

**UNIVERSIDADE FEDERAL DE MINAS GERAIS**  
**FACULDADE DE CIÊNCIAS ECONÔMICAS**  
**CENTRO DE PÓS-GRADUAÇÃO E PESQUISAS EM CONTROLADORIA E**  
**CONTABILIDADE**

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**Institutional Change and Mergers and Acquisitions in Emerging Economies**

Belo Horizonte

2023

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**Institutional Change and Mergers and Acquisitions in Emerging Economies**

Thesis submitted to the Center for Graduate Studies and Research in Controllershship and Accounting of the Federal University of Minas Gerais in partial fulfilment of the PhD degree in Controllershship and Accounting.

Research Line: Controllershship and Finance.

Advisor: Prof. Dr. Poueri do Carmo Mário.

Belo Horizonte

2023

Ficha Catalográfica

B333i  
2023

Batista, Alexandre Teixeira Norberto.  
Institutional Change and Mergers and Acquisitions in  
Emerging Economies [manuscrito] / Alexandre Teixeira  
Norberto Batista – 2023.  
1 v.: il.

Orientador: Poueri do Carmo Mário.  
Tese (doutorado) – Universidade Federal de Minas Gerais,  
Centro de Pós-Graduação e Pesquisas em Controladoria e  
Contabilidade.  
Inclui bibliografia.

1. Comportamento organizacional – Teses. 2. Empresas -  
Fusão e incorporação - Teses. 3. Controladoria – Teses. 4.  
Contabilidade – Teses. I. Mário, Poueri do Carmo. II.  
Universidade Federal de Minas Gerais. Centro de Pós-  
Graduação e Pesquisas em Controladoria e Contabilidade. III.  
Título.

CDD: 658.314



UNIVERSIDADE FEDERAL DE MINAS GERAIS  
FACULDADE DE CIÊNCIAS ECONÔMICAS  
PROGRAMA DE PÓS-GRADUAÇÃO EM CONTROLADORIA E CONTABILIDADE

## **FOLHA DE APROVAÇÃO**

**Institutional Change and Mergers and Acquisitions In Emerging Economies**

**ALEXANDRE TEIXEIRA NORBERTO BATISTA**

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Belo Horizonte, 6 de dezembro de 2023.



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## **ACKNOWLEDGEMENTS**

I would like to express my gratitude to everyone who made this work possible. I thank the Federal University of Minas Gerais, as a public and free institution, for being part of this academic community and allowing my education. My thanks also go to CEPCON/UFMG and the program's professors for their excellence and knowledge sharing. I'm thankful to my colleagues who shared with me the aspirations of postgraduate studies. I thank Prof. Pouri do Carmo Mário, for his partnership and trust in my work. Additionally, I want to thank the professors who served on the evaluation committee: Prof. Manuel Portugal Ferreira, Prof. Alexandre Aronne, Prof. Marcos Antônio de Camargos and Prof. Wagner Moura Lamounier, for their willingness and valuable contributions. I'm thankful to the Fundação Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – CAPES, for the financial support that made my doctoral studies possible. Special thanks to my family, my parents Gil and Marília, and my wife Larissa, for her patience and unconditional support.

## ABSTRACT

Based on the Theory of New Institutional Economics, we have investigated how changes in pro-market institutions in emerging economies influence M&A transactions. Implicit theoretical assumptions and some previous studies that found institutional changes associated with pro-market reforms in emerging economies influence firms' strategic responses led us to propose the following thesis: in emerging economies, M&A transactions by domestic acquiring firms are positively influenced by pro-market institutional changes. The findings regarding this relationship were unfolded in three studies. The aim in the first study was to seek theoretical and empirical support for establishing a relationship between institutional change and mergers and acquisitions in emerging economies. We conducted a systematic literature review which provided evidence that changes in pro-market institutions involving reforms, deregulation, and liberalization were followed by significant effects on M&A activity. We used an AI-based document reader with a chatbot to analyze the full text of selected papers and assist in defining papers eligible for descriptive synthesis. That allowed us to propose empirical tests of such a relationship. In the second study, we conducted an analysis of how pro-market reforms in the home country affect the initiative for mergers and acquisitions by acquiring firms in emerging markets. To estimate the effects of reforms, we used binary response regression models (Logit) with a sample of 76,654 observations of firms per year, from 6,117 publicly traded firms in nine countries, covering the period from 2002 to 2021. We documented an increase in the propensity for M&A after a country implements favorable pro-market institutional reforms. The results showed that acquiring firms in emerging markets increased their probability of acquisition by 1.69% and 6.32% in response to pro-market reforms, depending on the reform indicator used. In the third paper, we used Survival Analysis to examine the effects of pro-market reforms on the duration of M&A processes in the pre-acquisition stage, undertaken by acquiring firms listed in emerging economies. We also proposed that duration and abandonment of deals are integrated aspects since, at a certain point, firms may become prone not to close the deal. Our results showed that pro-market reforms have a positive effect on the hazard function of completing an acquisition and decrease the average duration of completed deals. Furthermore, we have found a negative duration dependence, as the longer the deal remains pending, the lower the chances of completing it for each additional unit of time. To validate our hypotheses, we analyzed firm-level data on M&A transactions in 9 emerging economies over a 20-year period. Our combined studies bring important implications for both theory and practice. In general, we contribute to bridging the gap between Institutional Theory and the research stream investigating the causes of variation in M&A activity within a country. We help elucidate the long-term benefits of pro-market institutional changes in emerging economies. We offer a more detailed analysis of the duration of M&A processes and their determinants. Finally, we contribute to the literature that enhances the understanding of the effects of institutional factors on firms' individual behavior.

**Keywords:** Takeovers, Emerging Markets, Pro-market reforms, Economic Freedom Index, Survival Analysis.

## RESUMO

Com base na Teoria da Nova Economia Institucional, investigamos como mudanças institucionais pró-mercado em economias emergentes influenciam as transações de M&A. Premissas teóricas implícitas e alguns estudos anteriores que encontraram que mudanças institucionais associadas a reformas pró-mercado em economias emergentes influenciam respostas estratégicas das firmas nos levaram a defender a seguinte tese: em economias emergentes, as transações de M&A de firmas adquirentes domésticas são influenciadas positivamente por mudanças institucionais pró-mercado. As conclusões sobre esse relacionamento foram desdobradas em três artigos. No primeiro artigo, o objetivo foi buscar sustentações teóricas e empíricas que permitam estabelecer um relacionamento entre mudança institucional e fusões e aquisições em economias emergentes. Desenvolvemos uma Revisão Sistemática da Literatura que apresentou evidências de que mudanças nas instituições pró-mercado envolvendo reformas, desregulamentação e liberalização foram acompanhadas de efeitos significativos na atividade de M&A. Utilizamos um leitor de documentos com chatbot baseado em IA para fazer a análise do texto completo de artigos selecionados e auxiliar na definição dos artigos qualificados para a síntese descritiva. Isso permitiu direcionar uma proposta de investigação dessa relação por meio de testes empíricos. No segundo artigo, realizamos uma análise sobre como as reformas pró-mercado do país de origem afetam a propensão para fusões e aquisições de firmas adquirentes em mercados emergentes. Para estimar os efeitos das reformas, utilizamos modelos de regressão de resposta binária (Logit) com uma amostra de 76.654 observações de firmas por ano, de 6.117 firmas de capital aberto de nove países, no período de 2002 a 2021. Documentamos um aumento na propensão para M&A depois que um país implementa reformas favoráveis nas instituições pró-mercado. Os resultados mostraram que as firmas adquirentes em mercados emergentes aumentaram sua probabilidade de aquisição em 1,69% e 6,32% em resposta às reformas pró-mercado, a depender do indicador de reformas utilizado. No terceiro artigo, utilizamos a Análise de Sobrevivência para verificar os efeitos de reformas pró-mercado na duração dos processos de fusões e aquisições na fase de pré-aquisição, realizados por empresas adquirentes listadas em economias emergentes. Também propomos que a duração e o abandono dos acordos são aspectos integrados, uma vez que, a partir de certo ponto, as empresas podem se tornar propensas a não os concluir. Nossos resultados mostram que as reformas pró-mercado têm efeito positivo na função de risco de concluir uma aquisição e diminuem a duração média dos acordos concluídos. Além disso, verificamos que há uma dependência de duração negativa, pois quanto mais tempo o acordo permanece pendente, menores são as chances de concluí-lo para cada unidade de tempo adicional. Para validar nossas hipóteses, analisamos dados em nível das firmas de transações de M&A em 9 economias emergentes ao longo de 20 anos. Nossos estudos combinados trazem importantes implicações para a teoria e prática. De forma geral, possibilitamos a aproximação da Teoria Institucional da corrente de pesquisa que investiga as causas de variação na atividade de M&A em um país. Auxiliamos a elucidar os benefícios de longo prazo de mudanças institucionais pró-mercado em economias emergentes. Oferecemos uma análise mais detalhada da duração dos processos de M&A e dos seus determinantes. Finalmente, contribuímos com a literatura que promove o entendimento de fatores institucionais no comportamento individual das firmas.

**Palavras-chave:** *Takeovers*, Mercados Emergentes, Índice de Liberdade Econômica, Custos de Transação, Análise de Sobrevivência.

## LIST OF ABBREVIATIONS

AI	Artificial Intelligence
BANKRUPTCY_D	Bankruptcy Dummy
BRIC	Brazil, Russia, India and China
BRICS	Brazil, Russia, India, China and South Africa
CARs	Cumulative Abnormal Returns
CASHONLY_D	Cash payment Dummy
CBMA_D	Cross-border deal Dummy
CEO	Chief Executive Officer
CHALLENGE_D	Challenge Dummy
CUSFTA	Canada–United States Free Trade Agreement
DIVERS_D	Diversification Dummy
EFI	Economic Freedom Index (The Heritage Foundation)
EFW	Economic Freedom of the World Index (Fraser Institute)
EPL	Employment Protection Legislation Index
ETCR	Index of Regulation in Energy, Transport and Communications
FDI	Foregin Direct Investment
GDP	Gross Domestic Product
HR	Hazard Ratios
IMD	Institute for Management Development
IMF	International Monetary Fund
IPO	Initial Public Offering
IV	Instrumental Variables
JCF	Journal of Corporate Finance
JFE	Journal of Financial Economics
JIBS	Journal of International Business Studies
JIMF	Journal of International Money and Finance
KM	Kaplan-Meier
M&A	Mergers and Acquisitions
MA_D	Acquisition Dummy
MERGER_D	Merger Dummy
MKTCAP	Country total market capitalization
ML	Maximum Likelihood
MRETURN	Market Return
MTB	Market-to-Book
NIE	New Institutional Economics
PBFJ	Pacific-Basin Finance Journal
PH	Proportional Hazard Model
PRIV_D	Privatization Dummy
REF	Pro-market reforms indicator
REF_EFI	Reforms indicator built with EFI
REF_EFW	Reforms indicator built with EFW
REG_D	Regulatory agency Dummy

REV_EFI	Reversals indicator built with EFI
REV_EFW	Reversals indicator built with EFW
SD	Science Direct
SDC	Securities Data Company
SLR	Sistematic Literature Review
SOX	Sarbanes-Oxley Act
TRBC	The Refinitiv Business Classifications
USA	United States of America
WB	World Bank
WEF	The World Economic Forum
WGI	World Wide Governance Indicators
WoS	Web of Science
WTO	World Trade Organization

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## CHAPTER 1

### **Institutional Change and Mergers and Acquisitions in Emerging Economies**

#### **1 Introduction**

In this study, we have analyzed mergers and acquisitions (M&A) conducted by acquiring firms in emerging economies from the perspective of New Institutional Economics (NIE). In general, this theoretical framework is particularly interested in how transaction costs are determined and how they affect market functioning (Coase, 1937; North, 1990; O. E. Williamson, 1985). The existence of firms, contractual nexus, and national institutions serve as a means to constrain such costs and enable organizations to operate more efficiently. In the case of emerging economies, which are inherently characterized by high costs of that nature (Khanna & Palepu, 2010), their evolution and performance over time, are closely linked to how institutions change. Therefore, we argue that the underdeveloped institutional environment in emerging economies contributes to market failures and that improvements in the quality of formal institutions implemented by governments have implications for M&A decisions. We use this initial chapter to introduce the constructs and rationale that underlie our central research thesis.

Institutions are continually evolving to support and make economic transactions more efficient. They encompass norms, rules, and conduct patterns that prescribe human behavior and, in doing so, they help reducing uncertainty in interactions among various forms of organizations. From the perspective of NIE (North, 1990; O. E. Williamson, 1985), institutions are necessary to constrain and guide human behavior, which, in many cases, hinders more rational decision-making due to the presence of opportunistic traits and bounded rationality. They, therefore, assist in ensuring that transactions are conducted in the best interests of all parties involved.

Thus, institutions shape economic activity when they move towards improving their quality. On a macro level, these changes can lead to economic development (Dutt, 2011; North, 1990). At firm-level, they can create incentives for managers to generate wealth by removing trade barriers, facilitating access to financial and non-financial resources, information, and technologies that can be used by companies to expand their businesses at a lower cost. Therefore, a firm's performance and other manifestations of its success such as growth, depend not only on internal capabilities and competitive structure of industries but also on the broader institutional context in which firms are embedded and the changes in norms and rules that affect them as players (Peng, 2003; Peng et al., 2009; Peng & Heath, 1996).

Institutions are identified in multiple dimensions (Kirti & Kumar, 2021; Oliver, 1991; Scott, 1995). Nevertheless, our primary focus lies on the market-oriented institutions, which, by reducing uncertainty in human interactions, contribute to lowering transaction costs (North, 1990). They are often referred to in the literature as pro-market institutions and pro-market reforms when they change favorably, granting more autonomy to markets for resource allocation through economic liberalization and deregulation (Cuervo-Cazurra et al., 2019). The clear definition of the institutional dimension under analysis is essential because, according to Campbell (2004), it needs to be relevant to the investigated phenomenon of interest and facilitate the definition of measures that can empirically track the changes.

According to North (1990), the Nobel laureate in Economics in 1993, the interaction between institutions and companies "shapes the potential wealth-maximizing opportunities of entrepreneurs" (North, 1990, p. 73), and changes in the rules of the game "provide organizational entrepreneurs with new avenues to profitable exploitation" (North, 1990, p. 88). Some studies have relied on these theoretical predictions to investigate the effects of institutional change on firms' individual behavior and have thus developed a "macro-micro bridge" (Banalieva et al., 2018), which connects country-level contingencies to firms' strategic responses. Some connections have been established, for example, with the decision to outsource activities (Mukherjee et al., 2023), organic growth through new projects (Singh et al., 2018), formal and informal entrepreneurship (Dau & Cuervo-Cazurra, 2014), and, above all, with firm performance (Banalieva et al., 2018; Chacar et al., 2010; Chari & Banalieva, 2015; Cuervo-Cazurra & Dau, 2009; Park et al., 2006), with the latter being a passive response to pro-market institutional changes.

These studies, predominantly belonging to the fields of strategic management and international business, have established a tradition of institutional analysis strongly rooted in NIE and focused on emerging economies, building on insights provided by Hoskisson et al. (2000) in the special research forum on emerging economies from the Academy of Management. This stream of research engages in an important discussion regarding the potential benefits brought about by pro-market institutional changes within firms (Chari & Banalieva, 2015; Cuervo-Cazurra & Dau, 2009) and encourages the exploration of new relationships. However, despite the direct call by Hoskisson et al. (2000, p. 253) to understand "how firms develop growth-oriented responses from an active strategic choice perspective" and "from the institutional economics perspective, how firms restructure themselves in response to institutional change," the investigation into how internal institutional shocks can influence M&A has not yet been established.

Regarding mergers and acquisitions, a significant form of investment and "inorganic" growth of firms (Reddy, 2014), it is well-known that macro-level contingencies are related to the volume and other outcomes of such activities, which seem to have greater prominence in certain periods (Adra et al., 2020; Andrade et al., 2001; Bonaime et al., 2018; Erel et al., 2021; Harford, 2005; Mitchell & Mulherin, 1996; Rhodes-Kropf & Viswanathan, 2004). For example, Harford (2005, p. 530) provides an explanation for the surge in M&A, stating that "merger waves require both an economic motivation for transactions and relatively low transaction costs to generate a large volume of transactions." The arguments Harford (2005) and other research that place regulatory shocks and deregulation as dominant causes of M&A (Andrade et al., 2001) align with the proposition that institutional change creates opportunities for profitable exploitation by reducing transaction costs and, therefore, are determinants of firm success (North, 1990).

In early research, Jensen and Ruback (1983) gathered evidence that the increase in transaction costs due to regulatory impositions reduced the profitability of takeovers. Regarding the flow of these activities, they argued that "by raising transaction costs and imposing restrictions on takeovers, regulations could simply truncate the distribution of takeovers that would actually occur" (Jensen & Ruback, 1983, p. 29). It suggests that, in determining transaction costs, institutional changes also play a role in shaping the flow of M&A activities in a country.

Some reviews of the extant literature on M&A have noticed a remarkable absence of Institutional Theory in this research stream (Ferreira et al., 2014; Hossain, 2021). Furthermore, the field of Finance, which accounts for a significant portion of the M&A scientific research (Hossain, 2021), often tends to pay less attention to the role of institutions in financial decisions compared to other business disciplines (Lawrence et al., 2021). Additionally, the concentration of M&A studies in developed countries, where institutions are more established and sophisticated (Ferreira et al., 2014), might explain the limited interest in Institutional Theory and its analytical branches, which are typically more applicable in emerging economies (Hoskisson et al., 2000).

Considering the identified gaps, we understand it is relevant and about time to investigate, from the perspective of New Institutional Economics, the decision to expand through M&A and whether the role of pro-market institutional changes channeled by reforms is significant in determining these activities in emerging economies. In this regard, our guiding question is: **How do pro-market institutional changes in emerging economies influence M&A transactions?**

Emerging markets saw their competitive environment transformed by pro-market reforms in the mid-1990s (Cuervo-Cazurra & Dau, 2009), with significant prominence in Latin American countries aligning with the prescriptions elucidated by the Washington Consensus (J. Williamson, 1990). The reforms involved macroeconomic prudence, trade liberalization, capital market opening, privatizations, and financing programs sponsored by the International Monetary Fund (IMF) and the World Bank (Goldfajn et al., 2021). Despite criticisms of this reform model for not always leading to the desired outcomes (Rodrik, 2006), it was observed that after its implementation in the 1990s, Latin American countries became "significantly more stable, with less frequent instances of balance-of-payments crises, high or hyperinflation, and unsustainable debt dynamics" (Goldfajn et al., 2021, p. 127).

This process of economic transformation also attracted new investments and triggered waves of corporate restructuring in these countries, facilitated and fostered by changes in their institutional context (De Paula et al., 2002). The deregulation movements in the 1990s led to an increase in M&A flows in terms of size and volume (Ekelund et al., 2001). In Brazil, for instance, the first wave of M&A coincided with the liberalization of the economy starting in 1994, associated with deregulation of local markets, favoring globalization; privatization programs that created opportunities for inflows of foreign capital, involving operations primarily in energy, telecommunications, and banking sectors, often characterized by heavy regulation; and intense international competition combined with technological changes, which forced a redistribution of assets among domestic companies through M&A (Wood Jr et al., 2004).

In the early 1990s in the Chinese market, property rights were uncertain. However, in the mid-1990s, there was a wave of M&A driven by a market reform that allowed free flow of property rights and corporate restructuring. Subsequently, several regulatory factors triggered subsequent waves, such as their transition to a market economy (1998-2002); entry into the World Trade Organization (WTO) and new pro-M&A laws and regulations (2003-2005); economic development associated with capital market liberalization reforms (2005-2008); and financial liberalization (2015-2018) (Junzhi et al., 2020).

India also witnessed a "boom" in its M&A activity from the 1990s, a period marked by liberal economic reforms (Nayyar, 2007). The concurrent reforms in the country involved deregulation of trade practices, with the removal of government prior approval provisions for M&A; removal of market access restrictions; and other changes related to foreign direct investment, government monopolies, and property (Agarwal & Bhattacharjea, 2006).

Similar to China and India, in the 1990s, Russia was undergoing the process of economic liberalization and transformation toward a market economy. From this, several waves of M&A could be identified, with a strong focus on the redistribution of assets from domestic industries and privatizations, although to a lesser extent compared to other countries, despite its vast territory and availability of natural resources (Junzhi et al., 2020).

Therefore, based on the predictions of New Institutional Economics on how institutional change should trigger wealth maximization opportunities by determining transaction costs in an economy (North, 1990); on empirical evidence of the effects of these changes on firms' individual behavior, which can react actively through strategic responses (Cuervo-Cazurra et al., 2019); on the research opportunity for institutional analysis in emerging economies (Hoskisson et al., 2000; Khanna & Palepu, 2010; Peng, 2003); on the perspective that for M&A to take place successfully, transaction costs must be relatively low (Harford, 2005; Jensen & Ruback, 1983; Peng & Heath, 1996); and on evidence that M&A respond to regulatory shocks (Andrade et al., 2001; Harford, 2005) and followed the liberalization movements in the 1990s (De Paula et al., 2002); we advocate the following Thesis: **In emerging economies, M&A transactions by domestic acquiring firms are positively influenced by pro-market institutional changes.**

This Thesis is further developed in three subsequent studies where we build and combine evidence to help answering our research question. At the end of this document, in Chapter 5, we present a general conclusion that summarizes the thesis and integrates the key implications of the outlined studies.

## **1.1 Global Objectives and Schematic Model of the Thesis**

Considering the rationale for constructing our research question, our global objective is **to analyze the effects of pro-market institutional changes in emerging economies on M&A transactions by domestic acquiring firms.**

To achieve this objective, this analysis has been segmented into three complementary studies, represented in individual papers. The schematic structure of the thesis follows next, outlining the objective of each study and the primary method employed:

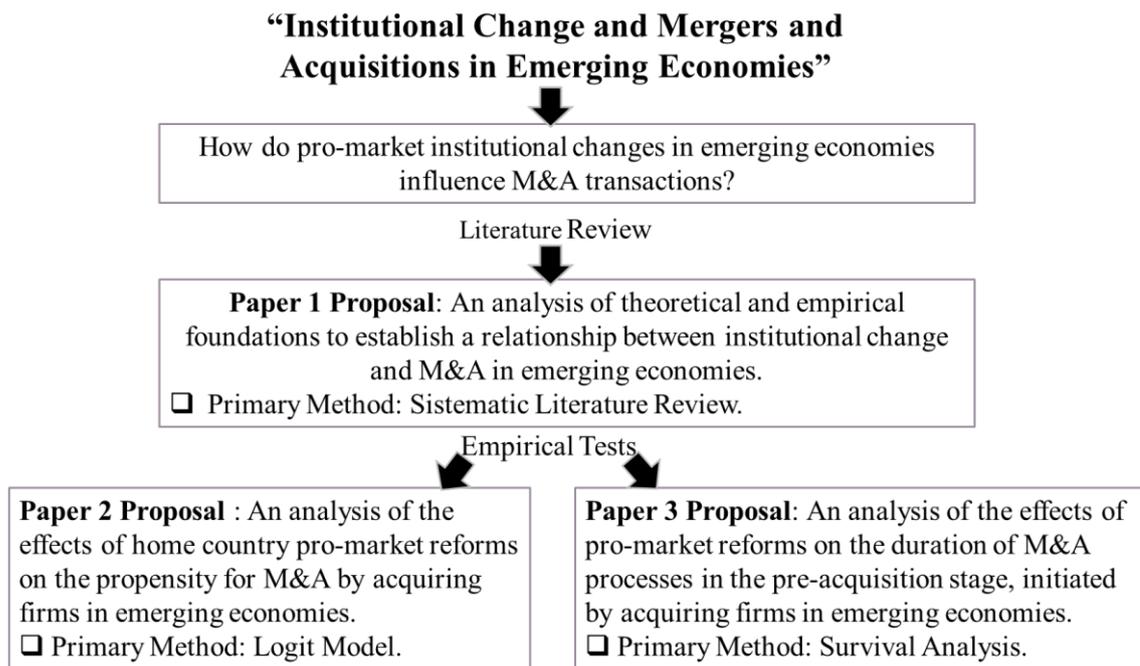


Figure 1: Schematic Model of the Thesis.  
 Source: Author's.

To answer such a question, we begin with a theoretical-empirical essay outlined in the paper titled **"Essay on the Relationship Between Institutional Change and Mergers and Acquisitions in Emerging Economies"**. Firstly, we present the theory and definitions of the main constructs under analysis. Then, we introduce some studies that build a macro-micro bridge to demonstrate that firms respond strategically, either passively or actively, to changes in pro-market institutions. Finally, through a Systematic Literature Review, we gather empirical studies on M&A that contribute to answering our research question. This allowed us to direct the two new empirical tests developed in the subsequent papers.

In our paper titled **"Do Home Country Pro-Market Reforms Affect Mergers and Acquisitions in Emerging Economies? Bringing Institutions into M&A Research"**, we examine whether, by reducing the institutional complexity of emerging countries, such reforms significantly drive the M&A initiatives of domestic acquiring firms. Our central argument is that managers should become more inclined to achieving their long-term goals, opting for M&A as a means of growth because the market usage costs (transaction costs) should become more attractive.

In our final paper, titled **"Duration of Corporate Mergers and Acquisitions in Emerging Economies Under Conditions of Institutional Change"**, we investigate, from initiated deals, whether the time to deal completion is affected by pro-market reforms. We argue

that by reducing transaction costs, pro-market reforms play a significant role in accelerating the deal completion. To reach our conclusions, we use survival analysis, which allows us to consider a more comprehensive sample of the M&A deals population, including deals which were completed, are pending, or abandoned.

## **1.2 Originality and Contributions**

To the best of our knowledge, our work is the first to attempt to understand the responses of domestic acquiring firms as they seek to restructure themselves following significant institutional changes in their country. While the existing M&A literature has made efforts to investigate the effects of institutional differences or institutional distance between countries in the context of cross-border transactions (Cao et al., 2019; Dikova et al., 2010; Ferreira, Vicente, et al., 2017; Lawrence et al., 2021; Santos et al., 2019), our focus has been on the effects of internal institutional shocks on the acquisitions of domestic acquiring firms. We are in the same spirit of research as some studies in the fields of strategic management and international business (Banalieva et al., 2018; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009; Mukherjee et al., 2023; Singh et al., 2018), and in this regard, we respond to several of their calls by establishing connections between firms and institutional changes in countries. This includes the original call by Hoskisson et al. (2000) to examine how firms develop growth-oriented responses, and we consider the acquisition/restructuring decision being chosen as an active strategic response.

It is important to highlight that our studies outlined in the empirical tests in papers 2 and 3 are very different from the studies identified in the systematic literature review in paper 1. First, we have found that those studies do not use NIE as the theoretical basis for testing their hypotheses. Secondly, most of them were "natural experiments," observing the effect of a single institutional change event on acquisitions. Ultimately, these studies focused on a single country and, therefore, a single institutional context. In our case, we draw from an interdisciplinary dialogue with the tradition of institutional analysis built by studies in strategic management and international business, which allowed us to build our conceptual framework. This framework includes the theoretical basis, a focus on emerging economies, and the construction of measures for tracking reforms in the analyzed countries over the years. We have combined that with M&A studies, especially in the field of finance, which investigate the exogenous causes of variation in such activities (Adra et al., 2020; Bonaime et al., 2018; Erel et al., 2021; Nguyen et al., 2020; Nguyen & Phan, 2017).

To validate our hypotheses in the empirical tests, we have analyzed data from thousands of acquiring firms and M&A deals from 9 emerging economies: Brazil, China, India, Indonesia, Mexico, Russia, South Africa, Thailand, and Turkey. These countries are among the largest markets for corporate control in emerging economies. By analyzing them together, we also answered the calls made by Ferreira, Borini, et al. (2017) and Singh et al. (2018), who argue that institutional complexities are better captured in multi-country samples, advancing beyond these studies.

As a result, we have provided several theoretical and practical contributions. A notable first contribution is the integration of Institutional Theory into M&A research, which is not commonly found in this field of research (Ferreira et al., 2014; Hossain, 2021). Thus, our findings provide a more comprehensive understanding of the external factors that drive M&A activities and affect their duration, adding the effect of pro-market reforms in emerging economies. Consequently, we have contributed to a better understanding of the acquisition capacity in environments under which institutions are in flux (Ferreira, Borini, et al., 2017). We also have contributed to the branch of literature that investigates the effects of institutions on individual firm responses, showing that firms should also react proactively through restructuring their activities.

This is important because changes in market-oriented institutions can have different paces in emerging economies, depending on how certain interest groups benefit from their status quo, despite the benefits they could bring to society. In this sense, our results contribute to policymakers' efforts to gather public support by demonstrating the long-term benefits of reforms (Mukherjee et al., 2023).

Additionally, we need to highlight the naturally longer durations of economic transactions in emerging markets due to high transaction costs (Khanna & Palepu, 2010). Delays cause social harm to the population who must wait longer to benefit from it. As such, we contribute by providing a more detailed analysis of the duration of M&A processes, clarifying the role of pro-market institutional changes in expediting these processes and reducing the deals' abandonment rates, which are a significant problem and represent a substantial portion of the initiated deals (Dikova et al., 2010; Ekelund et al., 2001; Ekelund & Thornton, 1999; Kim & Song, 2017). Furthermore, by employing survival analysis, we introduce a dynamic perspective on the duration-completion-abandonment analysis of deals, offering some alternatives and solution to studies that investigate these factors separately and with sub-samples.

This way, we contribute to the academy by providing a methodological basis that can be scaled in the future. We also contribute by demonstrating the utility and relevance of economic freedom indexes, developed by global organizations, in their application and economic meaning as an independent variable in empirical studies, associated with a positive outcome (Hall & Lawson, 2014). For M&A managers and market participants, our work can be used as a reference source based on its results and reference section, which maps the causes and motivations behind deals, as well as complexities leading to delays in their completion. These insights can be considered when crafting contracts and terms during the M&A process. Executives can benefit from a better understanding of the impacts of pro-market reforms in emerging economies. Economic research institutes can also rely on our findings in their demands for surveys and motivations that may guide the development of new public policies.

## CHAPTER 2

### **Essay on the Relationship Between Institutional Change and Mergers and Acquisitions in Emerging Economies**

#### **Abstract**

The objective of this essay is to seek theoretical and empirical support to establish a relationship between institutional change and mergers and acquisitions (M&A) in emerging economies. From the perspective of New Institutional Economics (NIE), we have argued that changes in pro-market institutions fill "institutional voids" in emerging economies and reduce transaction costs. Such a reduction creates incentives for wealth growth and should encourage M&A transactions, driven by the expected positive effects in the acquisition process and synergies. This analysis follows an inductive logic, built on a Systematic Literature Review that presented evidence that changes in pro-market institutions, involving reforms, deregulation, and liberalization, were accompanied by significant effects on M&A activity. We have worked with an AI-based document reader together with a chatbot to analyze the full text of selected papers and assist in defining the studies qualified for the descriptive synthesis. With that in hand, we have directed an investigation concerning such a relationship in emerging markets, as they can provide greater variation in their institutional context, and contribute to bringing Institutional Theory closer to the research stream that investigates the causes of M&A activity.

**Keywords:** Institutional Theory; Pro-Market Institutions; Pro-Market Reforms; M&A Activity; Emerging Markets.

#### **Resumo**

O objetivo deste ensaio é buscar sustentações teóricas e empíricas que permitam estabelecer um relacionamento entre mudança institucional e fusões e aquisições em economias emergentes. Na perspectiva da Nova Economia Institucional, argumenta-se que a mudança nas instituições pró-mercado preenchem os "vazios institucionais" em economias emergentes e reduzem os custos de transação. Tal redução cria incentivos para geração de riqueza e deve encorajar as transações de M&A, a partir dos efeitos positivos esperados no processo de aquisição e em sinergias. Esta análise possui lógica indutiva, construída com base em uma Revisão Sistemática da Literatura que apresentou evidências de que mudanças nas instituições pró-mercado envolvendo reformas, desregulamentação e liberalização foram acompanhadas de efeitos significativos na atividade de M&A. Utilizamos um leitor de documentos com chatbot baseado em IA para fazer a análise do texto completo de artigos selecionados e auxiliar na definição dos artigos qualificados para a síntese descritiva. Com isso nós direcionamos uma proposta de investigação dessa relação em mercados emergentes, pois podem fornecer maior variação no seu contexto institucional, e contribuimos com a aproximação da Teoria Institucional à corrente de pesquisa que investiga as causas de variação na atividade de M&A.

**Palavras-Chave:** Teoria Institucional; Instituições pró-mercado; Reformas pró-mercado; Atividade de M&A; Mercados Emergentes.

## 1 Introduction

### 1.1 Context and Motivations

Corporate Mergers and Acquisitions (M&A) are significant strategic decisions that lead to firm growth and potential wealth generation for investors. They can occur in response to various exogenous factors in the environment (Gugler et al., 2012; Harford, 2005; Shleifer & Vishny, 2003), and when such phenomena drive the aggregate volume of M&A, it is possible to observe a historical evolution of this activity in the shape of "waves", typically correlated to stock market prices and real changes in the economy (Harford, 2005; Rhodes-Kropf & Viswanathan, 2004).

In order to understand such a behavior, empirical literature investigating the causes of variation in the volume and other aspects of these activities has identified several sources of exogenous factors that affect them. These include macroeconomic conditions (Erel et al., 2021), uncertainty (Bonaime et al., 2018; Nguyen & Phan, 2017), monetary policy (Adra et al., 2020), geopolitical risk (Shen et al., 2021), and even political corruption (Nguyen et al., 2020; H. Yang et al., 2022). These factors have a significant impact on the propensity for acquisitions, value, timing, post-acquisition performance, among others.

Although some well-established studies argue that regulatory shocks also contribute to waves of mergers and acquisitions (Harford, 2005; Mitchell & Mulherin, 1996), that is, any expected or unexpected factor that changes the regulatory structure of a given market, little is known or has been demonstrated regarding the effects of institutional change on these activities (Milhaupt & West, 2003).

Institutional change refers to alterations, adjustments, and/or transitions in the formal and informal constraints, such as laws, norms, and standards of conduct within a society, that guide human behavior, including economic transactions, based on certain premises like the existence of transaction costs, bounded rationality, and opportunism of economic agents (North, 1990; O. E. Williamson, 1985). Change reduces transaction costs and, therefore, creates incentives for wealth maximization.

Such gap was also noted by some extant literature reviews on M&A, which led them to call for new studies to analyze this relationship, stating that "Institutional Theory is remarkably absent from M&A research" (Ferreira et al., 2014; Hossain, 2021). However, there are some methodological challenges that may hinder the testing of this relationship, especially in quantitative studies, such as the difficulty of operationalizing and defining institutional change (Campbell, 2004; Micelotta et al., 2017), and the identification of appropriate proxies to capture the effect of institutions (Garrido et al., 2014; Samadi & Alipourian, 2021; Voigt,

2013). Furthermore, Institutional Theory does not predict a direct relationship between changes in institutions and M&A transactions in an economy.

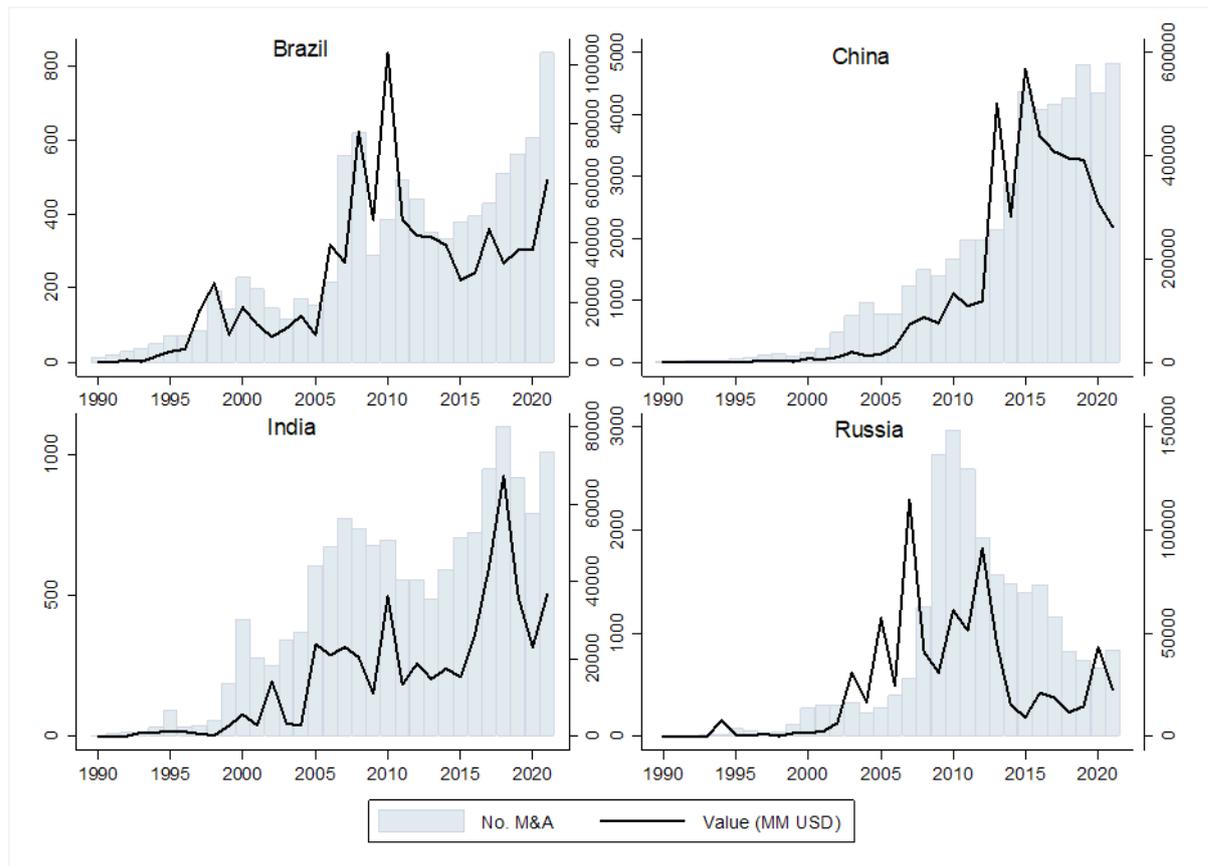
Therefore, this essay is an attempt to establish, employing inductive reasoning, a relationship between these two constructs through the study of the theory (Sections 2.1 and 2.2), defining the institutional dimension that is subject to our analysis (Section 2.3), presenting some empirical evidence on the effects of institutional change on firms' individual behavior (Section 2.4), and analyzing some studies that have explored the effects of institutional change on mergers and acquisitions activities (Section 4). For this last step, a systematic literature review (SLR) was conducted to gather and synthesize studies that could provide this connection. The studies were sought in some of the main scientific literature databases and selected if they could contribute to answering the research question: **What is the evidence of the effects of institutional changes on mergers and acquisitions?**

Due to the institutional voids present in emerging countries, markets located in these regions offer a significant opportunity for research that investigates the impact of institutions and institutional change (Hoskisson et al., 2000; Khanna & Palepu, 2010; Kim & Song, 2017; Peng, 2003). Corroborating this idea, empirical evidence on M&A shows that the effect of institutions is more pronounced in less developed economies (Iwasaki et al., 2021), making it suitable to direct this proposal to such markets. Thus, **the objective of this essay is to seek theoretical and empirical support that allows the establishment of a relationship between institutional change and mergers and acquisitions in emerging economies.**

The literature states that institutional transitions in countries, driven by economic and legal policies, have an impact on managerial incentives, transaction and agency costs, and enable the selective allocation of resources within and among industries (Park et al., 2006). Therefore, we argue that they should have consequences in the M&A process. These policies introduced profound changes in the global economy from the 1980s and, with greater intensity, in emerging countries from the 1990s, a period in which there was a massive movement toward the liberalization of these economies (Edwards, 1997), which coincided with the beginning of M&A waves in these markets (Cortés et al., 2017). The reforms had direct and indirect impacts on corporate restructuring movements in Latin America. While the deregulation of Foreign Direct Investment (FDI) and privatization policies had direct impacts, the liberalization of imports, for instance, had indirect effects as it compressed prices and local margins, making financially constrained firms more susceptible to takeovers (De Paula et al., 2002).

The number and size of M&A increased significantly in the 1990s due to deregulation (Ekelund et al., 2001). In the BRIC group, which is among the largest markets for corporate

control among emerging economies (Junzhi et al., 2020), the development of their M&A waves was affected by these factors (Agarwal & Bhattacharjea, 2006; De Paula et al., 2002; Junzhi et al., 2020; Nayyar, 2007; Wood Jr et al., 2004). Figure 1 below shows the annual evolution of completed M&A deals in the BRIC countries from 1990 to 2021, from the perspective of announcements made by domestic bidders, both public (listed) and private, indicating the onset of waves in the 1990s.



**Figure 1:** Annual Aggregate Volume and Value\* of M&A Deals Completed by BRIC Acquirers from 1990 to 2021. Note: No. M&A represents the annual volume of completed deals, announced by acquirer firms, both public and private, headquartered in the country, with value frequencies on the left axis. \*Aggregate value is limited to deals for which this information is known, with value frequencies on the right axis in millions of dollars. Source: Refinitiv (SDC).

Why choose M&A over other firm-related transactions? Hoskisson et al. (2000) provide a justification, stating that analyzing how firms develop "growth-oriented responses" from an active strategic choice perspective would be more relevant. Another theoretical justification can be found in the Theory of the Growth of the Firm (Camargos & Coutinho, 2008; Peng & Heath, 1996; Penrose, 1959). Firms are naturally motivated to grow in capitalist economies. Traditionally, two strategies can be considered: generic expansion or acquisitions. Firms should opt for acquisitions when costs of using the market mechanism (transaction costs) are lower.

This allows us to create a connection between changes in pro-market institutions and M&A, through the transaction cost channel, which we explore in NIE.

The SLR resulted in 26 studies with the potential to contribute to the research question and, therefore, they are qualified for the descriptive synthesis. The studies are distributed across journals in Finance, Economics, Management, and Industry-specific. Finance journals stood out in terms of number of studies, contributing with 12 papers that explore the causal link. It was found that a significant portion of the studies (15) focused on developed countries, even though they provide insights that testing the relationship is relevant in emerging markets. It was identified that some effects on M&A were channeled through pathways of trade liberalization, capital market liberalization, reduced information asymmetry, increased credit supply, strengthened property rights, industry shocks, and reduced overall costs or increased acquisition efficiency. Although some studies directly referred to reforms as episodes of "institutional change," "institutional variations," and "institutional reform," only one study (Opoku-Mensah et al., 2020) incorporated Institutional Theory into its discussion. That has helped us come to the conclusion that the current is still distant from M&A research (Ferreira et al., 2014; Hossain, 2021), even when institutions are among the objects of study.

In this sense, we expect that this proposal will provide useful insights for testing the effects of home country institutional changes, which are less obvious (Boudier & Lochard, 2013; Mukherjee et al., 2023), in various aspects of M&A, such as the volume, value, performance, time, deal completion, payment method, total or partial acquisitions, domestic or cross-border, among others. As such, a general contribution of this essay is the approximation of these two topics, clarifying the effects of variations in market-supporting institutions on firms' M&A decisions. Neoclassical theoretical foundations on the causes of M&A already point to strong evidence that regulatory shocks are determinants for these activities (Agarwal & Bhattacharjea, 2006; Andrade et al., 2001; Harford, 2005; Mitchell & Mulherin, 1996), and Institutional Theory could complement this line of research.

The remainder is divided into the following sections: Section 2 presents the theoretical framework, with an introduction to the theory and definition of the constructs used, which includes subsection 2.1 Institutional Change in Emerging Economies; 2.2 New Institutional Economics; 2.3 Pro-market Institutions, and; 2.4 Empirical Approaches, describing previous studies that explored the effect of institutional change on firms' individual behavior. Section 3 describes the SLR protocol. Section 4 presents the descriptive synthesis of the qualified studies, containing evidence of the addressed cause-and-effect relationship; and, in Section 5, the final considerations concerning our research and directions for new studies.

## **2 Theoretical Framework**

### **2.1 Institutional Change in Emerging Economies**

No company is immune to the institutional context of its country, and since some theorists have shown that institutions determine the choices of economic agents, including firms (DiMaggio & Powell, 1983; North, 1990), it is widely accepted that institutions matter (Peng, 2002). As a result, a substantial body of research has investigated their effects on organizations (Micelotta et al., 2017).

Institutions are "the rules of the game" (North, 1990). That is, they signal which actions are accepted by "players" and, in doing so, help to reduce uncertainty in the environment. Broadly, they can take the form of formal constraints, such as written laws and regulations, and informal constraints, such as culture and ideology. The institutional context is formed by the combination of these constraints and provides a framework for human interaction (North, 1990). On the perspective of institutional economics, North (1981, p. 201) defined them as "a set of rules, compliance procedures, and moral and ethical behavioral norms designed to constrain the behavior of individuals in the interest of maximizing the wealth or utility of the principals." While some of these rules are stable and enduring, such as a country constitution, the set of constraints that forms the institutional context is constantly changing.

Changes involve adjustments in the institutional pillars of a society (Scott, 1995) and are necessary to create well-functioning market economies (Rodrik, 2006). Such economies, like those in developed countries, are reflected in the quality of the institutions in those countries, and change should aim in quality improvement. From this perspective, the quality of institutions is an important aspect for understanding change. If a country is still poor in the quality of its institutions, Institutional Theory with an emphasis on change, such as the currents of North (1990), Campbell (2004), and Peng (2003), may be more effectively applied (Samadi & Alipourian, 2021).

This characteristic has shifted the focus of analyzing the effects of institutional change to emerging economies, which have become the primary field for this research approach (Faghih & Samadi, 2021; Hoskisson et al., 2000; Khanna & Palepu, 2010). In such settings, several factors can lead to market failures. These include factors like insecure property rights, underdeveloped financial and capital markets, and an inadequate tax system. Additionally, there are challenges related to starting new businesses, concerns about the quality of products and services, and a shortage of skilled labor. Evaluating credit risk and partnership risks, often conducted through due diligence, can be particularly complex. Corruption is a pervasive issue,

and alongside other deeply rooted factors, it can lead to increased financing costs and a higher expected return on private investments. Some authors refer to this set of characteristics as "institutional voids" (Khanna & Palepu, 2010). According to Khanna and Palepu (2010), these "voids" are what make a market "emerging" and are a primary source of high transaction costs and operational challenges.

These factors highlight the crucial role of institutional change in these markets, as it addresses such deficiencies. Institutional change essentially acts as a remedy for those gaps. Because emerging markets typically begin at a lower institutional development level compared to more mature developed countries, there is greater room for variation within the existing institutional framework. Therefore, any changes introduced have a more intense impact, given the wider range of adjustments that can be made.

At the macro level, change can lead to economic development (Dutt, 2011; North, 1990). At the firm level, it can create incentives for managers to generate wealth by removing trade barriers, facilitating access to resources, information, and technologies that can be used by companies for business expansion. Following this line of reasoning, considering that the adjustment in institutions "shapes the potential wealth-maximizing opportunities" (North, 1990, p. 73), firms can strategically respond to changes in several manners (Banalieva et al., 2018; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009; Dikova et al., 2010; Kim & Song, 2017; Mukherjee et al., 2023; Peng, 2003; Peng & Heath, 1996; Singh et al., 2018).

## **2.2 New Institutional Economics**

Although various streams of Institutional Theory share common issues and could help establish the relationship in this proposal, depending on the level of analysis and theoretical orientation of the researcher, New Institutional Economics (NIE), which has a particular interest in the mutable nature of institutions (North, 1990) and a focus on the problem of transaction costs (O. E. Williamson, 1985), may be more appropriate for this level of analysis, taking the perspective of building a macro-micro bridge on the effects of country contingencies on firm behavior.

Such theoretical stream has its origins in Coase (1937), who questioned the reason for the existence of firms and thus supported the proposition that there is a cost associated with the utilization of economic transactions that arise in the negotiation, drafting, and maintenance of contracts, an aspect not included in neoclassical assumptions. In these contracts, suppliers, for a certain remuneration, agree to the restrictions set by the buyers. Coase (1937) then highlights

the role of the manager, who can reduce costs by choosing to perform internal transactions, thereby reducing the boundaries of their operations (vertical integration).

This was a direct critique of the neoclassical assumption that economic transactions could occur freely in the market, and, therefore, this approach shifts the focus from the firm as a production function to the firm as a nexus of contracts and/or as a governance structure (Jensen & Meckling, 1976; O. E. Williamson, 1988). This view is based on the premise of the behavioral deviations of human agents, taking into account the assumptions of bounded rationality and opportunism. Being at a higher level than contracts, institutions ensure that these will be fulfilled and that behavioral deviations of agents will be constrained.

Hence, market-oriented institutions, which, following North (1990) ideas, are those capable to reduce transaction costs, are the institutional dimensions subject to analysis in this case. This is in line with other empirical studies that have investigated the effects of institutional change at the firm level (Banalieva et al., 2018; Chacar et al., 2010; Chari & Banalieva, 2015; Cuervo-Cazurra & Dau, 2009; Mukherjee et al., 2023). The institutional context consists of various dimensions, and the clear definition of the institutional dimension under analysis is essential because, as stated by Campbell (2004), it needs to be relevant to the subject under investigation and facilitate the definition of measures that can empirically track changes.

### **2.3 Pro-market Institutions**

Market-oriented institutions encompass laws, rules, protection of property rights, and mechanisms for resolving contractual disputes, among other formal normative aspects that help in coordinating economic transactions (Banalieva et al., 2018). In this regard, they should enable smoother market transactions rather than state intervention in the economy. Such institutions shape the competitive environment for firms and are decisive for their long-term investments (Grier & Grier, 2021). Transitions in these institutions occur through reforms related to economic policies, trade and price liberalization, industry deregulation, privatization, and the opening of economies to international trade, foreign capital, and labor flow, and other reforms that effectively ensure property rights protection (Cuervo-Cazurra et al., 2019).

Some authors refer to them as a series of policy recommendations that were prescribed in the "Washington Consensus" (Cuervo-Cazurra & Dau, 2009; Grier & Grier, 2021). Codified by J. Williamson (1990) and strongly encouraged by institutions such as the World Bank (WB) and the International Monetary Fund (IMF) at the time, they served as the basis for a wave of reforms in Latin American and Sub-Saharan African countries that transformed the political landscape of these regions (Archibong et al., 2021; Goldfajn et al., 2021; Rodrik, 2006).

Table 1 presents the original components of the Washington Consensus and additional prescriptions proposed by Rodrik (2006), based on criticisms of the consensus. It's important to note that the goal here is not to discuss the overall effectiveness of the consensus but to exemplify some channels through which reforms in pro-market institutions can take place. According to Rodrik (2006), as a justification for the additional prescriptions, the standardized pro-market reforms may not produce lasting effects if other underlying institutional conditions are poor. This is an important observation, given the greater interdependence of institutional dimensions in developing countries (Faghih & Samadi, 2021).

**Table 1:** Original and “Augmented” Washington Consensus Prescriptions

Original Washington Consensus	“Augmented” Washington Consensus
1. Fiscal discipline	11. Corporate governance
2. Reorientation of public expenditures	12. Anti-corruption policies
3. Tax reform	13. Flexible labor markets
4. Financial liberalization	14. WTO agreements
5. Unified and competitive Exchange rates	15. Financial codes and standards
6. Trade liberalization	16. “Prudent” capital-account opening
7. Openness to FDI	17. Non-intermediate exchange rate regimes
8. Privatization	18. Independent central banks/inflation targeting
9. Derregulation related to the entry of new competitors	19. Social safety nets
10. Secure Property Rights	20. Targeted poverty reduction

Source: Rodrik (2006).

Reforms (incremental changes) in these institutions strengthen property rights and market freedom by providing the capacity for autonomous adaptation to changes in the environment. In its latest release of the Doing Business report, the World Bank identified that 115 economies implemented 294 pro-market reforms between 2018 and 2019 in the areas covered by that report. According to the source, the most common characteristics of these reforms included advances in the functionality of credit and registry agencies, the development and improvement of online platforms for handling regulatory requirements, improvements in the reliability of energy distribution, tariff reduction, strengthening of protection for minority shareholders, simplification of property registration, and automation of international trade logistics (World Bank, 2020).

## 2.4 Empirical Approaches

The direct investigation of the connection between institutional changes and firms' individual behavior is a topic of greater interest in the fields of strategic management and international business, as highlighted by Cuervo-Cazurra et al. (2019) discussing changes in pro-market institutions through reforms and reversals and their effects on firms' global strategies and performance. Drawing from some of the major journals in the fields of international business, management, finance, and economics, the authors gathered 100 studies to critically describe the concepts, drivers, and implications of pro-market institutions on firms' strategic responses, as well as moderators of this relationship. Some of the mapped effects include internationalization, performance, growth opportunities, investments, and even "intensity of M&A flows."

A recent study, not included in the review of Cuervo-Cazurra et al. (2019) but possibly influenced by it, is the study of Mukherjee et al. (2023), which reaffirms that testing this relationship is still timely and of contemporary interest. These authors analyzed the relationship between pro-market reforms and the propensity for outsourcing productive activities of firms from 28 transition economies and how reforms moderate the relationship between R&D activity and outsourcing. The authors used institutional quality indices as proxies of pro-market reforms in countries, categorizing them into economic reforms and legal reforms. The findings did not offer direct support for the tested relationship; however, pro-market reforms significantly moderated the relationship between R&D and outsourcing.

Pro-market institutions can be analyzed from the perspective of various sub-dimensions (Chacar et al., 2010; Dau & Cuervo-Cazurra, 2014; Mukherjee et al., 2023), although many studies analyze them as a single construct (Banalieva et al., 2018; Cuervo-Cazurra & Dau, 2009; Singh et al., 2018). Furthermore, empirical approaches rely on a variety of measures to index pro-market reforms (Cuervo-Cazurra et al., 2019). For example, Banalieva et al. (2018) used the Index of Economic Freedom (EFI) from the Heritage Foundation (Miller et al., 2022) as a proxy to track reforms. Reforms were identified based on patterns of change in EFI over two consecutive periods. In this particular case, the authors categorized reforms into various types depending on the pattern of change in EFI. It was found that pro-market reforms have the potential to contribute to improved firm performance.

In an investigation that closely aligns with the scope our proposal, Singh et al. (2018) analyzed the relationship between pro-market reforms and corporate investments of firms in India, using the EFI index itself as a proxy for such reforms. The findings indicate that pro-market reforms can positively affect corporate expansion through new investments (organic

growth). Other early investigations like Park et al. (2006) and Cuervo-Cazurra and Dau (2009) showed that firms from developing countries with higher levels of pro-market reforms tend to have higher profitability, on average. These results add value to the debate about the effects of institutional change at the firm level and call for more detailed analyses, emphasizing other specific responses triggered by changes that can lead to performance (Chacar et al., 2010). Furthermore, it's noteworthy that a significant portion of these investigations was conducted in emerging markets.

### 3 Methods

We have used the method of Systematic Literature Review (SLR), which is more appropriate for reviewing specific niche research (Donthu et al., 2021). The SLR protocol involved the searching for relevant documents and was limited to studies that addressed the causal relationship between institutional change and mergers and acquisitions. To do this, we have searched three major academic bibliographic databases: Scopus, Web of Science (WoS), and Science Direct (SD), published between 1990 and 2022. We have searched for titles, abstracts, and author keywords, according to the combined keywords: ("mergers & acquisitions" OR "mergers and acquisitions" OR M&A OR mergers OR acquisitions) AND ("institutional change" OR reforms OR liberalization). The searching keywords were selected based on the terms used in the review by Cuervo-Cazurra et al. (2019), which analyzed the causal relationship between pro-market reforms and firms' global strategies. In our case, the search terms were adapted for mergers and acquisitions (Ferreira et al., 2014; Hossain, 2021).

A total of 3,606 documents were found in Scopus, 2,037 in WoS, and 309 in SD, which correspond to papers published in journals. In a preliminary screening to check their eligibility, we identified a wide heterogeneity among the studies, related to methods, constructs, and outcomes. Furthermore, most of the studies do not necessarily address the causal link investigated here. This situation is similar to the case of Aboal et al. (2014), who reviewed the existing literature on the causal link between (changes in) "contractual enforcement and investments," constructs that are similar to ours in both essence and direction of causality. Out of 2,546 documents found, only 19 studies that empirically addressed this relationship were filtered through a rigorous procedure, in which "only one that directly examines the effects of an actual institutional reform" (Aboal et al., 2014, p. 322).

We then understand that finding studies that can provide evidence of the relationship between reforms and the financial decisions of agents is indeed a challenge for researchers. Given the heterogeneity of the studies and that the most of them do not specifically address the

connection being examined, to facilitate the search, we sorted the results according to the relevance criteria of the respective database and selected the top 200 papers from each, excluding duplicates. This reduced the set of eligible documents to 600 unique papers<sup>1</sup>.

Of these, we proceeded with the reading of titles and abstracts to select studies that we believed had the potential to answer the research question and, therefore, were considered for descriptive synthesis. The others were excluded because they addressed a different relationship or unrelated topics. While some might argue that liberalization, deregulation, or institutional changes were determinant factors of M&A activity, they did not specifically focus on this causal relationship or analyzed the results of M&A in a "post-deregulation" environment without delving into the underlying causes. Additional exclusion criteria included papers that focused on other institutional aspects, such as the impact of institutional quality or institutional distance, typically examined in the context of cross-border M&A (Dikova et al., 2010; Erel et al., 2012; Ferreira, Borini, et al., 2017; Pinto, 2017).

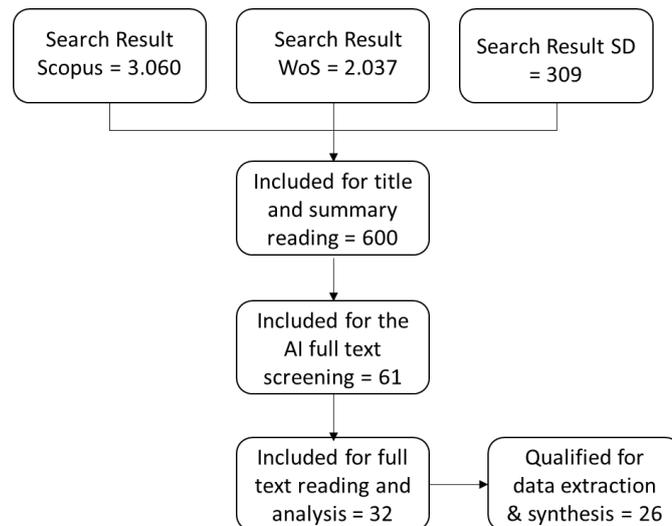
Therefore, we have filtered down to 61 studies with the potential to provide support for our research question. For the selected ones, we used a document reader that integrates an AI-based chatbot, specifically the ChatGPT from OpenAI (ChatPDF, accessible at: <https://www.chatpdf.com/>). This chatbot can answer questions, serving as an assistant in the full-text screening of documents for data extraction and synthesis. To validate our selection, we queried the chatbot with the question: "Can the study provide inferences about the causal relationship between institutional change and mergers and acquisitions?" Our AI-based assistant indicated that 31 studies could affirmatively address the question, while the remaining 30 did not contain specific information about the relationship. Among the studies excluded by the assistant, we decided to relocate the one from Alimov (2015) to the eligible studies group, as it was also listed in the review by Cuervo-Cazurra et al. (2019). We have also performed a random sampling check of studies from the excluded group but did not find the need for relocation.

After reading the full text of the selected studies (32 documents), we have decided to exclude another six because we deemed that although they provided useful insights (which may have influenced the program to select them as eligible), they did not focus on the cause-and-

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<sup>1</sup> Selection procedures for eligible studies for the title and summary reading: In order to extract 600 documents that met the eligibility criteria for the systematic literature review, we used an approach of overlapping documents derived from the search results. We began with the results from the SD database, which produced the smallest volume of results, selecting the top 200 papers from that database, sorted by relevance. Next, we used the results from the WoS database, which was second in terms of the volume of results, to reach a total of 400 non-duplicated studies. Finally, the 600 papers were supplemented with results from the Scopus database. This procedure allowed us to consider 200 unique studies from each database.

effect question, but rather on the results of M&A in a pre or post-reform environment. Additionally, we encountered difficulties in identifying some clear concluding information about the existence of the relationship in those papers. The excluded studies were Becher (2009), Kishimoto et al. (2017), Ghosh and Petrova (2013), Fukuda (2020), Klimek and Hansen (2017) and Chang and Williams (2002). The remaining 26 documents were confirmed to meet the eligibility criteria and were thus considered for data extraction and synthesis. Figure 2 summarizes the search strategy for the systematic literature review.



**Figure 1:** Summary of the search strategy.  
Source: Author's own elaboration.

In Appendix A, Table A1 lists the journals, including their full names, abbreviations, impact factors, and the number of analyzed papers from each journal. In Table A2, the review results are summarized, highlighting the research goals, methods, the context of institutional change, variables used, and key findings.

## 4 Evidence on the Effects of Institutional Change on Mergers and Acquisitions

### 4.1 Overview and Bibliometrics

The 26 selected studies were published in 20 different journals in the fields of Finance (7), Economics (8), Management (including international business) (4), and specific industry areas (transport) (1). The studies span the years from 2002 to 2022, although we set 1990 as the initial year. The journal with the most analyzed publications was the Journal of Corporate Finance (JCF), with 4 publications (15.4% of the total) between 2013 and 2020. Three other journals had 2 publications each: the Pacific-Basin Finance Journal (PBFJ), the Journal of International Money and Finance (JIMF), and the Journal of Financial Economics (JFE). We

have found that finance-focused journals are the most prominent in addressing the relationship between institutional changes and M&A, contributing with 12 publications, with JCF being a notable contributor. Journals in the fields of economics, management, and specific industry areas contributed 9, 4, and 1 study, respectively.

The studies were written by 58 authors, of whom only Azizjon Alimov participated in more than one publication (Alimov, 2015; Alimov & Officer, 2017), for JIBS and JCF, focusing on cross-border M&A studies. Out of the 26 reviewed studies, 15 had a focus on developed markets, while 5 centered on emerging economies, with a significant emphasis on China. Another 5 were geared towards general markets, and 1 did not clearly specify the sample coverage (Bertrand & Zitouna, 2006). All studies are empirical and employ quantitative approach, except for De Paula et al. (2002), which provides descriptive and comparative analysis of data without results derived from econometric modeling.

The descriptive synthesis of the literature that addressed our research question is presented next, segregated into two groups, covering "finance studies" (12) and "economics, management, and industry-specific studies" (14).

## **4.2 Finance Studies**

Five studies explicitly employed a "natural experiment" analysis (Balogh et al., 2022; Carletti et al., 2021; Chen et al., 2020; Kim & Lu, 2013; Srinivasan, 2020), using diff-in-diff models that compare before and after to measure the impact of institutional changes. This is a more common strategy, though there isn't a standard model. Such studies are typically considered more suitable for causal inferences due to their greater methodological rigor and consideration of endogeneity issues (Aboal et al., 2014). In all studies, the effects are measured by an indicator signaling the period(s) in which the reform(s) came into effect, except for Alimov and Officer (2017), who also used a continuous index to build an indicator tracking reforms in various countries over time.

The studies vary in terms of the context of institutional change analyzed, although they involve pro-market or "pro-M&A" reforms (Higgins & Beckman, 2006), deliberately implemented by governments. Some contexts may be similar but in different countries. Wang and Shao (2022) and Balogh et al. (2022), in China and the USA respectively, identified an increase in M&A activity following the liberalization of the IPO process. Reforms more targeted towards M&A, aimed at regulatory relief, had effects on abnormal returns around the acquisition announcement date (Carletti et al., 2021; Higgins & Beckman, 2006; Opoku-

Mensah et al., 2020), although Chen et al. (2020) found restricted effects on acquirer CARs (a recurring finding in M&A literature in general) but an increased propensity for M&A.

Other reforms, while not specifically directed at M&A, had positive effects through channels such as strengthening property rights (Alimov & Officer, 2017), increased credit supply (Kandilov et al., 2017), capital market liberalization (Ma et al., 2016), trade liberalization (Srinivasan, 2020), and reduced overall costs or increased acquisition efficiency (Kim & Lu, 2013). For instance, in the context of trade liberalization, Srinivasan (2020) found that acquiring firms are 19 to 27% more likely to engage in M&A after exogenous shocks from reductions in import tariffs.

The finance studies also explored an interesting perspective that shocks resulting from institutional changes may not be unexpected or exogenous. In this view, Ovtchinnikov (2013) revealed that deregulations in industries are preceded by prior poor performance and, therefore, are endogenous. This means that institutional change events may be driven by interest groups with bargaining power, using M&A as an exit strategy from an industry. Although not mentioned in the latter study, this perspective is extensively explored by North (1990) in his theory, analyzing the coevolution between organizations and institutions.

The selected finance studies often do not draw on an underlying theory to make inferences. Instead, they primarily rely on prior empirical evidence. Only Opoku-Mensah et al. (2020) incorporate Institutional Theory into their discussion. Wang and Shao (2022) and Ovtchinnikov (2013) are grounded in Neoclassical Economics, while Chen et al. (2020) employ classic theories of corporate finance and agency conflicts.

Consistent with our interpretation, Wang and Shao (2022) refer to the reforms they analyzed as episodes of "institutional change." Using similar terminology, Opoku-Mensah et al. (2020, p. 13) conclude that "variations within-country institutions influence acquirers' returns in domestic acquisitions," which significantly contributes to our research question.

Furthermore, it is evident that the attention given to emerging markets is limited, with only four studies focused on this context, all conducted in China (Chen et al., 2020; Ma et al., 2016; Opoku-Mensah et al., 2020; Wang & Shao, 2022). Two other studies are from general countries (Alimov & Officer, 2017; Kim & Lu, 2013), and the remaining six concentrate on developed countries (Balogh et al., 2022; Carletti et al., 2021; Higgins & Beckman, 2006; Kandilov et al., 2017; Ovtchinnikov, 2013; Srinivasan, 2020).

Regarding the effects of a country's level of development, Kim and Lu (2013) emphasize that corporate governance reforms in emerging countries reduce foreign acquirers' "cherry picking" behavior toward these nations. Alimov and Officer (2017) found that reforms in the

protection of intellectual property rights represent a significant channel for technology transfer to developing countries.

### **4.3 Economics, Management, and Industry-Specific Studies**

Finance journal studies frequently focus on contexts related to capital market reforms, like IPOs and ownership structure, as well as other reforms directly associated with M&A (pro-M&A). However, within the studies in this section, one can discover a broader range of contexts. These include labor reforms (Alimov, 2015; Dessaint et al., 2017) and tax reforms (Feld et al., 2016; von Beschwitz, 2018), which still have significant effects on the market for corporate control.

Four papers were based on natural experiments, considering institutional change events as exogenous shocks (Chondrakis et al., 2021; John et al., 2020; Restrepo & Subramanian, 2017; von Beschwitz, 2018). Many of the reviewed studies used binary or discrete indicators to index reforms (9), while some employed continuous indices obtained from international organizations (4). These indices included the Employment Protection Legislation (EPL) Index and the Regulation in Energy, Transport and Communications (ETCR) Index, both from the OECD, as well as the Economic Freedom of the World (EFW) Index from the Fraser Institute (Boudier & Lochard, 2013).

Some studies have shown that the analyzed reforms channeled effects through the reduction of information asymmetry (Bhabra & Hossain, 2017; Chondrakis et al., 2021; John et al., 2020). Chondrakis et al. (2021), analyzing firms in technology-intensive industries, identified an increased propensity to acquire other firms in the same industry in response to "institutional reforms" that release technological information into the public domain. However, the effects on acquirer abnormal returns on the announcement date were negative. This finding helps emphasize a possible dual role of reducing information asymmetry: facilitating transactions in the corporate control market while simultaneously restricting potential strategic gains, as it reduces the value of private information.

John et al. (2020) demonstrated that interstate banking deregulation in the United States influenced the M&A market for non-financial firms. The integration of banks from different states enables the transmission of private information about potential local targets to acquirer firms from outside the state. Bhabra and Hossain (2017) showed that reforms from the SOX Act influenced acquisitions outcomes, among other reasons, due to increased transparency and stricter financial disclosure requirements, which placed acquirers in a better position to conduct risk assessments of potential targets.

The studies in Economics, Management, and Industry-Specific contribute to reinforcing the hypothesis that institutional changes in broader dimensions can influence acquisitions in general. Dessaint et al. (2017) and Alimov (2015) analyzed the effects of employment protection reforms, which intuitively should have an adverse effect on M&As as they increase regulatory (and transaction) costs. Dessaint et al. (2017) found that the aggregate volume of M&A decreases (increases) by 27% when the target firm's country strengthens (relaxes) employment protection. On the other hand, Alimov (2015), focusing on cross-border M&As, argued that employment protection reforms are associated with increases in entry M&As, especially for firms in labor and skill-intensive sectors. The author's argument is that, despite being an adverse shock to the firm's fundamentals, it can make the target firm with high skills and productivity more attractive to foreign acquirers from countries with low labor protection. Other authors included in this review similarly identified a positive connection between cross-border M&As and "labor costs" (Bertrand & Zitouna, 2006), even though they debated the validity of this relationship. This opens the door for more conclusive research, shedding light on the influence of labor costs on both domestic and international M&A.

Other institutional changes analyzed drove effects on M&A through the channels of capital market liberalization (von Beschwitz, 2018), cost reduction, and increased acquisition efficiency (Feld et al., 2016; Jeon & Miller, 2007; Restrepo & Subramanian, 2017), industry shocks (Alexandrou et al., 2014; Boudier & Lochard, 2013), and trade liberalization (Bertrand & Zitouna, 2006; Breinlich, 2008). Breinlich (2008) found that the 1989 Canada-United States Free Trade Agreement (CUSFTA) led to a substantial increase in domestic transactions in Canada. On the other hand, the effects on domestic M&A activity in the United States were insignificant. This result is noteworthy because it is consistent with the argument that institutional changes generate more intense effects in less developed markets, which was the case of Canada compared to the United States at that time.

Despite not presenting econometric results, De Paula et al. (2002, p. 467) analyzed the effect of general economic liberalization in Latin America, based on a dataset of 3,607 M&A transactions between 1990 and 1999. They concluded that corporate restructuring in this region was "facilitated and fostered by specific changes in policy-associated institutional framework conditions." This study was the only one in this section with a specific focus on emerging markets.

In this section as well, few theories that assist in hypothesis development were identified. Chondrakis et al. (2021) considered the Strategic Factor Markets and Resource-

Based View theories. von Beschwitz (2018) used the Free Cash Flow Theory, and Alexandrou et al. (2014) used the neoclassical approach on the causes of M&A.

## **5 Conclusions and Directions for Further Studies**

With this essay, we hope to contribute to the advancement of theoretical knowledge regarding the connection between institutional change and mergers and acquisitions. Grounded on New Institutional Economics, we have argued that changes in pro-market institutions through reforms provide opportunities for profitable exploitation at the firm level, leading firms to respond strategically in various ways. Furthermore, we emphasize that this phenomenon is likely to have more significant effects in emerging markets due to the existing institutional voids in these locations (Khanna & Palepu, 2010; Kim & Song, 2017; Peng, 2003).

This is already a fundamental question that guides research in the fields of strategic management and international business (Banalieva et al., 2018; Cuervo-Cazurra & Dau, 2009; Mukherjee et al., 2023; Singh et al., 2018). These areas use NIE as the theoretical foundation to investigate the effects of institutional change on firms' individual behavior, with a primary focus on emerging markets, for the reasons explained before.

The propositions of Institutional Theory suggest that there is room for investigating the relationship between institutional change and mergers and acquisitions in emerging markets. To examine the existence of empirical evidence supporting this relationship, our systematic review revealed the following key findings: 1) Studies that can provide inferences about this causal link are scarce; 2) They focus on specific episodes of institutional change, using a "natural experiment" approach; 3) Journals in the field of finance were the most prominent in addressing the relationship; 4) Lack of reliance on underlying theories; 5) A predominant focus on developed countries.

Overall, the literature has demonstrated significant effects on the propensity for acquisitions, the number of acquisitions, and market reactions in the form of abnormal returns of acquiring and/or target firms, with the expectation of future synergies from the deal. However, the effects on abnormal returns at the announcement date are ambiguous, especially for acquiring firms (Chen et al., 2020; Chondrakis et al., 2021; Srinivasan, 2020; von Beschwitz, 2018). Additionally, the reduction of transaction costs should reduce the time it takes to complete deals, considering that long processing times are indicative of high transaction costs (Khanna & Palepu, 2010). Uncompleted deals are a significant issue, representing a considerable portion of initiated deals (Dikova et al., 2010; Ekelund et al., 2001; Ekelund & Thornton, 1999; Kim & Song, 2017). However, these aspects were not analyzed in the studies

resulting from the SLR. Therefore, more conclusive investigations regarding abnormal returns and new investigations involving deals' time to completion are timely in future research agendas.

Natural experiments are strategies used for causal inferences and they are effective in addressing endogeneity concerns (Aboal et al., 2014). They are more specific and suitable for assessing the impact of public policies, making them useful for demonstrating the causal mechanisms or pathways through which institutional change affects mergers and acquisitions. On the other hand, longitudinal studies that employ continuous or discrete measures to track reforms over time can be applied with heterogeneous samples from various countries. This latter approach, in contrast to the M&A papers reviewed, is more commonly used in studies of strategic management and international business (described in the "empirical approaches" section).

A problem identified in the reviewed studies from the SLR is the lack of an underlying theory. On this matter, Aboal et al., 2014 (p. 335) argue that, "indeed, statistical testing without a theoretical framework implicitly and mistakenly assumes that data will speak for itself, and deprives the analyst of explanations that are essential for deriving policy advice." Once again, we have noticed a contrast with studies in the field of strategic management and international business, where there is a strong emphasis on being theoretically supported in hypothesis development. Therefore, we confirm that institutional theory is absent from M&A research (Ferreira et al., 2014; Hossain, 2021).

In this manner, we believe that fostering an interdisciplinary dialogue between the studies within this research stream (Banalieva et al., 2018; Cuervo-Cazurra & Dau, 2009; Mukherjee et al., 2023; Singh et al., 2018) and those uncovered in the SLR findings may stimulate new and creative research designs. This collaboration could encompass the refinement of definitions, the creation of measures for tracking institutional changes, and significant contributions to theoretical development.

These findings highlight the need for further research in emerging markets, considering the scarcity of studies that directly address the causal link between institutional change and mergers and acquisitions, in addition to the theoretical justifications for directing new research toward these locations (Hoskisson et al., 2000; Khanna & Palepu, 2010; Peng, 2003). Furthermore, as argued by Boudier and Lochard (2013), the impact of deregulation in the home country of the acquiring firm is less obvious and, therefore, deserves attention. In this context, Opoku-Mensah et al. (2020) confirmed that the "within-country variations of institutions" have significant effects on domestic acquirers. Thus, a general direction resulting from this essay is

the investigation of the effects of home-country institutional changes on M&A activities by domestic acquiring firms in emerging economies.

Finally, some limitations of this study include the SLR screening procedures, which may have excluded relevant studies. Other peer-reviewed literature databases could have been included. The use of an AI-based document reader expedites the SLR process but does not replace human critical judgment.

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## CHAPTER 3

### Do Home Country Pro-Market Reforms Affect Mergers and Acquisitions in Emerging Economies? Bringing Institutions into M&A Research

#### Abstract

We have conducted an analysis on how home country pro-market reforms may affect the propensity for M&A of acquiring firms in emerging economies. We believe that the reforms significantly drive the M&A initiative by reducing the institutional complexity of countries. Based on the New Institutional Economics, we have argued that these reforms fill market failures and reduce transaction costs, thereby increasing the marginal benefit of choosing M&A as a growth strategy. To estimate the effects of these reforms, we have employed binary response regression models (Logit) together with a sample of 76,654 firm-year observations from 6,117 publicly traded firms in nine different countries, from 2002 to 2021. We have documented an increase in the propensity for M&A after a country implements pro-market institutional reforms. The results showed that acquiring firms in emerging markets increased their probability of acquisition in response to pro-market reforms. Furthermore, our results were robust across different specifications and corrections for endogeneity. This study contributes to theory and practice by bridging institutional theory with M&A research and discussing firms' specific responses to institutional changes.

**Keywords:** M&A Activity; Economic Freedom; Transaction Costs; Institutional Voids.

#### Resumo

Realizamos uma análise sobre como as reformas pró-mercado do país de origem afetam a propensão para fusões e aquisições de firmas adquirentes em economias emergentes. Acreditamos que essas reformas são impulsores significativos da iniciativa de M&A ao reduzirem a complexidade institucional dos países. Baseados na teoria da Nova Economia Institucional, argumentamos que as reformas preenchem falhas de mercado e reduzem os custos de transação, aumentando, assim, o benefício marginal de optar por M&A como forma de crescimento. Para estimar os efeitos das reformas, utilizamos modelos de regressão de resposta binária (Logit) com uma amostra de 76.654 observações de firmas por ano, de 6.117 firmas de capital aberto de nove países, no período de 2002 a 2021. Documentamos um aumento na propensão para M&A depois que um país implementa reformas nas institucionais pró-mercado. Os resultados mostraram que as firmas adquirentes em mercados emergentes aumentaram sua probabilidade de aquisição em resposta às reformas pró-mercado. Além disso, nossos resultados foram robustos para diferentes especificações e correções para endogeneidade. Este estudo contribui para a teoria e a prática, aproximando a teoria institucional da pesquisa em M&A e discutindo as respostas específicas das firmas às mudanças institucionais.

**Palavras-chave:** Atividade de M&A; Liberdade Econômica; Custos de Transação; Vazios Institucionais.

## 1 Introduction

### 1.1 Context and Motivations

Changes in pro-market institutions are the result of adjustments in the complex set of norms and rules that govern economic transactions. Such changes have far-reaching

consequences for the economies and firms, as governments implement reforms that secure property rights, economic freedom, contractual dispute resolution, and other mechanisms that facilitate transactions and limit their intervention (Alipourian & Samadi, 2021; Banalieva et al., 2018; Campos & Horváth, 2012b; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009; Grier & Grier, 2021). Therefore, a growing body of literature has shown that pro-market reforms (incremental changes) have a significant effect on firm behavior (Banalieva et al., 2018; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009) and has raised motivations for investigating specific firm responses to institutional variations (Chacar et al., 2010; Peng, 2003).

Despite that, little is known or has been demonstrated regarding the effects of institutional change on Mergers and Acquisitions (M&A) decisions (Milhaupt & West, 2003), especially in emerging markets, fast-growing environments where various institutional factors contribute to market failures (Khanna & Palepu, 2010). Consistent with this observation, reviews of the extant literature have shown that streams of analysis derived from Institutional Theory are not as common in explaining the causes of M&A (Ferreira et al., 2014; Hossain, 2021) and have called for new studies that incorporate institutions into this line of research.

In this study, we have addressed these gaps by questioning whether **home country pro-market reforms affect the propensity for mergers and acquisitions in emerging economies**. Firms are naturally motivated to grow and can adopt a range of strategic choices to that end (Peng & Heath, 1996). We have as a basis the New Institutional Economics (NIE) (North, 1990) to demonstrate, through transaction costs, that firms should opt for M&A as a means of rapid growth in institutional change environments.

This research focuses on the effects of home country institutional changes on domestic acquiring firms' M&A. Typically, the analysis of institutional influence on M&A is seen in the context of international transactions (cross-borders) (Cao et al., 2019; Erel et al., 2012; Ferreira, Vicente, et al., 2017; Gregoriou et al., 2021; Santos et al., 2019; Xie et al., 2017). Thus, this proposal differs from international M&A studies by examining the effect of the internal institutional context (within-country variations of institutions) (Mukherjee et al., 2023; Opoku-Mensah et al., 2020) on the decisions of domestic acquiring firms, which is less obvious (Boudier & Lochard, 2013). We have also responded to the call made by Singh et al. (2018) and Ferreira, Borini, et al. (2017) by using this approach with a sample from various emerging countries.

M&A represents an "inorganic" form of growth (Reddy, 2014), which is the fastest and least costly way to adapt to a new environment (Camargos & Coutinho, 2008; Mitchell & Mulherin, 1996). Therefore, under the light of the effects of changes in pro-market institutions,

such as the direct reduction of uncertainty and other factors that facilitate transactions in markets, including reduced transaction costs and informational asymmetry, contract dispute resolution, optimization of pricing mechanisms, among others (Banalieva et al., 2015; Khanna & Palepu, 2010), managers are likely to become more inclined to pursue acquisitions to achieve their long-term objectives, choosing M&A as a means of growth, as the costs of using the market should be more attractive (Peng & Heath, 1996). To support these arguments, this research aims **to analyze the effects of home country pro-market reforms on the propensity for mergers and acquisitions by acquiring firms in emerging economies.**

We have employed a similar line of reasoning to some studies in the literature on reforms/reversals (Banalieva et al., 2018; Campos & Horváth, 2012a; Grier & Grier, 2021) to create an indicator that tracks pro-market reforms in countries based on the identification of sustained increases in economic freedom indexes. We have alternately used the Index of Economic Freedom (EFI) from the Heritage Foundation and the Economic Freedom of the World (EFW) from the Fraser Institute (Gwartney et al., 2022; Miller et al., 2022). By applying binary response regression models to a sample of 76,654 firm-year observations from 6,117 publicly traded firms in nine different countries from 2002 to 2021, we have found a positive relationship between pro-market reforms and the propensity for M&A. When quantifying the average effect of pro-market reforms, we have identified that a discrete change in our reform indicator from 0 to 1 is associated to an average increase of 1.69% or 6.32%, depending on the index used, in the likelihood of announcing an acquisition in the following year, given the average sample probability of 20.5%. Thus, our analysis revealed that acquiring firms in emerging markets increase their propensity for M&A in response to pro-market reforms. Our model incorporated a comprehensive set of control variables that influence the acquisition decision. The results remained significant for different specifications of the constructed reform indicators.

Pro-market reforms and M&A flows in countries may be jointly correlated to unobservable factors, such as uncertainty in the political and economic dimensions (Bonaime et al., 2018; Bonfiglioli et al., 2022), which suggests that our findings may be biased and subjected to endogeneity of the key explanatory variable (Hill et al., 2021). To address such a concern, we have estimated a Probit model with instrumental variables (IV), using a measure of national governance institutions provided by the Worldwide Governance Indicators (WGI) from the World Bank as an instrument for the reform indicator. The results demonstrate that our findings are robust to endogeneity correction.

We have estimated another specification for our model in which the dependent and independent variables are at the same level (without a time lag between them), considering that managers of acquiring firms may anticipate the effect of reforms. Our findings have shown a positive and significant effect of pro-market reforms, indicating that managers may react simultaneously to the reforms.

Also adopted by other authors (Banalieva et al., 2018), the approach used to compute our reform indicator has limitations and it is subjected to a researcher discretion. To validate this strategy, we have used a reverse logic to compute a pro-market institutional reversals indicator based on the identification of sustained reductions in economic freedom indexes, expecting them to have a negative relationship with the propensity for acquisitions. Nevertheless, our findings were significant and consistent with the theoretical predictions for this relationship, aiding to confirm the relevance and economic meaning resulting from the strategy adopted to build the reform indicator.

This research makes theoretical and practical contributions. Firstly, it establishes a connection between institutional theory and M&A research, answering the call by Ferreira et al. (2014) and Hossain (2021). Therefore, we add to the literature that investigates the causes of variation in M&A activity (Bonaime et al., 2018; Erel et al., 2021; Nguyen et al., 2020; Nguyen & Phan, 2017; H. Yang et al., 2022) the effect of pro-market reforms in emerging markets. Furthermore, we have also contributed to the literature that documents how institutional changes affect firm behavior (Banalieva et al., 2018; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009; Mukherjee et al., 2023; Park et al., 2006; Singh et al., 2018). Our study is also a significant contribution to the literature on reforms/reversals (Campos & Horvath, 2012b, 2012a; Grier & Grier, 2021) and can be used as a foundation for the development of a macro-micro bridge for investigating the effect of a country characteristics on firms. Furthermore, this development has allowed an interdisciplinary dialogue among different fields of knowledge, especially corporate finance, business strategy, international business, and economics.

We have contributed with evidence that supports the New Institutional Economics, following North (1990), demonstrating that the interactions between institutions and organizations result in strategic choices that shape economic activity. This contribution provides insights for new studies aiming at investigating M&A from the perspectives of growth and strategic choice (Chittoor et al., 2008; Peng & Heath, 1996). Our study provides a brief and preliminary framework for understanding the trade-off between the costs and benefits of acquisition as a means of growth, which can be further explored in these studies.

On a practical level, our research has implications for policymakers, corporate decision-makers, and participants in the M&A market in general. These findings can provide policymakers with public justifications for the benefits of pro-market reforms within firms (Banalieva et al., 2018; Rodrik, 1996). "What is driving the current M&A resurgence" is also a concern raised by M&A practitioners (Lajoux, 2019, p. 18). Therefore, these results can be useful for market participants understanding what influence such transactions. Additionally, our study proposes an econometric model structured on accounting information, which can be used to predict the probabilities of acquisition announcements by potential acquiring firms in other contexts.

The remaining is divided into the following sections. Section 2: we present the theoretical framework, providing the foundations for the main constructs used and the development of empirical predictions. Section 3: discusses research methods, variables, and model specifications. Section 4: we present research results and some robustness checks. Finally, in Section 5, we present the concluding remarks.

## **2 Related Literature and Hypothesis Development**

### **2.1 Motivations and Causes for Mergers and Acquisitions**

Mergers and Acquisitions (M&A) are forms of corporate restructuring where there is a partial or total exchange of ownership between the involved firms through the negotiation of their assets. Buyers, those offering to relinquish their resources in exchange for the assets of the other firm, are commonly referred to as acquirers. Sellers, who receive the offer to be evaluated by their shareholders, are the "targets."

A merger occurs when the target firm is absorbed by the acquiring firm, either through incorporation, in which case it ceases to exist as a separate business and takes on the same name as the acquiring firm, or through consolidation when a new firm is created from the combination of the involved entities. Technically, a merger is more restrictive and relates more to the legal structure of a specific deal (Lajoux, 2019). On the other hand, an acquisition is a more generic term for the total or partial purchase of the assets (real assets or shares) of the target firm, sometimes referred to as a takeover or tender offer (Ross et al., 2022). Other terms are also used to describe such transactions, such as buyouts and leveraged buyouts (LBO), which refer to the complete purchase of the target firm's assets, in the latter case with third-party capital.

Financial analysts and traditional corporate finance manuals (Brealey et al., 2022; Ross et al., 2022) often categorize M&A in several ways: vertical acquisition, which involves firms in different stages of the value chain (suppliers and buyers); horizontal acquisition, which

involves firms in the same line of business (competitors); conglomerate acquisition, which results in diversification because a firm from an unrelated industry is acquired.

The choice of one of these modalities depends on the strategy of the firm seeking the deal, but the reasons for M&A transactions in general converge to the same points. The most general motives, theoretically grounded in the theory of the firm, are described by Camargos & Coutinho (2008): Asymmetric expectations; Irrationality; An alternative to dividends and repurchases; Compensation and tax incentives; Replacement costs and market values; Operational and managerial synergies; Anti-competitive effects and the pursuit of a monopoly; Reducing the risk of insolvency; and managerial reasons. Another key reason highlighted in the literature with the same theoretical foundation is "the desire of top-level managers to pursue a growth strategy" (Peng & Heath, 1996, p. 495). Despite the various reasons, some of which deviate from the primary utility-maximizing function, as noted by Berkovitch & Narayanan (1993), the most rational reason for M&A is synergies (Ross et al., 2022).

Synergies result from an economic gain that occurs when two (or more) firms combine. In other words, the difference between the value of the combined firms ( $V_{AB}$ ) and the sum of the (ex-ante) values of the separate firms ( $V_A, V_B$ ) must be greater than zero, denoted as follows:

$$\text{Synergy} \equiv V_{AB} - (V_A + V_B) > 0 \quad (1)$$

Gains derived from synergy can be priced based on the future free cash flows of the new firm ( $AB$ ), which will be increased through sources of revenue growth, cost reduction, tax benefits, and/or reduced working capital and fixed capital requirements (Ross et al., 2022). Therefore, such motivations are legitimate when they seek value maximization or competitive advantages.

However, the decision to engage in M&A depends on other internal and external factors, and the conditions under which these decisions occur are not always the most appropriate. In practice, it is observed that the aggregate volume of M&A in countries evolves in waves, the so-called "M&A waves", suggesting that certain conditions are favorable for their clustering over time or within specific industries (Gaughan, 2017). This has researchers to seek an understanding of their causes.

The fundamental research questions in M&A are widely raised in the fields of Strategy and Corporate Finance. In the field of strategy research, some dominant themes include "corporate partnership," "performance," and "environmental modeling: governmental, social, and political influences on strategy" (Ferreira et al., 2014). In the finance domain, key research topics involve the accounting and financial attributes of acquiring and target firms, effects on

stock returns and synergy gains, managerial behavior and conflicts of interest, anti-takeover strategies, M&A waves, and macroeconomic conditions (Hossain, 2021; Mulherin et al., 2017).

Among some of the determinant factors reported in traditional research, those from the stream investigating the exogenous causes of variation in M&A activity stand out, in which this study fits. At the aggregate level, two streams complement each other to explain M&A waves. On the one hand, Shleifer and Vishny (2003) developed a theoretical model that states that M&A are positively correlated with periods of high stock market valuations, where acquiring firms' stocks are overvalued. In this case, managers should use these stocks to acquire real assets from other companies as a means of protecting their shareholders, resulting in an M&A wave.

On the other hand, Harford (2005) relied on neoclassical foundations to develop his model, stating that M&A waves are driven by economic motivations rather than behavioral ones. In this case, M&A depends on industry shocks, economic liquidity, and economic expansion. He associates high capital liquidity with the ease of financing in a country, which also indicates low transaction costs. Our argumentation adheres to such idea, which posits M&A as a result of a transaction cost-viable environment.

In line with the last approach, Erel et al. (2021) investigated the relationship between acquiring firms' cash holdings and the propensity for acquisitions under different macroeconomic conditions, using an international sample of potential acquiring firms. Their results are consistent with the predictions of Harford (1999) and Jensen (1986) that cash-rich firms are more likely to make acquisitions. However, such acquisitions are of lower quality, leading to a reduction in the firm's value, especially during bull markets, suggesting the "winner's curse" concept. Nevertheless, the authors pointed out that maintaining cash can mitigate the effect of poor macroeconomic conditions on acquisitions, and such firms are more likely to make good acquisitions during these times.

Other theoretical streams have played an important role in predicting exogenous causes of M&A, such as the real options approach to investments (Dixit & Pindyck, 1994). According to this perspective, uncertainty can delay real investments by firms. In this view, several researchers have sought to investigate the connection between uncertainty and M&A (Bonaime et al., 2018; Borthwick, et al., 2020; Nguyen & Phan, 2017). Some of these studies empirically demonstrated a negative effect. For instance, Bonaime et al. (2018) found that political uncertainty in a country reduces the propensity for acquiring publicly listed firms and also decreases the aggregate level of M&A.

The volume of M&A can also respond to a country's economic policy. For instance, a contractionary monetary policy can increase the cost of financing investments and,

consequently, the firms' capital cost, negatively affecting their returns. Building on this perspective, Adra et al. (2020) found that Treasury Bond yields (reflecting monetary policy) negatively impact the abnormal stock returns of the acquiring firms, post-acquisition operational performance, and the aggregate volume of M&A transactions in the country. In line with the real options channel, these authors also showed that uncertainty about monetary policy around the acquisition announcement date is a significant predictor of the reduction in acquiring firms' abnormal returns because it affects investor expectations.

The situation of economic policy not being conducted in accordance with the principles of public administration can also have consequences. This has led some researchers to investigate the effect of regional political corruption on a country's M&A activities. Studying USA districts, Nguyen et al. (2020) found that local corruption leads to an increased propensity for acquisitions. The central argument for this is that firms seek to protect their most liquid assets by converting them into fixed assets and diversify the risk of corruption by acquiring firms in less corrupt areas. On the other hand, Yang et al. (2022) found a negative effect in China, arguing that, in this case, firms need to maintain liquidity to meet the rent-seeking demands from the government, which has major control over resources, and other impositions such as limits on access to land, foreign capital, and the threat of taxes and regulations. Such a study also provides insights for the investigation of how government intervention affects acquisitions in emerging markets, rather than maintaining institutions that ensure a reduction in transaction costs and, consequently, the smooth functioning of markets.

The external causes of variation in M&A activity are diverse, and some of them have been investigated from the perspective of reducing transaction costs through other factors, such as deregulation (Andrade et al., 2001; Mitchell & Mulherin, 1996) and reduced financing costs (Harford, 2005). Andrade et al. (2001, p. 104) argued that, in explaining the causes of M&A, the 1990s were the "decade of deregulation." This was especially true for emerging countries that engaged in waves of economic liberalization reforms (Agarwal & Bhattacharjea, 2006; De Paula et al., 2002; Junzhi et al., 2020). Building on this, our study seeks to bring new perspectives and evidence more directly related to the issue of transaction costs in emerging markets. To do so, we have developed a hypothesis grounded in New Institutional Economics, which was absent in earlier developments.

## **2.2 New Institutional Economics**

NIE is concerned with how transaction costs are determined and how they affect the functioning of markets, in terms of how firms coordinate activities or rely on institutional

arrangements to minimize them (Coase, 1937; North, 1990; Williamson, 1985). Such costs are not considered in neoclassical economic pricing allocation models, and they exist because information for transaction pricing is imperfect, and economic agents can engage in opportunistic behaviors. Therefore, transaction costs encompass all the resources incurred to ensure that transactions are concluded in the best interests of the parties, such as efforts in information collection, drafting, policing, and enforcement of contracts.

Therefore, transaction costs are a measure of how well a market works (Khanna & Palepu, 2010). In other words, they reflect the ease with which buyers and sellers can complete their transactions and the time it takes to do so. Depending on their magnitude, transaction costs can adversely affect operations returns or even make them unfeasible in some markets, such as emerging economies, which are naturally marked by high costs of this nature. This can alter the financial and operational structure of firms. As shown by Yang et al. (2022), firms in China need to maintain relatively higher liquidity in their financial structure to address the costs arising from government intervention in the markets. Khanna and Palepu (2010) referred to the sources of high transaction costs in emerging markets, such as Brazil, Russia, India, China, and South Africa (BRICS), as "institutional voids."

In this perspective, North (1990) attributes the institutional gaps to the difference in performance between economies over time. In his model, he conditions the measurement of transaction costs on the quality of economic institutions. These institutions are materialized in the entire regulatory and contractual enforcement framework that market transactions rely on, in addition to informal constraints that assist in their coordination in the absence of formal constraints. An economic institution is pro-market when it ensures its proper functioning by reducing transaction costs. Cuervo-Cazurra et al. (2019, p. 1) define them as the "implementation of rules and regulations that facilitate market transactions and limit the role of the government in the economy." La Porta et al. (1999, p. 222) state that some of these institutions include "a legal system that protects property rights and enforces contracts, and modest taxation and regulation." According to North (1990), these institutions determine transaction costs and, thereby, affect the performance of firms and economies as a whole.

Therefore, NIE provides an analytical framework for how economies can fill their gaps through institutional changes and, thus, help firms reduce their transaction costs (North, 1990). Quality and change are two aspects of institutions, with the latter representing adjustments triggered by government agents in the complex of rules through reforms and implemented economic policies aimed at improving quality (Banalieva et al., 2018; Cuervo-Cazurra et al., 2019). According to Banalieva et al. (2018, p. 3), such reforms provide "rules, regulations,

property rights protection, and contract dispute resolution mechanisms that reduce exchange hazards."

Expanding upon these concepts and the perspective of the gap relative to their more developed counterparts, some emerging economies embarked on a series of pro-market reforms during the 1990s. These reforms were based on a set of recommended policies deemed appropriate at the time (J. Williamson, 2004). These initiatives faced criticism for being viewed as a one-size-fits-all reform agenda and for potentially adhering too closely to neoliberal fundamentalism (Rodrik, 2006; J. Williamson, 2004). However, recent research suggests that, overall, these reforms have proven beneficial for countries in the long term (Grier & Grier, 2021).

Other studies that have investigated the effects of pro-market reforms at the firm level, utilizing the NIE as a theoretical framework, have found that firms reduce their costs and improve their performance (Banalieva et al., 2018; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009). In their approach, some of these studies rely on institutional quality indices to track the reforms (Banalieva et al., 2018; Grier & Grier, 2021).

### **2.3 Economic Freedom Indexes**

The debate about the combined importance of those policies and the need to map and monitor their evolution in countries has led some international organizations to develop metrics that capture this concept, known as "Economic Freedom Indexes" (Grier & Grier, 2021). Those are primarily deregulation indices, based on the idea that their scores increase with a higher level of deregulation in countries (Bonfiglioli et al., 2022). It consists of subcomponents that reflect the quality of pro-market institutions. For example, the Economic Freedom Index (EFI), developed and publicly disclosed by the Heritage Foundation, ranges from 0 to 100 and is calculated as a simple average of sub-indices aggregated into four general areas (Miller et al., 2022): (1) Rule of Law; (2) Government Size; (3) Regulatory Efficiency; (4) Market Openness. A score closer to 100 indicates a more well-developed scope of pro-market institutions.

Another example is the Economic Freedom of the World (EFW) index by the Fraser Institute, which represents "a valuable tool for scholars seeking to examine the contribution of economic institutions more thoroughly and disentangle their influence from political, climatic, locational, cultural, and historical factors as determinants of growth and development" (Gwartney et al., 2022, p. 3). It was developed as a result of conferences led by the economist Milton Friedman from 1986 to 1994, and subsequently, some of the world's leading economists, including Douglas North (the theorist providing the institutional analysis framework for this

proposal), participated in discussions to create the EFW (Gwartney et al., 2022). Data for its components are sourced from organizations such as the International Monetary Fund (IMF), the World Bank (WB), and the World Economic Forum (WEF). The overall score, ranging from 0 to 10, is an average of the index's measurement across five major areas: (1) Size of Government; (2) Legal System and Property Rights; (3) Sound Money; (4) Freedom to Trade Internationally, and (5) Regulation of Credit, Labor, and Business.

For a higher score, the EFW considers whether a government maintains low taxes, refrains from creating barriers to trade, and grants markets autonomy for resource allocation, at the expense of regulation and public spending. Additionally, it should provide a framework for voluntary exchanges, safeguard property rights, an equitable legal system, and a strong currency that results in price stability and predictability (Gwartney et al., 2022).

Hall and Lawson (2014) assessed the usefulness of the EFW since its initial publication in a review of studies that employed the index in their analyses. Out of the studies that used it as an explanatory variable (198), more than two-thirds correlated it with some positive economic outcome, such as "fast growth." Other research also employed the EFI in their regressors as proxies for the quality of institutions and reforms (Banalieva et al., 2018; Fuentelsaz et al., 2021; Liou et al., 2016; Meyer et al., 2009; Singh et al., 2018), yielding significant results.

Despite the emphasis on two indexes, EFW and EFI, as they are considered the main measures of pro-market institutions available (Cuervo-Cazurra et al., 2019), there are other similar alternatives that capture the concepts of economic freedom, such as competitiveness rankings provided by The World Economic Forum and the International Institute for Management Development (IMD), as highlighted by Grier and Grier (2021). This emphasis is reinforced considering that the correlation between the indexes presented can vary between approximately 0.6 to 0.8. However, the greater emphasis on the first indexes is justified by their wider diffusion in empirical literature on institutions and reforms, as well as their availability for a long period and for several countries.

#### **2.4 Hypothesis development on the relationship between pro-market reforms and mergers and acquisitions**

The number and size of M&A increased significantly in the 1990s in emerging markets, partially due to the restructuring of previously regulated industries (Ekelund et al., 2001). Developing countries concentrate markets where such changes would have a greater impact, as a variety of factors contribute to market failures, referred to as institutional voids (Khanna &

Palepu, 2010). Therefore, "institutional transitions throughout emerging economies present a fascinating opportunity to integrate institutional and strategic choice perspectives" (Peng, 2003, p. 276). M&A can be interpreted as strategic choices in response to changes in the external and industry environment (Hitt et al., 2019; Peng & Heath, 1996) and are the least costly way to adapt to the new environment by redistributing assets across industries (Mitchell & Mulherin, 1996). Thus, these considerations justify this examination in emerging economies.

Some studies have investigated the causal link between institutional change and mergers and acquisitions, identifying significant effects in the context of reforms, deregulation, and liberalization. We can highlight some general pathways through which these effects were channeled, like trade liberalization, capital market liberalization, reduced information asymmetry, increased credit supply, strengthened property rights, industry shocks, and overall cost reduction or increased acquisition efficiency (Alimov & Officer, 2017; Balogh et al., 2022; Breinlich, 2008; Chen et al., 2020; Chondrakis et al., 2021; Dessaint et al., 2017; John et al., 2020; Opoku-Mensah et al., 2020; Ovtchinnikov, 2013; Srinivasan, 2020; Wang & Shao, 2022). However, it is important to note that many of these studies have focused on specific instances of institutional change as natural experiments and have not explicitly adhered to an underlying theory, despite their references to institutions and institutional change.

In this vein, in earlier developments, Jensen and Ruback (1983) reviewed some pioneering studies on the impact of regulations on takeover activity and found that certain impositions reduced their profitability. The authors argued that "by increasing transaction costs and imposing restrictions on acquisitions, regulations could simply truncate the distribution of takeovers that would actually occur" (Jensen & Ruback, 1983, p. 29).

Thus, it is argued that in circumstances where adjustments in the complex of norms that assist in market coordination reduce transaction costs, firms should seize the opportunity by opting for M&As as a means of rapid growth (in addition to internal organic growth), given that market utilization costs will be smoothed (Peng & Heath, 1996).

From another perspective, reforms also signal the future direction of the economy and the government's commitment to protecting property rights, strengthening other pro-market institutions, reducing intervention, and providing more stable political structures. In this context, a reduction in firm costs (both transaction and production) is expected, and managers gain confidence to undertake long-term investments (Banalieva et al., 2018). Regarding this, Banalieva et al. (2018, p. 17) suggest that "the government broadcasts its intent to reduce or increase state control over the economy through the policies it implements. Managers' subsequent interpretation of these signals, and their judgment about the likely impact on

transaction costs results in heterogeneous company investments." In line with this reasoning, Singh et al. (2018) empirically demonstrate that home country pro-market reforms may positively affect the implementation of new investment projects by firms in emerging economies.

Thus, this hypothetical development can be summarized in the following statement:

*H1: Acquiring firms from emerging economies increase their propensity for mergers and acquisitions in response to pro-market reforms in their country.*

Our study differs from the others mentioned earlier in this section since we use broad-based reforms rather than a specific event, tracked through sustained increases in economic freedom indexes, similar to Banalieva et al. (2018) and Grier and Grier (2021).

### **3 Methods**

#### **3.1 Data collection and sample**

To reach our goal, binary response regression models were employed to estimate the parameters and calculate the probabilities of a firm announcing an acquisition in the following year ( $t+1$ ) conditional on pro-market reform indicators and other control variables. This modeling approach is similar to that used in several studies (Bonaime et al., 2018; Erel et al., 2021; Nguyen et al., 2020; Nguyen & Phan, 2017; H. Yang et al., 2022; J. Yang et al., 2019).

Therefore, the sample was constructed using annual observations of publicly traded firms with acquisition potential and headquartered in emerging markets. To classify them as potential acquirers, only firms that had made at least one acquisition announcement during the study period were included in the sample. The selection of these countries specifically involves emerging economies that have a considerable volume of transactions throughout the analyzed period. In this regard, the criteria followed Liou et al. (2016), who included nine countries in their study: Brazil, China, India, Indonesia, Mexico, Russia, South Africa, Thailand, and Turkey.

The M&A records were extracted from the Securities Data Company (SDC) database from Refinitiv, covering the period from 2002 to 2021. Only transactions involving acquiring firms headquartered in the selected countries were included. The extracted database encompasses announcements of domestic and cross-border mergers and acquisitions, including both in-in and in-out transactions, involving public, private, and subsidiary target firms. In line with the literature, records involving buybacks and acquisitions of remaining interests, where the acquirer is already a majority shareholder of the target company, were excluded, as per the Refinitiv classification (Adra et al., 2020; Alimov & Officer, 2017; Erel et al., 2021). Acquiring

firms in the financial sector (TRBC 2-digit industry classification: code 55) were also excluded. Within this setting, data on the accounting, financial, and market characteristics of eligible acquiring firms from each country were extracted.

At this point, firms with less than three years of complete observations regarding the availability or disclosure of their accounting, financial, and market characteristics were excluded. Despite the sample's temporal range extending until 2021, the econometric analysis encompasses data for the explanatory variables up to 2020, considering there is a time lag between the dependent and independent variables in the proposed model. This resulted in a sample of 6,117 non-financial companies from 9 countries with acquisition potential, resulting a total of 116,223 firm-year observations from 2002 to 2020. Finally, by excluding observations with missing data, an unbalanced panel with 76,654 firm-year observations was obtained. Table 1 provides details on the number of eligible companies per country and each country's contribution to the total number of observations:

Table 1: Sample of Firms by Country and Each Country's Contribution to the Number of Observations

	Brazil	Russia	India	China	Indonesia	México	S. Africa.	Thailand	Turkey	Total
No. Firms	145	190	1,314	3,407	241	88	205	367	160	6,117
Total Obs.	2,755	3,610	24,966	64,733	4,579	1,672	3,895	6,973	3,040	116,223
Complete Obs.	2,041	1,945	16,338	41,395	3,458	1,176	2,996	4,906	2,399	76,654
Country Rate (%)	2.7	2.5	21.3	54.0	4.5	1.5	3.9	6.4	3.1	100.0
No. Announcements	484	550	2,257	10,111	420	237	610	708	325	15,702
Announcement Rate (%)	23.7	28.3	13.8	24.4	12.1	20.2	20.4	14.4	13.5	20.5

Note: No. Firms is the number of eligible acquiring companies for analysis in each country; Total Obs. represents the number of companies multiplied by the number of years under analysis (19 years); Complete Obs. exclude firm-year observations where data is missing; Country Rate is the relative contribution of each country to the number of complete observations; No. Announcements represents the firm-year observations in which one company makes at least one acquisition announcement; Announcement Rate is the ratio of observations with announcements to the number of complete observations.

Source: Authors' own elaboration.

This combination of companies and countries allows for a comprehensive set of analyzable observations (76,654). The total announcement rate at 20.5% is similar to that obtained by Erel et al. (2021) for a sample of firms in 36 countries over 17 years, where the observed percentage was 23.8%. Thus, it was possible to build an econometric model structured with accounting, financial, and market information, using annual observations of companies with acquisition potential, to predict the probabilities of announcing an acquisition in the following year.

### 3.2 Variables definition

The dependent variable ( $ma\_d_{i,t+1}$ ) takes a binary form, assuming 1 if the company announces at least one acquisition in the following year, or zero otherwise.

We have constructed our key explanatory variable by alternately using the EFW and EFI indexes, which are commonly used indices of institutional quality for indexing reforms (Banalieva et al., 2018; Grier & Grier, 2021; Singh et al., 2018). Some studies in the field of finance and M&A use and advocate in favor of a discrete reform index as opposed to a continuous measure of institutional quality (Alimov & Officer, 2017; Dessaint et al., 2017). Transforming indices is suggested for the conceptualization of the institutional change construct, as "evaluating the quality of institutions does not necessarily translate into adjustments in institutions" (Samadi & Alipourian, 2021, p. 143). Following the information from Dau (2018), the only explicit index of pro-market reforms available is the "structural reform index" from the IMF, which is limited in its temporal coverage (1989-2008). Therefore, we chose to proceed with the current strategy.

Additionally, it is important to note that the literature also employs the continuous economic freedom indexes as proxies for pro-market reforms (Boudier & Lochard, 2013; Dau & Cuervo-Cazurra, 2014; Singh et al., 2018). In light of this, we have conducted supplementary tests using the original variables. The results of these additional tests have not been included in this paper, but they are available upon request from the authors.

Pro-market reforms were tracked by observing sustained increases in the indexes, following a similar reasoning to some studies in the reform/reversals literature (Banalieva et al., 2018; Campos & Horváth, 2012a; Grier & Grier, 2021). In line with Banalieva et al. (2018), the indicator takes the value 1 in year  $t$  if positive changes in the economic freedom index are observed in two consecutive years ( $t-1$  and  $t$ ), or 0 otherwise. In other words, for  $ref_t = 1$  to hold, it must meet the condition of  $\Delta EFX_{t-1} > 0$  and  $\Delta EFX_t > 0$ . Here,  $ref_t$  is the pro-market reforms indicator in year  $t$ , and  $\Delta EFX$  represents the annual change in the economic freedom index ( $\frac{EFX_t}{EFX_{t-1}} - 1$ ), assuming either EFW or EFI. Considering that "measures of institutional quality already contain all the relevant information about the impact of policies" (Rodrik et al., 2004, p. 156), tracking persistent increases in the indices assists in isolating the impact of a given reform from the overall institutional quality.

The  $ref_t$  indicator signals that the reforms have created a more favorable environment in terms of transaction costs in a given year. Our indicator can be interpreted as exogenous regulatory shocks that, in some instances, have altered the structure of market functioning. It

also indicates that the market-oriented institutions have evolved toward an improvement in their quality. This suggests that, at that moment, markets, in general, have greater autonomy for resource allocation, reducing the need for government interventions.

Grier and Grier (2021, p. 60) justify the use of a reform indicator, instead of the economic freedom index itself, stating that it is a “constructed index of a limited range and is unlikely to have a linear effect on outcome variables.” We have looked for sustained increases in the indexes, converting them into indicators, and this allowed us to estimate the average effect of such increases on the acquisition probabilities.

We have included control variables related to firm characteristics, capital market conditions, and the macroeconomic environment of the countries. These factors, as indicated by the M&A literature, are known to have explanatory power over the acquisition decision (Bonaime et al., 2018; Erel et al., 2021; Kim & Song, 2017; Nguyen et al., 2020; Nguyen & Phan, 2017; H. Yang et al., 2022; J. Yang et al., 2019). The variables description is detailed in Table 3:

Table 2: Variables description

<b>Dependent Variable</b>	<b>Meaning</b>	<b>Description</b>	<b>Expected Sign</b>	<b>Source</b>
<i>ma_d<sub>i,t+1</sub></i>	Acquisition dummy	Assumes 1 if the company announces at least one acquisition in the following year, or zero otherwise.		Refinitiv
<b>Independent Variables</b>				
<i>ref</i>	Pro-market reforms	Assumes 1 if a positive change in the economic freedom index is observed in both current and previous year, or zero otherwise.	(+)	Fraser Institute, Heritage Foundation
<b>Firm Characteristics</b>				
<i>size</i>	Acquirer size	Ln of total assets.	(+)	Refinitiv
<i>roa</i>	Performance	Operational profit to total assets.	(+)	Refinitiv
<i>cash</i>	Liquidity	Cash holdings to total assets.	(+)	Refinitiv
<i>debt</i>	Leverage	Debt to total assets.	(-)	Refinitiv
<i>growth</i>	Sales growth	Revenues % anual change.	(+)	Refinitiv
<i>return</i>	Stock returns	Cumulative stock returns in year t.	(+)	Refinitiv
<i>mtb</i>	Growth opportunities	Company market capitalization to total assets.	(+)	Refinitiv
<b>Market Conditions</b>				
<i>mreturnn</i>	Market returns	S&P Global Equity Indices (anual % change)	(+)	World Bank
<i>mktcap</i>	Total market capitalization	Market capitalization for listed companies (% of GDP)	(+)	World Bank
<b>Macroeconomic Conditions</b>				

<i>gdp</i>	GDP growth	Annual GDP growth rate	(+)	World Bank
<i>interest</i>	Real interest rate	Annual interest rate adjusted for inflation	(-)	World Bank

Note: Control variables for firm characteristics were winsorized at the 1st and 99th percentiles to mitigate the effects of outliers (Bonaime et al., 2018; Erel et al., 2021). The *ref* indicator is constructed and tested alternately with the EFW and EFI indexes. All control variables are dollar-denominated to allow for comparability between countries. Source: Authors' elaboration.

Managers may not react simultaneously to variations in the explanatory variables, so we considered coding the dependent variable in the following period (t+1), following the M&A literature. This procedure also helps alleviate concerns about possible endogeneity (Nguyen et al., 2020). However, considering the hypothesis that managers may anticipate the effect of reforms, we tested the model specification with dependent and independent variables at the same level (t). This is demonstrated in the robustness checks section.

Larger firms typically have more access to capital and the ability to exploit synergies with the target firm, making them more likely to make acquisitions (Erel et al., 2021). Furthermore, empirical evidence shows that more profitable firms, those with recent growth, and those with high cash reserves are more likely to engage in acquisitions (Bonaime et al., 2018; Erel et al., 2021; J. Yang et al., 2019). On the other hand, debt can increase the costs of financial distress and lead managers to be more cautious in evaluating potential targets, resulting in a negative relationship between leverage and acquisitions, as confirmed by some empirical investigations (Bonaime et al., 2018).

The market valuation of firms fundamentally impacts their acquisitions, which may also be correlated with increases in the capital market (Rhodes-Kropf & Viswanathan, 2004; Shleifer & Vishny, 2003). Therefore, we included stock returns and the firm's market capitalization, as well as the country's stock market return as proxies associated with a positive expectation of acquisitions. Since this study is limited to publicly traded acquiring companies in an analysis across various countries, we considered it important to include a proxy representing the level of development of the local capital market, represented by the total market capitalization as a percentage of GDP (Kim & Song, 2017).

At macro-level, good economic conditions can drive acquisitions, so we controlled for the countries' GDP growth (Erel et al., 2021). Finally, the real interest rate in the countries represents the direction of their monetary policy and is an important determinant of investments (Adra et al., 2020). Furthermore, when high, they also indicate high transaction costs (Harford, 2005). Thus, we expect a negative relationship.

Considering that M&A waves can cluster by industry and by country, we included dummies to control for industry (4-digit TRBC classification) and countries fixed effects, to capture time-invariant characteristics that may affect firms' acquisition decisions (Erel et al., 2021; Nguyen & Phan, 2017; J. Yang et al., 2019). Including dummies to control for specific-year effects is essential because it would capture the effects of exogenous shocks at a global level (such as financial crises and the COVID-19 pandemic) (J. Yang et al., 2019). However, it could absorb the explanatory power of our reform indicator since it is also a variable that captures specific year-specific shocks (but, in this case, varies among countries). Therefore, the results are presented with and without year controls.

The approach taken to compute our reform indicator is subject to researchers' discretion. With that in mind, following the same strategy, we have built a new indicator for reversals in pro-market institutions, tracked by identifying reductions in economic freedom indexes over two consecutive years. Reversals weaken pro-market institutions because the government gains more control over economic transactions (Cuervo-Cazurra et al., 2019). This also increases transaction costs through tariff impositions and interest rate hikes. Therefore, a negative effect on the propensity for M&A is expected. Significant evidence from this testing helps strengthen the indications that the strategy adopted for identifying reforms is relevant and holds economic significance. This development is found in the robustness checks section.

### 3.3 Model specification

The Logit model was chosen to estimate the parameters and calculate the probabilities of announcing an acquisition. Some other competing options are found in the M&A literature, such as Probit and Linear Probability Model (LPM) (Erel et al., 2021; Nguyen et al., 2020; Nguyen & Phan, 2017; J. Yang et al., 2019), which depend on specificities and the researcher's choice. We chose to follow Bonaimé et al. (2018) with the Logit specification. Nevertheless, the findings from tests with other models were qualitatively the same in terms of interpreting the sign of the coefficients and statistical significance (available upon request to the authors). Next, there is the specification of the functional form of the Logit model (Wooldridge, 2019).

$$P(y = 1|\mathbf{x}) = G(\alpha + \mathbf{x}\boldsymbol{\beta} + u_{i,t}) \quad (2)$$

Where  $G$  is the non-linear logistic function that converts the results into a probability ranging from 0 to 1, for any real number  $Z$ :

$$G(\alpha + \mathbf{x}\boldsymbol{\beta} + u_{i,t}) = \frac{1}{1 + e^{-(\alpha + \mathbf{x}\boldsymbol{\beta} + u_{i,t})}} = \frac{1}{1 + e^{-Z}} = \frac{e^Z}{1 + e^Z} \quad (3)$$

and

$$\begin{aligned} \mathbf{x}\boldsymbol{\beta} = & \beta_1 ref_{c,t} + \beta_2 size_{i,t} + \beta_3 roa_{i,t} + \beta_4 cash_{i,t} + \beta_5 debt_{i,t} + \beta_6 growth_{i,t} \\ & + \beta_7 return_{i,t} + \beta_8 mtb_{i,t} + \beta_9 mreturn_{c,t} + \beta_{10} mktcap_{c,t} \\ & + \beta_{11} gdp_{c,t} + \beta_{12} interest_{c,t} + \beta_{13} fe\_industry_s \\ & + \beta_{14} fe\_country_c + \beta_{15} fe\_year_t \end{aligned} \quad (4)$$

Where the result of this equation is the probability of announcing an acquisition in the following year, conditional on the vector  $\mathbf{x}$  denoting the set of variables that may potentially influence the acquisition decision as described in Table 2.  $\alpha$  is the constant term.  $\boldsymbol{\beta}$  is a vector denoting the set of estimated coefficients for the explanatory and control variables.  $u_{i,t}$  is the error term, which is independent of  $\mathbf{x}$  and follows the logistic distribution.  $fe\_industry_s$ ,  $fe\_country_c$  and  $fe\_year_t$  are the fixed effects controls for industries, countries, and years, respectively. The subscripts  $i, s, c$  and  $t$  index the firms, industries, countries, and time in years ( $t = 2002-2020$ ). To account for heteroscedasticity of the residuals, we adopted the robust standard errors clustered by firm (Nguyen et al., 2020; H. Yang et al., 2022). The VIF statistic test confirms the absence of multicollinearity among the selected regressors.

Due to the non-linear nature of the G function, the effects of the estimated coefficients cannot be directly interpreted (Wooldridge, 2019). In cases where the regressors in the  $\mathbf{x}$  vector are continuous variables, one can calculate the marginal (or partial) effect of the variable  $x$ , which measures the probability of success in  $y$  ( $y = 1$ ) given a unit change in  $x$ . Considering,  $p(\mathbf{x}) \equiv P(y = 1|\mathbf{x})$  (Wooldridge, 2019):

$$\frac{\partial p(\mathbf{x})}{\partial x_j} = G'(\alpha + \mathbf{x}\boldsymbol{\beta} + u_{i,t})\beta_j = \frac{e^Z}{1 + e^Z} \frac{1}{1 + e^Z} \beta_j \Rightarrow \frac{e^Z}{(1 + e^Z)^2} \beta_j \quad (5)$$

It is observed that the result of  $G'$  is a multiplication between  $\beta_j$ ,  $P$  and  $(1 - P)$ , where  $P = \frac{e^Z}{1+e^Z}$  and  $(1 - P) = \frac{1}{1+e^Z}$ . By substituting the terms of Eq. (5) with  $P$  and  $(1 - P)$ , we have the simplified calculation of the marginal effect of  $x$ :

$$\beta_j P(1 - P) \quad (6)$$

Where the subscript  $j$  refers to the estimated coefficient  $\beta$  for the  $j$ -th independent variable. However, when a variable in the vector  $\mathbf{x}$  is binary (as is the case with the variable of interest in this study), the quantification of the marginal effect of changing  $x$  from 0 to 1 can be assessed by the difference in probabilities between the groups 1 and 0 (Gujarati, 2014; Wooldridge, 2019):

$$G(\alpha + \mathbf{x}\boldsymbol{\beta} + u_{i,t}, x = 1) - G(\alpha + \mathbf{x}\boldsymbol{\beta} + u_{i,t}, x = 0) \quad (7)$$

In our case,  $x$  is the variable  $ref$ , which indicates observations where the pro-market reforms were observed in a given year ( $ref = 1$ ). Note that when  $x = 0$ , the term  $\beta_1 ref_{c,t}$  disappears from Eq. (4) because it will also be null. This development allows our research hypothesis to be directly tested by the following reasoning:

$$H1: \bar{P}(y = 1|\mathbf{x}, ref = 1) - \bar{P}(y = 1|\mathbf{x}, ref = 0) > 0 \quad (8)$$

In other words, the difference in the average probability  $\bar{P}$  of announcing an acquisition under the effect of reforms ( $ref = 1$ ) and the average probability  $\bar{P}$  of announcing an acquisition without the effect of reforms ( $ref = 0$ ) is significantly greater than zero. This would allow us to support the hypothesis that the propensity to announce acquisitions increases in response to changes in the functioning of market-oriented institutions in emerging countries.

Despite some considerations adopted, our findings may still be subject to endogeneity due to the existence of omitted variables, simultaneity, and the influence of unobservable factors (Hill et al., 2021). To address this issue, we have adopted the instrumental variables (IV) approach by estimating an IV Probit model, following previous studies (Nguyen et al., 2020; Nguyen & Phan, 2017; J. Yang et al., 2019). More information and the results of this test are presented in the robustness checks section. Furthermore, the specifications were also estimated using panel data estimators for fixed effects and random effects (xtlogit). The results remained in the same direction and were omitted from the main document but can be obtained upon request to the authors.

## 4 Results

### 4.1 Descriptive analysis

Table 3 presents the descriptive statistics of the variables included in the models and summarizes the characteristics of acquirers in our complete sample, as well as divided into two

subsamples for observations with acquisition announcements and observations without acquisition announcements. We have observed that reforms measured by EFW represented approximately 45% of the observations, while those computed by EFI represented 39%. This frequency is consistent with the perspective of NIE that institutions change incrementally (Campbell, 2004; North, 1990). In other words, it reflects the "gradual accumulation of small, incremental changes over long periods of time" (Campbell, 2004, p. 5).

Through tests of means and medians equality we have observed that there are significant differences in the characteristics between acquirers ( $ma_{d_{i,t+1}} = 1$ ) and non-acquirers ( $ma_{d_{i,t+1}} = 0$ ). Acquiring companies adjust their financial position in the periods preceding the announcement of an acquisition, as differences in means and medians between the groups are statistically different from zero, except for the *mreturn* variable (market return). On average, the bidders have higher book value of their assets, higher ROA, more cash, lower leverage, higher growth, and market valuation. Macroeconomic characteristics also differ, on average, and the capital markets are more capitalized. This evidence reinforces the relevance of including them as explanatory variables for the acquisition decision.

Table 3: Summary Statistics

Variable	Full Sample					$ma_{d_{i,t+1}} = 1$		$ma_{d_{i,t+1}} = 0$		Mean Diff.	Med. Diff.
	Mean	Med.	SD	Max.	Min.	Mean	Med.	Mean	Med.		
$ma_{d_{i,t+1}}$	0.205		0.404	1.000	0.000						
<i>ref_efw</i>	0.450		0.497	1.000	0.000	0.526		0.430		0.096***	
<i>ref_efi</i>	0.392		0.488	1.000	0.000	0.412		0.387		0.025***	
<i>size</i>	5.839	5.820	1.750	10.291	1.293	6.382	6.256	5.699	5.694	0.683***	0.562***
<i>roa</i>	0.048	0.048	0.094	0.317	-0.381	0.061	0.055	0.045	0.046	0.016***	0.009***
<i>cash</i>	0.123	0.085	0.127	0.614	0.000	0.144	0.109	0.117	0.078	0.027***	0.030***
<i>debt</i>	0.250	0.230	0.196	0.862	0.000	0.237	0.220	0.253	0.233	-0.016***	-0.013***
<i>growth</i>	0.175	0.093	0.553	3.781	-0.781	0.225	0.129	0.162	0.084	0.062***	0.045***
<i>return</i>	0.218	0.022	0.752	3.622	-0.784	0.302	0.086	0.197	0.005	0.106***	0.081***
<i>mtb</i>	1.862	0.983	3.095	24.056	0.032	2.153	1.288	1.787	0.918	0.366***	0.370***
<i>gdp</i>	0.063	0.068	0.036	0.142	-0.078	0.064	0.069	0.062	0.068	0.002***	0.001***
<i>interest</i>	0.043	0.036	0.067	0.567	-0.129	0.039	0.035	0.044	0.036	-0.004***	-0.001***
<i>mreturn</i>	0.133	0.073	0.336	1.301	-0.734	0.134	0.073	0.133	0.073	0.001	0.000
<i>mktcap</i>	0.499	0.452	0.494	3.227	0.002	0.566	0.573	0.482	0.433	0.085***	0.140***

Note: Description of the variables in Table 2.. The descriptive statistics are separated by the Full Sample, which includes all observations in the study, where  $N = 76,654$  observations; a subsample that includes observations where firms do not announce an acquisition in a given year ( $ma_{d_{i,t+1}} = 0$ ), where  $N = 60,952$  observations; and a subsample that includes observations where firms announce an acquisition in a given year ( $ma_{d_{i,t+1}} = 1$ ), where  $N = 15,702$  observations. For dummy variables, only the percentages (averages) for which the indicator takes the value of 1 in the sample are presented. Mean Diff. and Med. Diff. present the differences in means and medians of the subsamples [ $(ma_{d_{i,t+1}} = 1) - (ma_{d_{i,t+1}} = 0)$ ] with the associated statistical significance from the t-test and

the Wilcoxon rank-sum test (Mann-Whitney) for equality of means and medians. \*\*\* indicates significance at the 1% level. Source: Authors' elaboration.

We have observed that pro-market reforms preceded acquisition announcements more frequently, as the frequency of reforms was 52.6% for *ref\_efw* and 41.2% for *ref\_efi* in years with acquisition announcements, compared to 42.9% and 38.7%, respectively, in years without acquisition announcements by a given company.

Next, in Table 4, we present the preliminary relationship between the variables included in the models in the correlation matrix. We have observed that the reform indicators positively correlate to the dependent variable. The correlations in the first column, which consider the variable  $ma_{d_{i,t+1}}$ , were significant, except for market return. We have found that the correlation between the constructed reform indicators is negative (-0.16). However, the correlation between the EFW and EFI indexes (omitted) is 65.64%, as expected (Grier & Grier, 2021). What happens is that methodological differences in the design of the two indices may lead to a temporal mismatch in the absorption of policy impacts. However, both indexes follow the same direction. This issue calls for the alternate testing of both indexes for tracking broad-based reforms.

Table 4: Correlation matrix

Variables	$ma_{d_{i,t+1}}$	2	3	4	5	6	7	8	9	10	11	12	13
2 <i>ref_efw</i>	<b>0.08</b>												
3 <i>ref_efi</i>	<b>0.02</b>	<b>-0.16</b>											
4 <i>size</i>	<b>0.16</b>	<b>0.11</b>	<b>0.08</b>										
5 <i>roa</i>	<b>0.07</b>	<b>-0.04</b>	<b>-0.05</b>	<b>0.14</b>									
6 <i>cash</i>	<b>0.08</b>	<b>0.13</b>	<b>-0.03</b>	<b>0.02</b>	<b>0.11</b>								
7 <i>debt</i>	<b>-0.03</b>	<b>-0.05</b>	<b>-0.03</b>	<b>0.18</b>	<b>-0.26</b>	<b>-0.33</b>							
8 <i>growth</i>	<b>0.05</b>	<b>0.03</b>	<b>-0.10</b>	<b>0.01</b>	<b>0.16</b>	<b>0.05</b>	<b>-0.03</b>						
9 <i>return</i>	<b>0.06</b>	<b>0.02</b>	<b>0.11</b>	<b>-0.04</b>	<b>0.16</b>	<b>0.02</b>	<b>-0.04</b>	<b>0.10</b>					
10 <i>mtb</i>	<b>0.05</b>	<b>0.09</b>	0.00	<b>-0.17</b>	<b>0.09</b>	<b>0.18</b>	<b>-0.23</b>	<b>0.05</b>	<b>0.21</b>				
11 <i>gdp</i>	<b>0.02</b>	<b>0.27</b>	<b>-0.32</b>	<b>-0.03</b>	<b>-0.02</b>	<b>0.22</b>	<b>-0.02</b>	<b>0.13</b>	<b>0.07</b>	<b>0.09</b>			
12 <i>interest</i>	<b>-0.03</b>	<b>-0.05</b>	<b>0.04</b>	<b>0.01</b>	<b>0.02</b>	<b>-0.13</b>	<b>0.04</b>	<b>-0.04</b>	<b>0.10</b>	<b>0.13</b>	<b>-0.29</b>		
13 <i>mreturn</i>	0.00	<b>0.05</b>	<b>-0.04</b>	<b>-0.04</b>	<b>0.02</b>	0.00	<b>0.01</b>	<b>0.10</b>	<b>0.41</b>	<b>0.06</b>	<b>0.14</b>	<b>0.10</b>	
14 <i>mktcap</i>	<b>0.07</b>	0.01	<b>0.02</b>	<b>0.15</b>	<b>0.01</b>	<b>0.14</b>	<b>-0.08</b>	<b>0.02</b>	<b>0.07</b>	<b>0.01</b>	<b>-0.18</b>	<b>-0.08</b>	<b>0.07</b>

Note: Description of the variables in Table 2. In **bold**, significant correlations at 10%. Source: Authors'.

The correlations among the independent variables are of low intensity. We have found that the average VIF for the regression model specifications was approximately 4.5, below the normally acceptable tolerance levels for such statistic (Wooldridge, 2019).

## 4.2 Effects of pro-market reforms on the propensity for M&A

Table 5 presents the results of the Logit estimations for the propensity for M&A as a function of pro-market reforms. Except for the specification in column (2), which uses the EFI-calculated reform indicator, we have found a positive and significant association between M&A and pro-market reforms. This indicates that publicly acquiring firms become more inclined to pursue growth strategies through M&A in response to pro-market reforms in their home country. The coefficients in the estimations of columns (1) (0.2387), (3) (0.1684), and (4) (0.1096) were positive and significant. Therefore, in the presence of pro-market reforms, the probabilities of announcing acquisitions tend to increase in the following year. The non-significant results in column 2 suggest that the reform indicator calculated with EFI is more sensitive to differences in the model specification, providing a weaker signal of change in pro-market institutions.

Our findings are consistent with the observations made by Banalieva et al. (2018), who concluded that pro-market reforms can positively impact firms' outcomes. Within the research stream exploring the factors influencing variations in M&A flows, our findings are more closely aligned with neoclassical explanations, which assert that M&A waves are primarily driven by economic incentives, such as regulatory changes (Andrade et al., 2001; Harford, 2005; Mitchell & Mulherin, 1996). According to Harford (2005, p. 530), this relationship is actually driven by low transaction costs: "M&A waves require both an economic motivation for transactions and relatively low transaction costs to generate a large volume of transactions." Therefore, our results reinforce this argument, highlighting that exogenous shocks altering market dynamics and reducing transaction costs do indeed influence M&A decisions.

Table 5: Coefficient estimates results using the Logit model

Independent Variables	Dependent Variable $ma\_d_{i,t+1}$			
	(1)	(2)	(3)	(4)
<i>ref_efw</i>	0.2387*** (11.40)		0.1684*** (-6.12)	
<i>ref_efi</i>		0.0134 (0.60)		0.1096*** (3.41)
<i>size</i>	0.2265*** (23.31)	0.2297*** (23.71)	0.2246*** (22.26)	0.2245*** (22.26)
<i>roa</i>	0.0115*** (8.00)	0.0113*** (7.9)	0.0117*** (8.09)	0.0117*** (8.07)
<i>cash</i>	0.0062*** (6.15)	0.0057*** (5.76)	0.0060*** (5.91)	0.0060*** (5.86)
<i>debt</i>	-0.0018** (-2.48)	-0.0021*** (-2.87)	-0.0017** (-2.30)	-0.0017** (-2.32)
<i>growth</i>	0.0013*** (7.50)	0.0014*** (7.42)	0.0014*** (7.83)	0.0014*** (7.85)
<i>return</i>	0.0017***	0.0014***	0.0014***	0.0014***

	(12.24)	(11.76)	(9.20)	(9.01)
<i>mtb</i>	0.0004***	0.0004***	0.0004***	0.0004***
	(9.15)	(9.34)	(9.26)	(9.32)
<i>gdp</i>	-0.0164***	-0.0071**	-0.0560***	-0.0564***
	(-4.59)	(-1.94)	(-8.92)	(-8.97)
<i>interest</i>	-0.0199***	-0.0143***	-0.0241***	-0.0235***
	(-6.53)	(-4.69)	(-6.58)	(-6.37)
<i>mreturn</i>	-0.0014***	-0.0015***	0.0008	0.0010
	(-4.13)	(-4.44)	(1.20)	(1.50)
<i>mktcap</i>	0.0025***	0.0026***	0.0024***	0.0026***
	(4.92)	(5.27)	(3.36)	(3.57)
constant	-2.4387***	-2.5980***	-2.5590***	-2.5038***
	(-15.34)	(-16.46)	(13.62)	(13.34)
fe_industry	Yes	Yes	Yes	Yes
fe_country	Yes	Yes	Yes	Yes
fe_year	No	No	Yes	Yes
No. Obs.	76,654	76,654	76,654	76,654
Wald chi2	2483.15***	2374.92***	2691.21***	2678.15***
Pseudo-R2	0.052	0.050	0.055	0.055

Note: Description of variables in Table 2. The coefficients were estimated using the Logit model, without year fixed effects (*fe\_year*) in columns 1 and 2, and with year fixed effects in columns 3 and 4. All specifications include dummy controls for industry and country fixed effects (*fe\_industry*, *fe\_country*). The Z statistics based on robust standard errors with firm clustering are reported in parentheses. The dependent variable in all regressions,  $ma_{d_{i,t+1}}$ , is an indicator equal to 1 if the firm announces at least one acquisition in year  $t+1$ , or zero otherwise. The area under the ROC curve indicated that the models have acceptable discriminative power (> 66%). \*, \*\*, and \*\*\* indicate the level of significance at 10%, 5%, and 1%, respectively. Source: Authors'.

The goodness of fit measure, Pseudo-R2, which in this case is of secondary interest, was low but at a similar level to other studies that aim to predict the probabilities of announcing one or more M&As (Nguyen & Phan, 2017). The graph depicting the sensitivity and specificity relationship for each probability cutoff is presented below.

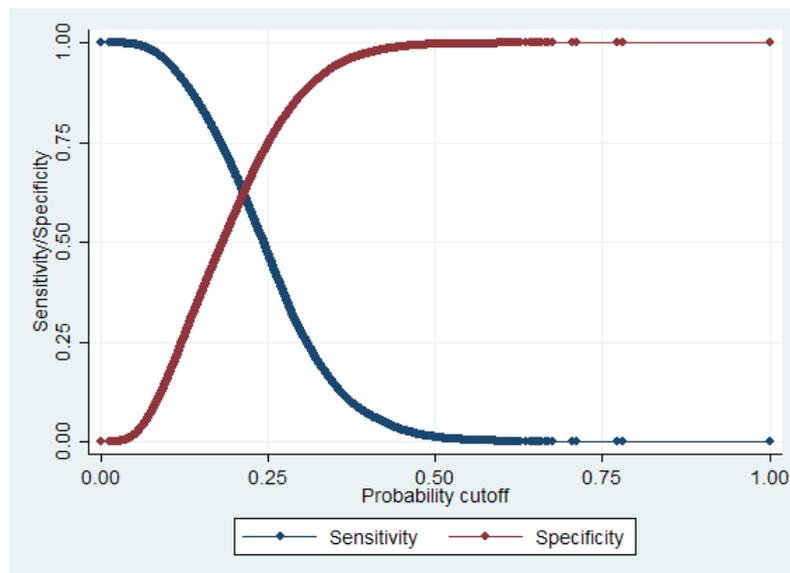


Figure 1: Sensitivity and specificity versus probability cutoff. Note: Sensitivity represents the correct classification rate of the model for observations = 1 (true positive,  $ma_{d_{i,t+1}} = 1$ , where  $N = 15,702$ ). Specificity represents the correct classification rate of the model for observations = 0 (true negative,  $ma_{d_{i,t+1}} = 0$ , where  $N = 60,952$ ). Cutoff is the probability threshold for defining a correct classification. Source: Authors'.

The graph depicts the correct classification rate as the probability cutoff varies from 0 to 1. For instance, setting the cutoff at 0.5, the sensitivity is 1.15% (180/15,702), and the specificity is 99.72% (60,783/60,925). This means that the model assigned a probability above 50% to 180 observations where there was an actual acquisition announcement in the following year. Similarly, this level of probability was also assigned to 169 non-acquisition observations (60,925 – 60,783), though in relation to a much larger number of observations in this group, resulting in a low error rate. This leads to an overall percentage of correct prediction (Count-R2) of 79.53% [(180 + 60,783) / 76,654]. Overall, this is an acceptable result, demonstrating that the model exhibits some predictive power, albeit low, it could be used and enhanced for such a purpose.

We can conclude that increases in firm size, performance, and cash holdings increase the probabilities of announcing an acquisition in the following year. Debt reduction also allows for more engagement in M&A. Additionally, recent growth, stock returns, and market valuation are positive drivers. The direction of these coefficients is consistent with our expectations and prior research (Bonaime et al., 2018; Nguyen et al., 2020; Nguyen & Phan, 2017).

Interest rates are one of the most critical determinants of investment decisions. The results indicate that an expansionary monetary policy (reduction in interest rates) is beneficial for the decision to engage in M&A (Adra et al., 2020). The coefficients for the GDP growth and market return variables were inconsistent with our predictions, although Bonaime et al. (2018) found a similar relationship for their proxy of economic activity in the United States. This suggests that other representative proxies for these dimensions may be better predictors. The coefficient for the market capitalization-to-GDP ratio was consistent with our expectations (Kim & Song, 2017).

When estimating the probabilities of announcing an M&A, we are interested in quantifying the average effect of pro-market reforms. That is, calculating the effect of a discrete change in *ref* from 0 to 1. This is demonstrated in Table 6. We have found that the average probability of announcing an M&A in our total sample of acquiring firms is 20.5%. Differences in probabilities between sub-samples of groups 1 and 0 are statistically greater than zero. With the *ref\_efw* indicator, in years when pro-market reforms were tracked (N=34,458), the average (median) probability of announcing an M&A was 6.32% (7.15%) higher. With the *ref\_efi* indicator, the average (median) increase in probabilities was 1.69% (1.92%) for the sub-sample where this indicator is equal to 1 (N=30,046).

Table 6: Quantification of the marginal effect of pro-market reforms on the probabilities of announcing an M&amp;A

Groups	Probabilities	N	Mean	Median
All	$\bar{P}(y = 1 \mathbf{x})$	76,654	20.48	19.60
1	$\bar{P}(y = 1 \mathbf{x}, ref\_efw = 1)$	34,458	23.96	23.80
0	$\bar{P}(y = 1 \mathbf{x}, ref\_efw = 0)$	42,196	17.64	16.66
	<i>Diff</i> (1 – 0)		6.32***	7.15***
1	$\bar{P}(y = 1 \mathbf{x}, ref\_efi = 1)$	30,046	21.51	20.75
0	$\bar{P}(y = 1 \mathbf{x}, ref\_efi = 0)$	46,608	19.82	18.83
	<i>Diff</i> (1 – 0)		1.69***	1.92***

Note: Values are presented in %. N represents the number of observations in each group.  $\bar{P}(y = 1|\mathbf{x})$  represents the mean/median conditional probability of announcing an acquisition in the following year considering the entire sample. Probabilities were separated into sub-sample groups for tests of equality of means and medians alternately, considering the two constructed reform indicators. 1 is the group of observations where pro-market reforms were tracked in the year  $ref = 1$ . 0 is the group where no market reforms were observed ( $ref = 0$ ). *Diff* (1 – 0) is the difference in probabilities between groups 1 and 0 with the associated statistical significance using t-test and Wilcoxon rank-sum test (Mann-Whitney). Probability calculations for the groups were based on Eq. (3) with the estimated coefficients from regressions 3 and 4 in Table 5, for *ref\_efw* and *ref\_efi*, respectively. The mean and median probability calculated for the entire sample are the same for specifications 3 or 4 in Table 5. \*\*\* indicates significance at the 1% level. Source: Authors'.

With that, we have direct support for our research hypothesis. This is an important finding for the M&A literature because, although there is significant evidence of effects triggered by improvements in institutional quality (Balogh et al., 2022; Breinlich, 2008; Chen et al., 2020; Chondrakis et al., 2021; Dessaint et al., 2017; John et al., 2020; Ovtchinnikov, 2013; Srinivasan, 2020; Wang & Shao, 2022), it had not been demonstrated especially in the context of an institutional environment in flux (Ferreira, Borini, et al., 2017), in a longitudinal analysis.

Unlike the previous studies, we have shown, through the lens of NIE (North, 1990), that institutions influence the selection and survival process of companies, creating constraints and opportunities for their activity. Institutional changes transmit signals from the government to managers, who must interpret this as a favorable environment for profitable exploitation alternatives (Banalieva et al., 2018), while the reduction in transaction costs exerts efficiency-based pressures on firms' strategic choices (Peng & Heath, 1996; Singh et al., 2018). Opoku-Mensah et al. (2020, p. 14), studying effects on returns of domestic acquirers, argue along the same lines of reasoning, stating that "payment of lesser transactional cost means a decrease in the total cost payable and will ultimately increase acquisition returns." The authors further conclude, for China, that "variations within-country institutions influence acquirers' returns in domestic acquisitions" (Opoku-Mensah et al., 2020, p. 13). Therefore, we conclude for a cross-country sample that the pursuit of efficiency can also motivate M&A initiatives.

Some empirical papers in finance have results that align with ours. For example, Chen et al. (2020, p. 21) found that the implementation of policies favoring increased competitiveness

"indeed increases firms' participation in mergers and acquisitions" in China. However, these policies may not have effects on other M&A outcomes, as they might favor potential overinvestment. Ovtchinnikov (2013) has showed that the increase in M&A frequency may be related to the exit of low performance industries and that waves of deregulation can be driven by interest groups, suggesting they may have an endogenous origin. Regarding this, North (1990) explains that institutional changes can arise in response to new problems in the business environment. When such obstacles are too great, some interest parties may try to change the formal rules to achieve their goals.

Balogh et al. (2022) have argued in favor of the hypothesis that regulation imposes additional costs on firms making investments. Consistent with our findings, these authors also concluded that when regulatory costs are low, firms engage in more acquisitions. However, many of the results that support our findings are observed in a single country.

Our research contributes to the M&A literature by including a diverse range of countries in our analysis. Additionally, the employed approach in this study engages in an interdisciplinary dialogue with research conducted in the fields of strategic management and international business (Banalieva et al., 2018; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009; Mukherjee et al., 2023; Park et al., 2006; Singh et al., 2018). These fields have a well-established history of connecting pro-market reforms with the individual behavior of firms in emerging markets, often relying on the framework of New Institutional Economics. This is a perspective that has not been extensively explored within the M&A research domain.

### **4.3 Robustness checks**

#### **4.3.1 Instrumental variables (IV) estimates**

Technically, endogeneity occurs when a regressor is correlated to the model error term (Hill et al., 2021). In our case, this can happen because pro-market reforms and the volume of M&A may be jointly correlated to unobservable factors such as economic and political uncertainty. As some studies suggest, uncertainty can precede the adoption of pro-market reforms (Bonfiglioli et al., 2022) and can help predict M&A flows in a country (Bonaime et al., 2018). Therefore, we used a two-stage IV Probit model to reexamine the effect of pro-market reforms on M&A propensity. We have employed a measure of national governance institutions, provided by the Worldwide Governance Indicators (WGI) from the World Bank, as an instrument for the reform variable to address its endogeneity. The effectiveness of pro-market reforms in emerging economies may be strongly conditioned by the quality of institutions

related to national governance, such as government efficiency, transparency, anti-corruption policies, and poverty reduction (Rodrik, 2006).

As a result, we took the mean among of the following WGI components: "Voice and Accountability," "Political Stability and Absence of Violence/Terrorism," "Government Effectiveness," and "Control of Corruption." We consider this index to be a valid instrument since it is directly related to pro-market reforms but is unlikely to have a direct effect on M&A propensity.

As shown in Table 7, our results are robust to endogeneity correction, at least in the estimations in columns 3 and 4, which consider controls for specific year effects.

Table 7: Coefficient estimates results using IV Probit model

Independent Variables	Dependent Variable $ma_{d,i,t+1}$			
	(1)	(2)	(3)	(4)
<i>instrumentalized_ref_efw</i>	0.0740 (0.88)		0.2813*** (2.81)	
<i>instrumentalized_ref_efi</i>		0.0449 (0.96)		0.1801*** (2.77)
<i>size</i>	0.1293*** (32.72)	0.1295*** (33.90)	0.1263*** (32.76)	0.1258*** (32.35)
<i>roa</i>	0.0063*** (9.05)	0.0063*** (9.01)	0.0065*** (9.27)	0.0064*** (9.22)
<i>cash</i>	0.0035*** (6.94)	0.0034*** (6.92)	0.0037*** (7.33)	0.0036*** (7.24)
<i>debt</i>	-0.0012*** (-3.50)	-0.0013*** (-3.77)	-0.0010*** (-2.95)	-0.0010*** (-2.95)
<i>growth</i>	0.0008*** (8.03)	0.0008*** (7.98)	0.0008*** (8.61)	0.0008*** (8.62)
<i>return</i>	0.0010*** (12.60)	0.0009*** (10.10)	0.0008*** (8.70)	0.0007*** (8.02)
<i>mtb</i>	0.0002*** (11.29)	0.0002*** (11.51)	0.0002*** (11.49)	0.0002*** (11.75)
<i>gdp</i>	-0.0077** (-2.42)	-0.0022 (-0.60)	-0.0293*** (-7.60)	-0.0298*** (-7.83)
<i>interest</i>	-0.0109*** (-4.24)	-0.0098*** (-5.04)	-0.0165*** (-7.08)	-0.0153*** (-7.14)
<i>mreturn</i>	-0.0008*** (-4.30)	-0.0008*** (-4.12)	0.0005 (1.12)	0.0006 (1.45)
<i>mktcap</i>	0.0016*** (5.26)	0.0015*** (5.30)	0.0014*** (3.54)	0.0015*** (3.96)
constant	-1.4444*** (-15.14)	-1.474*** (-18.06)	-1.4682*** (-14.88)	-1.3943*** (-13.68)
<i>fe_industry</i>	Yes	Yes	Yes	Yes
<i>fe_country</i>	Yes	Yes	Yes	Yes
<i>fe_year</i>	No	No	Yes	Yes
No. Obs.	76,654	76,654	76,654	76,654
Wald chi2	3606.11***	3606.5***	3960.07***	3966.64***
Wald test of exogeneity	0.540	0.620	3.550*	3.770*

Note: Description of variables in Table 2. The coefficients were estimated using the two-stage IV Probit model, without fixed year effects (*fe\_year*) in columns 1 and 2, and with fixed year effects in columns 3 and 4. The National Governance Index was used as an instrument for reform indicators. The results of the first-stage regression (omitted) indicate that the estimated coefficient for the instrument was significant, confirming its positive effect on pro-market reforms. All specifications include dummy controls for industry and country fixed

effects (fe\_industry, fe\_country). Z statistics are reported in parentheses. The dependent variable in all regressions,  $ma_{d_{i,t+1}}$ , is an indicator equal to 1 if the firm announces at least one acquisition in year t+1, or zero otherwise. The Wald test of exogeneity presents the test statistic and its significance for the endogeneity of regressors. \*, \*\*, and \*\*\* indicate the level of significance at 10%, 5%, and 1%, respectively. Complete results are available upon request to the authors. Source: Authors'.

The results in columns 3 and 4 of Table 7 indicate that the coefficients of the instrumentalized reform indicators are positive and significant.

### 4.3.2 Estimates with variables at the same level

In this case, we did not consider a time lag between the dependent and independent variables. The estimates in Table 8 take into account the possibility that managers may anticipate the effects of implemented reforms. For this specification, our results still show positive and significant coefficients for pro-market reforms.

Table 8: Coefficient estimates results using logit model with variables at the same level

Independent Variables	Dependent Variable $ma_{d_{i,t}}$			
	(1)	(2)	(3)	(4)
<i>ref_efw</i>	0.1514*** (7.08)		0.0457* (1.66)	
<i>ref_efi</i>		0.0467** (2.09)		0.1392*** (4.59)
<i>size</i>	0.2717*** (28.95)	0.2733*** (29.13)	0.2656*** (27.20)	0.2646*** (27.10)
<i>roa</i>	0.0064*** (4.51)	0.0064*** (4.49)	0.0067*** (4.68)	0.0067*** (4.69)
<i>cash</i>	-0.0033*** (-3.15)	-0.0034*** (-3.31)	-0.0032*** (-3.03)	-0.0031*** (-2.97)
<i>debt</i>	-0.0010 (-1.47)	-0.0012* (-1.66)	-0.0007 (-0.96)	-0.0006 (-0.87)
<i>growth</i>	0.0019*** (11.48)	0.0019*** (11.56)	0.0019*** (11.51)	0.0019*** (11.63)
<i>return</i>	0.0009*** (5.98)	0.0008*** (5.42)	0.0007*** (4.68)	0.0007*** (4.20)
<i>mtb</i>	0.0004*** (8.76)	0.0004*** (8.95)	0.0004*** (8.46)	0.0004*** (8.54)
<i>gdp</i>	-0.0155*** (-4.28)	-0.0071* (-1.91)	-0.0621*** (-9.72)	-0.0603*** (-9.42)
<i>interest</i>	-0.0244*** (-7.62)	-0.0216*** (-6.77)	-0.0244*** (-6.20)	-0.0257*** (-6.48)
<i>mreturn</i>	-0.0033*** (-9.65)	-0.0033*** (-9.54)	0.0007 (0.94)	0.0008 (1.12)
<i>mktcap</i>	0.0032*** (6.42)	0.0033*** (6.57)	0.0035*** (4.93)	0.0035*** (4.94)
constant	-2.5988*** (-16.21)	-2.6830*** (-16.76)	-3.0437*** (-15.50)	-2.9781*** (-15.13)
fe_industry	Yes	Yes	Yes	Yes
fe_country	Yes	Yes	Yes	Yes
fe_year	No	No	Yes	Yes
No. Obs.	76,654	76,654	76,654	76,654
Wald chi2	2452.52***	2429.49***	2793.64***	2813.48***
Pseudo-R2	0.053	0.052	0.057	0.058

Note: Description of the variables in Table 2. The coefficients were estimated using the logit model, without year fixed effects in columns 1 and 2, and with year fixed effects in columns 3 and 4. All specifications include dummy controls for industry and country fixed effects ( $fe\_industry$ ,  $fe\_country$ ). Z statistics based on robust standard errors with firm clustering are reported in parentheses. The dependent variable in all regressions,  $ma\_d_{i,t}$ , is an indicator equal to 1 if the firm announces at least one acquisition in the year, or 0 otherwise. \*, \*\*, and \*\*\* indicate significance levels at 10%, 5%, and 1%, respectively. Source: Authors'.

This raises indications that the corporate control market simultaneously reacts to signals of reduced transaction costs.

### 4.3.3 Reversals in pro-market institutions

Reversals are discontinuous changes in pro-market institutions. They occur when the government expands its control over the economy in pursuit of economic recovery (Banalieva et al., 2018; Cuervo-Cazurra et al., 2019). Some reasons for that include economic crises, externalities, sudden increases in unemployment, slowing growth rates, and ideological reasons (Campos & Horváth, 2012a). For example, governments may take control of prices and interest rates to stabilize inflation. However, this is a negative signal for managers in emerging markets because limiting market mechanisms represents a threat to property rights and their long-term investments, which may have their returns expropriated by government rent-seeking behavior (Banalieva et al., 2018; H. Yang et al., 2022). M&A literature suggests that government intervention has a negative effect on the propensity for acquisitions in emerging markets (H. Yang et al., 2022). Therefore, we expect reversals to have a negative effect.

We have employed this approach to confirm the relevance and economic significance resulting from the strategy adopted in building our reform indicator. Thus, we used this strategy to create a reversals indicator by identifying reductions in economic freedom indexes in two consecutive years. According to the literature, reforms and reversals are not continuous and uninterrupted but are part of an experimental trial-and-error process that may go through periods of punctuated equilibrium. However, reversals are rarer events in emerging markets (Banalieva et al., 2018; Campos & Horváth, 2012b, 2012a). The results in Table 9 demonstrate that reversals have a negative effect on the propensity for M&A in the subsequent year.

Table 9: Coefficient estimates results using the Logit model for the effects of reversals in pro-market institutions on the probabilities of announcing an M&amp;A

Independent Variables	Dependent Variable $ma_{d_{i,t+1}}$			
	(1)	(2)	(3)	(4)
<i>rev_efw</i>	-0.0376 (-0.84)		-0.1179** (-2.44)	
<i>rev_efi</i>		-0.1969*** (-5.05)		-0.1955*** (-4.08)
<i>size</i>	0.2298*** (23.74)	0.2277*** (23.40)	0.2252*** (22.33)	0.2248*** (22.26)
<i>roa</i>	0.0113*** (7.98)	0.0114*** (7.93)	0.0117*** (8.07)	0.0117*** (8.04)
<i>cash</i>	0.0057*** (5.74)	0.0056*** (5.63)	0.0059*** (5.81)	0.0059*** (5.79)
<i>debt</i>	-0.0021*** (-2.88)	-0.0019*** (-2.72)	-0.0017** (-2.37)	-0.0017*** (-2.33)
<i>growth</i>	0.0013*** (7.38)	0.0013*** (7.40)	0.0013*** (7.75)	0.0013*** (7.71)
<i>return</i>	0.0017*** (12.21)	0.0018*** (12.50)	0.0014*** (9.54)	0.0015*** (9.72)
<i>mtb</i>	0.0004*** (9.33)	0.0004*** (9.42)	0.0004*** (9.25)	0.0004*** (9.30)
<i>gdp</i>	-0.0082** (-2.42)	-0.0037 (-1.06)	-0.0566*** (-8.92)	-0.0564*** (-8.95)
<i>interest</i>	-0.0142*** (-4.74)	-0.0143*** (-4.70)	-0.0236*** (-6.42)	-0.0226*** (-6.07)
<i>mreturn</i>	-0.0015*** (-4.45)	-0.0016*** (-4.65)	0.0011 (1.61)	0.0008 (1.20)
<i>mktcap</i>	0.0026*** (5.28)	0.0030*** (5.74)	0.0024*** (3.35)	0.0028*** (3.78)
constant	-2.5926*** (-16.36)	-2.5275*** (-15.93)	-2.4850*** (-13.16)	-2.4598*** (-12.97)
<i>fe_industry</i>	Yes	Yes	Yes	Yes
<i>fe_country</i>	Yes	Yes	Yes	Yes
<i>fe_year</i>	No	No	Yes	Yes
No. Obs.	76,654	76,654	76,654	76,654
Wald chi2	2371.13***	2389.34***	2671.29***	2674.4***
Pseudo-R2	0.050	0.050	0.055	0.055

Note: Description of variables in Table 2. *rev\_efx* represents the indicators of reversals in pro-market institutions. The coefficients were estimated using the logit model, without year fixed effects in columns 1 and 2, and with year fixed effects in columns 3 and 4. All specifications include dummy controls for industry and country fixed effects (*fe\_industry*, *fe\_country*). Z statistics based on robust standard errors with firm clustering are reported in parentheses. The dependent variable in all regressions is  $ma_{d_{i,t+1}}$ , which is an indicator equal to 1 if the firm announces at least one acquisition in year t+1, or 0 otherwise. \*, \*\*, and \*\*\* indicate significance levels of 10%, 5%, and 1%, respectively. Source: Authors'..

Next, Table 10 presents the quantification of the marginal effect of a discrete change in the reversal indicators on the probabilities of an M&A announcement.

Table 10: Quantification of the marginal effect of pro-market institution reversals on the probabilities of an M&A announcement.

Groups	Probabilities	N	Mean	Median
All	$\bar{P}(y = 1 \mathbf{x})$	76,654	20.48	19.60
1	$\bar{P}(y = 1 \mathbf{x}, rev\_efw = 1)$	4,688	15.89	13.90
0	$\bar{P}(y = 1 \mathbf{x}, rev\_efw = 0)$	71,966	20.78	19.96
	<i>Diff</i> (1 – 0)		-4.89***	-6.06***
1	$\bar{P}(y = 1 \mathbf{x}, rev\_efi = 1)$	6,023	18.53	17.03
0	$\bar{P}(y = 1 \mathbf{x}, rev\_efi = 0)$	70,631	20.65	19.81
	<i>Diff</i> (1 – 0)		-2.12***	-2.78***

Note: Values are presented in %. N represents the number of observations in each group.  $\bar{P}(y = 1|\mathbf{x})$  represents the mean/median conditional probability of announcing an acquisition in the following year considering the entire sample. Probabilities were separated into sub-sample groups for tests of equality of means and medians alternately, considering the two reversals indicators. 1 is the group of observations where pro-market institutional reversals were tracked in the year ( $rev = 1$ ). 0 is the group where no pro-market institutional reversals were observed ( $rev = 0$ ). *Diff* (1 – 0) is the difference in probabilities between groups 1 and 0 with the associated statistical significance using t-test and Wilcoxon rank-sum test (Mann-Whitney). Probability calculations for the groups were based on Eq. (3) with the estimated coefficients from regressions 3 and 4 in Table 9, for *rev\_efw* and *rev\_efi*, respectively. The mean and median probability calculated for the entire sample are the same for specifications 3 and 4 in Table 9. \*\*\* indicates significance at the 1% level. Source: Authors'.

This finding helps alleviate concerns about the choice of the criterion used for tracking reforms, as in both cases (reforms and reversals), the empirical evidence aligns with the theoretical predictions.

## 5 Concluding Remarks

This study adds the effect of the home country's institutions to the research stream that investigates exogenous causes of variation in M&A activity. We rely on a comprehensive sample of potential acquiring firms headquartered in emerging markets to empirically demonstrate that pro-market reforms in their home country have a positive and significant effect on the propensity to announce new acquisitions. Furthermore, variations in model specifications and some robustness checks conducted supported the results.

One possible explanation for this lies in the New Institutional Economics (North, 1990), which posits that the interaction between institutions and organizations shapes economic activity. We argue that when it is likely that transaction costs will decrease through changes in pro-market institutions, the benefits of opting for M&A as a means of rapid growth increase, considering that the costs of using the market will be lower, among other factors caused by improved institutional quality, such as reduced uncertainty, a restriction on the threat of opportunism, and more symmetrical information. These findings also adhere to the neoclassical explanation of the causes of M&A (Andrade et al., 2001; Harford, 2005; Mitchell & Mulherin, 1996), which considers economic motivations such as regulatory shocks as important determinants of asset reallocation between firms and industries.

Our study differs from others that investigated the effects of deregulation on M&A activity since they examined a single country and thus assumed a single institutional context (Balogh et al., 2022; Breinlich, 2008; Chen et al., 2020; Chondrakis et al., 2021; Opoku-Mensah et al., 2020; Ovtchinnikov, 2013; Wang & Shao, 2022). However, institutional and technological complexities are better captured with broader and more diverse samples (Ferreira, Borini, et al., 2017; Singh et al., 2018). Furthermore, they examined the effect of specific mechanisms of institutional change, such as deregulations in isolated events. Our strategy of constructing a pro-market reform indicator from institutional quality indexes, which are reported for various countries, allowed for a longitudinal study using a cross-country sample.

The macro-micro bridge of investigating the country's characteristics in firm behavior is developed by some studies that examined the effect of home country's institutions on firm performance (Banalieva et al., 2018; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009), although it's not as conventional. The analysis of institutional influence is more common from the host country's perspective, both in international business research (Chacar et al., 2010) and in M&A research (Xie et al., 2017). Thus, we provide evidence that national institutions matter and answer the call of Chacar et al. (2010) by examining other specific firm responses to institutional variations.

Considering that institutions are not a directly measurable phenomena, researchers face a significant challenge in representing them through various proxies (Garrido et al., 2014; Samadi & Alipourian, 2021; Voigt, 2013), as well as in the operational definition of institutional change (Campbell, 2004). Thus, this study was limited in the choice of the reform indicator, as its construction is subject to researcher's discretion, even though it was tested with different indices and subjected to robustness checks. Furthermore, it is a binary indicator signaling whether a country underwent market-friendly reforms or not. Therefore, it does not reflect the level or speed at which reforms occur across countries.

Other potential biases may affect our conclusions, such as the reliability of firms' accounting data and the heterogeneity existing between the analyzed countries in terms of their level of development and other informal institutional factors. Another consideration is that the findings are limited to selected publicly traded companies in the sample, which are likely among the largest firms in the analyzed countries. Therefore, caution is needed when extending the findings beyond publicly traded acquirer firms.

As for future studies, they may provide a measure that captures the variation in the level of reforms across countries. Additionally, they may want to test our model in the context of private firms, as well as the effect of pro-market reforms on the country's aggregate volume of

M&A (Adra et al., 2020; Bonaime et al., 2018). Other studies can include an analysis of how institutional changes affect the initiative for cross-border acquisitions compared to domestic ones. Institutional quality indices are typically composed of various subcomponents of institutional dimensions. Another possibility is to investigate the segregated effect of formal economic institutions in product, financial, and labor markets (Chacar et al., 2010; Khanna & Palepu, 2010; Mukherjee et al., 2023), for instance, by using our same strategy to track changes in these institutions.

Future research can explore the interaction of other factors with pro-market reforms. For example, industries with greater regulatory complexity typically have higher costs associated with the M&A process (Ferreira, Borini, et al., 2017), making them more sensitive to the effect of reforms. Furthermore, other aspects such as the acquiring firm having political connections may help managers interpret government signals about the direction of reforms and improve their predictions about the target firm's value (Zhao et al., 2019). Other possibilities include interactions of institutional changes with characteristics like firm size, availability of financial resources, and ownership structure.

It is common for studies in the M&A literature to examine the effect of external factors on various transaction characteristics (Adra et al., 2020; Bonaime et al., 2018; Nguyen et al., 2020; Nguyen & Phan, 2017; H. Yang et al., 2022; J. Yang et al., 2019). Therefore, new studies may investigate the effect of pro-market reforms on aspects such as payment consideration (cash or stocks), acquisition value and premium, post-acquisition performance, market perception through abnormal cumulative returns on the announcement date, the proportion of acquired capital (total or partial), and the time it takes to complete a deal.

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## CHAPTER 4

### **Duration of Corporate Mergers and Acquisitions in Emerging Economies Under Conditions of Institutional Change**

#### **Abstract**

In this study, we have employed Survival Analysis to examine the effects of pro-market reforms on the duration of pre-acquisition corporate merger and acquisition (M&A) processes conducted by acquiring companies listed in emerging economies. Based in the theory of New Institutional Economics, we have argued that pro-market reforms play a crucial role in accelerating deal closures by reducing transaction costs in these countries. We have also proposed that duration and deal abandonment are integrated aspects, as firms may become inclined not to complete deals after a certain point. Our findings indicate that pro-market reforms positively impact the hazard function of deal completion and decrease the average duration of completed deals. Furthermore, we have observed a negative duration-dependence, meaning that the longer a deal remains pending, the lower the likelihood of its completion for each additional unit of time. Consequently, we have introduced a dynamic perspective for the analysis of duration-completion-abandonment of M&A deals. To validate our hypotheses, we have analyzed firm-level data on M&A transactions from 9 emerging economies over a 20-year period. Empirical tests confirm our assumptions, and thus, our results have significant implications for decision-makers in the M&A market within emerging economies.

**Keywords:** duration analysis; censored regression models; pre-acquisition; deal completion; deal abandonment.

#### **Resumo**

Neste estudo, utilizamos a Análise de Sobrevivência para verificar os efeitos de reformas pró-mercado na duração dos processos de fusões e aquisições na fase de pré-aquisição, realizados por empresas adquirentes listadas em economias emergentes. Com base na teoria da Nova Economia Institucional, defendemos que as reformas pró-mercado, ao reduzir os custos de transação nesses países, desempenham um papel importante na aceleração da conclusão dos acordos. Também propomos que a duração e o abandono dos acordos são aspectos integrados, uma vez que, a partir de certo ponto, as empresas podem se tornar propensas a não os concluir. Nossos resultados mostram que as reformas pró-mercado têm efeito positivo na função de risco de concluir uma aquisição e diminuem a duração média dos acordos concluídos. Além disso, verificamos que há uma dependência de duração negativa, pois quanto mais tempo o acordo permanece pendente, menores são as chances de concluí-lo para cada unidade de tempo adicional. Com isso, introduzimos uma perspectiva dinâmica de análise da duração-conclusão-abandono dos acordos de M&A. Para validar nossas hipóteses, analisamos dados em nível das firmas de transações de M&A em 9 economias emergentes ao longo de 20 anos. Os testes empíricos confirmaram as nossas suposições e, assim, nossos resultados têm implicações importantes para os tomadores de decisão no mercado de fusões e aquisições em economias emergentes.

**Palavras-chave:** análise de duração; modelos de regressão censurados; pré-aquisição; conclusão do acordo; abandono do acordo.

## **1 Introduction**

### **1.1 Context and Motivations**

Corporate Merger and Acquisition (M&A) transactions encompass one of the most intricate processes due to their involvement of numerous stages and stakeholders (Meglio et al., 2017; Very & Schweiger, 2001). They serve as a means of firm growth (Reddy, 2014), where a dominant purchasing company, the acquirer, absorbs the assets or ownership of another firm amenable to the transaction. The acquisition can result in a business combination, leading to the formation of an entirely new entity. Such combinations have far-reaching impacts at the aggregate level, increasing competition intensity within industries and the bargaining power of the merged firm, potentially affecting pricing control. Consequently, this process is typically regulated and requires a significant amount of time to reach its completion (Crocì et al., 2017; Ekelund et al., 2001). As such, numerous factors can hinder its expeditiousness and even lead to deal abandonment (Chang et al., 2016; Crocì et al., 2017; Dikova et al., 2010; Ferreira, Borini, et al., 2017; Kim & Song, 2017; Lawrence et al., 2021).

The time required to complete a transaction between sellers and buyers is an indicator of how well a market functions (Khanna & Palepu, 2010). Hence, notable differences in the average duration of economic transactions can be observed between developed and emerging markets. In the latter, the so-called "institutional voids" contribute to market failures, increasing transaction costs and causing specific transaction steps to take longer to be completed than usual (Kim & Song, 2017).

Therefore, Khanna and Palepu (2010) identify the institutional complexity of emerging markets as the primary reason for longer transaction completion periods. Table 1 provides examples of how transaction costs in emerging markets lead to extended average durations for various economic transactions carried out by companies and other processes related to them:

Table 1: Comparing the average time required to complete transactions in emerging and developed markets

<b>Country \ Time (days)</b>	Dealing with construction permits	Getting electricity	Registering property	Starting a business	Enforcing contracts	Exporting	Importing	Closing an M&A deal
<b>Emerging Markets (Average)</b>	<b>175</b>	<b>86</b>	<b>27</b>	<b>26</b>	<b>609</b>	<b>16</b>	<b>19</b>	<b>91</b>
Brazil	338	125	31	62	801	13	17	97
Russia	198	103	16	10	327	21	19	79
India	152	74	62	26	1445	17	21	112
China	221	106	19	21	496	21	24	127
South Africa	155	124	23	44	600	16	21	71
Indonesia	200	53	29	31	437	17	26	124
Turkey	100	53	6	9	585	13	14	64
Mexico	88	103	48	8	357	12	11	59
Thailand	120	33	9	18	430	14	13	86
<b>Developed Markets (Average)</b>	<b>125</b>	<b>78</b>	<b>16</b>	<b>6</b>	<b>484</b>	<b>8</b>	<b>8</b>	<b>58</b>
United States	81	90	15	5	444	6	5	51
Germany	126	28	52	10	489	9	7	54
Japan	108	81	13	11	360	11	11	55
Canada	249	138	4	2	858	8	10	67
Australia	118	75	4	2	402	9	8	83
United Kingdom	86	69	22	5	437	8	6	34
Norway	110	66	3	4	400	8	7	59

Note: The table presents average of values reported by the respective databases between 2015 and 2020 for the listed countries. The year 2020 is the last year of availability for the World Bank's Doing Business report. The time to complete a M&A is the time interval between the official announcement date of the acquisition and the date of its completion. Acquisitions made by publicly traded acquiring companies headquartered in their respective countries were considered. Source: The World Bank Doing Business; Securities Data Company (SDC) Refinitiv.

The relatively longer transactions in emerging markets deserve our attention because they harm economic agents who must wait longer to achieve their goals. In the case of M&A, many of them are socially beneficial as they provide goods, services, and technology to consumers. Therefore, delays in their consolidation can imply social costs (Ekelund & Thornton, 1999). Moreover, extended durations are associated to poor post-M&A performance and subsequent failure to create synergies (Thompson & Kim, 2020). The costs of keeping the deal open can lead to its abandonment by the acquirer, and other negative side effects of it include weakening the reputation of the acquiring firm, managerial frustration, and losses to shareholders (Dikova et al., 2010; Lawrence et al., 2021; Luypaert & De Maeseneire, 2015). Furthermore, the delays bring uncertainty to employees, customers, and shareholders who are speculating about the closing of the deal, and offer the opportunity for a competing bidder to contest the deal (Luypaert & De Maeseneire, 2015; Meglio et al., 2017).

Therefore, several stakeholders are harmed by delays in the conclusion of M&A deals. This problem is likely to be more prevalent in emerging markets because, due to the institutional voids in these markets (Khanna & Palepu, 2010), the average time to complete an M&A is longer compared to developed countries, considering acquisitions announced by firms headquartered in the country (Table 1). However, very little studies focus on the analysis of the duration and/or conclusion of M&A processes in emerging markets (Al-Sabri et al., 2022; Kim & Song, 2017). There is evidence of the effect of the institutional environment from the host country in the context of cross-border transactions (Dikova et al., 2010; Ferreira, Borini, et al., 2017; Lawrence et al., 2021). Although there is evidence that firms also seek growth in domestic markets during pro-market reforms in the country (Singh et al., 2018), such a connection with the duration of M&A has not yet been established.

As a result, we have provided a more detailed analysis of the duration of M&A processes. We have addressed this gap by questioning whether pro-market reforms in the home country affect the time required to conclude M&A deals in emerging economies. We have studied the effect of the internal institutional environment through the construct of "pro-market reforms" (Banalieva et al., 2018; Cuervo-Cazurra et al., 2019; Mukherjee et al., 2023), since their aim has been to "make market based exchanges more efficient by removing institutional constraints on economic activities" (Singh et al., 2018, p. 220). Improvements in the quality of national economic institutions occur through pro-market reforms, so we believe that such reforms can fill institutional voids and contribute to expediting transactions. Developing countries have environments that have been transformed by institutional changes, gaining more strength from the 1990s through the implementation of pro-market reforms (Cuervo-Cazurra & Dau, 2009; Singh et al., 2018), and they are still frequently implemented to support economic transactions (World Bank, 2020).

To shed light on such a relationship, we have relied on the theoretical framework of the New Institutional Economics (NIE) (North, 1990), commonly adopted in empirical literature to analyze the effect of institutions on firms' individual behavior (Banalieva et al., 2018; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009; Mukherjee et al., 2023; Singh et al., 2018). Institutions are norms, rules, and patterns of conduct that reduce uncertainty and provide stability for economic transactions. According to North (1990), the magnitude of transaction costs in a country is associated to the quality of internal institutions. Thus, institutional change creates wealth-maximization opportunities for firms when it reduces these costs. Based on it, some previous studies found that institutional changes driven by pro-market reforms in

emerging markets had significant effects on firm responses, such as their performance (Cuervo-Cazurra & Dau, 2009) and new investments (Singh et al., 2018).

We believe that pro-market reforms should also influence the pre-acquisition stage of M&A processes, through the pathway of transaction costs, reducing the duration of these processes. Among other factors, reforms should reduce the informational asymmetry between parties involved in the M&A transaction, benefiting the agility of preparing and circulating the substantial number of internal documents: shareholder approvals, board memos, integration guidelines, opinions from regulatory agencies and experts, and more accurate estimates of potential synergies (Dikova et al., 2010). Therefore, to substantiate these arguments, **this research aims to analyze the effects of pro-market reforms on the duration of M&A processes in the pre-acquisition stage initiated by publicly listed acquiring companies in emerging economies.**

To achieve our objective, we drew insights from the literature on reforms/reversals (Banalieva et al., 2018; Campos & Horváth, 2012a; Grier & Grier, 2021) to construct an indicator that tracks pro-market reforms. For this task, we have adopted economic freedom indexes, which consist of various dimensions of market-oriented institutions and are frequently used in studies related to reforms in these institutions (Banalieva et al., 2018; Fuentelsaz et al., 2021; Grier & Grier, 2021; Singh et al., 2018). One advantage of using these indices is their extensive historical data and availability for various countries (Cuervo-Cazurra et al., 2019).

With a sample of 15,376 deals announced by 5,521 listed acquiring firms headquartered in 9 emerging countries between 2002 and 2021, we have applied a survival analysis model to estimate the hazard function of completing an acquisition for each unit of time. Survival analysis finds wide application in clinical studies, as it is useful for predicting the effect of treatments on patients' survival (Su et al., 2022). It is also used in studies that analyze the effect of covariates from an specific moment until the time an event occurs (Balogh et al., 2022; Cai & Yesley, 2022; Mansaray et al., 2021). It's important to note that our study takes the perspective of the acquiring firm and considers a comprehensive sample of the population, encompassing not only observations of completed deals but also abandoned and pending deals as censored observations.

We found that pro-market reforms in the acquiring firm's home country positively affect the hazard function of completing an M&A, which also means it is associated to a shorter duration of deals. We have observed a negative duration dependence, implying that the likelihood of completion decreases for each additional day the deal remains pending. Furthermore, we have employed a Tobit model to estimate the effects on the expected duration

of completed deals (instead of the hazard function). Despite its limitations, as it considers only the subsample of completed deals, the results are more straightforward to interpret and allow for a more direct comparison with previous studies and with the survival analysis results. We have found that in both models, the results are consistent. In this latter model, the effects of pro-market reforms are linked to a significant reduction in the average duration of completed deals by 27 days. However, this result underestimates the survival analysis outcome considering the whole sample, where the effect was a reduction of 175 days in the median time to failure.

This is economically relevant and has practical implications: the improvement in the quality of institutions, driven by reforms, not only reduces the proportional costs to the duration of M&A processes, such as managerial costs (Dikova et al., 2010; Ekelund et al., 2001; Ferreira, Borini, et al., 2017; Luypaert & De Maeseneire, 2015), but also reduces social costs since the benefits brought by the consolidation of these processes will soon be available to consumers. Additionally, with survival analysis, this proposal integrates the perspectives of completion and duration of deals in the pre-acquisition stage, providing a solution for other studies that analyze these aspects separately and/or with sub-samples (Chang et al., 2016; Dikova et al., 2010; Ekelund et al., 2001; Ferreira, Borini, et al., 2017; Luypaert & De Maeseneire, 2015; Nguyen & Phan, 2017). In this way, we have made direct contributions to the M&A literature in three ways: (1) by proposing and applying a survival model, (2) by analyzing the determinants, and (3) by conducting a study involving multiple emerging countries. We have also contributed to the literature that promotes the understanding of institutional factors in the individual behavior of firms (Banalieva et al., 2018; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009; Mukherjee et al., 2023; Singh et al., 2018), by establishing a new link to the duration of M&A processes.

Next, we have presented the main constructs and the theoretical framework that support the development of the hypotheses. Following that, we have provided details on data extraction procedures, measures, and methods. We have dedicated a special section to the explanation and specification of the survival analysis models and the Tobit model. Finally, we have presented the description, interpretation, and discussion of the results, along with our concluding remarks.

## **2 Related Literature and Hypothesis Development**

### **2.1 Duration of corporate merger and acquisition processes**

M&A transactions are complex (Meglio et al., 2017) as they involve multiple phases and key participants, making the conclusion of these processes a significant challenge (Very & Schweiger, 2001). The process typically begins with a preparation phase, which includes the search for a target company or potential acquirer, followed by initial contact and preliminary

due diligence to determine if a potential business combination can generate synergies. It is only after this stage that the acquisition is officially announced, which can take a considerable amount of time.

The M&A process itself unfolds into two general stages: the pre-acquisition stage and the post-acquisition stage (Meglio et al., 2017). The pre-acquisition stage extends from the official announcement of the acquisition to its completion date. The post-acquisition stage, once the deal is closed, involves strategies for initiating the integration of resources, processes, and responsibilities of the combined companies (Lajoux, 2019). Until the latter is achieved, buyers and sellers have already been through the phases of the first stage, which involves defining the deal's form and legal structure, valuation, risk assessment, negotiation, choice of payment method, and deal closure, among others (Gaughan, 2017; Meglio et al., 2017; Very & Schweiger, 2001).

In this sense, the pre-acquisition stage is crucial because it is during this stage that the deal is closed or may not be if the involved parties do not reach a consensus (Dikova et al., 2010). The costs of this stage, directly related to time, can erode potential synergy gains, and the complexities of the transaction can extend the time gap between the official announcement and the deal's completion (Ferreira, Borini, et al., 2017; Luypaert & De Maeseneire, 2015).

Hence, many factors can affect the duration of such stage and even prevent its completion by making it more or less complex (Luypaert & De Maeseneire, 2015). Despite the significant implications of these factors for deals' outcomes, relevant studies related to the duration of M&A processes are scarce compared to the investigation of other aspects of these transactions (Agrawal et al., 2013; Al-Sabri et al., 2022; Chang et al., 2016; Croci et al., 2017; Dikova et al., 2010; Ferreira, Borini, et al., 2017; Lawrence et al., 2021; Li et al., 2017; Luypaert & De Maeseneire, 2015; Meglio et al., 2017; Muehlfeld et al., 2012; Nguyen & Phan, 2017; Park et al., 2016; Renneboog & Zhao, 2014; Soleimani & Yang, 2022).

Among the factors analyzed in the literature, the specific characteristics of the deals are regarded as the most important. The acquisition of a publicly listed company tends to be more complex because it is subject to security laws, disclosure requirements, and shareholder approval (Al-Sabri et al., 2022; Dikova et al., 2010; Lajoux, 2019; Lawrence et al., 2021). Practical delays resulting from the legal and transparency requirements of those deals, in particular, provide an opportunity for a competing acquirer to challenge the deal, leading to a dispute that reduces the likelihood of completion and it further extends the whole process (Croci et al., 2017; Lajoux, 2019; Luypaert & De Maeseneire, 2015; Nguyen & Phan, 2017). In the

case of privatizations, the negotiation process is usually more complex, takes longer, and involves other stakeholders (Meyer, 2002).

M&A involving firms from unrelated industries (diversification) generate greater uncertainty due to different regulations and information levels between the parties (Al-Sabri et al., 2022; Ferreira, Borini, et al., 2017), which can positively affect the duration. Other determining factors for duration include characteristics such as industry concentration and regulatory complexity (Crocì et al., 2017; Ekelund et al., 2001; Ferreira, Borini, et al., 2017). The duration is also strongly affected by the time spent by regulatory agencies to review the terms of the deal, which completion depends on prior regulatory approval (Ekelund et al., 2001; Ferreira, Borini, et al., 2017).

Evidence shows that cross-border deals may have their duration reduced compared to domestic ones (Al-Sabri et al., 2022) due to the additional investments in mechanisms to reduce information asymmetry, such as hiring country experts, which in these cases reduces the deal duration, even though they are more costly (Boeh, 2011). Mergers tend to last longer than tender offers, mainly because they typically have a more complex legal structure and bring more changes to the target firm's structure, which requires more detailed discussions (Al-Sabri et al., 2022; Lajoux, 2019; Luypaert & De Maeseneire, 2015).

The payment method (cash or stocks) can also affect the duration. Cash payment is more straightforward and easier to evaluate, while payment in stocks, or mixed payment, requires more administration and permission for issuing new securities (Al-Sabri et al., 2022; Luypaert & De Maeseneire, 2015). An M&A can rescue a target firm from bankruptcy, with legal incentives depending on the country's legislation. This can present significant opportunities for the acquirer and expedites negotiations in such cases (Iwasaki et al., 2021; Lajoux, 2019).

Other characteristics are also relevant. Meglio et al. (2017) provide valuable insights into how stakeholder characteristics involving shareholders, top managers, advisors, customers, and employees, can affect the speed of acquisition process stages. Building on those insights, Al-Sabri et al. (2022), in a more recent study, showed that the characteristics of the acquiring firm's CEO have an effect on the duration of the closing of the deal. Analyzing other factors related to the firms involved in the acquisition, Crocì et al. (2017) showed that deals where the target firm has political connections, have their completion time extended due to potential political interference. In addition to these factors, it has been shown that being accompanied by financial advisors is also a factor with proven significance (Chang et al., 2016; Lawrence et al., 2021).

Exogenous factors affecting the agility of the pre-acquisition process play a significant role as well. For instance, high economic policy uncertainty within a country can dampen the M&A initiative and extend the duration of ongoing deals (Nguyen & Phan, 2017). When examining how a host country's characteristics influence the duration of M&A transactions, studies with a focus on the effects of the host country's institutional status quo on cross-border acquisitions are more common (Dikova et al., 2010; Ferreira, Borini, et al., 2017; Lawrence et al., 2021; Soleimani & Yang, 2022). Institutional factors are widely acknowledged as the most critical determinants in the field of international businesses (Xie et al., 2017).

However, the home country institutional complexity stands out as one of the primary causes of extended durations for economic transactions (Khanna & Palepu, 2010), including M&A (Ekelund & Thornton, 1999). This may be one of the most relevant factors affecting the duration and completion of the pre-acquisition stage since it directly impacts many of its phases. M&A transactions typically involve a highly regulated process (Crocchi et al., 2017), and key characteristics of the pre-acquisition stage entail complexity related to regulatory and procedural requirements (Soleimani & Yang, 2022).

In this regard, it is expected that institutional change in a country, aimed at improving its quality, plays a crucial role in regulatory simplification and environmental clearance, thereby altering transaction costs (North, 1990), which can lead to more efficient deal. This is especially relevant for emerging markets, which inherently contend with high transaction costs (Peng, 2003). In addition to the evidence presented in Table 1 previously, a comparison between empirical studies in developed markets (Dikova et al., 2010) and emerging markets (Al-Sabri et al., 2022) also reveals that the average time to conclude a deal is longer in the latter.

However, there is a lack of studies that have examined how changes in the internal institutional context affect the duration and resolution of M&A deals involving acquiring domestic firms. This creates an opportunity for such an investigation. In line with this reasoning, Ekelund and Thornton (1999) argue in an early study that M&A is an efficient response to the expansion of free trade and the diffusion of market-oriented institutions. They contend that the implementation of "policy reforms" is a way to reduce the existing delays in the processes once initiated.

## **2.2 Pro-market Reforms**

Pro-market reforms are institutional changes implemented by governments that, in general, aim to facilitate market transactions, promote greater autonomy for resource allocation, and reduce government intervention (Alipourian & Samadi, 2021; Banalieva et al., 2018;

Campos & Horváth, 2012b; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009; Grier & Grier, 2021). According to North (1990, p. 88), changes in the rules of the game "provide organizational entrepreneurs with new avenues to profitable exploitation." Based on these predictions, evidence shows such market-oriented reforms have the potential to increase the profitability of companies in emerging markets, contrary to the arguments of some globalization critics. Domestic companies are the main beneficiaries of the reforms in these countries (Cuervo-Cazurra & Dau, 2009).

Such reforms are associated to deregulation policies, trade liberalization, price liberalization, protection of property rights, among other aspects that often lead to a reduction in a country's institutional complexity. The primary focus of the reforms has been to make market based exchanges more efficient by removing institutional constraints on economic activities (Singh et al., 2018, p. 220). Pro-market reforms serve as a mechanism that allows "rules and procedures to evolve not to restrict economic activity but (1) to simplify the process of 'deciphering the environment' and (2) to enable value-enhancing transactions that would otherwise not take place" (Dikova et al., 2010, p. 226).

According to Khanna and Palepu (2010, p. 14), "(...) less recognized is the importance of institutional development that underprints the functioning of mature markets. The most important feature of any market is the ease with which buyers and sellers can come together to do business." These authors refer to certain distinctive characteristics of developing countries as "institutional voids" that hinder the proper functioning of markets. Thus, institutional change assumes a crucial role in these contexts and should aim to overcome those gaps to create well-functioning market economies.

To shed light on the relationship between institutional change and firm behavior, the Theory of New Institutional Economics through the lens of North (1990) is commonly adopted (Banalieva et al., 2018; Dikova et al., 2010; Singh et al., 2018). This line of thought has a particular interest in the problem of transaction costs, which are influenced by the quality of institutions. In this regard, institutional changes that favor markets can reduce transaction costs and create opportunities for firms to generate wealth. North (1990) thus proposes that the success of organizations, among other internal and external factors, depends on the quality of national institutions. This success can manifest in different firm responses to favorable institutional change, such as internationalization, growth, new investments, and performance (Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009; Peng, 2003).

However, the connection between institutions and the success of organizations as manifested in financial decisions is relatively underexplored in the field of Finance, compared

to other business areas (Lawrence et al., 2021). Some literature reviews encourage new studies to integrate Institutional Theory into M&A research (Ferreira et al., 2014; Hossain, 2021).

### **2.3 Hypothesis development on the relationship between pro-market reforms and the time required to complete an acquisition**

We have used the arguments presented earlier to back up our research hypothesis. In general, the evidence shows that more complex deals result in a longer completion time (Dikova et al., 2010; Ekelund et al., 2001; Ekelund & Thornton, 1999; Ferreira, Borini, et al., 2017; Luypaert & De Maeseneire, 2015; Muehlfeld et al., 2007). The relatively higher transaction costs in emerging markets contribute to the increased complexity of M&A deals (Khanna & Palepu, 2010). Khanna and Palepu (2010) use the term emerging markets to refer to economies that face a variety of institutional challenges. What is emerging in these economies is not only the economic growth potential but also the development of the supporting infrastructure required for well-functioning markets (Hoskisson et al., 2000)

Thus, the institutional development driven by pro-market reforms in these countries can facilitate the entry and availability of market experts who expedite the due diligence and information gathering process (Kim & Song, 2017), such as tax, valuation, industry and country experts (Very & Schweiger, 2001). Additionally, it can improve corporate disclosure standards, reducing the chances of new information arising after the initial agreement. This, in turn, minimizes the need for renegotiation and contract adjustments (Kim & Song, 2017). Moreover, the development of the financial and capital markets, which facilitates financing availability and resource mobility, provides acquiring firms with the capability and legitimacy to finance the deal (Chacar et al., 2010; Kim & Song, 2017).

In accordance with Khanna and Palepu (2010, p. 17), "well-functioning markets tend to have relatively lower transaction costs and high liquidity, as well as greater degrees of transparency and shorter time periods to complete transactions." Therefore, we propose that the reduction in institutional complexities through pro-market reforms in the home country has an impact on the duration of M&A transactions as follows:

**H1:** *In emerging markets, pro-market reforms accelerate the completion of M&A processes in the pre-acquisition stage.*

Furthermore, Dikova et al. (2010, p. 227) suggest that the duration of M&A processes and the outcome of their resolution are interconnected when they state that formal environmental complexities "(1) increase the likelihood of deal abandonment and (2) produce hold-ups resulting in longer deal-completion time", although they analyze each perspective

separately. Renneboog and Zhao (2014, p. 220) argue that "the bidder usually prefers to have a short negotiation duration, as a longer waiting time due to target's resistance increases the transaction costs and uncertainty." Consequently, this may lead to the announcement withdrawal. We integrate this perspective through survival analysis, leading to the following hypothesis:

**H2:** *The likelihood of an acquiring firm completing a deal decreases for each additional unit of time.*

This implies that deals exhibit a negative duration dependence. In other words, the probability of completing the deal decreases the longer it remains pending, while holding other factors constant.

### **3 Methods**

#### **3.1 Data collection and sample**

The sample was restricted to annual observations of publicly traded acquiring firms headquartered in emerging countries that made acquisition announcements in the years under analysis. The total sample comprises announcements of completed, abandoned, or pending deals, which were still in progress up to the last date of database verification. We have included firms from nine different countries in the sample, which have a significant volume of transactions and are frequently used in other studies (Kim & Song, 2017; Liou et al., 2016): Brazil, China, India, Indonesia, Mexico, Russia, South Africa, Thailand, and Turkey. These countries provide access to data from publicly traded companies and are located on different continents.

The M&A records were extracted from the Securities Data Company (SDC) database by Refinitiv, with identification of acquiring and target firms among other deal details, from 2002 to 2021. For the subsequent analyses, deals announcement and completion dates (in cases of completed deals) were extracted to calculate the duration in days of the acquisition process. In the case of abandoned deals, the dates when the companies officially withdrew the announcement were extracted to calculate the duration (from the announcement date to the withdrawal date). For pending deals, the time was calculated as the difference between the announcement date and the date of database checking (June 30, 2022).

Following the literature, certain records were excluded. These included buybacks and acquisitions of remaining interest, where the acquirer already holds a majority stake in the target firm (Adra et al., 2020; Alimov & Officer, 2017; Luypaert & De Maeseneire, 2015), according to Refinitiv's classification. Acquirers from the financial sector (TRBC 2-digit industry classification: code 55) were also excluded.

At this stage, eligible companies for analysis were selected, consisting of non-financial publicly traded acquirers with completed, abandoned, or pending deals. Exclusions were made for observations where the financial, accounting, or market information of the acquiring firm was not disclosed or unavailable in the database used. Observations lacking certain macro-level information for their respective countries were also removed. This resulted in a sample of 5,521 acquiring companies, contributing with 15,376 observations, which is also the total number of analyzed deals, of which 7,836 were effectively completed. The remaining deals are classified as abandoned or pending. It is important to note that for companies with multiple announcements in a single year, only the first announcement of the year was considered to constitute observations for those companies (following a single-spell data approach) (Wooldridge, 2010).

Table 2 provides a breakdown of the number of acquiring companies analyzed by country and each country's contribution to the number of observations, where each observation represents an announced deal, which could be either completed, abandoned, or still pending:

Table 2: Sample of companies by country, number of observations, and completed deals

	Brazil	Russia	India	China	Indonesia	Mexico	S. Africa	Thailand	Turkey	Total
No. Companies	137	146	958	3,330	208	81	182	332	147	5,521
No. Observations	456	510	2.131	10.066	385	229	585	695	319	15.376
% of total	3,0%	3,3%	13,9%	65,5%	2,5%	1,5%	3,8%	4,5%	2,1%	100,00%
Completed deals	323	392	1.273	4.537	205	188	364	328	226	7.836
Completion rate	70,8%	76,9%	59,7%	45,1%	53,2%	82,1%	62,2%	47,2%	70,8%	50,96%

Note: No. Companies is the number of eligible companies. No. Observations is the number of analyzed deals, announced by these companies (a maximum of 1 per year). % of total is the relative contribution of each country to the number of observations. Completed deals is the number of deals completed out of the total observations. Completion rate is the percentage of completed deals in relation to the total observations. Source: Refinitiv (SDC).

This provides us with a comprehensive sample from different countries for the analysis of their duration as a function of to pro-market reforms and other controls.

### 3.2 Model specification

Given our interest in understanding the effects of pro-market reforms on both the hazard function of deal completion, which provides the chances of completion over time, and the expected duration of an acquisition process, we employed survival analysis and Tobit regression modeling, respectively. This follows the recommendations of Wooldridge (2010) for these specific scenarios. It is important to emphasize that, although some relevant studies have analyzed the time interval of the acquisition process (Al-Sabri et al., 2022; Dikova et al., 2010;

Ekelund et al., 2001; Ferreira, Borini, et al., 2017; Nguyen & Phan, 2017), the use of survival analysis for this purpose represents our contribution to this field of research.

### 3.2.1 Survival Analysis

Also known as duration analysis (Wooldridge, 2010), it is used to analyze data related to the time it takes for a specific event to occur. Therefore, it can be valuable for predicting outcomes resulting from a qualitative change in an individual's state. It is widely employed in the medical sciences to examine, for instance, cancer patients from the time of a surgery until their passing away (Su et al., 2022). In this context, the focus of analysis is on survival time, which is conditional on factors such as patient characteristics and the treatment they have undergone. Thus, a given treatment is considered effective if it positively impacts longevity.

The impact on survival time is examined through the hazard function, which provides the "instantaneous rate of exiting the initial state per unit of time" (Gujarati, 2014, p. 346). In other words, it gives the probability that an individual experiences the event, typically referred to as "failure" (in the last case, death), at time  $t$ , given that they have survived up to that point. It is important to note that the interpretation of the term "failure" depends on the context. Additionally, we observe that the survival time is inversely related to the hazard function.

In different contexts, survival analysis can be employed to examine the duration until the occurrence of socioeconomic events, such as the time a person remains unemployed until being rehired (Kiefer, 1988). In this context, the "failure" (being hired) is desired, as opposed to the survival time (remaining in the initial state - unemployed).

We have introduced this modeling to analyze the duration of corporate merger and acquisition processes involving public acquiring companies from emerging economies. In this case, survival time was defined from the date of the acquisition official announcement to the resolution date. With this delineation, our population of interest is represented by companies that made acquisition announcements, including those that did not proceed with the deal or where deals are still pending at the database verification date. Such firms carry important information about the population, which influences the hazard function, even if they have not completed the deal (the event of interest).

Thus, censoring is an important concept introduced in survival analysis (Su et al., 2022). Given that some observations in our sample did not reach the event of interest by the end of the study or the acquisition announcement was withdrawn at some point before the event occurred, such data were right-censored. Left censoring is not applicable here since all the official

announcement dates are known. For more details on survival data censoring, Gujarati (2014), Su et al. (2022) and Wooldridge (2010) can be checked.

In this analysis, we have considered a more comprehensive portion of the population of companies involved in the acquisition process compared to other studies (Chang et al., 2016; Dikova et al., 2010; Ekelund et al., 2001; Ferreira, Borini, et al., 2017; Nguyen & Phan, 2017). All observations combined constitute the total "time at risk" analyzed, which is the observed duration until the event or until censoring. The characteristics of observations with respect to their time at risk are illustrated in Figure 1. Completed deals' observations are those that reached the event (failure) and have their time at risk up to completion. Pending deals have their time at risk until the database verification date. Observations of abandoned deals have their time at risk up to the withdrawal date and are no longer at risk of failure. The last two cases are right-censored.

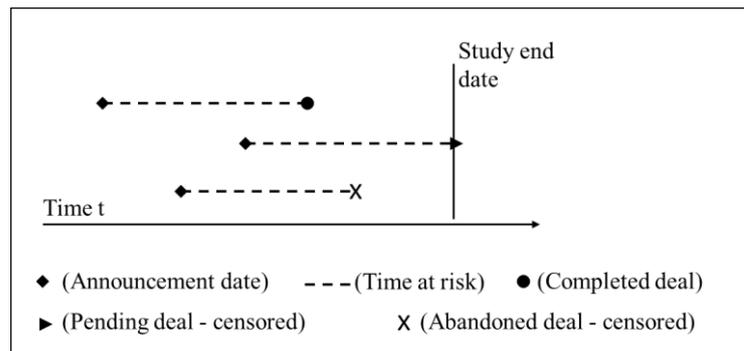


Figure 1: Time at risk of observed M&A deals. Source: Authors'.

Survival analysis follows two approaches. The first is the non-parametric method, which involves a univariate analysis of time at risk used for descriptive purposes. In this case, the Kaplan-Meier (KM) analysis is often used to estimate the hazard function (Hosmer et al., 2008):

$$\hat{\lambda}(t) = \frac{d_j}{n_j} \quad (1)$$

Where  $\hat{\lambda}(t)$  is the estimated hazard function, providing the instantaneous rate of failure at each time  $t_{(j)}$  (here, in days), given that the deal has lasted until this date.  $d_j$  represents the number of deals that have experienced failure, and  $n_j$  is the number of deals at risk of failure in  $j$  periods. By sorting the time periods  $t$  in crescent order, the Kaplan-Meier survival function

can be obtained through the product of 1 minus the hazard rate for each time  $t_{(j)}$ , as follows (Hosmer et al., 2008):

$$\hat{S}(t) = [1 - \hat{\lambda}(1)] \times [1 - \hat{\lambda}(2)] \times \dots \times [1 - \hat{\lambda}(\max j)] \Rightarrow \prod_{t_{(j)} \leq j} [1 - \hat{\lambda}(j)] \quad (2)$$

The result of the survival function  $\hat{S}(t)$  is the survival probability, meaning the probability that the deal lasts at least  $t_{(j)}$  days, denoted within the interval from 0 to 1. For example, at  $t_{(1)}$  in our sample,  $d_1 = 2,021$ , and  $n_1 = 15,376$ , so  $\hat{\lambda}(1) = 13.14\%$ , and  $\hat{S}(1) = 86.86\%$ . At  $t_{(2)}$ ,  $d_2 = 56$ , and  $n_2 = 15,376 - 2,021 - 9 = 13,346$ , which is the current number of deals at risk, considering that 2,201 were completed at  $t_{(1)}$ , and 9 were abandoned. Therefore,  $\hat{\lambda}(2) = 0.42\%$ , and  $\hat{S}(2) = 86.86\% \times (1 - 0.42\%) = 86.49\%$ , and so on. Hence, 86.49% is the probability that the deals in the sample last for at least 2 days. The values of  $\hat{S}(t)$  represented graphically result in the Kaplan-Meier (KM) curve, which is a decreasing step function.

For convenience, if the interest lies down in failure (as in our case) instead of survival, these results can be represented inversely, where  $\hat{F}(t) = 1 - \hat{S}(t)$ , revealing the probability of failure, or that the deals are completed within  $t_{(j)}$  days. Returning to the previous example, the probability that the deals are completed within 2 days is 13.51%.

The second approach is the parametric method, which includes regression models, considering that survival time is conditional on covariates (Su et al., 2022). Given that the probability distribution of duration values is often skewed, parametric models require that this distribution be pre-specified, such as Exponential, Weibull, Gompertz, Log-Logistic, among other possibilities, including the application of the Cox proportional hazards (PH) model, which relaxes this pre-specification (Gujarati, 2014; Su et al., 2022).

In this study, we went on with the Weibull regression, which, through testing, maximized the log-likelihood function, indicating that this distribution provided a better fit. Additionally, the Weibull distribution model explicitly considers the duration dependency by estimating a special parameter (Gujarati, 2014; Wooldridge, 2010). Findings from other models have shown similar results, and these results are available upon request to the authors. The Weibull model has the following general form (Wooldridge, 2010):

$$\lambda(t | \mathbf{x}) = \exp(\mathbf{x}\boldsymbol{\beta}) \alpha t^{\alpha-1} \quad (3)$$

Where,

$$\begin{aligned}
\mathbf{x}\boldsymbol{\beta} = & \beta_0 + \beta_1 ref_{c,n} + \beta_2 size_i + \beta_3 roa_i + \beta_4 cash_i + \beta_5 return_i \\
& + \beta_7 mktcap\_gdp_{c,n} + \beta_8 interest_{c,n} + \boldsymbol{\beta}_9 \mathbf{d\_deal}_i \\
& + \beta_{10} d\_industry_s + \beta_{11} d\_country_c + \beta_{12} d\_year_n
\end{aligned} \tag{4}$$

In this case, the estimated hazard function  $\lambda(t|\mathbf{x})$  is conditional on a vector of explanatory variables  $\mathbf{x}$ .  $\boldsymbol{\beta}$  is a vector of estimated regression parameters, including the constant parameter.  $\alpha$  is a non-negative estimated parameter that indicates the duration dependency. If  $\alpha = 1$ , there is no duration dependence. If  $\alpha < 1$ , the risk of failure decreases with time, indicating negative duration dependence. If  $\alpha > 1$ , the risk of failure increases with time, indicating positive duration dependence. The coefficients  $\beta$  are reported in the regression results as Hazard Ratios (HR) for each covariate, calculated as  $e^\beta$ . These have a multiplicative effect on the hazard function. Specifically, if  $HR = 1$ , the covariate has no impact on the hazard function; if  $0 < HR < 1$ , the covariate reduces the hazard function (and has a positive effect on the time to the event); if  $HR > 1$ , the covariate increases the hazard function (and has a negative effect on the time to the event).

To aid in the interpretation of the estimated coefficients, these results can be reported as Accelerated Failure Time (AFT) metrics instead of hazard ratios (applicable to the Weibull and Exponential models). In this case, the AFT model provides the time ratio (TR), offering a more explicit measure of time effects compared to hazard ratios. This measure is obtained by the following transformation (Cleves et al., 2016):

$$\begin{aligned}
& b = -\beta/\alpha \\
\text{Or,} & \\
& b = -\ln(HR)/\alpha
\end{aligned} \tag{5}$$

In Eq. (5),  $b$  is the AFT coefficient obtained by dividing  $-\beta$  by the  $a$  parameter. Next, to be interpreted as time ratio (TR), it needs to be exponentiated, applying  $\exp(b)$ . The TR has a multiplicative effect on the average/median failure time. That is: if  $TR = 1$ , the covariate does not affect the failure time; if  $0 < TR < 1$ , the covariate reduces the average/median failure time (accelerates the time to the event); if  $TR > 1$ , the covariate increases the average/median failure time (decelerates the time to the event). Statistical software can be programmed to report results in terms of AFT coefficients and time ratios. In Stata®, for instance, the model specification needs to be followed by the commands "time" and/or "tratio" (Cleves et al., 2016).

The set of explanatory variables is defined in the following section. The subscripts  $i, s, c$ , and  $n$  index the firms, industries, countries, and years ( $n = \{2002, \dots, 2021\}$ ). In particular,

$\beta_j d\_deal_i$  is a vector of estimated parameters for qualitative characteristics of the deals announced by the acquiring firm  $i$ , represented by 9 dummy variables ( $j = \{1, \dots, 9\}$ ).

It is important to highlight that the duration for each observation begins at different moments, corresponding to the date of the official acquisition announcement. Based on this date, the explanatory variables data set was collected, which represents the last known value for that variable. For instance, the firm's financial data is from the end of the fiscal year that precedes the announcement date. Therefore, such data do not have a sequential nature and are considered time-invariant.

### 3.2.2 Tobit Model

According to Wooldridge (2010), modern survival analysis places greater emphasis on the "hazard function," which allows researchers to address the probabilities of an event occurring. However, when the interest also lies in understanding the effects of explanatory variables on the expected duration (rather than the hazard function), the Tobit regression may also be applied by considering the natural logarithm of the duration as the dependent variable (Wooldridge, 2010). For this analysis, however, we have used a sub-sample that includes only completed deals (7,836 observations) because this model, typically, cannot handle random right-censoring. (Gong & Schaubel, 2018).

Following Ferreira et al. (2017), we have employed the Tobit model with left-censoring at 0, which represents the lower limit of the log-duration distribution (since  $\log(1) = 0$ ). In this case, censored values are deals completed in 1 day, or possibly already concluded when officially announced (which also assumes a duration of 1 day).

The Tobit regression is used when dealing with limited dependent variables, which restrict the use of statistical procedures assuming a normal distribution and typically employs the maximum likelihood (ML) estimator (Gujarati, 2014). The most common is the left-censoring model, where:

$$y_i^* = \beta_0 + \mathbf{x}\boldsymbol{\beta} + u_i \quad (5)$$

Where the dependent variable  $y_i^*$  is a latent variable that includes the actual observed values for  $y_i$  (the positive values) and the limited values, in this case representing the duration of deals announced and completed on the same day according to records. What can happen is that part of the M&A process occurred in the pre-announcement period, and we cannot directly observe the duration for these deals (Lawrence et al., 2021). However, we can still consider that

they were more agile processes, as they soon became known to investors. In this way,  $y_i^*$  takes on the respective values (Gujarati, 2014):

$$y_i^* = \begin{cases} 0 & \text{if } y_i^* \leq 0 \\ y_i & \text{if } y_i^* > 0 \end{cases} \quad (6)$$

This would also give us the possibility of modeling a binary regression (Probit), considering the zeros and assuming 1 only for the positive values. In this case, the interest would be in the probability of taking longer to conclude the deal [ $P(y = 1)$ ] or having it completed on the date of the official announcement [ $P(y = 0)$ ]. Since we do not have detailed information about the limited observations, we can also consider them as observed real values, without the need for censoring these observations. However, we have noted that a high frequency of data is concentrated at the lower limit of this distribution, and thus, we consider the Tobit model with left-censoring to be the most appropriate. The next section describes the set of variables used in the models.

### 3.3 Variables definition

Our response variable is the duration in days of the acquisition process, denoted as  $t$ . In survival analysis,  $t$  represents the total time at risk and it is included in the hazard function  $\lambda(t | \mathbf{x})$ , which reveals the effect of covariates on the chances of deals being completed more quickly. In the Tobit model, the dependent variable is  $\log(t)$  to assess the effect of covariates on the expected duration. In the latter,  $t$  is limited to the deals that were completed.

Pro-market reforms assume the key independent variable. To measure such a construct, we have built an indicator using economic freedom indexes, which are frequently associated to these reforms and are used for indexing them (Banalieva et al., 2018; Fuentelsaz et al., 2021; Grier & Grier, 2021; Singh et al., 2018). This aligns with other studies in the field of finance and M&A that support the use of a discrete reform indicator instead of the original continuous measure (Alimov & Officer, 2017; Dessaint et al., 2017). Two alternate indexes were used: the Economic Freedom of the World (EFW) by the Fraser Institute and the Index of Economic Freedom (EFI) by the Heritage Foundation, to mitigate potential biases associated with the methodology used for their conception.

Both indexes consist of an average of subcomponents focusing on institutional aspects of economic and business environment, with scores increasing as economies become more deregulated. The EFW ranges from 0 to 10 and is composed of 24 subcomponents divided into

five major constructs: Size of Government; Legal System and Property Rights; Sound Money; Freedom to Trade Internationally; Regulation of Credit, Labor, and Business. The EFI, by its turn, ranges from 0 to 100 and it is calculated as a simple average of 12 sub-indices grouped into the following categories: Rule of Law (property rights, government integrity, judicial effectiveness), Government Size (government spending, tax burden, fiscal health), Regulatory Efficiency (business freedom, labor freedom, monetary freedom), and Open Markets (trade freedom, investment freedom, financial freedom) (Gwartney et al., 2022; Miller et al., 2022).

The reform indicators were built by identifying sustained increases in the economic freedom indexes, following a similar reasoning to some studies in the reform/reversal literature (Banalieva et al., 2018; Campos & Horváth, 2012a; Grier & Grier, 2021). Similar to Banalieva et al. (2018), we have tracked pro-market reforms with an increase in the index values in two consecutive years. Thus, the indicator takes the value of 1 in year  $n$  if positive changes in the index are observed in both year  $n-1$  and year  $n$ , or 0 otherwise. In other words, for  $ref_n$  to be 1, it must satisfy the condition of  $\Delta EFX_{n-1} > 0$  and  $\Delta EFX_n > 0$ , where  $ref_n$  is the pro-market reforms indicator in year  $n$ , and  $\Delta EFX$  represents the annual change in the economic freedom index  $\left(\frac{EFX_n}{EFX_{n-1}} - 1\right)$ , using either EFW or EFI alternately.

Unlike Singh et al. (2018), we did not use the economic freedom index itself as our primary proxy for reforms. This is because institutional literature emphasizes differences in interpretation of institutional quality indices, which are "stock" variables and may not necessarily translate into changes in institutions (Rodrik et al., 2004; Samadi & Alipourian, 2021). The  $ref_n$  indicator signals the years in which institutional changes consistently reduced transaction costs. It is also an indicative that exogenous regulatory shocks altered the market structure, promoting greater autonomy in resource allocation while reducing government interventions. This suggests that at this point, the country exhibits lower institutional complexity compared to its past, with fewer trade barriers, lower risk, better modern market infrastructure, greater access to credit, and information. Nevertheless, we have also tested specifications using the continuous economic freedom indexes themselves. The results of these specifications, with both the Weibull and the Tobit models, are presented in the robustness checks section.

We relied on the M&A literature that investigates the duration and/or the probability of deal completion to structure the model regarding its control variables, which represent characteristics of acquiring firms, country characteristics, and deals' qualitative characteristics. The description of the variables is provided in detail in Table 3:

Table 3: Variables description

<b>Dependent Variable</b>	<b>Meaning</b>	<b>Description</b>	<b>Expected Effect</b>	<b>Source</b>
<i>t</i>	Duration of the acquisition process	Duration in days of the acquisition process, starting from the official announcement date.		Refinitiv
<b>Independent Variable</b>				
<i>ref</i>	Pro-market reforms	Assumes 1 if a positive change in the economic freedom index is observed in both current and previous year, or zero otherwise.	(-)	Fraser Institute, Heritage Foundation
<b>Acquiring Firm Characteristics</b>				
<i>size</i>	Acquirer size	Natural log of total assets.	(+)	Refinitiv
<i>roa</i>	Performance	Operational profit to total assets.	(-)	Refinitiv
<i>cash</i>	Liquidity	Cash holdings to total assets.	(-)	Refinitiv
<i>return</i>	Stock returns	Cumulative stock return in year n.	(-)	Refinitiv
<b>Macro Conditions</b>				
<i>mktcap_gdp</i>	Total market capitalization	Market capitalization of listed firms relative to the country's GDP (in dollars).	(-)	World Bank
<i>interest</i>	Real interest rate	Country's annual real interest rate.	(+)	World Bank
<b>Deal Characteristics</b>				
<i>cbma_d</i>	Cross-border deal dummy	Assumes 1 if the target firm is headquartered in another country, 0 otherwise.	(-)	Refinitiv
<i>reg_d</i>	Regulatory agency dummy	Assumes 1 if the deal is subject to regulatory agency review, 0 otherwise.	(+)	Refinitiv
<i>priv_d</i>	Privatization dummy	Assumes 1 if the target firm is state-owned, 0 otherwise.	(+)	Refinitiv
<i>tpublic_d</i>	Publicly listed target dummy	Assumes 1 if the target firm is publicly listed, 0 otherwise.	(+)	Refinitiv
<i>challenge_d</i>	Challenge dummy	Assumes 1 if the acquirer's offer was contested by a competitor, 0 otherwise.	(+)	Refinitiv
<i>divers_d</i>	Diversification dummy	Assumes 1 if the target firm belongs to a different 2-digit TRBC industry code, 0 otherwise.	(+)	Refinitiv
<i>cashonly_d</i>	Cash payment dummy	Assumes 1 if the payment consideration for the deal is cash-only, 0 otherwise.	(-)	Refinitiv
<i>merger_d</i>	Merger dummy	Assumes 1 if the deal format is categorized as a "merger," 0 otherwise.	(+)	Refinitiv
<i>bankruptcy_d</i>	Bankruptcy dummy	Assumes 1 if the target firm is bankrupt, 0 otherwise.	(-)	Refinitiv

Note: Control variables for firm characteristics were winsorized at the 1st and 99th percentiles to mitigate the effects of outliers. The *ref* indicator is constructed and tested alternately with EFW and EFI indexes. All control variables are dollar-denominated to allow for comparability between countries. Source: Author's.

The set of characteristics of acquiring firms is considered based on previous studies (Al-Sabri et al., 2022; Chang et al., 2016; Croci et al., 2017; Ferreira, Borini, et al., 2017; Luybaert & De Maeseneire, 2015; Nguyen et al., 2020; Nguyen & Phan, 2017) and can assist in controlling for firm efficiencies reflected in accounting and market information, which affect the acquisition process. Since the announced deals in our sample come from various countries

and may be exposed to different macro-level market and economic conditions, we have included controls representative of capital market characteristics and the country's real interest rate (Adra et al., 2020; Kim & Song, 2017). Different acquisition strategies result in different transaction costs (Higgins & Beckman, 2006). Therefore, deal characteristics can imply in complexities involved in the acquisition process, which affect its duration and conclusion (Al-Sabri et al., 2022; Croci et al., 2017; Dikova et al., 2010; Ferreira, Borini, et al., 2017; Luybaert & De Maeseneire, 2015; Meglio et al., 2017; Nguyen & Phan, 2017).

Our model also includes dummy controls for the effect of industry and country characteristics of the acquiring firms. We have also included year dummy variables to control for seasonal differences in the distribution of duration (Wooldridge, 2010), considering that the durations start on different dates spread over 20 years. Furthermore, the year controls can account for the impact of regulatory shocks and changes in public policy (Ferreira, Borini, et al., 2017), and other exogeneous shock such as the Covid-19 pandemic, which may conflict with our reform indicator that also captures the effect of specific shocks in the years. Therefore, the results are presented with and without year controls.

## **4 Presentation and Analysis of Results**

### **4.1 Descriptive analysis**

Table 4 describes the duration of the sample deals, subdivided into groups, including the full sample and per class of completed, pending, and abandoned deals. Descriptive statistics for the other variables included in the models can be found in Appendix B.

Completed deals represented 50.96% of the observations, with an average duration of 149 days and a median of 59 days across the nine countries. This is quite similar to the average found by Al-Sabri et al. (2022) in an emerging market and, not surprisingly, it is higher than the averages reported by de Ekelund et al. (2001), Dikova et al. (2010) and Luybaert and De Maeseneire (2015) in developed markets (ranging from 90 to 112 days).

It is worth noting that some extreme values were observed for the duration of pending deals, in some cases spanning almost the entire sample period. In such instances, we have considered these pending deals to be abandoned deals that had not had their status updated. To identify them, we considered pending deals with durations exceeding the historical maximum duration of a completed deal in the country and then reclassified them as abandoned. To address the effect of outliers, the duration of these deals was replaced for the maximum duration of a completed deal in their respective countries. However, econometric modeling with the original values did not yield qualitatively distinct findings.

Table 4: Descriptive statistics of the duration in days for observed M&amp;A deals by group

Duration by group	N	%N	Mean	SD	Median	Min	Max
Total	15,376	100%	1,075	1,388	280	1	4,446
Completed	7,836	50.96%	149	278	59	1	4,214
Pending	4,460	29.01%	1,866	1,104	1,751	93	4,200
Abandoned	3,080	20.03%	2,351	242	4,076	1	4,446

Source: Authors' own elaboration using data from SDC Platinum (Refinitiv).

We have observed that 29.01% of the sample deals were pending as of June 30, 2022, with an average duration of 1,866 days. Abandoned deals accounted for 20.03% of the total, with an average duration of 2,351 days. The longest completed deal in the sample took 4,214 days to be concluded which is equivalent to over 11 years. This deal was a merger in the Indian telecommunications sector, involving Bharti Infratel Ltd (the acquirer) and Indus Towers Ltd (the target) (SDC Deal No. 2072178040). The deal was originally announced on May 8, 2009, and it was completed on November 19, 2020, according to SDC Platinum records.

In Table 5, deals are classified by group and time intervals. It is observed that 2,021 deals were concluded on the same day as the announcement date. Another 3,839 were concluded within six months, 1,187 within one year, 548 within two years, and 241 took longer than that to be concluded. It is noticeable that censored deals tend to be concentrated in longer time intervals.

Table 5: Description of the duration in days for the observed M&amp;A deals by time intervals

Intervals	Completed		Pending		Abandoned	
	N	%	N	%	N	%
Same day (1 day)	2,021	25.79%	0	0.00%	9	0.29%
Up to 180 days (6 months)	3,839	48.99%	33	0.74%	577	18.73%
Up to 365 days (1 year)	1,187	15.15%	338	7.58%	323	10.49%
Up to 730 days (2 years)	548	6.99%	506	11.35%	174	5.65%
Over 730 days	241	3.08%	3,583	80.34%	1,997	64.84%
Total	7,836	100.00%	4,460	100.00%	3,080	100.00%

Source: Authors' own elaboration using data from SDC Platinum (Refinitiv).

Next is the non-parametric Kaplan-Meier (KM) survival analysis. Figure 2 illustrates the KM failure curve, displaying an ascending step-function over time. The vertical axis of the graph represents the population's probability of failure for a given period 't', measured in days on the horizontal axis. For each point on the horizontal axis, there is a corresponding number of observations at risk of failure, which diminishes over time as deals are either completed or censored. At the initial moment, all 15,376 observations are at risk of failure. In other words, at

this point, there is still an expectation that all deals will be completed. The curve increases only in the periods when observations experience failure and remains constant until another failure event is observed.

The highlighted point indicates that the probability of deal completion in the sample is 50% after 523 days. This point represents the median time for the conclusion of an M&A deal, which is considered a more appropriate measure compared to traditional central tendency measures that do not account for censored data. It allows researchers to understand how long the population of interest can generally survive (Su et al., 2022). The graph shows that within 523 days, 8,978 deals exited the study due to either being completed or censored, while 6,398 are still under observation. Up to this point, the curve has a sharp incline. Beyond that point, a larger proportion of the remaining observations consists of censored data. Thus, the curve stabilizes, and it can be observed that for each additional 't' period, the marginal probability of failure is quite low.

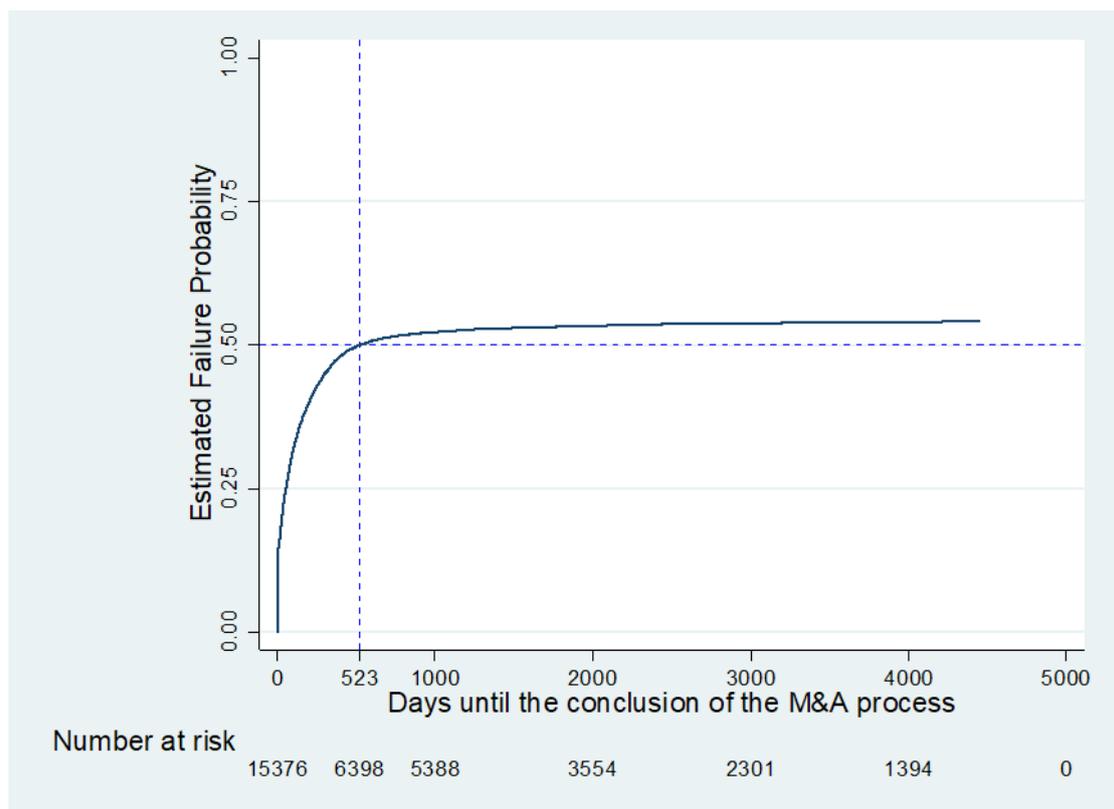


Figure 2: Kaplan-Meier failure curve estimation, median failure time, and number of deals at risk. Note: the Kaplan-Meier curve illustrates the probability of failure of an M&A deal over time. Source: Authors'.

We have noticed that the median duration of completed deals in Table 4 (59 days), without considering censored data, underestimates the time to failure of M&A deals in the countries considered in the sample. The median value generated by the KM analysis provides

a more comprehensive measure of the population regarding how long a deal can take until its completion. This is because it offers a prospective perspective where all observations start in the same state and are followed until the resolution of the deal. At the initial time, we still don't know the resolution, but there is an expectation that all of them will be completed.

In the following section, we apply parametric survival analysis using a multivariate Weibull model to investigate how pro-market reforms and other characteristics are associated to the duration of M&A deals announced by acquiring firms from emerging economies.

#### 4.2 Weibull model for the effects of pro-market reforms on the duration of M&A processes

In Table 6, the results of survival analysis based on the Weibull regression for estimating the hazard function of M&A completion are presented. The hazard ratio values reported in the columns indicate that pro-market reforms in the home country significantly affect the duration of M&A deals for acquiring firms headquartered in that country. The estimated hazard ratios for the reform indicators were greater than 1 and significant in all specifications, considering both economic freedom indexes (EFW and EFI). Based on the results in column (3), which includes the *ref\_efw* indicator and year dummies, the HR of 1.139 indicates that deals announced under the effect of pro-market reforms have a 13.9% ( $1.139 - 1$ ) increased chance of completion, while holding the values of the other covariates constant. Therefore, this analysis reveals that such deals are associated to a shorter duration.

The time ratio (TR) of the estimated coefficients can be calculated by applying the AFT model (for column 3):  $\exp(-\ln(1.139)/0.319) = 66.5\%$ . This signifies a reduction of approximately 33.5% ( $0.665 - 1$ ) in the median time to failure. Using the median completion time of an M&A revealed by non-parametric analysis (Figure 2) as a baseline, which is 523 days, the effect of pro-market reforms can be associated to a reduction of approximately 175 days. The TR results for the other specifications, 1, 2, and 4, were 71.6%, 69.9%, and 75.5%, respectively.

The parameter  $\hat{\alpha}$  estimates was less than 1 and statistically significant. Therefore, there is evidence of negative duration dependence. This means that the probabilities of completing a deal decrease the longer it remains pending, while holding the other factors constant.

Table 6: Results of hazard ratios estimation using the Weibull model

Independent Variables	Dependent Variable: $\lambda(t x)$			
	(1)	(2)	(3)	(4)
	Haz. Ratio	Haz. Ratio	Haz. Ratio	Haz. Ratio
<i>size</i>	0.988	0.985**	0.982**	0.982**
	(0.007)	(0.007)	(0.007)	(0.007)

<i>roa</i>	1.006*** (0.002)	1.006*** (0.002)	1.007*** (0.002)	1.007*** (0.002)
<i>cash</i>	1.002** (0.001)	1.002** (0.001)	1.003*** (0.001)	1.003*** (0.001)
<i>yreturn</i>	1.000 (0.000)	1.000 (0.000)	1.000** (0.000)	1.000** (0.000)
<i>mktcap_gdp</i>	1.000 (0.001)	1.000 (0.001)	0.999 (0.001)	0.999 (0.001)
<i>interest</i>	1.016*** (0.003)	1.014*** (0.003)	1.016*** (0.004)	1.016*** (0.004)
<i>cbma_d</i>	1.230*** (0.039)	1.236*** (0.039)	1.246*** (0.039)	1.248*** (0.039)
<i>reg_d</i>	1.113*** (0.033)	1.118*** (0.033)	1.138*** (0.034)	1.143*** (0.034)
<i>priv_d</i>	1.090* (0.055)	1.085 (0.054)	1.086 (0.055)	1.083 (0.054)
<i>tpublic_d</i>	1.260*** (0.059)	1.255*** (0.059)	1.271*** (0.060)	1.262*** (0.059)
<i>challenge_d</i>	0.513*** (0.130)	0.508*** (0.129)	0.500*** (0.127)	0.507*** (0.129)
<i>divers_d</i>	0.954** (0.023)	0.953** (0.023)	0.942** (0.022)	0.942** (0.022)
<i>cashonly_d</i>	1.237*** (0.030)	1.227*** (0.030)	1.149*** (0.030)	1.152*** (0.030)
<i>merger_d</i>	1.108*** (0.028)	1.108*** (0.028)	1.074*** (0.028)	1.076*** (0.028)
<i>bankruptcy_d</i>	1.517* (0.327)	1.513* (0.327)	1.517* (0.328)	1.499* (0.324)
<i>ref_efw</i>	1.111*** (0.028)		1.139*** (0.038)	
<i>ref_efi</i>		1.120*** (0.028)		1.094** (0.041)
<i>constant</i>	0.063*** (0.010)	0.070*** (0.011)	0.046*** (0.010)	0.048*** (0.010)
$\hat{\alpha}$	0.315*** (0.003)	0.316*** (0.003)	0.319*** (0.003)	0.319*** (0.003)
<i>industry_d</i>	Yes	Yes	Yes	Yes
<i>country_d</i>	Yes	Yes	Yes	Yes
<i>year_d</i>	No	No	Yes	Yes
No. Obs.	15,376	15,376	15,376	15,376
No. Failures	7,836	7,836	7,836	7,836
LR Chi2	1,412***	1,415***	1,562***	1,553***
Log Likelihood	- 28,121	- 28,119	- 28,046	- 28,051

Note: Variables description in Table 3. This table reports the results of estimated coefficients in the form of hazard ratios (HR), with robust standard errors in parentheses. The original coefficients can be obtained by taking the natural logarithm (ln) of HR. Models were estimated without the control of year dummies in columns 1 and 2, and with the control of year dummies in columns 3 and 4. All specifications include industry and country dummies as controls. The estimation of the hazard function  $\lambda(t|\mathbf{x})$  is based on  $t$ , which represents the total time at risk for the acquisition processes in the sample (15,376 Obs.). Of these, 7,836 experienced failure, and the remaining observations were censored. The Weibull model maximized the Log Likelihood function.  $\hat{\alpha}$  is the estimated special parameter that denotes the duration dependence.

Regarding the control variables, based on columns (3) and (4) with a more comprehensive specifications, we can state that an increase of one unit in the natural logarithm of the acquiring firm's total assets (Size) is associated with a 1.8% reduction (0.982 – 1) in the hazard rate. This means that deals involving larger acquiring firms take longer to conclude. On

the other hand, increases in ROA (HR = 1.007), cash holdings (HR = 1.003), and stock returns (HR = 1.000) of acquiring firms reduce the duration.

Surprisingly, it has been shown that increases in the real interest rates of countries (HR = 1.016) positively affect the hazard rate. This suggests that a contractionary monetary policy (increases in interest rates) contributes to faster deal completion. Empirical M&A literature shows that higher interest rates can predict a reduction in the likelihood of deal completion (Adra et al., 2020). High-interest rates are also related to high transaction costs (Harford, 2005). However, the results of using survival analysis to model the hazard rate provide a different perspective, which may be related to managers' attempts to expedite the conclusion of deals already in progress in the face of rising interest rates, which can increase costs at various stages of the M&A process and undermine synergy.

Regarding deal characteristics, only privatization (*priv\_d*) was not a significant characteristic in all specifications. Based on column (3) of Table 6, it has been shown that observations of cross-border deals (HR = 1.246), deals subject to regulatory agency review (HR = 1.138), deals in which the target firm is publicly listed (HR = 1.271), deals where the payment consideration was made in cash (HR = 1.149), deals classified as mergers (HR = 1.074), and those where the target firm is bankrupt (HR = 1.517) are associated to shorter duration as the estimated hazard ratios positively affect the hazard function. On the other hand, the observation group involving a competitor bidding contest (HR = 0.500) and diversification deals (HR = 0.942) tend to last longer than their counterparts.

The result that cross-border deals have shorter durations than domestic deals in these emerging markets is intriguing. Despite being theoretically more complex, other studies have found similar results (Al-Sabri et al., 2022; Boeh, 2011). The counterintuitive findings for deals subject to regulatory agency review could be attributed to the broader sample used in this study. Ekelund et al. (2001) argue in favor of this result, suggesting that regulatory agency review can reduce transaction costs, provide protection against potential market harm, and bring more efficiency to deals due to their up-to-date industry knowledge. The results also indicate that acquisitions of public firms and mergers are associated with shorter durations, which contradicts arguments presented in the literature review (Agrawal et al., 2013; Al-Sabri et al., 2022; Lawrence et al., 2021; Luypaert & De Maeseneire, 2015). It is possible that these classifications are associated to a stronger intention to carry out the deal, which may have influenced the higher hazard ratios (HR) values. Al-Sabri et al. (2022) argue that acquiring private firms in emerging markets may be more challenging due to family interference in the

process. The results regarding deal characteristics provide opportunities for further investigations.

### 4.3 Tobit model for the effects of pro-market reforms on the duration of M&A processes

The purpose of applying this model is to enable a comparison of its results with those of survival analysis since it follows a structure closer to that developed in previous studies, which often consider only the sample of completed deals.

In the Tobit model, the estimated coefficients do not have a direct interpretation since  $y_i^*$  is a latent variable. Gujarati (2014) recommends calculating the marginal effects of the coefficients, which also results in more concise effects. Considering that  $y_i^*$  takes on the value of  $\log(t)$ , the marginal effects are semi-elasticities (percentage changes) of the covariates on the expected duration, as it is a semi-log model (Wooldridge, 2010). We have used the mean value of the subsample of completed deals to estimate the effect of the covariates in days. Therefore, these results are limited compared to those in Table 6, as the subsample of deals excludes part of the population corresponding to censored deals. This has also led to divergent results in some cases in terms of the coefficient signs compared to the Weibull regression. Hence, the effect in days of the covariates in the Tobit model is an approximation.

Table 7 presents the results of the Tobit model estimations. We have had significant evidence in estimations (2) and (3) that pro-market reforms reduce the expected duration of M&A deals announced by acquiring firms from emerging markets. The marginal effect of the reforms (-0.179) corresponds to a reduction of 27 days in the average duration of completed deals. This result, in particular, is in the same direction as the findings in the Weibull regression, which can strengthen the evidence that pro-market reforms in emerging countries can improve the ability of firms to transact more quickly. The Tobit model results also underestimate the effect of reforms when compared to the TR outcome in the survival analysis, where the effect corresponded to a reduction of approximately 175 days in the expected duration of deals.

Table 7: Results of marginal effects estimation on expected duration using the Tobit model

Independent Variable	Dependent Variable: $\log(t)$							
	(1) Marg. Effect	Change in days from mean	(2) Marg. Effect	Change in days from mean	(3) Marg. Effect	Change in days from mean	(4) Marg. Effect	Change in days from mean
<i>size</i>	0.029 (0.020)	4	0.033* (0.020)	5	0.039** (0.020)	6	0.040* (0.020)	6
<i>roa</i>	-0.004 (0.004)	-1	-0.005 (0.004)	-1	-0.005 (0.004)	-1	-0.005 (0.004)	-1
<i>cash</i>	0.005***	1	0.005***	1	0.006***	1	0.006***	1

	(0.002)		(0.002)		(0.002)		(0.002)	
<i>yreturn</i>	0.001**	0	0.001**	0	0.001*	0	0.001	0
	(0.000)		(0.000)		(0.000)		(0.000)	
<i>mktcap_gdp</i>	-0.005***	-1	-0.005***	-1	-0.004*	-1	-0.004*	-1
	(0.002)		(0.002)		(0.002)		(0.002)	
<i>interest</i>	-0.009	-1	-0.003	0	-0.014	-2	-0.015	-2
	(0.010)		(0.010)		(0.012)		(0.012)	
<i>cbma_d</i>	-0.524***	-78	-0.523***	-78	-0.539***	-80	-0.538***	-80
	(0.085)		(0.085)		(0.085)		(0.085)	
<i>reg_d</i>	1.870***	279	1.869***	278	1.869***	279	1.867***	278
	(0.056)		(0.055)		(0.056)		(0.056)	
<i>priv_d</i>	0.293***	44	0.293***	44	0.322***	48	0.323***	48
	(0.083)		(0.083)		(0.083)		(0.084)	
<i>tpublic_d</i>	0.603***	90	0.602***	90	0.580***	86	0.585***	87
	(0.119)		(0.119)		(0.119)		(0.119)	
<i>challenge_d</i>	1.595***	238	1.597***	238	1.627***	242	1.605***	239
	(0.467)		(0.467)		(0.487)		(0.481)	
<i>divers_d</i>	-0.195***	-29	-0.191***	-29	-0.180***	-27	-0.183***	-27
	(0.052)		(0.052)		(0.052)		(0.052)	
<i>cashonly_d</i>	0.431***	64	0.454***	68	0.473***	70	0.472***	70
	(0.057)		(0.057)		(0.060)		(0.060)	
<i>merger_d</i>	0.376***	56	0.384***	57	0.395***	59	0.394***	59
	(0.054)		(0.054)		(0.054)		(0.054)	
<i>bankruptcy_d</i>	0.770	115	0.745	111	0.685	102	0.711	106
	(0.491)		(0.496)		(0.504)		(0.506)	
<i>ref_efw</i>	0.045	7			-0.179**	-27		
	(0.057)				(0.095)			
<i>ref_efi</i>			-0.179***	-27			-0.077	-12
			(0.055)				(0.107)	
<i>industry_d</i>	Yes		Yes		Yes		Yes	
<i>country_d</i>	Yes		Yes		Yes		Yes	
<i>year_d</i>	No		No		Yes		Yes	
No. Obs.	7,836		7,836		7,836		7,836	
Left Censored	2,021		2,021		2,021		2,021	
F	120.3***		120***		79.51***		79.42***	
Pseudo R2	0.1058		0.1061		0.1074		0.1073	

Note: Variable descriptions are provided in Table 3. The table presents the results of marginal effects of estimated coefficients with robust standard errors in parentheses, followed by columns with the interpretation of the marginal effect of coefficients in days from the average duration of completed deals (149 days). Models were estimated without year control dummies in columns 1 and 2 and with year control dummies in columns 3 and 4. All specifications include dummy controls for industries and countries. The dependent variable is log(t) for the subsample of completed deals. Out of the total observations (7,836), 2,021 were left-censored because they were at the lower limit of the duration distribution (Table 5). Results of the original coefficients, rather than marginal effects, and the constant can be obtained upon request from the authors.

In general, the results support our main research hypothesis and suggest that the duration of M&A transactions announced by acquiring firms from emerging markets is affected by pro-market reforms. When governments implement pro-market reforms that consistently reduce transaction costs, their effects on the smoothing of transactions in general are also extended to the market for corporate control in terms of time reduction. This perspective is consistent to New Institutional Economics (North, 1990), which assures that institutions and organizations co-evolve, and that institutional change creates opportunities for wealth maximization, manifested in firm achievements related to success factors (Dikova et al., 2010).

Our findings are aligned to the literature that investigates the effects of changes in country internal institutional environment on firm behavior (Banalieva et al., 2018; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009; Singh et al., 2018), especially in emerging markets, where pro-market reforms have historically transformed the competitive landscape (Cuervo-Cazurra & Dau, 2009; Ferreira, Borini, et al., 2017; Peng, 2003). This is because institutional voids in these countries allow for a wider range of variation in their institutional context and make pro-market reforms produce significant effects that facilitate transactions (Ferreira, Borini, et al., 2017; Kim & Song, 2017).

In the context of M&A, Ferreira et al. (2017, p. 410) argue that "the expected outcome of these pro-market reforms is a more transparent market, where information is more reliable and the regulatory framework made more explicit." In other words, they reduce transaction costs arising from the informational gap between buyers and sellers (Khanna & Palepu, 2010). Consequently, deals duration is affected reflecting smoother functioning in the M&A market. Thus, these results help highlighting institutional factors as some of the most critical determinants of the success of these activities, complementing previous literature (Crocchi et al., 2017; Ekelund et al., 2001; Luypaert & De Maeseneire, 2015; Meglio et al., 2017). Other studies have made similar arguments, such as Muehlfeld et al. (2007), who emphasize that regulatory factors are as crucial as deal-specific characteristics.

For as long as we know, no other study has examined the link between the duration of the M&A process and broad pro-market reforms in the acquiring firm home country, so we cannot make a direct comparison to such results. However, we can state that our findings are aligned to some studies that demonstrate that country characteristics significantly influence the duration and/or completion of M&A (Adra et al., 2020; Nguyen et al., 2020; Nguyen & Phan, 2017).

## **4.4 Robustness checks**

### **4.4.1 Using the continuous Economic Freedom Index as a proxy for reforms**

In the following tests, we have employed the economic freedom indexes as proxies for reforms, considering that both measures from the Heritage Foundation (Dau & Cuervo-Cazurra, 2014; Singh et al., 2018) and the Fraser Institute (Boudier & Lochard, 2013) were previously used for such a purpose. In this regard, it is expected that a higher level of institutional quality negatively affects the duration of M&A processes. It is important to mention the indexes different scales (EFW from 0 to 10 and EFI from 0 to 100), as it is responsible for producing different magnitudes in the estimated coefficients for each specification. Table 8 presents the

results of the Weibull model, where covariate hazard ratios greater than one and statistically significant were obtained. This is associated to an increase in the chances of success in an M&A and a reduction in its duration. Applying the AFT equation, the TR of estimated coefficients were respectively for each column: 11,54%, 88,40%, 22,93% and 89,54%. Taking the column 3 as an example, a unit increase in the EFW index means a reduction of approximately 77,07% ( $0.2293 - 1$ ) in the median time to failure.

Table 8: Estimation results of hazard ratios using the Weibull model for continuous economic freedom indexes

Independent Variables	Dependent Variable: $\lambda(t x)$			
	(1) Haz. Ratio	(2) Haz. Ratio	(3) Haz. Ratio	(4) Haz. Ratio
<i>controls (omitted)</i>	-	-	-	-
<i>efw</i>	1.987*** (0.142)		1.602*** (0.173)	
<i>efi</i>		1.040*** (0.005)		1.036*** (0.007)
<i>constant</i>	0.001*** (0.000)	0.007*** (0.002)	0.003*** (0.002)	0.007*** (0.003)
$\hat{\alpha}$	0.318*** (0.003)	0.318*** (0.003)	0.320*** (0.003)	0.320*** (0.003)
<i>industry_d</i>	Yes	Yes	Yes	Yes
<i>country_d</i>	Yes	Yes	Yes	Yes
<i>year_d</i>	No	No	Yes	Yes
No. Obs.	15,376	15,376	15,376	15,376
No. Failures	7,836	7,836	7,836	7,836
LR Chi2	1,491***	1,469***	1,567***	1,578***
Log Likelihood	-28,082	-28,092	-28,044	-28,038

Note: Variables description in Table 3. The results of the control variables were omitted as they are not qualitatively distinct from the findings in Table 6. This table reports the results of estimated coefficients in the form of hazard ratios (HR), with robust standard errors in parentheses. The original coefficients can be obtained by taking the natural logarithm ( $\ln$ ) of HR. Models were estimated without the control of year dummies in columns 1 and 2, and with the control of year dummies in columns 3 and 4. All specifications included industry and country dummies as controls. The estimation of the hazard function  $\lambda(t|x)$  is based on  $t$ , which represents the total time at risk for the acquisition processes in the sample (15,376 Obs.). Of these, 7,836 experienced failure, and the remaining observations were censored. The Weibull model maximized the Log Likelihood function.  $\hat{\alpha}$  is the estimated special parameter that denotes the duration dependence.

In Table 9, the results of the marginal effect of economic freedom indices on the duration of completed M&A deals are obtained through the Tobit model. It was observed that, in three specifications, an increase in the indices by one unit is associated with a reduction in the daily deals' average duration.

Table 9: Estimation Results of Marginal Effects on Expected Duration using the Tobit Model for Continuous Economic Freedom Indices

Independent Variables	Dependent Variable: log(t)							
	(1) Marg. Effect	Change in days from mean	(2) Marg. Effect	Change in days from mean	(3) Marg. Effect	Change in days from mean	(4) Marg. Effect	Change in days from mean
<i>controls (omitted)</i>	-		-		-		-	
<i>efw</i>	-0.472** (0.191)	-70			-0.201 (0.313)	-30		
<i>efi</i>			-0.042*** (0.009)	-6			-0.051*** (0.018)	-8
<i>industry_d</i>	Yes		Yes		Yes		Yes	
<i>country_d</i>	Yes		Yes		Yes		Yes	
<i>year_d</i>	No		No		Yes		Yes	
No. Obs.	7,836		7,836		7,836		7,836	
Left Censored	2,021		2,021		2,021		2,021	
F	120.06***		120.13***		79.43***		79.42***	
Pseudo R2	0.1061		0.1064		0.1073		0.1073	

Note: Variable descriptions are provided in Table 3. The results of the control variables were omitted as they are not qualitatively distinct from the findings in Table 7. The table presents the results of marginal effects of estimated coefficients with robust standard errors in parentheses, followed by columns with the interpretation of the marginal effect of coefficients in days from the average duration of completed deals (149 days). Models were estimated without year control dummies in columns 1 and 2 and with year control dummies in columns 3 and 4. All specifications include dummy controls for industries and countries. The dependent variable is log(t) for the sub-sample of completed deals. Out of the total observations (7,836), 2,021 were left-censored because they were at the lower limit of the duration distribution (Table 5). Results of the original coefficients, rather than marginal effects, and the constant can be obtained upon request from the authors.

This implies that a higher quality of pro-market institutions in the country of the acquiring firm, reflected in aspects of economic freedom such as a less substantial government presence in market transactions management, contributes to a reduction in the average duration of M&A deals in the pre-acquisition stage.

## 5 Concluding Remarks

Home country institutions either enable or restrict market transactions to be conducted in the best interests of buyers and sellers, making them agile as a result. The M&A processes involve complex negotiations during the pre-acquisition stage, where many factors can lead to parties reconsidering their decisions (Dikova et al., 2010; Luybaert & De Maeseneire, 2015; Meglio et al., 2017). In the case of emerging markets, institutional voids and various market failures further exacerbate such a complexity.

Our tests support the argument that well-functioning markets have shorter transaction time length (Khanna & Palepu, 2010). We empirically demonstrate that pro-market reforms in the home country of the acquiring firm, representing reductions in the country's institutional complexity, contribute to a quicker completion of M&A deals initiated by these firms. Furthermore, our tests with the sub-sample of completed deals have shown that pro-market

reforms reduce the expected duration of the deals. These findings provide support for our main research hypothesis.

Our study distinguishes itself from others that implement models to predict the duration of M&A deals by using survival analysis. While Dikova et al. (2010) mention it as a suitable model for such a task, we have not identified its application in this context until now, making it one of our contributions to this line of research. In the case of Balogh et al. (2022), survival analysis is used to examine the time from the IPO (Initial Public Offering) to the first M&A, not the pre-acquisition stage.

This has allowed us to consider a more comprehensive sample of the population of deals involved in the M&A process, including pending and abandoned deals as censored observations. Also known as "time-to-event" approach, the application of survival analysis has allowed us to integrate the perspective of duration and completion of deals, which is often assessed separately in other studies (Chang et al., 2016; Croci et al., 2017; Dikova et al., 2010; Luybaert & De Maeseneire, 2015; Renneboog & Zhao, 2014). With that, we have also provided support for our second hypothesis, that the M&A process exhibits negative duration dependence. That is, holding other factors constant, the success rate of completing the deal decreases for each additional unit of time. Thus, we offer a dynamic perspective to the study of duration-completion-abandonment.

Thus, we have made technical advancements compared to traditional studies that examine the timing of M&A processes. For example, Nguyen and Phan (2017) applied an OLS model to duration data, which have a skewed distribution and are known to potentially violate the assumptions of this model (Wooldridge, 2010). Ferreira et al. (2017) did not discuss the limitations of duration data in applying their Tobit model. The unrestricted consideration of both pending and completed acquisition processes in the sample can lead to a bias in interpreting the results, as such observations contain incomplete information about the acquisition process and should be censored. The latent dependent variable of the Tobit model does not distinguish them from observations in which the deal was actually completed because it traditionally cannot handle random right-censoring (Gong & Schaubel, 2018).

A similar issue occurs in Chang et al. (2016) when modeling "time to resolution". Resolution can have two outcomes: a completed deal or an abandoned deal. However, the same explanatory factor included in a joint model can have opposing effects when separately analyzed for each type of resolution. The proportion of each type of resolution in the sample can also distort the results because they have different distributions, with naturally longer times to resolution for abandoned deals. Again, the model cannot distinguish the response variable

"time" with two different paths, making the interpretation of such results challenging or impractical. Therefore, we provide a solution to the problem together with survival analysis, which also allows for a more appropriate description of duration data compared to traditional descriptive statistics.

In general, our results extend previous studies that have investigated the effects of pro-market reforms on firm responses (Banalieva et al., 2018; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009; Singh et al., 2018) since many of them explicitly encourage testing new relationships. Our findings represent significant advancements in understanding the effects of institutional variations on firm behavior and expand the frontiers of this research stream by demonstrating that firms respond to institutional changes through more agile M&A processes. In doing so, we bring institutions into M&A research, which, according to existing literature reviews, have been absent in these investigations (Ferreira et al., 2014; Hossain, 2021), and expand the frontiers of the studies by highlighting how home country institutions matter.

We contribute to a better understanding of the capacity to acquire in environments undergoing institutional changes (Ferreira, Borini, et al., 2017). As argued by Renneboog and Zhao (2014), long durations are associated to increased transaction costs and uncertainty. By reducing the duration of deals in the pre-acquisition stage, it is possible to reduce costs. Therefore, market-oriented institutional changes have the potential to alter the dynamics of the entire M&A process in emerging markets, in the pre-announcement, pre-acquisition, and integration stages. They can also contribute to a reduction in the average rate of abandoned deals, as there are more incentives to complete them. As our results have demonstrated, a significant portion of deals in the sample were not completed, and the reasons for that are also key research questions in other studies (Dikova et al., 2010; Luypaert & De Maeseneire, 2015).

Despite the contributions and advances identified, our research is not free of limitations. Endogeneity may affect the validity of causal inferences, despite the wide range of control variables. Furthermore, the indicator built to track pro-market reforms in countries is subject to researchers' discretion in choosing its formulation parameters, although it is based on previous research (Banalieva et al., 2018; Campos & Horváth, 2012a; Grier & Grier, 2021). In addition, the data may not reflect the actual duration of the pre-acquisition stage (Dikova et al., 2010; Lawrence et al., 2021). Even for publicly traded acquiring firms, the official announcement of an acquisition can be delayed for strategic reasons, while the process is actually on its way. Furthermore, the conclusions of this study are limited to publicly traded acquiring firms in emerging countries. Therefore, some generalizations need to be made cautiously.

This study is pioneering in the use of survival analysis to model M&A process duration data, and it represents a first step. Su et al. (2022, p. 308) emphasize that "the issue of choosing an appropriate survival analysis method can be potentially complex." In this regard, other studies can build on more advanced survival techniques (Hosmer et al., 2008; Su et al., 2022; Wooldridge, 2010; Zhao et al., 2016). It was shown that the results of the survival model with the full sample and the Tobit model with the subsample of completed deals are divergent in terms of the signs of some estimated coefficients. Therefore, considering the extensive set of control variables tested, such divergences offer some possibilities for further research.

Based on the conceptual framework provided by NIE (North, 1990), institutional changes should have an effect on all stages of the M&A process. Therefore, new studies can investigate this effect in the pre-announcement stage, analyzing the M&A initiative, and in the integration stage, evaluating post-acquisition performance. Another possibility for advancement is the investigation of characteristics that may moderate the effect of institutions, examining change from the perspective of reforms or reversals (Mukherjee et al., 2023). For example, the acquiring firm's past experience with completed deals (Dikova et al., 2010), regulatory complexity of industries (Ekelund et al., 2001; Ferreira, Borini, et al., 2017), political connections of the firms involved (Crocchi et al., 2017; Renneboog & Zhao, 2014), and the hiring of experts and financial advisors, such as major investment banks, to oversee the transaction (Chang et al., 2016; Meglio et al., 2017).

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## CHAPTER 5

### **Institutional Change and Mergers and Acquisitions in Emerging Economies:**

#### **Concluding Remarks**

This research sought to establish a cause-and-effect relationship between institutional change and mergers and acquisitions. Consequently, it represents an initial step in this line of study. To guide the unfolding of our central research thesis, we have asked "**How do pro-market institutional changes in emerging economies influence M&A transactions?**" As highlighted, the M&A process involves multiple stages and encompasses one of the most complex economic transactions. Hence, the outcomes of an exogenous shock can vary due to the distinct attributes of M&A processes, providing some opportunities to establish connections that support this question.

Our contribution is divided into three distinct studies, each with the following proposals:

- i) An analysis of theoretical and empirical foundations to establish a relationship between institutional change and M&A in emerging economies.
- ii) An analysis of the effects of home country pro-market reforms on the propensity for M&A by acquiring firms in emerging economies.
- iii) An analysis of the effects of pro-market reforms on the duration of M&A processes in the pre-acquisition stage, initiated by acquiring firms in emerging economies.

Considering that branches of Institutional Theory, or any other theory, do not predict a direct relationship for the established causal link, we initially employed an inductive logic to suggest the existence of such relationship, seeking evidence in the literature that is not explicitly (but implicitly) stated in theoretical premises. Through a systematic literature review, we have found evidence that M&A react to pro-market institutional changes involving reforms, deregulation, and economic liberalization.

In general, the SLR revealed that: 1) studies capable of providing inferences about this causal link are scarce; 2) they focus on specific episodes of institutional change using a "natural experiment" approach; 3) finance journals were the most prominent in addressing this relationship; 4) they are not based on any underlying theory; and 5) they focus on developed countries.

While scarce and with a greater focus on developed countries, some of these studies provided insights suggesting that this testing is timely in less developed countries (Breinlich, 2008). Furthermore, other studies focusing on emerging economies have shown significant effects. When observing the contexts of institutional change analyzed in these papers, we

identified several general channels through which institutional changes had an effect: trade liberalization, capital market liberalization, reduction in information asymmetry, increased credit supply, strengthening of property rights, industry shocks, and overall cost reduction/increased acquisition efficiency. Additionally, our review confirmed the absence of Institutional Theory in M&A research (Ferreira et al., 2014; Hossain, 2021), as it was directly mentioned in only one study resulting from the SLR (Opoku-Mensah et al., 2020). A noteworthy issue we have identified in these studies was the frequent lack of an underlying theory to illuminate the hypotheses.

Therefore, we confirmed through our observations that the literature provides evidence leading us towards the generalization of the theory. With this, we have identified room for constructing a research design that adheres more closely to the premises of the NIE, considering a longitudinal approach applied with heterogeneous samples from different countries.

To propose such a design, we have established an interdisciplinary dialogue with studies from the field of strategic management and international business. Those studies have built a tradition of institutional analysis to examine the effects of institutional changes on firms' individual behavior (Banalieva et al., 2018; Chacar et al., 2010; Cuervo-Cazurra & Dau, 2009; Mukherjee et al., 2023; Singh et al., 2018). We have integrated those insights with other M&A studies, primarily from the field of finance, in order to construct models and expand our analyses in Papers 2 and 3. This has led to a research proposal focusing on the impact of pro-market institutional changes in the home country on the M&A activities of domestic acquiring firms in emerging markets.

In Paper 2, through empirical tests, we have found that pro-market reforms in the home country have a positive and significant effect on the propensity for M&A by acquiring firms in emerging economies. In other words, we discovered that potential acquiring firms increase their probability of announcing an M&A in the years following an institutional shock. With this, we demonstrate that acquiring firms in emerging economies actively respond to changes in their institutional environment. In this particular case, we argue that by reducing transaction costs, pro-market reforms encourage the choice of M&A as a means of growth. Our results also reveal that national institutions matter in the financial decisions of domestic firms. These results, along with those that demonstrate other significant responses of firms, whether passive or active, are consistent with the view that pro-market reforms are beneficial for emerging countries, in this case, altering the way firms make their investments.

With a new empirical design introduced in Paper 3, we have demonstrated that pro-market reforms in emerging economies reduce the time required to complete M&A deals

initiated by domestic acquiring firms. To shed light on this relationship, we have applied a survival analysis model to estimate the hazard function of completing an acquisition for each unit of time. This allowed us to consider a more comprehensive portion of the population in our analysis, encompassing not only completed deals but also abandoned and pending ones.

Thus, through survival analysis, we have also verified a negative duration dependence, meaning that the longer a deal remains pending, the lower the chances that it will be concluded. The application of such model contributed to the implementation of a dynamic approach to the analysis of duration-completion-abandonment, as this model integrates the perspectives of completion and duration of deals in the pre-acquisition stage.

Our findings align with the concept that efficient markets experience shorter transaction times (Khanna & Palepu, 2010). Once again, it is important to emphasize the economic significance of these results. Institutional improvements in emerging markets, driven by reform initiatives, not only reduce costs relative to the duration of M&A processes, including managerial expenses (Dikova et al., 2010; Ekelund et al., 2001; Ferreira, Borini, et al., 2017; Luypaert & De Maeseneire, 2015), but also lead to a decrease in social costs. This is because the benefits resulting from the restructuring and consolidation of new companies become accessible to consumers and society.

Given the points raised, let's summarize some new research possibilities:

- Investigating the impact of pro-market reforms on M&A activities of private acquiring firms and on the aggregate M&A volume within a country.
- Examining how pro-market institutional changes affect domestic acquisitions separately from cross-border acquisitions.
- Analyzing the distinct effects of sub-dimensions of formal economic institutions in product, financial, and labor markets.
- Quantifying the effect of institutional voids in emerging economies on various aspects of the M&A process.
- Incorporating interaction effects with pro-market reforms, such as regulatory complexity in specific industries, political connections, deal-specific characteristics, target firm characteristics, and financial attributes of the acquiring firm.
- Investigating the impact of pro-market reforms on other aspects of M&A, such as payment consideration (cash and/or stocks), deal value and premium, market perception through abnormal cumulative returns around the announcement date, proportion of

equity acquired (total or partial), propensity for majority or minority acquisitions, and post-acquisition operational and market performance.

- Exploring the variations in results between survival analysis and other models that examine only the sub-sample of completed deals in studies of acquisition duration.
- Considering new indicators for pro-market reforms that quantify the intensity of reforms and the pace at which they occur.

In conclusion, our research highlights that pro-market institutional changes have the potential to transform the entire dynamics of the M&A process in emerging markets. They can stimulate increased acquisitive activity during the pre-announcement phase, contribute to expediting the process and reducing abandonment rates during the pre-acquisition phase, and possibly yield benefits related to post-acquisition synergies. Regarding this last aspect, we encourage further investigation as a potential avenue for future research. While our study does not provide empirical testing of the effects on abnormal acquisition returns and post-acquisition performance, we believe this topic holds promise for valuable insights in subsequent research agendas.

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## APPENDIX A – SLR Summary (Chapter 2)

**Table A1:** List of Journals from the search result

Journal Name					Journal Name				
<b>Finance</b>					<b>Management</b>				
		Abbrevi ation	Impact Factor	No. of Papers			Abbrevi ation	Impact Factor	No. of Papers
Journal of Corporate Finance	JCF	5,107	4	Strategic Management Journal	SMJ	7,815	1		
Pacific-Basin Finance Journal	PBFJ	3,555	2	Management Science	MS	6,172	1		
Journal of International Money and Finance	JIMF	2,762	2	Journal of International Business Studies	JIBS	11,103	1		
International Review of Financial Analysis	IRFA	8,235	1	Journal of Economics & Management Strategy	JEME	2,245	1		
Finance Research Letters	FRL	9,846	1						
Journal of Financial Intermediation	JFI	5,979	1						
International Journal of Finance & Economics	IJFE	1,634	1						
<b>Economics</b>					<b>Industry-specific</b>				
Journal of International Economics	JIE	3,712	1	Transportation Research Part E: Logistics and Transportation Review	TRPE	10,047	1		
Journal of Financial Economics	JFE	5,162	2						
Journal of Public Economics	JPE	8,262	1						
The North American Journal of Economics and Finance	NAJEF	3,136	1						
World Economy	WE	2,640	1						
Journal of Law & Economics	JLE	1,540	1						
Developing Economies	DE	1,500	1						
Japan and the World Economy	JWE	1,580	1						

Fonte: Elaborado pelos autores.

**Table A2:** Summary table of the Systematic Literature Review's findings

Study	Objective	Sample	Context of Institutional Change	Dependent variable	Institutional Change Indicators	Main Findings
Wang & Shao (2022)	To analyze whether the reform of the IPO pricing system affects M&A activities and assess the effectiveness of IPO price controls on the long-term performance of M&A.	2317 IPOs of Chinese acquiring companies	Market reform of IPO prices in 2009, carried out by the China Securities Regulatory Commission (CSRC), and its reversal in 2014.	Binary indicator for whether the firm announces an acquisition within 4 years of the IPO. CARs and BHARs.	Natural experiment: indexing three periods: before, during, and post (reversal).	Companies listed in the price liberalization stage of the IPO (2009-2012) raise more funds and have their financial constraints eased, which increases the possibility and frequency of M&A after listing. The performance of these M&A is also superior.
Balogh et al. (2022)	To analyze the impact of the regulatory relief introduced by the JOBS Act (USA) on post-IPO acquisition activity	563 IPOs of American companies	Shock in the aggregate regulatory cost of IPO companies caused by the Jumpstart Our Business Startups (JOBS) Act of 2012.	Binary indicator for whether the firm announces an acquisition within 2 years of the IPO. Time in days from IPO to the announcement.	Natural Experiment: Indicator for the Post-JOBS Period	With less regulatory burden, newly listed companies tend to make more acquisitions in a shorter period of time after going public, as well as invest in other forms of expansion more significantly.
Chondrakis et al. (2021)	To examine patterns in procurement activity and performance before and after the implementation of AIPA.	843 companies, of which 133 make at least 1 acquisition	Reform known as the American Inventors Protection Act (AIPA) of 1990 implemented in the USA.	Acquisition Dummy; No. of acquisitions. Indicator for the pairing of certain acquisitions. CARs.	Natural experiment: Indicator for the post-AIPA period.	The firms most affected by the reform show increases in their propensity to acquire other technology firms. The reform contributed to acquisitions of technology matching that are more distant between acquirer and target. Acquirers' CARs are adversely affected.
Carletti et al. (2021)	To assess the impact of merger control legislation on bank merger activity in European countries.	349 M&A transactions of European banks as targets	Institutional changes related to merger control legislation in European countries between 1986 and 2007.	CARs.	Natural experiment: Indicator for the post-legislation change period.	Higher abnormal returns on acquisition announcement (5-6% higher overall for target firms), considering a reduction in the prevalence of mergers creating "to-

						big-to-fail" banks. The results are more pronounced when there is a change in control.
Opoku-Mensah et al. (2020)	Investigate the impact of ownership and M&A regulations on the value creation of mergers and acquisitions (M&A) in China.	6,228 transactions.	Property or M&A-related reforms announced by the Chinese government, identified in 32 related laws.	CARs.	Natural experiment: Indicator for the period in which the reform was disclosed	A positive relationship was found between property interventions and acquirer returns.
John et al (2020)	To investigate how banking integration influences the market for corporate control of non-financial firms, from an episode of deregulation as an exogenous source of variation in the level of integration.	27,359 cross-state acquisitions	Deregulation of interstate banking in the U.S. in the 1980s and 1990s.	The rate of cross-state acquisitions in relation to a state's total; No. of cross-state targets	Natural experiment: Indicator for the post-deregulation period;	Interstate banking deregulation leads to an increase in the number of targets in cross-state acquisitions. Increase in abnormal acquirer returns on the date of announcement in cross-state acquisitions, following deregulation.
Chen et al (2020)	To examine the impact of industrial policy (OCMA) on the M&A propensity and post-merger performance of Chinese acquirers.	Panel with 14,186 Observations	"Opinion on Corporate Mergers and Acquisitions" (OCMA) policy issued by China's State Council in 2010 as an exogenous experiment.	Acquisition Dummy; CAR; BHAR; ROA; IROA; Tobin Q.	Natural Experiment: Indicator for the Post-OCMA Period	The 2010 OCMA policy encourages firms to engage in more M&A decisions. However, the effects on post-acquisition performance (financial and market) were not significant, except for firms with high market value and market power.

Srinivasan (2020)	Examine how domestic M&A activity in an industry responds to changes in external competitiveness by reducing import tariffs.	Panel with 15,803 Observations with 1,925 acquisitions in 23 industries.	Import tariff reductions from 1998 to 2014 as exogenous shocks.	Acquisition Dummy; CAR; BHAR; ROA.	Natural experiment: Indicator for the year of significant tariff reduction in an industry.	Firms affected by the tariff reduction are 19 to 27 percent more likely to do M&A. Acquisitions are concentrated in the same industry. The results are more pronounced for firms without financial constraints and in the presence of high monetary liquidity.
von Beschwitz (2019)	To explore the effect of large exogenous cash inflows on a company's acquisition activity, resulting from a German tax reform that made sales of equity stakes tax-free.	381 companies without shareholdings and 115 companies with shareholdings.	Tax reform in Germany in 2000 on the removal of capital gains taxation on the sale of shareholdings.	Acquisition Dummy; CARs; Alphas.	Natural Experiment: Binary Indicator Equal to 1 for the Post-Reform Period	Companies with equity stakes before the reform increased their likelihood of acquisition by 14% after the change. However, acquisitions are, on average, poorly valued by the market, due to the prospect of overinvestment.
Bhabra & Hossain (2017)	Analyze the impact of the reforms introduced by the Sarbanes-Oxley Act (SOX) on returns for target companies and acquirers in takeover bids.	910 tender offers.	Sarbanes-Oxley Act (SOX) of 2002 in the USA.	CARs; Deals size and acquisition premium.	SOX dummy (indicator equal to 1 for the post-SOX period).	Increase in abnormal returns on the date of the announcement to shareholders of both firms. Reduction in the relative size of deals. Increase in acquisition premiums.
Dessaint et al. (2017)	To examine the relationship between employment protection reforms and M&A activities.	3.646 Obs. (country level tests). 7.129 Obs (deal level tests).	Employment protection reforms in 21 developed countries	Number and value of agreements (country level tests). CARs and acquisition premium (deal level tests)	Discrete indicator that increases (decreases) with +1 (-1) if the target firm's country strengthens (relaxes) employment protection.	Average reduction of 27% in aggregate volume and 14% in the value of deals. 83% reduction in CARs of combined firms Other results: increase in post-integration job retention.
Alimov e Officer (2017)	To examine whether reforms in the protection of the country's intellectual property rights affect the flow and value of inbound cross-border M&As over time.	Panel with 67,375 CBMA transactions from 50 countries	Intellectual Property Rights Reforms	Number of cross-border deals in the country involving a foreign acquirer. CARs;	Patent Protection Index and Indicator for Patent Law Reforms.	The implementation of reforms that strengthen intellectual property rights is associated with a significant increase in inbound cross-border M&A. This effect is more pronounced for less developed countries.

Restrepo & Subramanian (2017)	To examine the effect of protection prohibitions on merger and acquisition deals on volume and other relevant dimensions.	3,953 deals, resulting in 478 country-quarter obs.	Protection prohibition of M&A deals (elimination of termination fees) in 2011 in the United Kingdom.	Deals' Number.	Natural Experiment: Binary Indicator Equal to 1 for the Post-Reform Period	The reform of the takeover code, prohibiting termination fees, had a negative effect on the volume of M&A deals in the UK.
Kamdilov et al. (2017)	To examine the relationship between state banking deregulation in the U.S. and inbound cross-border M&A activity.	3,052 transactions with 21 countries.	Deregulation of interstate banks and intrastate branches in the U.S. in the 1980s and 1990s as a source of exogenous variation in credit conditions.	Number and value of cross-border M&As.	Indicator for the year in which the state implemented banking deregulation.	Increase in the number of CBMAs by 43 to 67% after the adoption of interstate banking deregulation. The result is more pronounced when it involves countries with better financial development.
Ma et al. (2016)	To examine how state ownership and stock market liberalization affect mergers and acquisitions in China	328 transactions.	China Split-Share-Reform in 2005.	CARs; BHARs; Operating Cash Flow to total assets; ROA.	Indicator for the period after liberalization .	State-owned enterprises that have undergone split-share reform have shown improvements in operational efficiency, which has consequently led to higher post-M&A performance.
Feld et al. (2016)	To investigate how the elimination of repatriation taxes affects mergers and acquisitions (M&A) decisions of foreign companies by domestic companies.	17,907 deals.	Foreign-sourced dividend tax exemption reforms in Japan, New Zealand and the United Kingdom in 2009.	Propensity for cross-border acquisitions.	Size of repatriation taxes: tax difference between host countries and countries of origin.	Increase in foreign acquisitions by Japanese firms by 16.1%, by New Zealand firms by 1.8% and by British firms by 1.6%. The most pronounced effect for Japan is justified by Japan's considerably higher corporate income tax rate (40.7%) than in the other two countries.

Alimov (2015)	To investigate the impact of regulations on countries' labor markets on the flow and performance of cross-border M&A deals.	53,583 international M&A deals.	Employment Protection Legislation (EPL).	Number of inbound CBMA in the country.	Employment Protection Legislation (EPL) Index.	Reforms that increase employment protection rules are associated with increases in the overall volume of inbound CBMAs. The results are most pronounced for target firms in high-productivity and high-skill industries.
Alexandrou et al. (2014)	4 objectives. These include estimating the marginal effects of the factors that drive the likelihood of M&A for shipping firms and whether the effects vary across different regulatory regimes and regions.	1,266 deals, grouped into 4 macro-regions: Asia (524), Europe (550), North America (106) and Others (86).	OSRA (Ocean Shipping Reform Act) is passed in the U.S. in 1998; and EU competition laws that apply to the shipping sector, passed in 2008.	CARs; Acquisition Dummy.	Indicator indicating the pre-2000 deregulated period (0), the intermediate period (1); and the post-2008 regulated period (2).	The likelihood of engaging in M&A varies under different regulatory regimes. While in the pre-reform period some factors reduce this propensity, in the post-reform period these observed factors may increase the probability. European companies are more likely to engage in M&A in the post-change period.
Boudier & Lochard (2013)	To examine the impact of deregulation of services on cross-border M&A.	13.920 deals.	Deregulation of the services sector in OECD countries.	Total value of deals in the target firm's country	OECD Regulation in Energy, transport, and communications Index (ETCR) of both firms' country. Economic Freedom of the World (EFW);	A reduction in the ETCR (more deregulated environment) ratio implies an increase in the flow of cross-border M&A in the services sector in the target firm's country. Such a relationship is insignificant for the acquirer's country.
Kim & Lu (2013)	To examine whether corporate governance reforms trigger a shift in the tendency of foreign acquirers to seek outperforming targets in emerging markets.	527 transactions.	Corporate governance reforms (CGRs) in 33 countries.	Cumulative density function (CDF) of the target's performance prior to the acquisition bid.	Natural experiment: Indicator for the post-CGR period, in the country of the target or acquirer.	CGRs in acquirers' countries increase the tendency to choose best-performing targets. Conversely, CGRs in the host country reduce the "cherry picking" trend.

Ovtchinnikov (2013)	To examine how M&A activity relates to the pre-deregulation performance of the companies involved and whether deregulation induces a change in M&A activity.	7.858 transactions	Major federal deregulation initiatives that affected deregulated industries from 1960 to 2008 in the U.S.	Number of cash and bankruptcy M&As; CARs and acquisition premium.	Indicator for the year of regulatory waves.	Higher frequency of cash M&As and bankruptcy after the deregulation, which is preceded by poor industry performance. Therefore, the results suggest that M&A is a form of "exit" from underperforming industries.
Breinlich (2008)	To investigate whether mergers and acquisitions actually play a role in industrial restructuring in response to trade liberalization	Aggregate deals in 140 manufacturing industries, analyzed in 2 periods (280 Obs.)	1989 Canada-United States Free Trade Agreement (CUSFTA) as a source of exogenous variation in trade barriers	Count of M&A deals by period and industry level	Indicator for the post-CUSFTA period.	Trade liberalization has increased domestic Canadian M&A activity (Canadian companies buying other Canadian companies) by more than 70%. The impact on domestic U.S. M&A activity was insignificant.
Jeon & Miller (2007)	To analyze whether banking deregulation has affected the incidence of new banks (births), bankruptcies (deaths), and mergers (marriages) of commercial banks in the U.S.	1.377 Obs.	1994 Interstate Banking and Branching Efficiency Act.	Number of commercial banks acquired in the state in relation to the total number of banks.	Indicators for intrastate and interstate deregulation.	Bank merger rates respond positively to all regulatory variables. On the contrary, the effect on new bank and bankruptcy rates was not significant.
Higgins and Beckman (2006)	To examine the factors affecting the abnormal returns of Japanese acquirers, with a focus on the effect of pro-M&A legislation in the 1990s.	152 transactions.	Pro-M&A legislation in Japan, involving deregulation of the acquisition process, tax advantages, and accounting regulations.	CARs.	Indicator denoting whether the period is after or before pro-M&A legislation.	The findings are consistent with the view that the new legislation promotes M&A activity, alleviating acquirers' acquisition costs and catalyzing the economic effects of efficient capital reallocation.

Bertrand & Zitouna (2006)	To analyse the effect of trade liberalisation on cross-border M&A activities.	121 CBMA.	Trade liberalization, involving OECD member countries.	Binary indicator for whether the firm makes at least one acquisition.	Market access (continuous index that captures barriers to international trade)	Inverted U-shaped relationship between the degree of trade liberalization and incentives for M&A. Therefore, CBMA tends to happen among moderately commercially integrated economies.
De Paula et al. (2002)	To analyze the corporate restructuring and changes in corporate control in four major Latin American countries – Argentina, Brazil, Chile and Mexico – during the 1990s.	3,085 private mergers and acquisitions and 329 privatizations.	Political changes for economic liberalization in these countries in the 1990s.	N/A	N/A	Corporate restructuring in Latin America has been facilitated and fostered by specific changes in the conditions of the institutional structure associated with policies. In other words, the broad process of corporate restructuring is strongly associated with economic liberalization, which has become the main characteristic of Latin American national incentive and regulatory regimes.

Source: Author's own elaboration.

## APPENDIX B – Summary Statistics of Explanatory Variables (Chapter 4)

Table B1: Summary Statistics of Explanatory Variables.

Panel A: Full Sample						
Variable	N	Mean	Med.	SD	Min	Max
<i>size</i>	15,376	6.344	6.227	1.685	0.797	10.189
<i>roa</i>	15,376	0.061	0.055	0.081	-0.401	0.362
<i>cash</i>	15,376	0.145	0.110	0.132	0.000	0.622
<i>yreturn</i>	15,376	0.304	0.085	0.802	-0.790	3.787
<i>mktcap_gdp</i>	15,376	0.570	0.573	0.464	0.002	3.227
<i>interest</i>	15,376	0.039	0.035	0.063	-0.129	0.567
<i>cbma_d</i>	15,376	0.146		0.353	0.000	1.000
<i>reg_d</i>	15,376	0.184		0.388	0.000	1.000
<i>priv_d</i>	15,376	0.056		0.230	0.000	1.000
<i>tpublic_d</i>	15,376	0.053		0.224	0.000	1.000
<i>challenge_d</i>	15,376	0.002		0.048	0.000	1.000
<i>divers_d</i>	15,376	0.468		0.499	0.000	1.000
<i>cashonly_d</i>	15,376	0.445		0.497	0.000	1.000
<i>merger_d</i>	15,376	0.288		0.453	0.000	1.000
<i>bankruptcy_d</i>	15,376	0.002		0.043	0.000	1.000
<i>ref_efw</i>	15,376	0.529		0.499	0.000	1.000
<i>ref_efi</i>	15,376	0.413		0.492	0.000	1.000
Panel B: Completed Deals						
Variável	N	Mean	Med.	SD	Min	Max
<i>size</i>	7,836	6.355	6.205	1.674	0.797	10.189
<i>roa</i>	7,836	0.067	0.060	0.080	-0.401	0.362
<i>cash</i>	7,836	0.142	0.104	0.135	0.000	0.622
<i>yreturn</i>	7,836	0.339	0.117	0.824	-0.790	3.787
<i>mktcap_gdp</i>	7,836	0.560	0.573	0.492	0.002	3.227
<i>interest</i>	7,836	0.045	0.036	0.072	-0.129	0.567
<i>cbma_d</i>	7,836	0.179		0.383	0.000	1.000
<i>reg_d</i>	7,836	0.211		0.408	0.000	1.000
<i>priv_d</i>	7,836	0.057		0.232	0.000	1.000
<i>tpublic_d</i>	7,836	0.070		0.255	0.000	1.000
<i>challenge_d</i>	7,836	0.002		0.045	0.000	1.000
<i>divers_d</i>	7,836	0.439		0.496	0.000	1.000
<i>cashonly_d</i>	7,836	0.445		0.497	0.000	1.000
<i>merger_d</i>	7,836	0.303		0.459	0.000	1.000
<i>bankruptcy_d</i>	7,836	0.003		0.053	0.000	1.000
<i>ref_efw</i>	7,836	0.525		0.499	0.000	1.000
<i>ref_efi</i>	7,836	0.400		0.490	0.000	1.000
Panel C: Censored Deals						
Variable	N	Mean	Med.	SD	Min	Max
<i>size</i>	7,540	6.332	6.254	1.697	0.797	10.189

<i>roa</i>	7,540	0.053	0.049	0.082	-0.401	0.362
<i>cash</i>	7,540	0.148	0.116	0.129	0.000	0.622
<i>yreturn</i>	7,540	0.266	0.053	0.775	-0.790	3.787
<i>mktcap_gdp</i>	7,540	0.580	0.596	0.433	0.002	3.227
<i>interest</i>	7,540	0.033	0.031	0.050	-0.129	0.567
<i>cbma_d</i>	7,540	0.112		0.316	0.000	1.000
<i>reg_d</i>	7,540	0.156		0.363	0.000	1.000
<i>priv_d</i>	7,540	0.055		0.228	0.000	1.000
<i>tpublic_d</i>	7,540	0.035		0.185	0.000	1.000
<i>challenge_d</i>	7,540	0.003		0.050	0.000	1.000
<i>divers_d</i>	7,540	0.497		0.500	0.000	1.000
<i>cashonly_d</i>	7,540	0.445		0.497	0.000	1.000
<i>merger_d</i>	7,540	0.273		0.446	0.000	1.000
<i>bankruptcy_d</i>	7,540	0.001		0.028	0.000	1.000
<i>ref_efw</i>	7,540	0.533		0.499	0.000	1.000
<i>ref_efi</i>	7,540	0.427		0.495	0.000	1.000

Note: For dummy variables, only the percentages (averages) for which the indicator takes the value 1 in the sample are shown. Descriptive statistics are presented by group. In Panel A, the complete sample of observations is shown. In Panel B, the subsample of completed deals is presented. In Panel C, the subsample of deals that were censored (pending or abandoned) is shown.