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A STUDY OF MERGERS AND ACQUISITIONS – CORPORATE DIVESTITURE: A STUDY OF RETURNS TO SHAREHOLDERS

ADITYA PRATAP SINGH

ABSTRACT

Mergers and acquisitions (M&A) are tools by which companies reorganize their scale and scope, yet the objectives of acquisitions are often not fully realized. Many buyers go on to sell parts of their organizations. Such divestitures around M&A are common. Early US studies reported that 30-45% of M&A transactions resulted in divestitures of previously acquired units. A recent global study found that 13% of acquisitions were accompanied by at least one divestiture. In this study's sample, 1,232 of 4,711 acquisitions (26%) made by publicly listed buyers from Brazil, Russia, India, China and South Africa (BRICS) between 2000 and 2020 were accompanied by a divestiture in the window from one year before the acquisition announcement to three years after its completion. This rate implies that they are too frequent to be treated as an exception. Yet there is no clear consensus on why these divestitures happen or what they mean for shareholders. The same event may be read as distress, failure or astute portfolio management, with very different consequences for how securities are priced and managers judged.

The review of literature, anchored in a bibliometric analysis of 170 articles from 110 journals published between 1982 and 2023, identified several gaps in the literature. First, much of the research in this area is dominated by developed markets with not even one of the BRICS countries appearing among the top ten countries by citation per publication. Market dynamics in BRICS and developed countries vary in terms of liquidity for corporate assets, disclosure norms and regulatory action, and therefore, developed market findings cannot be assumed to hold in BRICS. Second, the jury was still out on theoretical explanation of divestitures around M&A including reasons and their impact. Correction of a prior mistake and active portfolio management had been competing explanations in extant literature. Similarly, there had been contradictory evidence on whether financial constraints improve divestiture outcomes signaling relief or worsen them due to fire-sale. These are usually treated as rival findings; this study treats them as potentially complementary and seeks the conditions under which each holds. Third, majority of research in the area considered only divestitures after the acquisition, ignoring those used to prepare for or finance a deal or to pre-empt regulatory action. Fourth, several effect of such divestitures on subsequent operating profitability and strategy were thinly studied even globally.

To the best of the researcher's knowledge, this is the first comprehensive framework for divestitures around M&A in BRICS. It examines these events from four different construct on the same sample. These include reasons and likelihood of divestiture, announcement returns, impact on subsequent operating profitability, and impact on strategy.

The study had four objectives. First, to identify the factors influencing the likelihood of divestitures post acquisitions and to create a model to predict such divestitures. Second, to analyze the impact of divestitures around acquisitions on shareholder's returns and identify

the factors influencing the same. Third, to evaluate the impact of divestitures on subsequent profitability of the buyer of focal M&A deal (i.e., seller in case of divestiture). Fourth, to analyze the impact of past learning through divestitures on future strategy.

S&P Capital IQ and World Bank were the main data sources. The main sample was of 4,711 M&A deals announced by BRICS publicly listed buyers between 2000 and 2020. Deal data from 1995 was extracted to measure prior deal experience and up to 2023 to observe deals for three years post-deal window. 1,232 of the deals had a divestiture associated with them of which 13% occurred in the year before the acquisition announcement, 6% between announcement and completion and 81% within three years of completion. Logistic regression was used for identifying the reasons for divestiture and for analyzing the impact on future strategy. Multivariate linear regression was used for analyzing the impact of divestiture announcement on cumulative abnormal returns (CAR) and to identify the factors influencing the same. Multiple linear regression was used to evaluate the impact of divestitures on subsequent profitability.

This study found that buyers that divest after acquisition are larger, experienced but financially stretched. Low free cash flow, low ROA, high leverage, obligation to pay dividends all increased the likelihood of divestiture as firms needed resources unlocked by divestiture to relieve financial constraints. Consistent with agency theorists' views, cross-border deals were found to be less likely to be divested as they increased the complexity of organization, thereby, protecting management's interests. Poor acquisition announcement returns were found to increase the likelihood of divestiture. This was the only area where correction of prior mistake theory found support in this study. The study also identified areas where BRICS behaved differently from developed markets. Stock volatility and risk of regulatory action were found to reduce the likelihood of divestitures in BRICS while developed market focused studies reported them to increase likelihood. BRICS countries have relatively poor liquidity for corporate assets and turbulent circumstances, for example, stock volatility and risk of regulatory action, lead to fire-sale and depressed valuation. Thus, managers avoid undertaking divestitures in BRICS when faced with these challenges that are public knowledge. The combined model correctly classified 83.2% of deals – whether divestiture happened or not post an M&A.

In a model that combined all BRICS countries except China, divestitures were found to add value to the restructuring process, in-line with global research. Only China was the exception with negative coefficient for divestiture return but it was statistically insignificant. Planned divestitures were rewarded by the market. Risk of regulatory action was also found to add to divestiture announcement returns. Prior divestiture experience was rewarded by the market but prior acquisition experience had no bearing on the returns. The study reconciles conflicting evidence on financial constraints by separating their level from their direction. Existing constraints, such as high leverage and low cash, were rewarded because the sale relieves them. Worsening constraints, such as rising leverage and low free cash flow were penalized as the sale was read as too little, too late. Good stock performance was rewarded but worsening stock performance was penalized. Correction of prior mistake theory was not supported as prior acquisition announcement returns had no statistically significant impact on divestiture returns.

Divestitures around M&A amplified the performance that preceded them. They also did not have a uniform impact on all organizations. High performers were able to continue to build on their prior performance. Post divestiture, they quickly deployed the proceeds into productive assets, likely through acquisitions, that further increased their ROA by increasing revenue faster than the growth in SG&A, and increasing their net income faster than the growth in assets. Low performers sold to survive and were unable to deploy proceeds within one year and saw their ROA fall with net income that contracted faster than the fall in assets. Divestiture did not have any significant impact on R&D profile for either group within the one-year horizon.

Both acquisition and divestiture experience were found to contribute to learning and increase the likelihood of divestiture, however, the learning impact of past divestiture experience was much stronger than that of past acquisitions. If divestitures were failures, experience of them wouldn't make firms more likely to divest again. Hence, correction of prior mistake theory is not supported here also. The study found support for vicarious learning theory from the flipside of acquisitions and also that organizations learn better from rare events and varied events instead of repeated ones.

The study makes several important contributions and implications for researchers, managers, shareholders and other stakeholders such as employees, analysts, and policymakers. The study showed that portfolio management theory is a much better framework to understand divestitures around M&A instead of treating these as evidence of correction of prior mistakes. It also distinguishes the level of financial constraints from their direction reconciling previously conflicting findings. The study also finds support for agency theory, vicarious learning and the complementary Penrose effect. Very importantly, the study also maps where BRICS markets diverge from developed markets and provides a first-of-its kind comprehensive framework to understand divestitures around M&A in BRICS. Managers now understand that planned divestitures are rewarded and unplanned ones are not. They can estimate the likelihood of a divestiture at the time of acquisition decision itself and plan for it. Managers can also note that rising leverage and deteriorating free cash flow are the warning signs of an unplanned, penalized sale. In thin BRICS markets, deferring a sale during stock market volatility or risk of regulatory scrutiny may be prudent. However deferral that prolongs weak performance also carries a cost. These findings are also relevant for shareholders as they can now evaluate the likelihood of divestitures at the time of acquisition as well as have a framework to price a divestiture around M&A. Policymakers should understand that anti-trust remedy playbook cannot be directly replicated from developed markets as BRICS countries have lower M&A liquidity where non-structural remedies may work better in certain situations. For employees, such divestitures are predictable, and high performers expand after divesting while low performers contract.

Divestitures around M&A in BRICS are better understood as a complementary portfolio management tool than as the reversal of something that went wrong. Large, experienced and financially constrained buyers divest. The market prices these events according to whether they relieve constraints or confirms deterioration, and whether it was planned. The operating performance follows the buyer's pre-existing trajectory. Divestiture experience is more valuable than acquisition experience. The study is limited to listed buyers, buyer-side variables and a one-year profitability horizon. Extending it to private buyers, target characteristics, divestiture sub-types, longer horizons and other emerging markets is natural next steps.

Chapter 1

1. Introduction

1.1. Introduction to the topic

Mergers and acquisitions (M&A) is an important mechanism through which companies reorganize their scale and scope. Emerging economies such as BRICS (Brazil, Russia, India, China and South Africa) have seen fair share of activity.

Globally, M&A phenomenon has been on the rise but expected objectives are seldom fulfilled therefore some companies go for divestiture. Companies like Tata and Suzlon Energy Ltd. have divested units like Corus and Senvion respectively from their portfolio after initially having acquired them. These are examples of deals worth more than USD 1 billion which later experienced significant divestitures. Several explanations, often without consensus between management and other market participants, emerge after such divestitures as to why it happened including original deal being overpriced, structural downturn in the market, need for deleveraging the buyer et al. In other words, explanation often revolves around correction of prior mistake, relief from financial constraints (due to internal or external factors such as market downturn) and planned portfolio management. There is a need to understand reasons as to why companies go for divestiture and what is the impact on return to shareholders.

Divestitures are sell-off of assets, either tangible or intangible, of a business segment or a unit (Clubb & Stouraitis, 2002) and are more common than one may imagine. Right from early 1980s, studies have reported that 30 to 45 percent M&As were divestitures of previously-acquired units (Weston J. , 1989). Porter (1987), Kaplan & Weishbach (1992) and Ravenscraft and Scherer (1987) also found evidence of a high occurrence of divestitures after M&A. The scenario is no different today. Aktas et al. (2022) report that 13% of acquisitions in their large 6,845 sample were associated with at least one divestiture representing on an average about 33% of the original acquisition value. Further, studies have also claimed a “cause and consequence” relation between these acquisitions and divestitures (Ma & Wang, 2018).

1.2. Deal flow

A brief look at the data used in this study establishes the scale of the phenomenon it examines. Over the past two decades covered by this study (2000 to 2020) BRICS countries have seen 4,711 M&A deals by publicly listed buyers. Of these 4,711 deals a large share (1,232 deals or 26% of the sample) have been associated with a divestiture with at least one divestiture by the buyer within a window running from one year before the acquisition announcement to three years after its completion.

This incidence sits between the benchmarks available in the literature. It is lower than the 30 to 45 per cent reported in early studies of US acquisitions (Weston, 1989) and roughly double the 13% reported by Aktas et al. (2022) for a recent global sample. Put simply, one in every four acquisitions by a listed BRICS buyer is accompanied by a divestiture. It is a rate too large for the event to be treated either as an exception or as an admission of failure in individual deals.

A feature of the data directly contribute to the design of this study. The timing of divestiture is important. Unlike majority of the extant literature on this topic which only considered the divestiture post-acquisition, this study also considers pre-acquisition divestitures as firms use divestiture to prepare for acquisitions including financing the focal deal. Of the 1,232 divestitures 13% were executed 1 year before the acquisition announcement, 6% were from announcement to deal closure and reaming 81% were executed within 3 years post deal closure.

1.3. Research Problem and scope

Divestitures around M&A are common globally as well as in BRICS, yet there is a lack of validated explanation of why it happens and what is the impact on shareholders. In the absence of a clear framework, the same event may be judged differently by the observers including as a signal of distress, admission of failure, evidence of robust portfolio management, and so on. It will have materially different impact on how the securities are priced and managers are evaluated.

This study analyzed the factors that influence decision to undertake a divestiture post an acquisition. Additionally, the study also analyzed the behavior of returns using data with

respect to companies that have gone into divestiture around an acquisition. Further, effect of such divestitures on profitability and its impact on future strategy were also analyzed. The study is confined to deals done by buyers in BRICS countries from 2000 to 2020.

1.4. Rationale of the study

M&A activity, though cyclical, continues to increase in the business world, and, along with it divestitures around M&A are also increasing. A lot of authors have studied M&A—for example, Bates (2005), Maksimovic & Phillips (2002b), Mulherin & Boone (2000) and Schlingemann et al. (2002). Of late divestitures have received some research interest, yet they continue to be less studied than M&A (Brauer, 2006; Buchholtz, Lubatkin, & O'Neill, 1999). One reason could be that divestitures are, many a times, less public than M&A and the market for divestitures tends to be less liquid than M&A (Datta, Iskandar-Datta, & Raman, 2003; Laamanen, Brauer, & Junna, 2014) perhaps because, in many countries, the disclosure regulations for divestitures are more lenient than that for M&A, and thus, divestitures cannot be considered a mirror image of M&A (Brauer, 2006).

There are several gaps in existing research in the area of divestitures despite the fact that divestitures around M&A are a common occurrence (across studies 13%-35% of deals had a reported occurrence of divestitures). Divestiture, being an important restructuring tool, has far reaching consequences for all stakeholders involved, such as employees, suppliers, customers, shareholders, management and society at large. Therefore, there is a clear requirement to have a framework to understand and analyze this corporate action.

The coverage on divestitures around M&A is dominated by developed markets such as USA, France, UK and Canada with not one BRICS country appearing in the top 10 by average citations per publication. This is important because divestiture around M&A are, amongst other factors, impacted by institutional factors such as liquidity in the market, credibility of regulatory intervention, governance et al. Learnings from deep, liquid and high disclosure markets cannot be assumed to directly apply in low liquidity markets with relatively poor disclosure norms for asset disposals.

Further, even in developed markets, there are competing explanations of divestitures around M&A ranging from them being an evidence of prior mistake (Kaplan & Weisbach,

1992; Porter, 1987) to them being an evidence of active portfolio management to maximize shareholder's returns (Aktas, Baros, & Croci, 2022). These are usually treated as rival findings but this study views them as potential complementary findings under specific conditions and attempts to identify those conditions.

Similarly, even in developed markets, studies analyzing the impact of such divestitures on performance are overwhelmingly only focused on immediate announcement share price returns and not on subsequent operating profitability. The impact on subsequent strategy (restructuring activity) is even more thinly analyzed in the prevailing literature. Several studies are also confined to single industries such as computing and printing in case of Doan et al. (2018), and pharmaceuticals in case of Vidal & Mitchell (2017).

This study is first such attempt to create a framework to understand impact of divestitures around M&A in the context of BRICS countries. It covers several critical aspects, namely reasons for such divestitures and predicting its likelihood, **impact of such divestitures on shareholders returns, impact of such divestitures on profitability of the organization,** and impact of such divestitures on future strategy (M&A and Divestitures).

This study tests several competing theories such as correction of prior mistake and portfolio management using the same data set and sample in the context of BRICS where it has never been examined. This study offers a reconciliation in these theories by distinguishing the level of financial constraints and the direction of change in financial constraints – something that has never been done before. Similarly, this is a first of its kind study that using the same data set and sample analyzes the impact of divestitures around M&A across four constructs – divestiture likelihood, announcement returns, subsequent operating profitability and subsequent strategy (restructuring behavior). This allows comparison of both short term and long term consequences of the same corporate action rather than inferring from it across multiple studies.

Further, this study has developed a model that is more than 80% accurate in predicting the likelihood of divestiture post-acquisition which can better help the management to plan their actions. It also allows other stakeholders such as shareholders and analyst to analyze on ex-ante basis the potential fall-outs of announced M&A deals including anticipating disposals.

To the best of researcher's knowledge, this is the first study that constructs such a comprehensive framework to understand divestitures around M&A in BRICS context. It establishes where these markets behave like developed markets and where they behave differently.

This study has the following objectives:

1. To identify the factors influencing the likelihood of divestitures post acquisitions and to create a model to predict such divestitures.
2. To analyze the impact of divestitures around acquisitions on shareholder's returns and identify the factors influencing the same.
3. To evaluate the impact of divestitures on subsequent profitability of the buyer of focal M&A deal (i.e., seller in case of divestiture).
4. To analyze the impact of past learning through divestitures on future strategy.

1.5. Contributions of the study

This study attempts to make significant contributions to the field of theory on divestitures around M&A. It aims to adjudicate the debate in extant literature between portfolio theory and correction of prior mistake theory as potential explanations for divestitures around M&A. It also aims to settle another debate in extant literature on whether financial constraints lead to improved divestiture performance or they lead to depressed performance due to fire-sale. Another key area of this study would be to establish where BRICS markets behave differently compared to their developed counterparts, thus, providing a framework for researchers to understand the BRICS M&A and divestitures markets as well act as a guide for policy makers to understand implications of their actions specially concerning anti-trust remedies. For managers it would establish a framework to better evaluate and manage acquisitions.

1.6. Chapter scheme

This chapter served as an introduction to the topic and the study. The rest of the study is divided into seven chapters. Chapter 2 covers review of existing literature in detail. It has 5 sections. First, it covers a more detailed background to the topic. Section 2 is on bibliometric analysis which helps understand how this field of research has evolved and which are the most impactful works. Section 3 identifies five main sub-themes in the body of research on divestitures around M&A. Section 4 summarizes the theoretical framework in extant literature. It is followed by the key gaps in literature in section 5.

Chapter 3 explains the research methodology and six sections. It starts with research questions in section 1 and objectives in section 2. Hypotheses are listed in this chapter in section 3 but have been developed in detailed in chapters 4, 5, 6 and 7. This chapter, in section 4, covers key concepts and definitions of all variables used in the study. Section 5 describes the sample and section 6 summarizes the techniques used.

Each of the next four chapters (Chapters 4 through 7) elaborate on each of the four objectives. Chapter 4 deals with reasons for divestiture around M&A and its likelihood. Chapter 5 establishes the impact of such divestitures on shareholder's returns at the time of divestiture announcement. Chapter 6 analyzes the impact on operational profitability and chapter 7 helps understand the impact of such divestitures on future strategy. Each of these four chapters are organized in a consistent manner. Section 1 is an introduction to the topic, lists the research questions and develops the hypotheses leveraging the extant literature. Section 2 describes the methodology relevant to the hypotheses including subset of sample used, main tests, and variables including dependent, independent, and control variables. It also specifies what are the key assumptions of technique used and how they have been tested. Section 3 discusses the results in detail which is followed by the summary of findings in section 4.

Finally, chapter 8 contains the overall conclusion including the summary of findings by chapter as well as integrated summary. This chapter also has a section on implications and another section on limitations and future scope of work. Following these chapters is the appendix which contains output tables. Finally, all references are included.

Chapter 2

2. Literature Review

This chapter reviews the existing body of knowledge on divestitures around M&A to establish background information, what remains contested, and what is yet unexplored. The review was conducted in two stages. First, the field itself was mapped through a bibliometric analysis carried and published separately (Singh, Singh, & Maheshwari, 2024), covering 170 articles drawn from 110 journals published between 1982 and 2023. Performance analysis conducted as part of the bibliometric study established the growth of the field, its geographic concentration, and its leading journals, authors and articles, while science mapping techniques, that is co-citation analysis and bibliographic coupling, identified the foundational works on which the field rests and grouped the publications into five distinct sub-themes. Second, the most influential works so identified, along with the more recent contributions, were studied in depth and organized around the competing theoretical explanations they offer. These were supplemented by works from the wider literature on corporate restructuring, acquisitions and firm performance to arrive at the gaps that this study addresses.

The chapter is organized into four sections. Section 2.1 establishes the background to the topic. Section 2.2 presents the bibliometric analysis of the field, including publication patterns, leading contributors, the most cited reference works and the sub-themes identified through bibliographic coupling. Within it, section 2.2.1 establishes the sub-themes within which the extant work sits. Section 2.3 discusses the theoretical framework applied to divestitures around M&A including correction of prior mistake, portfolio theory, behavioral theory and agency theory. Section 2.4 consolidates the discussion into the research gaps, which in turn form the basis of the research questions and objectives set out in Chapter 3.

2.1. Background to the topic

Corporate restructuring is becoming ever so important in today's dynamic environment. Acquisitions and divestitures are corporate restructuring tools (Brauer, 2006; Capron, Mitchell, & Swaminathan, 2001; Dranikoff, Koller, & Schneider, 2002). These help redraw the boundaries of an organization (Rhodes-Kropf & Robinson, 2008). Acquisitions create opportunities to restructure by disposing of old assets while buying new ones (Aktas, Baros, & Croci, 2022). There are several examples of divestitures around acquisitions in the business world, including those in large, reputed organizations such as General Electric which are known to be an expert in acquiring and integrating.

Divestitures are sell-off of assets, either tangible or intangible, of a business segment or a unit (Clubb & Stouraitis, 2002). While divestiture typically refers to sale of business unit/sub-unit, the expanded definition may also include sale of assets (Capron, Mitchell, & Swaminathan, 2001). Organizations may even respond to the post M&A challenges by shutting down of operations of the business unit instead of selling it (A.Lord & YoshieSaito, 2017). The divestiture is not always of the business unit or assets of the target of focal acquisition, it could also be of the assets of the acquirer (Capron, 1999). The divestiture could be to rivals within the industry or to organizations outside the industry of the buyer (Hammoudeh, Nain, & Qian, 2022). While Kaplan & Weisbach (1992) and Maksimovic, Phillips, & Prabhala (2011) document that most divestitures around M&A happen in the years following the M&A, it is important to note that the same could happen before the focal deal (Aktas, Baros, & Croci, 2022), for example, to prepare for the impending transaction (Arcot, Gantchev, & Sevilir, 2020), to preempt a regulatory action (Gelfand & Brannon, 2016; Gotts, 2006), to finance the deal (Mavis, McNamee, Petmezas, & Travlos, 2020), and so on. Vo, Nguyen, & Pham (2025) found that pre-deal divestitures get lower valuation (multiples), lower premiums and also lower announcement returns driven by the fact that any potential acquisition driven efficiencies have not gotten a chance to be implemented or backed in. Like acquisitions (Betton, Eckbo, & Thorburn, 2008; Harford, 2005; Harford & Uysal, 2014; Maksimovic, Phillips, & Yang, 2013), divestitures also have a cycles of increasing and decreasing activity (Aktas, Baros, & Croci, 2022).

There are several reasons or motivation on why organizations go for divestitures around M&A including regulatory (Gotts, 2006; Hammoudeh, Nain, & Qian, 2022), strategic (Aktas, Baros, & Croci, 2022), financial constraints (Borisova & Brown, 2013; Golder, Markovitch, & O'Brien, 2018), performance, and so on. The jury is still out on whether divestitures around M&A are a good decision or not. The research on divestiture around M&A is in nascent stage and there are enough contradictory views. For example, a group of researchers believe that such divestitures represent correction of prior mistakes and lead to value destruction (Kaplan & Weisbach, 1992; Porter, 1987). Others believe that divestitures are value accretive adding 2% to the total value created by acquisitions (Aktas, Baros, & Croci, 2022). Similarly, Deloitte (2026a) also conclude through a survey of management that divestitures are not reactive anymore and mostly strategy led driven by focus on operating model and reallocation of capital.

Interestingly, another type of divestiture happens around acquisition. Announced acquisition termination triggers divestiture of related assets by the bidder as it forces a strategic rethink specially when bidder does not have important resources to win in that domain (Gibbs, Byun, & Lim, 2026).

Several theorists have attempted to explain divestitures around M&A. Agency theory and institutional theory-based research often represents divestitures as correction of prior mistakes (Amiri, King, & DeMarie, 2019). Institutional theory-based research typically concerns itself with the divestiture timing. Brauer & Wiersema (2012) find that divestiture decisions taken in pursuit of crowd wisdom are followed by a negative market reaction. Though, some of the divestiture decisions could be legitimate ones leading to a positive market reaction (Flickinger & Zschoche, 2018). Managers initially diversify to reduce their own employment risk (Amihud & Lev, 1981; Castañer & Kavadis, 2012), and similarly may be interested in pursuing their own agenda with the sale proceeds of the divestitures (Lang, Poulsen, & Stulz, 1995). Performance aside, there are several behavioral aspects to the divestitures after M&A. It is known that many a times managers show a strong commitment to acquisitions (Haspeslagh & Jemison, 1991; Schweizer, 2005), sometimes irrationally or for personal gains leading to agency issues (Lang, Poulsen, & Stulz, 1995). Thus, divestiture of prior acquisitions comes with embarrassment and emotional turbulence

for many (Brauer & Wiersema, 2012; Hayward & Shimizu, 2006; Liu & McConnell, 2013), especially if it was not initially planned. Not everything happens as per one's plan. Behavioral theory-based research recognizes this and focuses on performance relative to the aspiration as the driver behind divestitures (Amiri, King, & DeMarie, 2019; Cyert, Feigenbaum, & March, 2007). More specifically, a performance below aspiration typically leads to a strategic change (Greve, 2003; 2008). Authors such as Feldman (2014) and Golder et al. (2018) find positive market reaction to divestitures of assets which were performing below aspiration. The aspiration is not limited to stock performance denoted by excess returns but also includes stock performance volatility.

Many of the studies on divestiture around M&A focus on individual deal characteristics and target or buyer variables, in isolation to the larger context of the portfolio of businesses of the acquiring organization. However, a number of contemporary researchers propose to look at acquisitions and divestitures together by applying the portfolio theory which gives more importance to the stock performance of the combined organization instead of the stand-alone performances of sub-units (Barkema & Schijven, 2008b; Dranikoff, Koller, & Schneider, 2002; Lubatkin & Chatterjee, 1994). In other words, organizations need to evaluate interaction of individual units/ firms with other units in the portfolio while deciding whether to acquire or divest (Dranikoff, Koller, & Schneider, 2002; Hoskisson, Johnson, & Moesel, 1994; Hoskisson & Turk, 1990; Shimizu & Hitt, 2005; Xia & Li, 2013; Wright, Kroll, Lado, & Ness, 2002).

The organizations use addition and subtraction of business units as a strategy to not just improve stock performance (Dranikoff, Koller, & Schneider, 2002; Mulherin & Boone, 2000) but also reduce risk as measured by stock performance volatility (Mackey, Barney, & Dotson, 2017; Markowitz H. M., 1959; Sengul, Costa, & Gimeno, 2018). Needless to mention, it also allows organizations to manage liquidity (Schlingemann, Stulz, & Walkling, 2002), geographic diversification (Berry, 2013), and uncertainty (Bergh & Lawless, 1998).

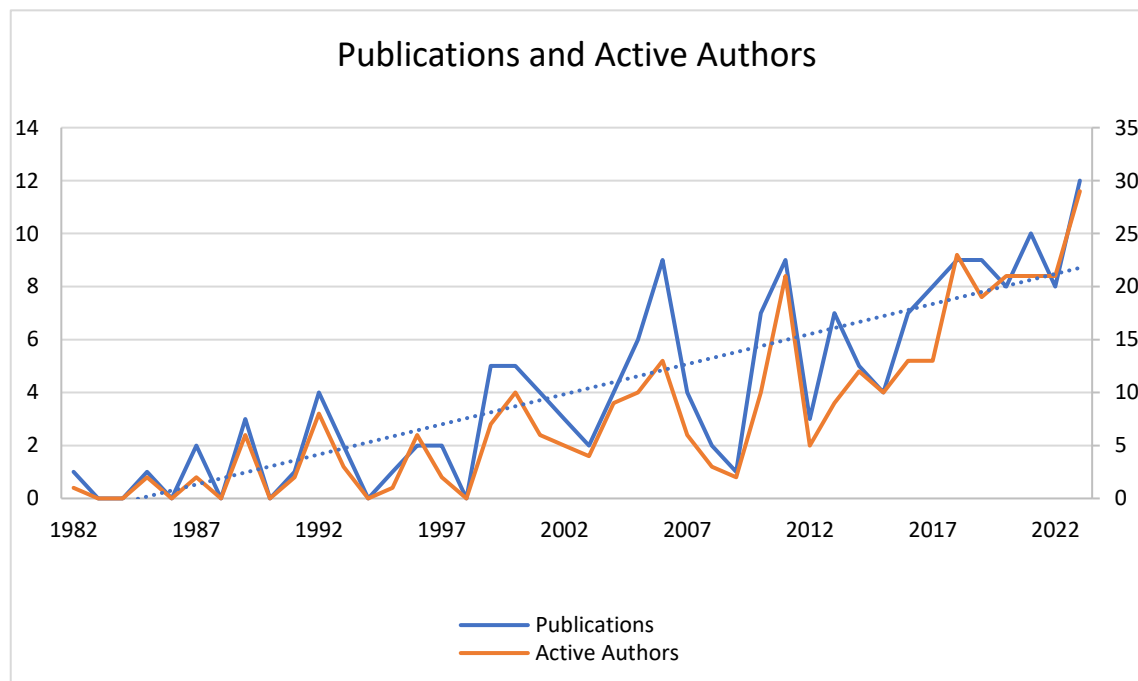
Further, recent works are also focusing on the role of seller in the success of deals. For example, Deloitte (2026b) report finds that sell-side management including CFO plays a

significant role in preparing the organization for divestiture, and thereby, contributing to the success of the deal for the buyer.

2.2. Bibliometric Analysis

While M&A is a well-studied topic, the field of research on divestitures around M&A is still quite nascent, Singh, Singh, & Maheshwari (2024) have conducted perhaps the first bibliometric analysis on this research area covering 170 articles from 110 journals from 1982 to 2023 on the topic of corporate divestitures around M&A. They show that it is an upcoming field with publications and authors increasing every year (see Figure 2.1 for details) but concentrated in developed countries, such as the USA, which has a clear lead, followed by France, the UK, Canada, among others (see Table 2.1 for details). None of the BRICS countries featured in the list of top 10 countries by average citations per publication.

Figure 2.1 Pattern of publication in the field of divestitures around M&A



Note: Left axis is for number of publications and right axis is for number of active authors.
Source: (Singh, Singh, & Maheshwari, 2024)

Table 2.1 Top 10 countries by citations in the field of divestitures around M&A

Country	TP	TC	TC/ TP
United States	77	3,879	50.4
France	16	809	50.6
United Kingdom	18	427	23.7
Canada	7	191	27.3
Norway	1	153	153.0
South Korea	2	110	55.0
Sweden	5	89	17.8
Finland	3	68	22.7
Portugal	4	46	11.5
Belgium	3	35	11.7

Note: TP is Total Publications, TC is Total Citations, and TC/ TP is Citations per Publication.

Source: (Singh, Singh, & Maheshwari, 2024)

Further, they show that top articles by citations per year (see Table 2.2 for details) have a mix of old articles (e.g., 1992 and 1996) as well as recent works (e.g., 2018). They identify Academy of Management Journal as the top journal by citations per publication followed by The Journal of Finance. Similarly, they identify Hitt, Michael A. as the top author by total citations (877) followed by Johnson, Richard A., Hoskisson, Robert E. and Moesel, Douglas D each having 734 citations in the field.

Table 2.2 Top 10 articles by citations per year in the field of divestitures around M&A

Title	Author	Journal	Year	TC	TC/ Y
"The market for corporate control and firm innovation"	Hitt, M.A.; Hoskisson, R.E.; Johnson, R.A.; Moesel, D.D.	Academy of Management Journal	1996	734	26.21
"Financial Statement Comparability and the Efficiency of Acquisition Decisions"	Chen, C.-W.; Collins, D.W.; Kravet, T.D.; Mergenthaler, R.D.	Contemporary Accounting Research	2018	124	20.67
"Acquirer-target social ties and merger outcomes"	Ishii, J.; Xuan, Y.	Journal of Financial Economics	2014	189	18.90
"The long-term performance of horizontal acquisitions"	Capron, L.	Strategic Management Journal	1999	470	18.80
"Prospect theory, behavioral theory, and the threat-rigidity thesis: Combinative effects on organizational decisions to divest formerly acquired units"	Shimizu, K.	Academy of Management Journal	2007	259	15.24
"Acquisition profitability and timely loss recognition"	Francis, J.R.; Martin, X.	Journal of Accounting and Economics	2010	205	14.64
"The Success of Acquisitions: Evidence from Divestitures"	Kaplan, S.N.; Weisbach, M.S.	The Journal of Finance	1992	418	13.06
"Modularity in organizational structure: The reconfiguration of internally developed and acquired business units"	Karim, S.	Strategic Management Journal	2006	212	11.78
"Asset divestiture following horizontal acquisitions: A dynamic view"	Capron, L.; Mitchell, W.; Swaminathan, A.	Strategic Management Journal	2001	240	10.43
"Measuring the performance of corporate acquisitions: An empirical comparison of alternative metrics"	Schoenberg, R.	British Journal of Management	2006	164	9.11

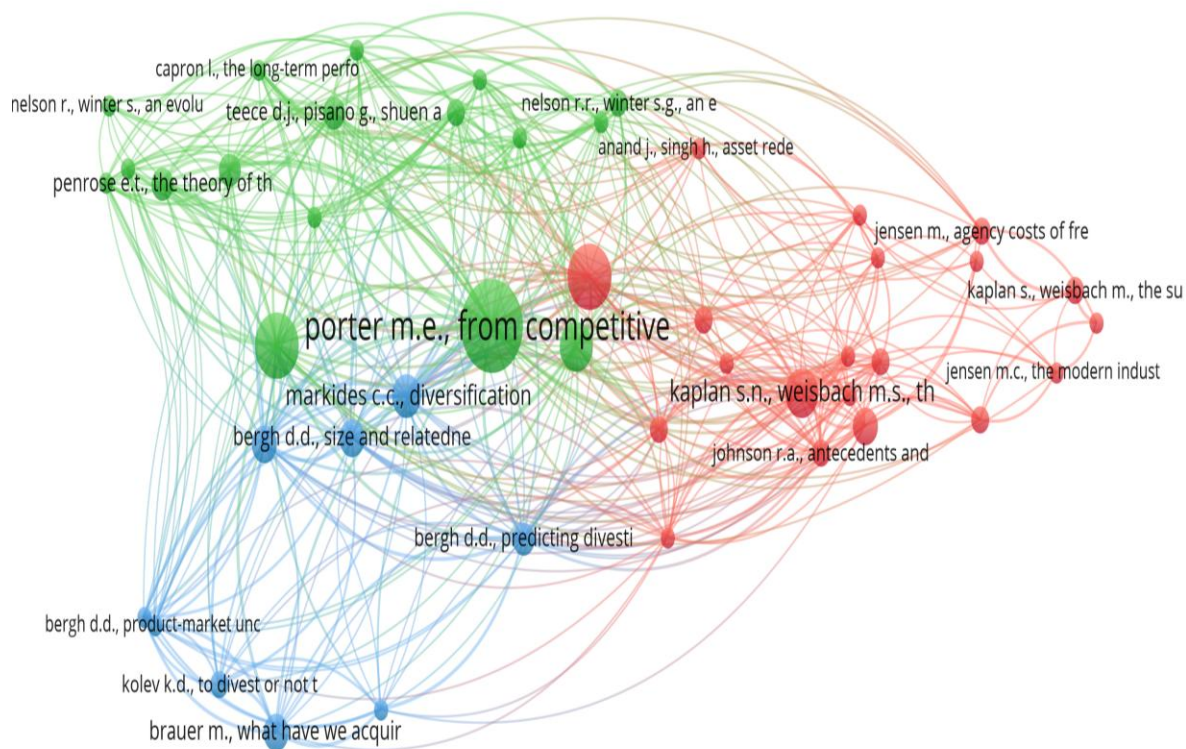
Note: TC/ Y is Citations per Year counted from the year of publication till 2023.

Source: (Singh, Singh, & Maheshwari, 2024)

The 170 publications in the field of divestitures around M&A had 6,686 references. Singh et al. (2024) identify Porter (1987) and Capron et al. (2001) as top works referred by the 170 publications - these two works had 17 and 16 references respectively from the 170 publications in focus (see Figure 2.2 for network diagram of top 40 references and Table 2.3 for details of top 10 papers). They also identify three clusters of these references. One of the clusters (represented by red color) was internal to the topic of research as it was on likelihood and reasons for divestitures around M&A with works such as Brauer (2006), Capron et al., (2001) and Kaplan & Weisbach (1992). Second (represented by green color)

was focused on strategy and growth of organization with works such as Porter (1987). Third (represented by blue color) had works such as Markides C. C. (1995) and Bergh (1995) which were focused on antecedents of divestitures.

Figure 2.2 Network diagram of top 40 articles which have been cited by the 170 papers in the field of divestitures around M&A



Source: (Singh, Singh, & Maheshwari, 2024)

Table 2.3: Top 10 papers which have been referenced by the 170 papers in the field of divestitures around M&A

Author(s)	Paper	Year	TC(Q)	Cluster
Porter, M.E.	"From Competitive Advantage To Corporate Strategy"	1987	17	Green
Capron, L.; Mitchell, W.; Swaminathan A.	"Asset Divestiture Following Horizontal Acquisitions: A Dynamic View"	2001	16	Red
Haspeslagh, P.C.; Jemison, D.B.	"Managing Acquisitions: Creating Value Through Corporate Renewal"	1991	16	Red
Brauer, M.	"What Have We Acquired And What Should We Acquire In Divestiture Research? A Review And Research Agenda"	2006	14	Red
Duhaime, I.M.; Grant, J.H.	"Factors Influencing Divestment Decision-Making: Evidence From A Field Study"	1984	12	Red
Bergh, D.D.	"Predicting Divestiture Of Unrelated Acquisitions: An Integrative Model Of Ex Ante Conditions"	1997	10	Red
Kaplan, S.N.; Weisbach, M.S.	"The Success of Acquisitions: Evidence from Divestitures"	1992	9	Red
Nelson, R.R.; Winter, S.G.	"An Evolutionary Theory Of Economic Change"	1982	9	Green
Ravenscraft, D.J.; Scherer, F.M.	"Mergers, Sell-Offs, And Economic Efficiency"	1987	9	Green
Markides, C.C	"Diversification, Restructuring And Economic Performance"	1995	8	Blue

Note: TC(Q) is the total citations received from within 170 papers in consideration. The cluster color referenced here refers to the cluster color in co-citation network diagram in Figure 1.2.

Source: (Singh, Singh, & Maheshwari, 2024)

2.3. Sub-themes in the topic of divestitures around M&A

Singh et al. (2024) make another critical contribution to this area of research by identifying five sub-themes (clusters) from among the 170 publications via bibliographic coupling analysis using full counting method (see Figure 2.3 for network diagram and Table 2.4 for top three papers in each of the five sub-themes). A minimum citation criterion of five was set to filter out low impact works which left 88 publications of which 54 were found to be connected and their network diagram was created.

The largest of the five sub-themes, with 14 publications, attempts to understand why firms unwind acquisitions they have previously made and what impacts its likelihood. Its defining feature is theoretical pluralism: Shimizu (2007) demonstrates that no single lens – prospect theory, behavioral theory or the threat-rigidity thesis – is on its own adequate to account for the decision to divest a formerly acquired unit, and that these explanations operate in combination rather than in competition. Loss of control was related to poor post-acquisition performance and divestitures (Ravenscraft & Scherer, 1989). Shimizu & Hitt (2005) show that likelihood of divestiture is increased due to improved governance. Mergers and acquisitions help finance projects which are marginally profitable and wouldn't otherwise have been financed as standalone projects (Fluck & Lynch, 1999). Therefore, as the profitability improves the divestitures occur. In other words, divestitures occurs when merger is no longer needed to justify the projects. Further, what impact the divestiture will have on perception of top management's performance is an important factor determining whether a divestiture will happen or not even for poorly performing acquisitions (Hayward & Shimizu, 2006).

The second cluster studied divestitures as an evidence of failure of prior acquisition. It had 12 publications. Which are the firms that are good at acquisition decisions? Those who recognize losses in a timely manner, and thus, they are also quick to divest (Francis & Martin, 2010). Schoenberg (2006) argues that no matter the measure – divestiture or cumulative abnormal returns – about half the acquisitions are failures i.e., only 44%-56% acquisitions are a success. And the failure is not small, buyers sell 27% and close 19% of the plants of the targets in three years of acquisitions (Maksimovic et al., 2011). Poor acquisition decisions are also due to softer aspects as per Ishii & Xuan (2014). They argue that higher control of pre-existing management understood by prior social ties between target and buyer's top management led to more divestitures due to poorer acquisition decisions.

Third cluster, with 11 publications, studied the impact on performance of organization that underwent divestitures and also the impact of performance on divestitures. Kaul (2012) argues that non core business are divested by successful innovators while they acquire complementary businesses in parallel. Divestiture as an evidence of acquisition failure is

rejected by Amiri et al., (2020). Divestitures are tools for improving performance and managing the overall portfolio. Vidal & Mitchell (2018) argue that divestitures indeed magnify the past performance as good performers divest and invest the proceeds to invest in growth. Divestiture and resource deployments are tools for improving M&A performance but only when divestiture or redeployment is of buyer's own resources (Capron, 1999).

Fourth cluster focused on divestitures in niches, for example, divestiture in unrelated M&A, for select industries, for cross border deals et al. Benito (1977) finds that, in comparison to greenfield setup, acquired subsidiaries are more likely to be divested in a cross border setting. Bergh (1997) finds that change of motivations since acquisition is the key driver for divestiture of unrelated acquisitions which can be upwards of 50%. Increase in relative size had a negative impact of divestiture likelihood even though in absolute terms larger affiliates are more likely to be divested according to Norbäck et al., (2015) in a study based on Swedish multinationals.

Finally, fifth cluster how to make M&A successful, or in other words, factors that contribute to success. Organizations who are engaging in inorganic growth through M&A and divestitures are poor internal innovators, and thus, are relying on external innovation (Hitt et al., 1996). Top management retention can increase acquisition performance Bergh (2001). However, given that measure of success is absence of divestiture, retaining target's managements would arguably increase the bias against divestiture. Thus, the findings need to be taken with a pinch of salt. Some other studies including from other clusters have also found factors contributing to success. Organizations learn from divestitures and get better acquisitions as divestitures are a flipside of acquisitions (Doan et al., 2018). Firms earn better returns by reinvesting the divestiture proceeds which leads to better announcement returns and long term operational profitability (Humphery-Jenner et al., 2019).

Table 2.4: Top three papers in each of the five sub-themes in the field of divestitures around M&A

Paper	Author	Year	TC
Cluster 1 (Red): Reasons and likelihood of divestiture of previously acquired units (TP: 14, TC: 984, APY: 2008.1)			
"Prospect Theory, Behavioral Theory, and the Threat-Rigidity Thesis: Combinative Effects on Organizational Decisions to Divest Formerly Acquired Units"	Shimizu, K.	2007	259
"What constrains or facilitates divestitures of formerly acquired firms? The effects of organizational inertia"	Shimizu, K.; Hitt, M.A.	2005	143
"Why do firms merge and then divest? A theory of financial synergy"	Fluck, Z.; Lynch, A.W.	1999	126
Cluster 2 (Green): Divestiture as an indicator of failure of prior M&A (TP: 12, TC: 977, APY: 2007.0)			
"Acquisition profitability and timely loss recognition"	Francis, J. R., Martin, X.	2010	205
"Measuring the Performance of Corporate Acquisitions: An Empirical Comparison of Alternative Metrics"	Schoenberg, R.	2006	164
"Bustup Takeovers of Value-Destroying Diversified Firms"	Berger, P. G., Ofek, E.	1996	161
Cluster 3 (Blue): Impact of divestitures and organisational performance on each other (TP: 11, TC: 1,109, APY: 2012.5)			
"The long-term performance of horizontal acquisitions"	Capron, L.	1999	470
"Asset divestiture following horizontal acquisitions: a dynamic view"	Capron, L.; Mitchell, W.; Swaminathan, A.	2001	240
"Modularity in organizational structure: the reconfiguration of internally developed and acquired business units"	Karim, S.	2006	212
Cluster 4 (Yellow): Likelihood and impact of divestitures around specific niche of M&A (TP: 10, TC: 524, APY: 2002.0)			
"Predicting divestiture of unrelated acquisitions: An integrative model of Ex Ante conditions"	Bergh, D. D.	1997	157
"Divestment of foreign production operations"	Benito, G. R. G.	1997	153
"The impact of modes of entry and resource fit on modes of exit by multibusiness firms"	Chang, S.J.; Singh, H.	1999	99
Cluster 5 (Purple): Factors contributing to success of M&A (TP: 7, TC: 957, APY: 2010.7)			
"The market for corporate control and firm innovation"	Hitt, M.A.; Hoskisson, R.E.; Johnson, R.A.; Moesel, D.D.	1996	734
"Executive retention and acquisition outcomes: A test of opposing views on the influence of organizational tenure"	Bergh, D. D.	2001	122
"Corporations as stepfamilies: A new metaphor for explaining the fate of merged and acquired companies"	Allred, B.B.; Boal, K.B.; Holstein, W.K.	2005	31

Note: APY is Average Publication Year. The cluster color referenced here refers to the cluster color in bibliographic coupling-based network diagram in Figure 2.3.

Source: (Singh, Singh, & Maheshwari, 2024)

2.4. Theoretical framework

Conventional wisdom on this topic agreed that divestitures post M&A represent *correction of prior mistake* (Berger & Ofek, 1995; Kaplan & Weisbach, 1992; Porter, 1987). Some concluded that divestitures had a negative impact on performance – accounting (Bergh, 1995) as well as market performance (Wright & Ferris, 1997). Proponents of this theory treat divestiture as an evidence of acquisition failure. Further, the theory implies that if prior acquisition was penalized by the market, that is, it had poor acquisition announcement returns, it would be rewarded by the market later. It also implies poor acquisition announcement returns would increase the likelihood divestitures happening in future.

Furthermore, *behavioral theory* explanations of performance around divestitures highlight that when such divestitures follow a period of below expected performance they are rewarded by the market (Feldman E. , 2014; Golder, Markovitch, & O'Brien, 2018). Behavioral theory claims that management is forced to rethink their strategy when the performance is below expectations. Strategy decisions are not made in isolation but are relative to expectations. Thus, if the expectations from the acquisition are not met, management is more likely to divest. One could say that behavioral theory provides support to correction of prior mistake theory, or is at least views such divestitures in the same light.

However, others have found support for *portfolio theory* that divestitures, like acquisitions, are tools to improve overall performance of combined organization and that divestitures contribute positively to shareholder's returns (Aktas, Baros, & Croci, 2022) as they lead to improved profitability (Hoskisson & Johnson, 1992). The organizations use addition and subtraction of business units as a strategy to not just improve stock performance (Dranikoff, Koller, & Schneider, 2002; Mulherin & Boone, 2000) but also reduce risk as measured by stock performance volatility (Amiri S. , King, DeMarie, & Brown, 2021; Sengul, Costa, & Gimeno, 2018). It clearly shows that there are likely moderating factors which have not been fully explained (Lee & Madhavan, 2010) such as past performance of the buyer. Proponents of this theory would argue that divestiture could have always been part of the plan – to acquire, integrate, assimilate, and then divest slack resources. Therefore, divestitures should not be regarded as an evidence of acquisition failure, but instead should be treated as evidence of astute management.

Agency theory suggests that managers initially diversify to reduce their own employment risk (Amihud & Lev, 1981; Castañer & Kavadis, 2012), and they similarly may be interested in pursuing their own agenda with the sale proceeds of the divestitures (Lang, Poulsen, & Stulz, 1995). This is because agency theorists support the idea that management is more concerned with furthering their own agenda instead of their principals i.e., the shareholders. In other words, if there is a conflict of interest between managers and shareholders, managers will pursue their own interests. In the context of M&A it manifests as doing more M&A to increase the scope and complexity of their organizations so that more managers are needed ensuring job security and more skilled managers are required ensuring increase in compensation.

Thus, when faced with a choice of divesting, managers will hold onto to the assets for as long as possible even if it hurts the interests of shareholders. Agency theory explanation of positive market reaction to divestitures post M&A claims that such divestiture decisions represent alignment of interest of agents (managers) with principals (shareholders) and reduced control costs (Chen, Collins, Kravet, & Mergenthaler, 2018; Feldman E. R., 2016; Pathak, Hoskisson, & Johnson, 2014).

Overall, the review of literature on divestiture around M&A shows that while divestitures are a common occurrence around M&A, jury is still out on whether they are evidence of failure of prior acquisition or demonstrate portfolio management by an astute management. A clear answer on this will not only help one understand the factors contributing to divestitures after acquisitions but also determine how the market reacts to announcement of divestitures. To what extent agency theory plays out in the context of such divestitures is also unclear – under what circumstances do managers hold on to failed acquisitions to protect their interests and when do they divest aligning their interests with their principals.

2.5. Research gaps

Much of the research on divestitures has studied this topic in isolation of acquisitions (Bates, 2005; Lang, Poulsen, & Stulz, 1995; Schlingemann, Stulz, & Walkling, 2002). This is so even though divestiture post M&A may reflect a reversal or a significant change in strategic direction of the organization requiring substantial resources, involving significant risks, and may include losses (Kaplan & Weisbach, 1992; Shimizu, 2007).

There are very few studies which link divestitures and acquisitions together let alone cover nuances sufficiently (Amiri, King, & DeMarie, 2019; Amiri S. , King, DeMarie, & Brown, 2021). For instance, most studies consider divestitures only after acquisition announcement—for example, Kaplan and Weisbach (1992) Maksimovic et al. (2011), even though an organization may go in for a divestiture to prepare for and/ or finance the M&A deal (Arcot, Gantchev, & Sevilir, 2020; Mavis, McNamee, Petmezas, & Travlos, 2020) and/ or to pre-empt a regulatory action (Gelfand & Brannon, 2016; Gotts, 2006). Further, many of the existing studies either define divestitures too narrowly (Aktas, Baros, & Croci, 2022) – for example, only when the exact assets which were bought are later sold it is called a divestiture – or define the predictors too narrowly (Amiri S. , King, DeMarie, & Brown, 2021) – for example, only consider performance issues at the target to be the problem. Both these type of studies fail to recognize the portfolio approach wherein management evaluates entire portfolio of businesses and uses restructuring tools, such as M&A and divestitures, to improve performance (Aktas, Baros, & Croci, 2022; Amiri S. , King, DeMarie, & Brown, 2021).

Not just that, the extant literature has many apparent contradictions. For example, Porter (1987) considers divestitures as correction of prior mistakes, whereas Aktas et al. (2022) find that divestitures around M&A improve performance irrespective of the acquisition being a mistake or not. Similarly, many studies claim that divestitures lead to improved performance – both market (Jain, 1985; Mulherin & Boone, 2000) and accounting performance (Hoskisson & Johnson, 1992). However, there is no dearth of research contradicting these claims – for example, Bergh (1995) finds that divestitures have a negative impact on accounting performance and Wright & Ferris (1997) conclude the same

for market performance. There are likely moderating factors which have not been fully explained (Lee & Madhavan, 2010).

Similarly, there have been very few research studies outside of European and USA markets barring exceptions of a few global studies such as Aktas et al. (2022) and Doan et al. (2018). These global studies would have likely missed the nuances of BRICS countries even though developed and developing countries are known to exhibit differences in M&A behaviors and outcomes (Deng & Yang, 2015). Nuances of BRICS countries would likely be a rounding off error in global studies. Case in point is comparison of market capitalization of developed and BRICS countries. For example, USA's market capitalization as a share of global market capitalization is more than 50%. When other developed countries' market capitalization is added the share increases to approximately 80% (Lu, 2025). Share of Indian markets in global market capitalization is less than 10% of the USA, and China is about 20% of the USA (Lu, 2025). Other BRICS countries are even smaller. For example, in 2019, BRICS countries put together had a deal volume of \$539 billion which is small in front of the USA which had a deal volume almost 5x of BRICS at \$2.4 trillion (Institute of Mergers, Acquisitions and Alliances, 2025). Essentially, even though China is the second and India is the fifth largest economy in the world, a study based on listed M&A buyers which is the case for most existing research – for example, Aktas et al. (2022) and Amiri et al. (2021) – will only have BRICS nuances as rounding off errors. It shows a clear, valuable gap in the field of research on divestitures post M&A.

Further, some of the existing studies such as Doan et al. (2018) and Vidal & Mitchell (2017) only consider specific industries, such as computer & printing industries and pharmaceutical industries respectively. And thus, the applicability of the findings of these studies on other industries is not established. Similarly, some of the critical variables which have significant explanatory power and impact the applicability of results have been missed often – for example, cross border deals have a different behavior but are not considered in many studies (Meschi & Métais, 2015).

Clearly, there is a gap in the research for a BRICS nations focused study explaining the factors influencing divestitures around M&A and the impact of such divestitures.

Chapter 3

3. Research Methodology

Having established the gaps in the extant literature, this chapter sets out the design of the empirical work through which those gaps are addressed. It begins with the four set of research questions and the corresponding objectives of the study, lists the hypotheses to be tested under each objective which have been developed and detailed in chapters 4, 5, 6, and 7. This chapter also defines the key concepts and variables. It then describes the sample. The chapter closes with the detailing the statistical techniques employed and a summary of the dependent, independent and control variables mapped against each objective.

The purpose of presenting these elements together is to set out, in one place, the choices that are common to the entire study. Chapters 4 through 7 therefore revisit only what is specific to the objective being examined in them such as the sample subset used, the particular tests and variables, and the assumption testing undertaken.

3.1. Research questions

This study analyzed the divestitures around M&A, specifically, the reasons for such divestitures along with the impact of such divestitures on shareholder's wealth. Additionally, the analyses covered the impact of such divestitures on the performance and strategy of the parent organization represented by profitability and future restructuring activity respectively.

The research questions of this study are as follows:

1. Divestiture likelihood:
 - a. What are the factors that influence the likelihood of divestitures of prior acquisitions?
2. Returns to shareholders:
 - a. What is the impact of divestitures around acquisitions on announcement shareholder's returns?
 - b. What are the factors that influence shareholder's returns of divestitures?

3. Subsequent performance:
 - a. What is the impact of divestitures on subsequent performance (ROA - return on assets) and what role does prior performance play in that?
 - b. What are the constituents for this change in performance and what does it inform about strategy and post-divestiture resource deployment?
4. Future strategy:
 - a. What is the impact of organization's learning from past divestitures on its future strategy?
 - b. How does the learning from past divestitures vary from that of past acquisitions?

3.2. Objectives

The objectives of this study are as follows:

1. To identify the factors influencing the likelihood of divestitures post acquisitions and to create a model to predict such divestitures.
2. To analyze the impact of divestitures around acquisitions on shareholder's returns and identify the factors influencing the same.
3. To evaluate the impact of divestitures on subsequent profitability of the buyer of focal M&A deal (i.e., seller in case of divestiture).
4. To analyze the impact of past learning through divestitures on future strategy.

3.3. Hypotheses

Hypotheses of this study have been developed and discussed in detail in chapters 4, 5, 6 and 7 leveraging the review of extant literature. Following is the list of alternate hypotheses of this study for reference:

1. *Hypotheses for objective 1* – factors influencing divestitures around acquisitions:

1.1. **Financial constraints:** The likelihood of divestiture post M&A is positively associated with financial constraints of the seller (*buyer of focal M&A*).

1.2. **Deal complexity:**

1.2a. The likelihood of divestiture post M&A is positively associated with the deal complexity (relative size and cross border deals) of the focal M&A.

1.2b. The likelihood of divestiture post M&A is negatively associated with the deal complexity (relative size and cross border deals) of the focal M&A.

1.3. **Instability in performance:**

1.3a. The likelihood of divestiture post M&A is positively associated with the buyer's stock price volatility.

1.3b. The likelihood of divestiture post M&A is negatively associated with the buyer's stock price volatility.

1.4. **Mean stock performance:**

1.4a. The likelihood of divestiture post M&A is negatively associated with the buyer's mean stock performance.

1.4b. Higher mean stock performance negatively impacts the relationship between stock performance volatility and likelihood of divestiture around M&A.

1.5. **Related vs. unrelated deals:**

1.5a. The likelihood of divestiture post M&A is negatively associated with unrelated deals.

1.5b. Unrelated nature of deal positively impacts the relationship between change in stock performance volatility and likelihood of divestiture post M&A.

1.5c. The likelihood of divestiture post M&A is positively associated with unrelated deals.

1.5d. Unrelated nature of deal negatively impacts the relationship between stock performance volatility and likelihood of divestiture post M&A.

1.6. Risk of regulatory action:

1.6a. The likelihood of divestiture post M&A is positively associated with the risk of regulatory action of the focal M&A.

1.6b. The likelihood of divestiture post M&A is negatively associated with the risk of regulatory action of the focal M&A.

1.7. Acquisition announcement returns:

1.7a. The likelihood of divestiture post M&A is negatively associated with the shareholder's returns of the focal M&A.

1.7b. The likelihood of divestiture post M&A is positively associated with the shareholder's returns of the focal M&A.

2. *Hypotheses for objective 2* – impact of divestitures around acquisitions on shareholder's returns and the factors influencing the same:

2.1. Relative size:

2.1a. The shareholder's returns of divestiture around M&A are negatively associated with the relative size of the focal M&A.

2.1b. The shareholder's returns of divestiture around M&A are positively associated with the relative size of the focal M&A.

2.2. Regulatory risk:

2.2a. The shareholder's returns of divestiture around M&A are positively associated with the regulatory risk of the focal M&A.

2.2b. The shareholder's returns of divestiture around M&A are negatively associated with the regulatory risk of the focal M&A.

2.3. Announcement CAR:

2.3a. The shareholder's returns of divestiture around M&A are negatively associated with the shareholder's returns of the announcement of focal M&A.

2.3b. The shareholder's returns of divestiture around M&A are positively associated with the shareholder's returns of the announcement of focal M&A.

- 2.4. **Financial constraints:**
 - 2.4a. The shareholder's returns of divestiture around M&A are positively associated with financial constraints of the seller (buyer of focal M&A).
 - 2.4b. The shareholder's returns of divestiture around M&A are negatively associated with financial constraints of the seller (buyer of focal M&A).
- 2.5. **Past learning (acquisitions and divestitures):** The shareholder's returns of divestiture around M&A are positively associated with past acquisitions or past divestitures.
- 2.6. **Prior stock performance:**
 - 2.6a. The shareholder's returns of divestiture around M&A are positively associated with prior stock performance (mean performance and volatility).
 - 2.6b. The shareholder's returns of divestiture around M&A are negatively associated with prior stock performance (mean performance and volatility).
- 2.7. **Planned vs. unplanned divestitures:** The shareholder's returns of divestiture around M&A are positively associated with planned divestitures.
3. **Hypotheses for objective 3** – impact of divestitures around acquisition on subsequent profitability of the buyer of focal M&A deal (i.e., seller in case of divestiture):
 - 3.1. **Divestiture's impact:** Divestitures have an impact on subsequent profitability.
 - 3.2. **Moderating impact of prior performance on profitability:** Prior performance does moderate the impact of divestitures on subsequent profitability.
 - 3.3. **Divestiture's impact on constituents of profitability:** Divestitures have an impact on constituents of profitability (net income, total assets, revenue, SG&A, R&D).
 - 3.4. **Moderating impact of prior performance on constituents of profitability** Prior performance does moderate the impact of divestitures on constituents of profitability (net income, total assets, revenue, SG&A, R&D).

4. *Hypotheses for objective 4* – impact of past learning through divestitures on future strategy:

4.1. **Acquisition experience:**

4.1a. The likelihood of divestiture post M&A is negatively associated with past acquisition experience.

4.1b. The likelihood of divestiture post M&A is positively associated with past acquisition experience.

4.2. **Divestiture experience:**

4.2a. Prior divestiture experience negatively impacts the likelihood of future divestiture post M&A.

4.2b. Prior divestiture experience positively impacts the likelihood of future divestiture post M&A.

4.3. **Acquisition vs. divestiture experience:** Impact of prior divestiture experience on likelihood of divestitures post M&A done in future is more than that of prior acquisition experience.

4.4. **Learning from major and minor divestitures:**

4.4a. Prior minor divestiture experience contributes to learning and impacts the likelihood of future divestiture post M&A.

4.4b. Prior major divestiture experience contributes to learning and impacts the likelihood of future divestiture post M&A.

3.4. Concepts and variable definitions

The following details the concept, variables used and their definitions.

3.4.1. Key concepts

- Acquisitions or mergers and acquisitions (M&A):** Acquisition is defined as a corporate transaction where a buyer has bought assets or shares of another organization fully or partially. Merger is where two entities combine to form a new entity. In this work, acquisition and M&A are both considered same and used interchangeably. Several filters were applied on M&A deals – deals with missing data were removed. In line with most of the researches on this topic – for example, Aktas et al. (2022) and Amiri et al. (2021), only deals by public listed buyers were included as data for private buyers was not available. The deal should have closed within three years and the status should be closed or completed i.e., not cancelled or just announced. The deal should have resulted in change in control. The buyer should be solvent with positive assets. The buyer should have been from one of the BRICS countries and deals should have been announced between 1st January 2000 and 31st December 2020 (both inclusive) to be included in the work.
- Focal window:** Focal window taken as the period starting one year before acquisition announcement to three years post-acquisition closure. For all practical purposes, year is to be understood as financial year.
- Focal deal** is defined as the acquisition/ M&A deal around which divestitures are being studied. Divestitures are associated to a focal deal if such a divestiture took place during the focal window.
- Divestiture:** divestiture is defined as sale of a business unit by a parent organization. Direct investment (even 100%) in parent organization is not considered i.e., the seller has to be an organization and not an individual. Similarly, a private equity owner selling an organization is not included, the seller should be a corporate organization and not a financial investor. For being considered in the study, only divestitures which were done by a buyer of the focal M&A were considered, the deal should not have been cancelled and should have resulted in a change in ownership. The divestiture could have been of the same unit that was acquired or any part of the combined business of the buyer

(Aktas, Baros, & Croci, 2022). If such a divestiture was done during the focal window, it was tagged to the focal M&A deal, and the deal was said to be with divestiture (variable *Acquisition_With_Or_Without_Divestiture* took the value 2). If it was done up to five years before the focal window, it was counted in *Past_Divestiture_5_Log*.

- **All pre-divestiture variables:** For acquisitions with accompanying divestitures, these variables were calculated one year before divestiture announcement. For remaining observations, it was calculated one year before end of focal window which was three years from acquisition announcement.
- **All post-divestiture variables:** For acquisitions with accompanying divestitures, these variables were calculated one year after divestiture announcement. For remaining observations, it was calculated one year after end of focal window which was three years from acquisition announcement.
- **All change variables:** All change variables were calculated as a difference between variable's value one year before acquisition announcement and variable's value one year before divestiture announcement. Where an acquisition was not accompanied by divestiture instead of one year before divestiture announcement one year before the end of the focal window (which was three years from acquisition announcement) was taken.

3.4.2. Organization variables

- **Capex (*Capex_N*):** Capital expenditures normalized on a base of total assets (Aktas, Baros, & Croci, 2022).
- **Cash holding (*Cash_Holding_N*):** Cash and cash equivalents normalized on a base of total assets (Aktas, Baros, & Croci, 2022).
- **Equity Issue (*Equity_Issue_B*):** taken as a binary variable with value of 1 if organization issued equity during the focal deal, that is from one year before acquisition announcement to one year post closure, 0 otherwise (Aktas, Baros, & Croci, 2022).
- **Debt Issue (*Debt_Issue_B*):** taken as a binary variable with value of 2 if organization issued debt during the focal deal, that is from one year before acquisition announcement to one year post closure, 1 otherwise (Aktas, Baros, & Croci, 2022).

- **Buyer's Leverage:** Total debt normalized on a base of total assets (Aktas, Baros, & Croci, 2022; Amiri, King, & DeMarie, 2019).
 - **Leverage pre-divestiture ($Buyer_Leverage_Divestiture_N$):** Calculated one year before divestiture announcement.
 - **Change in leverage ($Buyer_Leverage_N_Change$):** Calculated as difference between value one year before acquisition announcement and one year before divestiture announcement.
- **Normalized Levered Free Cash Flow (FCF):** Levered free cash flow which is EBITDA adjusted for net working capital changes, Capex and mandatory debt payments was taken and normalized on the base of total assets (Amiri S. , King, DeMarie, & Brown, 2021).
 - **Levered FCF pre-divestiture ($Levered_FCF_Divestiture_N$):** Calculated one year before divestiture announcement.
 - **Levered FCF change ($Levered_FCF_N_Change$):** Calculated as difference between value one year before acquisition announcement and one year before divestiture announcement.
- **Stock Volatility:** Stock volatility is variability of returns which is a measure of risk (Amiri S. , King, DeMarie, & Brown, 2021) and calculated as standard deviation of returns multiplied by square root of time period.
 - **Stock volatility pre-divestiture ($Stock_Volatility_Divestiture$):** Calculated for a period of one year before divestiture.
 - **Stock volatility change ($Stock_Volatility_Change$):** Calculated as difference between value for the period one year before acquisition announcement and for the period one year before divestiture announcement.

- **Stock performance:** Stock performance (Amiri S. , King, DeMarie, & Brown, 2021) was the abnormal return calculated as the difference between observed return and expected return. It was calculated using standard market model: $AR_{j,t} = R_{j,t} - (\alpha + \beta \times R_{m,t})$. Where $AR_{j,t}$ is abnormal returns, $R_{j,t}$ is organization's observed returns, and $R_{m,t}$ is observed returns for the market, and α and β are constant and systematic risk respectively of organization j (Gaur, Malhotra, & Zhu, 2013; Amiri, King, & DeMarie, 2019)). α and β were calculated over approximately 230 trading days (i.e., approximately 320 days) ending 45 days before announcement date of the event similar to Amiri et al. (2019) and Brauer & Wiersema (2012). Some of the other studies have taken a 200-day period ending 40 days before announcement (Aktas, Baros, & Croci, 2022). Country specific appropriate index was used as market portfolio (i.e., Brazil: Bovespa Index (Ibovespa); Russia: MOEX Russia Index, India: Nifty 50 Index, China: Shanghai Composite Index and South Africa: FTSE/JSE Top 40 Index).
 - **Stock performance pre-divestiture (*Stock_Performance_Divestiture*):** Calculated for a period of one year before divestiture.
 - **Stock performance change (*Stock_Performance_Change*):** Calculated as difference between value for the period one year before acquisition announcement and for the period one year before divestiture announcement.
- **Dividend Payer (*Dividend_Payer_B*):** taken as a binary variable with value of 1 if organization, one year before the focal deal, paid cash dividends, 0 otherwise (Aktas, Baros, & Croci, 2022).
- **Market Value (*Market_Value_Log*):** is the equity market capitalization one day before the acquisition announcement (Aktas, Baros, & Croci, 2022).
- **R&D (*RD_N*):** are the expenses on research and development normalized on a base of total assets (Aktas, Baros, & Croci, 2022).
- **Return on Assets - ROA (*EBITDA_ROA*):** EBITDA or earnings before special items, interest, tax, depreciation and amortization normalized on a base of total assets (Aktas, Baros, & Croci, 2022).
- **Size (*Size_Log*):** taken as the log of total assets in USD million at the end of the year prior to acquisition announcement (Aktas, Baros, & Croci, 2022; Brauer & Schimmer, 2010).

- **Tobin's Q (*TobinsQ*)**: Calculated as sum of total debt and equity market value, before acquisition announcement, normalized on a base of total assets (Aktas, Baros, & Croci, 2022).
- **Acquisition experience (*Past_Acquisition_5_Log*)**: measured as the log transformation of count of deals completed by the buyer (excluding subsidiaries and affiliates) five years prior to the focal window (Amiri, King, & DeMarie, 2019). Since the count observations contained several zero values, a small positive constant was added before log transformation as the log of zero is undefined (West, 2021).
- **Divestiture experience (*Past_Divestiture_5_Log*)**: measured as the log transformation of count of divestments completed by the buyer's entity (excluding subsidiaries and affiliates) in five years prior to focal window (Amiri, King, & DeMarie, 2019; Markides C. , 1992). Since the count observations contained several zero values, a small positive constant was added before log transformation as the log of zero is undefined (West, 2021).
- **Experience of minor divestitures in past (*Past_Minor_Divest_5_Log*)** (Meschi & Métais, 2015): calculated in the same way as *Past_Divestiture_5_Log* where only divestitures with transaction value of less than \$150m were considered.
- **Experience of major divestitures in past (*Past_Minor_Divest_5_Log*)** (Meschi & Métais, 2015): calculated in the same way as *Past_Divestiture_5_Log* where only divestitures with transaction value of more than \$150m were considered.
- **Small organization (*Small_Organisation_B*)**: taken as a binary variable with value of 2 if the organization is in the bottom tercile using total assets, at the year-end before acquisition announcement, as the normalization variable, 1 otherwise (Aktas, Baros, & Croci, 2022). The cut-off was calculated for each industry and country combination.
- **Young organization (*Young_Organisation_B*)**: similar to small firm variable, it is taken as a binary variable with value of 2 if the organization is in the bottom tercile using firm age as the normalization variable, 0 otherwise (Aktas, Baros, & Croci, 2022). The cut-off was calculated for each industry and country combination.
- **Strong organization (*Strong_Organisation_B*)**: taken as a binary variable with value of 2 if the organization is above the four-firm concentration ratio (CR4), 1 otherwise. CR4 is calculated as the average share of revenue/ shipments by top four organizations (Hammoudeh, Nain, & Qian, 2022). The cut-off was calculated for each industry, country and year (one year before acquisition announcement) combination.

- 1

 - **Profitability:** profitability was measured as the industry adjusted net margin (return on sales). The industry average was calculated for each industry, country and year (one year before acquisition announcement) combination.
 - **Buyer_Profitability_Pre_Divestiture:** Calculated for a period of one year before divestiture.
 - **Buyer_Profitability_Change:** Calculated as difference between value for the period one year before acquisition announcement and for the period one year before divestiture announcement.
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 - **Return on equity (ROE):** calculated as net income by shareholder's equity for the year ending prior to acquisition announcement (Amiri S. , King, DeMarie, & Brown, 2021).
 - **Log of net income** (Vidal & Mitchell, 2017): Log transformation of net income was taken. Net income is revenue less expenses such as cost of goods sold (COGS), selling, general and administrative expenses (SG&A), other operating expenses and non-operating expenses like interest and taxes. The variables were taken for two time periods:

 - One year before divestiture (**Log_Net_Income_1D**)
 - One year post divestiture (**Log_Net_Income_D1**)
 - **Log of total assets** (Vidal & Mitchell, 2017): Log transformation of total assets was taken. Total assets include all fixed and current assets. The variables were taken for two time periods:

 - One year before divestiture (**Log_Total_Assets_1D**)
 - One year post divestiture (**Log_Total_Assets_D1**)
 - **Log of revenue** (Vidal & Mitchell, 2017): Log transformation of revenue or total sales was taken. The variables were taken for two time periods:

 - One year before divestiture (**Log_Revenue_1D**)
 - One year post divestiture (**Log_Revenue_D1**)
 - **Log of SG&A** (Vidal & Mitchell, 2017): Log transformation of selling, general and administrative expenses (SG&A) was taken. The variables were taken for two time periods:

 - One year before divestiture (**Log_SGA_1D**)
 - One year post divestiture (**Log_SGA_D1**)

- **Log of R&D** (Vidal & Mitchell, 2017): Log transformation of research and development expenses (R&D) was taken. The variables were taken for two time periods:
 - One year before divestiture (*Log_RD_ID*)
 - One year post divestiture (*Log_RD_DI*)
- **Return on assets** (Vidal & Mitchell, 2017): Calculated as net income by total assets. The variables were taken for two time periods:
 - One year before divestiture (*ROA_ID*)
 - One year post divestiture (*ROA_DI*)
- **High vs. low performers (*HL_Performer_Median*)** (Vidal & Mitchell, 2017): taken as a binary variable coded as 2 if the buyers ROA in the year of divestiture was above median, 1 otherwise.

3.4.3. Deal characteristics variables

- **Binary variable for divestiture (*Acquisition_With_Or_Without_Divestiture*)**: which takes the value 2 if the focal deal was accompanied with a divestiture in the focal window, 1 otherwise (Aktas, Baros, & Croci, 2022).
- **Cumulative abnormal return (CAR)** over a three-day window (-1 to +1) around the announcement date i.e., from one day before to one day after the announcement date (Amiri, King, & DeMarie, 2019; Brauer & Schimmer, 2010; King, Dalton, Daily, & Covin, 2004). Abnormal return is observed return less expected return using standard market model as defined above in calculation of stock performance variable.
 - **Acquisition CAR (*Acquisition_CAR*)** was calculated as defined above around acquisition announcement date (Allen, Lummer, McConnell, & Reed, 1995; Amiri, King, & DeMarie, 2019).
 - **Divestiture CAR (*Divestiture_CAR*)** was calculated as defined above around divestiture announcement date (Amiri, King, & DeMarie, 2019; Brauer & Wiersema, 2012; Jain, 1985).
 - **Total CAR (*Total_CAR*)** was sum of *Acquisition_CAR* and *Divestiture_CAR* (Aktas, Baros, & Croci, 2022).

- **Relative size (*Relative_Size*):** refers to the greater of 1) ratio of book value of total assets of target to that of the buyer prior to the acquisition (Gaddis, 1987; Hitt, et al., 2012; Schipper & Smith, 1983); and 2) ratio of total transaction value to market capitalization of the buyer.
- **Relative size (*Relative_Size_Category*):** is coded as a categorical variable with value of 6 if relative size of deal is less than 10%, 2 if it is between 10% and 20%, 3 if it is between 20% and 33%, 4 if it is between 33% and 100%, and 5 if it is more than 100%.
- **Cross Border (*Cross_Border_B*):** taken as a binary variable with value of 1 if the target organization is from a different country than the buyer, 0 otherwise (Aktas, Baros, & Croci, 2022; Borisova & Brown, 2013; Cao, Owen, & Yawson, 2006).
- **Cross Industry (*Relatedness_C*):** similarly, cross border shall be taken as a category variable with values of 1, 2, 3, 4 if the buyer and target had no/ one, two, three and all four digits of SIC code same respectively (Amiri S. , King, DeMarie, & Brown, 2021).
- **Public Target (*Listed_Target_B*):** taken as a binary variable with value of 1 if the target organization is a publicly listed company, 0 otherwise (Aktas, Baros, & Croci, 2022).
- **Planned divestiture (*Planned_Divestiture_B*):** taken as a binary variable with value of 2 if the divestiture is proxied to be planned, 1 otherwise. Time interval between acquisition and divestiture dates is taken as a proxy for planned vs unplanned divestitures (Amiri, King, & DeMarie, 2019) i.e., if the divestiture happened before the focal M&A deal or within 6 months of acquisition announcement it is taken to be a planned divestiture.
- **High regulatory risk (*High_Reg_Risk_Combined*):** Proxy for high risk coded as categorical variable when 1) a market leader is either the buyer (Aktas, Baros, & Croci, 2022) or the target; and 2) the deal's relative size is significant. The variable takes the value of 2, 3, 4, 5 when the relative size is 10-20%, 20-33%, 33-100%, 100%+ respectively or 6 when there is no regulatory risk.
- **Timing of Divestiture (*Divestiture_Timing*):** coded as a categorical variable with value 0 if there was no divestiture in focal window, 1 if divestiture was before focal deal but within the focal window, 2 if divestiture was between deal announcement and closure, and 3 if the divestiture was post focal acquisition but within the focal window.

- **Number of acquisitions in the focal window (*Only_1_AcquisitionIn_Focal_Window*):** coded as binary variable with value 1 if there was only one acquisition in the focal window, and 0 if there was more than one acquisition.

3.4.4. Country variables

- **Banking Development (*Banking_Development*):** Calculated using the value of domestic credit given by banks to the private sector as percentage Gross Domestic Product for the year prior to acquisition announcement (Aktas, Baros, & Croci, 2022; Demircug-Kunt, Feyen, & Levine, 2013; Hsu, Tian, & Xu, 2014; Levine & Zervos, 1998) (Source: World Bank WDI).
- **Stock Market Development (*Stock_Market_Development*):** calculated as the total of market capitalization of listed companies as percentage Gross Domestic Product for the year prior to acquisition announcement (Aktas, Baros, & Croci, 2022) (Source: World Bank WDI).
- **Real Gross Domestic Product (GDP) Growth (*Real_GDP_Growth*):** Year on year growth in real GDP for the year prior to acquisition announcement (Source: World Bank WDI). Real GDP is Nominal GDP adjusted for inflation.
- **Real GDP Per Capita (*Real_GDP_Per_Capita*):** calculated as log of real GDP divided by midyear population for the year prior to acquisition announcement (Aktas, Baros, & Croci, 2022) (Source: World Bank WDI).

3.4.5. Other control/ fixed effect variables

- **Country fixed effects (*Country_FE*):** unique identifier given to each country to control for time-invariant country characteristics (Aktas, Baros, & Croci, 2022).
- **Industry (*Industry_FE*):** defined as first two digit of primary SIC code of the buyer to control for time-invariant industry characteristics (Aktas, Baros, & Croci, 2022; Amiri, King, & DeMarie, 2019).
- **Time fixed effects (*Year_FE*):** unique identifier given to year to control for year of acquisition announcement (Aktas, Baros, & Croci, 2022).

- **Fiver year window (*Five_Year_Window*):** Coded as 1, 2, 3 and 4 if the acquisition announcement year was 2000-2004, 2005-2009, 2010-2014, and 2015-2020 respectively.

3.5. Sample

Sample of acquisitions from buyers from original BRICS countries (Brazil, Russia, India, China and South Africa) was extracted from 1995 to 2023 of which this study uses deals data from 2000 to 2020 as the main sample. Deals data for 5 years before (1995 to 1999) was extracted for evaluating prior experience (divestiture and acquisition). Similarly, deals data till 2023 was required to observe a focal deal for a period of 3 years to ascertain whether the deal was followed by a divestiture or not. The three-year period is neither too short to miss divestitures nor too long to have too many overlapping acquisitions that impact the results. For example, in this study's sample, the buyers were involved in an average of 0.3 divestitures per year i.e., one divestiture in approximately three years. This and the three-year period are in line with prior research – for example, Maksimovic, Phillips, & Prabhala (2011). It is also in line with findings of Amiri et al. (2019) that average divestiture period was 2.5 years and supported by observations of Ingham et al. (1992) and Lubatkin et al. (2001) that integration is completed within three years. It is more than the one-year period taken in studies like Aktas et al. (2022) and it is not too large like five or seven years period during which the buyer would have done many more acquisitions, and thus the findings would have been biased with those corporate events.

S&P Capital IQ was used as the main data source for deals and financial data. It was supplemented by data for country variables (e.g., GDP per capita) from World Bank.

Several filters were applied on deals – deals with missing data were removed. In line with most of the researches on this topic, for example, Aktas et al. (2022) and Amiri et al. (2021), only deals by public listed buyers were included as data for private buyers was not available. The deal should have concluded within three years, and the status should be closed or completed i.e., not cancelled or just announced. The deal (including divestiture if it took place) should have resulted in change in control. The buyer should be solvent with positive assets.

A total of 4,711 deals were included in the final sample of which 1,232 (26%) had divestiture in the focal window (see Table 3.1 below). This is slightly less than 30% to 45% found in early researches – for example, Weston (1989), and slightly more than 13% found in a recent global sample based study by Aktas et al. (2022). Of these 1,232 divestitures, more than 80% (997) deals had a divestiture during the three year period post-acquisition (see

Table 3.2 below), only 13% had conducted a divestiture one year before the deal and only 6% of total divestitures had taken place during the acquisition i.e., interim period from acquisition announcement to closure. The median time period for divestitures was 1.69 years.

Table 3.1 Country wise summary of deals broken down by whether divestiture happened or not

Country	Count of Deals			Percentage of Total Deals	
	Without Divestiture	With Divestiture	Total	Without Divestiture	With Divestiture
Brazil	180	65	245	73%	27%
Russia	55	97	152	36%	64%
India	1278	216	1494	86%	14%
China	1879	803	2682	70%	30%
South Africa	87	51	138	63%	37%
Total	3479	1232	4711	74%	26%

Table 3.2 Country wise summary of divestitures broken down by timing of divestiture (1 year pre acquisition, interim period and up till 3 years post-acquisition completion)

Country	Count of Divestitures				Percentage of Total		
	Pre	Interim	Post	Total	Pre	Interim	Post
Brazil	9		56	65	14%	0%	86%
Russia	18	1	78	97	19%	1%	80%
India	28	9	179	216	13%	4%	83%
China	106	58	639	803	13%	7%	80%
South Africa	5	1	45	51	10%	2%	88%
Total	166	69	997	1232	13%	6%	81%

3.6. Techniques and key variables

Primarily regression was used to analyze the impact on dependent variables and identify key factors influencing the same. Table 3.3 summarizes the techniques and variables used for each objective. Techniques and variables have been discussed in detail in respective chapters for each objective. Additionally, means were compared using independent samples t-test for scale variables, and frequency distribution was tested using Chi-square test of independence for categorical variables. For all the tests, assumptions were tested, and validity was ensured.

Table 3.3 Summary of statistical techniques, dependent, independent and control variables across objectives of this study

Objective and sample dataset	Dependent Variables	Independent and Control Variables	Main Techniques
To identify the factors influencing the likelihood of divestitures post acquisitions and to create a model to predict such divestitures. Dataset: Subset A (i.e., only divestitures post-acquisition announcement – interim and post phases).	<i>Acquisition_With_Or_Without_Divestiture</i> .	Several independent variables (e.g., <i>Relative_Size</i> , <i>Debt_Issue</i>) and control variables (e.g., <i>Capex</i>).	Logistic regression to estimate the coefficients to identify the factors
To analyze the impact of divestitures around acquisitions on shareholders' returns and identify the factors influencing the same. Dataset: complete (i.e., all divestitures – pre, interim and post phases).	1) <i>Acquisition_CAR</i> ; 2) <i>Divestiture_CAR</i> ; and 3) <i>Total_CAR</i> .	<i>Acquisition_With_Or_Without_Divestiture</i> , several other independent variables (e.g., <i>Relative_Size</i> , <i>Debt_Issue</i>) and their interaction variables, as well as control variables (e.g., <i>Capex</i>).	Multivariate linear regression to estimate the coefficients of variables.
To evaluate the impact of divestitures on subsequent profitability of the buyer of focal M&A deal (i.e., seller in case of divestiture). Dataset: complete (i.e., all divestitures – pre, interim and post phases).	1) <i>ROA_DI</i> ; 2) <i>Log_Net_Income_DI</i> ; 3) <i>Log_Total_Assets_DI</i> ; 4) <i>Log_Revenue_DI</i> ; 5) <i>Log_SGA_DI</i> ; 6) <i>Log_RD_DI</i> .	1) <i>Acquisition_With_Or_Without_Divestiture</i> ; 2) Interaction variable between two binary variables – high/low performers and acquisitions with/without divestiture; 3) Prior year performance; and control variables (e.g., <i>Capex</i>).	Multiple linear regression to estimate the coefficients of variables.
To analyze the impact of past learning through divestitures on future strategy. Dataset: Subset A (i.e., only divestitures post-acquisition announcement – interim and post phases).	<i>Acquisition_With_Or_Without_Divestiture</i> .	1) <i>Past_Acquisition_5_Log_Binned</i> ; 2) <i>Past_Divestiture_5_Log</i> ; 3) <i>Past_Minor_Divest_5_Log</i> ; 4) <i>Past_Major_Divest_5_Log</i> ; and control variables (e.g., <i>Capex</i>).	Logistic regression to estimate the coefficients of variables.

Note: Linearity of the logit, which means linear relationship between independent variables and logit of dependent variable, was tested using Box-Tidwell test. Six continuous variables were found to be breaching the assumption, and therefore, were transformed into categorical variables as per accepted practice of binning for logistic regression. The names of these variables were suffixed with “_Binned”.

Definition of techniques used:

1. **Logistic regression:** it is used when the dependent variable is binary (classification into two categories) and there are multiple explanatory variables (independent or control). Logistic regression provides impact of explanatory variables on the odds ratio of dependent variable (Sperandei, 2014). In other words, the outcome is a prediction of probability that a case belongs to one category or the other.

Formula:

Equation 3.1 Logistic regression formula

$$\begin{aligned}\pi(X) &= \frac{\exp(\beta_0 + \beta_1 X_1 + \dots + \beta_k X_k)}{1 + \exp(\beta_0 + \beta_1 X_1 + \dots + \beta_k X_k)} \\ &= \frac{\exp(X\beta)}{1 + \exp(X\beta)} \\ &= \frac{1}{1 + \exp(-X\beta)}\end{aligned}$$

Source: (The Pennsylvania State University, 2025)

Where:

- π is the success probability or probability of the case being in the specified categories
- β_0 is the intercept
- β_i is the coefficient for the variable X_i
- $\exp$ represents the exponential function

- 2. Multivariate linear regression:** it is used when there are multiple dependent variables (which are scale variables) and multiple independent variables (UCLA: Statistical Consulting Group, 2025). It shows the impact of multiple independent variables together on multiple dependent variables. It considers the correlation between dependent variables, and joint testing of hypotheses can be undertaken.

Formula:

Equation 3.2 Multivariate regression formula

$$y = Xb + e$$

Source: (Helwig, 2017)

Where:

- $y = (y_1, \dots, y_n)$ is the $n \times 1$ dependent variable vector
- $X = [1_n, x_1, \dots, x_p]$ is the $n \times (p + 1)$ design matrix
 - 1_n is an $n \times 1$ vector of ones
 - $x_j = (x_{1j}, \dots, x_{nj})$ is j -th independent variable vector ($n \times 1$)
- $b = (b_0, b_1, \dots, b_p)$ is $(p + 1) \times 1$ vector of coefficients
- $e = (e_1, \dots, e_n)$ is the $n \times 1$ error vector

3. **Multiple linear regression:** it is used when there is one dependent variable (which is a scale variable) and multiple independent variables. It assumes linear relationship between dependent and independent variables (Hayes, 2025a).

Formula:

Equation 3.3 Multiple linear regression formula

$$y_i = b_0 + \sum_{j=1}^p b_j x_{ij} + e_i$$

Source: (Helwig, 2017)

Where:

- i is 1 to n
- y_i is the dependent variable response for the i -th observation
- b_0 is the intercept
- b_j is the coefficient for j -th independent variables
- x_{ij} is the j -th independent variable for the i -th observation
- $e_i \text{ iid} \sim N(0, \sigma^2)$ is Gaussian error term

- 4. Independent samples t-test:** it is a test used for comparing means of two groups to establish if the means are different from each other or not. Independent version of the test assumes that the two groups are not related to each other (Hayes, 2025b).

Formula:

Equation 3.4 Independent samples t-test formula

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left[\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2} \right] \left[\frac{n_1 + n_2}{n_1 \times n_2} \right]}}$$

Source: (LibreTexts Statistics, 2024)

Where:

$\bar{X}_1$ = the mean for Group 1

$\bar{X}_2$ = the mean for Group 2

S_1^2 = the variance for Group 1

S_2^2 = the variance for Group 2

n_1 = the sample size for Group 1

n_2 = the sample size for Group 2

Source: (LibreTexts Statistics, 2024)

5. **Chi-square test of independence:** it is used when a variable is categorical and objective is to test if the distribution of two variables are independent of each other or not (Hayes, 2024).

Formula:

Equation 3.5 Chi-square test of independence

$$X^2 = \sum \frac{(O - E)^2}{E}$$

Source: (Biswal, 2025)

Where:

- O = Observed Value
- E = Expected Value:

Equation 3.6 Expected value for Chi-square test of independence

Expected Value = ((Row Total) * (Column Total))/Total Number Of Observations

Source: (Biswal, 2025)

Chapter 4

4. Reasons for divestitures around M&A

4.1. Introduction, research questions and hypotheses

This chapter addresses the first objective of the study: to identify the factors influencing the likelihood of a divestiture following an acquisition, and to build a model capable of predicting it. It is the foundation for the three chapters that follow, since it identifies the population of divestitures whose consequences are examined subsequently.

The question matters because the field has not settled on an answer. The convention wisdom treats a post-acquisition divestiture as a failure being corrected, an interpretation with a long lineage including Porter (1987) and Kaplan and Weisbach (1992). More recent works treat it instead as portfolio management. The two accounts predict different antecedents: on the first, divestitures should follow poor deals and weak acquirers; on the second, they should follow the acquirers most capable of active reconfiguration. These predictions are separable, and this chapter separates them.

The chapter has an additional purpose specific to the BRICS context. Several of the mechanisms proposed in the developed-market literature depend on the depth and liquidity of the market for corporate assets and on the credibility of regulatory intervention, both of which differ materially in these economies. Where the findings here diverge from the established literature, the divergence is examined rather than treated as anomalous.

This section, section 4.1, develops the hypotheses. Section 4.2 describes the sample, the main regression tests and the assumption tests. Section 4.3 reports the results and discusses them. Section 4.4 summarizes and Table 4.2 consolidates the findings across all models.

Research question: What are the factors that influence the likelihood of divestitures of prior acquisitions?

Objective: To identify the factors influencing the likelihood of divestitures post acquisitions and to create a model to predict such divestitures.

Traditionally, divestitures around M&A were looked down upon – treated as a failure or mistake now being corrected (Berger & Ofek, 1995; Porter, 1987). These were said to accompany a whole set of problems including change of management, reputation loss and financial loss (Donaldson, 1990; Kaplan & Weisbach, 1992; Taylor, 1988). This was even more in case of cross-industry (unrelated) M&A (Kaplan & Weisbach, 1992; Porter, 1987). Reason for linking divestiture to failure of M&A was because it was believed that few unsuccessful acquisitions are retained and few successful acquisitions are divested (Hamilton & Chow, 1993; Porter, 1987; Ravenscraft & Scherer, 1987).

While the research on divestiture around acquisitions is limited, the topic has a few studies which are now beginning to provide an initial theoretical understanding of the reasons, motivations and impact of this corporate restructuring tool. However, researchers are yet to form a consensus on this. Perhaps, one cannot ignore the positive side (Amiri, King, & DeMarie, 2019; Lee & Madhavan, 2010; Markides C. , 1992) of divestitures as highlighted by Aktas et al. (2022). General Electric (GE), a well-respected organization and the last standing company in the Dow Jones Industrial Average from the original list from 1986, has a history of making acquisitions and divestitures. Such corporate restructuring, using acquisitions and divestitures, could perhaps go a long way in explaining GE's continued success (Richards & Gladwin, 1999). Jack Welch, in fact, divested 20% of its assets within the first four years of becoming a CEO (Amiri, King, & DeMarie, 2019; Dranikoff, Koller, & Schneider, 2002) to simplify portfolio and exit underperforming businesses. Such divestitures help organizations improve efficiency (Berry, 2010; 2013; Cummins & Xie, 2009), get rid of underperforming units, restore a coherent identity (Shimizu, 2007; Wang & Jensen, 2018), improve focus by reducing overdiversification costs (Berger & Ofek, 1995; Curi & Murgia, 2018; Kumar, 2005) and eliminate negative synergies (Cohen, 2013).

This study explored several different factors that potentially contribute to a divestiture around an M&A.

1. Financial constraints (profitability, credit availability, cash, leverage, age, size, strength)

Many authors have found divestitures were motivated by a need for funds or that the acquirer was going through a phase of low performance prior to divestment – for example,

Bergh (1997), Berry (2013), Borisova & Brown (2013), Dranikoff et al. (2002), Duhaime & Grant (1984), Hoskisson et al. (1994), Jain (1985), Laamanen et al. (2014), Lockett & Wild (2013), Markides & Singh (1997), Montgomery & Thomas (1988) and Singh, Singh, & Maheshwari (2025). A divestiture can provide much needed cash, it can reduce diversification, and thus allow management to focus on core business. It can even directly boost profitability (profit margin) if the divested unit's profitability is less than the average of remaining units. Further, Bergh (1997), Trautwein (1990), Walter & Barney (1990) and Weston et al. (1990) argue that M&A are undertaken for synergies with cost and balance sheets savings being the key drivers of overall synergistic value. Thus, if a focal M&A is adding value in terms of profitability, cash position, ability to raise capital, and so on, it is more likely to be retained. Thus, it was hypothesized that:

Hypothesis # 1.1: The likelihood of divestiture post M&A is positively associated with financial constraints of the seller (buyer of focal M&A).

The null hypothesis was:

Hypothesis # 1.1 (null): The likelihood of divestiture post M&A is not associated with financial constraints of the seller (buyer of focal M&A).

This study combines following measures included in selected works like Aktas et al. (2022), Hadlock & Pierce (2010) and Denis & Sibilkov (2010) to analyze impact of financial constraints comprehensively:

- (Low) Cash:
 - Cash holding - *Cash_Holding_N_Binned*
 - Free Cash Flows – *Levered_FCF_Divestiture_N* and *Levered_FCF_N_Change*
- (Low) Profitability:
 - Return on Assets – *EBITDA_ROA*
 - Profit (EBITDA) Margin – *Buyer_Profitability_Change*

- Debt capital and leverage:
 - (High) Leverage – *Buyer_Leverage_Divestiture_N* and *Buyer_Leverage_N_Change_Binned*
 - (Absence of) debt issue - *Debt_Issue_B* (as availability of debt, at least in the near term, will signify increase in availability of capital, and thus easing of constraints)
- (Low) Valuation – *TobinsQ_Binned*
- Size, age and strength:
 - (Small) Size (by assets) – *Small_Organisation_B* and *Size_Log*
 - (Low) Age – *Young_Organisation_B*
 - (Weak) Strength (by revenue) – *Strong_Organisation_B*
- Dividend Payer (Yes) – *Dividend_Payer_B*

2. Deal complexity - indigestion vs. managerial self-interests – agency theory (relative size and cross border)

Relative size is a double-edged sword. Higher relative size enables extraction of more cost synergies but also has the cookie jar problem – difficulty in integration requiring more bandwidth and ultimately increasing likelihood of divestiture. Authors such as Gaddis (1987) and Kaplan & Weisbach (1992) conclude that divestiture can be a result of such an indigestion, that is, inability of acquiring organization to integrate properly. It may be so because once an organization has acquired something that it is finding difficult to manage, divestiture, in some shape or form, could be the only option it has, wherein they attempt to reduce the size of the organization following an acquisition (Schipper & Smith, 1983). The divestiture may not always be unplanned and signal an issue – it could also mean that relatively larger sized deals are more likely to lead to restructuring activities to enable completion of the focal deal for better exploitation of synergies (Aktas, Baros, & Croci, 2022). Further, the deal complexity and resulting cookie-jar problem is potentially driven not just by the relative size but also by the fact that a deal may be outside of one's host country. The complexity of cross border deals is attributed to legal, taxation, accounting factors in addition to other important factors such as cultural factors (Shimizu K. , Hitt, Vaidyanath, & Pisano, 2004; Zaheer, 1995), institutional distance (Doan, Sahib, &

Witteloostuijn, 2018), language barriers (Capron, 1999), and power distance between headquarters and regional offices (Berry, Guillén, & Zhou, 2010). In fact, Doan et al. (2018) find that domestic versus cross border nature of deals also has a bearing on likelihood of an M&A deal getting completed which can be extended to divestitures around M&A. Therefore, it was hypothesized that:

Hypothesis # 1.2a: The likelihood of divestiture post M&A is positively associated with the deal complexity (relative size and cross border deals) of the focal M&A.

Bergh (1997), on the other hand, finds partial evidence to support an alternative theory. He argues that M&A decisions are driven by manager's self interest in support of agency theorists such as Fama (1980), Jensen & Meckling (1976) and Tosi & Gomez-Mejia (1989)). One would argue that there is no better way to satisfy manager's self-interests than by undertaking large (high relative size deals) and complex (cross border deals) which increase scope and size of their organizations (Amihud & Lev, 1981; Hill & Snell, 1988; Jensen, 1986). Managers behave in this manner because their compensation is linked to the size and complexity of their portfolio (Gomez-Mejia, Tosi, & Hinkin, 1987; Muller, 1969; Ravenscraft & Scherer, 1987). Thus, a focal M&A which furthers managerial interests, i.e., increases size and scope of their organisation is less likely to be divested. It leads to the following alternative hypothesis:

Hypothesis # 1.2b: The likelihood of divestiture post M&A is negatively associated with the deal complexity (relative size and cross border deals) of the focal M&A.

The null hypothesis was:

Hypothesis # 1.2 (null): The likelihood of divestiture post M&A is not associated with the deal complexity (relative size or cross border deals) of the focal M&A.

Independent variables here would be *Relative_Size* and *Cross_Border_B*.

3. *Instability in performance (stock performance volatility)*

Findings of (Amiri S. , King, DeMarie, & Brown, 2021) support correction of a mistake theory where the mistake is increased volatility in stock performance of the combined organization. Reduction in volatility is important because volatility is a measure of risk (Low, 2009; Markowitz H. , 1952; 1959) which leads to difficulties such as increased cost of capital (Barth, Konchitchki, & Landsman, 2013) and issues in credit markets (Correia, Kang, & Richardson, 2018; Kim, Kim, & Pantzalis, 2001; Merton, 1974).

Further, diversification also allows the management to diversify their own employment risk (Kim & McConnell, 1977; Weston, Chung, & Hoag, 1990). Not just that, reduced volatility leads to increased predictability of shareholder's return which reflects better on management's capabilities (Glaser, Lopez-De-Silanes, & Sautner, 2013; McGrath, Chen, & MacMillan, 1998). Management are, in turn, rewarded in their compensation (Brauer, 2009). Managerial interests are, therefore, well aligned to reduce the stock performance volatility (Christensen & Overdorf, 2000) through acquisitions (Seth, 1990) and divestitures taking a portfolio approach (Feldman & McGrath, 2016; Halebian, Devers, McNamara, Carpenter, & Davison, 2008).

Lower volatility in stock prices could have been a realistic expectation from a focal deal (Cartwright & Schoenberg, 2006; Lubatkin & Chatterjee, 1994; Lubatkin & O'Neill, 1987; Sanders, 2001). A performance below aspiration typically leads to a strategic change (Greve, 2008; 2003)) which triggers portfolio restructuring (Bergh & Lawless, 1998; Berry, 2013; Hildebrandt, Oehmichen, Pidun, & Wolff, 2018; Shimizu, 2007). Amiri et al. (2021), Chatterjee (1986), Singh & Montgomery (1987) and Seth (1990) find that increased volatility after M&A increases the likelihood of divestitures. Therefore, it was hypothesized that:

Hypothesis # 1.3a: The likelihood of divestiture post M&A is positively associated with the buyer's stock price volatility.

However, a contrarian view on this would suggest that high volatility, at least in the short term, would be negatively associated with the likelihood of a divestiture happening post M&A. It is so because, divestitures are not straightforward. They are complex, risky and come with their fair share of problems (Amiri, King, & DeMarie, 2019). When the volatility is high, managers would avoid taking big, bold decisions such as cutting off a part of the organisation and selling it off. Therefore, an alternative hypothesis was:

Hypothesis # 1.3b: The likelihood of divestiture post M&A is negatively associated with the buyer's stock price volatility.

The null hypothesis was:

Hypothesis # 1.3 (null): The likelihood of divestiture post M&A is not associated with the buyer's stock price volatility.

Independent variables here would be *Stock_Volatility_Divestiture* and *Stock_Volatility_Change_Binned*.

4. Mean stock performance

Amiri et al. (2021) find that while stock performance volatility impacts likelihood of a divestiture, the same is moderated by increased stock performance. In other words, for the same level of volatility, the organization with higher excess returns is less likely to divest prior acquisitions. That is, all things equal, higher mean stock performance reduces the need for a divestiture (Berry, 2010; Brauer, 2006; Damaraju, Barney, & Makhija, 2015; Hoskisson, Johnson, & Moesel, 1994; Koley, 2016). There are several contributing reasons for this. While shareholders value predictability of return (low volatility), they also want higher absolute returns. Further, divestiture is a complex and ambiguous process (Amiri, King, & DeMarie, 2019) with its own share of risks and challenges. Part of the organisation may need to be carved out, deal perimeter defined, new contracts signed for people who may be unwilling to move, supplier and customer contracts may need to be novated, new legal entity setup and hiring of group roles may be required, new IT systems may need to be implemented for the carved-out entity and so on. The motivation to take up this significant challenge is lesser when at least one of the key performance indicators (mean stock performance) is going management's way (Hannan & Freeman, 1984). There is a risk that the disruption caused by divestiture may lead to a fall in stock performance.

Similarly, low stock performance can be key driver for a divestiture (Bergh & Lawless, 1998; Berry, 2013; Hildebrandt, Oehmichen, Pidun, & Wolff, 2018; Shimizu, 2007) as it releases capital which eases immediate financial constraints and allows management to invest for future growth (Amiri S. , King, DeMarie, & Brown, 2021).

Therefore, for mean stock performance, it was hypothesized that:

Hypothesis # 1.4a: The likelihood of divestiture post M&A is negatively associated with the buyer's mean stock performance.

Further, for the interaction between mean stock performance and volatility of stock performance, it was hypothesized that:

Hypothesis # 1.4b: Higher mean stock performance negatively impacts the relationship between stock performance volatility and likelihood of divestiture around M&A.

The null hypothesis was:

Hypothesis # 1.4 (null): The likelihood of divestiture post M&A is not associated with the buyer's mean stock performance and mean stock performance does not impact the relationship between stock performance volatility and likelihood of divestiture around M&A.

Independent variables here would be *Stock_Performance_Divestiture* and *Stock_Performance_Change*. Further, to study the impact of mean stock performance on volatility, an interaction term would be added in the model.

5. Related vs. unrelated M&A (cross industry)

In addition to the theories above, a modifying factor would be whether the focal M&A was in the same industry or different. For an unrelated deal, the correlation of stock prices of the organizations in two different industries would be less than one, resulting in lower volatility and risk of the combined organization (Low, 2009). It is so because the core businesses are not perfectly correlated (Contractor, 2007; Kim, Kim, & Pantzalis, 2001; Mauri, 2009), and thus serve as a natural hedge (Bergh & Lim, 2008). Therefore, unrelated deals are less likely to be divested, all things equal. Capron et al. (2001) supported by arguments of O'Shaughnessy & Flanagan (1998) find evidence that likelihood of a

divestiture in case of related deal could all have been part of the plan – acquire, integrate and extract synergies, achieve operational efficiencies, and once that is done, divest slack resources. However, if an unrelated deal leads to higher stock performance volatility, it is more likely to be divested. Therefore, it was hypothesized that:

Hypothesis # 1.5a: The likelihood of divestiture post M&A is negatively associated with unrelated deals.

Hypothesis # 1.5b: Unrelated nature of deal positively impacts the relationship between change in stock performance volatility and likelihood of divestiture post M&A.

On the other hand, for a related deal, increase in size and stronger capabilities would lead to reduced volatility of stock prices (Rabier, 2017; Shelton, 1988; Sirmon, Hitt, Arregle, & Campbell, 2010) and higher stock performance due to improved fit with buyer (Eisenmann, 2002; Haspeslagh & Jemison, 1991; Laamanen, Brauer, & Junna, 2014), synergy, efficiencies and economies of scale (Berger & Ofek, 1995; Chatterjee & Lubatkin, 1990; Devos, Kadapakkam, & Krishnamurthy, 2009; Helfat & Eisenhardt, 2004). The fact that scale efficiencies are more in case of related acquisitions is well established (Ramaswamy, 1997). Therefore, one could equally argue that related deals are less likely to be divested. On the other hand, unrelated deals are found to be associated with higher failure (Meschi & Métais, 2015), more complexity and difficulty in integrating (Bergh, 1995; 1997; Mahoney & Pandian, 1992) and poor performance (Bergh, 1997; Kaplan & Weisbach, 1992; Porter, 1987). Not just that, motivation for an unrelated deal could likely have been acquisition of a specific know-how and capability. Once that is acquired and assimilated, such a deal (unrelated) is more likely to be divested. It presented the following alternative hypothesis:

Hypothesis # 1.5c: The likelihood of divestiture post M&A is positively associated with unrelated deals.

Further, for a related deal, it is likely that this was a key motivation - expectation that the combined organization would have greater market power, and thus, control the outcomes better which in turn would lead to low performance volatility. Therefore, when this expectation is not met post-M&A, it is more likely to lead to divestiture driven by an expectation to stabilize performance (Dranikoff, Koller, & Schneider, 2002). It presented the following hypothesis:

Hypothesis # 1.5d: Unrelated nature of deal negatively impacts the relationship between stock performance volatility and likelihood of divestiture post M&A.

The null hypothesis was:

Hypothesis # 1.5 (null): The likelihood of divestiture post M&A is not associated with unrelated/ related nature of deals, and unrelated/ related nature of deal does not impact the relationship between stock performance volatility and likelihood of divestiture post M&A.

Independent variable here would be *Relatedness_C*. Further, to study the impact related deals on volatility, an interaction term would be added in the model.

6. Anticipation of regulatory concern

In Chapter 2, Literature Review, it was identified that anticipation of regulatory action is a potential factor impacting likelihood of divestitures around M&A. Verge (2010) and Vasconcelos (2010) suggest that divestitures are an effective tool to keep the increasing market power of merged firms in check if the divested assets are sold to existing rivals in the industry as new entrants will not be able to compete with larger established players. This has been coined as the Competitive Efficiencies Hypothesis by Hammoudeh, Nain, & Qian (2022). Contrary to this, under the Market Power Hypothesis, Hammoudeh et al. (2022) find evidence that divestitures are more effective to check the unilateral monopoly power of large organizations as well as cooperative collusion between organizations when the divested assets are sold to a new entrant. They further find that the impact is even more evident where the conditions for exercise of market power were more conducive – for example, in a concentrated industry. Whether sold to a new entrant or an existing player, it is safe to conclude that divestiture are able to check market power, and therefore are an effective tool to alleviate anti-trust concerns of regulators. The decision to divest could be made post the focal M&A or pre-deal from the buyer's assets. As long as the market power of combined entity is kept under check, the regulator is likely to sign off on the

deal, and if anything, pre-acquisition divestiture is better from regulator's perspective as the execution risk is eliminated. Therefore, hypothesis was:

Hypothesis # 1.6a: The likelihood of divestiture post M&A is positively associated with the risk of regulatory action of the focal M&A.

However, since M&A markets in BRICS countries have poor liquidity (Institute of Mergers, Acquisitions and Alliances, 2025), it might lead to difficulty in divesting around an M&A when there is a high risk of regulatory action. This is likely due to poor M&A markets (low liquidity) in these economies leading to fire-sale situation around such divestitures which would discourage such divestitures. Further, regulators would also be aware of this and are likely to suggest alternative remedies than to force a divestiture. Therefore, an adept management would be aware of these attributes of the M&A market in their countries (BRICS) and is more likely to resort to other alternatives than to divest. It presented the following alternative hypothesis:

Hypothesis # 1.6b: The likelihood of divestiture post M&A is negatively associated with the risk of regulatory action of the focal M&A.

The null hypothesis was:

Hypothesis # 1.6 (null): The likelihood of divestiture post M&A is not associated with the risk of regulatory action of the focal M&A.

Independent variable here would be *High_Reg_Risk_Combined*.

7. Correction of mistake (acquisition announcement returns)

Much of the conventional research on post-acquisition divestitures labels such transactions as correction of prior mistakes – for example, Porter (1987) and Kaplan & Weisbach (1992). Poor shareholder's returns at the time of announcement of focal M&A are taken to be proxy of prior mistakes (Allen, Lummer, McConnell, & Reed, 1995). Such divestitures are also viewed to be correction of erstwhile agency issues (Comment & Jarrell, 1995; Feldman, Amit, & Villalonga, 2019; Fluck & Lynch, 1999). Therefore, it was hypothesized that:

Hypothesis # 1.7a: The likelihood of divestiture post M&A is negatively associated with the shareholder's returns of the focal M&A.

However, several researchers have found evidence contradicting that such divestitures are correction of prior mistake. Portfolio theory argues M&A and divestitures are tools available to management to increase overall shareholder's wealth (Shepherd, Williams, & Patzelt, 2015). It may have been the plan to divest now redundant, slack assets post integration of required resources, achievement of scale efficiencies, and extraction of organizational knowledgebase (Bergh, 1997; Dutz, 1989; Jensen & Ruback, 1983). Therefore, if the market could foresee this plan, it would have rewarded the decision at the time of focal M&A. It led to the following alternative hypothesis:

Hypothesis # 1.7b: The likelihood of divestiture post M&A is positively associated with the shareholder's returns of the focal M&A.

The null hypothesis was:

Hypothesis # 1.7 (null): The likelihood of divestiture post M&A is not associated with the shareholder's returns of the focal M&A.

Independent variable here would be *Acquisition_CAR*.

4.2. Methodology

4.2.1. Sample

Analysis would be run on Subset A of data which ignores the pre-acquisition divestitures. In other words, acquisitions without divestitures would be included; for acquisitions with divestitures, only divestitures post-acquisition announcement - during the interim phase and 3-year post completion of focal M&A deal would be included. This is what is commonly studied in divestitures around M&A research – for example, Amiri et al. (2021), Bergh (1997) and Capron et al. (2001). Since the objective is to predict impact of past experience on likelihood of future divestitures around M&A, the study will be useful only once the deal has been announced or completed. The output of this model will only be helpful when it is run on data of an organization which is proposing to or has recently undertaken an M&A. It cannot be run on datasets of all companies as it is not predicting acquisitions, but only divestitures given an acquisition. Hence, this study will only use

sample of observations where either no divestiture was undertaken, or a divestiture was conducted post M&A announcement date.

4.2.2. Main tests and variables

Dependent variable was *Acquisition_With_Or_Without_Divestiture* which was coded as one if there was no divestiture with acquisition, and two if the acquisition was accompanied with a divestiture (Bergh, 1997).

This study used three *analyses techniques*:

1. Logistic regression

Similar to Bergh (1997), Nguyen & Rahman (2015) and Vidal & Mitchell (2017), logistic regression is used as the dependent variable is a dichotomous variable.

2. Comparison of Means

Means of each of the relevant variables were compared between the two groups – acquisitions with divestiture and acquisitions without a divestiture. Scale variables were tested through independent samples t-test while frequency distribution of categorical variables was tested using Chi-square test. The following table (Table 4.1) summarizes the different factors studied and independent variables used for running logistic regression models to analyze these factors.

Table 4.1 Summary of models of logistic regression run to predict divestitures post-M&A

#	Factor	Independent Variables
2.0	<i>No factor – control model</i>	N/A – all control variables
2.1(1)	<i>Financial constraints – Cash</i>	<i>Cash_Holding_N_Binned,</i> <i>Levered_FCF_Divestiture_N,</i> <i>Levered_FCF_N_Change</i>
2.1(2)	<i>Financial constraints – Profitability</i>	<i>EBITDA_ROA, Buyer_Profitability_Change</i>
2.1(3)	<i>Financial constraints – Leverage and availability of debt capital</i>	<i>Buyer_Leverage_Divestiture_N,</i> <i>Buyer_Leverage_N_Change_Binned,</i> <i>Debt_Issue_B</i>
2.1(4)	<i>Financial constraints – valuation</i>	<i>TobinsQ_Binned</i>
2.1(5)	<i>Financial constraints – small (by assets), young (by age), weak (by revenue)</i>	<i>Small_Organisation_B, Size_Log,</i> <i>Young_Organisation_B,</i> <i>Strong_Organisation_B</i>
2.1(6)	<i>Financial constraints – dividend payer</i>	<i>Dividend_Payer_B</i>
2.2(1)	<i>Deal complexity - indigestion vs. managerial self-interests – agency theory (relative size)</i>	<i>Relative_Size</i>
2.2(2)	<i>Deal complexity - indigestion vs. managerial self-interests – agency theory (cross border)</i>	<i>Cross_Border_B</i>
2.3	<i>Instability in performance (stock performance volatility)</i>	<i>Stock_Volatility_Divestiture,</i> <i>Stock_Volatility_Change_Binned</i>
2.4	<i>Mean stock performance</i>	<i>Stock_Performance_Divestiture,</i> <i>Stock_Performance_Change,</i> <i>Stock_Performance_Divestiture*</i> <i>Stock_Volatility_Divestiture,</i> <i>Stock_Performance_Change*</i> <i>Stock_Volatility_Change_Binned,</i>

#	Factor	Independent Variables
		<i>Stock_Volatility_Divestiture</i> , <i>Stock_Volatility_Change_Binned</i>
2.5	<i>Related vs. unrelated M&A (cross industry)</i>	<i>Relatedness_C</i> , <i>Stock_Volatility_Divestiture*</i> <i>Relatedness_C</i> , <i>Stock_Volatility_Change_Binned*</i> <i>Relatedness_C</i>
2.6	<i>Anticipation of regulatory concern</i>	<i>High_Reg_Risk_Combined</i>
2.7	<i>Correction of mistake (acquisition announcement returns)</i>	<i>Acquisition_CAR</i>
2.8	<i>Combined model</i>	All factors

The study incorporated all relevant controls variables typically considered in the context of divestitures around M&A. These were – *Capex_N*, *Equity_Issue_B*, *RD_N*, *Past_Acquisition_5_Log*, *Past_Divestiture_5_Log*, *Country_FE*, *Industry_FE*, *Listed_Target_B*, *Year_FE*, *ROE*, *Real_GDP_Growth*, *Real_GDP_Per_Capita*, *Stock_Market_Development*. Experience variables, *Past_Acquisition_5_Log* and *Past_Divestiture_5_Log*, were included as control variables here even though they are studied in detail in Chapter 7 to avoid omitted variable bias in this analysis.

4.2.3. Assumption testing

It was ensured that the data was appropriate for use of selected statistical techniques.

1. Logistic regression

The dependent variable is binary making it suitable for logistic regression and the type II errors are avoided by having sufficiently big sample size (Amiri S. , King, DeMarie, & Brown, 2021). The observations were independent, and linearity was tested through Box-Tidwell test. VIF was calculated and correlation matrix analyzed to ensure that multicollinearity was absent. Impact of outliers was tested through Cook's test and standardized residuals.

2. Comparison of means

For t-test test following conditions were ensured – independence, normality, large sample size and continuous variables. Based on Levene's test for equality of variances, appropriate version of t-test's significance values was considered. Similarly, all conditions of Chi-square test were ensured – categorical variable, independent observations and expected frequency for each cell was at least 5.

4.3. Results and discussion

4.3.1. Results of assumption testing

In order to run Logistic regression, necessary conditions need to be met. The dependent variable should be binary. The dependent variable for this study was *Acquisition_With_Or_Without_Divestiture* which was coded as one if there was no acquisition, and two if acquisition was accompanied with a divestiture within the focal window. Linearity of the logit, which means linear relationship between independent variables and logit of dependent variable, was tested using Box-Tidwell test. Six continuous variables - *Cash_Holding_N*, *TobinsQ*, *Past_Acquisition_5_Log*, *Real_GDP_Growth*, *Buyer_Leverage_N_Change*, *Stock_Volatility_Change* - were found to be breaching the assumption, and therefore, were transformed into categorical variables as per accepted practice of binning for logistic regression. The names of these variables were suffixed with “_Binned”. Multicollinearity was tested through VIF scores and correlation matrix. Three variables - *Market_Value_Log*, *Banking_Development*, *Buyer_Profitability_Pre_Divestiture* – were dropped to address high correlation. None of the other variables had a VIF score above prescribed threshold (see **Error! Reference source not found.** for details) of 5-10 (Sheather, 2009; Tabachnick & Fidell, 2012). The variables should not lead to perfect separation - none of the variables had this issue. The sample size was well above the prescribed threshold of at least 10-15 per predictor variable. The observations were independent. Presence of outliers and influential points was checked through Cook's distance and standardized residuals. None of the Cook's values were above threshold of one. Only one observation had a standardized residual marginally above the threshold of three (at 3.02).

As stated above, for t-test test all the conditions were met – independence, normality, large sample size and continuous variables. Based on Levene’s test for equality of variances, appropriate version of t-test’s significance values was considered. Similarly, all conditions of Chi-square test were met – nominal variable, independent observations and expected frequency for each cell was at least 5.

4.3.2. Main results and discussion

A. Results of comparison of means

Several variables had statistically significant variances in means and frequency distribution (see **Error! Reference source not found.**). Statistical significance was evaluated using independent samples t-test for scale variables and Chi-square test for categorical variables. When statistically significant results are considered, acquisition deals which were followed by divestiture were characterized by the following (when compared to acquisitions without divestiture):

- Domestic (not cross border) transactions (*Cross_Border_B*)
- More diversified transactions or unrelated transactions (*Relatedness_C*)
- Lower relative size of deals (*Relative_Size*)

Similarly, when statistically significant results are considered for buyers, buyers who did acquisitions deals which were followed by divestiture had the following characteristics (when compared to acquisitions without divestiture):

- Issued debt (*Debt_Issue_B*)
- Issued equity (*Equity_Issue_B*)
- Paid dividends (*Dividend_Payer_B*)
- Bigger (by assets - *Size_Log* and *Small_Organisation_B*)
- Stronger (by revenue - *Strong_Organisation_B*)
- Lower cash holding (*Cash_Holding_N*)
- Lower Capex (*Capex_N*)
- Higher market value (*Market_Value_Log*)

- More leverage but increasing at a smaller pace i.e., things are relatively in control (*Buyer_Leverage_Divestiture_N* and *Buyer_Leverage_N_Change*)
- Lower R&D spend (*RD_N*)
- Lower ROA (*EBITDA_ROA*)
- Lower TobinsQ (*TobinsQ*)
- Lower free cash flows (*Levered_FCF_Divestiture_N*)
- Lower stock volatility (*Stock_Volatility_Divestiture*)
- Change in stock performance was better i.e., only a marginal fall vs. significant fall for buyers who didn't divest (*Stock_Performance_Change*)
- More experienced M&A players – had more prior acquisitions and divestitures – both absolute and major & minor (*Past_Acquisition_5_Log*, *Past_Divestiture_5_Log*, *Past_Minor_Divest_5_Log* and *Past_Major_Divest_5_Log*)

From above, we have a profile of buyers who are more likely to divest around acquisitions – stronger, established, mature players (lower stock volatility and already high market value & assets base with closer to replacement value valuation, and therefore, poor return on assets), with better stock performance. These buyers are also established players of M&A market – had significantly more prior acquisitions and divestitures under the belt. Barring a few exceptions, these results are almost identical to a global study of 6,845 acquisitions of which 876 had divestitures (Aktas, Baros, & Croci, 2022).

B. Results of Logistic Model

From the control Logistic regression model (see **Error! Reference source not found.** for details), it is clear that country factors (*Real_GDP_Growth_Binned* and *Stock_Market_Development*) are significant factors. Importantly, both past acquisitions (*Past_Acquisition_5_Log_Binned*) and past divestments (*Past_Divestiture_5_Log*) are also significant factors which have been studied in more detail in Chapter 7.

Error! Reference source not found. combines all independent variables into one regression model. The adjusted R square (" R^2_{adj} "), which is Nagelkerke R square for logistic regression, was .356 which was a significant improvement over the control model (.220). The Hosmer and Lemeshow Test indicates that the model is a good fit. Omnibus

Tests of Model Coefficients is also significant implying the variables are significant. Further, the overall accuracy of model is 83.2% vs. 80.4% for the control model. Overall, it showed that the combined model is a significant upgrade to the control model implying independent variables have statistically significant explanatory power. Specifically, the independent variables in focus which have statistically significant explanatory power are *Cash_Holding_N_Binned*, *Dividend_Payer_B*, *EBITDA_ROA*, *Size_Log*, *TobinsQ_Binned*, *Past_Divestiture_5_Log*, *Past_Acquisition_5_Log_Binned*, *Cross_Border_B*, *Relatedness_C*, *Buyer_Leverage*, *Divestiture_N*, *Buyer_Leverage_N_Change_Binned*, *Levered_FCF_N_Change*, *Mean_Stock_Performance_Change* and *High_Reg_Risk_Combined*. β Coefficients of these variables and their implications have been covered below.

Following is the analysis of key factors and independent variables being studied.

1. Financial constraints (profitability, credit availability, cash, leverage, age, size, strength)

The following variables were found to be statistically significant and supporting hypothesis # 1.1 that presence of financial constraints increases the likelihood of divestitures post M&A (see **Error! Reference source not found.** for details):

- (Low) Cash:
 - Cash holding - *Cash_Holding_N_Binned* (β : -0.1593; p :<.1)
 - Free Cash Flows – *Levered_FCF_Divestiture_N* (β : -1.2372; p :<0.01)
- (Low) Profitability:
 - Return on Assets – *EBITDA_ROA* (β : -0.7523; p :<0.05)
- (High) Leverage – *Buyer_Leverage_Divestiture_N* (β : 1.564; p :<0.01)
- Dividend Payer (Yes) – *Dividend_Payer_B* (β : 0.5773; p :<0.01)

The findings are in line with prior wisdom in this area that divestitures post M&A are motivated by a need to alleviate financial constraints and improve performance (Bergh, 1997; Berry, 2013; Borisova & Brown, 2013; Dranikoff, Koller, & Schneider, 2002; Duhaime & Grant, 1984; Hoskisson, Johnson, & Moesel, 1994; Jain, 1985; Laamanen, Brauer, & Junna, 2014). For example, Bergh (1977) also found evidence that high leverage

and low profitability are associated with increased likelihood of divestiture post-acquisition. Similarly, Nadolska & Barkema (2007) and Meschi & Métais (2015) found evidence that high ROA reduces likelihood of divestitures post M&A and inversely low ROA increases the likelihood. Low cash holding and low cashflows prior to divestitures are found to be statistically significant which directly supports the earlier theories that such divestitures are undertaken to provide much needed cash to struggling organisations. Poor profitability (in terms of low ROA) and high leverage are all signals that market participants and shareholders should monitor, as they are likely to influence the decision to divest post an M&A. While dividend is technically an optional payment made out of profits, for organizations that have been paying dividends on a regular basis it almost becomes a necessity because a reduction in dividend rate is seen as a signal for trouble and invariably leads to adverse stock market reaction - see signaling hypothesis (Baker, 2009). The findings in this study support this view as an organisation which is paying dividends regularly is more likely to divest post an M&A, perhaps to address higher cash flow requirements compared to an organisation which does not pay dividends. Two of the variables did not support the hypothesis – *Size_Log* (β : 0.6899; p :<0.01) and *Buyer_Leverage_N_Change_Binned* (β : -0.6058; p :<0.01).

2. Deal complexity - indigestion vs. managerial self-interests – agency theory (relative size and cross border)

While *Relative_Size* (β : -0.1363; p :>0.1) was not found to be statistically significant which is in-line with the findings based on sample of 140 acquisitions in 1987 by Bergh (1997), *Cross_Border_B* was statistically significant with a negative coefficient (β : -0.422; p :<0.01; see **Error! Reference source not found.** for details). It provides strong support to hypothesis # 1.2b that deal complexity reduces the likelihood of divestiture post M&A. It supports the argument that managers act in their self-interest (Fama, 1980; Jensen & Meckling, 1976; Tosi & Gomez-Mejia, 1989) intending to increase scope and complexity of their organisation (Hill & Snell, 1989; Jensen, 1986; Muller, 1969) in order to keep their employment secured and ultimately increase their compensation and marketability (Gomez-Mejia, Tosi, & Hinkin, 1987; Muller, 1969; Ravenscraft & Scherer, 1987).

3. *Instability in performance (stock performance volatility)*

Unlike the findings of Amiri et al. (2021), which was based only on US acquisitions and concluded that high volatility leads to divestiture post M&A, this study based on sample of deals in BRICS nations suggests that stock performance volatility is negatively associated with likelihood of a divestiture post M&A and supports hypothesis # 1.3b (for *Stock_Volatility_Divestiture* - β : -0.0051; p :<0.05; see **Error! Reference source not found.** for details). Divestitures are complex, risky and ambiguous which can lead to increased volatility if not undertaken properly. On the back of an acquisition that has been perceived negatively by the market (high volatility), the management may feel underconfident in successfully executing another bold and risky move. Further, unlike USA which has a relatively more advanced M&A market, managers in BRICS countries would face more challenges trying to divest with fewer buyers and poor M&A liquidity (Institute of Mergers, Acquisitions and Alliances, 2025). Since stock market volatility is publicly available information, a divestiture following high volatility may signal weak bargaining power and fire-sale situation. The situation is aggravated by poor M&A liquidity in BRICS economies. Therefore, managers in BRICS countries are less likely to divest post M&A when faced with higher volatility.

4. *Mean stock performance*

Similarly, unlike the US based research of Amiri et al. (2021), this study finds no evidence that mean stock performance having a bearing on likelihood of divestiture post M&A (*Mean_Stock_Performance_Divestiture* - β : 0.2977; p :>0.1; *Mean_Stock_Performance_Change* - β : 0.0468; p :>0.1). Its moderating impact on stock performance volatility (β :-0.0023 and 0.1325 respectively for pre-divestiture and change variables; see **Error! Reference source not found.** for details) is also not statistically significant (p :>0.1). Variance in these findings is likely attributable to differences in maturity of capital markets and M&A markets in the USA versus BRICS economies.

5. *Related vs. unrelated M&A (cross industry)*

Findings do not support hypothesis # 1.5, that is, related/ unrelated nature of M&A deals does not impact the subsequent likelihood of divestiture (p :>0.1 for all categories of

Relatedness_C - see **Error! Reference source not found.** for details). Similar to previous two findings, the moderating impact of related versus unrelated deals on volatility of stock performance is not found to be statistically significant ($p > 0.1$). Overall, it supports the view that likelihood of divestiture in USA and BRICS economies does not necessarily behave in the same manner. In USA related deals are more likely to be followed by a divestiture, in BRICS nations no evidence was found to support this hypothesis.

6. *Anticipation of regulatory concern*

Similar to previous findings, anticipation of regulatory concern does not seem to have the same impact on post M&A divestiture likelihood in BRICS as it has in developed countries. The β coefficient for *High_Reg_Risk_Combined* is negative and statistically insignificant in all cases except for 20%-33% relative size category (β : -0.6868; $p < 0.05$; see **Error! Reference source not found.** for details). It supports hypothesis # 1.6b that high regulatory risk reduces the likelihood of divestiture for 20%-33% relative size category. The divergence to findings when compared to USA based studies is likely explained by the difference in liquidity and maturity of M&A markets in developed countries like USA and developing countries like BRICS. When there is a risk of regulatory concern in USA, the management can easily resort to a divestiture thanks to a vibrant and liquid M&A market. Markets in BRICS economies do not extend the same privilege to management which finds itself in a similar situation (high risk of regulatory concern). The regulators are also likely to take this into consideration and are more likely to suggest alternative remedies than to force a divestiture.

7. *Correction of mistake (announcement return)*

Findings of this study support the conventional wisdom that divestitures post M&A are a correction of prior mistake (Berger & Ofek, 1995; Kaplan & Weisbach, 1992; Porter, 1987) where mistake is proxied by poor returns (CAR) at the time of acquisition announcement (Allen, Lummer, McConnell, & Reed, 1995). The findings support hypothesis # 1.7a that acquisition announcement returns are negatively associated with likelihood of divestiture post M&A (*Acquisition_CAR* - β : -1.4376; $p < 0.05$; see **Error! Reference source not found.** for details). In other words, poor acquisition returns lead to a higher likelihood of subsequent divestiture. This is another area of difference between work of Amiri et al.

(2021) and this study which highlights that M&A markets in USA and BRICS economies behave very differently. They had failed to find evidence that in US acquisition CAR impacts likelihood of divestiture post M&A. Findings of this study suggest that when performance is less than the prior expectation, it leads to strategic change (Greve, 2008; 2003). This is in line with behavioral theory assertions (Cyert, Feigenbaum, & March, 2007).

4.4. Summary

To sum up, this study makes significant contributions to the field of research around divestitures post M&A. A clear profile has been established of buyers who divest post M&A – stronger, larger, mature players with better stock performance as well as more experienced players of M&A industry both in terms of past acquisitions and divestitures. Further, difference in M&A markets between BRICS countries and developed countries was clearly understood.

This study found strong support for the argument that financial constraints lead to divestiture. Low cash, low profitability, high leverage and an inherent obligation to pay dividends were all contributing to the financial woes of buyers who ultimately had to divest. The study also found support for agency theory that managers act in their self-interest to increase complexity of organizations by undertaking cross border deals, which are therefore, less likely to be followed by a divestiture.

Contrary to developed economies, in BRICS economies when managers are faced with high volatility in stock prices, they are less likely to take a bold and risky decision such as a divestiture. Poor M&A market maturity (e.g., lower liquidity) is a contributory factor. Similarly, when faced with a situation where regulators are likely to object to a deal, management in BRICS countries is less likely to divest post M&A which is a different approach when compared to their counterparts in developed countries.

In line with conventional wisdom, this study finds that correction of mistake, where mistake is proxied by poor Acquisition CAR, is a contributing factor increasing likelihood of divestitures post M&A.

Overall, this study formulated a robust model, which is 83.2% correct in classifying cases, to predict if an M&A deal would be retained or be followed by a divestiture. This model can be used by shareholders, market participants, and researchers to predict the outcome post an M&A. Further, management can utilize this model and framework to plan ahead in order to make smarter decisions both at the time of acquisition, and if required, to plan for a divestiture in order to avoid fire-sale situation. Table 4.2 below summarizes the findings.

Table 4.2 Summary of results of logistic regression models to predict divestitures post-M&A

#	Factor	Independent Variables	Analyses' Results	Implications
1.0	No factor – control model	N/A – all control variables	ARS: .220 % Correct: 80.4%* β: Multiple DA: Multiple	N/A
1.1(1)	Financial constraints – Cash	Cash_Holding_N_Binned, Levered_FCF_Divestiture_N, Levered_FCF_N_Change	ARS: .227* % Correct: 80.3%* β: Cash_Holding: -.159*, FCF_Divestiture: -1.237***, FCF_Change: .395	Support for hypothesis # 1.1 that presence of financial constraints (low free cash flow before divestiture and low cash holding) increases the likelihood of divestiture post M&A.
1.1(2)	Financial constraints – Profitability	EBITDA_ROA, Buyer_Profitability_Change	ARS: .224 % Correct: 80.6%* β: ROA: -.752**, Profitability: .001	Support for hypothesis # 1.1 that presence of financial constraints (low return on assets) increases the likelihood of divestiture.
1.1(3)	Financial constraints – Leverage and availability of debt capital	Buyer_Leverage_Divestiture_N, Buyer_Leverage_N_Change_Binned, Debt_Issue_B	ARS: .240 % Correct: 80.8%* β: Leverage_Divestiture: 1.564***, Leverage_Change: -.606***, Debt: .006	Support for hypothesis # 1.1 that presence of financial constraints (high leverage prior to divestiture) increases the likelihood of divestiture post M&A.
1.1(4)	Financial constraints – valuation	TobinsQ_Binned	ARS: .221 % Correct: 80.1%* β: .084	N/A – statistically insignificant result of the independent variable on likelihood of divestiture post M&A.
1.1(5)	Financial constraints – small (by assets), young (by age), weak (by revenue)	Small_Organisation_B, Size_Log, Young_Organisation_B, Strong_Organisation_B	ARS: .252* % Correct: 80.5%* β: Small: .027; Size: .690***; Young: -.026; Strong: -.144	N/A – while the coefficient for size is statistically significant, it is positive, and thus, does not support hypothesis # 1.1.

#	Factor	Independent Variables	Analyses' Results	Implications
1.1(6)	<i>Financial constraints – dividend payer</i>	Dividend_Payer_B	ARS: .227* % Correct: 80.4%* β: .577***	Support for hypothesis # 1.1 that presence of financial constraints (obligation to pay dividends) increases the likelihood of divestiture.
1.2(1)	<i>Deal complexity - indigestion vs. managerial self-interests – agency theory (relative size)</i>	Relative_Size	ARS: .221 % Correct: 80.4%* β: -.136	N/A – statistically insignificant result of the independent variable on likelihood of divestiture post M&A.
1.2(2)	<i>Deal complexity - indigestion vs. managerial self-interests – agency theory (cross border)</i>	Cross_Border_B	ARS: .224* % Correct: 80.3% β: -.422***	Support for hypothesis # 1.2b that deal complexity reduces the likelihood of divestiture post M&A
1.3	<i>Instability in performance (stock performance volatility)</i>	Stock_Volatility_Divestiture, Stock_Volatility_Change_Binned	ARS: .241* % Correct: 81% β: Divestiture: -.005**; Change: .112	Support for hypothesis # 1.3b that volatility (pre divestiture) reduces the likelihood of divestiture post M&A.
1.4	<i>Mean stock performance</i>	Stock_Performance_Divestiture, Stock_Performance_Change, Stock_Performance_Divestiture* Stock_Volatility_Divestiture, Stock_Performance_Change* Stock_Volatility_Change_Binned, Stock_Volatility_Divestiture, Stock_Volatility_Change_Binned	ARS: .283* % Correct: 81.6% β: Performance_Divestiture :.298; Performance_Change: .047; Interaction_Divestiture: -.002; Interaction_Change: -.132	N/A – statistically insignificant result of the independent variables on likelihood of divestiture post M&A.

#	Factor	Independent Variables	Analyses' Results	Implications
1.5	Related vs. unrelated M&A (cross industry)	<i>Relatedness_C, Stock_Volatility_Divestiture* Relatedness_C, Stock_Volatility_Change_Binned * Relatedness_C</i>	ARS: .248* % Correct: 80.9% β : Relatedness: -.179; .135, -.111); interactions are also insignificant	N/A – statistically insignificant result of the independent variable on likelihood of divestiture post M&A.
1.6	Anticipation of regulatory concern	<i>High_Reg_Risk_Combined</i>	ARS: .223* % Correct: 80.4% β : 10-20%: -.309; 20-33%: -.687**; 33-100%: -.162; 100%+: -.245	Support for hypothesis # 1.6b – Coefficient for 20-33% category is statistically significant and negative implying that risk of regulatory concern in 20%-33% relative size category reduces the likelihood of divestiture post M&A.
1.7	Correction of mistake (announcement return)	<i>Acquisition_CAR</i>	ARS: .238* % Correct: 80.8%* β : -1.438**	Support for hypothesis # 1.7a that acquisition announcement returns are negatively associated with the likelihood of divestiture post M&A.
1.8	Combined model	<i>All factors</i>	ARS: .356* % Correct: 83.2%* β : Multiple	This model is a significant improvement to the control model both in terms of R^2_{adj} and percentage of cases correctly classified implying that the independent variables are contributing significantly to the explanatory power of the model.
Notes: 1) For categorical variables, signs of β coefficients in the original output table (appendix) are reported for the lower category against the reference category which is the highest category by default in SPSS. For ease of interpretation, in the summary output (in the body sections of the thesis), the signs have been changed to reflect the true nature of variable i.e., if higher category implies more of the variable and original sign, for lower category, was negative (implying if variable is less the likelihood of divestiture is more) the sign has been changed to positive in the summary table which shows the higher category (as this study is analyzing the higher category). This is not applicable for High_Reg_Risk_Combined as highest category (6) is absence of regulatory risk. 2) Details captured for Logistic regression are – adjusted (Nagelkerke) R square (“ARS”), Hosmer-Lemeshow Test for goodness of fit shown as * next to R^2_{adj} for models which are a good fit, percentage of observations correctly classified by the model (“% Correct”), Omnibus Tests of Model Coefficients shown as * next to % correct for significant models, β coefficient (“β”) and their significance level shown as * ** *** for 10%, 5% and 1% significance level respectively.				

Chapter 5

5. Impact of divestitures around M&A on shareholder's returns and factors influencing the same

5.1. Introduction, research questions and hypotheses

This chapter addresses the second objective: the impact of divestitures around acquisitions on shareholders' returns at announcement, and the factors that impact it. It takes the divestitures identified in Chapter 4 and asks what the market pays for them.

Announcement returns are the most direct available measure of how market participants interpret a disposal, and they therefore provide a test of the competing accounts examined in Chapter 4.

Three features of the analysis distinguish it from prior work. The returns to the acquisition, the divestiture and the two combined are estimated separately, so that anticipation effects at acquisition announcement can be distinguished from the value of the disposal itself. The analysis is conducted country by country as well as in aggregate, which proves essential to the interpretation. And financial constraints are measured both in level and in direction of change, a distinction that reconciles findings previously regarded as contradictory.

This section, section 5.1 develops the hypotheses. Section 5.2 describes the sample, the event-study design and the regression models. Section 5.3 reports the results by factor. Section 5.4 summarizes and Table 5.2 consolidates the findings.

Research questions:

1. What is the impact of divestitures around acquisitions on announcement shareholder's returns?
2. What are the factors that influence shareholder's returns of divestitures?

Objective: To analyze the impact of divestitures around acquisitions on shareholder's returns and identify the factors influencing the same.

Authors such as Porter (1987) and Kaplan & Weishbach (1992) argue that divestitures signal correction of prior mistake, and thus are value destroying for acquisitions which were initially rewarded by the market upon announcement. On the other hand, Aktas et al. (2022) argue that divestitures add to 2% to the total value created by acquisitions which translates into a value of \$149 million on average for an organization in their sample. Maksimovic & Phillips's (2002a; 2002b) profit maximization theory suggests divestitures are likely to happen to maximize profits – substitute existing assets for better ones or when the market value of assets is more than their replacement value. Thus, divestitures should add to total value in the M&A process.

This study identifies several factors that are hypothesized to explain the shareholder's returns of divestitures around M&A.

1. Synergy potential vs. indigestion (relative size)

Relative size refers to the ratio of book value of total assets of target to that of the buyer prior to the acquisition (Ellis, Reus, Lamont, & Ranft, 2011). Obviously, the benefits expected from an M&A deal are not realized if the target is not integrated properly (Paruchuri, Nerkar, & Hambrick, 2006). Unfortunately, higher relative size comes with its own set of problems and is analogous to a cookie jar problem wherein one finds it difficult to exfiltrate one's hand if he/ she has grabbed too many cookies (Amiri, King, & DeMarie, 2019). Similarly, the organization may find it harder to extract the benefits from a deal if it proves too big to handle for them in terms of integration. Acquisition difficulties are known to increase the chances of an acquisition being later divested (Hitt, et al., 2012), and larger the relative size of the deal the more difficult it would be to integrate as it would come with more challenges, for example, it would require more management bandwidth. Similarly, the risks, both the probability of things not going as per plan as well as the value of potential loss, increase with increasing relative size. Therefore, it was hypothesized that:

Hypothesis # 2.1a: The shareholder's returns of divestiture around M&A are negatively associated with the relative size of the focal M&A.

Amiri et al. (2019) however, fail to find a statistically significant relationship between large relative size acquisition and negative divestiture announcement returns. In other words, they didn't find evidence that divestiture of prior large relative size acquisitions are perceived negatively by the market i.e., divestitures may be signaling a failure on the organization's part to effectively integrate. Interestingly Aktas et al. (2022) conclude that, irrespective of the relative size threshold, value created by divestitures in acquisition centered restructuring processes is positive, and that the value increases with increasing relative size of the deal. When the relative size threshold increases from 5% to 33% the value contribution of divestitures increases 107 basis points to 3.08%. Thus, instead of looking at divestitures following large relative size acquisitions as a problematic outcome of indigestion, there may be merit in evaluating such transactions as a potential to extract better synergies through effective restructuring of combined assets. Consistent with this, several other researchers have also found evidence that acquisition as well as divestiture returns are positively related to relative size (Asquith, Bruner, & Mullins, 1983; Jory & Ngo, 2015; Lal, Nguyen, & Rahman, 2013; Veld & Veld-Merkoulova, 2009). It is so because larger acquisition and divestiture sizes enhance revenue and cost efficiencies and facilitate scale and scope economies (Cummins & Xie, 2009; Devos, Kadapakkam, & Krishnamurthy, 2009). Not just that, larger relative size deals improve access to resources, increase investment capabilities of the organizations (Love & Nohria, 2005), allow for faster development of new processes which are essential given the new organization's size and structure, and improve focus of the management (Feldman E. , 2014). Similarly, divestitures around such positively viewed acquisitions are likely to be perceived from a lens of portfolio theory as a tool to finance the focal M&A, get rid of unwanted parts of the portfolio, or even a signal that integration and deal value extraction process is complete and now this part of the business is being sold to release further value (capital). It leads to the following alternative hypothesis:

Hypothesis # 2.1b: The shareholder's returns of divestiture around M&A are positively associated with the relative size of the focal M&A.

The null hypothesis was:

Hypothesis # 2.1 (null): The shareholder's returns of divestiture around M&A are not associated with the relative size of the focal M&A.

Independent variable here would be *Relative_Size* of the focal deal. Since the sample also had M&A cases where divestiture was not undertaken, interaction term of dummy variable for divestiture (*Acquisition_With_Or_Without_Divestiture*) with independent variable was added and values (sign of β coefficient and statistical significance) of this interaction term were evaluated to ascertain the impact of divestitures around M&A.

2. *Anticipation of regulatory concern*

Organizations divest around M&A for several reasons. Regulatory action or threat of a potential regulatory action in response to growing market power post M&A is an important reason for such divestitures. Regulatory action may prove to be costly for organizations going in for M&A as it may delay the focal deal and/ or the organizations may be forced to sell assets under urgency (Aktas, Bodt, & Roll, 2004; Fidrmuc, Roosenboom, & Zhang, 2018) which may lead to a transaction at below optimum price (Bodt, Cousin, & Demidova, 2012; Shleifer & Vishny, 2011). Thus, instead of waiting for a regulatory action, the organization may decide to undertake divestiture of certain assets in anticipation of a regulatory concern (Aktas, Bodt, & Roll, 2004; Fidrmuc, Roosenboom, & Zhang, 2018). Arguably, an organization preemptively undertaking a divestiture is likely to extract better value than what it would have done had it been forced to do it. However, Aktas et al. (2022) do not find any evidence that anticipation of regulatory concerns is able to explain the positive value created by divestitures around M&A. In fact, one may argue that the fact that a deal has high risk of regulatory action, would be a well-known fact based on publicly available information (relative size of the deal and relative market strength of buyer and target). Hence, a buyer (counterparty) to such divestiture around such a high regulatory risk acquisition would likely take advantage of the situation similar to a fire-sale. Therefore, hypothesis and alternative hypothesis were:

Hypothesis # 2.2a: The shareholder's returns of divestiture around M&A are positively associated with the regulatory risk of the focal M&A.

Hypothesis # 2.2b: The shareholder's returns of divestiture around M&A are negatively associated with the regulatory risk of the focal M&A.

The null hypothesis was:

Hypothesis # 2.2 (null): The shareholder's returns of divestiture around M&A are not associated with the regulatory risk of the focal M&A.

Independent variable here would be *High_Reg_Risk_Combined* of the focal deal. The risk of regulatory action has been proxied by a binary variable where a market leader (top tercile by sales) is either the buyer or target and relative size of deal is more than 10%, 20%, 33% or 100%. Since the sample also had M&A cases where divestiture was not undertaken, interaction term of dummy variable for divestiture (*Acquisition_With_Or_Without_Divestiture*) with independent variable was added and values (sign of β coefficient and statistical significance) of this interaction term were evaluated to ascertain the impact of divestitures around M&A.

3. *Correction of mistake (announcement return)*

Much of the initial research on divestitures post M&A takes the view that these divestiture transactions reflect failure of M&A or a mistake which is now getting corrected (Berger & Ofek, 1995; Porter, 1987). Kaplan & Weisbach (1992) conclude that announcement returns of divestiture of unsuccessful acquisitions are lower, and that about half of the divestments after M&A are acquisition failures. Similarly, Allen et al. (1995) conclude that divestiture of prior M&A represent correction of mistake as the abnormal announcement returns around divestment are inversely related to prior acquisition announcement returns (*Acquisition_CAR*). In other words, market rewards divestiture of units that were perceived negatively at the time of acquisition announcement, mistakes. Similarly, this argument finds strength in agency theory-based research which concerns itself with managerial objectives, ownership structure and governance issues behind the initial acquisition and subsequent divestitures decisions (Amiri, King, & DeMarie, 2019). Since agency issues at the time of acquisition represent inefficiencies, many authors have found support for a positive performance after divestiture when the initial acquisition was value destroying, that is, it received a negative market response. Such improvement could be because of better resource allocation (Maksimovic & Phillips, 2002b) and/ or when such decisions lead to aligned interests of the agent(s) and the principal as well as reduced coordination/

control costs (Feldman E. R., 2016; Feldman, Amit, & Villalonga, 2019; John & Ofek, 1995). Therefore, it was hypothesized that:

Hypothesis # 2.3a: The shareholder's returns of divestiture around M&A are negatively associated with the shareholder's returns of the announcement of focal M&A.

However, Aktas et al. (2022) fail to find conclusive evidence to support correction of mistake theory in their global sample of 6,845 focal deals. Further, a portfolio outlook to M&A and divestiture argues that organizations increase efficiency by being better at assimilation of resources post an acquisition and divesting once the knowledge transfer is complete and/ or the redundancies have been established post integration (Capron, Mitchell, & Swaminathan, 2001; Keil, McGrath, & Tukiainen, 2009). Interestingly, organizations do not always only divest target's resources. They integrate and retain parts of target's business and, many a times, choose to divest parts of target and buyer's businesses (Capron, Mitchell, & Swaminathan, 2001). Organizations take a scale efficiency perspective wherein divestitures help them gain efficiencies post an acquisition by selling off slack resources which have become redundant and cannot be absorbed even by the organization's increased size (Anand & Singh, 1997; Bergh, 1997; Hoskisson, Johnson, & Moesel, 1994). It means that divestitures are not an unwanted outcome, but an integral part of the integration process following an acquisition (Barkema & Schijven, 2008a; Weston J. , 1989) or as Shepherd et al. (2015) argue that it is important to recognize divestitures as a critical tool in an organization's portfolio strategy arsenal. In support of this theory, Amiri et al. (2019) find evidence that acquisition CAR is positively associated with divestiture CAR. They assert that better buyers (proxied by higher *Acquisition_CAR*) are rewarded at the time of divestiture. They reject the correction of mistake hypothesis and support portfolio restructuring theory to improve performance similar to Dranikoff et al. (2002) and Mulherin & Boone (2000). It leads to the following alternative hypothesis:

Hypothesis # 2.3b: The shareholder's returns of divestiture around M&A are positively associated with the shareholder's returns of the announcement of focal M&A.

The null hypothesis was:

Hypothesis # 2.3 (null): The shareholder's returns of divestiture around M&A is not associated with the shareholder's returns of the announcement of focal M&A.

Independent variable here would be *Acquisition_CAR* of the focal deal. Since, *Acquisition_CAR* is an independent variable, it or *Total_CAR* cannot be dependent variables due to multicollinearity. Therefore, this analysis was done using multiple regression technique (instead of multivariate regression which was used for most of other factors) by filtering cases which had divestitures around M&A, and thus interaction term was not required.

4. Financial constraints (profitability, credit availability, cash, leverage, age, size, strength)

Many authors have found evidence that organizations facing problems do resort to divestments (Borisova & Brown, 2013; Golder, Markovitch, & O'Brien, 2018). Problems facing the organizations (Amiri, King, & DeMarie, 2019) could include external pressure (Durand & Vergne, 2015), poor performance of the organization or its managers (Kolev, 2016; Markides & Singh, 1997), overdiversification (Peruffo, Marchegiani, & Vicentini, 2017), financial distress (Finlay, Marshall, & McColgan, 2018; Nguyen, 2013; Nixon, Roenfeldt, & Sichertman, 2000), hostile takeover (Chemmanur, Krishnan, & Nandy, 2014), and so on. Such divestitures may also be triggered post-acquisition to reduce financial constraints and risks (Bongaerts & Schlingemann, 2024). Divestitures can bring much-needed cash for an organization which is facing challenges. They are known to ease the financial burden of focal M&A (Arnold, Hackbarth, & Puhan, 2018; Edmans & Mann, 2019; Mavis, McNamee, Petmezas, & Travlos, 2020) and reduce risks (Bongaerts & Schlingemann, 2024). Theoretically, divestitures are hypothesized to alleviate financial constraints which should ideally be rewarded by markets in terms of positive returns. If divestiture reduces financial constraints, it is likely to improve performance, and therefore, should be perceived positively by the market. Thus, it was hypothesized that:

Hypothesis # 2.4a: The shareholder's returns of divestiture around M&A are positively associated with financial constraints of the seller (buyer of focal M&A).

However, Aktas et al. (2022) fail to find statistically significant evidence that presence of financial constraints, such as young age of buyer and small size of buyer, leads to an increase in the value created by divestitures in the acquisition led restructuring process. On the other hand, if financial constraints are leading to divestiture it may signal distress and lead to less than optimal value for the perceived fire-sale (Finlay, Marshall, & McColgan, 2018) due to poor bargaining power (Laamanen, Brauer, & Junna, 2014). When management claims that divestiture would lead to improved performance, the market may interpret it as a signal for pre-existing trouble in the organization (Amiri, King, & DeMarie, 2019) and may not have confidence in management's ability to utilize divestiture as a performance improvement tool. In line with this, researchers such as Schill and Zhou (2001), Ushijima and Schaefer (2014) and Wright and Ferris (1997) have concluded that divestitures can carry a negative connotation and lead to a negative market response especially when they signal that the organization is facing problems or is subject to constraints. It leads to the following alternative hypothesis:

Hypothesis # 2.4b: The shareholder's returns of divestiture around M&A are negatively associated with financial constraints of the seller (buyer of focal M&A).

The null hypothesis was:

Hypothesis # 2.4 (null): The shareholder's returns of divestiture around M&A are not associated with financial constraints of the seller (buyer of focal M&A).

This study combines following measures by several researches like Aktas et al. (2022), Hadlock & Pierce (2010) and Denis & Sibilkov (2010) to analyze impact of financial constraints comprehensively:

- (Low) profitability - *Buyer_Profitability_Pre_Divestiture*
- (Absence of) debt issue - *Debt_Issue_B* - as availability of debt, at least in the near term, will signify increase in availability of capital, and thus, easing of constraints
- (High) Leverage - *Buyer_Leverage_Divestiture_N* and *Buyer_Leverage_N_Change*
- (Low) Cash holding - *Cash_Holding_N*
- (Low) Free cash flows - *Levered_FCF_Divestiture_N* and *Levered_FCF_N_Change*
- (Young) Age - *Young_Organisation_B*

- (Small) Size (by assets) - *Small_Organisation_B* and *Size_Log*
- (Weak) Strength (by revenue) - *Strong_Organisation_B*

Since the sample also had M&A cases where divestiture was not undertaken, interaction term of dummy variable for divestiture (*Acquisition_With_Or_Without_Divestiture*) with independent variable was added and values (sign of β coefficient and statistical significance) of this interaction term were evaluated to ascertain the impact of divestitures around M&A.

5. *Learning (past acquisitions and divestitures)*

In M&A research, learning through past M&A is a commonly studied variable. In this context, past experiences are represented by past acquisitions and divestitures before the focal M&A. Doan et al. (2018) argue that organizations learn from past acquisitions, but their learning is accelerated by past divestitures as they learn from being on the flip side with other organization integrating assets sold by them. Furthermore, research on learning indicates that one can learn effectively from failures and not just successes (Cannon & Edmondson, 2005). In fact, learning from failures is considered to be more significant than learning from successes (Haunschild & Sullivan, 2002; Sitkin, 1992). Therefore, it was hypothesized that:

Hypothesis # 2.5a: The shareholder's returns of divestiture around M&A are positively associated with past acquisitions or past divestitures.

The null hypothesis was:

Hypothesis # 2.5 (null): The shareholder's returns of divestiture around M&A are not associated with past acquisitions or past divestitures.

Independent variables here would be log of number of past acquisitions and divestitures in last 5 years before the focal window (*Past_Acquisition_5_Log* and *Past_Divestiture_5_Log*). Since the sample also had M&A cases where divestiture was not undertaken, interaction term of dummy variable for divestiture (*Acquisition_With_Or_Without_Divestiture*) with independent variable was added and values (sign of β coefficient and statistical significance) of this interaction term were evaluated to ascertain the impact of divestitures around M&A.

6. *Prior stock performance (mean stock performance and volatility)*

Mean stock performance and stock volatility are a well-studied variables in the context of divestitures around M&A—for example, Amiri et al. (2021), Berry (2010), Damaraju et al. (2015) and Kolev (2016). Stock performance is a measure of how efficiently the organization is run, or more importantly market's perception of organization's performance and management's capabilities and actions. If a stock is performing well (high mean performance and low volatility), it would imply that the shareholders and market are rewarding the decisions and actions of management. When such an organization is announcing decisions like acquisitions and divestitures, it is likely to be rewarded by the market. Hence, it was hypothesized that:

Hypothesis # 2.6a: The shareholder's returns of divestiture around M&A are positively associated with prior stock performance (mean performance and volatility).

On the contrary, one may argue that divestitures around M&A reflect a change in strategy, and therefore, if the market was rewarding the organization's strategy earlier, the CARs for divestitures around M&A should be negatively impacted. Thus, alternative hypothesis was:

Hypothesis # 2.6b: The shareholder's returns of divestiture around M&A are negatively associated with prior stock performance (mean performance and volatility).

The null hypothesis was:

Hypothesis # 2.6 (null): The shareholder's returns of divestiture around M&A are not associated with prior stock performance (mean performance or volatility).

Independent variable here would be mean stock performance and volatility before divestiture and change when compared with the same at the time of acquisition (*Stock_Performance_Divestiture*, *Stock_Performance_Change*, *Stock_Volatility_Divestiture* and *Stock_Volatility_Change*). Since the sample also had M&A cases where divestiture was not undertaken, interaction term of dummy variable for divestiture (*Acquisition_With_Or_Without_Divestiture*) with independent variable was added and values (sign of β coefficient and statistical significance) of this interaction term were evaluated to ascertain the impact of divestitures around M&A.

7. *Planned vs. unplanned divestitures*

Similarly, planned vs. unplanned divestitures are also a well-studied variable in the context of divestitures around M&A (Amiri, King, & DeMarie, 2019). If a divestiture around an M&A was planned, the organization is more likely to extract optimal value from such a divestiture. The value could be in terms of financing the focal deal to invest for future (Arnold, Hackbarth, & Puhan, 2018; Edmans & Mann, 2019; Mavis, McNamee, Petmezas, & Travlos, 2020), selling unwanted parts post focal deal or sale post complete assimilation of knowledge and extraction of synergy (Aktas, Baros, & Croci, 2022). On the other hand, if such a divestiture was unplanned it could lead to distressed sale or fire-sale situation leading to sub-par outcome for the buyer of focal deal (Bodt, Cousin, & Demidova, 2012; Shleifer & Vishny, 2011). Hence, it was hypothesized that:

Hypothesis # 2.7a: The shareholder's returns of divestiture around M&A are positively associated with planned divestitures.

The null hypothesis was:

Hypothesis # 2.7 (null): The shareholder's returns of divestiture around M&A are not associated with planned divestitures.

Independent variable here would be a binary variable (*Planned_Divestiture_B*) coded as 2 when the divestiture was planned, and 1 otherwise. Divestitures undertaken prior to focal deal and within 6 months of focal deal are proxied to be planned. Since this variable already differentiated between acquisitions with and without divestitures, a separate interaction term was not required.

5.2. Methodology

5.2.1. Sample

These analyses were conducted on entire acquisition data with and without divestitures, that is, divestitures across all three stages were included i.e., pre, interim and post-acquisition, except for models 2.3 and 2.4A where only acquisitions with divestiture were taken.

5.2.2. Main tests and variables

1. *Linear regression*

This study analyzed data using multivariate linear regression on dependent variables – 1) *Acquisition_CAR*; 2) *Divestiture_CAR*; and 3) *Total_CAR* similar to Aktas et al. (2022) and Amiri et al. (2019). The study had the following models (see Table 5.1 for details) of which models 2.3 and 2.4A are multiple OLS regression models (on *Divestiture_CAR*) whereas all other models are multivariate linear regression models on all three dependent variables.

Table 5.1 Summary of analysis done using linear regression models on CAR

Model	Independent Variables
Model 2.0 – Control	• <i>Acquisition_With_Or_Without_Divestiture</i> • N/A (only controls)
Model 2.1 – Synergy potential vs. indigestion (relative size)	• <i>Relative_Size</i> • <i>Acquisition_With_Or_Without_Divestiture</i> • <i>Relative_Size*</i> • <i>Acquisition_With_Or_Without_Divestiture</i>
Model 2.2 – Anticipation of regulatory concern	• <i>Acquisition_With_Or_Without_Divestiture</i> • <i>High_Reg_Risk_Combined</i> • <i>High_Reg_Risk_Combined *</i> • <i>Acquisition_With_Or_Without_Divestiture</i>
Model 2.3 - Correction of mistake (announcement return) – analyzed only on acquisitions with divestitures	<i>Acquisition_CAR</i>
Model 2.4A - Financial constraints (buyer's profitability) - analyzed only on acquisitions with divestitures	<i>Buyer_Profitability_Pre_Divestiture</i>
Model 2.4B - Financial constraints (Debt Issue)	• <i>Debt_Issue_B</i> • <i>Above *</i> • <i>Acquisition_With_Or_Without_Divestiture</i> • <i>Acquisition_With_Or_Without_Divestiture</i>
Model 2.4C – Financial Constraints (Leverage)	• <i>Buyer_Leverage_Divestiture_N</i> • <i>Buyer_Leverage_N_Change</i> • <i>Above *</i> • <i>Acquisition_With_Or_Without_Divestiture</i> • <i>Acquisition_With_Or_Without_Divestiture</i>
Model 2.4D - Financial constraints (Cash Holding)	• <i>Cash_Holding_N</i> • <i>Above *</i> • <i>Acquisition_With_Or_Without_Divestiture</i> • <i>Acquisition_With_Or_Without_Divestiture</i>

Model	Independent Variables
Model 2.4E - Financial constraints (Free Cash Flow) – analyzed on acquisitions with divestitures	• <i>Levered_FCF_Divestiture_N</i> • <i>Levered_FCF_N_Change</i> • <i>Above *</i> • <i>Acquisition_With_Or_Without_Divestiture</i> • <i>Acquisition_With_Or_Without_Divestiture</i>
Model 2.4F - Financial constraints (young organisations)	• <i>Young_Organisation_B</i> • <i>Above *</i> • <i>Acquisition_With_Or_Without_Divestiture</i> • <i>Acquisition_With_Or_Without_Divestiture</i>
Model 2.4G - Financial constraints (small organisations)	• <i>Small_Organisation_B</i> • <i>Above *</i> • <i>Acquisition_With_Or_Without_Divestiture</i> • <i>Acquisition_With_Or_Without_Divestiture</i>
Model 2.4H - Financial constraints (Size)	• <i>Size_Log</i> • <i>Above *</i> • <i>Acquisition_With_Or_Without_Divestiture</i> • <i>Acquisition_With_Or_Without_Divestiture</i>
Model 2.4I - Financial constraints (strong/weak organisations)	• <i>Strong_Organisation_B</i> • <i>Above *</i> • <i>Acquisition_With_Or_Without_Divestiture</i> • <i>Acquisition_With_Or_Without_Divestiture</i>
Model 2.5 – Learning (past acquisitions and divestitures)	• <i>Past_Acquisition_5_Log</i> • <i>Past_Divestiture_5_Log</i> • <i>Acquisition_With_Or_Without_Divestiture</i> • <i>Acquisition_With_Or_Without_Divestiture*</i> • <i>Past_Acquisition_5_Log</i> • <i>Acquisition_With_Or_Without_Divestiture*</i> • <i>Past_Divestiture_5_Log</i>
Model 2.6A – Stock performance (mean stock performance)	• <i>Stock_Performance_Divestiture</i> • <i>Stock_Performance_Change</i>

Model	Independent Variables
	• <i>Above *</i> <i>Acquisition_With_Or_Without_Divestiture</i>
Model 2.6B – Stock performance (stock volatility)	• <i>Stock_Volatility_Divestiture</i> • <i>Stock_Volatility_Change</i> • <i>Above*</i> <i>Acquisition_With_Or_Without_Divestiture</i>
Model 2.7 – Planned Divestiture	• <i>Planned_Divestiture_B</i>
Model 2.8 – combination of above models (except models 2.3 and 2.4A)	• All of the above (except Acquisition CAR and Buyer Profitability Pre Divestiture)

The study incorporated all relevant controls variables typically considered in the context of divestitures around M&A. These were - *Capex_N*, *Equity_Issue_B*, *Dividend_Payer_B*, *Market_Value_Log*, *RD_N*, *EBITDA_ROA*, *TobinsQ*, *Cross_Border_B*, *Relatedness_C*, *Industry_FE*, *Listed_Target_B*, *Year_FE*, *ROE*, *Banking_Development*, *Real_GDP_Growth*, *Real_GDP_Per_Capita*, *Stock_Market_Development*, *Buyer_Profitability_Change*.

2. Difference in means test

Additionally, difference in means test compared mean values for all dependent variables between acquisitions with divestitures and acquisitions without divestitures using independent samples t-test.

5.2.3. Assumption testing

To run regression, necessary conditions need to be met. Residual plots were used to check linearity of relationship between independent and dependent variables. Durbin-Watson test was conducted to ensure independence. Homoscedasticity was checked through plotting residuals on scatter plot. Normality of residuals were checked through histogram and Q-Q plots. Multicollinearity was tested through VIF and correlation matrix. Sample size was

sufficiently large, more than the recommended 10-15 per testing variable. Outliers and influential points were checked through Mahalanobis distances and Cook's distance.

For independent sample t-test nominal variables were only used. Other conditions were similar to regression – independence and normality. Homogeneity of variances was evaluated for each variable to ascertain which assumption to use for assessing statistical significance.

5.3. Results and discussion

5.3.1. Results of assumption testing

Residual plots were used to check linearity of relationship between independent and dependent variables, and it was found to be acceptable. Durbin-Watson test was conducted to ensure independence (see **Error! Reference source not found.**). Values for all three dependent variables were between 1.5 to 2.5 which is the acceptable range, and suggests no autocorrelation. Homoscedasticity was checked through plotting residuals on scatter plot, and no pattern was observed implying that homoscedasticity was not a concern in the data. Normality of residuals were checked through plotting residuals on histogram, and they appeared to be approximately normal. Additionally, Q-Q plot was created, and the residuals were close to the diagonal line signifying that residuals were normally distributed. Multicollinearity was tested through VIF and correlation matrix. Three variables (*Buyer_Profitability_Change*, *Market_Value_Log* and *Banking_Development*) were dropped before running regression due to high VIF/ multicollinearity concerns (see **Error! Reference source not found.** for VIF scores of all retained variables). Further, Country Fixed Effects (*Country_FE*) had a high correlation with *GDP_Per_Capita*, and *Country_FE* was dropped from the control model. However, given that *GDP_Per_Capita* is based on the country and the countries in our profile had a significantly different values for GDP per Capita, this variable will serve as a proxy for country fixed effects. None of the remaining variables had a high VIF or high correlation i.e., VIF scores were well below threshold of 5-10 (Sheather, 2009; Tabachnick & Fidell, 2012). Sample size was sufficiently large, more than the recommended 10-15 per testing variable. Outliers and influential points were checked through Mahalanobis distances and Cook's distance. While none of the Cook's distance values were more than one (i.e., all values were in acceptable

range), 95 cases had standardized residuals of more than $\pm$ three. Upon inspecting these cases on sample basis, it was found that these had data quality issues – abnormally high/low CARs were reported due to very low volume trading. The share price data was highly volatile and not reliable for these cases. Therefore, these 95 cases were removed from the sample. For t-test all the conditions were met.

5.3.2. Main results and discussion

Independent samples t-test was conducted to compare means of acquisitions with and without divestitures (see **Error! Reference source not found.**). Acquisitions with divestitures had an *Acquisition_CAR* of 0.52% ($p < 0.05$) whereas *Acquisition_CAR* for acquisitions without divestitures was higher at 1.15% ($p < 0.05$) which is in contrast with some of the previous research (Cai, Song, & Walkling, 2011; Wang & Jensen, 2018). Aktas et al. (2022) explain this as anticipation effect i.e., buyers who are known to divest have a lower CAR at acquisition announcement as market is anticipating a divestiture which will later be rewarded. Similar to prior research of Aktas et al. (2022), *Divestiture_CAR* (applicable only for acquisitions with divestiture) was positive (0.35%; $p < 0.01$) in this study bringing the *Total_CAR* to 0.88% for acquisitions with divestitures (though $p > 0.1$ for *Total_CAR*). Though *Total_CAR* for both, acquisitions with and without divestitures, are statistically insignificant, it is lower for acquisitions with divestitures. This is in contrast with prior research of Aktas et al. (2022). In other words, there is likely not just an anticipation effect, but also an overall negative CAR associated with divestitures around M&A which deviates from prior research.

Since the results were not in accordance with prior research, further investigation was conducted. Interestingly, when the same analysis is run for each country individually (see **Error! Reference source not found.**), the results are strikingly different. Russia had results which were in-line with prior research such as Amiri et al. (2019), Brauer & Wiersema (2012) and Jain (1985) i.e., *Divestiture_CAR* was positive (1.6%; $p < 0.05$) and the *Total_CAR* for acquisitions with divestitures was higher than that of acquisitions without divestitures (3.4% vs. -1.4%; $p < 0.01$) as there was no anticipation effect in Russia.

India's *Divestiture_CAR* was also positive (1.6%; $p < 0.01$). The anticipation impact at the time of acquisition was smaller than this as *Acquisition_CAR* for acquisitions without divestiture was 1.09% vs. 0.63% for acquisitions with divestitures. Therefore, the *Total_CAR* for acquisitions with divestitures was more by approximately 1% (2.11% vs. 1.09% $p < 0.05$). Upon further investigation of results in India, it was discovered that there is a clear distinction between those buyers who had undertaken multiple acquisitions in the focal window vs. those who only had one. The market rewarded clarity, focus and low complexity. While the *Acquisition_CAR* was lower for acquisitions with divestiture in both cases, the *Divestiture_CAR* was more for buyers who did only one divestiture compared to those who did multiple (2.1% vs. 0.7%; $p < 0.01$ and $p < 0.05$ respectively). Thus, *Total_CAR* for buyers who did only one divestiture was more than that of those who did multiple (2.6% vs. 0.8%; $p < 0.05$ and $p > 0.1$ respectively). This means that Indian market participants rewarded focus, clarity and lower complexity of single divestiture versus multiple transactions (see **Error! Reference source not found.** for details).

The results for China were peculiar (see **Error! Reference source not found., Error! Reference source not found.** and **Error! Reference source not found.**) – the *Acquisition_CAR* was lower for acquisitions with divestiture (0.3% vs. 1.2%; $p < 0.1$) and the *Divestiture_CAR* was also negative though statistically insignificant (-0.01%; $p > 0.1$) bringing the *Total_CAR* to 0.19% (vs. 1.2% for acquisitions with divestiture $p < 0.05$). The results were consistent when analyzed across different relative size categories and even when data is broken down into five-year windows. Selected windows had positive *Divestiture_CAR* but the anticipation effect at the time of acquisition was more than the positive *Divestiture_CAR* resulting in lower *Total_CAR* for acquisitions with divestiture. Sample size was insufficient for Brazil and South Africa.

The control regression model (see **Error! Reference source not found.**) had impact of all selected control variables on the dependent variables – *Acquisition_CAR*, *Divestiture_CAR* and *Total_CAR*. In line with results above for comparison of means, the acquisitions with divestitures (*Acquisition_With_Or_Without_Divestiture*) had a negative β coefficient for all the three dependent variables, but it was statistically significant only for *Acquisition_CAR* and *Total_CAR*. R^2_{adj} was .006, .048 and .009 respectively for the three

variables which is slightly below the average of .010 for M&A research (Sirower, 1997). Further, the control model reveals that dividend payers have a lower value effect both on *Acquisition_CAR* and *Total_CAR* with β coefficients as -0.0066 and -0.007 respectively (p : <0.05 for both). Return on Equity (ROE) also had a negative impact on *Acquisition_CAR* and *Total_CAR* with β coefficients as -0.002 (p : <0.05) and -0.0018 (p : <0.1) respectively. On the other hand, Return on Assets (*EBITDA_ROA*) had a positive impact with β coefficients as 0.0199 and 0.0189 (with p : < 0.05 and p : < 0.1) respectively. Only one factor – *Real_GDP_Per_Capita* had a statistically significant negative impact on *Divestiture_CAR* (β coefficients of -0.0041; p : <0.01).

The R^2_{adj} for combined model (see Appendix Table q for details) which takes into account all variables reaches .113 for *Divestiture_CAR* which implies that the independent variables selected for this study have a good explanatory power. The β coefficient for *Acquisition_With_Or_Without_Divestiture* also changes to positive in the combined model to 0.011 (p : <0.05) and 0.0066 (p : >0.1) for *Divestiture_CAR* and *Total_CAR* respectively. It can be concluded that organizations use divestitures as a tool around M&A to enhance overall shareholder's value. Divestitures and acquisitions are both restructuring tools to manage the portfolio to improve efficiency (Aktas, Baros, & Croci, 2022). The difference in sign between control and combined model is because control model had several important explanatory variables missing, that is, it suffered from omitted variable bias.

Upon further investigation into the combined model by country (see Appendix Table q for details), it was revealed that only China had a negative β coefficient for *Divestiture_CAR* - 0.0106 (though statistically insignificant). Results of Russia and India were in line with prior research wherein acquisitions with divestiture had a positive impact on the dependent variables. Russia's β coefficient for *Divestiture_CAR* was 0.2154 (though statistically insignificant with p : >0.1). For India, β coefficient for *Divestiture_CAR* was .0194 (p : <0.05). The difference between countries has been discussed in detail in the this section above (comparison of means). Similarly, when control model (see **Error! Reference source not found.**) is created with data of all countries excluding China, β coefficient for *Divestiture_CAR* is positive at .0054 (p value: < 0.01) which is in line with prior research.

For individual factors, there wasn't any notable difference across countries, and therefore, this study presents overall analyses.

1. Synergy potential vs. indigestion (relative size)

Relative_Size as well as its interaction with dummy variable for divestiture (see **Error! Reference source not found.** for details) did not have statistically significant results. The R^2_{adj} of this model is the same as the control model for *Divestiture_CAR* and only a small improvement of .001 for *Total_CAR*. Therefore, there is no evidence to support hypotheses # 2.1a and # 2.1b i.e., it fails to establish a relationship between relative size of deal and abnormal returns of divestitures around M&A. These findings are in line with that of Amiri et al. (2019) who also failed to find a statistically significant relationship between relative size and divestiture announcement returns.

When the same analysis is run by relative size categories (e.g., 10%-20%, more than 100%) almost all the models show a negative impact of interaction variable of relative size and divestiture on *Divestiture_CAR* (see **Error! Reference source not found.**). For example, β coefficient of interaction variable on *Divestiture_CAR* model is -0.5272 ($p < 0.01$; R^2_{adj} : 16%) for 10%-20% relative size category. This can be taken as a support to cookie jar problem (hypothesis # 2.1a). However, none of the coefficients, for categories greater than 10%, are statistically significant for *Total_CAR* which implies that the market perceives such divestitures around M&A negatively but impact on *Total_CAR* is inconclusive when it comes to relative size. These results are different than the findings of Aktas et al. (2022) which was based on a study on a global sample. Thus, it is clear that the BRICS M&A markets have a different behavior when compared to the global markets.

2. Anticipation of regulatory concern

Similar to Aktas et al. (2022), at an overall level, this study finds that anticipation of regulatory concern has limited impact on *Total_CAR* for deals where a divestiture around M&A took place versus where it did not (see **Error! Reference source not found.** for details). However, β coefficient of the interaction term of *High_Reg_Risk_Combined* with *Acquisition_With_Or_Without_Divestiture* on *Divestiture_CAR* was positive at 0.0028 ($p < 0.01$) implying higher regulatory risk leads to higher CAR at the time of divestiture post-acquisition. Thus, it can be taken as a support for hypothesis # 2.2a i.e., a positive relation between regulatory risk and CAR. Since impact on *Total_CAR* is not statistically significant, it can be concluded that overall regulatory risk doesn't impact CARs.

3. *Correction of mistake (announcement return)*

While the β coefficient of *Acquisition_CAR* for predicting *Divestiture_CAR* is negative (-0.029), in line with hypothesis # 2.3a, it is not statistically significant. This study finds that *Acquisition_CAR* does not have an impact on *Divestiture_CAR* (as $p > 0.1$; see **Error! Reference source not found.** for details), therefore, hypotheses # 2.3a and 2.3b are not supported. Thus, theory of correction of prior mistake is not supported.

4. *Financial constraints (profitability, credit availability, cash, leverage, size, age, strength)*

This study analyzed several measures of financial constraints (see **Error! Reference source not found.**, **Error! Reference source not found.** and **Error! Reference source not found.**) as it is factor known to impact divestitures around M&A (Bongaerts & Schlingemann, 2024). Of all the measures, the following were found to be significant and support hypothesis # 2.4a i.e., financial constraints have a positive impact on CARs for buyers who divest around acquisition:

- (High) leverage prior to divestiture (β of interaction variable of *Buyer_Leverage_Divestiture_N* for *Total_CAR*: 0.029; $p < 0.05$) similar to findings of Aktas et al. (2022)
- (Low) cash holding (β of interaction variable of *Cash_Holding* for *Divestiture_CAR*: -0.0252; $p < 0.01$)

On the other hand, following were found to be significant and support hypothesis # 2.4b i.e., financial constraints have a negative impact on CARs for buyers who divest around acquisition:

- (Non) availability of capital (β of interaction variable of *Debt_Issue_B* for *Divestiture_CAR*: 0.0102; $p < 0.01$)
- Increase in leverage building up to divestiture (β of interaction variable for *Acquisition_CAR*, *Divestiture_CAR* and *Total_CAR*: -0.0601 ($p < 0.05$), -0.0337 ($p < 0.01$) and -0.0986 ($p < 0.01$) respectively)
- (Low) free cash flow earned during the financial year prior to divestiture (β of interaction variable of *Levered_FCF_Divestiture_N* for *Divestiture_CAR*: 0.007; $p < 0.01$)

- (Small) sized organization (β of interaction variables of *Small_Organisation_B* and *Size_Log*: 0.0077 ($p < 0.01$) and 0.0021 ($p < 0.01$) respectively)

The results of some of the other variables, are statistically insignificant which is in line with prior research, such as profitability (Amiri, King, & DeMarie, 2019) and young organizations (Aktas, Baros, & Croci, 2022).

On the face of it, the results may seem contradictory i.e., some factors are supporting hypothesis and others are supporting alternate hypothesis. However, there is a clear and logical pattern to this. Presence of financial constraints in absolute terms (for example high leverage and lack of cash) leads to positive CAR for buyers who divest, as such a divestiture provides relief from financial constraints (Arnold, Hackbarth, & Puhon, 2018; Edmans & Mann, 2019; Mavis, McNamee, Petmezas, & Travlos, 2020). However, if the financial constraints are getting worse (for example the organisation is not able to raise debt, leverage is increasing and free cash flows earned during the year are low), it leads to negative impact on CARs for divestiture around M&A similar to assertion of Schill and Zhou (2001), Ushijima and Schaefer (2014) and Wright and Ferris (1997). Further, since issuance of debt and increase in leverage have opposite impact, it shows that when buyers are raising a fresh round of debt to replace old debt (i.e., not impacting leverage) it is seen as positive sign that buyer has ready access to debt capital. Its corollary is that a failure to issue debt is perceived as a signal of trouble as is associated with negative CARs. If the issued debt leads to increased leverage, it signals trouble and is punished. Further, small sized organizations would anyway have poor bargaining power which is known to be an important factor in returns pertaining to such deals (Laamanen, Brauer, & Junna, 2014). Since all the buyers are publicly listed companies, their financials would be easily available. If financial constraints are getting worse, it would be known by counterparties of the divestiture who may exploit the situation for their own financial gain (Laamanen, Brauer, & Junna, 2014) and the deal may be akin to fire-sale (Finlay, Marshall, & McColgan, 2018).

It can be concluded that financial constraints are alleviated through divestitures and the market rewards the same through higher CARs. However, if the organization's circumstances are getting worse, the market recognizes the criticality of the situation and

punishes such organizations even if they divest – perhaps a perception of too little too late. This study is able to reconcile erstwhile seemingly contradictory findings in this area of research.

5. *Learning (past acquisitions and divestitures)*

Similar to results of Aktas et al. (2022), there is limited evidence to show that past learning in terms of prior acquisitions is statistically associated with CARs for divestitures around M&A (see **Error! Reference source not found.**).

However, experience gained from past divestitures is found to be positively associated (statistically significant) with CARs for divestitures around M&A both – *Acquisition_CAR* (β of interaction variable of *Past_Divestiture_5_Log*: 0.0242; $p < 0.1$) and the *Total_CAR* (β of interaction variable of *Past_Divestiture_5_Log*: 0.0219; $p < 0.1$). Hence, it can be concluded that hypothesis # 2.5a is supported for learnings from past divestitures. These findings are in line with Doan et al. (2018) who argue that learnings from past divestitures are more significant than past acquisitions. It shows that divestitures cannot be treated as a flip-side of acquisitions and need specialized skill-set to execute.

6. *Prior stock performance (mean stock performance and volatility)*

Mean stock performance prior has a statistically significant impact on *Divestiture_CAR* with positive β coefficient supporting hypothesis # 2.6a (β for interaction variable of *Mean_Stock_Performance_Divestiture*: 0.0023; $p < 0.01$). Change in stock performance (prior to divestiture vs. prior to acquisition) has a statistically significant impact on *Divestiture_CAR* with negative β coefficient supporting hypothesis # 2.6b (β for interaction variable of *Mean_Stock_Performance_Change*: -0.0013; $p < 0.05$). Result of stock volatility was also statistically significant (β for interaction variable of *Stock_Volatility_Divestiture* for *Divestiture_CAR* and *Total_CAR*: -0.0002 ($p < 0.01$) and -0.0004 ($p < 0.01$) respectively) and so was for stock volatility change (β for interaction variable of *Stock_Volatility_Change* for *Divestiture_CAR*: 0.0002; $p < 0.01$) albeit the signs of β coefficient were opposite (see **Error! Reference source not found.**). That is, similar to mean stock performance, the one measure of stock volatility seems to support hypothesis # 2.6a and the other supports hypothesis # 2.6b.

From above, it can be inferred that good (high) mean stock performance prior to divestiture or good (low) stock performance prior to divestiture had similar impact i.e., they lead to improved CARs on Divestiture around M&A. The corollary to this is that poor (low) stock performance or poor (high) volatility prior to a divestiture will lead to poor CARs on divestitures around M&A.

However, since the β coefficient for change in mean performance on *Divestiture_CAR* is negative and statistically significant, it implies that if the mean stock performance used to be good (prior to acquisition) but the stock had not been doing so well building up to the divestiture, the divestiture will still be rewarded by the market with improved CARs. Point to note here is that absolute value of β coefficient of stock performance prior to divestiture is more than that of change in stock performance implying that the stock performance just prior to divestiture is more important.

Similarly, stock volatility change has a positive coefficient implying that a divestiture wherein volatility was increasing from acquisition to pre-divestiture was rewarded by the market. An increased volatility could be an indication of market's disapproval of the acquisition decision by the management and therefore a reversal in strategy i.e., a divestiture is accepted well and accordingly rewarded. The impact of pre-divestiture volatility and change in volatility are equal.

It can be concluded that prior stock performance of buyer has a positive impact on Divestitures around M&A. The relationship is more profound for stock performance prior to divestiture when compared to stock performance prior to acquisition. Pre-divestiture volatility, on the other hand, has a negative impact on *Divestiture_CAR*. Increasing volatility signals trouble and a subsequent divestiture is well rewarded.

7. *Planned vs. unplanned divestitures*

β coefficient for planned divestiture is positive and statistically significant for *Divestiture_CAR* (β of *Planned_Divestiture_B* for *Divestiture_CAR* is 0.0032; $p < 0.01$; see **Error! Reference source not found.** for details) implying that when a divestiture around M&A is planned, it leads to improved *Divestiture_CAR* (supporting hypothesis # 2.7a). In other words, unplanned divestitures around M&A have a negative impact on

Divestiture_CAR. These findings are in line with prior research—for example, Shleifer & Vishny (2011) and Bodt et al. (2012).

Model 2.8 combines all variables from previous models and confirms the results (see Appendix Table q for details). It has R^2_{adj} of .018, .113 and .025 respectively for *Acquisition_CAR*, *Divestiture_CAR* and *Total_CAR* which is a significant improvement to control model implying that the selected independent variables have significant explanatory power.

5.4. Summary

To sum up, this study finds that divestitures around acquisitions have a positive impact on CARs for most countries barring China. The results of other countries are in line with prior contemporary research on the topic implying rest of the BRICS countries in sample behaved similar to their global counterparts.

The study finds limited support for cookie jar problem i.e., large relative size deals are perceived negatively. While it is true for *Divestiture_CAR* but at an overall level (*Total_CAR*) the impact is not significant. Similarly, correction of prior mistake found no statistical support in the sample i.e., *Acquisition_CAR* was not a statistically significant variable impacting *Divestiture_CAR*.

This study makes significant contribution by reconciling several differing views on financial constraints. It finds that presence of financial constraints prior to divestitures has a positive impact on CARs when buyers divest around acquisition. It provides support to the theories on divestitures being a tool to improve performance, providing much needed capital, enabling financing of deal and so on. Further, it finds that if the financial constraints were getting worse, for example, increasing leverage, low cash flow during the year, and so on, it leads to poor announcement returns due to low bargaining power and fire-sale circumstances around divestitures.

Learning plays an important role in announcement returns. However, learning is only significant in terms of divestiture experience. Acquisition experience is not statistically significant.

This study further finds that prior stock mean performance and stock volatility, which are proxy for organization's overall performance, are also important variables. Well performing buyers i.e., buyers whose stock was doing well (high mean returns and low volatility) are rewarded at the time of divestiture. Further, the mean stock performance prior to divestiture has greater impact on CARs when compared to the variable which measured changes in mean performance from acquisition to divestiture. The study also demonstrates that markets perceive divestitures by different types of organizations differently. If the market perception was good, i.e., high mean performance and lower volatility, markets perceive divestiture to be another brilliant move by an already well performing company. On the other hand, if the market perception used to be good but was deteriorating building up to the divestiture i.e., reducing mean stock performance or increasing volatility prior to divestiture, a divestiture is still rewarded as a change in strategy.

Separately, as expected, the study also finds that planned divestitures result in higher CARs when compared to unplanned divestitures.

The following table (Table 5.2) summarizes the outcomes of different regression analyses models, as discussed in detail above.

Table 5.2 Summary of results of regression models on CAR

Model	Independent Variables	β (Coefficient)	R ² _{adj}	Implications
Model 2.0 – Control	Acquisition_With_Or_Without_Di vestiture N/A (only controls)	1. Multiple	1. .006 2. .048 3. .009	N/A
Model 2.1 – Synergy potential vs. indigestion (relative size)	Relative_Size Acquisition_With_Or_Without_Di vestiture Relative_Size* Acquisition_With_Or_Without_Di vestiture	1. .001 (-.004) 2. -.002 (-.002) 3. 0 (-.005)	1. .008 2. .048 3. .010	N/A - Statistically insignificant result to establish relationship between the three CARs and relative size.
Model 2.2 – Anticipation of regulatory concern	Acquisition_With_Or_Without_Di vestiture High_Reg_Risk_Combined High_Reg_Risk_Combined * Acquisition_With_Or_Without_Di vestiture	1. -.00041 (-0.0033) 2. 0.003*** (0.0028***) 3. -.00008 (0.0001)	1. .006 2. .051 3. .008	Support for hypothesis # 2.2a that high regulatory risk is positively associated with CAR around divestitures.
Model 2.3 - Correction of mistake (announcement return) –	Acquisition_CAR	2. -.029	2. .033	N/A - Statistically insignificant result to establish relationship between Divestiture CAR and Acquisition CAR.
Model 2.4A - Financial constraints (buyer's profitability) - analyzed	Buyer_Profitability_Pre_Divestiture	2. .005	2. .032	N/A - Statistically insignificant result to establish relationship between the three CARs and buyers' profitability.
Model 2.4B - Financial constraints (Debt Issue)	Debt_Issue_B Above * Acquisition_With_Or_Without_Di vestiture	1. .003 (.006) 2. -.011*** (.010***) 3. -.007 (.015)	1. .007 2. .051 3. .009	Supports hypothesis # 2.4b – non-availability of capital through debt issue, as a proxy of financial constraints, reduces CAR around divestiture.

Model	Independent Variables	β (Coefficient)	R ² _{adj}	Implications
Model 2.4C - Financial Constraints (Leverage)	Buyer_Leverage_Divestiture_N Buyer_Leverage_N_Change Above * Acquisition_With_Or_Without_Divestiture Acquisition_With_Or_Without_Divestiture	Divestiture: 1. .011 (.028*) 2. -.002 (.002) 3. .009 (.029**) Change: 1. -.050 (-.060**) 2. -.032 (-.034**) 3. -.088 (-.099***)	1. .008 2. .056 3. .013	Supports hypothesis # 2.4b – increase in leverage from acquisition to divestiture, as a proxy of financial constraints, reduces value generated by divestitures around acquisitions. However, in absolute terms high leverage has a positive impact on Total CAR when buyers divest around acquisition (supports hypothesis # 2.4a).
Model 2.4D - Financial constraints (Cash Holding)	Cash_Holding_N Above * Acquisition_With_Or_Without_Divestiture Acquisition_With_Or_Without_Divestiture	1. .023 (.007) 2. -.021*** (-.025***) 3. .005 (-.015)	1. .007 2. .054 3. .009	Supports hypothesis # 2.4a – lower cash holding, as a proxy of financial constraints, increases CAR around divestiture.
Model 2.4E - Financial constraints (Free Cash Flow) – analyzed on acquisitions with divestitures	Levered_FCF_Divestiture_N Levered_FCF_N_Change Above * Acquisition_With_Or_Without_Divestiture Acquisition_With_Or_Without_Divestiture	Divestiture: 1. -.005 (-.014) 2. .029*** (.028***) 3. .024 (.015) Change: 1. -.014 (-.010) 2. .006 (.007) 3. -.011 (-.005)	1. .006 2. .069 3. .008	Supports hypothesis # 2.4b – lower free cash flow before divestiture, as a proxy of financial constraints, reduces CAR around divestiture.
Model 2.4F - Financial constraints (Young organisations)	Young_Organisation_B Above * Acquisition_With_Or_Without_Divestiture Acquisition_With_Or_Without_Divestiture	1. .001 (.001) 2. .002 (-.001) 3. .004 (-.001)	1. .006 2. .048 3. .008	N/A - Statistically insignificant result to establish relationship between the three CARs and young organization
Model 2.4G - Financial constraints (small organisations)	Small_Organisation_B Above * Acquisition_With_Or_Without_Divestiture Acquisition_With_Or_Without_Divestiture	1. .002 (.002) 2. .009*** (-.008***) 3. .009 (-.004)	1. .006 2. .053 3. .009	Supports hypothesis # 2.4b – small, as a proxy of financial constraints, reduces CAR around divestiture.
Model 2.4H - Financial constraints (Size)	Size_Log Above * Acquisition_With_Or_Without_Divestiture Acquisition_With_Or_Without_Divestiture	1. -.002 (.003) 2. .002*** (.001*) 3. .001 (.004)	1. .008 2. .051 3. .010	Supports hypothesis # 2.4b – small size, as a proxy of financial constraints, reduces CAR around divestiture.

Model	Independent Variables	β (Coefficient)	R^2_{adj}	Implications
Model 2.4I - Financial constraints (strong/ weak organisations)	- Strong_Organisation_B - Above * Acquisition_With_Or_Without_Divestiture Acquisition_With_Or_Without_Divestiture	1. -.002 (-.004) 2. 0 (0) 3. 0 (-.006)	1. .008 2. .047 3. .010	N/A - Statistically insignificant result to establish relationship between the three CARs and strength of organisation (by revenue).
Model 2.5 – Learning (past acquisitions and divestitures)	- Past_Acquisition_5_Log - Past_Divestiture_5_Log - Acquisition_With_Or_Without_Divestiture* - Acquisition_With_Or_Without_Divestiture* - Past_Acquisition_5_Log - Acquisition_With_Or_Without_Divestiture* - Past_Divestiture_5_Log	Acquisition: 1. -.003 (-.004) 2. -.001 (-.002) 3. -.004 (-.007) Divestiture: 1. .010 (.024*) 2. -.003 (-.003) 3. .007 (.022*)	1. .006 2. .048 3. .009	Supports hypothesis #2.5a – learnings, as defined by number of past divestitures, has a positive impact on both Acquisition CAR and Total CAR when buyers divest around acquisitions. Learnings in terms of past acquisition experience is not a statistically significant predictor of CARs when a buyer divests around acquisitions.
Model 2.6A – Stock performance (mean stock performance)	- Stock_Performance_Divestiture - Stock_Performance_Change - Above * Acquisition_With_Or_Without_Divestiture	Divestiture: 1. -.003 (-.004) 2. .002*** (.002***) 3. -.001 (-.002) Change: 1. -.003 (-.001) 2. -.001** (-.001**) 3. -.004* (-.003)	1. .009 2. .051 3. .012	Support for hypothesis # 2.6a – higher mean stock performance prior to divestiture has a positive impact on CAR on divestitures around M&A. Support for hypothesis # 2.6b – change (increase) in mean stock performance from acquisition to divestiture negatively impacts CAR on divestitures around M&A.

Model	• Independent Variables	B (Coefficient)	R ² _{adj}	Implications
Model 2.6B – Stock performance (stock volatility)	• Stock_Volatility_Divestiture • Stock_Volatility_Change Above* Acquisition_With_Or_Without_Divestiture	Divesture: 1. -.0002 (-.0001) 2. -.0002*** (-.0002***) 3. -.0004** (-.0004**) Change: 1. .0001 (0) 2. .0002*** (.0002***) 3. .0003** (.0002)	1. .007 2. .057 3. .011	Support for hypothesis # 2.6a – better volatility performance i.e., lower volatility prior to divestiture has a positive impact on CAR on divestitures around M&A. Support for hypothesis # 2.6b – change (increase) in volatility from acquisition to divestiture positively impacts CAR on divestitures around M&A.
Model 2.7 – Planned Divestiture	• Planned_Divestiture_B	1. -.001 2. .003*** 3. .003	1. .006 2. .050 3. .009	Support for hypothesis # 2.7a that planned (as opposed to unplanned) nature of divestitures lead to improved CARs for divestitures around acquisitions
Model 2.8 – combination of above models (except models 4 and 5A)	• All of the above (except Acquisition CAR and Buyer Profitability Pre Divestiture)	Multiple	1. .018 2. .113 3. .025	Significant uplift in R ² _{adj} compared to control model implying the independent variables have predictor value.
Note: 1) For categorical variables, signs of β coefficients in the original output table (appendix) are reported for the lower category against the reference category which is the highest category by default in SPSS. For ease of interpretation, in the summary output (in the body sections of the thesis), the signs have been changed to reflect the true nature of variable i.e., if higher category implies more of the variable and original sign, for lower category, was negative (implying if variable is less the likelihood of divestiture is more) the sign has been changed to positive in the summary table which shows the higher category (as this study is analyzing the higher category). 2) 1,2,3 represent the three dependent variables – Acquisition CAR, Divestiture CAR and Total CAR and *, **, *** represents statistical significance at 10%, 5% and 1% levels respectively. 3) Terms in brackets are interaction terms.				

Chapter 6

6. Impact of divestitures around M&A on profitability of parent organization

6.1. Introduction, research questions and hypotheses

This chapter addresses the third objective: whether divestitures around acquisitions improve the subsequent operating profitability of the divesting organization. It also attempts to understand what role prior performance plays in that outcome.

The chapter follows directly from Chapter 5 and tests a different proposition. A positive announcement return records what the market expects; it does not establish that the expectation is fulfilled. Where the two diverge, the divergence is itself informative. This outcome is also the least studied of the four examined here - research on the profitability consequences of divestitures around M&A is limited even on a global sample. And, the existing evidence is contradictory, with some studies reporting improvement and others deterioration.

Following Moliterno & Wiersema (2007), this chapter proposes that the contradiction arises from a missing moderator, and uses prior performance in that role. The analysis then decomposes the effect on return on assets into net income and total assets, and net income further into revenue, SG&A and R&D, so that the mechanism producing any change in profitability can be identified rather than inferred.

This section, section 6.1 develops the hypotheses. Section 6.2 describes the sample and models. Section 6.3 reports results. Section 6.4 summarizes and Table 6.2 consolidates the findings.

Objective: To evaluate the impact of divestitures on subsequent profitability of the buyer of focal M&A deal (i.e., seller in case of divestiture).

While prior research has somewhat covered how performance impacts post-acquisition divestitures likelihood—for example, Amiri et al. (2021), Berry (2010), Duhaime & Baird (1987), Hopkins (1991) and Chakrabarti, Vidal, & Mitchell (2011), research on such divestitures impacting profitability is very limited—for example, Capron et al. (2001). Impact on performance by other restructuring tools has still been covered to a certain extent – alliances (Anand & Khanna, 2000; Castañer, Mulotte, Garrette, & Dussauge, 2014; Das & Teng, 2000; Kale, Dyer, & Singh, 2002; Kale & Singh, 2007), internal research and development (Capron & Mitchell, 2009; Karim & Mitchell, 2004) and acquisitions (Hennart & Park, 1993; Karim & Mitchell, 2000; Moatti, Ren, Anand, & Dussauge, 2015);.

Existing research, especially resource-based view, suggests that M&A can impact performance (Karim, 2006; Karim & Capron, 2015). In case of divestitures, it is clear that there is an impact on performance but the jury is still out on nature of impact. For example, many studies claim that divestitures lead to improved performance – both market (Alexander, Benson, & Kampmeyer, 1984; Hite & Owers, 1983; Mulherin & Boone, 2000) and accounting performance (Hoskisson & Johnson, 1992). However, there is no dearth of research contradicting these claims—for example, Bergh (1995) finds that divestitures have negative impact on accounting performance and Wright & Ferris (1997) conclude the same for market performance. There are likely moderating factors which have not been fully explained (Lee & Madhavan, 2010). This study takes a sample of BRICS countries which has not been studied extensively before. Following the recommendations of Moliterno & Wiersema (2007), this study uses prior performance as the key moderating factor.

While divestiture's impact on performance is relatively less studied, the evolving view is that for low performers it can help address issues, and for high performers it can sustain or create new areas of competitive advantage (Helfat & Eisenhardt, 2004; Helfat, et al., 2007; Moliterno & Wiersema, 2007). Specifically, divestitures allow firms to divest existing, and perhaps non-performing, assets and invest the sale proceeds into high growth areas for future which is akin to a complementary Penrose effect (Penrose, 1959; Vidal & Mitchell, 2017).

However, the theoretical background of linking divestitures with change in performance is relatively nascent and does not allow enough basis to develop hypotheses. Any such attempt would invariably have sufficient ambiguity and therefore, similar to Vidal & Mitchell (2017), this study takes an exploratory approach to identifying the impact of divestitures on subsequent performance.

The first *research question* of this study was:

RQ.1. What is the impact of divestitures on subsequent performance (ROA - return on assets) and what role does prior performance play in that? Conventional wisdom has treated divestitures post acquisitions as correction of prior mistakes (Markides & Singh, 1997; Porter, 1987) which would imply that only poor performers divest. Such players may be motivated by a need to repay debt (Brown, James, & Mooradian, 1994) or reduce excess capacity which frees up resources (Chakrabarti, Vidal, & Mitchell, 2011; Villalonga B. , 2004) to invest in growth for future (Haynes, Thompson, & Wright, 2003). The motivation could simply have been to divest a low performing unit to increase the average ROA of remaining units (Duhaime & Grant, 1984; Markides & Singh, 1997; Porter, 1987). It will also allow the management to free up its bandwidth and focus more on potential growth areas whether in existing businesses or new. Hanson and Song (2003) find that improved performance is due to reduced negative synergies. Lang, Poulsen and Stulz (1995) argue that if a sale deal has been finalized it implies that the selling organization received enough proceeds to make it worthwhile. However, if the criticality of situation was very high the low performers may be required to divest high performing units to free up considerable cash especially since cash release would likely be a multiple of EBITDA. This is often a lever in debt restructuring deals where multiple assets exist in a company.

Subsequently, a few studies have also explored the idea that high performers also divest (Kaul, 2012) – albeit for different reasons, for example to sustain and create new competitive advantage (Vidal & Mitchell, 2017) by divesting and reinvesting sales proceeds into opportunities which have significantly more growth potential for future (Kaul, 2012). The hypotheses were:

Hypothesis # 3.1 (null): Divestitures have no impact on subsequent profitability.

Hypothesis # 3.1 (alternate): Divestitures have an impact on subsequent profitability.

Hypothesis # 3.2 (null): Prior performance does not moderate the impact of divestitures on subsequent profitability.

Hypothesis # 3.2 (alternate): Prior performance does moderate the impact of divestitures on subsequent profitability.

The second **research question** of the study was:

RQ.2. What are the constituents for this change in performance and what does it inform about strategy and post-divestiture resource deployment? Change in ROA could be because of change in net income or change in total assets. For example, an increase in ROA could be because of increase in net income, reduction in total assets or both net income and total assets fall but percentage reduction in net income is less than the percentage reduction in total assets. Further, net income could increase because revenue increases or revenue decreases but reduction in costs (e.g., SG&A and R&D) is more than the reduction in revenue. Each of these combinations will be caused by different strategies. For example, if such a divestiture is not followed by an acquisition it will lead to reduction in net income whereas a subsequent acquisition may result in net income increasing or decreasing depending on relative size of units divested and acquired. Similarly, a partial divestiture may have limited impact on revenue (Vidal & Mitchell, 2015) but may impact the cost structure. These strategic decisions are undertaken to sustain or create new competitive advantages by changing resource base (Helfat, et al., 2007; Makadok, 2001; Teece, Pisano, & Shuen, 1997).

Here also, the moderating factor would be past performance. High performers may be looking to invest in future growth opportunities. They may deploy resources and use sales proceeds to invest in assets which give long term results. Low performers on the other hand, especially if they are driven by a need to ensure near-term survival, may show improved average accounting performance simply by divesting lowest performing units (Vidal & Mitchell, 2017). On the other hand, low performers may be forced to sell a high performing asset to ensure sufficient resources are gained through the process as the valuation is typically a multiple of EBITDA. Therefore, the null hypotheses were:

Hypothesis # 3.3 (null): Divestitures have no impact on constituents of profitability (net income, total assets, revenue, SG&A and R&D).

Hypothesis # 3.3 (alternate): Divestitures have an impact on constituents of profitability (net income, total assets, revenue, SG&A and R&D).

Hypothesis # 3.4 (null): Prior performance does not moderate the impact of divestitures on constituents of profitability (net income, total assets, revenue, SG&A and R&D).

Hypothesis # 3.4 (alternate): Prior performance does moderate the impact of divestitures on constituents of profitability (net income, total assets, revenue, SG&A and R&D).

6.2. Methodology

6.2.1. Sample

This analysis was conducted on entire acquisition data with and without divestitures i.e., divestitures across all three stages were included i.e., pre, interim and post-acquisition. Additionally, as a robustness check the analysis was also run on subset A in which acquisitions without divestitures would be included. For acquisitions with divestitures, only divestitures post-acquisition announcement – during the interim phase and 3-year post completion of focal M&A deal would be included i.e., divestitures pre-acquisition would be ignored. This is what is commonly studied in divestitures around M&A research—for example, Amiri et al. (2021), Bergh (1997) and Capron et al. (2001).

6.2.2. Main tests and variables

This study analyzed data using Ordinary Least Square multiple regression similar to Vidal & Mitchell (2017). The following table (Table 6.1) summarizes the models, dependent and independent variables.

Table 6.1 Summary of models of regression run to analyze impact of divestitures around M&A on profitability

#	Model	Dependent Variable	Independent Variables
3.1	ROA	<i>ROA_DI</i>	<i>Acquisition_With_Or_Without_Divestiture</i> , <i>ROA_ID</i> , <i>Acquisition_With_Or_Without_Divestiture*HL_Performer_Median</i>
3.2	Net income	<i>Log_Net_Income_DI</i>	<i>Acquisition_With_Or_Without_Divestiture</i> , <i>Log_Net_Income_ID</i> , <i>Acquisition_With_Or_Without_Divestiture*HL_Performer_Median</i>
3.3	Total assets	<i>Log_Total_Assets_DI</i>	<i>Acquisition_With_Or_Without_Divestiture</i> , <i>Log_Total_Assets_ID</i> , <i>Acquisition_With_Or_Without_Divestiture*HL_Performer_Median</i>
3.4	Revenue	<i>Log_Revenue_DI</i>	<i>Acquisition_With_Or_Without_Divestiture</i> , <i>Log_Revenue_ID</i> , <i>Acquisition_With_Or_Without_Divestiture*HL_Performer_Median</i>
3.5	SG&A	<i>Log_SGA_DI</i>	<i>Acquisition_With_Or_Without_Divestiture</i> , <i>Log_SGA_ID</i> , <i>Acquisition_With_Or_Without_Divestiture*HL_Performer_Median</i>
3.6	R&D	<i>Log_RD_DI</i>	<i>Acquisition_With_Or_Without_Divestiture</i> , <i>Log_RD_ID</i> , <i>Acquisition_With_Or_Without_Divestiture*HL_Performer_Median</i>

All relevant control variables were included in the analysis - *Capex_N*, *Equity_Issue_B*, *Debt_Issue_B*, *Dividend_Payer_B*, *TobinsQ*, *Past_Acquisition_5_Log*, *Past_Divestiture_5_Log*, *Relative_Size*, *Cross_Border_B*, *Country_FE*, *Relatedness_C*, *Industry_FE*, *Listed_Target_B*, *Year_FE*, *Real_GDP_Growth*, *Real_GDP_Per_Capita*, *Stock_Market_Development*, *Young_Organisation_B*, *Small_Organisation_B*, *Strong_Organisation_B*, *Levered_FCF_Divestiture_N*, *Levered_FCF_N_Change*, *Stock_Volatility_Divestiture*, *Stock_Volatility_Change*, *Stock_Performance_Divestiture*, *Stock_Performance_Change* and *High_Reg_Risk_Combined*.

6.2.3. Assumption testing

In order to run OLS regression, necessary conditions need to be met. Residual plots were used to check linearity of relationship between independent and dependent variables. Durbin-Watson test was conducted to ensure independence. Homoscedasticity was checked through plotting residuals on scatter plot. Normality of residuals were checked through histogram and Q-Q plots. Multicollinearity was tested through VIF and correlation matrix. It was checked that sample size is sufficiently large. Outliers and influential points were checked through Cook's distance.

6.3. Results and discussion

6.3.1. Results of assumption testing

In order to run OLS regression, necessary conditions were checked and ensured. Residual plots were used to check linearity of relationship between independent and dependent variables and it was found to be acceptable. Durbin-Watson test was conducted to ensure independence. Values for dependent variables were between 1.5 to 2.5 which is the acceptable range and suggests no autocorrelation (see **Error! Reference source not found.** for details). Homoscedasticity was checked through plotting residuals on scatter plot and no pattern was observed implying that homoscedasticity was not a concern in the data. Normality of residuals were checked through plotting residuals on histogram and they appeared to be approximately normal. Additionally, Q-Q plots were created and the residuals were close to the diagonal line signifying that residuals were normally distributed. Multicollinearity was tested through VIF and correlation matrix. None of the selected variables had a high VIF (see **Error! Reference source not found.** for details) or high correlation i.e., scores were well below threshold of 5-10 (Sheather, 2009; Tabachnick & Fidell, 2012). Sample size was sufficiently large, more than the recommended 10-15 per testing variable. Outliers and influential points were checked through Cook's distance. Models 3.2 through 3.6 had no violations. Model 3.1 had one observation which had Cook's value of greater than 1.

6.3.2. Main results and discussion

Regression with *ROA_DI* (return on assets one year post divestiture) as dependent variable has an R^2_{adj} of .104 which is above average of .100 typically seen in M&A research (Sirower, 1997). The F statistic is significant at 1% level signifying that the model is statistically significant (see **Error! Reference source not found.** for details). β coefficient for *Acquisition_With_Or_Without_Divestiture* is negative (β : -0.0678; p : <.001) signifying that divestitures are associated with poor post divestiture returns (*ROA_DI*). The β for *ROA_ID* (return on assets one year pre divestiture) is positive (β : 0.0595; p : <.001) signifying that, all things equal, higher prior returns lead to higher post returns for ROA. This is similar to the findings of prior research. Further, the interaction variable between high/ low performer and binary variable for divestiture (*Divestiture_HLPerformer_Int*) is positive (β : 0.045; p : <.001) which signifies that when buyers who have above median ROA (i.e., high performers) divest around acquisition, it leads to further improvement in ROA post divestiture. This finding is in line with findings of Lee & Madhavan (2010) but is in contrast to the findings of Vidal & Mitchell (2017). This implies that organizations in BRICS countries behave differently to their western counterparts.

The net impact of the three variables taken together is also positive. Overall, it is safe to conclude that high performers further improve their returns by divesting around an acquisition. On the other hand, returns for low performing buyers are further damaged by divesting around acquisitions. Thus, divestitures around acquisitions reinforce prior returns and increase the magnitude of prior good/ bad performance.

Next, the study attempts to decode the reason for this change in return of assets i.e., is the increase in *ROA* for high performers because of increase in net income or reduction in total assets and similarly identifying reason for change in performance for low performers. Two more regression models were run with log of net income post divestiture (*Log_Net_Income_DI*) and log of total assets post divestiture (*Log_Total_Assets_DI*) as dependent variables (see **Error! Reference source not found.** for details).

The R^2_{adj} for *Log_Net_Income_DI* model was .825 and F test was significant at 1% level signifying overall statistical significance of the model. β coefficients of *Acquisition_With_Or_Without_Divestiture*, *Log_Net_Income_ID*, *Divestiture_HLPerformer_Int* are -0.3242

($p < .001$), 0.8343 ($p < .001$) and 0.1912 ($p < .001$) respectively. It implies that taken alone, divestitures around M&A lead to reduced net income, however, when high performers undertake such divestitures, it leads to increase in net income. Whereas low performers undertaking such divestitures further reduce their net income.

Similarly, the R^2_{adj} for *Log_Total_Assets_DI* model was .977 and F test was significant at 1% level signifying overall statistical significance of the model. β coefficients of *Acquisition_With_Or_Without_Divestiture*, *Log_Total_Assets_ID*, *Divestiture_HLPerformer_Int* were -0.1133 ($p < .001$), 1.007 ($p < .001$) and 0.0947 ($p < .001$) respectively. The positive coefficient of interaction variable shows that within one year of such divestitures, the asset base increases for high performers whereas it reduces for low performers similar to the findings of prior research.

Results of the first three models taken together show high performers increase their ROA post divestitures. This increase is due to increase in net income which exceeds the increase in total assets. It could be because they divested low ROA asset and invested the sale proceeds either into R&D to generate highly productive assets or undertook acquisition of high performing (high ROA) assets. On the other hand, low performers witness reduced ROA post divestitures around acquisitions. The net income and total assets of low performers falls post divestiture implying that they are not able to immediately deploy the sales proceeds into highly productive assets which means that such divestiture were likely undertaken to meet immediate survival needs. Further, these low performers were cautious in deploying the proceeds either due to being risk averse given prior performance or had to deploy resources to ensure survival of remaining portfolio.

Next the study attempts to decode the impact on net income into its key controllable components i.e., revenue, SG&A and R&D expense. The model on revenue (*Log_Revenue_DI*) has high R^2_{adj} (.935) and F test is statistically significant at 1% level (see **Error! Reference source not found.** for details). The findings of this model further corroborate the earlier conclusion that high performers quickly create assets, likely through acquisition, which leads to increased revenue one year post such divestitures (β of *Divestiture_HLPerformer_Int* is 0.1132; $p < .001$). The other two variables have coefficients as one would expect - all things equal, prior higher revenue leads to higher

revenue (β of *Log_Revenue_ID* is 0.9795; p : <.001), and divestitures lead to reduced revenue (β of *Acquisition_With_Or_Without_Divestiture* is -0.1301; p : <.001). Thus, for low performers, the revenue falls post divestitures around M&A likely because they do not deploy the sale proceeds into acquisitions. High performers, on the other hand, deploy the sale proceeds into assets that more than offsets the revenue loss due to divestitures.

The model on SG&A expense (*Log_SGA_DI*) also has high R^2_{adj} (.939) and F test is statistically significant at 1% level (see **Error! Reference source not found.** for details). The results are similar to the model on revenue with β coefficients of *Acquisition_With_Or_Without_Divestiture*, *Log_SGA_ID*, *Divestiture_HLPerformer_Int* being -0.0801 (p : <.05), 0.9918 (p : <.001), 0.0825 (p : <.001) respectively. It shows that, all things equal, divestitures around M&A leads to lower SG&A as part of the organization has been sold off. Also, ceteris paribus, higher prior SG&A lead to higher SG&A as the organization continues to grow. However, when high performers divest they likely acquire quickly post such divestitures as the interaction variable has a positive β coefficient which implies that it leads to higher SG&A expense, ceteris paribus, which is similar to the findings of Vidal & Mitchell (2017). Corollary to these findings is that, ceteris paribus, low performers reduce their SG&A expense post such divestitures around a focal M&A.

The model on R&D expenses (*Log_RD_DI*) also had high R^2_{adj} at .946, F test is statistically significant at 1% level (see **Error! Reference source not found.** for details) and β coefficients of *Acquisition_With_Or_Without_Divestiture*, *Log_RD_ID*, *Divestiture_HLPerformer_Int* are -0.022 (p : >0.1), 0.9893 (p : <.001), 0.0435 (p : >0.1) respectively (see **Error! Reference source not found.** for details). The variables for divestiture and interaction are not statistically significant. It shows that R&D expense is largely driven by organization's previous R&D expense. Combined with previous results it shows that high performers seem to quickly invest into new acquisitions which low performers are unable to. Neither low or high performers are able to meaningfully alter their R&D profile around such divestitures. It is also intuitive because R&D requires years of hard-work and if divestiture sales proceeds are to be quickly deployed, i.e., within the one-year time frame of this study, it can only be done via acquisitions. Further, many organizations may have an accounting policy to capitalize R&D initially and amortize it

later which further makes it difficult to alter R&D expense organically in a short time frame.

Overall, these findings are in line with the previous research. High performers improve further their performance by investing sales proceeds in highly productive assets. Low performers are unable to do so.

As an additional robustness check, these analyses were run on data subset A (i.e., removing divestitures undertaken pre focal M&A) and the results were similar.

6.4. Summary

To sum up, this study makes significant contributions to the extant literature on impact of divestitures on subsequent performance of the buyer of focal M&A. The prior research was very limited on this topic and had not explored the impact of such divestitures in developing economies like BRICS. This study shows that high and low performers have different impact of divestitures on subsequent performance. High performers increase their ROA by investing the sales proceeds of divestitures around M&A into highly productive assets which leads to increase in total assets and more than proportional increase in net income. The increase in net income is driven by increase in revenue and is not fully offset by the increase in SG&A. On the other hand, low performers are not able to deploy the sales proceeds within 1-1.5 years post such divestitures. It leads to fall in net income and total assets. Likely such divestitures around focal M&A for low performers is driven by a need to survive, and hence, they divest high performing units as the average profitability falls of remaining units. This is done perhaps to gather survival resources (e.g., cash) quickly, for example, in June 2025 Ardagh Group was considering divestiture of its Metal business (Ardagh Metal Packaging “AMP”) which is relatively better performing business unit of the group (Hazra, 2025).

Since this study has identified differences in outcomes for high and low performers, it contributes to the literature on performance feedback theories which suggest that high and low performers have different incentives to engage in risky moves such as M&A and divestitures. As the outcome of divestiture essentially increased the magnitude of previous performance, at least in the short term, the pressure to improve performance would continue. For low performers, while they may have gotten resources to survive, the pressure to improve

profitability (ROA) is increased. For high performers, the pressure to maintain competitive advantage further increases with continued above average performance.

This study also supports complementary Penrose effect (Penrose, 1959; Vidal & Mitchell, 2015) which suggests that organizations eliminate excesses to focus on areas of future growth. The findings of this study are consistent with it – high performers divested units and followed it with deployment of resources into highly productive assets. They eliminated assets with relatively lower performance, lower future potential and immediately fed investment into high potential, highly profitable assets. Low performers who were finding it difficult to survive freed up resources to overcome challenges. Table 6.2 below summarizes the findings across models.

Table 6.2 Summary of findings across regression models

#	Model	Dependent Variable	Independent Variables	Result of Analyses
3.1	ROA	<i>ROA_D1</i>	<i>Acquisition_With_Or_Without_Divestiture, ROA_1D, Acquisition_With_Or_Without_Divestiture*HL_Performer_Median</i>	ARS: .104*** Divestiture: -.068*** ROA_1D: .059*** Interaction: .045***
3.2	Net income	<i>Log_Net_Income_D1</i>	<i>Acquisition_With_Or_Without_Divestiture, Log_Net_Income_1D, Acquisition_With_Or_Without_Divestiture*HL_Performer_Median</i>	ARS: .825*** Divestiture: -.324*** Log_NI_1D: .834*** Interaction: .191***
3.3	Total assets	<i>Log_Total_Assets_D1</i>	<i>Acquisition_With_Or_Without_Divestiture, Log_Total_Assets_1D, Acquisition_With_Or_Without_Divestiture*HL_Performer_Median</i>	ARS: .977*** Divestiture: -.113*** Log_TA_1D: 1.007*** Interaction: .095***
3.4	Revenue	<i>Log_Revenue_D1</i>	<i>Acquisition_With_Or_Without_Divestiture, Log_Revenue_1D, Acquisition_With_Or_Without_Divestiture*HL_Performer_Median</i>	ARS: .935*** Divestiture: -.130*** Log_Revenue_1D: .980*** Interaction: .113**
3.5	SG&A	<i>Log_SGA_D1</i>	<i>Acquisition_With_Or_Without_Divestiture, Log_SGA_1D, Acquisition_With_Or_Without_Divestiture*HL_Performer_Median</i>	ARS: .939*** Divestiture: -.080** Log_SGA_1D: .992** Interaction: .083**
3.6	R&D	<i>Log_RD_D1</i>	<i>Acquisition_With_Or_Without_Divestiture, Log_RD_1D, Acquisition_With_Or_Without_Divestiture*HL_Performer_Median</i>	ARS: .946*** Divestiture: .022 Log_RD_1D: .989*** Interaction: .044

Notes:

- 1) Details captured for result of analyses are – adjusted R square (“ R^2_{adj} ”), p value of F statistic (Anova), which signifies overall statistical significance of model, shown as *, **, *** for 10%, 5%, 1% level of significance respectively next to R^2_{adj} , β coefficient for each independent variable and their significance level (p value) shown as *, **, *** for 10%, 5% and 1% significance level respectively.

Chapter 7

7. Impact of past learning through divestiture on future strategy

7.1. Introduction, research questions and hypotheses

This chapter addresses the fourth and final objective: what an organization carries forward from its divestiture experience, and how that experience shapes its subsequent restructuring behavior. It closes the sequence begun in Chapter 4.

The chapter provides what is arguably the sharpest available test of the two competing accounts of divestiture. If a post-acquisition divestiture is a failure, the experience should not systematically increase the organization's propensity to repeat it, and a large failure should impair subsequent restructuring capability. If it is portfolio management, experience should accumulate as capability and should be observable in subsequent behavior. The chapter therefore examines not only whether divestiture experience predicts future divestitures, but how it compares with acquisition experience as a source of learning, and whether major and minor divestitures teach differently.

The comparison with acquisition experience is the more novel of these. Divestitures are rarer than acquisitions, more varied in their execution, and expose the organization to the opposite side of the negotiating table. Each of these features has been argued in the learning literature to deepen learning relative to the incremental refinement that repeated acquisitions produce, but the proposition has rarely been tested directly.

This section, section 7.1 develops the hypotheses. Section 7.2 describes the sample and the logistic regression models. Section 7.3 reports results. Section 7.4 summarizes and Table 7.2 consolidates the findings.

Research questions:

1. What is the impact of organization's learning from past divestitures on its future strategy?
2. How does the learning from past divestitures vary from that of past acquisitions?

Objective: To analyze the impact of past learning through divestitures on future strategy.

Organizations learn from past M&A which has an impact future M&A outcomes (Muehlfeld, Sahib, & Witteloostuijn, 2012). Question now is - can future acquisition outcomes be influenced by similar, but not the same, activity? Theory on learning supports that similar events aid learning, and in fact, lead to better learning outcomes when compared to learning from the same type of experience which can be restrictive in learning (Haleblian & Finkelstein, 1999; Sitkin, 1992; Zahra & George, 2002). The same has been found true in M&A context also (Zollo & Reuer, 2010). Therefore, since divestitures are opposite or flipside of acquisitions (Villalonga & McGahan, 2005), they should facilitate M&A learning (Shimizu & Hitt, 2005).

Not just the flipside of acquisitions, divestitures are often also perceived as a proxy for M&A failures. It is well known that learning happens significantly through failures (Haunschild & Sullivan, 2002; Lant, Milliken, & Batra, 1992; Madsen & Desai, 2010; March J. , 1981; Sitkin, 1992).

Whether, flipside or failures, divestitures deserve in-depth analysis on their ability to influence future restructuring activities. There are several researchers, such as Brauer (2006), Doan et al. (2018) etc., who have found evidence to support the assertion that divestitures facilitate M&A learning and impact outcomes.

This study explored several factors that potentially contribute to the impact of prior divestiture on future restructuring activity.

1. *Learning from past acquisitions*

If divestitures are correction of earlier mistakes (Kaplan & Weisbach, 1992; Porter, 1987), past experience in terms of acquisitions (Barkema & Schijven, 2008a; Finkelstein & Halebian, 2002; Ingram & Baum, 1997; Porrini, 2004; Zollo & Singh, 2004) should have added to an organization's know-how which would arguably reduce mistakes, and thus, reduce the need for divestitures now (Amiri, King, & DeMarie, 2019; Markides C. , 1992). Therefore, it was hypothesized that:

Hypothesis # 4.1a: The likelihood of divestiture post M&A is negatively associated with past acquisition experience.

On the other hand, if acquisitions and divestitures are restructuring tools in the hands of management who evaluate the entire combination of business assets from a portfolio theory approach (Amiri S. , King, DeMarie, & Brown, 2021; Hoskisson & Turk, 1990; Wright, Kroll, Lado, & Ness, 2002; Xia & Li, 2013), it implies that more savvy and experienced buyers would be more likely to divest post an acquisition as they are more adept at deploying this value creation tool. Such a divestiture could have been part of the plan all along – acquire, integrate, assimilate know-how, extract synergies and divest slack resources. It is so because divestitures positively contribute to the overall returns of restructuring process (see e.g., findings in this study on CARs around such divestitures and Aktas et al. (2022)). Thus, the alternative hypothesis was:

Hypothesis # 4.1b: The likelihood of divestiture post M&A is positively associated with past acquisition experience.

The null hypothesis was:

Hypothesis # 4.1 (null): The likelihood of divestiture post M&A is not associated with past acquisition experience.

The independent variable here would be *Past_Acquisition_5_Log_Binned*.

2. *Learning from divestitures*

Changes in organizational knowledge owing to past experience is called organizational learning (Argote & Miron-Spektor, 2011). Changes in organizational performance is often taken as the proxy for organizational knowledge since the latter is considerably subjective and difficult to measure (Baum & Ingram, 1998; Madsen & Desai, 2010). For learning to be effective, two conditions should be met – 1) one should be able to extract knowledge from an experience; and 2) one should be able to modify existing knowledge base (Madsen & Desai, 2010).

What the buyer does pre-M&A goes a long way in defining the value it extracts from the deal and sellers are in a unique position to learn very closely from buyers because they have to work closely with them on every step – due-diligence (e.g., responding to all queries and data requests) (Galpin & Herndon, 2014; Sherman, 2011), negotiation (which takes into account valuation and synergy potential), drafting and agreeing key terms of the contract, drafting and adhering to checklist for separation and integration etc. (Miller, 2008; Sherman, 2011). It allows the seller to understand the processes and rationale of activities of buyers, and arguably, improve their own processes and understanding (Haunschild P. , 1994) for future M&A deals where they would be the buyers. In other words, sellers learn from the experience of buyers which is also known as vicarious learning (Bandura, 1977; Levitt & March, 1988). Here it is vicarious learning through participation than outside-in imitation, and therefore, better (Doan, Sahib, & Witteloostuijn, 2018) as the seller is observing directly and can evaluate good and bad from their own perspective (Hoover, Giambatista, & Belkin, 2012; Skinner, 1953). Sellers often go through the same process with multiple buyers (e.g., at least till negotiation phase), allowing them to cherry pick good practices and create their own processes and templates (Hoover, Giambatista, & Belkin, 2012; Kim & Miner, 2007). Further, the learning is not lost through business unit managers moving to the divested unit as many activities are undertaken solely or at least shadowed by employees retained by sellers e.g., legal, HR, finance etc. (Sherman, 2011). Sellers are well aware that business unit managers are to leave and plan ahead for it. Therefore, Doan et al. (2018) conclude that both conditions of learning are met in divestitures (extracting knowledge from experience and modifying existing knowledge).

In acquisition research, it is well established that prior acquisitions facilitate organizational learning in M&A context (Barkema & Schijven, 2008a; Chakrabarti & Mitchell, 2015; Muehlfeld, Sahib, & Witteloostuijn, 2012; Zollo M. , 2009). Doan et al. (2018) have found support to the argument that prior divestitures also facilitate learning and increase the likelihood of completion of future M&A deals. Further, if majority of divestitures in an M&A represent failure of a prior M&A and sellers learn from divestitures, prior divestitures should reduce future divestitures. Therefore, it was hypothesized that:

Hypothesis # 4.2a: Prior divestiture experience negatively impacts the likelihood of future divestiture post M&A.

While everything above with respect to divestiture leading to learning maybe true, if divestitures are not mistakes and instead a restructuring tool (portfolio theory) then impact on post-acquisition likelihood would be very different. Portfolio theory argument as described in the previous factor, would suggest that more experienced buyers would likely divest more post acquisitions, i.e., they would leverage this restructuring tool (divestitures) more since they are experienced and arguably better at it. Thus, it presented the following alternative hypothesis:

Hypothesis # 4.2b: Prior divestiture experience positively impacts the likelihood of future divestiture post M&A.

The null hypothesis was:

Hypothesis # 4.2 (null): Prior divestiture experience does not impact the likelihood of future divestiture post M&A.

The independent variable here would be *Past_Divestiture_5_Log*.

3. *Learning from divestitures vs. acquisitions*

It is clear that learning happens both from acquisitions and divestitures. Question arises whether past experiences around acquisition help more or divestiture. The literature is not conclusive. Similar to findings in orbital launch industry that one learns more from accidents than successes (Madsen & Desai, 2010), the learning from failures is considered to be significant (March J. G., 2006), vital (Lee, Edmondson, Thomke, & Worline, 2004) and more impactful than what one learns from successes (Haunschild & Sullivan, 2002; Sitkin, 1992). It is so because failures, especially in the context of M&A are big and loud, easier to identify reasons for (Levinthal & March, 1981) and forcing organizations to introspect and analyze (Baum & Dahlin, 2007; Chuang & Baum, 2003; Iyer & Miller, 2008; Pangarkar, 2009). Failures require fundamental, riskier changes and strategic shift (Lant, Milliken, & Batra, 1992) vs. incremental improvements (Lant, 1992; Madsen & Desai, 2010) in case of successes. In fact some may even find change pointless in case of a success (Lant, 1992; March & Shapira, 1992) – ‘why fix something that is not broken’ mentality. Researchers have found evidence supporting the argument that prior acquisition failures increase success of future acquisition (Muehlfeld, Sahib, & Witteloostuijn, 2012) and the learning is more when failures are more (Haleblian & Finkelstein, 1999). Since much research on divestitures post M&A considers it to be a signal of prior failures (Kaplan & Weisbach, 1992; Porter, 1987), such divestitures should contribute significantly to learning.

Even if divestitures are not considered failure, an argument is to be made that divestitures contribute more towards organizational learning. Acquisition learning is helpful as it helps codify knowledge, build on existing base, create specialization and has less distraction as experience and focal event are similar (Argote, 1999; Haleblian & Finkelstein, 1999; Schilling, Vidal, Ployhart, & Marangoni, 2003; Zahra & George, 2002), but at the same, is restrictive due to lack of variation (Sitkin, 1992) and building on existing routines (Doan, Sahib, & Witteloostuijn, 2018). On the other hand, learning from divestitures can force an organization to build new routines and processes. Schilling et al. (2003) support the argument that variation facilitates deeper knowledge. Graydon & Griffin (1996) and Schilling et al. (2003) support the assertion that learning from divestitures is more than learning from acquisitions as they claim that learning from experiences that are related to

focal event accelerates organizational learning through abstract principles developed as response to variation in the experience. Therefore, it was hypothesized that:

Hypothesis # 4.3: Impact of prior divestiture experience on likelihood of divestitures post M&A done in future is more than that of prior acquisition experience.

The null hypothesis was:

Hypothesis # 4.3 (null): Impact of prior divestiture experience on likelihood of divestitures post M&A done in future is not different to that of prior acquisition experience.

The independent variables here would be *Past_Acquisition_5_Log_Binned* and *Past_Divestiture_5_Log*.

4. Learning from major and minor divestitures (deal size of prior divestitures)

Not all failures are equal (Herriott, Levinthal, & March, 1985), and therefore, the response and learning from different types of failures (by size) might be different (Sitkin, 1992). A minor failure, being more acceptable, may provoke a positive response wherein an organization may introspect, amend its processes and fill gaps in its knowledgebase (Sitkin, 1992; Weick, 1984). In support of this, Hayward (2002) finds that minor M&A failures positively influence outcomes in future M&A. Therefore, it was hypothesized that:

Hypothesis # 4.4a (alternate): Prior minor divestiture experience contributes to learning and impacts the likelihood of future divestiture post M&A.

And the null hypothesis was:

Hypothesis # 4.4a (null): Prior minor divestiture experience does not contribute to learning and does not impact the likelihood of future divestiture post M&A.

A major failure, on the other hand, may cause so much stress, anxiety and psychological trauma (Astrachan, 2004; Dick, Ullrich, & Tissington, 2006; Seo & Hill, 2005; Teerikangas, 2012) that the individual, group or organization may be in denial i.e., attribute it to external factors (Kim & Miner, 2007), and thereby, escalate commitment to old processes (Staw & Ross, 1987; Staw, Sandelands, & Dutton, 1981) so much so that the management continues to acquire in future with same processes for self-vindication

(Hayward & Shimizu, 2006). Due to high stress, they may even find it difficult to function optimally (Brahma & Srivastava, 2007), or the failure is attributed to internal factors leading to internal conflicts which hampers future M&A performance (Dikova & Sahib, 2013; Weber & Camerer, 2003). It is obvious that learning in an organization warrants knowledge sharing (Agarwal, Anand, Bercovitz, & Croson, 2012; Barkema & Schijven, 2008b; Hayward, 2002; Zollo & Singh, 2004) and major M&A failures threaten jobs (Riad & Vaara, 2011) leading to restriction in knowledge sharing (Rafferty & Restubog, 2010) which further inhibits learning.

In other words, major M&A failures give rise to learning inhibitors, such as stress, restricted knowledge sharing and escalation of commitment, which has a negative impact on future performance with respect to M&A – threat rigidity framework (Sagan, 1993; Sitkin, 1992; Staw & Ross, 1987; Staw, Sandelands, & Dutton, 1981). Meschi & Métais (2015) find evidence to support their hypothesis that prior major acquisition failure positively impacts the probability of future acquisition failures. Thus, if divestitures are indication of failure, it was hypothesized that:

Hypothesis # 4.4b (null): Prior major divestiture experience does not contribute to learning, and therefore, does not impact the likelihood of future divestiture post M&A.

Hypothesis # 4.4b (alternate): Prior major divestiture experience contributes to learning and impacts the likelihood of future divestiture post M&A.

The independent variables here would be *Past_Minor_Divest_5_Log* and *Past_Major_Divest_5_Log*.

7.2. Methodology

7.2.1. Sample

Similar to the objective of predicting divestitures post M&A, analysis would be run on Subset A of data which ignores the pre-acquisition divestitures. In other words, acquisitions without divestitures would be included; for acquisitions with divestitures, only divestitures post-acquisition announcement - during the interim phase and 3-year post completion of focal M&A deal would be included. This is what is commonly studied in divestitures around M&A research – for example, Amiri et al. (2021), Bergh (1997) and Capron et al. (2001). Since the objective is to predict impact of past experience on likelihood of future divestitures around M&A, the study will be useful only once the deal has been announced or completed. The output of this model will only be helpful when it is run on data of an organization which is proposing to or has recently undertaken an M&A. It cannot be run on datasets of all companies as it is not predicting acquisitions, but only divestitures given an acquisition. Hence, this study will only use sample of observations where either no divestiture was undertaken, or a divestiture was conducted post M&A announcement date.

7.2.2. Main tests and variables

Dependent variable was *Acquisition_With_Or_Without_Divestiture* which was coded as one if there was no divestiture with acquisition, and two if the acquisition was accompanied with a divestiture (Bergh, 1997) and similar to Doan et al. (2018). This study used **logistic regression** (Doan, Sahib, & Witteloostuijn, 2018) as the dependent variable is a dichotomous variable.

Table 7.1 below summarizes the different models and *independent variables*.

Table 7.1 Summary of models and independent variables

#	Factor	Independent Variables
4.0	Control	N/A
4.1a,b	Learning from acquisitions	<i>Past_Acquisition_5_Log_Binned</i>
4.2a,b	Learning from divestitures	<i>Past_Divestiture_5_Log</i>
4.3	Learning from divestitures vs. acquisitions	<i>Past_Divestiture_5_Log</i> <i>Past_Acquisition_5_Log_Binned</i>
4.4a,b	Learning from major and minor divestitures	<i>Past_Minor_Divest_5_Log</i> <i>Past_Major_Divest_5_Log</i>
4.6	Combined model - all factors combined	All of the above

All the relevant **control variables** were included namely, *Capex_N*, *Cash_Holding_N_Binned*, *Equity_Issue_B*, *Debt_Issue_B*, *Dividend_Payer_B*, *RD_N*, *ROA*, *Size_Log*, *TobinsQ_Binned*, *Cross_Border_B*, *Country_FE*, *Relatedness_C*, *Industry_FE*, *Listed_Target_B*, *Year_FE*, *ROE*, *Acquisition_CAR*, *Real_GDP_Growth_Binned*, *Real_GDP_Per_Capita*, *Stock_Market_Development*, *Young_Organisation_B*, *Small_Organisation_B*, *Strong_Organisation_B*, *Buyer_Profitability_Change*, *Buyer_Leverage_Divestiture_N*, *Buyer_Leverage_N_Change_Binned*, *Levered_FCF_Divestiture_N*, *Levered_FCF_N_Change*, *Stock_Volatility_Divestiture*, *Stock_Volatility_Change_Binned*, *Stock_Performance_Divestiture*, *Stock_Performance_Change*, *High_Reg_Risk_Combined*.

7.2.3. Assumption testing

Since the technique (logistic regression) and dependent variable (*Acquisition_With_Or_Without_Divestiture*) are the same as first objective (Chapter 4), data readiness checks were performed together and discussed in detail in first objective. To summarize, all conditions required for using logistic regression were tested and ensured.

7.3. Results and discussion

7.3.1. Results of assumption testing

Since the technique (logistic regression) and dependent variable (*Acquisition_With_Or_Without_Divestiture*) are the same as first objective (Chapter 4), data readiness checks were performed together and discussed in detail in Chapter 4. To summarize, all conditions required for using logistic regression were met post removal of three high VIF variables and transforming six scale variables into categorical variables (suffixed with “_Binned”).

7.3.2. Main results and discussion

Error! Reference source not found. reports the Control Model which has an R^2_{adj} (Nagelkerke R square) of 0.331 and correctly classifies 82.0% of the data. The Omnibus Tests of Model Coefficients is significant implying overall significance of the model and p value for Hosmer-Lemeshow Test is insignificant implying the model fits the data well. The last model in **Error! Reference source not found.** combines the impact of all factors (Combined Model) and has an R^2_{adj} of 0.363 which is a marked improvement to the Control Model implying that selected independent variables are meaningfully contributing to the model and have considerable explanatory power. This model also has desired results Omnibus Tests of Model Coefficients and Hosmer-Lemeshow Test implying significance of variables and goodness of model fit. Individual factors have been discussed in detail below.

1. *Learning from acquisitions*

The coefficient for *Past_Acquisition_5_Log_Binned* is positive and statistically significant (β : 0.4991; p :<0.01) implying that more experienced buyers are more likely to divest post-acquisition. It finds support for portfolio theory while rejecting the simplistic view that such divestitures represent correction of prior mistakes. Prior acquisition experience is found to have a statistically significant positive impact on post-acquisition divestiture likelihood which supports hypothesis # 4.1b (see **Error! Reference source not found.** for details).

2. *Learning from divestitures*

In continuation to the findings above, the findings of this model (see **Error! Reference source not found.** for details) also support portfolio theory and reject correction of prior mistakes theory. It provides support to hypothesis # 4.2b that past divestiture has a positive impact on post-acquisition divestiture likelihood as the β coefficient of *Past_Divestiture_5_Log* is also positive and statistically significant (β : 2.1174; p :<0.01). Taken together, it is clear that acquisitions and divestitures are restructuring tools available to the management who evaluate overall portfolio. Post-acquisition divestitures are not mistakes and could very well have been part of the plan all along – to acquire, integrate, assimilate know-how, extract synergies and divest slack resources. These findings are in line with prior research that prior divestiture experience enables learning for the buyers.

3. *Learning from divestitures vs. acquisitions*

Similar to the findings of (Graydon & Griffin, 1996; Paas & Van Merriënboer, 1994; Schilling, Vidal, Ployhart, & Marangoni, 2003) this study finds support for hypothesis # 4.3 (see **Error! Reference source not found.** for details) that learning from divestitures is more impactful than the learning from acquisitions as the coefficient of β *Past_Divestiture_5_Log* (β : 2.015; p :<0.01) is much bigger than the coefficient of *Past_Acquisition_5_Log_Binned* (β : 0.410; p :<0.01). Similarly, the Wald statistic was 9.320 vs. 44.286 and Exp(B) was .664 vs. 7.500 for *Past_Acquisition_5_Log_Binned* and *Past_Divestiture_5_Log* respectively. It shows that while acquisition learning is important in codifying & improving routines and knowledge around acquisitions, it is only

incremental which builds on existing routines due to lack of variation (Sitkin, 1992), whereas variation in divestiture processes facilitates deeper learning (Doan, Sahib, & Witteloostuijn, 2018; Schilling, Vidal, Ployhart, & Marangoni, 2003). In other words, variation supports learning and does not harm it (Graydon & Griffin, 1996; Paas & Van Merriënboer, 1994; Schilling, Vidal, Ployhart, & Marangoni, 2003). Since divestitures are rarer compared to acquisitions (even in sample of this study), these findings are also in line with theory that learning from rare events is stronger (Lampel, Shamsie, & Shapira, 2009; Madsen & Desai, 2010). From the other side of the table, seller is not only able to observe the actions of buyer during the negotiation and integration phase but also evaluates the impact of those actions on the sell-side thereby, getting stronger insights and knowledgebase on how to handle acquisitions and divestitures (Doan, Sahib, & Witteloostuijn, 2018; Schilling, Vidal, Ployhart, & Marangoni, 2003). Irrespective of supporting theories it is safe to say that while both are useful, learning impact of past divestitures is more impactful than learning impact of past acquisitions.

4. Learning from major vs. minor divestitures (deal size of prior divestitures)

The findings (see **Error! Reference source not found.** for details) support hypothesis # 4.4a (alternate) as well as hypothesis #4.4b (alternate). Minor divestitures in the past contribute to the learning and increase the likelihood of future post-acquisition divestitures (β : 2.4116; p :<0.01) just as overall experience (acquisition and divestiture) had done. However, findings around past major divestitures are different to the assertion that divestitures are failure and therefore, major divestitures should block learning and lead to more failures in future. Past major divestitures lead to reduced likelihood of post-acquisition divestitures in future (β : -2.4288; p :<0.01). Like previous findings, this finding also rejects the correction of mistake theory and supports portfolio theory.

7.4. Summary

To sum up, findings of this study make an important contribution to the field of research on post M&A divestitures. It not only builds to the existing research on role of such divestitures on learning but also conclusively rejects the view that such divestitures represent failures and are correction of prior mistakes as per prior wisdom (Allen, Lummer, McConnell, & Reed, 1995; Berger & Ofek, 1995; Porter, 1987) or represent downsizing with a negative connotation (Decker-Lange & Mellewig, 2007). The study supports portfolio theory that divestitures, like acquisitions, are restructuring tools to improve performance, support growth (Brauer, 2006; Lee & Madhavan, 2010) and dispose of redundant resources (Moschieri & Mair, 2011).

It also finds support for vicarious learning theory that while learning from acquisitions is important learning from flipside is more impactful. Sellers learn a great deal from buyers being on the other side of the table. It supports variation in learning theory that variation is important to increase the impact of learning. Variation in learning greatly contributes to the process making the learning deeper which is typically incremental in case of acquisitions. Rarity of divestitures adds to the learning outcomes.

Buyers learn from both past minor and major divestitures. These do not represent failure.

Overall, there is strong evidence to reject correction of prior mistake theory and support portfolio theory similar to some of the contemporary research in this area—for example, Dranikoff et al. (2002), Shimizu & Hitt (2005) and Xia & Li (2013).

It is safe to say that managers learn from divestitures. Organizations which have undergone past acquisitions and divestitures are better at it in future. Market participants and other stakeholders including employees can use this study to evaluate and predict likely outcomes at the time of announcement of restructuring events. Board and executive management can also leverage this study to make smarter hiring decisions especially when corporate restructuring is imminent. Researchers would also be able to utilize this study as a basis for future research in the area which is relatively unexplored. Table 7.2 below summarizes the findings.

Table 7.2 Summary of findings across logistic regression models

#	Factor	Independent	Result of Analyses	Implications
4.0	Control	N/A	ARS: .331* % Correct: 82%* β: Multiple	N/A
4.1a,b	Learning from acquisitions	<i>Past_Acquisition_5_Log_Binned</i>	ARS: .337* % Correct: 82.3%* β: .499***	Support for hypothesis 4.1b that learning from past acquisition positively impacts post-M&A divestiture likelihood.
4.2a,b	Learning from divestitures	<i>Past_Divestiture_5_Log</i>	ARS: .352* % Correct: 82.8%* β: 2.117***	Support for hypothesis 4.2b that learning from past divestitures positively impacts post-M&A divestiture likelihood.
4.3	Learning from divestitures vs. acquisitions	<i>Past_Divestiture_5_Log</i> <i>Past_Acquisition_5_Log_Binned</i>	ARS: .356* % Correct: 83.2%* β: Acqui: .410***; Divest: 2.015***	Support for hypothesis 4.3 that learning from past divestitures is more impactful on post M&A divestiture likelihood than the learning from past acquisitions as the coefficient of divestiture experience is bigger than acquisition experience.
4.4a,b	Learning from major and minor divestitures	<i>Past_Minor_Divest_5_Log</i> <i>Past_Major_Divest_5_Log</i>	ARS: .354* % Correct: 82.8%* β: Minor: 2.412***; Major: 2.429***	Support for hypothesis # 4.4a (alternate) and hypothesis # 4.4b (alternate) i.e., both minor and major past divestitures contribute to learning and impact future divestiture likelihood.
4.6	All models	All of the above	ARS: .363* % Correct: 82.8% β: multiple	N/A

Notes: Details captured for Logistic regression are – adjusted (Nagelkerke) R square (“ARS”), Hosmer-Lemeshow Test for goodness of fit shown as * next to R2adj for models which are a good fit, percentage of observations correctly classified by the model (“% Correct”), Omnibus Tests of Model Coefficients shown as * next to % correct for significant models, β coefficient (“β”) and their significance level shown as *, **, *** for 10%, 5% and 1% significance level respectively.

Chapter 8

8. Conclusion, future scope and social impact

8.1. Summary of findings and conclusion

This study sets out to explain a corporate action, divestitures around M&A, which is increasingly common in BRICS and consequential to a wide variety of stakeholders, and yet largely unexplained. On a sample of 4,711 M&A transactions by publicly listed buyers in BRICS countries over a 21 year period from 2000 to 2020 of which 1,232 transactions were accompanied by a divestiture, four objectives were pursued. These findings are summarized below.

Reasons for divestitures: A clear profile has been established of BRICS buyers who divest post M&A – financially stronger, larger, mature players with better stock performance as well as more experienced players of M&A industry both in terms of past acquisitions and divestitures. This study has developed a robust predictive model which correctly classifies 83.2% of the cases – whether a divestiture will happen post M&A or not.

Financial constraints were found to be a strong predictor for divestiture post M&A. High leverage, low free cash flow and an obligation to pay dividends all raised the odds of divestiture. Two findings were against the developed market literature. This study found that in BRICS stock price volatility and elevated risk of regulatory action both reduced the risk divestitures. These reversals are consistent with lower liquidity in BRICS markets for corporate assets as a disposal in such turbulent circumstances with thin pool of buyers would risk transaction becoming a fire-sale resulting in deferment by managers. Cross border deals are less likely to be divested which is consistent with agency theory where managers try to drive their interests by increasing organizational complexity by increasing scope and scale of organizations. One area where correction of prior mistake theory survived the evidence of this study is here – poor acquisition announcement returns resulted in higher likelihood of subsequent divestiture.

Impact on shareholder's returns: This study finds strong evidence that divestitures, when used correctly, are a restructuring tool that improve performance and do not represent a failure. It has highlighted important similarities and differences between BRICS and western economies when it comes to research on divestitures around M&A. It has helped to reconcile and understand differing points of views in this area of research.

At an aggregate level, *Divestiture_CAR* 0.35% (positive and statistically significant). However, the *Acquisition_CAR* was lower for acquisitions with divestitures (0.52% vs. 1.15% for acquisitions without divestitures) which is consistent with the anticipation effect described by Aktas et al. (2022). It resulted in a *Total_CAR* of 0.88 for acquisitions with divestitures though it was statistically insignificant.

However, the aggregate findings do not do justice to the intricate country level findings. Russia and India behave consistently with developed market literature i.e., positive *Divestiture_CAR* (1.6% for both) and *Total_CAR* which is more than *Acquisition_CAR* of M&A without divestiture (Russia: 3.4% vs. -1.4%; India: 2.11% vs. 1.9%) – all these results were statistically significant. China was the only exception that had a negative *Divestiture_CAR* even though it was insignificant. Control model without China had a positive (0.54%) and statistically significant coefficient for *Divestiture_CAR* signifying that negative result was not for BRICS but just for China. In India, focus was rewarded with *Divestiture_CAR* of 2.1% for deals with one divestiture vs. 0.7% for multiple – *Total_CAR* was 2.6% and 0.8% respectively.

Another significant contribution of this study is reconciliation of the literature on financial constraints. Presence of financial constraints (e.g., low cash, high leverage) is rewarded at the time of divestiture around M&A because such divestitures provide much needed cash and signals reversal. However, if the financial constraints were worsening (e.g., falling free cash flow, rising leverage), the divestiture is punished because it is interpreted to be too little and too late. Prior divestiture experience was rewarded which was reasonable, however, prior acquisition experience did not add to the returns around acquisition signifying that market value direct experience more and also appreciated that the two restructuring events are materially different. Similarly, planned divestitures were well rewarded in comparison to the unplanned ones. Contrary to conventional literature, cookie-

jar problem (relative size) and correction of prior mistake (poor acquisition announcement returns) found no support in this analysis on divestiture announcement returns.

Impact on subsequent operational performance: Literature on impact of divestiture around M&A on subsequent profitability was very limited, and in this light, the findings of this study are even more significant. The study found that instead of improving or reducing the performance, divestitures around M&A amplified the performance that preceded them. Given that assets are disposed, naturally divestitures resulted in lower net income, lower revenue and lower total assets. However, for above-median performance, called as high performers, the interaction between divestiture and these variables largely reversed the trend. The study found that when high performers divested around an M&A, it resulted in an increase in ROA by 4.5%.

High performers disposed lower return assets and quickly redeployed the funds into productive assets ones resulting in growing asset base, revenue growth which was higher than the growth in SG&A resulting in an increase in net income. Low performers were unable to redeploy the proceeds in the observed period as they had sold for immediate survival and it resulted in contracted asset base and net income. Given the one year observation horizon, neither group materially altered their R&D profile which demonstrated that any meaningful change in performance was due to M&A instead of internal development.

Impact on strategy: This study found that while both prior acquisition experience and prior divestiture experience were valuable and resulted in higher likelihood of future post-acquisition divestiture, the divestiture experience did so far more strongly. The coefficient for divestiture experience was 2.015 versus 0.410 for acquisition experience. Similarly, the Wald statistics were 44.3 and 9.3 respectively. Experience of past major divestiture reduced the likelihood of future divestiture around acquisition whereas experience of past minor divestitures increased it.

The findings reject the correction of prior mistake theory. If the divestitures were a failure, experience of them would not have increased the likelihood of those in future. Further, acquisition experience which would be a proxy of success in this case, would not have pointed in the same direction.

This study also establishes that the experience of divestiture is more valuable than acquisitions as divestitures are more rare, provide variety and the seller benefits from learning from multiple buyers (for example, on how to value businesses better) as well as being on the other side of transaction (for example, learning what to do and what to avoid while integrating).

Integrated conclusion: The four objectives provide a comprehensive framework to understand a single event in BRICS context – divestitures around M&A. Large, experienced and financially constrained buyers divest. The market prices these events based on whether the event relieves constraints or confirms deterioration, and whether it was planned or not. Operating performance follows buyer's pre-existing trajectory as high performers use proceeds for growth by redeploying it into productive assets and low performers use it survival. The experience is retained and shapes the strategy including next restructuring decision.

The study found evidence for portfolio management theory instead of correction of prior mistake. Divestitures are better described as a complementary tool to M&A instead of reversal of something that went wrong. The correction of prior mistake theory only found partial support, that is, poor acquisition announcement returns did increase the likelihood of subsequent divestiture. However, on all other counts, it was rejected. A poor acquisition CAR had no impact on divestiture announcement returns. Prior divestiture experience was rewarded instead of being penalized.

The study also found support for agency theory whereby managers were incentivized to retain complexity gained by cross-border deals instead of divesting it. Another theory which is supported by this study is vicarious learning theory that while learning from acquisition is important, variation in experience, as provided by divestitures, also contributes to learning outcomes. Further, this study provides support to complementary Penrose effect (Penrose, 1959; Vidal & Mitchell, 2015) which suggests that organizations eliminate excesses to focus on areas of future growth. However, the pressure to improve performance continues for both high and low performers.

8.2. Social impact and implications

Overall, this study has formulated a model to predict whether an acquisition would be followed by a divestiture or not. The model is more than 80% correct in its classifications. Further, it has also created a framework to calculate announcements returns and impact on future strategy and profitability. Taken together, it is a valuable tool for market participants to predict outcomes and impact on short-term and long-term performance. It is equally valuable for managers to predict short-term and long-term implications of their decisions. For researchers, it gives a clear framework and comprehensive model to understand divestitures around acquisitions in the context of BRICS countries. Very importantly, this study helps understand apparent peculiarities in market reaction to divestitures for example reason for different reaction to presence of financial constraints versus worsening financial constraints. Similarly, the difference in market reaction based on prior absolute stock performance (mean performance and volatility) versus change in performance building up to divestiture announcement.

Contributions: The study has made important contributions as summarized below.

To theory: The study adjudicates between portfolio management theory and correction of prior mistake theory across four constructs of divestitures around M&A by using the same sample and finds in the favor of former. It holds the portfolio management theory and rejects the correction of prior mistake theory. This study also reconciles the extant literature on financial constraints by differentiating between level of financial constraints versus the direction of travel.

To literature: This study provides the first such framework to understand divestitures around M&A in BRICS markets. It provides specific areas of divergence between developed markets and BRICS such as China markets reaction on such divestitures, impact of volatility and impact of risk of regulatory risk.

The study also helps understand the impact of such divestitures on subsequent profitability which is a topic that remains under-explored even in developed markets. This study goes further in decomposing the accounting performance into its component parts for a more comprehensive understanding.

To practice: The predictive model along can be applied ex-ante by managers, shareholders and analysts to estimate the likelihood of divestiture around an acquisition. The findings of this study are also useful in understanding the likely impact on short term returns (announcement returns) and long term performance (operating profitability) of such divestitures.

Implications: The implications of this study are manifold and are summarized below.

Implications for the field of research: This study furthered the research into divestitures around acquisitions filling key gaps in current research. This study helped in understanding the dynamics of such divestitures in the context of BRICS countries had not been studied so far and the study highlighted areas of similarity and key differences when compared to global or developed countries-based work. Not only that, but this study has also furthered the understanding on what is contributing to such divestitures and what is the impact on shareholder's wealth in short term (cumulative abnormal returns around announcement) and long term (profitability). Impact of divestitures around M&A on profitability was an area that was relatively understudied even on a global scale. It has also contributed to the area of research focusing on implications of such a divestiture on organization's overall strategy.

Implications for managers: For managers, this study clearly establishes that planned divestitures are rewarded and unplanned ones are not. Factors resulting in unplanned divestitures are rising leverage and deteriorating free cash flows. The predictive model enables managers to predict, at the time of acquisition, the likelihood of the deal resulting in a divestiture. The study also cautions the managers that BRICS markets are thin and it may be better to defer the divestiture in cases of stock market volatility or risk of regulatory action. However, deferral, specially if it prolongs low performance, will have a cost as evidenced in chapter 6.

For shareholder's and analysts: This study establishes that all divestitures around M&A cannot be priced uniformly. Prior performance, financial constraints, trajectory of financial constraints and prior divestiture experience all need to be factored in. The predictive model is also useful for ex-ante analysis of likelihood of a divestiture post M&A.

For policymakers: BRICS M&A markets have thin liquidity, and thus, regulatory action against anti-trust concerns will often need to be different than that of developed markets. The developed market playbook cannot be duplicated blindly in BRICS countries.

For employees and other stakeholders: M&A and divestitures around M&A are consequential for employment and this study establishes that such divestitures can be predictable. Further, the impact of such divestitures on employment is not the same. High performers expand and low performers contract gives a basis to employees to evaluate such announcements.

8.3. Limitations and future scope

Limitations: Like any research, there are certain limitations of this study. First, the sample in this study was restricted to publicly listed buyers. The excluded population was likely systematically different from the included one due to being smaller, more financially constrained and less liquid. Second, the study relied on S&P Capital IQ for deal identification and there is a possibility that some deals were left out. Third, country level differences existed in sample size – China had 2,682 deals out of 4,711 whereas Brazil and South Africa together consisted of 383 deals which rendered country level comparisons infeasible for Brazil and South Africa.

Fourth, the independent variables were focused on the buyer and several target variables were not considered e.g., target's profitability which would likely impact the findings. Fifth, divestitures around M&A are treated as largely a homogeneous set in this study. For example, partial and full divestiture are clubbed and so are voluntary and regulator mandated. Similarly, disposal of buyer's assets and sellers assets are treated equally. There is reason to believe that some of these may behave differently.

Sixth, event study inherently assumes certain level of market efficiency and trading liquidity. In some markets it may not exist enough which might have impacted the results of announcement returns analysis.

Ninth, in terms of impact of divestiture on subsequent performance the time period of study was limited to one year post divestiture, and thus, might have just tested the speed instead of inherent decision. Tenth, the findings are specific to BRICS from 2000 to 2020 and

cannot directly be interpreted to be applicable for all emerging markets and in materially differently regulatory environment.

Future scope: Several limitations can provide corresponding scope that can be explored in future:

1. Sample can be extended to private buyers where impact of financial constraints can be further tested.
2. A dedicated study on these individual markets would bring out more nuances e.g., Chinese market study could focus on impact of state ownership, impact of investor composition, listing venue, and so on.
3. Target side variables can be incorporated into the study.
4. Divestitures can be segregated into sub-types e.g., partial vs. full, buyer's assets vs. target's assets, voluntary vs. regulator imposed, and so on.
5. Extending post divestiture observation period to three to five years for impact on future strategy would help understand if the low performers eventually deployed the proceeds into productive assets.
6. Additional interactions can be explored e.g., interaction between stock performance and cross-border deal status on divestiture around M&A
7. This study can be replicated in other emerging markets such as new BRICS countries, ASEAN, Latin America beyond Brazil, and so on.
8. The study can be extended by adding qualitative analysis e.g., management interviews to test planned vs. unplanned dynamics

