ESSAYS ON NEW PRODUCT DEVELOPMENT IN EMERGING MARKETS

A Dissertation

by

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ABSTRACT

Global firms are increasingly moving new product development (NPD) to large emerging markets, such as India and China. In my dissertation, I study two potential NPD strategies that a global firm can pursue when entering an emerging market- (1) Shifting NPD and (2) Partnering NPD. Using a uniquely compiled panel dataset, I estimate the effect of such NPD strategies on shareholder value.

In the first essay, I examine the determinants of short-term abnormal returns to a global firm's NPD shift to an emerging market using internal resources. Investment amount (relative local employee size) is not significantly related to short-term abnormal returns. However, the effect of investment amount and relative local employee size are moderated by employee quality emphasis, costs savings emphasis, development scope and prior profitability. Employee quality emphasis has a positive moderating effect on both investment amount-- and relative local employee size-- short-term abnormal return relationships. Cost savings emphasis has a positive moderating effect on the investment amount--short-term abnormal returns relationship, but no effect on relative local employee size. Development scope (prior profitability) has a positive (negative) moderating effect on the investment amount-abnormal returns relationship.

In the second essay, I investigate the determinants of the effect of NPD partnering in an emerging market on short-term abnormal returns. NPD partnering consists of a global firm engaging in NPD with a local firm through an alliance, a joint venture, or an acquisition. The findings provide actionable insights. I find that

mentioning cost savings as a reason for partnering leads to negative abnormal returns. In contrast, highlighting the quality of the partner's local employees leads to positive abnormal returns. Interestingly, the global firm's past profitability moderates these main effects in the opposite direction. Furthermore, financial leverage has a negative effect on the short-term abnormal returns to an NPD partnership announcement. That is, the greater the global firm's debt is relative to equity, the lower the abnormal returns are to the NPD partnership. However, a cost savings emphasis alleviates this negative effect.

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CHAPTER I

INTRODUCTION

In recent years, there has been a fundamental shift in the new product development (NPD) of global firms, such as Cisco Systems, Motorola, Caterpillar, and Colgate-Palmolive. These firms are increasingly moving NPD to large emerging markets, such as India and China, which offer high numbers of quality research and development (R&D) personnel, a low-cost workforce, and the ability to develop innovations for a wide global customer base.

I study two potential NPD strategies that a global firm can pursue when entering an emerging market- (1) Shifting NPD and (2) Partnering NPD. Shifting NPD results when the global firm builds out its NPD using *internal* resources (e.g., opening a new NPD center, expanding an existing NPD center, hiring specialized R&D employees in a foreign country), whereas partnering NPD results when the global firm is able to build out its NPD using *external* resources (e.g., collaborating with another firm on a new product, acquiring another firm's development team in a foreign country).

However, little is known about the effectiveness of these NPD strategies. In this dissertation, I seek to fill this void by examining both the determinants and outcomes of shifting and partnering NPD strategies in emerging markets.

In the first essay, I focus on shifting NPD and address the following research questions: (1) What are the short-term effects on shareholder value of shifting NPD to emerging markets? (2) What are the determinants of these effects? I develop a

conceptual framework and hypotheses related to these important questions and test them using a uniquely compiled dataset of 102 publically traded North American-headquartered global companies who shifted some of their NPD activities to India during 1991-2013.

I find important effects for NPD shifting to an emerging market. Investment amount (relative local employee size) is not significantly related to short-term abnormal returns. However, the effect of investment amount and relative local employee size are moderated by employee quality emphasis, costs savings emphasis, development scope and prior profitability. Employee quality emphasis has a positive moderating effect on both investment amount-- and relative local employee size-- short-term abnormal return relationships. Cost savings emphasis has a positive moderating effect on the investment amount--short-term abnormal returns relationship, but no effect on relative local employee size. Development scope (prior profitability) has a positive (negative) moderating effect on the investment amount-abnormal return relationship.

In the second essay, I examine partnering NPD and address the following research questions: (1) What are the short-term effects on shareholder value of partnering NPD in emerging markets? (2) What are the determinants of these effects? I develop a conceptual framework and hypotheses related to these important questions and test them using a uniquely compiled dataset of 91 publically traded North American-headquartered global companies who utilized partnering NPD as an NPD strategy in India during 1991-2013.

I find important effects regarding partnering NPD in an emerging market. While many global firms partner with emerging market firms on NPD to save costs, I find that mentioning cost savings as a reason for partnering boomerangs on the firm as it leads to negative abnormal returns. In contrast, highlighting the quality of the partner's local employees leads to positive abnormal returns. Yet many global firms hesitate to highlight an emerging market partner firm's employee quality due to product quality dilution fears. Interestingly, the global firm's past profitability moderates these main effects in the opposite direction. Furthermore, financial leverage has a negative effect on the short-term abnormal returns to an NPD partnership announcement. That is, the greater the global firm's debt is relative to equity, the lower the abnormal returns are to the NPD partnership. However, a cost savings emphasis alleviates this negative effect, suggesting some silver lining associated with a cost savings emphasis. These interesting findings provide actionable insights and will help managers better manage the impact of moving their NPD to emerging markets on shareholder value.

CHAPTER II

IMPACT OF SHIFTING NEW PRODUCT DEVELOPMENT TO EMERGING MARKETS ON SHAREHOLDER VALUE

In recent years, there has been a fundamental shift in how global firms, such as Cisco Systems, Motorola, Caterpillar, and Colgate-Palmolive, organize new product development (NPD) across geographical locations. These firms are increasingly shifting NPD to large emerging markets, such as India and China, which offer high numbers of quality research and development (R&D) personnel, a low-cost workforce, and the ability to develop innovations for a wide global customer base. However, little is known about the effectiveness of shifting NPD (e.g., opening a new NPD center, expanding an existing NPD center, hiring specialized R&D employees in a foreign country). What are the short-term effects on shareholder value of shifting NPD to emerging markets? What are the determinants of these effects? I develop a conceptual framework and hypotheses related to these important questions and test them using a uniquely compiled dataset of 348 announcements of 102 publically traded North American-headquartered global companies who shifted some of their NPD activities to India during 1991-2013. Specifically, I examine the impact of providing information on the number of local employees (relative local employee size) and providing NPD investment amounts (investment amount) and their relevant interactions on shareholder value.

My analysis reveals important insights. The results show important asymmetries regarding the impact of an emerging market shift of NPD on shareholder value.

Investment amount (relative local employee size) is not significantly related to short-term abnormal returns. However, the effect of investment amount and relative local employee size on shareholder value are moderated by employee quality emphasis, costs savings emphasis, development scope and prior profitability. Employee quality emphasis has a positive moderating effect on both investment amount short-term abnormal returns, and relative local employee size and short-term abnormal returns. Cost savings emphasis has a positive moderating effect on the relationship between investment amount and short-term abnormal returns, but no effect on the relationship between relative local employee size and short-term abnormal returns. Development scope (prior profitability) has a positive (negative) moderating effect on the investment amount-abnormal returns relationship.

INTRODUCTION

Global firms rely heavily on innovation for growth and survival. A key component of a firm's innovation strategy is organization of new product development (NPD) across geographical locations. Increasingly, global firms are facing the challenge of building and managing their innovations in different countries, including developed and emerging markets.

Although developed markets have been the mainstay of global firms' business and NPD, emerging markets are projected to contribute to a vast majority of a firm's future growth (Prahalad and Hammond 2002). By 2025, emerging markets are projected to contribute $30 trillion worth of business and 70% of global business growth (Atsmon

et al. 2012). In 2010, the middle class consisted of 20% of the world population; by 2020, this number is expected to double to 40% (Bisson, Kirkland, and Stephenson 2010). Emerging markets, such as China and India, are also becoming increasingly attractive destinations for NPD work, such as design, research and development (R&D), and engineering (Lewin, Massini, and Peeters 2009; Subramaniam and Venkatraman 2001). Furthermore, innovations developed in emerging markets for mainstream local customers are being leveraged for use in developed markets---a process termed "reverse innovation" (Govindarajan and Ramamurti 2011). For example, Levi's initially introduced into emerging markets, Denizen Jeans, a low price alternative to their developed markets' traditional jeans offering. It later launched this product into developed markets, including the United States.

Despite the growing demand potential and NPD opportunities offered by emerging markets, as of 2010, only 17% of global firms' revenues are derived from emerging markets (Atsmon et al. 2012), and NPD activities of many global firms are centered in developed markets. However, in recent years, global firms, such as Cisco Systems, Motorola, Caterpillar, and Colgate-Palmolive, have been fundamentally changing their innovation architecture by shifting some of their NPD from developed to emerging markets. Global firms are likely to continue shifting more of their high level R&D work to India and other emerging markets, while slowing their hiring of development personnel in the United States (U.S.) (Hagerty 2012; Lewin, Massini, and Peeters 2009).

Despite the importance of the effects of R&D, innovation and NPD on shareholder or firm value (Chakravarty and Grewal 2011; Saboo and Grewal 2013), very little is known about the effectiveness of global firms' shifting their NPD to emerging markets. Specifically, how do investors react to global firms shifting their NPD to emerging markets?

On the one hand, such shifts appear to be beneficial for firms. Key emerging markets, such as India and China, offer highly-trained R&D employees who can be employed at lower wage rates than similar employees in developed markets (Lewin, Massini, and Peeters 2009). In addition, shifting NPD to countries with low labor costs can increase firm productivity and cost savings for firms (Amiti and Wei 2009; Baily and Farrell 2004; Farrell 2005). On the other hand, such announcements also have the potential to elicit negative investor reaction. While the global firm retains direct control of NPD shifting, entering an emerging market presents unique challenges. Historically, emerging markets have been viewed more as a favorable location for large-scale repetitive activities, such as manufacturing and call center management rather than for value-added activities such as innovation (Holman, Batt, and Holtgrewe 2007). Furthermore, global firms may face challenges when working with local employees; team members with similar backgrounds cooperate better than team members with different backgrounds (Wiersema and Bantel 1992). Finally, uncertainties can arise with the NPD process, such as differences in quality, research practices, and cultural and institutional knowledge (De Brentani and Kleinschmidt 2004; Nakata and Sivakumar 1996). Given these conflicting perspectives, an important research question that merits

investigation is whether investors react positively or negatively to an NPD shift to emerging markets.

Prior research has examined the effects of companies purely *outsourcing* marketing related activities to international locations, including emerging markets. Pure outsourcing consists of hiring an outside supplier to perform all of the NPD work. Raassens, Wuyts, and Geyskens (2012) examine the *outsourcing* of NPD to all markets (not emerging markets) and find that a firm can alleviate the technical uncertainty of outsourcing by taking a minority equity position in the company to which it outsources and can reduce cultural uncertainty by working with familiar partners. Kalaignanam et al. (2013) investigate the impact of *outsourcing CRM* to other countries and find that it benefits firms with high (low) IT (marketing) capabilities. However, it remains unclear as to how *shifting* NPD to emerging markets impacts shareholder value, and what factors determine the short-term abnormal returns to such shifting.

Departing from prior research focusing on outsourcing of NPD (turning over NPD to an outside firm), my research focuses on NPD shifting when the firm maintains complete (internal) control over the NPD process. It bridges an important gap in the literature by addressing the following key research questions: (1) What is the effect of shifting NPD to emerging markets on shareholder value? (2) What are the determinants of short-term abnormal returns from such shifting?

I develop a conceptual framework and hypotheses related to these important questions. Specifically, I examine the impact of the number of local employees (relative local employee size) and NPD investment amount and their relevant interactions on

shareholder value. I test the hypotheses using a uniquely compiled dataset of 348 announcements of 102 publically traded North American-headquartered global companies, which shifted some of their NPD activities to India during 1991-2013.

My results show important asymmetries regarding the impact of an emerging market shift of NPD on shareholder value. Investment amount (relative local employee size) is not significantly related to short-term abnormal returns. However, the effect of investment amount and relative local employee size are moderated by employee quality emphasis, costs savings emphasis, development scope and prior profitability. Employee quality emphasis has a positive moderating effect on both investment amount-- and relative local employee size-- short-term abnormal return relationships. Cost savings emphasis has a positive moderating effect on the investment amount--short-term abnormal returns relationship, but no effect on relative local employee size. Development scope (prior profitability) has a positive (negative) moderating effect on the investment amount-abnormal return relationship. To get the biggest short-term abnormal return to an NPD shift announcement, firms should highlight employee quality and cost savings, while mentioning the number of local employees and the investment amount.

My research contributes to the emerging market innovation literature in the following important ways. It offers critical insights into the determinants of the effect of NPD shifting on shareholder value. Relatedly, it complements research insights of the effects of *pure* NPD *outsourcing* (e.g., Raassens, Wuyts, and Geyskens 2012).

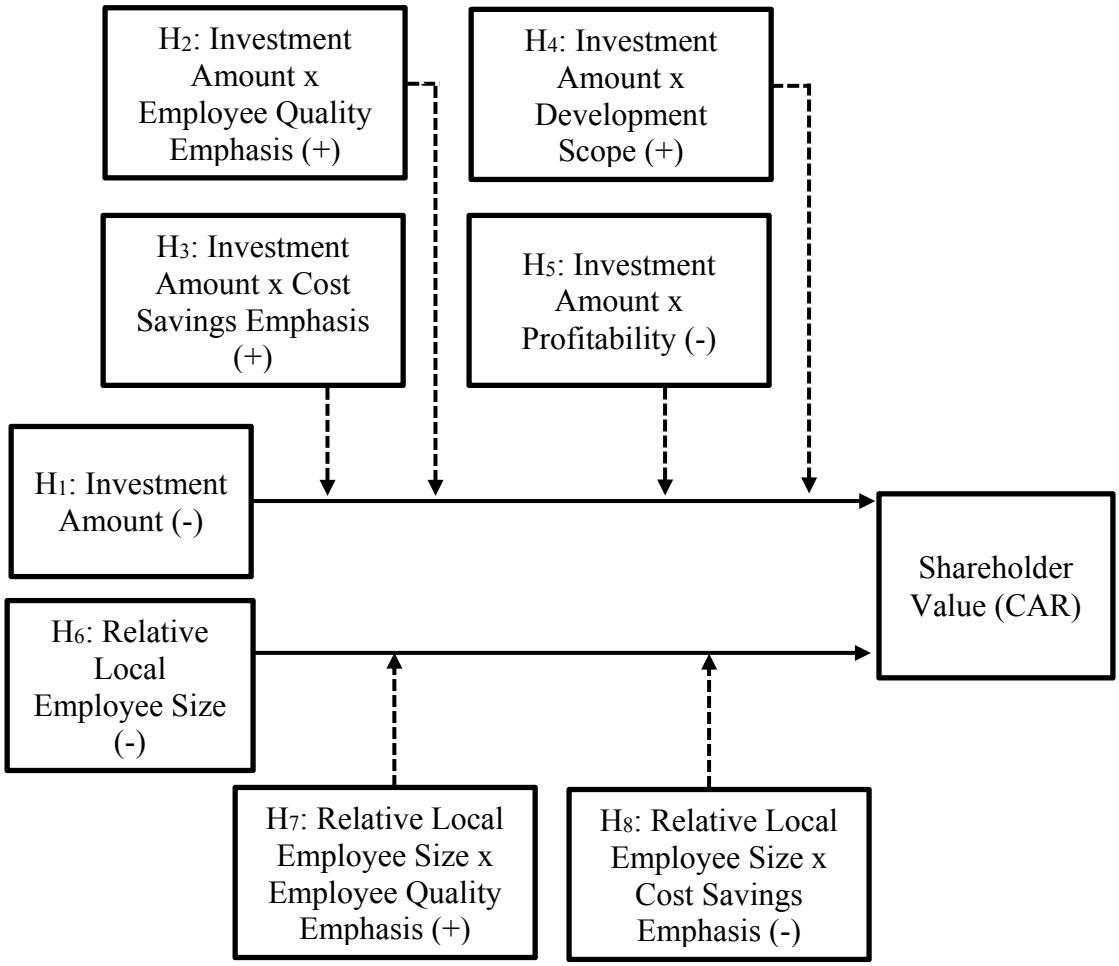
CONCEPTUAL MODEL AND HYPOTHESIS DEVELOPMENT

I examine a global firm's NPD shifting to outside its home country using internal resources. My view of NPD shifting is similar to in-house organizational restructuring, which is a form of offshoring; the global firm reallocates operations from the home country to a foreign country while retaining complete control (Contractor et al. 2010). For example, if a U.S. based global firm decides to shift NPD by opening an R&D center in India, it would be consistent with this form of offshoring as the firm still retains direct control over its NPD. This differs from outsourcing where the firm hands over the activity to an arms-length provider located either in the home country or a foreign country (Contractor et al. 2010).

I draw upon signaling theory to formulate the hypotheses relating to NPD shifting. Signaling theory describes how two parties disseminate, process, and interpret asymmetric information (Spence 1973, 2002; Stiglitz 2002). The sender (the firm) decides how to code the signal and the receiver (the investor) must figure out how to unravel and interpret the signal. Managers have private information regarding the potential profitability, risk, and long-term health of the firm (Aiken and Boush 2006). Investors being in a state of informational deficit, seek to gain additional insights by searching for and interpreting the signals that managers disclose. Prior research in marketing have used signaling theory to explain the effect of marketing announcements on shareholder value (e.g., Sorescu, Shankar, and Kushwaha 2007). I use signaling theory to partially explain investors' reactions to global firms' decisions to shift their

NPD to emerging markets. The conceptual model in presented in Figure 1. A discussion of the conceptual rationale for the hypotheses follows.

FIGURE 1
Impact of Shifting New Product Development to Emerging Markets on Shareholder Value: Conceptual Model



Determinants of Shifting NPD and Shareholder Value

Several factors may determine the impact of a global firms' shifting NPD to emerging markets on shareholder value. Signaling theory suggests that both direct signals and contingent signals from an NPD shift announcement will likely affect investor valuation of the shift. Investors use both these types of signals to decipher the effect of unobservable characteristics of an announcement (Stigliz 2000). In the context of shifting NPD to an emerging market, direct value signals are new information provided by the firm on the investment level and the number of local employees. Quantitative information about these variables helps investors directly evaluate their impact in respect of changes in revenues, profits and cash flow. These changes in turn lead investors to better estimate firm value. In contrast, contingent value signals do not include new information for evaluating a direct quantitative assessment of changes to firm value. However, these signals may contain information to help analysts and investors identify potential differences in the effects of direct value signals on firm value. In the case of shifting NPD, these signals come from information about the announcing firm's emphasis on employee quality and cost savings, development scope, and prior profitability.

Investors directly consider the amount of a firm's NPD investment in an emerging market when assessing the announcement's effect on firm value. When asymmetric information about the potential of an event exists between the firm and investors, investors use proxies to determine the true potential. For example, in assessing the effect of a firm's advertising campaign on firm value, investors view advertising

expenditures as a signal to achieve long-term success from the market offering (Aiken and Boush 2006; Kihlstrom and Riordan 1984).

Overall, I expect that investment amount to act as a signal to investors for their assessment of the value of shifting NPD. The greater this amount, the more investors may view an NPD shift to an emerging market as a critical shift away from resources that can be used in the home markets, triggering incongruity in investors. Multinational firms developing new products in an emerging market may be more closely scrutinized than when they are deploying NPD activities in their more familiar domestic (developed) markets. Overall, a general investor aversion exists regarding international investments; a new environment, such as an emerging market, results in an informational asymmetry, requiring increased investor scrutiny (Dahlquist and Robertsson 2001). While future growth in emerging markets is projected to outpace growth in developed markets, global firms face a perception challenge. Investors appear wary of firms redirecting product development investments to emerging markets. Thus, by making the investment amount salient, investors question the credibility of the NPD shift.

> *H_1: Investment amount will have a negative impact on the short-term abnormal return to an NPD shift to an emerging market.*

The effect of investment amount on the abnormal returns to an NPD shift to an emerging market will be contingent on the information about the quality of local employees involved in the NPD effort (i.e., employee quality emphasis). Employee quality emphasis refers to firms directly mentioning local employee quality as a key reason for shifting NPD to an emerging market. When a firm highlights the quality of local employees, it sends a contingent signal to investors that the level of NPD work to

be conducted will not just be routine work, but highly skilled innovative work. It is important for firms to highlight the quality of local employees because of the challenges that currently exist in hiring in developing markets. For example, India is viewed as exporting its best talent to developed markets, while China has a large amount of young workers flooding the marketplace, many of whom are lacking sufficient language skills for functioning at a global firm (Ready, Hill, and Conger 2008).

Thus, highlighting the quality of employees in the new NPD initiative will likely lead to a greater positive impact of investment amount on shareholder value. That is, together, investment amount and employee quality emphasis will likely have a positive interaction effect. The investor market will likely respond more positively to an announcement that has information on both the investment amount and employee quality than an announcement that does not offer information on either. Investors interpret the investment amount as a signal of firm commitment to NPD shifting that is backed up by the quality of the personnel involved in the NPD initiative. Therefore, highlighting both the investment amount *and* the quality of local employees will have a positive effect on shareholder value, leading to my next hypothesis.

> *H_2: Investment amount interacts with employee quality emphasis to have a positive impact on the short-term abnormal return to an NPD shift to an emerging market.*

Another key potential moderator of the effect of investment amount on abnormal returns to an NPD shift to an emerging market is cost savings emphasis. Cost savings emphasis refers to firms directly mentioning cost savings as a key reason for shifting NPD to an emerging market. Global firms have been known to utilize emerging markets

for cost savings (Holman, Batt, and Holtgrewe 2007). Stating the NPD investment's cost savings benefit will have a positive effect on the relationship between investment amount and abnormal stock market returns. Highlighting a cost savings emphasis at higher NPD investment amounts will help offset investor uncertainty regarding the financial outcome of a global firm's financial investment in the emerging market, leading to my next hypothesis.

> *H_3: Investment amount interacts with cost savings emphasis to have a positive impact on the short-term abnormal return to an NPD shift to an emerging market.*

An additional potential moderator of the effect of investment amount on abnormal returns to an NPD shift to an emerging market is development scope. Development scope refers to the range of products to be created through the NPD process in the new emerging market. Specifically, firms can announce NPD shifts with two types of NPD scope. Firms deploying a broad NPD scope do not provide information about specific products; whereas, a focused NPD scope refers to planned NPD that is very specific to a limited set of products. Only breakthrough innovation, not incremental innovation, increases firm value (Sorescu and Spanjol 2008). Furthermore, a group's creative potential is higher when a project is left open and unstructured (i.e., organic) versus when it is very specific (i.e., mechanized) (Woodman, Sawyer, and Griffin 1993). If a project is too focused, it can be viewed as narrow and leave employees unmotivated, leading to a disinclination towards innovation (Shalley and Oldham 1985). Thus, firms taking a more broad NPD scope will be viewed more favorably than firms with a focused NPD scope, because a broad NPD scope may lead to

multiple innovations, have a greater appeal in the global marketplace, and potentially lead to breakthrough innovations.

Because this signal does not carry any quantitative information for investors to assess its impact on shareholder value, most likely, it will not have any direct effect on shareholder value. However, it serves as a contingent signal, potentially affecting the influence of a direct value signal, such as investment amount on shareholder value.

For firms specifying a broad NPD scope, I expect the negative main effect of investment amount on shareholder value to be weaker than that for other firms. Investors may perceive the combination of investment amount and a broad NPD scope as having greater revenue potential than the case where firms mention investment details and focus on a narrower set of products. A broad NPD scope together with details on the investment amount suggests that future products can potentially be developed for a much wider audience than those for a narrow NPD scope, signaling larger potential revenues. A broad NPD scope expands product breadth and the global potential from the NPD shift when investment details are mentioned, even potentially allowing for reverse innovation to occur. Based on these arguments, I hypothesize:

> *H_4: Investment amount interacts with development scope such that for new products developed with a broad NPD scope, the negative effect of investment amount on the short-term abnormal return to an NPD shift to an emerging market is weaker than it is for new products developed with a specific NPD scope.*

Investors rely on contingent signals to differentiate between high and low-quality firms. For example, firm signals regarding debt, advertising and dividends have all been utilized to decipher between high and low-quality firms (Aiken and Boush 2006; Clark,

Cornwell, and Pruitt 2002; Ross 1977). Because sending signals can be costly (Bird and Smith 2005), firms with a stronger track record of profitability are better positioned than those with a weaker history of profitability; this differential will influence investor perceptions of the effect of an NPD shift to emerging markets. Firms with higher levels of prior profit will be in a better position to absorb any negative investor perceptions of a direct value signal. Specifically, an investor's response to the specification of the dollar amount of investment of NPD shifting to an emerging market will be moderated by profitability.

I expect prior profitability to mitigate the negative effect of investment amount. Investors may judge the high investments in an NPD shift to be more credible for firms with high prior profit levels than for firms with low prior profit levels. Firms with higher prior profitability have a track record of exhibiting superior financial decisions; investors may view such firms favorably as having adequately thought through the NPD shift with sufficient resources to engender a successful NPD initiative. As a result, profitability will be interpreted as a quality signal that will help make the negative impact of investment amount less salient. Investors will view profitable firms as being better positioned to take advantage of NPD shifting than firms that are less profitable. This reasoning leads to my next hypothesis.

> *H_5: Investment amount interacts with profitability to affect the short-term abnormal return to an NPD shift to an emerging market in such a way that at higher levels of profit, the negative effect of investment amount is weaker than it is at lower levels of profit.*

Firms may also mention in their announcement the *number* of local employees to be involved in their NPD shift to emerging markets. Many investors in developed

markets view such an announcement as having a negative bearing on the value of an NPD shift. Mentioning the number of employees, but not the *quality* of the employees in an emerging market may induce investors to view the resulting innovations to be of low quality. Product quality is evaluated using informational signals, and one commonly used signal is the country of origin (Verlegh and Steenkamp 1999). A positive association exists between a country's income per capita and its quality perception (Hudson and Jones 2003). Furthermore, developing countries have a harder time overcoming negative quality perceptions of their products than developed countries (Elliott and Cameron 1994; Hudson and Jones 2003).

As a result, investors will likely question the value of innovations resulting from the NPD shift when a direct reference to employee quality is not specified. Part of investors' aversion can be attributed to quality concern frustrations that stem from products designed in emerging markets. As a result, some firms are "reshoring" jobs from emerging markets back to developed markets (Ellram, Tate, and Peterson 2013). The greater the number of local employees, the greater the investor valuation of resulting innovations as low quality innovations, leading to a lower estimate of potential future cash flows. Thus, I argue that investors will view a high number of local employees as undesirable and will react negatively to the announcement.

> *H_6: Relative local employee size will have a negative impact on the short-term abnormal return to an NPD shift to an emerging market.*

However, the negative effect of local number of employees on abnormal returns to an NPD shift to an emerging market may be mitigated when the firm also mentions the quality of local employees. A global firm focusing on both employee quality and

relative local employee size makes it possible for investors to evaluate both the scope of the NPD shift as well as the quality of the local employees. This combination also sends a signal to investors that this will not be routine, low quality work, but more advanced, specialized work, potentially increasing shareholder value. This leads to my next hypothesis.

> *H_7: Relative local employee size interacts with employee quality emphasis to have a positive impact on the short-term abnormal return to an NPD shift to an emerging market.*

I expect that when a firm mentions the number of local employees and cost savings that it will backfire, resulting in a negative investor reaction. Such an announcement may bring up negative perceptions of low-quality work. Historically, a main reason for entering an emerging market has been for cost savings (Holman, Batt, and Holtgrewe 2007). Many investors still have a lingering view of emerging markets as a destination for low-cost, routine work and not for highly specialized, high-quality development work. Therefore, providing details about local employees, when highlighting a cost savings emphasis, engenders a potential contradiction in investor minds, prompting them to question the innovation returns, generating a negative reaction. Thus, I expect investors will view mentioning the number of local employees and a cost savings emphasis as undesirable and will react negatively to the announcement.

> *H_8: Relative size of local employees interacts with cost savings emphasis to have a positive impact on the short-term abnormal return to an NPD shift to an emerging market.*

DATA AND VARIABLE OPERATIONALIZATION

To empirically test the hypotheses, I assemble a unique panel data set by collecting data on a number of key variables related to the shifting of NPD to India. My final sample consists of 102 publically traded North American-headquartered global companies that initially set up a subsidiary in India between 1991 and 2013 and then subsequently shifted NPD to India. Sixty one of the global companies made more than one NPD shift announcement across the time period.

To compile the final dataset, I first searched through approximately 70,000 news releases in Factiva. My final usable sample consists of 348 announcements for an NPD shift. I searched for an NPD shift using the very broad search term of "India" and the firm's name. Although this procedure added significantly to the number of news releases to be analyzed, I believe this step is necessary to accurately capture the wide range of NPD terminology (e.g., design center, R&D center, new product development facility). By utilizing a very broad search terminology, I am able to generate a more robust set of announcements than if I limit my search to a few key words. For an NPD announcement to make it into the final sample, the news release needs to mention the global firm undertaking NPD in India without any cofounding news, such as also entering the Chinese market. Table 1 shows examples of an NPD shift.

TABLE 1
Examples of Announcements of Shifting New Product Development

"Adobe Systems Inc. is investing $8 million in a new research and development center in India to tap the country's growing talent for software development. The new center, located at Noida on the outskirts of New Delhi, can accommodate up to 450 people. Our expansion in India is tangible reinforcement of Adobe's commitment to investment in innovation."

-Adobe Systems Inc., 1/19/2005 (CAR: + 0.80%)

"Electronic design service provider, Cadence Design Systems today announced the inauguration of its new research and development facility in Noida with an investment of $11.5 million dollars. As Cadence celebrates its 20th year in India, it's fitting that we also inaugurate the new facility at our Noida campus. Cadence is committed to being close to where our customers are expanding, and India is an integral part of our overall growth strategy."

-Cadence Design Systems, 10/9/2007 (CAR: -2.24%)

Focal Variables of Shifting NPD

The main effects of my research interest are those of *investment amount* and *relative local employee size*. I operationalize *investment amount* as the investment amount the global firm commits to NPD, and *relative local employee size* as the number of local employees hired divided by the global firm's total employee count. I accessed both *investment amount* and *relative local employee size* by examining announcement details. I look at the totality of NPD investment made by the global firm. When examining *investment amount* and *relative local employee size*, I further differentiate if a firm opens a new NPD center or if it expands an existing NPD center (*NPD shift type*). I also examine important interaction effects using the following variables: *employee*

quality emphasis, which I define as a dummy variable that takes the value of one if the NPD activity is undertaken to leverage the high quality of the local workforce and zero if this reason is not mentioned; *cost savings emphasis* is a dummy variable that takes the value of one if the NPD activity is undertaken to take advantage of the cost savings of the local workforce and zero if this reason is not mentioned; *development scope,* which is a dummy variable that takes the value of one if the NPD activity is broad and zero if it is specific to certain products. I treat announcements not mentioning specifics regarding the development of products and services as broad because investors are likely to interpret such announcements as broad; and *profitability* which I conceptualize as net income divided by sales.

Additional Announcement-specific Variables

I include additional announcement-specific variables that may affect shifting NPD on shareholder value. *New-to-the-firm* is a dummy variable that takes a value of one if the news release mentions that the NPD activity is creating a new product or service opportunity for the firm and zero otherwise. I conceptualize *location specificity* as a dummy variable that takes the value of one if innovation from the NPD activity focuses on the global market and zero if it focuses on the local market (Indian or Asian market). *NPD shift type* is a dummy variable taking the value of one if the firm is opening a new R&D center and zero otherwise. *Firm NPD shift frequency* is a dummy variable taking the value of one if the firm made two or more announcements in the same year and zero otherwise.

Control Variables

Finally, I add control variables to account for firm-specific heterogeneity. *Offering type* is a dummy variable and takes the value of one if the firm primarily produces tangible (non-service) goods and zero if the firm primarily produces service goods. *Customer focus* is a dummy variable that takes the value of one if the firm primarily deals directly with the end-consumer (B2C) and zero if the firm does not primarily directly interact with the end-consumer (B2B). *Firm experience* is the number of years elapsed between the year of the news release and the year in which the R&D subsidiary was initially set up. I operationalize *diversification* as the number of business segments in which the firm operates. *Firm size* is the natural logarithm of the firm's assets in dollars. I define *R&D intensity* as the ratio of R&D expenditures to sales;[1] *leverage* as the firm's ratio of long-term debt to total assets. I include industry dummies with services as the base industry. A full list of the variables, their definition and operationalization, and data sources appears in Table 2.

[1] I do not include marketing intensity, the ratio of selling, general and administrative expenditures to sales, in the model because it is highly correlated with R&D intensity in my data and because R&D intensity is more directly relevant to NPD than is marketing intensity.

TABLE 2
Operationalization of Variables for Shifting New Product Development

Variable	Notation	Operational Measure	Data Source
Cumulative Abnormal Returns	CAR	Short-term cumulative abnormal returns	CRSP, Ken French website
Investment Amount	INVSPEC	Firm investment amount (in million $)	Factiva
Relative Local Employee Size	EMPSPEC	# of local employees hired divided by the firm's total employee count	Factiva
Employee Quality Emphasis	EMPQUAL	Dummy variable; =1 if employee quality mentioned; =0 if not mentioned	Factiva
Cost Savings Emphasis	COSTSAVE	Dummy variable; =1 if cost savings mentioned; =0 if not mentioned	Factiva
Development Scope	DEVSCOPE	Dummy variable; =1 if NPD spans broad set of products; =0 if NPD is specific	Factiva
Profitability	PROFIT	One year lag of net income divided by sales	Compustat
New-to-the-Firm	NEWTOFIRM	Dummy variable; =1 if product/service is new to the firm; =0 otherwise	Factiva
Location Specificity	LOCSPEC	Dummy variable; =1 if products from NPD is for the global market; =0 if for local market	Factiva
NPD Shift Type	ANNOUNCETYPE	Dummy variable; =1 if the firm is opening a new R&D center; =0 otherwise	Factiva
Firm NPD Shift Frequency	FIRMFREQ	Dummy variable; =1 if the firm makes two or more announcements in the same year; =0 otherwise	Factiva

TABLE 2 Continued

Variable	Notation	Operational Measure	Data Source
Offering Type (Tangible Good)	OFFERTYPE	Dummy variable; =1 if NPD is for tangible goods; =0 if NPD is for services	Four-digit North American Industry System Code
Customer Focus (B2C)	CUSTFOC	Dummy variable; =1 if the firm is primarily a B2C firm; =0 if primarily a B2B firm	Company website for product information
Firm Local Experience	FIRMEXP	# of years elapsed between the announcement date year and the year when the first R&D center opened in the emerging market	Zinnov Consulting; Factiva
Diversification	DIV	One year lag of the # of business segments in which the firm operates	Compustat (Segments file)
Firm Size	SIZE	One year lag of the natural logarithm of the firm's assets ($)	Compustat
R&D Intensity	RDINT	One year lag of the ratio of R&D expenditures to sales revenues	Compustat
Leverage	LEV	One year lag of the ratio of long-term debt to total assets	Compustat

The mean short-term abnormal return in the sample is -0.45%. Less than one-half (47.1%) of the shifting NPD announcements generate positive abnormal returns with an average return of 2.87%. The remaining 52.9% of the announcements generate an average negative abnormal return of -3.41%. The summary statistics of the determinant variables in the data appear in Table 3. I notice some interesting differences between the frequency of direct value signals, investment amount and relative local employee size. The average amount of NPD investment specified (investment amount) ranges from zero

to $500 million with an average investment amount of $10.5 million. Among the firms that specified an investment level, the minimum amount is $1.5 million. If a firm did not provide an investment amount in an announcement, I believe that investors interpret it as a signal of insignificant investment, so I treat the investment amount as zero. The number of local employees hired as a percentage of the total workforce (relative local employee size) ranges from zero to 79.4, with an average of 3.4. Among the announcements that provided the number of local employees, the minimum relative local employee size is .0003132. As in the case of investment amount, I treat the value of relative local employee size of announcements that do not mention the number of local employees as insignificant and equate it to zero.

With regard to the contingent value signals, firms appear more willing to highlight the quality of local employees (employee quality emphasis) involved in the NPD shift than the expected cost savings (cost saving emphasis). Specifically, 22.3% of all announcements have an employee quality mention compared to only 8.9% of all announcements featuring cost savings. The vast majority (65.5%) of firms specify a broad development scope versus a specific development scope. Finally, profitability, which measures the ratio of net income divided by sales, ranges from -6.56 to 0.67, with an average of 0.02.

TABLE 3
Summary Statistics of Key Variables in the Data for Shifting New Product Development

Variable	Mean (SD)	Minimum	Maximum
Cumulative Abnormal Returns	-0.0045 (0.046)	-0.204	0.172
Investment Amount	10.503 (47.644)	0.000	500.000
Relative Local Employee Size	0.034 (0.077)	0.000	0.794
Employee Quality Emphasis	0.227 (0.420)	0.000	1.000
Cost Savings Emphasis	0.089 (0.285)	0.000	1.000
Development Scope	0.655 (0.476)	0.000	1.000
Profitability	0.020 (0.452)	-6.557	0.665
New-to-the-Firm	0.046 (0.210)	0.000	1.000
Location Specificity	0.690 (0.463)	0.000	1.000
NPD Shift Type	0.437 (0.497)	0.000	1.000
Firm NPD Shift Frequency	0.368 (0.483)	0.000	1.000
Offering Type (Tangible Good)	0.664 (0.473)	0.000	1.000
Customer Focus (B2C)	0.187 (0.390)	0.000	1.000
Firm Local Experience	5.009 (5.036)	0.000	22.000
Diversification	3.928 (2.891)	1.000	13.000
Firm Size	7.568 (2.170)	2.404	12.558
R&D Intensity	0.159 (0.111)	0.000	1.142
Leverage	0.109 (0.132)	0.000	0.573

The correlation matrix appears in Table 4. The correlations between the independent variables remain low, suggesting that multicollinearity is not a problem.

TABLE 4
Correlation Matrix for Shifting New Product Development

		1	2	3	4	5	6	7	8	9	10	11	12
1.	CAR [-1,+1]	1.00											
2.	Investment Amount	0.08	1.00										
3.	Investment Amount x Employee Quality Emphasis	0.12	0.28	1.00									
4.	Investment Amount x Cost Savings Emphasis	0.08	0.13	0.11	1.00								
5.	Investment Amount x Development Scope	0.12	0.55	0.38	0.04	1.00							
6.	Investment Amount x Profitability	-0.04	-0.39	-0.20	-0.03	0.16	1.00						
7.	Relative Local Employee Size	-0.08	-0.05	-0.03	-0.04	-0.03	0.03	1.00					
8.	Relative Local Employee Size x Employee Quality Emphasis	0.13	-0.03	0.05	-0.02	-0.03	0.01	0.21	1.00				
9.	Relative local employee size x Cost Savings Emphasis	-0.05	-0.02	-0.01	0.00	-0.02	0.00	0.32	0.14	1.00			
10.	Employee Quality Emphasis	0.01	-0.02	0.25	0.03	0.02	-0.03	-0.08	0.42	0.01	1.00		
11.	Cost Savings Emphasis	-0.01	-0.02	0.02	0.32	-0.04	-0.02	0.01	0.06	0.37	0.14	1.00	
12.	Development Scope	0.01	-0.04	0.04	-0.06	0.16	0.11	-0.05	-0.04	-0.02	-0.07	-0.07	1.00
13.	Profitability	-0.03	0.00	-0.01	-0.01	0.03	0.07	-0.16	-0.32	-0.01	-0.10	0.01	0.10
14.	New-to-the-Firm	0.05	0.13	-0.03	-0.02	0.01	0.01	0.05	-0.04	-0.03	-0.02	-0.07	-0.19
15.	Location Specificity	-0.05	-0.20	-0.12	0.01	-0.17	0.03	0.06	0.05	0.08	0.02	0.10	0.00
16.	NPD Shift Type	-0.03	-0.01	0.07	0.03	0.07	0.04	-0.05	-0.02	0.00	-0.06	0.05	-0.01
17.	Firm NPD Shift Frequency	-0.05	0.07	0.00	0.05	0.09	0.01	-0.14	-0.03	-0.03	0.03	0.16	0.13
18.	Offering Type (Tangible Good)	0.03	0.10	0.05	0.07	0.07	-0.04	-0.26	-0.07	-0.09	0.07	-0.01	-0.12
19.	Customer Focus (B2C)	0.10	0.40	0.20	0.21	0.36	0.02	-0.19	-0.09	-0.05	0.00	0.01	0.05
20.	Firm Experience	0.03	0.19	0.05	0.00	0.24	0.03	-0.12	-0.07	-0.08	0.00	-0.14	0.06
21.	Diversification	0.03	0.13	0.05	0.09	0.15	-0.01	-0.21	-0.06	-0.08	0.05	0.06	0.11
22.	Firm Size	-0.01	-0.14	-0.15	-0.10	-0.26	-0.07	-0.28	-0.09	-0.10	0.02	0.01	-0.10
23.	R&D Intensity	-0.02	-0.15	-0.03	-0.10	-0.11	0.03	0.25	0.21	0.09	-0.01	0.05	-0.04
24.	Leverage	-0.02	0.19	0.02	0.16	0.07	-0.11	-0.14	0.00	-0.04	-0.01	0.01	0.05

TABLE 4 Continued

		13	14	15	16	17	18	19	20	21	22	23	24
13.	Profitability	1.00											
14.	New-to-the-Firm	0.04	1.00										
15.	Location Specificity	-0.07	-0.12	1.00									
16.	NPD Shift Type	0.02	0.03	-0.14	1.00								
17.	Firm NPD Shift Frequency	0.04	-0.17	-0.02	0.23	1.00							
18.	Offering Type (Tangible Good)	0.04	-0.08	-0.10	-0.01	0.10	1.00						
19.	Customer Focus (B2C)	0.04	0.04	-0.06	-0.02	0.12	0.25	1.00					
20.	Firm Experience	0.12	0.05	-0.07	-0.05	0.11	0.07	0.27	1.00				
21.	Diversification	0.07	0.01	0.03	-0.01	0.27	0.14	0.36	0.24	1.00			
22.	Firm Size	0.07	0.06	0.14	-0.04	0.05	0.26	-0.14	-0.03	0.27	1.00		
23.	R&D Intensity	-0.31	-0.05	0.04	-0.07	-0.08	-0.09	-0.37	-0.14	-0.30	-0.19	1.00	
24.	Leverage	-0.09	0.02	-0.07	-0.01	0.06	0.36	0.32	0.11	0.14	-0.02	-0.04	1.00

MODEL DEVELOPMENT

My focus is on the determinants of an NPD shift on shareholder value. Below I discuss how I measure and estimate short-term abnormal returns by using an event-study analysis to determine the impact on shareholder value from NPD shifting.

In the event study methodology, the firm's stock price reflects the future value of its discounted cash flows. This is based on the efficient market hypothesis, which states that a firm's stock price incorporates all publically available information (Fama 1970). As investors become aware of new information, they will adjust the stock price accordingly, where positive news will result in a purchase (an upward adjustment), and negative news will result in a sale (a downward adjustment). Therefore, I expect that any negative reactions by investors regarding NPD shifting will result in investors selling the stock, thus lowering shareholder value. Similarly, any positive reactions should result in an increase in shareholder value.

Short-term event studies are widely used to assess the effects of innovation on shareholder value because they offer numerous benefits. First, because I am looking at the short-term window, I am able to accurately isolate individual NPD announcements, allowing me to understand their immediate impact on the stock's valuation. Second, the short-term abnormal return used as the outcome measure is a forward-looking measure (i.e., it takes into account all of the expected future cash flows). Being able to account for future cash flows is especially important when trying to measure the effects of an NPD shift as it may take years before the benefits from innovation are fully realized (Raassens, Wuyts, and Geyskens 2012).

To determine the effects from an announcement on shareholder value, I first compute the short-term abnormal returns to announcements (events) of an NPD shift to emerging markets for the firms in my data. To compute the short-term abnormal returns, I calculate the difference between the observed returns (R_{it}) with the expected returns ($E(R_{it})$) for firm *i* from an event at time *t* using a benchmark model portfolio, which assumes the event did not happen. To estimate the expected returns, I use the Fama-French four-factor model (Carhart 1997; Fama and French 1993):

$$(1) \quad E(R_{it}) = \hat{\alpha}_i + \hat{\beta}_i R_{mt} + \hat{\gamma}_i SMB_t + \hat{\varphi}_i HML_t + \hat{\sigma}_i UMD_t,$$

where R_{mt} is the stock valuation of the benchmark model portfolio; SMB_t is the difference between the returns of small and large stock firms; HML_t is the difference between the ratio of high and low book-to-market stocks; UMD_t is the difference between firms with favorable (winner) and unfavorable (loser) performance, and α, β, γ, φ, and σ are parameter estimates obtained from an OLS estimation. Daily stock returns were generated for each firm by regressing R_{it} on R_{mt} over an estimation period of 250 to 30 trading days prior to the event. To calculate the abnormal return (AR) for each event, I take the difference between the observed and expected returns:

$$(2) \quad AR_{it} = R_{it} - E(R_{it}) = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt} + \hat{\gamma}_i SMB_t + \hat{\varphi}_i HML_t + \hat{\sigma}_i UMD_t)$$

I aggregate the abnormal returns for each firm over the event period ($-t_1$, t_2) to get the cumulative abnormal return (CAR):

$$(3) \quad CAR_{i(-t_1, t_2)} = \sum_{t=-t_1}^{t_2} AR_{it}$$

I decide on the appropriate event window for the analysis as follows. I first calculate the CAAR for multiple event windows, such as [-1, +1], [-2, +2] and [-3, +3], by averaging the CARs from Equation (3) across observations to obtain one cumulative average abnormal return (CAAR) for that window:

$$(4) \qquad CAAR_{(-t_1, t_2)} = \sum_{i=-1}^{N} \frac{CAR_{i(-t_1, t_2)}}{N}$$

where N is the number of announcements or observations or events. I then compare the significance levels of the CAARs for the different windows. Consistent with Patell's standardized residual test, I choose the event window with the highest significance of CAAR (Patell 1976). Based on this procedure, I selected the window of [-1, +1] for the analysis.

To test my hypotheses on the drivers of shareholder value, I regress the standardized CAR on the focal and control variables. Some of the independent variables are lagged by a year to address reverse causality and potential endogeneity issues (e.g., Dotzel, Shankar, and Berry 2013; Sorescu and Spanjol 2008). I further account for endogeneity of two key decision variables, investment amount and local employee size, using the control function approach to address both intercept and slop endogeneity issues (Petrin and Train 2010). A firm's decision regarding NPD investment and local employee hiring decisions may introduce both intercept and slope endogeneity. I also allow for unobserved factors regarding NPD investment and local employee hiring decisions to potentially introduce an intercept endogeneity problem. Furthermore, firms

may have private information on the effectiveness of NPD spending and hiring decisions, leading to a potential slope endogeneity problem.

When slope endogeneity is present, the Control Function (CF) approach may be more appropriate to use than the Instrument Variable (IV) approach (Garen 1984; Liu and Shankar 2015; Luan and Sudhir 2010). The CF approach can accommodate cross-sectional data and allows for multiple endogenous variables (Garen 1984; Liu and Shankar 2015; Luan and Sudhir 2010). The CF approach uses the predicted residuals generated from the first stage regression for each endogenous variable. Therefore, to account for both intercept and slope endogeneity, I regress each endogenous variable (investment amount and relative local employee size) on relevant instruments. I assume both *investment amount* and *relative employee size* are endogenous; in the first stage, I run two separate equations, one for *investment amount* and one for *relative employee size*. I regress *investment amount* on *capital expenditures by industry* (instrument) and on the focal, additional, and control variables. In the second stage, I include the residual from this regression in the original model as an additional covariate, consistent with the CF approach. My instrument is significant in the first stage. I repeat this procedure for *relative employee size*. I regress *relative employee size* on *total employees by industry* (instrument) and on the focal, additional, and control variables.[2]

In the equation below, subscript *i* represents the firm and subscript *t* represents the year during which the announcement is made. The model is given as:

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[2] The instruments, *capital expenditures by industry* and *total employees by industry*, come from the Business Research and Development and Innovation Survey (BRDIS) and the Bureau of Labor Statistics, respectively.

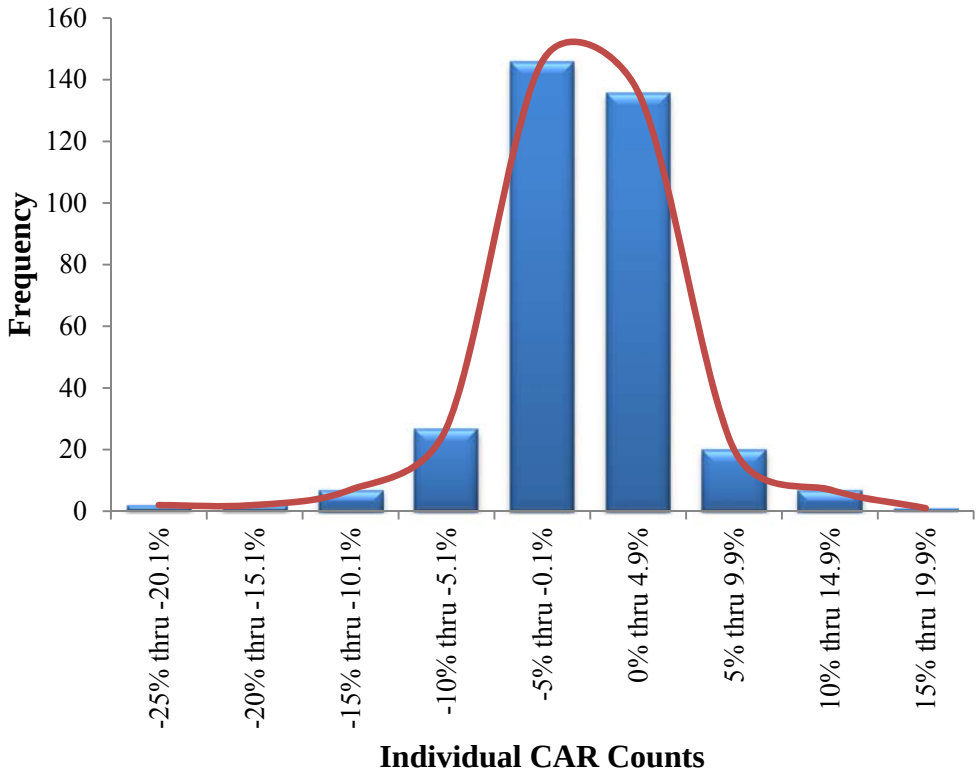
$$(5)\quad CAR_{it}[-t_1, t_2] = \alpha_0 + \alpha_1 INVSPEC_{it} + \alpha_2 EMPSPEC_{it} + \alpha_3 EMPQUAL_{it}$$
$$+ \alpha_4 COSTSAVE_{it} + \alpha_5 DEVSCOPE_{it} + \alpha_6 PROFIT_{i(t-1)} + \alpha_7 INVSPEC_{it} * EMPQUAL_{it}$$
$$+ \alpha_8 INVSPEC_{it} * COSTSAVE_{it} + \alpha_9 INVSPEC_{it} * DEVSCOPE_{it}$$
$$+ \alpha_{10} INVSPEC_{it} * PROFIT_{i(t-1)} + \alpha_{11} EMPSPEC_{it} * EMPQUAL_{it}$$
$$+ \alpha_{12} EMPSPEC_{it} * COSTSAVE_{it} + \alpha_{13} NEWTOFIRM_{it} + \alpha_{14} LOCSPEC_{it}$$
$$+ \alpha_{15} ANNOUNCETYPE_{it} + \alpha_{16} FIRMFREQ_{it} + \alpha_{17} OFFERTYPE_{it} + \alpha_{18} CUSTFOC_{it}$$
$$+ \alpha_{19} FIRMEXP_{it} + \alpha_{20} DIV_{i(t-1)} + \alpha_{21} SIZE_{i(t-1)} + \alpha_{22} RDINT_{i(t-1)} + \alpha_{23} LEV_{i(t-1)}$$
$$+ \sum_{k=1}^{K-1} \alpha_{24k} IND_{ki} + \varepsilon_i + \eta_{it},$$

where CAR is the abnormal return; INVSPEC is investment amount; EMPSPEC is relative local employee size; EMPQUAL is employee quality emphasis; COSTSAVE is cost savings emphasis; DEVSCOPE is development scope; PROFIT is profitability; NEWTOFIRM is a new-to-the-firm product or service related to the NPD shift; LOCSPEC is location specificity; ANNOUNCETYPE is the type of NPD activity shifted; FIRMFREQ takes into account firms that made multiple announcements in the same year; OFFERTYPE is the tangibility of goods; CUSTFOC is the firm's primary set of customers (B2C versus B2B); FIRMEXP is the years of firm experience in NPD in the emerging market; DIV is the level of firm diversification; SIZE is the natural log of the firm's assets; RDINT is R&D intensity; LEV is leverage; IND is a vector of (K–1) industry level dummy variables (the base industry is services); α is a parameter vector; ε is a random effect error term, and η is a panel error term.

Model Estimation

I estimate Equations 5 using a random-effects linear regression. The Hausman test is insignificant ($p > .10$), suggesting that it is appropriate to use a random-effects specification (Hausman). Figure 2 shows the CAR distribution for an NPD shift. Because the distribution appears to follow a normal distribution, it is appropriate to estimate the model using linear regression. I capture unobserved heterogeneity through fixed industry effects.

FIGURE 2
Distribution of Cumulative Abnormal Returns for Shifting New Product Development



RESULTS

As hypothesized, I find a negative main effect of investment amount (-.0001; $p < .10$), supporting H_1. I also find support for the proposed positive effect of the interaction between employee quality emphasis and investment amount (.0002; $p < .10$) and for the positive effect of the interaction between cost savings and investment amount (.0060; $p < .01$), in accord with H_2 and H_3, respectively. The interaction between development scope and investment amount is positive and significant (.0003; $p < .01$), consistent with H_4. I also find support for H_5, the proposed negative effect between prior profitability and investment amount (-.0007; $p < .05$). For relative local employee size, the main effect is insignificant ($p > .10$); thus, H_6 is not supported. With regard to the interaction effects of relative local employee size, employee quality emphasis shows a significantly high positive effect (.4409; $p < .05$), in line with H_7; however, the interaction effect of cost savings emphasis is insignificant ($p > .10$), contrary to H_8.

None of the additional or control variables except customer focus has a significant effect on short-term abnormal returns to an NPD shift to emerging markets ($p > .10$). Firms primarily in B2C markets generate a greater return to an NPD shift than firms primarily in B2B markets ($p < .10$).

My analysis illuminates important results from shifting NPD to emerging markets. Investment amount related to an NPD shift has a negative direct effect on shareholder value, suggesting that investors may generally have a negative view of investing in a developing country's product development capabilities; investment opportunities in emerging markets may not be perceived as favorably as those in the

firm's developed markets. While growth in emerging markets is projected to outpace growth in developed markets, global firms still face a perception challenge. Investors may be wary of firms redirecting investments to emerging markets. Multinational firms developing new products in an emerging market may be more closely scrutinized than when they are deploying NPD activities in more familiar domestic (developed) markets. Overall, a general investor aversion to greater NPD investments in an uncertain environment, such as an emerging market seems to exist, resulting in informational asymmetry and increased investor scrutiny (Dahlquist and Robertsson 2001).

However, I find a positive interaction between investment amount and employee quality emphasis, and between investment amount and cost savings emphasis, suggesting that investors view quality employees and cost savings as mitigating negative returns to investment amount. Likewise, I find a positive interaction effect between development scope and investment amount. This finding suggests that investors penalize firms with high investment amounts less when the firm signals an expansion of innovation offerings across a broader global market. Interestingly, the net effect of the main effect of investment amount and each moderating effect is a positive effect on short-term abnormal returns.

Interestingly, the counter-intuitive negative interaction effect between prior profitability and investment amount implies that investors are wary of more profitable firms investing more while shifting their NPD to emerging markets. Firms with higher levels of prior profit generate higher expectations from investors, increasing investor scrutiny (Das, Sen, and Sengupta 1998). Investors may perceive that a previously

profitable global firm is risking future returns by investing more into a culturally dissimilar emerging market when shifting NPD, leading to negative returns.

I did not find a significant main effect of relative local employee size. It may be that relative local employee size is a difficult measure to use for accurately evaluating the impact on shareholder value. For example, some NPD efforts may require few employees, but may still have a high impact on the firm's innovation potential, whereas others may require many employees, but have a minimal effect on innovation outcomes. Such variance in NPD undertakings makes it difficult for shareholders to properly evaluate the impact of relative local employee size. In essence, there may be too many "moving pieces." Froot, Scharfstein, and Stein (1993) argue that multinational firms partaking in activities across multiple countries complicate their risk management, making hedging or safeguarding against risk difficult. However, when a firm with a high ratio of local employees highlights the quality of its local employees, it creates a synergistic effect, reassuring investors that the resulting innovations will be of high quality.

Surprisingly, neither firm local experience nor firm size has a significant effect on shareholder value. Intuitively, it would seem that firms announcing an emerging market NPD shift with greater emerging market experience should elicit higher shareholder value than firms with lower experience. Prolonged experience in the new environment should result in greater cultural and business familiarity as firms are able to learn from prior expansions in the marketplace (Barkema, Bell, and Pennings 1996). However, my results do not reveal such an effect. Furthermore, one may expect larger

firms to have an advantage over smaller firms when shifting NPD to an emerging market because larger firms can access higher levels of marketing development and product knowledge than smaller firms and produce more radical innovations (Chandy and Tellis 2000). However, in my analysis, firm size does not have a significant effect on the returns from an emerging market NPD shift. Table 5 presents the estimation results for the CARs from the shifting NPD model.

TABLE 5
Model Results for Shifting New Product Development

Variable	Estimate	Robust SE
Focal Variables and Interactions		
Investment Amount	-0.0001*	(0.0000)
Investment Amount x Employee Quality Emphasis	0.0002*	(0.0001)
Investment Amount x Cost Savings Emphasis	0.0060***	(0.0002)
Investment Amount x Development Scope	0.0003***	(0.0001)
Investment Amount x Profitability	-0.0007**	(0.0003)
Relative Local Employee Size	-0.0518	(0.0379)
Relative Local Employee Size x Employee Quality Emphasis	0.4409**	(0.2251)
Relative Local Employee Size x Cost Savings Emphasis	-0.0754	(0.1126)
Employee Quality Emphasis	-0.0116	(0.0082)
Cost Savings Emphasis	-0.0008	(0.0101)
Development Scope	0.0018	(0.0052)
Profitability	-0.0003	(0.0031)
Additional and Control Variables		
New-to-the-Firm	0.0138	(0.0092)
Location Specificity	-0.0025	(0.0054)
NPD Shift Type	-0.0027	(0.0052)
Firm NPD Shift Frequency	-0.0054	(0.0053)
Offering Type (Tangible Good)	0.0100	(0.0069)
Customer Focus (B2C)	0.0211*	(0.0124)
Firm Experience	0.0002	(0.0005)
Diversification	-0.0002	(0.0010)
Firm Size	-0.0001	(0.0018)

TABLE 5 Continued

Variable	Estimate	Robust SE
R&D Intensity	0.0080	(0.0292)
Leverage	-0.0175	(0.0263)
Industry 2 (Communications)	-0.0318**	(0.0158)
Industry 3 (Medical)	-0.0010	(0.0144)
Industry 4 (Semiconductors)	-0.0070	(0.0114)
Industry 5 (Computer)	-0.0080	(0.0072)
Industry 6 (Other)	-0.0281	(0.0173)
Investment Endogeneity Correction Term	-0.0000	(0.0001)
Employee Endogeneity Correction Term	-0.1414	(0.1260)
Constant	0.0002	(0.0168)

Notes: * p < .10; ** p < .05; *** p < .01; Services in the base industry.

Robustness Checks

I performed several robustness checks. First, because I treat the announcing firm's non-mention of investment amount as a signal of an insignificant or zero amount, a possible concern is whether I may have oversimplified investor interpretation of the absence of investment amount in the announcement. To rule out this concern, I repeated the analysis multiple times by systematically equating each mentioned investment amount to zero, starting from the lowest mentioned amount ($1.5 million). I find that equating NPD investments under $60 million to zero does not alter the findings, suggesting that investors react only beyond a threshold level of investment, essentially validating my approach.

Second, it is possible that some firms may have learned from investor responses to earlier announcements and changed the content of their subsequent announcements to elicit positive returns. However, I find that firms with multiple announcements in the data experience both positive and negative CARs without any clear sequence or pattern. A possible reason is that since multiple NPD shift announcements from the same firm

occur over a long horizon, any knowledge gained from the response to a previous announcement may have disappeared with the exit of relevant executives. This finding underscores the need for gaining a deep understanding of the determinants of returns from shifting NPD to emerging markets.

Third, one could argue that only firms with favorable NPD shift information may choose to make an announcement, unlike with some financial announcements where disclosures are mandated by regulators. I searched the Internet for evidence of news of NPD shifts that were not announced by the firms, but later reported by news media. I did not find any evidence for such events. There were some "thought" articles on NPD shifting to India, but they included only examples from the dataset.

Fourth, one possible reason for the NPD shift announcements and their returns in the data is that firms generally experienced poor performance of their NPD in developed markets and the stock market was reacting to this overall poor performance. To explore this reason, I analyzed the distribution of past profitability of the announcing firms. The vast majority of firms have positive profitability, suggesting that this possible reason is unlikely.

Finally, I estimated the models by removing outliers. I removed observations (five) with CARs that were outside of 15% (positive and negative) and estimated the models. The signs of the effects remain the same.

Table 6 provides a summary of the hypotheses and empirical findings. The findings support six out of eight hypotheses for NPD shifting on shareholder value.

Hypotheses H_1-H_5 and H_7 are significant and are directionally supported. While H_6 and H_8 are directionally supported, they are not significant.

TABLE 6
Summary of Hypotheses and Results for Shifting New Product Development

Hypothesized Effect	Observed Effect
Hypothesis 1: Investment Amount (-)	(-)
Hypothesis 2: Investment Amount x Employee Quality Emphasis (+)	(+)
Hypothesis 3: Investment Amount x Cost Savings Emphasis (+)	(+)
Hypothesis 4: Investment Amount x Development Scope (+)	(+)
Hypothesis 5: Investment Amount x Profitability (-)	(-)
Hypothesis 6: Relative Local Employee Size (-)	N.S.
Hypothesis 7: Relative Local Employee Size x Employee Quality Emphasis (+)	(+)
Hypothesis 8: Relative Local Employee Size x Cost Savings Emphasis (-)	N.S.

IMPLICATIONS

My novel findings offer meaningful implications for theory and practice. From a research standpoint, the findings offer some counter-intuitive insights and implications. Although an average NPD shift announcement generates a negative return (-0.45%), less than one-half (47.1%) of the NPD shift announcements generate positive abnormal returns with an average return of 2.87%. The remaining announcements (52.9%) generate an average negative abnormal return of -3.41%. These findings provide a new twist to previous research that show that a new product introduction announcement generally generates positive shareholder value (see Chaney, Devinney, and Winer 1991;

Lee et al. 2000; Sharma and Lacy 2004). However, my average return finding on NPD shifting is directionally consistent with that on NPD outsourcing (Raassens et al. 2012).

Among the two direct investor signals, investment amount and relative local employee size, only investment amount has an effect on short-term abnormal returns. Even so, investment amount has a negative effect on short-term returns. Investment amount signals economic costs and the potential size of the impact on a firm's cash flows. By itself, a high level of investment in developing new products in an emerging market seems to create concerns among investors about the quality of potential products. The prospect of diminished future quality seems to dampen investors' assessment of future cash flows, resulting in a negative return.

From a managerial perspective, given the negative direct effect of investment amount, why do firms include investment amounts in their announcements? Should they include investment amounts in their announcement of an NPD shift? The interaction effects of investment amount with employee quality emphasis, cost savings emphasis and development scope offer valuable insights into this issue.

Firms are better off indicating the investment amount in their announcements of NPD shifting to an emerging market only if the investment exceeds a threshold amount. Even if it exceeds this threshold level, firms can benefit from higher investment amounts only if they highlight the quality of local employees, cost savings, and/or the broad scope of product development. In each case, the information acts as a contingent signal; the net effect of investment amount on short-term abnormal returns is positive.

Among these contingent signals, for higher investment amounts, cost savings emphasis yields the highest pay-off. The theoretical reasoning is based on the economics of investing. When a firm signals a high level of investment in an NPD shift to an emerging market, investors are skittish about the quality of potential products and question the return on a big investment. However, if the firm highlights potential cost savings from such an initiative, it assuages investors' apprehensions about excessive spending. Investors may even interpret the firm's decision as a well-thought out move. Therefore, firms can derive an advantage if they invest a substantial amount in the NPD shift so long as they play up the resulting costs savings from such a strategic move.

A firm realizes the biggest short-term abnormal return when it highlights the quality of its local employees and when the number of local employees it plans to use in the NPD shift is high. While the number of local employees is a direct signal, the quality of employees serves as a contingent signal. Investors value these two pieces of information in conjunction. Therefore, firms should emphasize the qualifications, training, and track record of its local employees, especially if it plans to use a high number of local employees. Thus, the number and quality of employees should be highlighted in announcements of NPD shifts to emerging markets.

Taken together, the findings provide key implications. Direct and contingent signals act in tandem to provide valuable information to investors. Firms should highlight the quality and number of local employees when there are a high number of local employees. For example, if a firm intends to invest beyond $1.5 million in an NPD shift to an emerging market, it should emphasize the investment amount and the cost

savings to be attained together. The firm should also refrain from mentioning the set of products the NPD shift pertains to, especially if it is a narrow set.

LIMITATIONS, FUTURE RESEARCH, AND CONCLUSIONS

While my research contributes to a critical understanding of the consequences of firms' shifting their NPD to emerging markets, it also suggests additional areas for future research. First, I consider the consequences of shifting NPD through the establishment of an R&D facility in an emerging market. It would be fruitful to consider if such a shift should be gradual or rapid for effective innovation outcomes. Second, it would be beneficial to study the challenges associated with shifting NPD to emerging markets and how firms should overcome them. Future research could examine the effects of cultural differences, communication styles, and the composition of top management teams on global and local innovations from emerging markets, and how to manage these effects. Third, future research could examine how the shifting of highly skilled NPD impacts the innovation outcomes across geographic boundaries; specifically, how innovation diffuses from a centralized local innovation hub into other markets. Finally, by focusing my empirical analysis on India, I developed a tight and robust set of results. Future research could improve the generalizability of the results by studying other emerging markets.

My research offers timely and important insights and implications for both theory and practice. From a theoretical standpoint, my research offers insights into how shifting NPD to emerging markets impacts short-term shareholder value. From a managerial

perspective, my research provides guidance for when it may be advantageous for a global firm to shift its NPD to emerging markets, and related actions (information content of the NPD shift announcement) may be conducive to increasing shareholder value.

I find important asymmetries regarding the impact of shifting NPD to an emerging market on shareholder value. Investment amount (relative local employee size) is not significantly related to short-term abnormal returns. However, the effect of investment amount and relative local employee size are moderated by employee quality emphasis, costs savings emphasis, development scope and prior profitability. Employee quality emphasis has a positive moderating effect on both investment amount-- and relative local employee size-- short-term abnormal return relationships. Cost savings emphasis has a positive moderating effect on the investment amount--short-term abnormal returns relationship, but no effect on relative local employee size. Development scope (profitability) has a positive (negative) moderating effect on the investment amount-abnormal return relationship. To get the biggest short-term abnormal return to an NPD shift announcement, firms should highlight employee quality and cost savings, while mentioning the number of local employees and the investment amount.

CHAPTER III

BETTER TOGETHER? IMPACT OF PARTNERING NEW PRODUCT DEVELOPMENT IN EMERGING MAREKTS ON SHAREHOLDER VALUE

In recent years, global firms, such as Adobe Systems, Pfizer, Verizon Communications, and Proctor & Gamble, have been increasingly looking to large emerging markets, such as India and China, for new product development (NPD) by partnering with local firms. Emerging market partner firms are attractive for creating innovations because of the availability of a highly specialized and trained R&D workforce and relatively low product development costs. Global firms typically partner in a foreign country by either acquiring a local firm's development team, or forming a joint venture with a local form, or forming an NPD alliance with the local firm. However, little is known about the effectiveness of global firms partnering for NPD with firms based in emerging markets (hereafter, partnering NPD). What are the short-term effects on shareholder value of partnering NPD in emerging markets? What are the determinants of these effects? I develop a conceptual framework and hypotheses related to these important questions and test them using a uniquely compiled dataset of 91 publically traded North American-headquartered global companies who did partnering NPD in India during 1991-2013.

My analysis reveals important effects of partnering NPD on shareholder value. While many global firms partner with emerging market firms on NPD to save costs, I find that mentioning cost savings as a reason for partnering boomerangs on the firm as it

leads to negative abnormal returns. In contrast, highlighting the quality of the partner's local employees leads to positive abnormal returns. Yet, many global firms seem to hesitate to highlight an emerging market partner firm's employee quality due to concerns that it may adversely impact perceptions of product quality. Interestingly, the global firm's past profitability moderates these main effects in the opposite direction. Furthermore, financial leverage has a negative effect on the short-term abnormal returns to an NPD partnership announcement. That is, the greater the global firm's debt is relative to equity, the lower the abnormal returns are to the NPD partnership. However, a cost savings emphasis alleviates this negative effect, suggesting some silver lining associated with a cost savings emphasis. These interesting findings provide actionable insights and can help managers better manage the impact of partnering NPD in emerging markets on shareholder value.

INTRODUCTION

Innovation is the engine of growth for many firms, in particular, global firms. At the heart of a firm's innovation strategy are its decisions pertaining to the innovation architecture—a firm's strategic decisions on how to build and manage its NPD across geographical locations. To create and manage their innovation architecture, firms pursue new product development (NPD) in different countries, both developed and emerging markets.

Historically, global firms have concentrated the vast majority of their NPD in developed markets, from which they derive most, if not all of their profits. In recent

years, global firms have been moving some of their NPD to developing markets, where the vast majority of future growth is estimated to occur (Prahalad and Hammond 2002). By 2025, emerging markets are projected to contribute $30 trillion worth of business and 70 percent of global business growth (Atsmon et al. 2012). Emerging markets, such as China and India, are also becoming increasingly attractive destinations for NPD work, such as design, research and development (R&D), and engineering (Lewin, Massini, and Peeters 2009; Subramaniam and Venkatraman 2001). Two major reasons underlying their attractiveness are a highly specialized and trained R&D workforce and relatively lower product development costs.

Entering an emerging market for product development may entail a higher level of risk compared to more westernized, developed markets. Such uncertainty can result in established global firms hitting roadblocks when entering emerging markets. For example, Kellogg's entered India to market its popular cold cereal, which seemed like a natural extension of products consumed in developed markets. However, prior to launch, the deep-seated cultural preference for a warm breakfast was not uncovered, and as a result, the product did not succeed. Had Kellogg's chosen to do NPD in India and develop a warm breakfast cereal, the outcome could have been different.

Firms may be able to resolve such uncertainty and develop products that are a better fit for emerging markets by partnering with local firms on NPD, and utilizing the local firm's resource capabilities. Working directly with a local firm in an emerging market can help a global firm build out its innovation architecture. For example, in 2012, Starbucks created a joint venture with Tata Global Beverages in India to develop new

product offerings, including the premium tea product, Tata Tazo. Furthermore, in 2011, Proctor & Gamble and Teva Pharmaceutical Industries created a new partnership focusing on consumer healthcare to develop new product offerings for the Indian market. By partnering with local firms, global firms are able to expand their innovation capabilities.

In this paper, I examine three broad types of partnering for NPD in an emerging market that a global firm can consider (hereafter, partnering NPD); (1) acquiring a local firm with a product development team, (2) creating a joint venture (JV) with a local company for product development, and (3) forming a product development collaboration or alliance with a local firm. These partnership modes allow firms access to the resources local firms' and expand their capabilities, either by working with them directly or by acquiring those resources. They help ease the transition into a country that is culturally, socially, and institutionally different from the MNC's home base (Meyer 2001; Meyer et al. 2009). Despite the potential benefits of a global firm utilizing the resource capabilities of a local firm, very little is known about the effectiveness of global firms' partnering for NPD in emerging markets. How do investors react to global firms' partnering for NPD with firms based in emerging markets?

Despite the growing potential and opportunities offered by emerging markets for NPD, the NPD activities of many global firms are mostly centered in developed markets. However, many global firms, such as Adobe Systems, Pfizer, Verizon Communications, and Proctor & Gamble, are realizing the vast potential of emerging markets as a critical component for firm profitability. As such, large emerging markets, such as India and

China, are being increasingly utilized to help firms develop their NPD. Partnering NPD is one way that firms can develop their NPD, and it offers many benefits to global firms. For example, for NPD, emerging markets, such as India and China, offer a highly trained workforce (Lewin, Massini, and Peeters 2009). Local firms have expertise and experience dealing with unique constraints encountered in emerging markets, including limited infrastructure and resources, powerful sociopolitical institutions, an informal economy, and wide consumer heterogeneity (Sheth 2011). Hitt, Li and Worthington (2005) classify emerging markets as "learning laboratories" for foreign entrants.

Partnering NPD can help a global firm in important ways. Emerging markets exhibit informal rules in organization and development. While formal rules are explicit and relatively easy to understand and follow, informal rules are often more insidious to decipher; such difficulties may be alleviated (and even learned) by utilizing the resource capabilities of a local firm. Similarly, differences in culture may present challenges that may be easier to manage if a global firm works with a local firm than attempting to navigate an emerging market without these external capabilities. Utilizing a local partner's embedded knowledge base can help in reducing the uncertainty of entering into an unfamiliar marketplace (Barkema, Bell, and Pennings 1996).

Interactions with a local partner in NPD also have the potential to produce reverse innovations that are initially developed in emerging markets (at much lower price points) to appeal first to mainstream local customers and then utilized in the developed markets (Govindarajan and Ramamurti 2011). An example of Partnering NPD resulting in reverse innovation is the joint venture partnership between Ashok Leyland,

an automobile manufacturing company based in India, and Deere & Company (i.e., John Deere), a large American manufacturer of agricultural machinery. Together, these firms created a wide range of construction equipment to sell in both emerging and developed markets.

However, despite the potential benefits of partnering for NPD with firms in emerging markets, unique challenges exist. The decision to announce partnering NPD has the potential to trigger a negative investor reaction. Historically, emerging markets were seen as favorable destinations for offshoring or outsourcing standardized, repetitive activities, such as manufacturing, rather than for innovation related activities, such as NPD (Holman, Batt, and Holtgrewe 2007). Working with or acquiring a local firm can create a cultural clash. Team members with homogenous backgrounds communicate and cooperate better together than team members with heterogeneous backgrounds (Wiersema and Bantel 1992). Also, deciding to utilize outside resources results in a loss of control, thus increasing transaction costs.

It remains unclear how investors react to partnering for NPD with firms in emerging markets. This externally controlled NPD, which results in partnering NPD, uses *new* resources from outside the firm (e.g., collaborating with a local firm, acquiring a local firm's development team). Prior research has examined the effects of companies purely *outsourcing* marketing related activities to international locations, including emerging markets. In an NPD context, pure outsourcing entails hiring an outside firm to perform all of the NPD work. Raassens, Wuyts, and Geyskens (2012) examine the *outsourcing* of NPD and find that a firm can alleviate technical uncertainty of

outsourcing by taking a minority equity position in the company to which it outsources and can reduce cultural uncertainty by working with familiar partners. Kalaignanam et al. (2013) investigate the impact of *outsourcing CRM* to foreign countries and find that it benefits firms with high (low) IT (marketing) capabilities. However, it remains unclear as to how such partnering impacts shareholder value, and what factors determine abnormal returns to partnering NPD in emerging markets.

My research bridges this gap by addressing the following key research questions: (1) What is the effect on global firms partnering for NPD with firms in emerging markets on shareholder value? and (2) What are the determinants of short-term abnormal returns from such partnering?

I develop a conceptual framework and hypotheses related to these important questions and test them using a uniquely compiled dataset of 91 publically traded North American-headquartered global companies who engaged in partnering NPD to India during 1991-2013. My research contributes to the emerging market innovation literature in the following important ways. My results extend the insights from the effects of *pure* NPD *outsourcing* (e.g., Raassens, Wuyts, and Geyskens 2012) to the effects of *partnering* NPD on firm value, and offer critical insights into the *determinants* of partnering NPD.

My analysis reveals important effects for partnering NPD. Historically, a key reason for partnering with emerging market firms is cost savings. Interestingly, I find that mentioning a cost savings emphasis backfires on the firm, leading to negative abnormal returns. In contrast, highlighting the quality of the emerging market partner's

local employees leads to positive abnormal returns. Yet, many global firms hesitate to highlight an emerging market partner firm's employee quality due to perceived product quality dilution fears. Interestingly, the global firm's past profitability moderates these main effects in the opposite direction. Furthermore, financial leverage has a negative effect on the short-term abnormal returns to an NPD partnership announcement. That is, the greater the global firm's debt is relative to equity, the lower the abnormal returns are to the NPD partnership. However, a cost savings emphasis alleviates this negative effect, suggesting there is a silver lining associated with a cost savings emphasis. These interesting findings provide actionable insights and will help managers better manage the impact of partnering NPD in emerging markets on shareholder value.

CONCEPTUAL MODEL AND HYPOTHESIS DEVELOPMENT

A global firm engaging in partnering NPD with a local firm can engage in an alliance, a joint venture, or an acquisition. Partnering NPD in emerging markets differs from shifting the firm's own NPD team to emerging markets. In shifting NPD, the firm's existing resources are deployed, and the capabilities of local firms are not utilized.

To understand the impact on shareholder value from partnering NPD, I examine global firms' decisions over an extended time horizon. Building on the resource-based view (RBV) (Barney 1991; Wernerfelt 1984), the theory of dynamic capabilities purports that firms are not limited by their initial bundles of resources but develop resources over time. They develop and accumulate these capabilities over time via organizational learning (Teece, Pisano, and Schuen 1997). In the context of innovation,

global firms build their capabilities by partnering with local firms on NPD (Hurley and Hult 1998; Tellis, Prabhu, and Chandy 2009).

I draw upon organizational learning theory to formulate the hypotheses relating to partnering NPD. Organizational learning theory examines how firms accumulate new information, codify and transfer the acquired information, and deploy the learned information for strategic decision making (Argyris and Schon 1999; Levitt and March 1988). Global firms can learn from experiences inside the firm (internal) or outside of the firm (external). I extend organizational learning theory to NPD. For NPD learning to occur throughout the organization, firms need to employ a well-developed and disciplined approach. Firms that are successful at learning from their NPD can improve the likelihood of success when introducing new products to the marketplace, resulting in improved company performance (McKee 1992; Slater and Narver 1995).

A key reason for firms to partner externally is to leverage outside specialized knowledge. Knowledge generated externally form such networks is a fruitful form of organizational learning, and can lead to innovation generation and a sustained competitive advantage (Inkpen 1998; Powell, Koput, and Smith-Doerr 1996). Innovating for a global marketplace requires dependence on external firms for outside knowledge generation (Harrison et al. 2001). Also, accessing local markets and knowledge from external sources allows firms from developed markets to acquire new capabilities in developing markets (Hitt et al. 2000).

Strategically, firms enter emerging markets for three primary reasons: (1) cost savings, (2) knowledge and (3) access to foreign markets (Contractor et al. 2010;

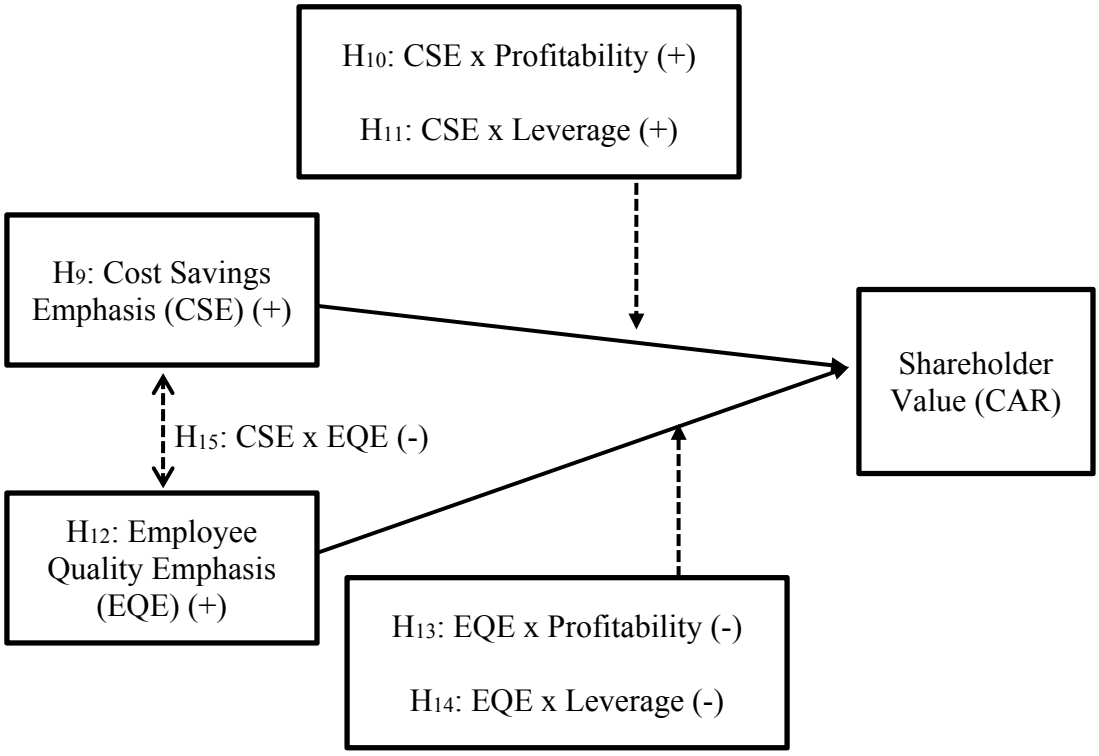
Dunning 1993). I focus on two major reasons in the context of partnering NPD: (1) a cost savings strategic advantage (cost savings emphasis) and (2) a knowledge based strategic advantage (employee quality emphasis). Cost savings emphasis refers to firms directly mentioning cost savings as a key reason for partnering NPD in an emerging market; and employee quality emphasis refers to firms directly mentioning local employee quality as a key reason for partnering NPD in an emerging market. In addition to the direct effects of these two strategic emphasis types, I also investigate the moderating effects of two key financial variables, specifically prior profitability and leverage, which together concisely represent a firm's financial position. While a firm emphasizes either cost savings or employee quality, investors will assess the potential cash flows to partnering NPD through these financial health variables.

Both prior profitability and leverage impact a global firm's access to foreign markets, although in different ways. A key reason firms enter into partnerships is to secure additional resources (Hitt et al. 2000). Financial resources, leverage and profitability, are critical for attracting partners. For global firms, partnering with a local firm allows access to local knowledge (Hitt, Li, and Worthington 2005). Local firms in emerging markets are also interested in securing financial and other resources from global firms (Hitt et al. 2000; Svetlicic and Rojec 1994). Profitable firms are rich in financial resources. As a result, they have an easier time forming and succeeding at partnerships. Because of their abundant financial resources, such firms have a wider number of potential partners to choose from (Park et al. 2002; Stuart 1998). Furthermore, profitable firms can recognize, codify, and implement external knowledge

from partnerships with ease, improving the NPD partnership's likelihood of success (Cohen and Levinthal 1990).

In contrast, highly leveraged firms may have a harder time accessing external knowledge from NPD partners as they are resource poor (Hitt et al. 2000). These financially stretched firms tend to have a difficult time findings partners, and as a result, have a reduced pool of local firm partners to choose from in an emerging market. Moreover, NPD partnerships carry an elevated risk as the global firm may face liquidity challenges and run into challenges if the NPD partnership requires additional financing. Therefore, I am interested in understanding how a global firm's financial health, specifically profitability and financial leverage, moderate the two major areas of strategic emphasis (cost savings and employee quality) commonly undertaken by a global firm entering an emerging market. I develop hypotheses only for important interaction effects, which include prior profitability, leverage, cost savings emphasis, and employee quality emphasis. I develop these hypotheses in the following paragraphs. My conceptual model appears in Figure 3.

FIGURE 3
Impact of Partnering New Product Development in Emerging Markets on Shareholder Value: Conceptual Model



Determinants of Partnering NPD and Shareholder Value

When a firm engages in partnering NPD in an emerging market, certain key factors may influence the abnormal returns to an announcement about the NPD partnership. They include cost savings emphasis, employee quality emphasis and their interactions with profitability, leverage, and each other. For partnering NPD, investors will utilize observable company information to determine if a firm can generate the innovation potential from outside learning to achieve a competitive advantage.

A major factor affecting investors' evaluation of partnering NPD in an emerging market is their perception of cost savings that can be realized from partnering with a

local firm (cost savings emphasis). Indeed, historically, exploitation of potential cost savings has been a major reason for entering emerging markets through partnerships. As a result, I expect firms mentioning cost savings in their partnering NPD announcement to experience a positive effect on their shareholder value, leading to the following hypothesis.

> *H_9: Cost savings emphasis will have a positive effect on the short-term abnormal return to partnering NPD in an emerging market.*

Firms with a track record of being profitable will extract cost savings by partnering with a local firm. Profitable firms are rich in resources. Resource-rich firms are more likely to succeed in partnerships in uncertain markets such as emerging markets than resource-poor firms. Greater resources enable the global firm to be more attractive to emerging market firms, increasing the quality of partner selection opportunities (Park et al. 2002). Such resources include technical, financial, and physical attributes (Barney 1991). Furthermore, firms with high resources recognize the value of external knowledge quickly, learn fast from such partnerships, and are skilled at extracting such knowledge (Cohen and Levinthal 1990). Investors will view cost savings emphasis more favorably for firms with a track record of profitability than for other firms, creating a positive synergistic effect. Thus, I expect that cost savings and prior profitability to have a positive interaction effect on shareholder value. Hence, H_{10}:

> *H_{10}: Prior profitability interacts with cost savings emphasis to affect the short-term abnormal return to partnering NPD in an emerging market in such a way that at higher levels of profit, the positive effect of prior profitability is stronger than it is at lower levels of profit.*

When a highly leveraged firm partners with an emerging market firm, it is viewed as riskier than when a firm with less debt enters into partnerships, mainly because of access to resources. Because of inadequately developed and funded financial markets, many emerging market firms seek to access capital by partnering with firms from developed markets (Hitt et al. 2000; Svetlicic and Rojec 1994). Partnerships with resource constraints have a high risk of failure, suffer from reduced access to emerging market partners, and make successful collaboration more difficult (Hitt et al. 2000; Stuart 1998). Given the elevated risk associated with emerging market partnerships, highly leveraged global firms are perceived as potentially risky, hurting their shareholder value.

Although investors view highly leveraged firms negatively, they react positively when cost savings is emphasized, mitigating their negative returns to partnering NPD. A cost savings emphasis reassures investors that the firm is conscious about controlling all costs, including debt service costs induced by leverage, improving shareholder value. I predict cost savings and leverage will have a positive interaction, resulting in increased shareholder value. My next hypothesis is as follows:

> *H_{11}: Leverage interacts with cost savings emphasis to affect the short-term abnormal return to partnering NPD in an emerging market in such a way that at higher levels of leverage, the positive effect of leverage is stronger than it is at lower levels of leverage.*

Another major factor affecting investors' evaluation of partnering NPD in an emerging market is their perception of the partner firm's quality of employees whose skills will be utilized for NPD (employee quality emphasis). Because the global firm makes a conscious decision to partner with a local firm, it may signal the potential

effectiveness of the local firm by highlighting the quality of local employees. Because an emerging market like India is typically viewed as a strong base for design and development talent, firms that partner with emerging market firms can leverage the country of origin image (Ready, Hill, and Conger 2008) by highlighting the local talent.

While historically, cost savings was the main motivation for moving NPD to emerging markets, in recent years, extracting learning or knowledge from emerging markets has been a strong motivation. Therefore, firms focus on the quality of interactions with local firms' employees and not just on cost savings (Farok et al. 2010). Access to specialized skills is a key motivational driver for global firms to move NPD to emerging markets (Lewin et al. 2009; Manning, Massini and Lewin, 2008). Furthermore, the knowledge generated from distant locations is often more valuable than knowledge from an established home location (Bierly et al. 2009); partnering with a local firm can facilitate access and knowledge extraction. Employees of local firms have expertise and experience dealing with the unique challenges of emerging markets, including limited infrastructure and resources, powerful sociopolitical institutions, an informal economy, and wide consumer heterogeneity (Sheth 2011). Therefore, I expect employee quality emphasis in emerging market partnering NPD announcements to have a positive effect on shareholder value, leading to my next hypothesis.

> *H_{12}: Employee quality emphasis will have a positive effect on the short-term abnormal return to partnering NPD in an emerging market.*

Firms with higher levels of prior profitability generate higher investor expectations than firms with lower levels of prior profitability. Investors have high profitability expectations from previous high performers. Das, Sen, and Sengupta (1998)

find that investors expect more profitable, larger firms to show greater profits from a partnership than less profitable, smaller firms. Firms with higher levels of profitability will be held to a higher standard when they announce partnering NPD than firms with lower levels of profitability. Therefore, investors may view the announcements of partnering NPD in emerging markets from firms with high profitability more negatively than those from firms with low profitability.

Importantly, I expect that highlighting the quality of local employees will exacerbate this negative effect for high profitability firms. Investors have high expectations for a firm with a past record of profitability and may perceive this action as creating a worse future for the firm, and that the firm should instead remain in its current and profitable NPD situation in its developed markets. Investors may question if a profitable firm can leverage the quality of highly skilled local employees in an emerging market, resulting in improved future cash flows. Firms with higher prior profitability have a much higher threshold to cross than firms with lower prior profitability. Investors already have built in expectations that profitable firms will choose quality employees; when profitable firms emphasize the quality of local employees, investors already expect the firm to make this good decision. Therefore, I expect that for highly profitable firms, highlighting the quality of local employees will be perceived negatively. Therefore, my next hypothesis is as follows.

> *H_{13}: Prior profitability interacts with employee quality emphasis to affect the short-term abnormal return to partnering NPD in an emerging market in such a way that at higher levels of profit, the negative effect of prior profitability is stronger than it is at lower levels of profit.*

Since partnering with emerging market firms can be difficult and risky, investors are likely to be wary of highly leveraged firms entering into such partnerships, and may question the returns to shareholder value from the announcement of such partnerships. Furthermore, firms with less resources and high levels of debt are likely to have a harder time attracting partners than firms that are more financially secure (Park et al. 2002). The partners that a highly leveraged global firm attracts may be of lower quality. Because international alliances have high dissolution rates (Hitt et al. 2000; Lambe et al. 2002), investors favor financially stable firms with ample resources that have a better chance of securing a strong emerging market partner whose employee quality is well known. Given these inherent risks, I hypothesize that investors will question the returns from a highly leveraged firm adopting a high employee quality emphasis. In general, investors perceive quality employees favorably, but for highly leveraged firms, they question the firm's ability to attract high quality local employees. As a result, this positive effect is diminished. This reasoning leads to my next hypothesis.

> *H_{14}: Leverage interacts with employee quality emphasis to affect the short-term abnormal return to partnering NPD in an emerging market in such a way that at higher levels of leverage, the negative effect of leverage is stronger than it is at lower levels of leverage.*

Although cost savings emphasis and employee quality emphasis when announcing an NPD partnership in an emerging market can independently have a positive effect on firm value, highlighting both cost savings and employee quality in the same announcement may have a different effect on firm value. This is because of an inherent contradiction between cost and quality in investors' minds. Investors perceive high quality employees to be associated with high costs of hiring and retention.

Highlighting cost savings together with employee quality in the same announcement creates incongruity for investors. As a result, investors may question the firm's ability to realize positive returns from partnering NPD. This in turn, will likely lead to a negative effect on shareholder value. This reasoning leads to my next hypothesis.

> *H_{15}: Employee quality emphasis interacts with cost savings emphasis to affect the short-term abnormal return to partnering NPD in an emerging market in such a way that when both employee quality and cost savings are highlighted, the positive effects of employee quality emphasis or cost savings emphasis are lower than when either employee quality or cost savings is highlighted.*

To summarize, I expect the following key hypotheses to illuminate important asymmetric effects on short-term abnormal returns when a firm engages in partnering NPD in an emerging market. When a firm highlights either a cost savings emphasis or an employee quality emphasis in its partnering NPD announcement, I expect it to positively affect short-term abnormal returns. However, when a firm decides to emphasis both cost savings and employee quality, I predict a negative moderating effect. Furthermore, as a firm becomes more profitable or increases its financial leverage, this would lead to a positive moderating effect on the positive cost savings emphasis effect. However, I predict that as a firm becomes more profitable or increases its financial leverage, this will have a negative moderating effect on the positive employee quality emphasis.

DATA AND VARIABLE OPERATIONALIZATION

To empirically test the hypotheses, I assemble a unique panel data set by collecting data on a number of key variables related to partnering NPD in India. My final sample consists of 288 announcements of 91 publically traded North American-

headquartered global companies that engaged in partnering NPD in India between 1991 and 2013. Eighty nine of the global companies made more than one partnering NPD announcement during the time period.

To compile my final dataset, I first searched through approximately 70,000 news releases in Factiva. I searched for partnering NPD using the very broad search term of "India" and the firm's name. Although this procedure demanded that a huge volume of news releases be analyzed, I believe this step is necessary to accurately capture the wide range of NPD terminology (e.g., design center, R&D center, new product development facility). By utilizing a very broad search terminology, I am able to generate a more robust set of announcements than if I limit the search to a few key words. For a partnering NPD announcement to make it into the final sample, the news release needs to mention the global firm undertaking NPD with a partner in India without any cofounding news, such as also entering the Chinese market. Table 7 shows some examples of partnering NPD.

TABLE 7
Examples of Announcements of Partnering New Product Development

> "Apollo Hospitals, Asia's largest health care provider, and Cisco today announced an alliance to help transform health care through information and communications technology. The joint initiative will help drive inclusive growth and well-being. The integration of Cisco's desktop based Health Presence Extended Reach technology with Apollo Hospital's "Medintegra" will now for the first time make available a user friendly, cost effective tele-medicine solution. As part of this initiative, Cisco and Apollo have collaborated in Raichur to demonstrate how health care in rural areas can be tranformed."
>
> -Cisco Systems Inc., 5/17/2010 (CAR:-0.75%)

TABLE 7 Continued

"Tech Mahindra Ltd. and Microsoft are to set up an authorized Encoder Conformance Testing Lab for video encoders used in deployment of IPTV solutions on Microsoft Mediaroom based platforms. We are pleased to work with Tech Mahindra to offer our Mediaroom ecosystem partners worldwide a seamless and efficient method. By applying Tech Mahindra's technical prowess and capabilities, our partners can continue to offer powerful and easy to deploy video delivery solutions, enabling operators worldwide to meet growing consumer demand for high quality entertainment experiences across a range of screens."

-Microsoft, 7/7/2011 (CAR: 2.31%)

Focal Variables of Partnering NPD

Following the hypotheses, I focus on two main determinants of partnering NPD, *cost savings emphasis* and *employee quality emphasis*. *Cost savings emphasis* is a dummy variable that takes the value of one if partnering NPD is undertaken to take advantage of the cost savings of the local team and zero if this reason is not mentioned. *Employee quality emphasis* is a dummy variable that takes the value of one if partnering NPD is undertaken to leverage the high quality of the local team and zero if this reason is not mentioned. My interaction variables of interest are *profitability* and *leverage*. I operationalize *profitability* as net income divided by sales, and *leverage* as the firm's ratio of long-term debt to total assets.

Additional and Control Variables

In addition to the focal variables, I include additional and control variables to strengthen the analysis. I operationalize *offering type* as a dummy variable that takes the

value of one if the firm primarily produces tangible (non-service) goods and zero if the firm primarily produces service goods; *firm experience* as the numbers of years between the news release date and the year in which the firm's first R&D subsidiary was set up overseas; *customer focus* as a dummy variable that takes the value of one if the firm deals directly with the end-consumer (B2C) and zero if the firm does not directly interact with the end-consumer (B2B); *diversification* as the number of business segments in which the firm operates; *firm size* is the natural logarithm of the firm's assets; *R&D intensity* as the ratio of R&D expenditures to sales and *marketing intensity* as the ratio of selling, general and administrative expenditures to sales. I operationalize *location specificity* as a dummy variable that takes the value of one if the NPD activity has a global focus and zero if it has a local focus; a local focus consists of an NPD activity focused on the Indian or Asian consumer market; *development specificity* as a dummy variable that takes the value of one if partnering NPD applies to all products (general) and zero if it is specific to certain products. I treat announcements not mentioning specifics regarding product or service development as general.

I operationalize *new-to-the-firm* as a dummy variable that takes a value of one if the news release mentions that the NPD activity is creating a product or service opportunity new for the firm and zero otherwise; e*quity level* is a dummy variable that takes the value of one if the firm acquires or forms a joint venture and zero if the firm forms a loose collaboration or alliance with a local firm for NPD, and f*irm announcement frequency* is a dummy variable taking the value of one if the firm made

two or more announcements in the same year and zero otherwise. A full list of the variables, operationalization, and data sources appears in Table 8.

TABLE 8
Operationalization of Variables for Partnering New Product Development

Variable	Notation	Operational Measure	Data Source
Cumulative Abnormal Returns	CAR	Short-term cumulative abnormal returns	CRSP, Ken French website
Cost Savings Emphasis	COSTSAVE	Dummy variable; =1 if cost savings mentioned; =0 if not mentioned	Factiva
Employee Quality Emphasis	EMPQUAL	Dummy variable; =1 if employee quality mentioned; =0 if not mentioned	Factiva
Profitability	PROFIT	One year lag of net income divided by sales	Compustat
Leverage	LEV	One year lag of the ratio of long-term debt to total assets	Compustat
Development Scope	DEVSCOPE	Dummy variable; =1 if NPD spans broad set of products; =0 if specific	Factiva
Offering Type (Tangible Good)	OFFERTYPE	Dummy variable; =1 if NPD is for tangible goods; =0 if NPD is for services	Four-digit North American Industry System Code
Firm Local Experience	FIRMEXP	# of years elapsed between the announcement date year and the year when the first R&D center opened in the emerging market	Zinnov Consulting; Factiva
Customer Focus (B2C)	CUSTFOC	Dummy variable; =1 if the firm is primarily a B2C firm; =0 if primarily a B2B firm	Company website for product information

TABLE 8 Continued

Variable	Notation	Operational Measure	Data Source
Diversification	DIV	One year lag of the # of business segments in which the firm operates	Compustat (Segments file)
Firm Size	SIZE	One year lag of the natural logarithm of the firm's assets ($)	Compustat
R&D Intensity	RDINT	One year lag of the ratio of R&D expenditures to sales revenues	Compustat
Marketing Intensity	MKTGINT	One year lag of the ratio of selling, general and administrative expenditures to sales	Compustat
Location Specificity	LOCSPEC	Dummy variable; 1=global NPD; 0=local NPD	Factiva
Development Specificity	DEVSPEC	Dummy variable; 1=general; 0=specific NPD	Factiva
New-to-the-Firm	NEWTOFIRM	Dummy variable; 1=new product; 0=otherwise	Factiva
Equity Level	EQUITYLEV	Dummy variable; 1=acquisition or joint ventures; 0=partnership	Factiva
Firm Announcement Frequency	FIRMFREQ	Dummy variable; 1=2 or more announcements in the same year; 0=otherwise	Factiva

The summary statistics appear in Table 9. The focal variables exhibit some interesting differences. Nearly half (49.2%) of the firms experience positive CAR with the mean of 3.57%. The remaining half (50.8%) of firms exhibit negative returns, the mean being -2.65%. Thus, a good mix of firms experience both positive and negative returns. Among the potential determinants, firms mention either a cost savings emphasis

or an employee quality emphasis with roughly equal likelihood. About 26.4 percent of firms emphasize either cost savings or employee quality. Profitability, which I conceptualize as the one year lag of net income divided by sales, ranges from -0.580 to 0.791, with an average value of 0.118. Finally, financial leverage, which I measure as the one year lag of the ratio of long-term debt to total assets, ranges from 0.000 to 1.404, with an average value of 0.124.

TABLE 9
Summary Statistics of Key Variables in the Data for Partnering New Product Development

Variable	Mean (SD)	Minimum	Maximum
Cumulative Abnormal Returns	0.004 (0.060)	-0.526	0.481
Cost Savings Emphasis	0.132 (0.339)	0.000	1.000
Employee Quality Emphasis	0.132 (0.339)	0.000	1.000
Profitability	0.118 (0.137)	-0.580	0.791
Leverage	0.124 (0.139)	0.000	1.404
Offering Type (Tangible Good)	0.684 (0.466)	0.000	1.000
Firm Experience	7.889 (5.972)	0.000	26.000
Customer Focus (B2C)	0.330 (0.471)	0.000	1.000
Diversification	4.503 (2.844)	1.000	13.000
Firm Size	8.527 (2.590)	2.002	12.530
R&D Intensity	0.122 (0.071)	0.000	0.402
Marketing Intensity	0.362 (0.170)	0.000	0.873
Location Specificity	0.486 (0.501)	0.000	1.000
Development Specificity	0.556 (0.498)	0.000	1.000
New-to-the-Firm	0.045 (0.208)	0.000	1.000
Equity Level	0.222 (0.416)	0.000	1.000
Firm Announcement Frequency	0.378 (0.486)	0.000	1.000

The correlation matrix appears in Table 10. The correlations between the independent variables remain low, suggesting that multicollinearity is not a problem.

TABLE 10
Correlation Matrix for Partnering New Product Development

		1	2	3	4	5	6	7	8	9	10	11	12
1.	CAR [-1,+1]	1.00											
2.	Cost Savings Emphasis (CSE)	0.03	1.00										
3.	CSE x Profitability	0.26	0.58	1.00									
4.	CSE x Leverage	0.04	0.56	0.32	1.00								
5.	Employee Quality Emphasis (EQE)	0.10	0.09	0.10	0.00	1.00							
6.	EQE x Profitability	-0.02	0.08	0.10	0.00	0.68	1.00						
7.	EQE x Leverage	0.05	0.04	0.04	0.08	0.63	0.36	1.00					
8.	EQE x CSO	0.03	0.43	0.40	0.13	0.43	0.33	0.24	1.00				
9.	Profitability	0.01	0.00	0.16	-0.04	0.02	0.26	-0.02	0.03	1.00			
10.	Leverage	-0.03	0.14	0.02	0.59	-0.03	-0.05	0.25	-0.03	-0.18	1.00		
11.	Offering Type (Tangible Good)	-0.10	0.04	0.00	0.08	-0.09	-0.07	0.03	-0.02	-0.05	0.10	1.00	
12.	Firm Experience	-0.05	0.06	0.08	-0.02	0.00	0.09	0.02	-0.02	0.16	0.01	-0.13	1.00
13.	Customer Focus (B2C)	-0.03	-0.10	-0.08	-0.06	-0.10	-0.07	-0.05	-0.12	0.06	0.00	0.14	0.08
14.	Diversification	0.01	-0.03	-0.03	-0.08	-0.17	-0.14	-0.09	-0.05	-0.12	0.00	-0.02	0.12
15.	Firm Size	-0.05	-0.16	-0.09	-0.13	-0.23	-0.09	-0.19	-0.08	0.13	0.04	0.17	0.04
16.	R&D Intensity	0.07	0.03	0.06	-0.09	0.16	0.05	0.03	0.07	-0.04	-0.27	-0.17	0.13
17.	Marketing Intensity	0.08	0.09	0.12	0.01	0.14	0.09	-0.04	0.11	0.04	-0.18	-0.27	0.06
18.	Location Specificity	0.05	-0.09	-0.06	-0.08	0.13	0.09	0.15	0.05	0.00	0.05	-0.04	-0.16
19.	Development Specificity	0.05	-0.04	0.00	0.04	0.12	0.11	0.08	0.02	0.00	0.11	-0.07	-0.07
20.	New-to-the-Firm	-0.01	0.06	0.05	0.01	0.01	0.01	0.01	-0.04	-0.08	-0.01	0.04	0.09
21.	Equity Level	0.01	-0.04	-0.06	0.12	-0.06	-0.04	-0.02	-0.04	0.01	0.08	0.04	-0.19
22.	Firm Announcement Frequency	0.03	0.06	0.04	0.00	-0.07	0.01	-0.03	0.09	0.12	-0.06	-0.04	0.15

TABLE 10 Continued

		13	14	15	16	17	18	19	20	21	22
13.	Customer Focus (B2C)	1.00									
14.	Diversification	0.22	1.00								
15.	Firm Size	0.18	0.30	1.00							
16.	R&D Intensity	-0.34	-0.19	-0.27	1.00						
17.	Marketing Intensity	-0.38	-0.27	-0.33	0.67	1.00					
18.	Location Specificity	-0.08	0.06	0.03	-0.06	-0.04	1.00				
19.	Development Specificity	-0.09	-0.04	-0.15	0.02	0.04	0.23	1.00			
20.	New-to-the-Firm	-0.12	-0.12	-0.13	0.14	0.12	-0.01	-0.01	1.00		
21.	Equity Level	-0.09	-0.11	0.03	-0.03	-0.07	0.12	0.07	0.04	1.00	
22.	Firm Announcement Frequency	0.09	0.20	0.26	-0.04	-0.13	0.01	-0.12	-0.10	-0.16	1.00

MODEL DEVELOPMENT

My focus is on the determinants of partnering NPD on shareholder value. I discuss below how I measure and estimate short-term abnormal returns by using an event-study analysis, allowing me to understand the impact on shareholder value from partnering NPD.

In the event study methodology, the firm's stock price reflects the future value of its discounted cash flows. This is based on the efficient market hypothesis, which states that a firm's stock price incorporates all publically available information (Fama 1970). As investors become aware of new information, they will adjust the stock price accordingly, where positive news will result in a purchase (an upward adjustment), and negative news will result in a sale (a downward adjustment). Therefore, I expect that any negative reactions by investors regarding partnering NPD will result in investors selling the stock, thus lowering shareholder value. Similarly, any positive reaction should result in an increase in shareholder value.

Short-term event studies are widely used within the realm of innovation and offer numerous benefits. First, because I am looking at a short-term window, I am able to accurately isolate individual NPD announcements; this allows me to understand their immediate impact on the stock's valuation. Second, it is a forward-looking measure (i.e., it takes into account all of the expected future cash flows). Being able to account for future cash flows is especially important when trying to measure NPD as it may take years before the benefits from innovation are fully realized (Raassens, Wuyts, and Geyskens 2012).

To determine the effects from an announcement on shareholder value, I first compute the short-term abnormal returns to announcements (events) of partnering NPD in emerging markets for the firms in the data. To compute the short-term abnormal returns, I calculate the difference between the observed returns (R_{it}) with the expected returns ($E(R_{it})$) for firm i from an event at time t using a benchmark model portfolio, which assumes the event did not happen. To estimate the expected returns, I use the following Fama-French four-factor model (Carhart 1997; Fama and French 1993).

$$(6) \quad E(R_{it}) = \hat{\alpha}_i + \hat{\beta}_i R_{mt} + \hat{\gamma}_i SMB_t + \hat{\varphi}_i HML_t + \hat{\sigma}_i UMD_t,$$

where R_{mt} is the stock valuation of the benchmark model portfolio; SMB_t is the difference between the returns of small and large stock firms; HML_t is the difference between the ratio of high and low book-to-market stocks; UMD_t is the difference between firms with favorable (winner) and unfavorable (loser) performance, and α, β, γ, φ, and σ are parameter estimates obtained from an OLS estimation. Daily stock returns were generated for each firm by regressing R_{it} on R_{mt} over an estimation period of 250 to 30 trading days prior to the event. To calculate the abnormal return (AR) for each event, I take the difference between the observed and expected returns:

$$(7) \quad AR_{it} = R_{it} - E(R_{it}) = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt} + \hat{\gamma}_i SMB_t + \hat{\varphi}_i HML_t + \hat{\sigma}_i UMD_t)$$

I aggregate the abnormal returns for each firm over the event period ($-t_1$, t_2) to get the cumulative abnormal return (CAR):

$$(8) \quad CAR_{i(-t_1, t_2)} = \sum_{t=-t_1}^{t_2} AR_{it}$$

I decide on the appropriate event window for the analysis as follows. I first calculate CAAR for multiple event windows such as [-1, +1], [-2, +2] and [-3, +3] by averaging CARs from Equation (9) across firms to obtain one cumulative average abnormal return (CAAR) for that window:

$$(9) \qquad CAAR_{(-t_1, t_2)} = \sum_{i=-1}^{N} \frac{CAR_{i(-t_1, t_2)}}{N}$$

where N is the number of announcements or observations or events. I then compare the significance levels of the CAARs for the different windows. Consistent with Patell's standardized residual test, I choose the event window with the highest significance of CAAR (Patell 1976). Based on this procedure, I selected the window of [-1, +1] for the analysis.

To test the hypotheses on the drivers of shareholder value, I regress the standardized CAR on the focal and control variables. Some of the independent variables are lagged by a year to address reverse causality and potential endogeneity issues (e.g., Dotzel, Shankar, and Berry 2013; Sorescu and Spanjol 2008). In each equation below, subscript *i* represents the firm and subscript *t* represents the year during which the announcement is made. The model for partnering NPD is given as:

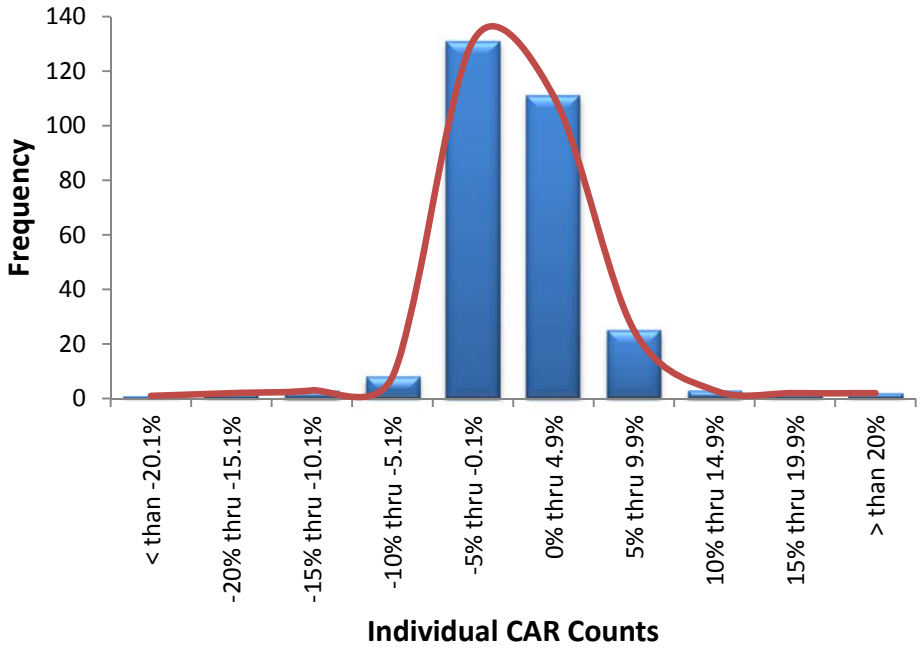
$$\begin{aligned}(10) \qquad CAR_{it}[-t_1, t_2] &= \beta_0 + \beta_1 COSTSAVE_{it} + \beta_2 EMPQUAL_{it} + \beta_3 PROFIT_{i(t-1)} \\ &+ \beta_4 LEV_{i(t-1)} + \beta_5 COSTSAVE_{it} * PROFIT_{i(t-1)} + \beta_6 COSTSAVE_{it} * LEV_{i(t-1)} \\ &+ \beta_7 EMPQUAL_{it} * PROFIT_{i(t-1)} + \beta_8 EMPQUAL_{it} * LEV_{i(t-1)} \\ &+ \beta_9 EMPQUAL_{it} * COSTSAVE_{it} + \beta_{10} OFFERTYPE_{it} + \beta_{11} FIRMEXP_{it} \\ &+ \beta_{12} CUSTFOC_{it} + \beta_{13} DIV_{i(t-1)} + \beta_{14} SIZE_{i(t-1)} + \beta_{15} RDINT_{i(t-1)} + \beta_{16} MKTGINT_{i(t-1)} \\ &+ \beta_{17} LOCSPEC_{it} + \beta_{18} DEVSPEC_{it} + \beta_{19} NEWTOFIRM_{it} + \beta_{20} EQUITYLEV_{it} \\ &+ \beta_{21} FIRMFREQ_{it} + \sum_{k=1}^{K-1} \beta_{22k} IND_{ki} + \lambda_i + \pi_{it},\end{aligned}$$

where CAR is the abnormal return; COSTSAVE is cost savings emphasis; EMPQUAL is employee quality emphasis; PROFIT is profitability; LEV is leverage; OFFERTYPE is the tangibility of goods; FIRMEXP is the years of firm experience; CUSTFOC is the firm's primary set of customers (B2C versus B2B); DIV is the level of firm diversification; SIZE is the natural log of the firm's assets; RDINT is R&D intensity; MKTGINT is marketing intensity; LOCSPEC is location specificity; DEVSPEC is development specificity; NEWTOFIRM is a new-to-the-firm product or service introduction; EQUITYLEV is equity level. FIRMFREQ takes into account firms that made multiple announcements in the same year; IND is a vector of (K–1) industry level dummy variables (the base industry is services); β is a parameter vector, λ is a random effects term, and π is a panel error term.

Model Estimation

I estimate Equation 10 using random-effects linear regression. Figure 4 shows the CAR distribution for partnering NPD. Because the distribution appears to follow a normal distribution, it is appropriate to estimate the model using linear regression. I capture unobserved heterogeneity through fixed industry effects.

FIGURE 4
Distribution of Cumulative Abnormal Returns for Partnering New Product Development



RESULTS

Table 11 presents the estimation results for the CARs for partnering NPD. With regard to H_9, cost savings emphasis has a significant ($p < .10$) but *negative* effect on short-term abnormal returns. The interaction of profitability and cost savings emphasis has a positive and significant effect on firm value ($p < .10$), supporting H_{10}. The interaction effect between leverage and cost savings emphasis is positive and significant ($p < .01$), supporting H_{11}. Employee quality emphasis is significant and positive ($p < .01$), supporting H_{12}. The influence of the interaction of profitability with employee quality emphasis is significant and negative ($p < .01$), supporting H_{13}. However, the effect of the interaction of leverage with employee quality emphasis is not significant,

inconsistent with H_{14}. Furthermore, the effect of the interaction of cost savings emphasis with employee quality emphasis is also not significant, contrary to H_{15}.

Among the control variables, only leverage is significant. The main effect of leverage is negative and significant ($p < .10$), suggesting that the greater the debt to equity ratio of a firm, the more negative the short-term abnormal returns to a partnering NPD announcement.

TABLE 11
Model Results for Partnering New Product Development

Variable	Estimate	Robust SE
Focal Variables and Interactions		
Cost Savings Emphasis	-0.0875*	(0.052)
Cost Savings Emphasis x Profitability	0.7038*	(0.373)
Cost Savings Emphasis x Leverage	0.1193***	(0.039)
Employee Quality Emphasis	0.0402***	(0.010)
Employee Quality Emphasis x Profitability	-0.1604***	(0.045)
Employee Quality Emphasis x Leverage	0.0109	(0.035)
Employee Quality Emphasis x Cost Savings		(0.027)
Emphasis	-0.0297	
Profitability	-0.0189	(0.028)
Leverage	-0.0523*	(0.028)
Additional and Control Variables		
Offering Type (Tangible Good)	-0.0107	(0.007)
Firm Experience	-0.0004	(0.001)
Customer Focus (B2C)	0.0003	(0.008)
Diversification	0.0005	(0.001)
Firm Size	0.0002	(0.001)
R&D Intensity	-0.0100	(0.055)
Marketing Intensity	0.0350	(0.024)
Location Specificity	0.0044	(0.008)
Development Specificity	0.0019	(0.007)
New-to-the-Firm	-0.0046	(0.012)
Equity Level	0.0042	(0.006)
Firm Announcement Frequency	0.0093	(0.008)
Industry 2 (Communications)	0.0082	(0.012)
Industry 3 (Medical)	0.0001	(0.012)
Industry 4 (Semiconductors)	0.0059	(0.001)

TABLE 11 Continued

Variable	Estimate	Robust SE
Industry 5 (Computer)	-0.0057	(0.011)
Industry 6 (Other)	0.0174	(0.011)
Constant	-0.0082	(0.017)

Notes: * p < .10; ** p < .05; *** p < .01; Notes: Services is the base industry.

Table 12 provides a summary of the hypotheses and empirical findings. While I hypothesized a positive effect of cost savings emphasis on shareholder value for H_9, I find a significant negative effect. My hypotheses for H_{10}-H_{13} are significant and directionally supported. H_{14} is neither significant nor directionally supported. Finally, while H_{15} is directionally supported, it is not significant.

TABLE 12
Summary of Hypotheses and Results for Partnering New Product Development

Hypothesized Effect	Observed Effect
Hypothesis 9: Cost Savings Emphasis (+)	(-)
Hypothesis 10: Cost Savings Emphasis x Profitability (+)	(+)
Hypothesis 11: Cost Savings Emphasis x Leverage (+)	(+)
Hypothesis 12: Employee Quality Emphasis (+)	(+)
Hypothesis 13: Employee Quality Emphasis x Profitability (-)	(-)
Hypothesis 14: Employee Quality Emphasis x Leverage (-)	N.S.
Hypothesis 15: Employee Quality Emphasis x Cost Savings Emphasis (-)	N.S.

IMPLICATIONS

My novel findings offer meaningful implications for theory and practice. My analysis highlights important effects for partnering NPD in emerging markets. Interestingly, firms announcing an NPD partnership with a cost savings emphasis experience an investor penalty, resulting in a negative effect on shareholder value. Global firms entering into an NPD partnership with a local firm may want to think carefully about announcing cost savings as a key reason for seeking external resources. While emerging markets have long been associated with low business costs (Khanna, Palepu, and Sinha 2005), firms highlighting this cost savings emphasis can experience a negative return to shareholder value. A plausible reason is the historical perception of emerging markets being associated with low wages and routine work and not with specialized work, such as NPD. Investors may be questioning if a cost emphasis in an NPD partnership in an emerging market can produce high quality products desired from that NPD partnership. Furthermore, because NPD partnerships often require resources deployed over a longer time horizon, a firm emphasizing a cost savings emphasis may inadvertently send the wrong signal; investors may worry that the global firm is incapable of dedicating sufficient resources to the NPD partnership.

However, more profitable firms may not be affected as much by a cost savings emphasis as are less profitable firms. More profitable firms engaging in partnering NPD in emerging markets can find it easier to generate cost savings by working externally with local firms than less profitable firms. But more leveraged firms generate more negative abnormal returns to a partnering NPD announcement than less leveraged firms.

Counterintuitively, highly leveraged firms mentioning cost savings emphasis are able to mitigate the negative effect of cost savings emphasis. Leveraged firms that specifically address the potential cost savings from the NPD partnership reassure investors that the firm is cognizant of controlling expenditures, and if the partnership is successful, even potentially reducing the leverage and debt service costs. As a result, investors are less negative in their reactions to a cost savings emphasis.

While investors react negatively to firms highlighting a cost savings emphasis, they respond positively to firms pursuing an NPD partnership in which the quality of the local firm's employees is mentioned. Accessing specialized skilled workers is one of the key motivators for a global firm to pursue NPD in emerging markets (Lewin et al. 2009). Partnering with local firms facilitates the extraction of this knowledge, helping global firms surmount challenges unique to emerging markets (Sheth 2011).

Firms with high levels of profit generate high expectations from investors, increasing investor scrutiny (Das, Sen, and Sengupta 1998). Investors may be uncomfortable with the level of uncertainty involved in developing markets and may fear that the global firm is risking future profitability. For firms with higher levels of profit, mentioning local employee quality dampens the positive effect of highlighting an employee quality emphasis. Again, more profitable firms are held to higher expectations than less profitable firms; investors fear that an already profitable firm will not be able to further improve its future cash flows by leveraging the quality of highly skilled employees in an emerging market. Such firms have a much higher threshold to cross than less profitable firms. Furthermore, another potential explanation is the "Google

Effect," where very profitable firms invest in hundreds of NPD projects that might emphasize employee quality, but only a few of them succeed. Therefore, employee quality emphasis in NPD partnering announcements of highly profitable firms can backfire with investors as investors question the incremental returns from such projects.

Robustness Checks

I performed several robustness checks. First, it is possible that some firms may have learned from investor responses to earlier announcements and changed the content of their subsequent announcements to elicit positive returns. However, I find that firms with multiple announcements in the data experience both positive and negative CARs without any clear sequence or pattern. A possible reason is that since multiple partnering NPD announcements from the same firm occur over a long horizon, any knowledge gained from the response to a previous announcement may have disappeared with the exit of relevant executives. This finding underscores the need for gaining a deep understanding of the determinants of returns from partnering NPD in emerging markets.

Second, one could argue that only the firms with favorable partnering NPD information may choose to make an announcement, unlike some financial announcements where disclosures are mandated by regulators. I searched the Internet for evidence of partnering NPD that were not announced by the firms, but later reported by news media. I did not find any evidence for such events. There were some "thought" articles on partnering NPD to India, but they included only examples from the dataset.

Third, one possible reason for the partnering NPD announcements and their returns in the data is that firms generally experienced poor performance of their NPD in

developed markets and the stock market was reacting to this overall poor performance. To explore this reason, I analyzed the distribution of past profitability of the announcing firms. The vast majority of firms have positive profitability, suggesting that this possible reason is unlikely.

Fifth, I estimated the models by removing outliers. I removed observations (seven) with CARs that were outside of 15% (positive and negative) and estimated the models. The signs of the effects remain the same. Finally, to ensure that the results are robust to different operationalization of partnering equity, I coded partner equity level as an ordinal variable, where 1 = alliances; 2 = joint ventures; and 3 = acquisitions and reestimated the models. The signs of the all the effects remain the same.

LIMITATIONS, FUTURE RESEARCH, AND CONCLUSIONS

While this research contributes to a critical understanding of the consequences and drivers of firms' partnering NPD in emerging markets, it also suggests additional areas for future research. First, it would be beneficial to study the challenges associated with partnering NPD in emerging markets and how firms should overcome them. Future research could examine the effects of cultural differences, communication styles, and top management team composition on global and local innovations. Second, while I study the determinants of abnormal returns to partnering NPD in an emerging market, it would also be interesting to study the drivers of returns to innovation efforts in the reverse direction; what are the drivers of returns for an emerging market firm partnering NPD with developed market firms. Third, another fruitful avenue is to examine how

partnering NPD impacts innovation outcomes across geographic boundaries; specifically, how innovation diffuses from a centralized local innovation hub into other markets. Finally, by focusing the empirical analysis on India, I developed a tight and robust set of results. Future research could improve the generalizability of the results by studying partnering NPD in other emerging markets.

This research offers timely and important implications for both theory and practice. From a theoretical standpoint, my research offers insights into how partnering NPD to emerging markets impacts shareholder value in the short-run. From a managerial perspective, my research provides guidance on when it is advantageous for a global firm to move its NPD to emerging markets and what actions will increase shareholder value.

On average, 49.3 percent of partnering NPD announcements generate an average positive abnormal return of 3.57 percent. For the remaining partnering NPD announcements, 50.7 percent generate an average negative abnormal return of -2.65 percent. While the number of negative announcements slightly exceeds the number of positive announcements, the absolute returns are greater for those announcements able to garner a positive reaction from investors; this suggests that investors expect (on average) the infusion of external resources to generate positive future cash flows in excess of negative future cash flows.

This analysis reveals important effects regarding partnering NPD. While many global firms partner with emerging market firms on NPD to save costs, I find that mentioning cost savings as a reason for partnering boomerangs on the firm as it leads to negative abnormal returns. In contrast, highlighting the quality of the partner's local

employees leads to positive abnormal returns. Yet many global firms hesitate to highlight an emerging market partner firm's employee quality due to product quality dilution fears. Interestingly, the global firm's past profitability moderates these main effects in the opposite direction. Furthermore, financial leverage has a negative effect on the short-term abnormal returns to an NPD partnership announcement. That is, the greater the global firm's debt is relative to equity, the lower the abnormal returns are to the NPD partnership. However, a cost savings emphasis alleviates this negative effect, suggesting some silver lining associated with a cost savings emphasis. These interesting findings provide actionable insights and will help managers better manage the impact of partnering NPD in emerging markets on shareholder value.

CHAPTER IV

CONCLUSION

This research makes important contributions both to theory and managerial practice. First, from a theoretical perspective, this research develops and empirically tests an integrated framework that includes both the drivers and outcomes of emerging market innovations. Second, from a managerial perspective, this research derives implications that will allow managers to make more informed decisions when introducing innovation in global markets, improving organizations' competiveness. Finally, this research helps to identify best-practices when introducing innovations into emerging markets, allowing a firm to stay competitive in a rapidly changing environment.

In my first essay, I find important asymmetries regarding the impact of an emerging market shift of NPD on shareholder value. Investment amount (relative local employee size) is negatively (not significantly) related to short-term abnormal returns. However, the effect of investment amount and relative local employee size are moderated by employee quality emphasis, costs savings emphasis, development scope and prior profitability. Employee quality emphasis has a positive moderating effect on both investment amount-- and relative local employee size-- short-term abnormal return relationships. Cost savings emphasis has a positive moderating effect on the investment amount--short-term abnormal returns relationship, but no effect on relative local employee size. Development scope (profitability) has a positive (negative) moderating

effect on the investment amount-abnormal returns relationship. To get the biggest short-term abnormal return to an NPD shift announcement, firms should highlight employee quality and cost savings, while mentioning the number of local employees and the investment amount.

Overall, investors have a negative view regarding shifting NPD to emerging markets. Although an average NPD shift announcement generates a negative return (-0.45%), less than one-half (47.1%) of the NPD shift announcements generate positive abnormal returns with an average return of 2.87%. The remaining announcements (52.9%) generate an average negative abnormal return of -3.41%. These findings provide a new twist to previous research showing that a new product introduction announcement generally generates positive shareholder value (see Chaney, Devinney, and Winer 1991; Lee et al. 2000; Sharma and Lacy 2004). However, the average return finding on shifting NPD is directionally consistent with that on NPD outsourcing (Raassens et al. 2012).

In my second essay, I find important effects regarding partnering NPD. While many global firms partner with emerging market firms on NPD to save costs, I find that mentioning cost savings as a reason for partnering boomerangs on the firm as it leads to negative abnormal returns. In contrast, highlighting the quality of the partner's local employees leads to positive abnormal returns. Yet many global firms hesitate to highlight an emerging market partner firm's employee quality due to product quality dilution fears. Interestingly, the global firm's past profitability moderates these main effects in the opposite direction. Furthermore, financial leverage has a negative effect on

the short-term abnormal returns to an NPD partnership announcement. That is, the greater the global firm's debt is relative to equity, the lower the abnormal returns are to the NPD partnership. However, a cost savings emphasis alleviates this negative effect, suggesting some silver lining associated with a cost savings emphasis. These interesting findings provide actionable insights and will help managers better manage the impact of partnering NPD in emerging markets on shareholder value.

On average, 49.3% of partnering NPD announcements generate an average positive abnormal return of 3.57%. For the remaining partnering NPD announcements, 50.7% generate an average negative abnormal return of -2.65%. While the number of negative announcements slightly exceeds the number of positive announcements, the absolute returns are greater for those announcements able to garner a positive reaction from investors; this suggests that investors expect (on average) the infusion of external resources to generate positive future cash flows in excess of negative future cash flows.

Strategically balancing NPD in both developed and emerging markets over a long-time horizon can mitigate innovation challenges. Emerging market economies offer tremendous opportunities for global firms willing to persevere over the inherent challenges. While innovating in emerging markets is still in its infancy, the majority of future growth in the world economy will come from such locations. My research offers firms a starting point on how to harness and benefit from this growth opportunity.

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