

# **The Influence of New IPO Firms on Incumbent Performance: An Empirical Investigation**

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*Market entry of new IPO firms adds to the competition of any industry, however, the impact on competitors may differ depending on several factors. Our study contributes to the literature on IPOs and incumbent performance by providing empirical evidence of the importance of firm-specific characteristics in determining performance. Using a sample of 232 firms, we found that the strategic content of an IPO firm's prospectus affects the short-term pricing of incumbents during an IPO. Specifically, our findings suggest that IPO firms that signal high levels of exploitative tendencies in their prospectus have a negative impact on incumbents' performance. Incumbent firms' high degree of involvement in the focal business segment of the IPO firm tends to negatively impact their performance. Finally, technological diversity of incumbents attenuates the negative impact of new IPOs.*

*Keywords: new IPOs, ambidexterity, technological diversity, firm performance*

## **INTRODUCTION**

Research has shown that how investors perceive a firm affects the subsequent valuation of the firm during an initial public offering (IPO). Furthermore, the firm's strategic orientation has the most significant impact in shaping positive perceptions of the firm in the investors' minds (Shiller, 1989). From the investor's perspective, the firm's offering prospectus (S-1 document) is the primary source of information regarding the firm's strategic, competitive, and financial information at the time of the IPO. Therefore, the strategic content of the prospectus can have implications for the short-term pricing (underpricing) of the new issue. Within the strategic management and marketing literature, two strategic orientations widely used pertain to a firm's entrepreneurial (EO) and marketing orientation (MO) (Covin & Slevin, 1991; Lumpkin & Dess, 1996; Kohli & Jaworski, 1990). According to Lumpkin and Dess (1996), EO is the "process, practices, and decision-making activities that lead to new entry" (p. 136) and is often viewed as the shared variance between firms' emphasis on innovativeness, risk-taking, and proactiveness (Covin & Wales, 2012, p. 678). On the other hand, MO denotes a firm culture that concentrates on customers and competitors and emphasizes the generation, dissemination of, and responsiveness to market intelligence (Narver & Slater, 1990; Kohli & Jaworski, 1990).

On the one hand, a company can improve dependability and achieve scale and scope economies by utilizing existing client bases and technologies (Danneels, 2002). On the other hand, creating entirely new

products through investigation leads to more room for expansion and better adaptability for renewal (Benner & Tushman, 2003; Crossan & Berdrow, 2003; McGrath, 2001). The ability to compete in the face of technological progress can be hampered by excessive exploitation, which can also restrict growth and give the market a reputation for strategic stagnation (Dosi, 1988; Schilling, 2002). An excessive amount of exploration can result in inefficiency and adverse cost positions, and it also involves a higher risk of failing to create inventions that will be economically successful (March 1991). Since exploration and exploitation are necessary for long-term success, companies differ in their exploration/exploitation orientation due to factors like aspiration, slack, and the pace of technological development in their industry (Sidhu, Commandeur, & Volberda, 2007).

While the strategic orientation exhibited by the IPO firm influences investors' perceptions of their valuation, at the same time, a newly public firm can also impact the valuation of incumbent firms within the industry (Hsu, Reed, & Rocholl, 2010). Research has shown that new IPO firms would cause the incumbents' performance to deteriorate (Hsu et al., 2010) as the IPO firms increase the competition within the industry. As a result, incumbents are negatively impacted. However, such general characterization of competitive effects from newly IPO firms has not considered firm-specific characteristics of incumbents and how their performance may differ. Recent strategy research suggests that competitive dynamics are dyadic and are influenced by the firm-specific characteristics of both the IPO firm and the incumbent (Chen, 1996). Therefore, the effects of a new IPO firm are not universally the same on different incumbents and should be moderated by the firm-specific characteristics of both the IPO and the incumbent firms. Thus, this study aims to boost our knowledge of a new IPO's influence on its competitors' performance.

## **THEORY & HYPOTHESES**

Companies list on stock exchanges primarily to generate equity capital and establish a market where shareholders can convert a portion of their value into cash later (Ritter & Welch, 2002). Going public enables business owners to earn more money for their company than they would from a straight sale. An IPO can increase the firm's worth by encouraging more confidence in the company from other investors, clients, creditors, and suppliers. The issuing company is recapitalized through an IPO, often resulting in a low debt-to-equity ratio. By giving them more investment flexibility, low leverage may give issuing enterprises an edge over their more heavily leveraged rivals (Miller, Galloway, & Smith, 2015). The advantage of recently receiving investment bank certification goes to issuing enterprises. Investors desire to purchase new issues as opposed to existing shares within the same industry is influenced by the certification role of investment banks. New entrants may exhibit a few non-financial advantages (knowledge capital) over their industry rivals.

Additionally, research on IPOs points to some industry signaling impacts. IPOs can provide information about market conditions (Akhigbe, Johnston, & Madura, 2006). If an offering has new information on promising industry trends, it may have positive intra-industry effects for other publicly traded companies that could benefit from promising trends. Conversely, timing an IPO to coincide with the peak of the market valuation may indicate unfavorable future industry conditions. An offering company's market capitalization is correlated positively with net income, revenue, total assets, and underwriter fees and negatively with debt level. Generally speaking, businesses in highly profitable sectors like chemical products, computer and electronic equipment, scientific instruments, and communications are highly valued. In contrast, businesses in more established sectors like oil and gas, manufacturing, transportation, and financial services are less highly valued (Akhigbe et al., 2006).

Recent research in the literature on IPOs emphasizes how competitively disadvantageous IPOs are for incumbent firms' performance (Hsu et al., 2010), as the introduction of new publicly traded firms is anticipated to either push competitors to decrease margins or to take market share away from competitors (Akhigbe et al., 2006). Investors are prompted by new IPOs to reevaluate the industry's competitive landscape and to identify any potential competitive advantages held by the newly public firm. According to Hsu et al. (2010), advantages for newly-public enterprises over incumbent firms may include more accessible access to finance, recent certification by underwriters, and crucial intellectual capital. However,

prior research has not considered the firm-specific characteristics of both the IPO and the incumbent firms. The resource-based approach asserts that enterprises comprise a diverse collection of resources. Because every incumbent will face a different influence on their performance following an IPO, this is indicated by the enterprises' diverse market profiles and resource endowments. An industrial organization (I/O) literature-based strategy study typically views two companies in the same industry as de facto competitors (Chen, 1996). Recent multipoint competition research has highlighted the importance of common markets in the competitive dynamics between enterprises, but it neglects to consider the heterogeneity of resources among firms (Chen, 1996). According to the resource-based view, a company is seen as a unique collection of tangible and intangible resources and capabilities (Penrose, 1959; Wernerfelt, 1984). It is expected that these resources and bundles are dispersed differently among firms. As a result, each company is regarded as unique because of the numerous resources and assets it has accumulated over time and the various procedures it has established to manage them (Chen, 1996; Barney, 1991). According to Teece, Pisano, and Shuen (1997), a firm's resource endowments tend to be "sticky" and will likely limit its ability to make strategic decisions. As a result, incumbent firms' competitive strategies would differ depending on their availability of resources and capabilities after an IPO.

It is commonly known that there is knowledge asymmetry between firm owners and potential investors throughout the IPO process, which can sometimes be advantageous to the issuing firm and often disadvantageous to incumbents (Carter & Manaster, 1990; Brealey, Leland, and Pyle, 1977; Ross, 1977; Stuart, Hoang, and Hybels, 1999). Outsiders typically have minimal awareness of the IPO firm, but insiders have extensive knowledge of the new business (Stuart et al., 1999). Additionally, technological uncertainty and the potential for owners to act opportunistically might worsen knowledge asymmetry (Sanders & Boivie, 2004). Spence's (1973) signaling theory-based research has demonstrated that new enterprises can impact the investment community's view by sending credible signals. According to research, when valuing new ventures, investors give weight to indicators like governance traits (Certo, 2003; Filatotchev & Bishop, 2002; Sanders & Boivie, 2004); venture backing (Gompers, 1996; Megginson & Weiss, 1991); founder presence (Nelson, 2003); underwriter reputation (Carter & Manaster, 1990); or celebrity endorsements (Dean & Biswas, 2001).

EO and MO are typically regarded as two fundamental strategic techniques the company might use to create a competitive advantage in the literature on strategic management (Miles & Arnold, 1991; Atuahene-Gima & Ko, 2001). Although they represent two different corporate philosophies, EO and MO are generally seen as complementing orientations (Miles & Arnold, 1991). EO often describes how an organization responds to potential or future requirements (Hong, Song, & Yoo, 2013). Organizations with high levels of EO take significant risks, innovate frequently, and work proactively to create new goods and markets (Covin & Slevin, 1991; Miller, 1983). However, MO focuses on creating superior customer value through the collection, dissemination, and organizational responsiveness of intelligence (Kohli & Jaworski, 1990; Narver & Slater, 1990). As a result, MO is thought to be more closely related to customer satisfaction than EO, which is connected to discovering and exploiting possibilities (Baker & Sinkula, 2009).

Regarding the resources and competencies built to give IPO firms a competitive advantage, the differing focus between EO & MO produces heterogeneity. For instance, businesses that promote entrepreneurship tend to be proactive and concentrate on internal procedures and resources that facilitate the development of novel products and services (Teece et al., 1997). On the other hand, market-oriented businesses strongly emphasize tools that monitor client wants and make it possible to meet those needs. Given that EO and MO indicate different underlying strategies, it is crucial to comprehend how the strategic orientation of the IPO firm affects investors' perceptions of competitors' performance during the IPO event.

### **Ambidexterity**

The basic idea underlying ambidexterity is that organizations operating in a complex environment must balance exploring new knowledge and exploiting existing knowledge (Tushman & O'Reilly, 1996). However, most organizations fail to achieve this balance as effectiveness in one process makes effectiveness in the other less likely. Within the context of IPOs, due to resource constraints, one would expect firms to exhibit either an explorative or an exploitative orientation mostly. Depending on this

orientation, firms would either emphasize EO or MO. For firms exhibiting exploratory tendencies (through the introduction of radical innovation), innovativeness and proactiveness (EO dimensions) are more relevant. On the other hand, high levels of MO become relevant when a firm seeks to exploit existing technology as understanding the needs of the customers and moves of the competitor become essential inputs to the product enhancement process.

**Hypothesis 1:** *IPO firm's ambidexterity is related to rivals' performance, such that IPO firms exhibiting exploitative tendencies would have a more substantial effect than firms exhibiting explorative tendencies.*

### **Technological Diversity**

Technology diversification is suggested to benefit the innovation performance in terms of economy of scope and knowledge-based view (e.g., Granstrand, 1998; Suzuki and Kodama, 2004; Turner & Fauconnier, 1997; Almeida & Phene, 2004; Lin, Chen, and Wu, 2006). Granstrand (1998) illustrates the central role of technology diversification in the evolution of a technology-based firm from the viewpoints of economies of scope, speed, and space. He argues that a technology diversification strategy can help firms enhance innovation efficiency because technology diversification can stimulate firms to generate more innovative ideas by combining and recombining various technologies. Similarly, Suzuki and Kodama (2004) suggest that taking advantage of economies of scope in technology through continued diversification is necessary for a technology-based firm to survive and grow for a prolonged period. A range of research approaches and expertise within technology-diversified firms permit the cross-fertilization of ideas through knowledge spillovers between units, leading to greater creative output (Almeida & Phene, 2004).

**Hypothesis 2:** *Technological diversity of the rival impacts the effect of an IPO, such that rivals exhibiting high technological diversity would perform better than those exhibiting low technological diversity.*

### **Market Overlap**

With the arrival of new firms, the competition structure in a particular industry's upstream and downstream value chain is likely to be restructured. The relevance of a particular business segment to a diversified incumbent can be seen in the proportion of its overall resources that are invested (tied up) in that business segment. Suppose the entry of the new firm raises competitive pressures in that part of the firm's chain. In that case, a diversified incumbent may respond by either increasing investment into that focal business or divesting its interest in that part of the segment. The decision would primarily be a function of the overall strategic significance of the business segment (Chen, 1996; Chen, Su, & Tsai, 2007). For example, if a fables semiconductor firm enters the market. In that case, a diversified firm may choose to invest more in R&D (to compete/maintain the competitiveness of its chips in the marketplace) or lower its investment, license chip design technology and focus its efforts on the downstream manufacturing and distribution of the product. Ceteris paribus, the more resources a firm has tied up in the focal business, the higher the competitive pressure it faces due to the entry of a new IPO firm, which then requires a greater resource reallocation and potential restructuring of the incumbent firm.

**Hypothesis 3:** *Market overlap of the rivals with the IPO firm impacts the effect of an IPO, such that rivals with lower market overlap perform better than those exhibiting higher market overlap.*

## **METHODOLOGY**

### **Data**

This study's main goal was to demonstrate how the performance of incumbent firms in the industry after introducing a new firm is impacted differently by firm-specific characteristics of incumbent and IPO firms (IPO). To evaluate our hypothesis, we built a data set that included a sample of firms in the electronic components and accessories industry group (SIC Code: 367) that had an IPO between January 1996 and December 2011. We located the newly publicized companies using the SDC New Issues database and

gathered relevant data, including the IPO proceeds, the underwriters, and Venture Capitalists (VCs) engaged. A selection of 271 companies in the industry group had an IPO during our study, thanks to our initial search in SDC's New Issues. In-depth details about the company's strategy, financial performance, management structure, products, risks, and many other factors are included in the S-1 prospectus. Accounting information about individual sectors was gathered through Wharton Research Data Services' COMPUSTAT database (WRDS). The 232 companies that went public between 1996 and 2010 made up the final sample used in this study due to the absence of certain firms' prospectuses and missing data in COMPUSTAT.

We used text analysis techniques to determine the IPO firm's strategic orientation. With the help of descriptions from documents including annual reports, letters to shareholders, mission statements, and IPO prospectuses, this technique has been used to investigate issues of interest to management researchers (Moss, Short, Payne, and Lumpkin, 2011; Palmer & Short, 2008; Mousa, Wales, and Harper, 2015). The analysis uses Computer Aided Text Analysis (CATA) software by analyzing IPO firm's S-1 documents following earlier research (Hanley & Hoberg, 2012; Loughran & McDonald, 2013; Benson, Brau, Cicon, and Ferris, 2015; Mousa et al., 2015; Brau, Cicon, and McQueen, 2016). We identified the major competitors of the IPO firm since they are frequently stated under the section of "Risk Factors" of the S-1 paperwork because the study focuses on firm-specific competitors of new IPO firms. The competitors' names were painstakingly gathered by both authors from the S-1 paperwork and double-checked for accuracy. Finally, the COMPUSTAT database provides financial information about the IPO company's main rivals.

### **Dependent Variable**

#### *Cumulative Abnormal Return (CAR)*

The dependent variable in our analysis, cumulative abnormal return, reflects a fresh IPO's financial impact on the incumbent firm's company valuation. The difference between the actual and anticipated returns on the stock during a crucial period immediately preceding the event is typically used to calculate the effect of an event on the value of a company's common stock. Our event research technique was based on generating a market model for each competitor's security and then predicting anomalous returns related to each IPO event. This methodology was based on prior work (Brown & Warner, 1985; Fama, Fisher, Jensen, and Roll, 1969). The market model technique creates a series of anticipated returns by regressing security returns against the overall market return (S&P 500). The market model for each security  $I$  on day  $t$  is given by:

$$R_{it} = a_i + b_i * R_{mt} + e_{it}$$

where  $a$  is a constant,  $b$  is an estimate of systematic risk,  $R_{mt}$  is the return on the market portfolio (S&P 500 Index) and  $e_{it}$  is a stochastic error term uncorrelated over time and with an expected value of zero. Following the estimation of the market model, abnormal returns over the event period were computed as

$$AR_{it} = R_{it} - (a_i + b_i * R_{mt})$$

Finally, CARs were computed as

$$CAR = \sum AR$$

The CARs were calculated for a 3-day trading window that covered the day before and the day after the SEC reporting date. The event window was selected to capture the consumption and dissemination of information surrounding the release of a new initial public offering (IPO). Since previous research has indicated that extended windows may result in erroneous conclusions about the relevance of the event, we chose a concise window to test our hypothesis (McWilliams & Siegel, 1997). The event history analysis's findings show that the market value of the incumbent firm is typically significantly ( $p < 0.01$ ) impacted negatively by new IPOs within an industry.

## **Independent Variables on IPO Firm**

### *Ambidexterity*

Through earlier research, we used textual analysis to gauge the IPO firm's degree of exploration versus exploitation. We used dictionaries used in previous studies to increase the construct validity of our analyses (Short, Broberg, Cogliser, and Brigham, 2009; Uotila, J., Maula, M., Keil, T., & Zahra, S. A., 2009; see article for full list) and performed computer-aided text analysis (CATA) on the business summary section of each prospectus. Examples of terms found in these dictionaries include "exploratory action" terms such as "search," "variation," and "experiment," and "exploitative action" terms like "refine," "implement," and "execute." The metrics for exploration and exploitation are the overall counts of exploratory and exploitative terms in the business summary section of the respective S-1 document of the IPO firm. Relative explorations are determined by dividing exploration by (exploration + exploitation). As a result, they can range in value from zero (no exploration, only exploitation) to one (only exploration, no exploitation).

## **Independent Variables on Competitors of IPO Firms**

### *Technological Diversity*

We used the Herfindahl index of diversification (Berry, 1975), also known as the heterogeneity index (Blau, 1977), which is developed from the Herfindahl-Hirschman Index, to assess the "technological diversity" of a corporation (HHI). In addition to being widely used to evaluate technological and functional diversity, the HHI index is also traditionally used to approximate industrial concentration. The following is how the Herfindahl diversification index is expressed:  $D = 1 - HHI = 1 - \sum P_i^2$ , where  $P_i$  represents the percentage of patents in a company in the technical sector  $i$ . The index is equal to one when a company spreads its research throughout a wide technological knowledge base. It is nearly zero when a company exclusively conducts research in a particular area.

### *Market Overlap*

Data on the number of incumbent assets invested in the same focal business as the IPO firm was obtained using the COMPUSTAT Segment database. Using the business-level segment data, COMPUSTAT classifies the total identifiable assets invested by the firm by primary business SIC code. The market overlap ratio was constructed by dividing the assets in the focal business by the total assets held by the firm.

## **Control Variables for IPO Firms**

### *Year*

According to prior studies, IPOs frequently happen in waves, each characterized by high market returns preceding it, poor market returns after it, and high stock prices following it. We included a control for the year the firm had its IPO to account for the "wave effects" of IPOs.

### *IPO Size*

To account for the magnitude of the IPO, we used the natural logarithm of the employees of the IPO firm. Large IPOs in the sector signify investors' favorable assessments of the company's growth prospects. As a result, they may have a higher impact on the stock price of established companies than smaller IPOs.

### *IPO Age*

According to Clark (2002), a firm's maturity is determined by its age at the time of an IPO. Investors are more optimistic about the company's potential for growth and future performance as it becomes more established. The age of the IPO firm was calculated as the difference between the date of incorporation and the date the IPO firm filed its S-1.

### *Venture Capital*

Previous studies have demonstrated that specific reputational consequences are connected to IPO firms' performance (Hsu et al., 2010). Some of the information asymmetry involved with IPO pricing is thought

to be reduced by the venture capital backing and reputations of top underwriters (Chalk & Peavey, 1987). We utilized a dummy variable that, if the IPO firm obtained venture funding, would equal 1.

#### *Underwriters Ranking*

We utilized the Carter and Manster underwriter ranking (range from 1 to 10) to gauge the repute of the IPO firm's underwriter by earlier research (Hsu et al., 2010).

#### *Spin-Off*

To control for the corporate parenting activities of spin-off firms, we included a dummy variable which equaled one if the IPO firm had spun off from an existing incumbent firm.

#### *CEO Duality*

We use a dummy variable that takes the value 1 if the CEO is also the chairman of the board to control for duality to account for potential agency problems (Finkelstein & Hambrick, 1996).

#### *Risk Position*

Through earlier research, we considered the number of risk indicators listed in the S-1 document as well as the firm's assessment of risk (Mousa et al., 2015).

#### *Industry Competition*

The Herfindahl index, the sum of squared market shares of businesses in an industry and uses company sales to compute market shares, is used to operationalize industry competitiveness (Giroud & Mueller, 2011; Vomberg, Homburg, and Bornemann, 2015). Higher numbers are equivalent to more competition since the Herfindahl Index, which evaluates industry concentration, is removed from 1 to arrive at this measurement.

### **Controls for Competitors of IPO Firms**

#### *R&D Intensity*

IPOs in the high-tech sector, such as the semiconductor industry, frequently herald the arrival of new technology. This could indicate the consequences of competition or open up new prospects for market expansion for the incumbent firm. The amount of money a company invests in R&D is frequently used to gauge how well it can adapt to new technologies and absorb new information. This variable was calculated by dividing the amount spent on R&D by sales.

#### *Return on Equity*

The stock price may also change due to the incumbent company's performance. Compared to highly competitive enterprises, less competitive firms could experience a greater stock price shock. Return on Equity is a widely used metric for evaluating business success (Lang & Stulz, 1994). To calculate this ratio, we divided net income by total shareholder equity.

#### *Firm Leverage*

When analyzing a competitive firm's debt, leverage is determined as the total of short- and long-term debt scaled by market capitalization. This variable controls the strategic financial adaptability of competitors.

#### *Size*

We added the natural logarithm of the firm's total number of employees to adjust for firm size because the competitive implications of a new IPO in the industry could differ depending on the size of the existing firm.

### **Data Analysis & Estimation Procedure**

We employed hierarchical linear modelling (HLM) for our investigation. When independent variables are present at more than one level of analysis, such as in our scenario where rivals are present within the setting of an IPO, HLM is utilized to predict values on the dependent variable. In particular, the HLM 7 software's HLM2 process was used to build a two-level HLM model. The use of HLM has several benefits. First, the mathematics of HLM acknowledges that constituents of a higher-level system (incumbent firms in an IPO) may not be completely independent of one another (Hoffman, 1997). In addition, compared to conventional methods, HLM uses a Bayesian estimating strategy, increasing the results' precision (Hofmann, 1997).

### **RESULTS**

Table 1 presents the means and standard deviations for key variables and the bivariate correlations among the variables. A null model was used to prove that level 2 (IPO) categories had an impact on the level 1 dependent variable (CAR). The variance from the second level is examined in this model, which only includes the dependent variable. Multilevel analysis is necessary, as evidenced by the intercept-only model's interclass correlation coefficient of 0.264, which showed that approximately 26.4% of the variation in the 3-day CAR was between groups. Next, a baseline model with only the control variables was estimated (Model 1 in Table 2). As can be seen in the model, amongst the level-1 (competitor) control variables, R&D Intensity, ROE, and competitor firm size had a significant positive effect on 3-day CAR, whereas competitors' firm leverage had a significant negative impact. On the other hand, at the IPO firm level, IPO Age, Venture Backing, and risk perception were significantly related to 3-day CAR. The pseudo- $R^2$  after adding the control variables was 0.21.



**TABLE 1**  
**DESCRIPTIVE STATISTICS AND CORRELATION OF VARIABLES**

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 CAR (3-Day)	-0.05	0.06	1															
2 Ambidexterity	0.53	0.16	0.21	1														
3 Technological Diversity	0.59	0.21	0.16	-0.02	1													
4 Market Overlap	0.51	0.37	-0.14	0.02	-0.01	1												
5 IPO Size	5.45	1.84	-0.06	-0.03	-0.07	0.02	1											
6 IPO Age	2.75	1.04	0.07	-0.03	-0.13	0.03	0.01	1										
7 Venture Capital	0.47	0.16	-0.10	-0.01	0.06	0.01	-0.05	0.05	1									
8 Underwriter Ranking	7.58	1.15	-0.04	-0.01	0.03	0.01	0.01	-0.01	0.02	1								
9 Spin-Off	0.15	0.27	-0.03	0.04	0.14	0.09	0.01	-0.03	-0.01	-0.04	1							
10 CEO Duality	0.66	0.46	0.10	-0.02	-0.02	0.07	0.11	0.02	0.03	0.07	-0.05	1						
11 Risk Perception	30.28	7.75	0.08	0.08	0.02	0.05	-0.03	-0.05	0.09	0.03	-0.05	0.12	1					
12 Industry Competition	0.42	0.13	-0.05	0.02	-0.05	-0.11	-0.09	0.05	-0.01	-0.03	-0.02	0.03	0.02	1				
13 R&D Intensity	0.18	0.15	0.13	0.03	0.03	-0.04	0.09	-0.06	-0.11	-0.08	0.11	-0.04	-0.06	0.03	1			
14 ROE	0.20	0.16	0.11	-0.04	-0.10	-0.05	0.08	-0.01	-0.07	0.05	0.11	0.04	0.03	-0.07	-0.09	1		
15 Firm Leverage	0.22	0.16	-0.12	-0.01	-0.01	0.04	0.03	-0.09	-0.06	-0.03	0.05	0.02	-0.04	-0.14	0.12	0.03	1	
16 Competitor Size	9.30	2.60	0.09	0.06	0.01	-0.01	-0.07	0	-0.08	-0.08	-0.05	0.13	0.10	-0.16	0.02	0.01	0.01	1

In Model 2 (Table 2), we added our level-2 independent variable. Hypothesis 1 argued that IPO firms with exploitative tendencies would have a bigger impact than companies with explorative impulses. Results show that the IPO firm's ambidexterity has a positive and statistically significant ( $p < 0.01$ ) relationship with CAR. As higher levels of our measure for ambidexterity indicate more explorative tendencies, these results support hypothesis 1. In addition, accounting for level-2 independent variables explained an additional 1.8% of the variation in rivals CAR. In Model 3 (Table 2), we added our level-1 independent variables of technological diversity and market overlap. Hypothesis 2 stated that a competitor's technology diversity would influence the impact of an IPO; competitors with high technological diversity would outperform those with low technological diversity. As can be seen in Model 3 (Table 2), competitors' technological diversity has a positive and significant ( $p < 0.05$ ) impact on 3-day CAR. Thus hypothesis 2 is supported. Finally, in hypothesis 3, we stated that the effect of an IPO is influenced by the rivals' market overlap with the IPO business, and rivals with smaller market overlaps outperform those with higher market overlaps. As can be seen in Model 3 (Table 2), competitors' market overlap with the IPO firm has a negative and significant ( $p < 0.05$ ) impact on 3-day CAR, thereby supporting hypothesis 3. Accounting for level-1 independent variables also explained an additional 2.5% variation in rivals CAR.

**TABLE 2**  
**RESULTS OF HIERARCHICAL LINEAR MODELING (3-DAY CAR)**

<b>Variables</b>	<b>Model 1</b>		<b>Model 2</b>		<b>Model 3</b>	
Intercept	-0.032***	(0.001)	-0.032***	(0.001)	-0.032***	(0.001)
<b>Level-1 (Competitor)</b>						
R&D Intensity	0.015***	(0.004)	0.014***	(0.003)	0.014***	(0.003)
ROE	0.012***	(0.003)	0.012***	(0.002)	0.011***	(0.002)
Firm Leverage	-0.014**	(0.009)	-0.015**	(0.009)	-0.015**	(0.011)
Firm Size	0.008***	(0.001)	0.010***	(0.001)	0.009***	(0.001)
Technological Diversity					0.020**	(0.012)
Market Overlap					-0.017**	(0.010)
<b>Level-2 (IPO Firm)</b>						
Year Dummies	Included		Included		Included	
IPO Size	-0.005	(0.013)	-0.005*	(0.012)	-0.023*	(0.012)
IPO Age	0.008*	(0.006)	0.011*	(0.006)	0.011*	(0.006)
Venture Backing	-0.012*	(0.008)	-0.014*	(0.008)	-0.014*	(0.008)
Underwriter Rank	0.005	(0.010)	0.006	(0.010)	0.01	(0.010)
Spin-off	-0.003	(0.016)	-0.003	(0.018)	-0.02	(0.017)
CEO Duality	0.004	(0.006)	0.004	(0.004)	0.002	(0.004)
Risk Perception	0.009**	(0.005)	0.008**	(0.005)	0.008**	(0.005)
Industry Competition	-0.007	(0.012)	-0.008	(0.011)	-0.008	(0.011)
Ambidexterity			0.027***	(0.006)	0.026***	(0.008)
Pseudo R <sup>2</sup>	0.16		0.178		0.203	
Deviance	1983.26		1843.78		1736.08	

N: 232 IPOs (level 2), 778 Competitors (Level 1)  $p < 0.10$ ; \*,  $p < 0.05$ ; \*\*,  $p < 0.01$ ; \*\*\*,  $p < 0.001$

The choice of the event window to determine the cumulative abnormal returns could have affected the analysis's findings. We calculated CAR using a 5-day (-2,0, +2) and a 7-day (-3,0, +3) event window to test our results' sensitivity to the variables mentioned above. Table 3 presents the results of the full model (corresponding to model 3, Table 2). As seen in Table 3, Hypotheses 1, 2, & 3 were supported using the 5-day and 7-day CAR as the dependent variable.

**TABLE 3**  
**RESULTS OF HIERARCHICAL LINEAR MODELING**

Variables	5-day CAR (DV)		7-day CAR (DV)	
Intercept	-0.030***	(0.001)	-0.028***	(0.001)
<b>Level 1 (Competitor)</b>				
R&D Intensity	0.012***	(0.004)	0.010***	(0.003)
ROE	0.009**	(0.002)	0.008**	(0.002)
Firm Leverage	-0.013**	(0.011)	-0.014**	(0.011)
Firm Size	0.009***	(0.002)	0.010***	(0.001)
Technological Diversity	0.019**	(0.011)	0.018**	(0.008)
Market Overlap	-0.016**	(0.009)	-0.015**	(0.009)
<b>Level 2 (IPO Firm)</b>				
Year Dummies	Included		Included	
IPO Size	-0.006	(0.012)	-0.005	(0.012)
IPO Age	0.010*	(0.006)	0.011*	(0.006)
Venture Backing	-0.014*	(0.008)	-0.012*	(0.008)
Underwriter Rank	0.006	(0.010)	0.007	(0.009)
Spin-off	-0.004	(0.018)	-0.005	(0.008)
CEO Duality	0.005	(0.004)	0.004	(0.002)
Risk Perception	0.010**	(0.005)	-0.009**	(0.005)
Industry Competition	-0.008	(0.011)	-0.010	(0.011)
Ambidexterity	0.026***	(0.006)	0.024***	(0.006)
Pseudo R2	0.191		0.185	
Deviance	1717.91		1708.64	

N: 232 IPOs (level 2), 778 Competitors (Level 1) p < 0.10; \*, p < 0.05; \*\*, p < 0.01; \*\*\*

## DISCUSSION

The current study contributes to the literature on competitive strategy by outlining the effects of firm-specific features on the firms' capacity to react to changes in their competitive environment. We recognized IPOs as an event that alters the competitive dynamics within an industry and subsequently impacts the performance of the incumbent enterprises based on prior work. Our findings show that, on average, incumbent firms' stock prices receive a negative shock after an industry IPO, consistent with earlier research. Furthermore, we argued that by differentiating IPO firms based on their ambidexterity, it would be possible to predict how each IPO firm's impact on Incumbent performance would differ. Specifically, our findings indicate that IPO firms that signal a higher degree of explorative tendencies in their prospectus tend to have a weaker impact on their rival's performance than those exhibiting exploitative tendencies. When the IPO firm's prospectus indicates a higher degree of exploitative tendencies, it signals to the market that the firm has an existing market for its products and services. This, combined with the enhanced financial flexibility imparted by the IPO process, can enable the firm to snatch market share from the incumbent firms, which explains the higher adverse impact on the stock price of the incumbent firms. On the other hand, when the IPO firm exhibits higher levels of explorative tendencies, it implies that it is still developing its technology, and its product is potentially some time away from being introduced to the market. As this does not threaten the incumbent firm, the impact on their performance is lower.

In this study, we also looked at two variables at the incumbent firm's level that may influence the impact of an IPO on their performance: incumbents' technological diversity and the extent of market overlap between the incumbent and the IPO firm. Our results show that when an incumbent has diversified technological capabilities, the impact of a new IPO on their performance is lower. Innovation is a crucial

factor that businesses may use to gain the upper hand in the marketplace. As a result, a business might raise entry barriers to strengthen its position in the market and spur innovation-driven growth. Continuous innovation is a strategy that innovative businesses should use to boost their technological prowess and competitiveness. To continue their growth and profitability due to the law of diminishing returns in their existing industries, corporations must explore new markets (Hill & Jones, 2007). Companies can create more varied items and increase their growth with access to a broader selection of technologies (Granstrand & Oskarsson, 1994). Additionally, technical diversification can lessen the level of market competition since it helps companies create more distinctive products.

Finally, the degree of market overlap essentially functions as a proxy for the extent of competitive overlap between the incumbent and the IPO firm. Where this overlap tends to be high, the negative impact on the rival's stock price tends to be higher. This finding supports the recent push in the literature towards the dyadic analysis of competitive effects and responses of firms in the event of a change in environmental conditions. Both competitive effects and subsequent responses of incumbent firms would tend to differ based on the extent to which the focal business segment is relevant to the incumbent firms' long-term profitability and survival.

## LIMITATIONS & FUTURE RESEARCH

The study has several limitations that make it difficult to evaluate the findings. First, because this study's sample was limited to U.S.-based companies, the findings may not generalize to other industries or nations. Future studies should determine if the pattern of interactions found in this study replicates across other industries and countries. If not, what underlying factors (at the business, industry, and country level) are responsible for the variations? Second, causal inference was not possible because the study used cross-sectional data. Therefore, longitudinal research is required to more thoroughly explore the causal relationship between firm-level characteristics and its capacity to adapt to changes in its competitive environment following an IPO. Thirdly, in order to assess the competitive consequences of the IPO, our study employs stock price reaction as the benchmark for business performance. Although this measure has been employed in prior studies, some writers contend that the institutional investors' procedure of portfolio rebalancing may confuse this indicator. The significant sale of incumbent corporations' stock holdings may have caused a negative shock to their stock prices. When examining the effects of IPOs on the performance of incumbent enterprises, future research should find a mechanism to account for these consequences.

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