MARKET REACTIONS TO ACQUISITION ANNOUNCEMENTS: THE IMPORTANCE OF SIGNALING 'WHY' AND 'WHERE'

Abstract: Acquisitions are risky events but not all acquisitions involve the same levels of risk. We suggest that the announced acquisition motive – the 'why' of the acquisition – is an important risk signal. We categorize acquisition motives and distinguish between acquisitions with 'pure explore' and 'pure exploit' motives. Recognizing that most acquisitions have multiple motives, we identify acquisitions with 'ambidextrous' motives – that is different combinations of explorative and exploitative motives – too. Then, building on recent contributions to signaling theory, we argue that the 'why' will matter more, if the 'where' pertains to a high-risk setting. We measure this using target-to-acquirer industry relatedness. We find that the market reacts more positively to pure acquisitions, aimed at exploration *or* exploitation, compared to ambidextrous acquisitions. We show that the market reacts more positively to ambidextrous acquisitions orientated towards exploitation than ambidextrous acquisitions orientated toward exploration. Finally, we find that relatedness moderates this relationship, in that the market is more willing to tolerate exploration in a related industry. Our core contribution is to the literatures on acquisition motives and ambidexterity. We provide new insights into the incidence of specific motives, the ways in which they are mixed, and the market's reaction to their announcement. In addition, we contribute to the emerging literature that takes on behavioral perspective of market reactions by showing that the 'why' and 'where' of an acquisition matter.

Keywords: Acquisitions; High-tech industries; Signaling Theory; Acquisition Motives; Exploitation / Exploration; Event Study; Risk; Relatedness

JEL Classification: G3, G14, G34, L1, L25

1. INTRODUCTION

Acquisitions are common in industries characterized by fast-paced change and continuous innovation (Cloodt et al., 2006). There were 41,810 of them in the high-tech industries between 2000 and 2021[1]. IBM, for example, bought Red Hat for US$34 billion (2019) and Broadcom bought CA Technologies for US$18.9 billion (2018). Both were, as the business press put it, an attempt by the acquirer to 'procure their way into the future' (Bloomberg, 2018).

But not all acquisitions succeed and those that fail often have a negative effect on the acquirer (Moeller et al, 2005; Ahuja and Katila, 2001). Hewlett-Packard (HP)'s 2011 US$11.7 billion acquisition of Autonomy is a case in point. That acquisition was supposed to help HP shift from hardware to software. However, a botched integration led to 27,000 job losses, a US$8.8 billion write-down, allegations of fraud and misconduct, and a US$100 million lawsuit. The saga ended in 2017 when HP divested Autonomy, at a loss of US$2.9 billion (Reuters, 2019).

Perhaps because of this, the market also reacted negatively to the announcement of both the IBM and Broadcom acquisitions. But not all acquisitions come with the same risk (Heimeriks et al., 2012). For instance, Broadcom acquired CA Technologies to consolidate its existing market position whereas IBM acquired Red Hat to develop a new market position. The former might be considered an immediate and low-risk 'exploitation of old certainties' (March, 1991), while the latter is more of a distant and high-risk 'quest into the unknown' (Teece, 1996).

Research recognizes that acquisition motives are relevant to understanding acquisition risk and performance (e.g., Rabier, 2017; Devos et al., 2009). Yet, research is largely silent about

[1] Thomson SDC reports that there were 740,214 completed or unconditional, partial or full acquisitions announced between 01/01/2000 and 01/01/2021. Of these, 41,810 (5.6%) involved acquirers from the high tech industries; that is, aerospace and defense (SIC-codes 372 and 376), computers and office machinery (SIC-code 357), pharmaceuticals (SIC-code 283) and electronics and communications (SIC-code 36) industries.

the way in which the market reacts to the announced motive (e.g., Haleblian et al., 2009; King et al., 2004). It is generally assumed, for example, that all acquisitions in the high tech industry (Valentini, 2012), or all acquisitions involving high tech targets (Cloodt et al., 2006), are motivated by innovation and, because of this, all should provoke the same reaction.

We challenge these implicit assumptions. Answering various calls (e.g., Devers et al., 2020; Schijven and Hitt, 2012; Haleblian et al., 2009), we explore the way the market reacts to different types of announced acquisition motives. We employ March's (1991) exploration-exploitation framework and distinguish between high tech acquisitions aimed at exploration and exploitation. We identify acquisitions aimed, for example, at exploring new products, processes, technologies or markets as explorative high tech acquisitions, and identify acquisitions aimed at, for example, building size, cutting costs, or reducing tax exposure as exploitative acquisitions. Then, recognizing that most acquisitions have multiple motives (Bower, 2001), we consider the way in which acquirers combine of explorative and exploitative motives in acquisitions.

Building on recent contributions to the behavioral view (e.g., Devers et al., 2020; Blagoeva et al., 2020; Schijven and Hitt, 2012), we argue that the market – which is by definition risk-averse – will prefer less risky, 'pure' exploitative acquisitions compared to more risky, 'pure' explorative acquisitions (Swift, 2016). We use the term 'pure' to describe acquisitions that announce a single or a set of motives aimed at *either* exploration or exploitation. We follow literature which suggests that synergies in exploitative acquisitions, aimed for example at cutting costs and short-term value capture, are easier to estimate pre-acquisition and are easier to realize post-acquisition (e.g., Devos et al., 2009). By contrast, explorative acquisitions, aimed for example, at revenue expansion and long term value creation, are harder to estimate pre-acquisition and are harder to realize post-acquisition (e.g., Devos et al., 2009). Thus, we suggest

that exploitation is less risky than exploration. We argue, therefore, that the market will react more positively to the announcement of a low-risk pure exploitative acquisition, in expectation of superior acquisition performance and, post-acquisition, increased acquirer value.

Next, we consider the effects of combining exploration *and* exploitation motives. Building on insights from the ambidexterity literature (Martin et al., 2019; O'Reilly III and Tushman, 2008), we argue that the market will prefer less risky pure exploration and/or pure exploitation to high-risk ambidextrous acquisitions. We use the term 'ambidextrous acquisition' to identify acquisitions aimed at simultaneously exploring and exploiting. In such an acquisition, the strategy may be to 'cut costs' (exploit) *and* to 'expand abroad' (explore). We argue that such acquisitions will be considered high risk because exploration and exploitation requires "contradictory structures, processes, and cultures" (Tushman and O'Reilly III, 1996, p. 4), and there is no evidence that this can be achieved within the context of a single acquisition.

That said, not all ambidextrous acquisitions are the same. Therefore, we then zoom in on the way in which exploration and exploitation is combined in the acquisition announcement. We argue that ambidextrous announcements orientated towards low-risk exploitation will again be preferred to those orientated towards high-risk exploration. We argue, in other words, that the 'why' of the acquisition matters in understanding the market's reaction to its announcement.

Then, building upon recent contributions to signaling theory (e.g., Paruchuri et al., 2020; Ramchander et al., 2012;), we argue that the 'why' matters more if the 'where' pertains to a high-risk setting. In acquisitions, the levels of relatedness between the target and the acquirer is the classic indicator of acquisition risk (e.g., de Groote et al., 2019; Rumelt, 1982). 'Where' – in the sense of the industry in which the target is located – matters because there are different risks

associated, for example, with exploring related and unrelated industries (e.g., Haleblian and Finkelstein, 1999). It is also easier to estimate and to realize synergies in a related market (Cefis et al., 2020). In our setting, the implication is that the market will be more sensitive to the risk implied by the 'why' when the 'where' involves a target in an unrelated industry.

As such, we study *how the 'why' – the declared acquisition motive – and the 'where' – the industry in which the target is located – interact and influence expected acquisition performance*. We investigate this using a sample of 3,162 acquisitions, from four high-tech industries. We measure market reaction, which we interpret as an indication of expected performance (Golubov and Xiong, 2020; Welch et al., 2020), using an event-study methodology. We rely on Haans et al. (2016) to theorize and test curvilinear relationships and their moderation.

Our results support our hypotheses. We show that the market prefers pure exploitation to pure exploration and prefers both to those with ambidextrous motives. We find a U-shaped relationship between the market reaction and the ratio of exploration to exploitation motives announced. This means that the market prefers ambidextrous motives with more exploitation and less exploration. Finally, we show that relatedness moderates this relationship. Specifically, we show that the expected performance is higher for exploitation in a related industry and lower in an unrelated industry. We conclude, therefore, that the 'why' and 'where', as well as their interaction, matter when explaining market reactions to acquisition announcements.

Our study makes a number of contributions. Our main contribution is to the literature on acquisition motives. We link discussions in finance (e.g., Devos et al., 2009) and strategy (e.g., Rabier, 2017), and add to them by empirically considering the way the market reacts to different combinations of motives. In so doing, we answer calls to further insight on the role of acquisition

motives (e.g., Haleblian et al., 2009; Gamache et al., 2019). Next to this, we contribute to the ambidexterity literature (Martin et al., 2019). We present a more fine-grained view of ambidexterity in acquisition motives, we describe market reactions to ambidexterity and add to the conversation about how to achieve ambidexterity (e.g., Kang and Kim, 2020). As a by-product from this, we contribute to the literature on the innovation impact of acquisitions by showing that, in our sample, only a small share of acquisitions in the high tech industry are motivated by innovation. This raises questions of the assumption (e.g., Valentini, 2012) that all acquisitions in the high tech industry should have an effect on the post-acquisition innovation performance of the acquiring firm. Finally, and by showing that the 'why' matters more when the 'where' involves an unrelated industry, we contribute to emerging literature on the behavioral view of market reactions to acquisitions (e.g., de Groote et al., 2019; Schijven and Hitt, 2012).

2. BACKGROUND

Acquisition Motives

There is a significant body of work on acquisition motives in finance (e.g., Devos et al., 2009) and strategy (e.g., Trautwein, 1990), which describes motive as a risk signal (e.g., Reuer et al., 2012; Schijven and Hitt, 2012). Roughly, this can be split into four groups.

The first group empirically links *declared motive* to performance. Rabier (2017), for example, uses SEC filings, conference calls and press releases to identify and to categorize acquisition motive. Following the traditions in finance (e.g., Devos et al., 2009), she classifies motives based on the synergies at which they are aimed. She then links motive to expected performance, using an event study. She finds that "acquisitions motivated by operating synergies […] experience greater gains than acquisitions driven by financial synergies but are harder to

value and implement, making them more uncertain" (p. 2666). In doing so, she shows that motives matter and that the market reacts to the risk that they imply.

The second group *infers motive* from performance. This group includes classical works by, for example, Mueller (1969), Jensen (1986), Roll (1986), and Shleifer and Vishny (1989). Studies in this group use the high failure rate of acquisitions to suggest that many acquisitions must be motivated by managerial motives, such as empire building, and entrenchment. This group also include work by Chatterjee (1986), Houston et al. (2001) and Devos et al. (2009), however, who use the realization of different types of synergies to describe motive. They distinguish between 'operative', 'financial' and 'collusive' or 'market power' gains and show that there are differences in the probability that these synergies are realized. For example, like Rabier (2017), Devos et al. (2009) distinguishes between operative and financial synergies. They then split operative synergies into 'cost-cutting' and 'revenue expanding' synergies. They show that 60% of expected cost-cutting synergies are realized in the years after the acquisition while only 7% of expected revenue-expanding are realized. Not surprisingly, they conclude that acquisitions motivated by cutting costs are, therefore, less risky. Unlike Rabier (2017), however, they reach this conclusion without considering if the acquisitions that realized the greatest cost cutting synergies, post-acquisition, were ever actually motived, pre-acquisition, by cost-cutting.

The third group *infers motive* from industry and target type. Cloodt et al. (2006) for instance, studies the innovation performance of high tech acquisitions. They *assume* that acquisitions in involving a target that patented in the 5 years before the acquisition was motivated by innovation. They then compare the post-acquisition innovation performance of technology-motivated and non-technology motivated acquisitions. In the same way, Desyllas and Hughes (2010), Valentini (2012, 2016), and Cefis et al. (2020), to name but a few, assume that all

acquisitions in high-tech industries are motivated by innovation. Each studies the post-acquisition innovation consequences of these seemingly technology-induced acquisitions.

The fourth group *obliquely* describes motives (e.g., Graebner et al., 2010; Graebner, 2004). Krishnan et al. (2007), for instance, uses press releases to identify acquisition motive, and again, following the traditions in finance, they distinguish between 'efficiency', 'complementarity' and 'market power' motives. They do so, however, to create a control in their study of post-acquisition workforce reductions, premiums, and performance. Their results suggest that relative to acquisitions driven by market power, acquisition driven by efficiency and complementarity have a negative effect on workforce reduction and a largely insignificant effect on performance. In doing so, they again demonstrate the importance of motive in explaining acquisition outcome.

There are, in addition, several non-empirical reviews that span the four groups and contribute to the discussion of acquisition motives. Trautwein (1990), for example, reviews and classifies acquisition motives, distinguishing between 'rational' motives, like operative synergies, and 'managerial' motives, like empire building. Angwin (2007) classifies motives according to March's (1991) exploration–exploitation framework in his review; he describes exploitative motives like building scale, and explorative motives, like expanding into new markets. Finally, Haleblian et al. (2009) discusses 'environmental factors', like resource dependence, and 'firm characteristics', like acquisition experience, in their discussion of acquisition antecedents.

Together, the literature shows that the market reacts to motives and that motive affects performance. However, acquisition motives still differ in ways that the current literature does not capture. IBM's acquisition of Red Hat was technology induced and intended to launch IBM into a new market. The same could be said of HP's acquisition of Autonomy. Broadcom's acquisition

on the other hand had little to do with the acquisition of knowledge or technology. That acquisition was designed simply to help Broadcom strengthen its position in an existing market. Cloodt et al. (2006) and Valentini (2012, 2016) would classify these deals as 'technological acquisitions', whereas Devos et al. (2009) and Krishnan et al. (2007) would describe them as being motivated by 'revenue expanding operative synergies'. Neither is sufficient. As a result, the discussion on motives remains tangled, and it is unclear why the market evaluates some acquisitions positively and others negatively (Blagoeva et al., 2020; Campbell et al., 2016).

Categorizing Acquisition Motives

Acquisition motives, and the risks associated with them, can be categorized in a number of ways. March's (1991) exploration–exploitation framework is perhaps the simplest and most widely accepted framework for classifying strategic decisions and the risk associated with them. It has been applied to a wide range of contexts and has been used, for example, in strategic management (e.g., Graebner, 2004; He and Wong, 2004), organization theory (e.g., Holmqvist, 2004; Siggelkow and Levinthal, 2003), innovation management (e.g., Benner and Tushman, 2003; McGrath, 2001), and managerial economics (e.g., Ghemawat and Costa, 1993).

According to March (1991), exploitation is a short-term and certain strategy that involves 'refinement, choice, production, efficiency, selection, implementation, [and] execution' (March, 1991, p. 71). In the context of acquisitions, Angwin (2007) suggests that exploitation is about improving your current financial position or about reducing your tax exposure. It is about building economies of scale and scope, about cutting costs, or about vertically integrating to improve supply chains. It is about strengthening the core business, building size and scale, to win in your current market. Exploitation is about the 'sameness'. It is immediate, easily estimated, and therefore exploitative acquisitions are lower risk (Devos et al., 2009).

Exploration, in contrast, is a long-term and uncertain strategy involving 'search, variation, risk taking, experimentation, play, flexibility, discovery, [and] innovation' (March, 1991, p. 71). In the context of acquisitions, Angwin (2007) suggests that exploration is about expanding into new products and services, new industries and new geographic regions. It is about learning to create new products, services and markets, or about accelerating innovation. It is about accessing intellectual property, patents, knowledge or technology, to enable the firm to explore new technological domains. Exploration is about 'newness' which is, by definition, and the returns are distant, difficult to quantify. Thus, explorative acquisitions are higher risk (Devos et al., 2009).

Using these labels, IBM's Red Hat acquisition is a high-risk explorative acquisition, as the aim of that acquisition was to explore the subscription-based cloud-computing market. Both the probability of success and the scale of the resultant synergies are difficult to estimate. The Broadcom–CA Technologies deal, by contrast, is a low-risk exploitative acquisition, as the aim of that acquisition was to allow Broadcom to consolidate its position in an existing market.

The reality of course, is that acquisitions are often driven by multiple motives. In other words, they are not undertaken only for exploration or exploitation, but can be motivated by a mix thereof (Sears and Hoetker, 2014; Ambrosini et al., 2011; Schweizer, 2005; Bower, 2001; Steiner, 1975). We term such acquisitions, which use a 'combined magnitude of exploration and exploitation' (Hughes, 2018; Cao et al., 2009), as 'ambidextrous' acquisitions.

Ambidexterity in acquisition motives

An ambidextrous firm is one which combines exploration and exploitation (Duncan, 1976). Ambidexterity generates competitive advantage for firms through revolutionary and evolutionary change (Tushman and O'Reilly III, 1996), or though explorative and exploitative

innovation (Benner and Tushman, 2003). Research suggests that ambidexterity is both necessary and value creating (Andriopoulos and Lewis, 2009; O'Reilly III and Tushman, 2008; Lubatkin et al., 2006; He and Wong, 2004; Benner and Tushman, 2003; Katila and Ahuja, 2002).

The literature describes a number of ways in which the firm can become ambidextrous. For example, by 'sequentially switching' (Brown and Eisenhardt, 1997; Nickerson and Zenger, 2002; Kang and Kim, 2020), or by 'oscillating back and forth between periods of exploitation and exploration' (O'Reilly III and Tushman, 2013, p. 327). That said, true ambidexterity implies that firms simultaneously engage in exploration and exploitation (Gupta et al., 2006; Raisch et al., 2009) and the literature again provides advice on how to achieve this. For example, it suggests 'structural' or 'contextual' means for achieving ambidexterity. Structurally, ambidexterity could be achieved by creating separate exploration and exploitation units within the firm, each outfitted with different people, structures, processes and cultures (O'Reilly III and Tushman, 2008). Contextually, ambidexterity could be achieved by 'developing a supportive corporate culture that 'encourages individuals to make their own judgments on how best to divide their time between the conflicting demands' (Gibson and Birkinshaw, 2004, p. 211).

Some recent empirical work makes interesting conjectures about how ambidexterity matters in acquisitions (Hughes et al., 2020; Park and Meglio, 2019; Bauer et al., 2018). For instance, work on contextual ambidexterity suggests that acquirers that combine exploration and exploitation are better able to integrate their acquisitions, and therefore enjoy superior acquisition performance (Meglio et al., 2015; Jansen et al., 2009). The literature warns, however, that choosing for ambidexterity also leads acquirers to lose out on the specialization that comes with focusing on exploration *or* exploitation (Hughes, 2018), and that for many acquirers

ambidexterity is simply too demanding (Bauer et al., 2018). For these reasons, it remains unclear if ambidextrous acquirers perform better or worse than their non-ambidextrous peers.

There is no work, to the best of our knowledge however, which examines ambidextrous motives in the context of a single acquisition. Ambidexterity requires "multiple contradictory structures, processes, and cultures" (Tushman and O'Reilly III, 1996, p. 4). This is, of course, difficult to achieve in a single acquisition. Simply put, an acquisition aimed at, for example, 'cutting costs' (exploitation), or an acquisition aimed at 'exploring a new market' (exploration) is easier than an acquisition that attempts to combine both. For this reason, we argue that acquisitions announcing an ambidextrous set of motives will be considered higher-risk.

Market Reactions to Acquisition Motives

Signaling theory (Spence, 1974; Nelson, 1970) states that the market reacts to signals, such as the acquisition motive, which might affect or predict acquisition performance. Based on these signals, and the expectations that they create in terms of future value, the market then updates the acquirer's current value (Engelen et al., 2018; Reuer and Ragozzino, 2012).

Signaling theory sheds light on instances in which information is incomplete and asymmetrically distributed (Paruchuri et al., 2020; Bergh and Gibbons, 2011; Connelly et al., 2011). The literature on signaling considers how senders send signals to receivers under a behavioral bias of bounded rationality. In a strategy context, the signal sender is typically the firm, the signal is an activity or attribute that either by design or accident conveys information that alters the receiver's beliefs about the firm, and the market is often the receiver (Ragozzino et al., 2018; Bergh et al., 2014; Spence, 2002). The market is composed of boundedly rational investors that are actively searching for signals on the firms risk exposure (Blagoeva et al., 2020;

Kock, 2005; Levy and Lazarovich-Porat, 1995; Farrelly, 1980). Signaling theory suggests that the market evaluates the effect of any signals that it receives on the future value of the firm (Deeds et al., 1997) and incorporates this into its current market price (Kotha et al., 2018; Vasudeva et al., 2018; Sanders and Boivie, 2004). In our context, this means that the market will react to the motives in the acquisition announcement as signals of future risk and return.

Recent work on signaling theory suggests that in risky situations, bounded rational investors demand more signaling from the acquiring firm (Kotha et al., 2018; Vasudeva et al., 2018; Hsu and Ziedonis, 2013; Ozmel et al., 2013; Ramchander et al., 2012; Schijven and Hitt, 2012). Simply put, the greater the risk, the more the market pays attention to the details.

In an acquisition setting, the level of relatedness between the target and acquirer is the classic risk signal (Cefis et al., 2020; de Groote et al., 2019; Haleblian and Finkelstein, 1999; Lubatkin, 1987; Singh and Montgomery, 1987; Chatterjee, 1986; Rumelt, 1982; Amihud and Lev, 1981). Relatedness matters, because relatedness makes it easier for the acquirer to evaluate the synergistic potential of the target up front, meaning the acquirer is less likely, for example, to over-pay. Post-deal relatedness makes it easier for the acquirer to understand, to integrate, and to realize synergies (Puranam et al., 2006; Datta, 1991; Haspeslagh and Jemison, 1991), meaning the acquirer is more likely to realize expected synergies. As a result, related acquisitions come with less risk (Heimeriks et al., 2012) and higher returns (Lubatkin and Rogers, 1989).

Our contention is that the risk associated with exploring a related industry is very different to that associated with exploring an unrelated one (e.g., Haleblian and Finkelstein, 1999). Consequently, we expect relatedness to impact the way in which the market reacts to the announcement of an acquisition. Specifically, we argue that the motive underlying the acquisition

should become more important in the case of high-risk, unrelated deals. In other words, we suggest that both the 'why' and the 'where' of the acquisition matters, and that they jointly influence the way in which the market responds to the announcement of an acquisition.

3. HYPOTHESES

The 'Why': Market Reaction to Pure Acquisition Motives

The 'why' of an announced acquisition relates to the motive. We argue that the market will take two factors into account when reacting to the motive. The first is whether the deal is motivated by exploitation or exploration. To start, we consider cases of in which the acquisition was driven by pure exploitation or by exploration but not by both together.

Exploitation is about 'refinement, choice, production, efficiency, selection, implementation, execution' (March, 1991, p.7). It is about building on existing knowledge (Baum et al., 2000), building scale (Angwin, 2007), decreasing variance (Smith and Tushman, 2005), and incremental innovation (Andriopoulos and Lewis, 2009). It is predictable, immediate, readily realized (Devos et al., 2009) and, as a result, low risk (March, 1991). Exploration, by contrast, is about 'variation, risk-taking, experimentation, flexibility, discovery and innovation' (March, 1991, p.7). It is about generating new knowledge (Koza and Lewin, 1998), exploring new products, markets and geographic regions (Angwin, 2007), and creating new capabilities (Lavie et al., 2011). It is uncertain and time-consuming (March, 1991), and involves experimentation, radical innovation (Andriopoulos and Lewis, 2009) and above-average risk (Bauer et al., 2018). It is unpredictable, longer-term, hard to realize (Devos et al., 2009) and, as a result, high risk (March, 1991).

Acquisitions are a high-risk activity; the majority fail and are divested at a loss (Moeller et al., 2005). Acquisitions aimed at exploitation are lower risk because acquirers can better estimate

the synergies from exploiting their existing operation (Hughes et al., 2020; Devos et al., 2009). For the same reasoning, acquisitions aimed at exploration are higher risk because acquirers are less able to estimate distant synergies from exploring new operation (Hughes et al., 2020; Devos et al., 2009). As a result, acquirers are less likely to overpay in exploitative acquisitions, increasing their probable performance and reducing the risk that they are divested at a loss.

Signaling theory (Spence, 1974; Nelson, 1970) suggests that the market will react to any signal regarding changes in the likely future value of the firm, that it will anticipate the effect on its risk exposure, and that it will incorporate this information into the firm's current market value. Consequently, we argue that the market will react more positively to the announcement of low-risk exploitative acquisition and more negatively to a high-risk explorative acquisition. Thus:

> ***Hypothesis 1****: The market will respond more positively to the announcement of a low-risk pure exploitative acquisition and less positively to a high-risk pure explorative acquisition.*

The 'Why': Market Reactions to Ambidextrous Acquisition Motives

Acquisitions are often driven by multiple motives. Consequently, an acquisition may not be about pure exploration or exploration but may be a mix of both. Hence, the mix of motives is a second factor that the market should take into account when reacting to the 'why' of the deal.

The literature on ambidexterity suggests that it is beneficial for the firm to combine exploration and exploitation (Bauer et al., 2018; Andriopoulos and Lewis, 2009; Lubatkin et al., 2006; He and Wong, 2004; Benner and Tushman, 2003; Katila and Ahuja, 2002). It underscores, however, that exploration and exploitation require different organizational structures, processes, resources, and cultures (Bauer et al., 2018; Uotila et al., 2009; He and Wong, 2004). We argue, therefore, that relative to a pure acquisition, aimed at either exploration *or* exploitation, an

ambidextrous acquisition that seeks to do both simultaneously will be seen as higher risk. In other words, an acquisition aimed at ‘entering a distant market’ (exploration) and an acquisition aimed at ‘cutting costs’ (exploitation), will be preferred to one that attempts to do both.

But not all ambidextrous acquisitions are the same. Because exploitation carries less risk than exploration, we suggest that the more an ambidextrous acquisition is orientated towards exploration, the more negative the market’s reaction to its announcement. In other words, adding more explorative motives to the announcement will provoke a more negative reaction.

We argue, furthermore, that an ambidextrous acquisition orientated towards exploitation will perform better than one that is oriented towards exploration. We suggest that both, however, will perform better than an acquisition that is not oriented towards either. In an ambidextrous acquisition that is orientated towards exploitation will primarily require structures, processes, and cultures aimed at exploitation. In the same way, one which is orientated towards exploitation will primarily require structures, processes, and cultures aimed at exploration. In an ambidextrous acquisition that is not oriented towards either, however, it becomes unclear which of these “contradictory structures, processes, and cultures” (Tushman and O’Reilly III, 1996, p. 4) should dominate in the acquisition. In other words, we theorize the existence of a U-shaped relationship between the market reaction and the ratio of explorative to exploitative motives.

We follow Haans et al. (2016) and hypothesize that this relationship is based on both a negative and a positive latent mechanism. We start with the negative latent mechanism. We suggest that, in comparison to a low-risk exploitative acquisition, the market will react increasingly negative to the announcement of an ambidextrous acquisition with an increasing number of exploratory motives. Acquisitions are complex events and any efforts to pursue

multiple motives, requiring mutually exclusive management inputs and target characteristics, increases complexity, adds to the strain on the 'structures, processes, and cultures' of the acquiring firm, and lowers expected performance (Wang and Li, 2008; Uotila et al., 2009; Vaara, 2003). Consequently, we argue that the higher the ratio of exploitation to exploration, the less focused the acquisition becomes, increasing risk and lowing expected performance.

In terms of a positive latent mechanism, we suggest that, in comparison to a high risk acquisition with a higher the ratio of exploitation to exploration, the market will react more positively to ambidextrous motives that becomes increasingly orientated towards exploration. We suggest that as the purpose of the primary purpose of the acquisition becomes clear, it becomes clearer which of the contradictory structures, processes, and cultures are required. This simplifies the acquisition, lowers the risk, and increases expected performance. Thus:

> ***Hypothesis 2****: There is a curvilinear (U-shape) relationship between the ratio of explorative and exploitative motives announced and the market's reaction to them.*

The 'Where': The Moderating Effect of Relatedness

'Where' the deal occurs is an important risk signal because acquisitions in related industries perform better (Lewis and Bozos, 2019; Cefis et al., 2020; de Groote et al., 2019; Chatterjee, 1986). For this reason, relatedness is a classic measure of acquisition risk (Rumelt, 1982). Unrelated acquisitions imply higher risk and signaling theory suggests that signals matter more in high-risk settings (Kang and Kim, 2020; Vasudeva et al., 2018; Kotha et al., 2018; Hsu and Ziedonis, 2013; Schijven and Hitt, 2012). Consequently, we expect the level of relatedness between the target and the acquirer will moderate the relationship described by *Hypothesis 2*.

Relatedness matters in a number of ways. Pre-deal, relatedness means that the acquirer is already familiar with the industry, with the firms in the industry, and with the ways in which they interact (Laamanen and Keil, 2008; Haleblian et al., 2006; Haspeslagh and Jemison, 1991). This familiarity reduces information asymmetries (Lewis and Bozos, 2019), increases the probability that the acquirer can accurately estimate synergies (Kavuşan et al., 2020), and lowers the probability of overpaying (Haleblian et al, 2009; Capron and Shen, 2007). In other words, pre-deal, relatedness takes some of the uncertainty out of the acquisition, which reduces risk.

Post-deal, relatedness reduces the challenges that come with combining fundamentally different systems, activities and organizational (Cefis et al., 2020; Hughes, 2018; King et al., 2004). Relatedness makes it easier to merge assets, to redeploy resources and to combine routines (Capron and Shen, 2007; Capron et al., 1998; Haspeslagh and Jemison, 1991). It enables cost savings to be realized through economies of scale (Makri et al., 2010). It also makes it easier to accurately value the target and reduces the probability of negative surprises post acquisition (Capron and Shen, 2007). Relatedness furthermore eases moral hazard problems by reducing information asymmetries between the acquirer and the target as well as the acquirer and the market (Devers et al., 2020; Duchin and Schmidt, 2013). Post-deal, in other words, relatedness increases the probability that forecast synergies will be realized (Kavuşan et al., 2020), which increases the probability that the exploration will be successful (Cefis et al., 2020).

Again, we follow Haans et al. (2016) when theorizing the moderating effect of relatedness. In terms of the negative latent mechanism, we argue that relatedness reduces the risk that comes with ambidexterity. Relative to an exploitative acquisition, we argue that the market will react more positively to a related acquisition that adds more explorative motives and less positively to an unrelated acquisition that adds more explorative motives. With less contextual

uncertainty, at the industry level, we argue that the market will tolerate more risk at the level of the acquisition. Moreover, as relatedness makes cost savings through economies of scale easier achieved, this leaves more resources for exploratory activity (Makri et al., 2010).

In terms of the positive latent mechanism, we argue that relatedness reduces the risk that come from orientating towards exploration. Relative to an ambidextrous acquisition, we argue, that the market will react more positively to a related acquisition that orientates towards exploration and less positively to an unrelated acquisition that orientates towards exploration. With less overlap in resources, the costs of integration quickly outweigh the benefits of learning (Wei and Clegg, 2020; Angwin and Meadows, 2015). Value capture becomes more important than value creation (Zaheer et al., 2013; Zollo and Singh, 2004). Taken together, we predict:

Hypothesis 3*: Relatedness will flatten the curvilinear (U-shape) relationship between the ratio of acquisition explorative and exploitative motives and the market's reaction.*

4. METHODS

Empirical Setting

We test our hypotheses using a sample of acquisitions in the high-tech industry. We restrict the sample to the high-tech industries because they are characterized by a high volume of acquisitions, they are fast-moving and they are relatively opaque, due to the high knowledge burden they place on bounded rational investors' efforts to evaluate them. This means that the sorts of events that we want to investigate are likely to be visible in this setting.

Sampling Methods

We collect our data from the *Thomson Reuters SDC Database*. We refine it to include all acquisitions: (1) by public acquirers; (2) announced in the period 01/01/2000 to 01/01/2016; (3) with deal values greater than US$10 million; (4) in which 100% of the target firm was acquired; and (5) where the acquirer operated in a high-tech industry. Following Cloodt et al. (2006) and McCarthy and Aalbers (2016), we define this to include acquirers whose primary SIC code is in the aerospace and defense (SIC-codes 372 and 376), computers (SIC-code 357), pharmaceuticals (SIC-code 283) and electronics and communications (SIC-code 36) industries. We exclude all recapitalizations or repurchases of own shares, as well as all acquisitions in which the target and acquirer have the same parent, to exclude intra-firm reorganizations (Ikenberry et al., 1995).

Dependent Variable

The event study is a corner-stone tool for empirical research in strategic management (Schijven and Hitt, 2012) and the most commonly used measure to describe acquisition performance (Zollo and Meier, 2008). We use it to describe the way in which the market reacts to the announcement of the acquisition. We interpret the market's reaction as a pre-deal indication of expected post-acquisition performance (Golubov and Xiong, 2020; Welch et al., 2020).

We estimate the event study and calculate abnormal returns using a 'market model' (MacKinlay, 1997). Abnormal returns are the returns to the firm in excess of what was expected and are attributable, consequently, to the event in question. The return of firm i on day t:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \qquad eq(1)$$

where R_{it} is the return to firm i on day t, R_{mt} is the return of the 'reference market' on which the firm is listed, on day t, to identify the portion of the return that is related to variation in the market's return, α_i is the intercept term, β_i is the systematic risk of stock i, and $\sum_{it}$ is the error term, with $E(\sum_{it}) = 0$. We estimate the abnormal returns to the acquiring firm as:

$$AR_{it} = R_{it} - (a_i + b_i R_{mt}) \qquad eq(2)$$

where a_i and b_i are the ordinary least squares (OLS) parameter estimates obtained from the regression of R_{it} on R_{mt} over the 'estimation window' (T). AR_{it} is the return to the firm, above what is expected as a 'normal' return. The sum of the acquirer's abnormal returns (ARs), over a predefined 'event window', is referred to as the cumulative abnormal returns (CARs).

We use COMPUSTAT to identify the primary, or reference market, on which the firm is listed and to retrieve the firm- and market-level data necessary to estimate CARs; in total, we make use of 106 reference markets. We use a 260 day estimation window and a 3 day event window. We follow precedent and measure abnormal returns to the acquirer in the period from one day before (-1), to one day after (+1) the announcement (e.g., Yakis-Douglas et al., 2017; Schijven and Hitt, 2012). We use a short window to minimize the inclusion of confounding effects that can lead to false inferences about the significance of the event (McWilliams and Siegel, 1997). We start with one day before the announcement in order to capture the effect of rumors and leaks on the share price (Yakis-Douglas et al., 2017; Schwert, 1996).

Independent Variable

There are many ways to identify acquisition motives. We use press release because they are widely distributed, they are a matter of historical record, and they are credible; in the US, it is a criminal offense for a manager to make 'false and misleading statements' about their firms.

We identify and categorize the motives described in each of the press releases announcing the acquisitions. Acquirers rarely announce in explicit terms that the purpose of an acquisition is to 'explore' or to 'exploit' a market. For instance, IBM acquired Red Hat to 'develop new hybrid cloud providers that would enable companies to securely move all business applications to the cloud and accelerate hybrid multi-cloud adoption'. We draw upon Angwin's (2007) motive archetypes and identify seven acquisition motives. We then classify these acquisition motives using March's (1991) broader exploration-exploitation categories. *Table 1* provides an overview of the motive categories that we make use of and highlights the sorts of example terms that are used to attribute acquisitions to them. For example, an acquisition aimed at 'accessing intellectual property' is classified as a 'technological' motive within the explorative category.

We were able to classify 97% of the acquisitions for which we could retrieve a press release. In the remaining cases, the wording was insufficiently specific to assign the acquisition to a motive category. We labeled these as acquisitions with an 'unknown' motive.

[INSERT TABLE 1 HERE]

To ensure correct coding we followed recent procedure in acquisition research (Grigoriou and Rothaermel, 2017). We recruited two research assistants and trained them separately. We provided them with the set of motives and a list of example terms. We asked them to classify each acquisition by motive. They were not permitted to confer with each other, we did not

explain the purpose of the study and we did not introduce them to exploration-exploitation framework. This way, we ensured that the classification procedure was applied objectively.

We cross-checked the quality of the data which was produced in two ways. First, we checked the quality of the coders. We estimate reliability to be 86%, which is well above the recommended 70% (Cohen et al., 2003). We recoded the cases over which there was disagreement between the two coders. Secondly, we checked the quality of the press releases. We randomly selected 100 US acquisitions from the sample and, following Rabier (2017), coded their motives using SEC filings. Comparing results we found that in 91% of cases the same motive was applied. Those that differed did so in the motives but not in the categories. For example: in four cases an acquisition was identified with the 'technological' motive in one version with the 'learning' in the other, both of which fall within the 'explorative' category.

Having identified the motives in each announcement, we counted: (1) the total number of motives; (2) the number of explorative motives; and (3) the number of exploitative motives, for each acquisition. With this, we then created a dummy to identify 'pure' explore acquisition *(Pure Explore Dummy*). We set this equal to 1 when the acquirer announced one or more explorative motives and no exploitative motives. In a similar fashion we created a 'pure' exploitative dummy *(Pure Exploit Dummy*). Again, we set this equal to 1 when the acquirer announced one or more exploitative motives and no explorative motives. We created a dummy to identify ambidextrous motives *(Ambidextrous Dummy*). We set this equal to 1 when the acquirer announced (any) combination of explorative or exploitative motives, and set it to 0 when the acquirer only

announced pure explore or pure exploit. Finally, we estimated the ratio of explorative to exploitative motives (*Ratio of Explore to Exploit*) announced for each acquisition[2].

Moderator Variable

We quantify the risk of an acquisition in terms of levels of *Relatedness* between the target and the acquirer (Rumelt, 1982). We measure relatedness using four-digit 'Standard Industrial Codes' (SIC. The numbers themselves are meaningless but the codes can be grouped into progressively broader industry classifications. The first two digits of the SIC indicate the major group, the first 3 digits the industry group and the full set of four digits indicates the precise sub-industry to which the firm belongs. We retrieve the full set of SIC codes for the full set of (target and acquirer) firms in our sample. Thereafter, we estimate the level of overlap between the SIC codes of the target and the acquiring firms and calculate relatedness on a scale of 0-1. When the two firms do not share any 3-digit SIC codes, they are completely unrelated and therefore high-risk. The latter are assigned a value of 0. A value of 1 implies that the two firms are in exactly the same 3-digit industry and are perfectly related and, as a consequence, are low-risk.

Control Variables

A number of acquirer-, target- and deal-specific characteristics are known to impact the performance of mergers and acquisitions (King et al., 2004; Haleblian et al., 2009).

Cognizant of this, we control for: (1) the *Number of Motives* announced, which is the sum of the number of motives that we identified per acquisition; (2) the *Acquirer's Financial Slack*, which we define as the acquirer's operating cash flow (in millions) normalized by total assets

[2] Hughes (2020) reports that there are a variety of ways in which to operationalize ambidexterity. Each method, however, relates exploration to exploitation (e.g., Cao et al., 2009; Lubatkin et al., 2006). For this reason, we employ a ratio of exploitation to exploration.

over the last four quarters before the announcement; (3) the *Percent Cash* used to finance the deal; (4) the acquirer's *Prior Performance*, which we measure as the acquirer's return on assets (ROA) in the year before the deal; (5) *Acquirer's Size*, which we measure as the number of employees at the time of the acquisition; (6) the *Acquirer's Experience*, which we measure as the number of acquisitions made by the acquirer in the five years prior to the focal acquisition; (7) the *Deal Value*, which we measure in US$ millions; (8) *International Deal Dummy*, indicating the target was domestic (=0) or international (=1); (9) the *Private Target Dummy* indicating that the target was private (=1) or stock listed firm (=0); and (10) *Prior Alliance Dummy*, indicating that the target and the acquirer were in an alliance in the 5 years prior to the focal acquisition (=1). Finally, we create *Acquisition Year Dummies* to control for year-specific effects and create *Acquirer's Industry Dummies* to control for the acquirer's industry specific effects.

The data to construct these variables was collected from the *SDC* or *Datastream*. *Table 2* provides a descriptive overview[3]. We replaced all missing values with the variables' mean value. We inspect the distributions of each variables and use the Shapiro-Wilk Test to test for normality. We employ logs of any variables (specifically the *Number of Motives, Acquirer's Financial Slack, Percent Cash, Prior Performance, Size* and *Deal Value*) that are not normally distributed, in order to comply with the normality assumption in OLS regression analysis.

[INSERT TABLE 2 HERE]

[3] Most of the correlations on *Table 2* are straightforward. It is interesting to note, however, that there is a positive correlation between relatedness and pure explore. This implies that firms explore in related industries and fits with classical literature which suggest, for example, that firm should expand into adjacent markets. For example: Google acquired Motorola (2012) to explore the smart phone market. At the same time, Table 2 reports a negative correlation between relatedness and pure exploit, implying that firms exploit in unrelated industries. This again fits with classical literature which suggest that firm should expand in ways that build on their core competencies. For example: Amazon acquired Whole Foods (2017) to apply its online distribution skills to the offline supermarket industry. We thank one of the reviewers for bringing this interesting and illustrative point to our attention.

Final Sample Description

Applying the restrictions outlined above results in the creation of a sample of 3,162 acquisitions for the period from 2000 to 2016 for which we can: (1) retrieve a press release; (2) classify the motive; (3) calculate market reaction; and (4) create a full set of necessary controls.

The sample has 1,345 unique acquirers. As *Table 2* reports, the average acquirer had 24,014 employees at the time of the acquisition and earnings before interest and tax (EBIT) of US$ 1.2 billion. The acquirers come from 41 countries, although the majority (41%) are US-based. The majority (74%) of acquirers come from the electronics industry, with 32% coming from the pharmaceutical industry, 17% from computing and 2% from the aerospace industry.

The targets in the sample come from a range of industries, but 76% come from the same four high tech industries. The average deal in the sample was completed for US$631 million. Seventeen percent (17%) of deals involved listed targets, 46% were non-listed/private, and the rest were corporate spin-offs. The set of targets in the sample were distributed over 55 countries but the lion's share of the targets are US-based (58.8%). The majority of deals are domestic (64%). In fact, 67% of the deals in the sample involves US acquirers buying US targets. *Table 3* provides an overview of the acquisitions in the sample by industry and geographic region.

[INSERT TABLE 3 HERE]

Estimation

We model the way in which the market reacts to the acquisition announcement as:

$$CAR_{it} = \beta_0 + \beta_1 Motives_{it} + \beta_2 Motives_{it}^2 + (\beta_3 Motives_{it} \times Relatedness_{it}) + (\beta_4 Motives_{it}^2 \times Relatedness_{it}) + \beta_5 Relatedness_{it} + \beta_j Controls_{it} + \varepsilon_{it} \quad eq(3)$$

Where CAR_{it} is the return to firm i, in period t, on the announcement of the acquisition. $\beta_1 Motives_{it}$ is either: (1) *Pure Explore Dummy*; (2) *Pure Exploit Dummy*; (3) *Ambidextrous Dummy*; or (4) the *Ratio of Explore to Exploit* motives. $\beta_2 Motives^2$ is the squared *Ratio of Explore to Exploit* for firm i in period t. $\beta_3 Motives_{it} \times Relatedness$ is the interaction between the *Ratio of Explore to Exploit* for firm i in period t and the level of target-to-acquirer *Relatedness*. Similarly, $\beta_4 {Motives_{it}}^2 \times Relatedness$ is the squared interaction between the *Ratio of Explore to Exploit* for firm i in period t and *Relatedness*. Finally, $\beta_j Controls_{it}$ is the set of controls, described above, for firm i in period t, and ε_{it} is a normally distributed error term.

Our dependent is a normally distributed continuous variable with positive and negative values. We estimate *Equation 3*, therefore, using a standard ordinary least square (OLS) regression. The sample includes a number of repeat acquirers, which may cause autocorrelation and heteroskedasticity, and conflict with the OLS assumptions. We deal with the former by clustering by firm ID and with the latter by estimating a robust OLS regression. Doing so allows us to obtain unbiased standard errors. We check the control model for multicollinearity before interpreting results. A variance inflation factor (VIF) test reveals that the highest VIF score for a single variable is 1.38 (*Log Acquirer Size*) with a mean score of 1.12, both of which are below the established cut-offs (Hair et al., 1992), of 5 and 10, used to indicate multicollinearity.

To test *Hypothesis 1* we set β_1 = *Pure Explore Dummy* or *Pure Exploit Dummy* and estimate a version of *Equation 3* that only includes the control variables. We test it using a sub-sample of 1,856 acquisitions in which the acquirer announced an acquisition with a pure (set of) explorative motives or a pure (set of) exploitative motives. To test *Hypothesis 2* we set β_1 = the *Ratio of Explore to Exploit* and β_2 = the squared *Ratio of Explore to Exploit* and estimate

Equation 3 including only the set of controls. We conclude that there is a curvilinear relationship when $\beta_1 < 0$ and $\beta_2 > 0$ (Aiken et al., 1991). Finally, to test *Hypothesis 3*, we set β_1 = the *Ratio of Explore to Exploit*, β_2 = the squared *Ratio of Explore to Exploit* and estimate *Equation 3* including both the interaction terms and controls. To evaluate the moderation effect, we examine the impact of *Relatedness* on the shape of the U-shape (Haans et al., 2016). We test for a change in the turning point by estimating *Equation 4* and inspect β_4. When $\beta_4 > 0$ the moderating effect flattens the U-shape and when $\beta_4 < 0$ it has a steepening effect (Haans et al., 2016).

$$\frac{\partial TurningPoint}{\partial Related} = \frac{\beta_1\beta_4 - \beta_2\beta_3}{2(\beta_2 + \beta_4)^2}$$
$$eq(4)$$

5. RESULTS

Acquisition motives

Table 2 reports that acquirers announce 1 to 5 motives per acquisition and 1.31 motives on average. In terms of what they announce, *Table 4* reports that 57% of the 3,162 acquisitions in the sample announce 'strategic' motives – that is, acquisition aimed, for example, at 'strengthen the core business' – and that 32% announced 'expansionary' motives – that is, acquisitions aimed at, for example, 'expanding the product range'. Interestingly, while 11% of acquisitions announce 'learning' (486) as a motive – which is about 'accelerating innovation' – only 7% of acquisitions in our sample of high tech acquirers are about accessing knowledge, technology.

[INSERT TABLE 4 HERE]

Table 5 aggregates motives and describes the interaction between them. It reports that in 20% (649) of cases the acquirer announced a (set of) purely explorative motives (explore=1, 2, or 3 and exploit = 0), and in 38% (1,217) the acquirer announced a (set of) purely exploitative

motives (exploit=1, 2, or 3 and explore = 0). In other words, in 59% of cases the acquirer announced a 'pure' acquisition strategy. For the remainder (n=1,209, 38%), the acquirer announced an acquisition with an ambidextrous set of motives. In some cases (n=895, 28%), the acquirer announced an equal amount of explorative and exploitative motives (exploit=1 and explore =1, and/or exploit =2 and explore = 2). In the remainder, they announced an unequal amount of explorative and explorative motives. For example, *Table 5* reports that in 97 cases the acquirer announced two explorative and one exploitative motive and in 189 cases the acquirer announced one explorative and two exploitative motives. Finally, *Table 5* also shows that in 3% (97) of cases the motive is unknown, meaning that the motive could not be identified.

[INSERT TABLE 5 HERE]

The 'Why': The Market's Reaction to Pure Acquisition Motives

To test our hypotheses, we estimated several robust ordinary least square (OLS) models. *Models 1- 9* on *Tables 6* and *7* report the results. We estimate all models with year and industry dummies. In all cases we cluster by firm ID and acquirer nation to deal with repeated observations and their effects on the OLS assumption regarding independent residuals.

[INSERT TABLE 6 HERE]

Model 1 presents the base specification of control variables. The 4.2% Adj-R2 presented here is typical for an event study.[4] *Models 2* and *3* add the *Pure Explore Dummy* to this base

[4] We report Adj-R2 of 4.2%in the control model (*Model 1*) and 4.8% in the case of the full model (*Model 9*) using a 3-day CAR and a sample of 3,162 events. These are within the range of what might be considered 'normal'. For example, writing in the *Journal of Finance*, Moeller et al. (2005), report Adj-R2s of between 2.4 and 5.6% using a 3-day CAR and a sample of 6,596 and 6,584 events respectively. Our Adj-R2 are also in line with other studies that use smaller samples and narrower windows, and should therefore have higher adj-R2. For example, McNamara and Baden-Fuller (2007) report (unadjusted) R2s of 1.8% and 7.9% in *Research Policy*, using a 1-day CAR and a sample of 180 and 237 events respectively, Muller and Kräussl (2011) report Adj-R2s of between 4% and 6% writing in the *Strategic Management Journal*, using a 2-day CAR and a sample of 345 events, while Liu et al. (2009) report Adj-R2s of between 6 and 8%, writing in this journal, using a 3-day CAR and a sample of 1,888 and 1,722 respectively.

specification. *Models 4* and *5* replace this with the *Pure Exploit Dummy*. *Models 2* and *4* consider the effect *Pure Explore Dummy* and *Pure Exploit Dummy* making use of the full sample of 3,162 acquisitions. *Models 3* and *5* repeats the exercise and test their effects using the sub-sample of 1,856 acquisitions in which the acquirer announced only exploration or exploitation.

The *Pure Explore Dummy* in *Model 2* is negative and significant and the *Pure Exploit Dummy* in *Model 4* is positive and significant. This suggest that – *relative to all other motive combinations* – the market responds negatively to acquisitions that only explore and positively to those that only exploit. *Model 3* and *Model 5* confirm this using the sub-sample. There, the negative and significant coefficient for *Pure Explore Dummy* and the positive and significant coefficient for *Pure Exploit Dummy* suggests that – *relative to each other* – the market responds more positively to acquisitions that only exploit and more negatively to those that only explore.

Model 6 introduces the *Ambidexterity Dummy*. The negative and significant coefficient indicates that, relative to the announcement of a pure (set of) motive(s), the market reacts more negatively to the announcement of a deal that mixes exploration and exploitation.

[INSERT TABLE 7 HERE]

Model 7 on *Table 7* adds *Ratio of Explore to Exploit* to the base specification. In line with expectations the results suggest, that the more exploration in an ambidextrous announcement, the more negative the market's reaction. *Model 8* considers the shape of this relationship by adding the squared (*Sq*) *Ratio of Explore to Exploit* to the specification. The positive and significant coefficient implies an U-shaped relationship. We confirm this, following Haans et al. (2016), by testing if the slope of the relationship is sufficiently steep at both ends of the data range and by

showing that the turning point is located within the data range. We conclude that there is a U-shaped relationship, illustrated by *Figure 1*, between *CAR* and *Ratio of Explore to Exploit*.

[INSERT Figure 1 HERE]

The 'Where': The Moderating Impact of Relatedness

Finally, *Model 9* considers the moderating impact of *Relatedness* on the relationship between *CARs* and *Ratio of Explore to Exploit*. The negative coefficient for the interaction term '*Ratio of Explore to Exploit * Related*' and the positive coefficient on the squared interaction term '*Ratio of Explore to Exploit * Related*' suggest that there is a moderating effect. To quantify this effect, we again follow Haans et al. (2016) and conduct the following two tests. First, we test if the moderator shifts the turning point of the U-shaped relationship between the ratio of explorative to exploitative motives and market reaction. We do so by estimating *Equation 4.* We find that relatedness significantly affects the turning point (β= -0.155, p= 0.00). Then, we inspect the sign and significance of the '*Sq. Ratio of Explore to Exploit * Related'* term to determine if the moderating effect flattens or steepens the relationship between the ratio of explorative to exploitative motives and market reaction. The negative and significant coefficient (β = -0.032, p < 0.000) implies, in the context of a U-shaped relationship, that *Relatedness* flattens the relationship. *Figure 2* illustrates the effect on the shape of the curvilinear relationship.

[INSERT Figure 2 HERE]

Robustness Checks

We conduct a number of robustness checks to confirm our findings. First, and in terms of the specification of the dependent variable, we first re-ran our analysis using a 7-day CAR. We

estimate this in the way as described above, in the period from 3 days before to 3 days after the acquisition. Our results (available on request) allow us to support all of our hypotheses[5].

Secondly, we run our analysis with and without the 97 cases with 'unknown' motives. These are acquisitions in which the press release we were able to retrieve was too vague or too generic to allow us to categorize the acquisition. We find that not only do the results remain robust when we drop the unknowns, but also the size and significance of the effects increase.

Finally, we test for endogeneity. Endogeneity can occur for a number of reasons (Semadeni et al., 2014). One of the most commonly discussed forms of this in strategy is self-selection bias (Dong et al., 2017). Such bias arises because firms choose strategies based on their attributes and on the industry conditions, so that strategy is endogenously determined (Shaver, 1998). We make use of a two-stage Heckman test to address the potential issue of self-selection (Heckman, 1979). We followed the procedures suggested by Shaver (1998).

In the first stage, we used a Probit model to estimate the probability of announcing an acquisition with only exploitative motives. We estimate this using a set of variables that affect the likelihood of the choice in the first stage that will not affect the performance of a particular acquisition in the second stage. Specifically, we use the number of deals made by the firm – because acquirers who make more deals may be more willing to embark on more risky explorative acquisitions – and the acquirer's level of R&D (research and development) investment – because acquirers that invest more may be more willing to explore. We also make use of the geographic proximity between the target and the acquirer based on the assumption that

[5] We support all hypotheses using the 7-day CAR. However, as longer CARs contain more noise, the size of the effects diminishes when moving from a 3-day to a 7-day CAR. For example, in Model 3, the coefficient on the *Pure Explore Dummy* is β=-0.0096 using the 3-day CAR. This drops to β=-0.0088 with the 7-day CAR. A marginal decline in the size and significance of the effects is, however, typical of event studies (see e.g., Schijven and Hitt, 2012; Moeller et al. 2005). In fact, the additional noise that comes with longer windows is the reason that 'event window should be as short as possible' (McWilliams and Siegel's (1997, p. 636).

risk-loving acquirers may be more willing to accept the risk that comes with distance (McCarthy and Aalbers, 2016). We use the log of the geographic distance in kilometers and the log of the formal institutional distance, which we calculate following Schwens et al. (2011). *Table 8* presents the results of this analysis. It reports the effect of each variable on the probability that an acquirer will announce an acquisition with pure exploitative motives.

[INSERT TABLE 8 HERE]

The model demonstrates a good fit (Wald Chi-square = 589, $p < 0.000$), allowing us to calculate the *Inverse Mills Ratio* (IMR). The IMR represents the probability that the choice between explore and exploit is endogenously determined. In the second stage, we add this variable to our set of controls and re-test our hypotheses. *Table 9* presents an example of the result. *Model 'Robust 3'* on *Table 9*, for example, reports the results when the IMR variable is added to *Model 7*, on *Table 7*. The fact that IMR is insignificant, coupled with the fact that the sign and significance of the main variables do not change, imply that the results are not driven by self-selection endogeneity. This conclusion holds for the other models as well.

[INSERT TABLE 9 HERE]

6. DISCUSSION AND CONCLUSION

Discussion

Research in finance and strategy has long suggested that acquisition motives ('*why*') and relatedness ('*where*') convey important information regarding risk and expected acquisition performance. However, the existing classifications systems ignores the nuance in the acquisition

announcement (Welch et al., 2020). As a result, it remains unclear why the market reacts positively in some cases and negatively in others (Blagoeva et al., 2020; Campbell et al., 2016).

We study how the market reacts to the announcement of acquisitions with different (sets of) 'pure' and 'ambidextrous' motives. Arguing that there are different risks associated with 'exploring' within a related and unrelated industry, we then consider how relatedness moderates this relationship. Our results reveal that the market responds more positively to the announcement of acquisitions with pure exploitative motives than to acquisitions with pure explorative motives. We find that it responds more positively both to both types of acquisitions than it does to acquisitions with ambidextrous motives. We show that there is a U-shaped relationship between market reactions and the ratio of explorative to exploitative motives announced. We find that the market reacts more positively to ambidextrous acquisitions orientated toward exploitation than it does to those orientated toward exploration. Finally, we find that relatedness moderates this relationship as the market is more willing to tolerate exploration in a related market.

In the process our study makes a number of contributions. Specifically, we contribute to the work on acquisition motives (e.g., Rabier, 2017; Devos et al., 2009), on acquisitions and ambidexterity (e.g., Stettner and Lavie, 2014), and on high tech acquisitions and innovation (e.g. Valentine, 2012). Additionally, we add to the emerging discussion on the behavioral perspective of market reactions (e.g., Devers et al., 2020; de Groote et al., 2019; Schijven and Hitt, 2012).

Firstly, we contribute to the discussion on acquisitions and ambidexterity. The existing literature on acquisition motives tends to allow acquirers only to announce single motives, which it then describes in terms of synergies, like 'cost-cutting' and 'revenue-enhancing' (e.g., Rabier, 2017; Devos et al., 2009). We contribute by introducing a number of announced motive, by

employing March's exploration-exploitation framework to categorize them, and by introducing the ambidexterity concept to the discussion of acquisition motives. We show that acquirers announce multiple motives and that almost half mix motives and announce acquisition with ambidextrous motives (e.g., O'Reilly III and Tushman, 2008). Because ambidexterity requires the acquirer to have 'multiple contradictory structures, processes, and cultures' (Tushman and O'Reilly, 1996, p.4), we find that the market reacts more positively to the announcement of pure acquisitions, aimed at exploration *or* exploitation, than it does to ambidextrous acquisitions. We then pull the ambidexterity concept apart, and show that the market reacts to the way in which the acquirer combines announced motives. We show that the market reacts more positively to ambidextrous acquisitions orientated towards exploitation than it does to ambidextrous acquisitions orientated toward exploration. In doing so, we answer calls to extend work on acquisition motives (Haleblian et al., 2009; King et al., 2004), and provide a more nuanced perspective on what motives acquirers announce and how the market reacts to them.

The above also constitutes a contribution to the ambidexterity literature. Our study provides a fine-grained understanding of the ways in which announced acquisition motives are mixed and of the way in which the market reacts to their announcement. Our finding that almost half of acquisitions announce ambidextrous motives seems to suggest that acquirers 'believe in' ambidexterity. Our finding that the market prefers a certain type of ambidexterity – in that it reacts more positively to an ambidexterity acquisition orientated toward exploitation – shows the importance of detailing the ambidexterity concept. In so doing, we support work on the tensions that arise when simultaneously seeking to explore and exploit (Andriopoulos and Lewis, 2009; Boumgarden et al., 2012; Siggelkow and Levinthal, 2003; Uotila et al., 2009). We also respond to calls to study simultaneous exploration and exploitation (e.g., Stettner and Lavie, 2014), to

consider how firms balance exploitation and exploration (e.g., Martin et al., 2019) and, by zooming in on ambidexterity in acquisition announcements, we also contribute to ongoing discussions on how to achieve organizational ambidexterity (e.g., Kang and Kim, 2020).

Second, we contribute to the general literature on acquisition motives by identifying individually announced motives and by linking them to expected performance. Our study is one of the few to empirically consider the link between announced acquisition motive and market reactions (Haleblian, et al., 2009). Most studies on acquisition motives rely either on target or industry characteristics (Valentini, 2012), or on post-deal inferred proxies (e.g., Devos et al., 2009), to infer motive. We join the thin ranks of authors like Rabier (2017) and Krishnan et al (2007) who describe the performance implications of the announced acquisition motive. We deviate from them by introducing a number announced acquisition motive categories, by making use of March's (1991) exploration-exploitation framework to categorize these, by allowing acquirers to announce multiple motives, and by allowing acquirers to mix motives across categories. In doing so, we offer a more fine-grained discussion of acquisition motives. By showing that the 'why' of acquisitions impacts the expected performance we also underline the significance of pre-deal factors in understanding acquisitions (Welch et al., 2020), and provide new insights on why the market react to deals in different ways (Campbell et al., 2016).

In the process – and as a by-product of looking at individual motives – we note that most acquisitions in high-tech industries are *not* motivated by access to new technology. This in itself is a finding with interesting implications. The assumption has long been that all acquisitions in the high tech industry are motivated by innovation (e.g., Valentini, 2012). Based on this assumption, an entire literature has emerged on the innovation performance of acquisitions. We find, however, that access to new technology is the second-least announced sub-motive in our

sample, and innovation is a far less important factor than previously reported (e.g., Ranft and Lord, 2000). This, combined with our finding that most acquisitions have multiple motives, suggests that research cannot continue to use industry to infer motive. It also raises questions regarding the conclusion that acquisitions have a negative or neutral effect on innovation (e.g., Hitt, 1991). It may be that innovation performance of the acquiring firm does not increase after the acquisition simply because the acquisition had nothing to do with innovation.

Our third and final contribution is to signaling theory and the emerging literature on the behavioral perspective on market reactions (e.g., Schijven and Hitt, 2012). We extend work in this domain by introducing acquisition announcements as a behavioral trigger, which affects the market's response, as individual investors react to market signals (de Groote et al., 2019; Devers et al., 2020). We find that the 'why' and 'where' of the deal are distinct signaling mechanisms that differentially impact the way in which the market reacts. We extend the notion that different behavioral tendencies are 'alleviated, or magnified, by different organizational settings' (Welch et al., 2020). Our finding that explorative acquisitions are met with a different response based on whether the target is in a related or an unrelated industry supports the suggestion that in uncertain environments investors look for more signals (e.g., Hsu and Ziedonis, 2013) and may more closely scrutinize acquirer motives (Bettis, 1983; Jennings and Mazzeo, 1991; Myers and Majluf, 1984). In a market context where investors embrace any signal that proxies for "management's informed perception of the focal acquisition's synergistic potential" (Schijven and Hitt, 2012, p. 1251), our findings offer a first glance at the sort of signals that shape investor responses.

Limitations and Future Research

All studies come with limitations. In this section we will discuss a few limitations we encountered in this research, and the avenues for future research that they open up.

First, we make use of an event study to describe market response and expected performance. We recognize that assuming that markets can correctly incorporate new information to update the expected value of the firm has been challenged (e.g., Grossman and Stiglitz, 1980) in finance (e.g., Shleifer, 2000) and strategy (e.g., Cording et al., 2010). Abnormal returns are not only influenced by other cognitive biases (Ozcan and Overby, 2008), but also by factors that affect mood, such good weather (Hirshleifer and Shumway, 2003) and bad news (Kaplanski and Levy, 2010). As a result, short term expected performance does not always predict long term performance (Zollo and Meier, 2008). It would be interesting for future research to examine the relationship between the announced motive and the acquirer's longer-term performance.

Secondly, we look at each acquisition in isolation. The explore-exploit literature suggests, however, that firms can become ambidextrous by sequentially switching between exploration and exploitation (Brown and Eisenhardt, 1997). Although this does not mean that the acquirer should be ambidextrous with any single motive, it does mean that the market may value an explorative acquisition at the end of an exploitative series of acquisitions differently to an explorative acquisition in the middle of an exploitative series of acquisitions. In this paper we ignore this possibility. We hope that future research will not only consider the 'why' and 'where', but also to consider the 'when', in terms of location of the acquisition in the sequence.

Thirdly, we assume that all press releases are the same honest signals of true intent. We make this assumption because, in the US, it is a criminal offence to mislead the market. The reality is, however, that managerial motives pay a role in acquisition (e.g. Trautwein, 1990) and

there are significant differences in the content of the announcements. Managers are also known to engage in 'impression offsetting' and to release information to offset the market's negative reaction (Gamache et al., 2019; Graffin et al., 2016). Some of the announcements in our sample are little more than a technical description of the acquisition, whereas others use emotive language to paint a vision of the future after the acquisition. Research shows that the tone of the message (e.g., McCarthy and Dolfsma, 2014), as well as the reputation of the sender (e.g., Blagoeva et al., 2020) matter. We look forward to future research investigating the link between announcements and managerial motives, and the way in which the market reacts to the various motives we identify, may be moderated by the type and tone of the message.

Fourthly, we test our hypotheses using a sample of acquisitions from four high tech industries. We do so, arguing that the high volume of acquisitions and the high knowledge burden that they place on the investor makes the industry an attractive empirical setting. We hope that future research will explore the generalizability of our findings outside these industries.

Finally, we consider the moderating role of relatedness on the relationship between acquisition motives and performance. We use industry codes to describe relatedness at the highest level. We recognize, however, that relatedness is a broad concept and that there are many ways to describe it (Larsson and Finkelstein, 1999; de Andrés et al., 2017). We hope that future research will repeat our study using consider alternative measures, such as the level of relatedness between target and acquirer in terms of products, or in terms of knowledge or technology bases.

Managerial implications

Acquisitions are risky. Academics have long concluded that investors would often be better off if management had just 'burned the cash or shares [they] used to pay for the acquisition' (Moeller et al., 2005 p.765). As a result, investors are right to worry.

Our results provide insights into which acquisitions will be accepted by the market. We identify two insights that warrant particular managerial attention. Firstly, our data suggests that the market *only* reacts positively to acquisitions with pure exploitative motives. In the remaining cases in our sample, were the acquirer announced acquisitions with only explorative or with ambidextrous motives, the market negatively updated the value of the firm. This suggests that, while it may appear appealing to explore and to exploit and to do both simultaneously, the market treats this as a risk, and only believes that exploitive acquisitions create value.

Secondly, our results suggests that management can use acquisition to explore *and* can provoke a positive reaction from the market in the process, if the target is in a related market. We find that the leniency, of using acquisitions to explore, ends once the target is in an unrelated market. In doing so, we highlight the importance of industry relatedness, and the way in which the 'why' and the 'where' of the acquisition relate in building performance expectations.

Conclusion

We argue that the acquisition motive – the 'why' of the deal – is an important risk signal. We suggest, however, that existing work on motives has tended to ignore that actual 'why', in terms of the announced motive, and has largely missed the nuance in those signals. We describe a number of acquisition motives, categorize them using the explore-exploit framework, and distinguish between acquisitions with pure explorative motive and pure exploitative motives. Then, building on the observation that most acquisitions have multiple motives we also identify

acquisitions which do both, which we term ambidextrous. We also zoom in on the way in which acquirers combine exploration and exploitation. Building on recent contributions to signaling theory, we then argue that the 'why' of a deal matters more, if the 'where' pertains to a high-risk setting which we measure using relatedness. Our findings provide new insights into the incidence of specific motives, the ways in which they are mixed and the market's reaction to them. We add to discussions on acquisition motives, ambidexterity and to work on the behavioral view of market reactions. Our findings call for more work on acquisition motives, for additional detailing of the announcement, and for long-term studies linking announcement motive to performance.

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Table 1 – Acquisition motives

Motive category	Motive	Example terms	Example Acquisitions in dataset
Explorative	Technological	to access intellectual property, patents, knowledge or technology	ADAM Inc acquired Integrative Medicine Comm (2001): "to gain access to the technology and intellectual property assets of Integrative Communications Inc (ICI) and to capitalize on ICI's brand in the growing area of complementary and alternative medicine"
	Expansionary	to expand into new geographic or product markets or industries	Secure Computing Corp acquired CyberGuard Corp (2005)" to expand the geographical reach and the product portfolio of the combined company"
	Learning	to create, to accelerate, to develop new products or markets	Corixa Corp acquired Coulter Pharmaceuticals Inc (2000): "to create a comprehensive immunotherapy company capable of discovering antigens, developing them into products and taking those products to market"
Exploitative	Financial	to improve financial position, to reduce tax exposure	Vivalis SA acquired Humalys SAS (2010): "to capture more value while increasing its medium and long-term cash flow generation without modifying its risk profile"
	Economic	to build economies of scale/scope, to cut costs, to vertically integrate	3Com Corp acquired Alteon Websystems-Card Bus (2000): "to strengthen its existing operations by making the company more vertically integrated"
	Strategic	to improve access to distribution, to become industry leader	Mercury Computer Systems Inc acquired TGS Europe SA (2004): "to enable Mercury Coputer Systems Inc to take early leadership in high-growth 3-D imaging markets"
	Market share	to build size, to strengthen presence, to gain critical mass.	ABB Ltd acquired AB Lorentzen & Wettre (2011): "to strengthen its existing operations in pulp and paper business"

Table 2– Descriptive statistics

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	CAR3	1															
2	Pure Explore Dummy	-0.04	1														
		[0.03]															
3	Pure Exploit Dummy	0.07	-0.4	1													
		[0.00]	[0.00]														
4	Ambidexterity Dummy	-0.03	-0.42	-0.66	1												
		[0.06]	[0.00]	[0.00]													
5	Ratio of Explore to	-0.07	0.8	-0.79	0.13	1											
		[0.00]	[0.00]	[0.00]	[0.00]												
6	Relatedness	-0.04	0.03	-0.04	0.02	0.06	1										
		[0.05]	[0.10]	[0.02]	[0.33]	[0.00]											
7	Number of Motives	0.02	-0.18	-0.34	0.48	0.16	0.01	1									
		[0.24]	[0.00]	[0.00]	[0.00]	[0.00]	[0.75]										
8	Acquirer Financial Slack	0.04	-0.04	0.05	-0.01	-0.07	-0.07	-0.01	1								
		[0.04]	[0.02]	[0.01]	[0.57]	[0.00]	[0.00]	[0.62]									
9	Percent Cash	-0.04	0.03	-0.05	0.02	0.04	0.00	-0.04	0.11	1							
		[0.05]	[0.09]	[0.02]	[0.35]	[0.07]	[0.85]	[0.03]	[0.00]								
10	Prior Performance	0.06	-0.03	0.01	0.01	-0.03	0.01	0.01	-0.03	0.08	1						
		[0.00]	[0.10]	[0.47]	[0.52]	[0.16]	[0.42]	[0.73]	[0.10]	[0.00]							
11	Acquirer Size	-0.07	-0.04	0.01	0.02	-0.03	-0.08	-0.01	0.17	0.18	0.01	1					
		[0.00]	[0.03]	[0.58]	[0.22]	[0.10]	[0.00]	[0.5]	[0.00]	[0.00]	[0.45]						
12	Acquirer Experience	-0.05	0.08	-0.08	0.02	0.10	0.07	-0.03	0.08	0.24	0.02	0.23	1				
		[0.00]	[0.00]	[0.00]	[0.39]	[0.00]	[0.00]	[0.14]	[0.00]	[0.00]	[0.30]	[0.00]					
13	Deal Value	-0.04	-0.06	-0.04	0.09	-0.03	0.04	0.12	0.06	-0.03	0.01	0.13	0.05	1			
		[0.03]	[0.00]	[0.04]	[0.00]	[0.11]	[0.02]	[0.00]	[0.00]	[0.12]	[0.68]	[0.00]	[0.00]				
14	International Deal	-0.02	-0.01	-0.05	0.06	0.02	0.01	0.04	0.08	0.17	-0.02	0.10	-0.01	-0.02	1		
		[0.40]	[0.52]	[0.00]	[0.00]	[0.31]	[0.62]	[0.01]	[0.00]	[0.00]	[0.24]	[0.00]	[0.42]	[0.38]			
15	Private Target Dummy	-0.09	-0.05	-0.06	0.10	0.01	0.07	0.13	-0.01	-0.08	0.01	0.16	0.03	0.25	-0.09	1	
		[0.00]	[0.00]	[0.00]	[0.00]	[0.75]	[0.00]	[0.00]	[0.53]	[0.00]	[0.45]	[0.00]	[0.15]	[0.00]	[0.00]		
16	Prior Alliance Dummy	-0.01	0.00	-0.01	0.01	-0.01	0.02	-0.02	0.01	-0.03	0.00	0.01	0.01	0.09	-0.01	0.07	1
		[0.46]	[0.88]	[0.55]	[0.48]	[0.40]	[0.32]	[0.23]	[0.68]	[0.18]	[0.90]	[0.53]	[0.62]	[0.00]	[0.57]	[0.00]	
	Mean	0.02	0.2	0.38	0.41	0.39	0.6	1.32	-0.09	65.42	-11.49	24014	4.55	631.19	0.38	0.18	0.01
	S.D.	0.14	0.4	0.49	0.49	0.39	0.41	0.65	0.33	41.57	527.75	57567	8.6	2937.6	0.49	0.38	0.07
	Min	-1.06	0	0	0	0	0	1	-1	0	-28023	0	0	10	0	0	0
	Max	2.09	1	1	1	1	1	5	2.57	100	180.84	46080	81	68,445	1	1	1

Table 3 – Acquisitions by acquirer industry and region

	Aerospace	Computers	Electro	Pharma	Total
Australasia	0	14	11	32	57
Eastern Europe	0	0	0	5	5
Japan	2	15	72	32	121
Middle East	1	9	12	16	38
North America	97	381	856	511	1,845
North Asia	9	46	177	81	313
South America	0	6	0	0	6
South Asia	0	12	8	24	44
Southeast Asia	0	11	59	4	74
Sub Saharan Africa	0	5	1	4	10
Western Europe	49	86	240	274	649
Total	158	585	1,436	983	3,162

Table 4 – Announced motives

Category	**Motive**	**Obs**	
Explore	Technological	326 (7.4%)	1,859 (42%)
	Expansionary	1,438 (32.6%)	
	Learning	486 (11%)	
Exploit	Financial	361 (8.2%)	2,445 (55%)
	Economic	223 (5%)	
	Strategic	2,532 (57.5%)	
	Market Share	433 (9.8%)	
Unknown			97
Total			4,401

Table 5 – Combination of motive categories

		No. Exploit Motives				
		0	1	2	3	**Total**
No. Explore Motives	0	97	1,014	195	8	**1,265**
	1	528	877	189	21	**1,654**
	2	121	97	18	1	**237**
	3	0	5	1	0	**6**
	Total	**688**	**2041**	**403**	**30**	**3,162**

Table 6 – Regression results (1)

VARIABLES	(1) CAR3	(2) CAR3	(3) CAR3	(4) CAR3	(5) CAR3	(6) CAR3
Pure Explore Dummy *(H1)*		-0.0109***	-0.0185***			
		(-1.963)	(-2.426)			
Pure Exploit Dummy *(H1)*				0.0179***	0.0185***	
				(2.774)	(2.426)	
Ambidexterity Dummy						-0.0117**
						(-2.254)
Relatedness	-0.0050	-0.0048	-0.0044	-0.0046	-0.0044	-0.0049
	(-1.255)	(-1.254)	(-0.580)	(-1.196)	(-0.580)	(-1.228)
(Log) Number of Motives	0.0049	0.0038	0.0162**	0.0098***	0.0162**	0.0088***
	(1.455)	(1.066)	(2.367)	(3.887)	(2.367)	(3.234)
(Log) Acquirer Financial Slack	0.0040***	0.0041***	-0.0001	0.0042***	-0.0001	0.0041***
	(2.754)	(2.908)	(-0.064)	(3.098)	(-0.064)	(2.820)
(Log) Percent Cash	0.0047	0.0045	0.0111	0.0044	0.0111	0.0048
	(0.662)	(0.633)	(1.398)	(0.634)	(1.398)	(0.670)
(Log) Prior Performance	-0.0023	-0.0020	-0.0012	-0.0018	-0.0012	-0.0022
	(-0.618)	(-0.569)	(-0.326)	(-0.533)	(-0.326)	(-0.625)
(Log) Acquirer Size	-0.0032***	-0.0032***	-0.0049***	-0.0032***	-0.0049***	-0.0032***
	(-2.722)	(-2.688)	(-3.968)	(-2.693)	(-3.968)	(-2.747)
(Log) Acquirer Experience	-0.0039	-0.0035	-0.0014	-0.0030	-0.0014	-0.0038
	(-1.543)	(-1.435)	(-0.538)	(-1.393)	(-0.538)	(-1.587)
(Log) Deal Value	0.0016	0.0013	0.0035	0.0014	0.0035	0.0017
	(0.438)	(0.384)	(0.776)	(0.422)	(0.776)	(0.485)
International Deal Dummy	-0.0064	-0.0065	-0.0057	-0.0056	-0.0057	-0.0059
	(-0.748)	(-0.767)	(-0.534)	(-0.739)	(-0.534)	(-0.723)
Private Target Dummy	-0.0353***	-0.0355***	-0.0431***	-0.0352***	-0.0431***	-0.0351***
	(-3.940)	(-4.005)	(-4.634)	(-4.059)	(-4.634)	(-3.940)
Prior Alliance Dummy	-0.0058	-0.0059	-0.0536***	-0.0038	-0.0536***	-0.0045
	(-0.361)	(-0.373)	(-3.379)	(-0.263)	(-3.379)	(-0.294)
Acquisition Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Acquirer's Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.0378	0.0415	0.0237	0.0186	0.0052	0.0335
	(0.400)	(0.439)	(0.632)	(0.206)	(0.164)	(0.358)
Observations	3,162	3,162	1,856	3,162	1,856	3,162
R-squared	0.042	0.043	0.048	0.045	0.048	0.043

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7 – Regression results (2)

VARIABLES	(7) CAR3	(8) CAR3	(9) CAR3
Ratio of Explore to Exploit *(H2)*	-0.0212***	-0.0813***	-0.0489***
	(-3.031)	(-4.437)	(-2.218)
Sq. Ratio of Explore to Exploit *(H2)*		0.0619***	0.0222*
		(3.998)	(1.130)
Ratio of Explore to Exploit * Related *(H3)*			-0.0391***
			(-1.835)
Sq. Ratio of Explore to Exploit * Related *(H3)*			0.0481***
			(2.245)
Relatedness	-0.0043	-0.0039	-0.0030
	(-1.147)	(-1.019)	(-0.451)
(Log) Number of Motives	0.0072**	0.0134***	0.0132***
	(2.508)	(4.026)	(4.022)
(Log) Acquirer Financial Slack	0.0042***	0.0043***	0.0045***
	(3.092)	(3.172)	(3.366)
(Log) Percent Cash	0.0042	0.0043	0.0044
	(0.605)	(0.623)	(0.635)
(Log) Prior Performance	-0.0017	-0.0017	-0.0016
	(-0.494)	(-0.497)	(-0.472)
(Log) Acquirer Size	-0.0032***	-0.0032***	-0.0032***
	(-2.674)	(-2.687)	(-2.688)
(Log) Acquirer Experience	-0.0029	-0.0029	-0.0030
	(-1.276)	(-1.281)	(-1.325)
(Log) Deal Value	0.0012	0.0014	0.0014
	(0.354)	(0.412)	(0.423)
International Deal Dummy	-0.0062	-0.0056	-0.0053
	(-0.784)	(-0.726)	(-0.692)
Private Target Dummy	-0.0356***	-0.0354***	-0.0353***
	(-4.095)	(-4.062)	(-4.164)
Prior Alliance Dummy	-0.0068	-0.0069	-0.0081
	(-0.438)	(-0.463)	(-0.544)
Acquisition Year Dummies	Yes	Yes	Yes
Acquirer's Industry Dummies	Yes	Yes	Yes
Constant	0.0396	0.0320	0.0316
	(0.426)	(0.347)	(0.341)
Observations	3,162	3,162	3,162
R-squared	0.045	0.047	0.048

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 1 – Market reactions to ambidextrous announcements

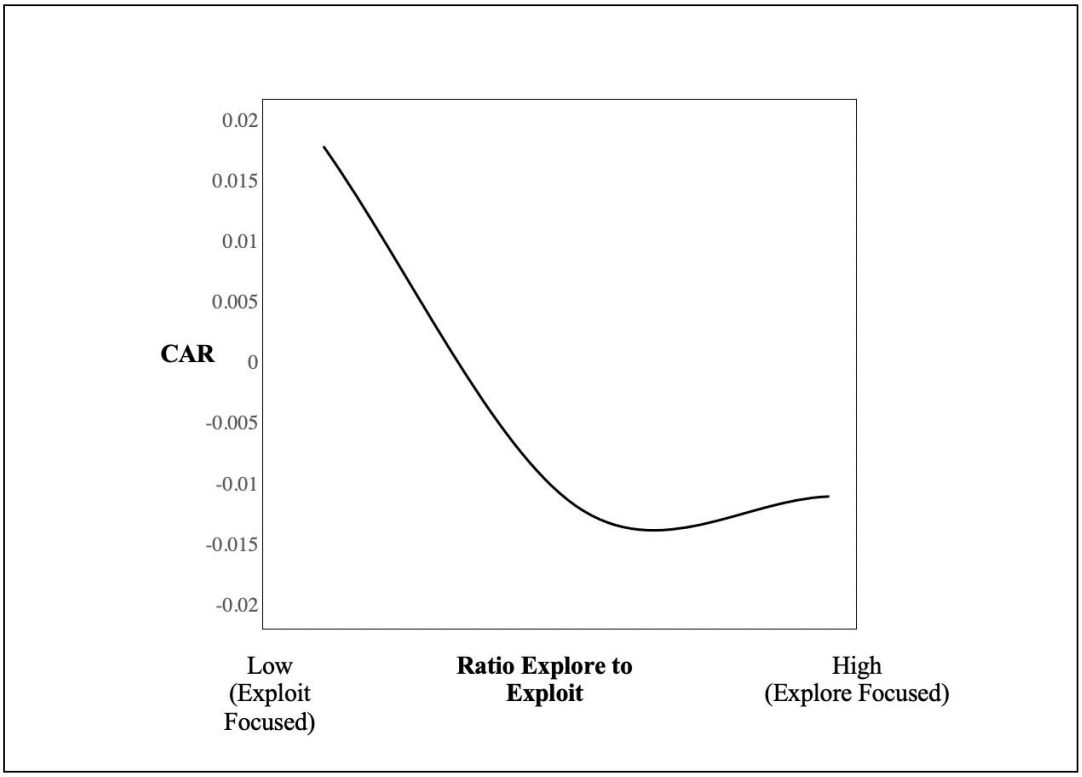

Figure 2 – The moderating effect of relatedness

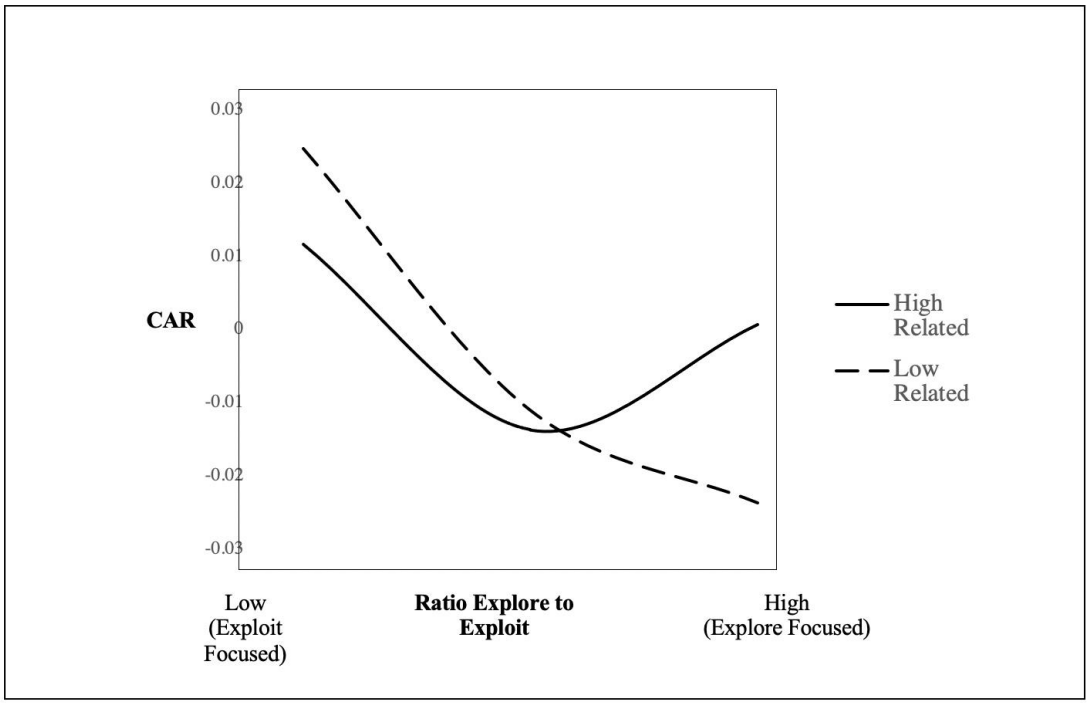

Table 8 – Heckman first stage analysis

MODELS VARIABLES	(1) Exploit Only Dummy
Number of M&As	-1.703***
	(0.0758)
(Log) Geographic Distance	-0.0237***
	(0.00728)
(Log) R&D Intensity	-0.131***
	(0.0203)
(Log) Institutional Distance	0.0108
	(0.0412)
Constant	0.402***
	(0.0594)
Wald chi2(4)	539
Prob > chi2	0.000
Pseudo R2	0.1607
Observations	3,162

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9 – Heckman second stage analysis

VARIABLES	(Robust 1) CAR3	(Robust 2) CAR3	(Robust 3) CAR3
Ratio of Explore to Exploit		-0.020***	-0.020***
		(-8.764)	(-8.746)
IMR			-0.015
			(-1.088)
Relatedness	-0.007	-0.005	-0.005
	(-0.585)	(-0.422)	(-0.418)
(Log) Number of Motives	-0.006	-0.005	-0.005
	(-1.206)	(-1.052)	(-1.016)
(Log) Acquirer Financial Slack	0.003	0.005*	0.016
	(1.049)	(1.646)	(1.301)
(Log) Percent Cash	0.004	0.004	0.004
	(1.033)	(1.052)	(0.983)
(Log) Prior Performance	0.002	0.002	0.002
	(0.364)	(0.334)	(0.333)
(Log) Acquirer Size	-0.002	-0.002	-0.002
	(-0.641)	(-0.500)	(-0.482)
(Log) Acquirer Experience	-0.003	-0.003	-0.003
	(-1.119)	(-1.102)	(-1.149)
(Log) Deal Value	-0.003*	-0.002	-0.002
	(-1.754)	(-1.443)	(-1.353)
International Deal Dummy	-0.002	-0.003	-0.002
	(-0.703)	(-0.750)	(-0.723)
Private Target Dummy	-0.004	-0.004	-0.002
	(-1.211)	(-1.133)	(-0.608)
Prior Alliance Dummy	-0.014***	-0.015**	-0.013**
	(-3.149)	(-2.241)	(-2.046)
Acquisition Year Dummies	Yes	Yes	Yes
Acquirer's Industry Dummies	Yes	Yes	Yes
Constant	0.068	0.068	0.069
	(1.111)	(1.119)	(1.141)
Observations	3,162	3,162	3,162
R-squared	0.036	0.038	0.039

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1