if FDI regulations generally permit minority ownership only, 1 if majority ownership is generally permitted, and 2 if full ownership is generally permitted.

Consistent with our theory, and the Government's intent, the seven measures overall indicate greater liberalization and the strengthening of laws and regulations that improve market functioning as the reform process has progressed over time. The seven measures are substantially correlated, and we take the first principal component of the seven measures as the index of pro-market reforms. The first principle component accounts for most of the variance (78%) in the data, indicating that the index effectively captures the individual items[6]. The value of the index ranges from -4.33 to 3.07, with larger values indicating greater pro-market reforms. A check for convergent validity of our index of pro-market reforms with the index of economic freedom used to measure pro-market reforms in related research (Cuervo-Cazurra and Dau, 2009a, b), but available only from 1995 for India, shows high convergence (correlation of 0.88; $p<0.001$).

[6] In addition, we also checked robustness to using each of the measures in our analyses rather than the composite index and found that, barring CBR's labor regulations index which is not significant, all other measures yield similar results. Since reforms in labor regulations included more pro-business judicial interpretations of labor laws and their liberalized enforcement, the labor regulations index may not fully capture labor deregulation, resulting in the insignificance of this measure when used alone.