Essays on Mergers and Acquisitions around the World

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Abstract

In Chapter 1, we identify and explore three areas of research on US M&A. We also describe how each chapter of the paper relates to these areas of research. In the following chapter, we introduce a new test approach based on existing theory, particularly the well-known paper using the comprehensive policy uncertainty measure (EPU) developed by Baker et al. (2016).

In Chapter 2, we introduce a novel test that builds upon existing theory, particularly notable papers that adopted the comprehensive policy uncertainty measurement (EPU) developed by Baker et al. (2016) to investigate the negative impacts of policy uncertainty on U.S. mergers and acquisitions (Nguyen and Phan, 2017; Bonaime et al., 2018). However, Hassan et al. (2019) discovered that firm-level political risk (PRisk) accounts for 91% of overall uncertainty. We replaced EPU with PRisk, and our results continuously support prior evidence indicating that uncertainties negatively influence deal performance. Nevertheless, we utilise the tax haven index, which was developed by Meier and Smith (2023), and the results suggest a strong positive correlation between the effective tax rate and the probability of crossborder mergers and acquisitions in the United States. Choi et al. (2022) suggest that successful lobbying could ease the negative effects of political risk on corporate investment decisions while reducing political risk (Islam et al., 2022). Liu et al. (2022) address that corporate tax rates could be strongly influenced by the manager's tone during the earnings conference calls. Following these tests, we continue to find that PRisk can be strongly mitigated by corporate tax rates. Thus, when firms face PRisk and tax payment issues, acquirers tend to bid for targets in tax havens.

Chapter 3 examines the relationship between inflation and U.S. domestic transaction activities, building on prior studies that investigated state inflation dynamics' influence on

cross-border M&A activities (Black, 2000; Uddin and Boateng, 2011; Boateng et al., 2017). Similar to studies by Travlos (1987) and Eckbo (2009), we test the likelihood of cash bidders versus stock bidders, finding that cash bidders' shareholders generally enjoy more favourable returns (Travlos, 1987). A recent study by Yang et al. (2019) identified excess cash as a determinant of mergers and acquisitions. Our test finds that inflation significantly decreases the favorability of U.S. domestic transactions. However, firms tend to engage in acquisitions while holding excess cash during inflationary periods. Furthermore, pure cash deals tend to be more common during inflationary periods, and vice versa. Regarding shareholder returns, our findings align with Travlos's (1987) arguments.

Chapter 4 investigates the effects of the insider trading laws' enforcement on cross-border acquisitions bid by U.S. acquirers. Prior studies have explored the initial enforcement of insider trading laws on stock market performance, both in terms of frequencies and profits (Bris, 2005). This argument is further supported by evidence showing enhanced capital market efficiency in developed markets, which reduces equity costs and improves liquidity (Fernandes & Ferreira, 2009; Bris, 2005). The impact of the enforcement of insider trading laws on firm valuation during transactions varies (Bhattacharya, 2023). Additionally, misvaluation (Rhodes-Kropf and Viswanathan, 2004) and stock price informativeness (Bai et al., 2016) have crucial impacts on mergers and acquisitions. Gao (2011) suggests that bidders prefer to pay with stock, indicating overvaluation. Myers and Majluf (1984) argue that when investors find companies issuing shares without the need to invest capital, this indicates overvaluation. Hackbarth and Morellec (2008) point out that insider trading laws prohibit insiders from sending signals to the market, so market prices reflect information from outsiders. In our test, the initial enforcement of insider trading laws positively affected U.S. acquirers significantly. Additionally, an increase in price informativeness drives cash bidders. Cash bidders have significant and positive returns, whereas stock bidders have negative returns.

The last chapter provides a conclusion of the findings, limitations, and suggestions for further research directions.

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Declaration

I declare that the information in this doctoral thesis is entirely original with no submissions for credit towards any other degree, diploma, or other academic honours. All of the work contained in this thesis is my own, unless otherwise noted in the references or acknowledgements.

Signature: Xiaoling Xu

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Chapter

Introduction

This study investigates the firm-specific political risk (PRisk)'s complexity in how to shape U.S. cross-border mergers and acquisitions (M&A) and corporate strategies. By focusing on the interactions between PRisk, tax considerations, and means of payment in M&A, it underlines how political uncertainties and firm-level risk factors affect M&A outcomes and decision-making. The analysis also extends to the impact of inflation and excess cash on M&A payment preferences, revealing how macroeconomic conditions affect corporate behaviour. In addition, this study also explores the impact of insider trading regulation on market efficiency and M&A transactions, especially how regulatory enforcement affects stock price information and payment methods. Overall, it provides insights into how regulatory, political, and economic factors converge to affect M&A performance and corporate decision-making in the U.S.

In Chapter 2, we delve into the intricate dynamics of firm-specific political risk (PRisk) and its impact on the performance of mergers and acquisitions (M&As) in the United States. Utilising the firm-level political risk indexes developed by Hassan et al. (2019), we highlight that over 90% of the uncertainties faced by firms stem from firm-specific factors. These indexes reveal a significant positive correlation between a firm's political risk and its influence over government economic policies and budgets in subsequent quarters. Additionally, prior research has shown that corporate lobbying efforts can mitigate PRisk, influencing corporate investment decisions and cash reserves (Islam et al., 2022; Choi et al., 2022; Hasan et al., 2022). Our study distinguishes itself from earlier research that primarily focused on Economic Policy

Uncertainty (EPU) in analysing the likelihood of U.S. domestic transactions. By adopting PRisk indexes from Hassan et al. (2019), we concentrate on firm-level political risk and its implications for U.S. cross-border transactions. This shift in focus allows us to explore how heightened EPU discourages domestic M&A activity, particularly in contexts characterised by uncertainties in monetary policy, fiscal policy, taxation, and government expenditure (Bonaime et al., 2018).

In addition, our study introduces the tax residence model proposed by Meier et al. (2023), which introduces new determinants for US cross-border M&A transactions. Evidence shows that US companies are increasingly engaging in cross-border M&A to benefit from lower effective tax rates in tax havens (Meier & Smith, 2023). The association between PRisk and cross-border M&A activity is further supported by our findings, which show a link between higher firm-level political risk and increased corporate tax evasion attempts (Hossain et al., 2023; Liu et al., 2022). The purpose of this chapter is to elucidate how PRisk influences cross-border M&As in the United States and how effective cash tax rates mitigate these transactions. Moreover, we investigate how firm-level political risk influences stock market reactions to M&A announcements, revealing outcomes that can vary significantly based on specific circumstances (Beltratti & Paladino, 2013). Our analysis examines how heightened uncertainty encourages acquirers to favour stock payments, a trend driven by lower stock returns and the diminished bargaining power of financially constrained targets (Paudyal et al., 2021; Bonaime et al., 2018).

When exploring the impact of PRisk on M&A tax avoidance, we turn our focus to crossborder deals, as prior literature suggests that EPU negatively affects domestic US deals (Bonaime et al., 2018; Nguyen and Phan, 2017). We investigate whether the choice of payment method varies depending on the determinants of recent M&A and how these choices affect the cumulative abnormal returns (CAR) to shareholders. An important aspect of our analysis concerns the tax effects of the payment method. Acquirers that choose stock payment allow target shareholders to defer immediate tax obligations until they sell their shares, whereas cash payments subject them to immediate tax obligations (Boone et al., 2014). Our findings suggest that firms facing high PRisk tend to limit their M&A opportunities; however, they may pursue bids when the target firms are in tax havens, where tax liabilities are reduced. This indicates that PRisk significantly mitigates when acquirers target firms from tax havens.

Through this finding, we aim to provide valuable insights into the complexity of M&A performance and corporate strategic decision-making in the U.S. political economy. This chapter will focus on the links between PRisk, tax considerations, and M&A payment structures in order to gain a deeper understanding of the factors that influence M&A outcomes in a specific corporate political risk context.

Chapter 3 explores the impact of inflation and corporate cash holdings on M&A payment preferences and examines how these factors affect the decision-making process of companies with excess cash. This analysis is based on the method of calculating excess cash and follows the framework established by Opler et al. (1999) and Yang et al. (2019). The study finds that both inflation and real interest rates significantly affect the likelihood of cash payments in M&A transactions. In addition, companies with large excess cash holdings show a clear preference for cash payments, especially in periods of high inflation or rising real interest rates. To date, no studies have specifically examined the role of inflation in U.S. M&A activity. This chapter addresses that gap by analysing how inflation interacts with M&A transactions in the U.S. context. Previous research, such as Shleifer and Vishny (1992), has linked high corporate liquidity to merger waves in earlier decades, while more recent studies (e.g., Erel et al., 2017) have confirmed that firms with higher cash reserves are more likely to engage in acquisitions. A recent study suggests a positive correlation between excess cash and acquisition preferences in China; the study is in line with Agency Theory and Jensen's (1986) "Free Cash Flow Hypothesis", which contends that corporations that hold high liquidity tend to have greater propensities to engage with mergers and acquisitions (Yang et al., 2019). Hanson (1992) and Harford (1999) discovered that acquirers with substantial free cash flows frequently involve themselves in low-value transactions, further bolstering Agency Theory by emphasising the conflicts between management and shareholder interests.

Further, this chapter continuously contributes to prior research by examining the relationship between a company's liquidity and M&A activity, concentrating on the Chinese market (Chi et al., 2011; Zhou et al., 2015; Black et al., 2015). According to Yang et al.'s (2019) study, where they find Chinese companies with substantial cash reserves choose cash payments over stock bids in M&A transactions, which cash deals improve post-acquisition performance. This study extends this analysis by examining U.S. firms and how inflation impacts means of payments in M&A.

After four decades of studying M&A payment trends, according to Boone et al. (2014), the frequency of cash payments has increased, while the frequency of stock payments peaked in the late 1990s and has since declined. These patterns help further explain the shift in preferences for cash or stock payments in M&A, as well as tax concerns (Boone et al., 2014) and adverse selection theory (Hansen, 1987).

A key contribution of this study is its focus on the U.S. market, contrasting with existing literature that predominantly focuses on other contexts, such as China. Our research differs from studies like Adra et al. (2020), which analysed the impact of monetary expansion and contraction on U.S. domestic transactions using the Federal Funds Rate (FFR). Instead, we use inflation as a monetary proxy to explore U.S. M&A activities, particularly how cash-rich firms behave in different inflationary environments. This study also builds on prior work that first

explored the effects of FFR cuts on stock returns (Kontonikas et al., 2013) and second, examined the signalling effects of payment methods on shareholder returns (Travlos, 1987).

This chapter aims to detect direct relationships among inflation, excess cash, and the probability of M&As in the US market, to fill the gap by concentrating on the US context where inflation has yet to be extensively examined in relation to M&A activity. In line with Boateng et al. (2017), who emphasised the role of economic policies in shaping M&A outflows in emerging economies, this chapter highlights the importance of inflation, liquidity, and interest rates in shaping U.S. firms' cross-border M&A activities. However, it goes further by addressing the unique dynamics of domestic M&A transactions and offering insights into how excess cash holdings affect corporate strategies during periods of monetary expansion.

Chapter 4 explores the role of insider trading regulations in U.S. cross-border mergers and acquisitions (M&As), focussing on how these laws impact stock price informativeness and influence M&A decisions. Utilising the price informativeness measure developed by Bai et al. (2016), this study examines how the enforcement of insider trading laws enhances market efficiency and investor confidence, leading to a greater likelihood of cash payments in M&A transactions. Empirical findings highlight that stricter insider trading regulations increase the probability of cash payments, which are associated with positive returns for cash bidders, aligning with earlier research by Travlos (1987).

The chapter delves into the broader effects of insider trading laws on firm valuation and market behaviour in M&A contexts, particularly in developed markets where strong enforcement enhances liquidity and reduces equity costs (Bris, 2005; Fernandes & Ferreira, 2009). However, in emerging markets where enforcement is less consistent, the impact varies. These regulations are associated with mitigating information asymmetry, improving capital allocation efficiency, and stock price transparency. In cross-border transactions, company valuations are closely related to insider trading dynamics, and regulatory effectiveness affects market reactions and corporate strategic decisions.

One of the main discussions in this chapter is the impact of overpriced shares. on M&A activities, particularly how misvaluation can drive takeovers and affect means of payments. The misvaluation hypothesis suggests that market mispricing plays a crucial role in transaction dynamics and post-acquisition outcomes (Dong et al., 2006). Additionally, the study investigates how effective enforcement of insider trading laws reduces the likelihood of misvaluation and improves the accuracy of firm valuations, especially in cash transactions, where price efficiency is critical.

This study also explores the mechanisms by which insider trading regulations mediate the relationship between price informativeness and transaction outcomes. The results show that the likelihood of US cross-border M&As is increased by 57.46% after enforcing the insider trading law while decreasing by 48.52% during a high price informativeness. However, insider trading enforcement mitigates the negative effects of price informativeness while significantly increasing the likelihood of engaging in transactions by 105.85%, which is mainly dominated by all-cash deals consistently generating positive shareholder returns, especially under high political risk conditions.

This chapter provides valuable insights into the firm's strategic decision-making process in the cross-border M&A landscape by exploring how insider trading laws affect the probability of cross-border transactions and their choice of payment methods. This chapter highlights the key role of regulatory frameworks in promoting market integrity and protecting investor interests and provides practical advice for managers and policymakers seeking to optimise M&A strategies in increasingly complex and regulated markets.

Chapter

How does the firm mitigate its firm-level political risk to engage with the cross-border transactions? Evidence from the US cross-border transactions.

This study investigates the impact of firm-level political risk and cash effective tax rates on US cross-border mergers and acquisitions (M&As). To address our research question, we examined a sample of 2,464 deals from 51 target nations between January 2003 and December 2022. The sample includes all cross-border M&As by U.S. public firms. Our findings show that firms facing firm-level political risk are less likely to engage in merger transactions. However, when firms facing such risks are also paying taxes, their preference for targeting tax havens increases. These results remain consistent even after examining a subsample of firms with high firm-level political risk and conducting further tests. This supports the idea that tax avoidance is a key determinant for US cross-border deals. Additionally, we find that cash bidders dominate under conditions of political risk. Furthermore, for firms facing both political risk and tax obligations, the deal size tends to shrink and the completion time increases.

2.1. Introduction

A large body of literature suggests a link between the effect of aggregate policy uncertainty and M&As is suggested in well-established literature. Harford (2005) suggested that macroeconomic factors could drive merger waves across diverse industries, which include

technical, economic, and regulatory shocks. Prior studies investigate the uncertainty effects on US domestic acquisitions by utilising the economic policy uncertainty index (EPU), which was developed by Baker et al. (2016) (Nguyen and Phan, 2017; Bonaime et al., 2018). These studies find that EPU and US domestic M&As have a significant inverse relationship (Nguyen and Phan, 2017; Bonaime et al., 2018), and this reverse association is primarily led by uncertainties within government expenditure, fiscal policy, taxation, and monetary policy (Bonaime et al., 2018). We extend this literature by examining firm-level political risk that developed by Hassan et al. (2019), who state most of the variation in political risk occurs at the firm level.

These studies show that elevated EPU significantly discourages domestic M&A activity in the United States (Nguyen and Phan, 2017; Bonaime et al., 2018), and uncertainty in monetary policy, fiscal policy, taxation, and government spending are the main drivers of this inverse relationship (Bonaime et al., 2018). Additional study finds that firms are also exposed to external risks such as political uncertainty that adversely affect their performance (Jia and Li, 2020). While recent studies focus on overall uncertainty levels, our study shifts the focus to firm-specific political risk to further extend the literature by adopting Hassan et al.'s (2019) firm-level political risk method.

Thus, in our study, we will adopt firm-level political risk (PRisk) rather than the economic policy uncertainty index (EPU), which index offers specific political risks that impact each firm's strategic decisions, particularly the firm's taxation and investment. Different from aggregate economic policy uncertainty (EPU), which captures broad macroeconomic policy concerns based on social media and systemic events, PRisk is derived from textual analysis of earnings calls and covers companies' specific perceptions of risks such as regulatory changes, trade tensions, health crises, and, crucially, tax uncertainty. These firm-level perceptions often differ strongly from macro-level EPU because they are affected by industrial issues, strategic factors, and localisation that are not immediately reacted to in wider policy

uncertainties. This heterogeneity makes PRisk a vital indicator for analysing how individual firms react to political risks, especially in sensitive contexts such as cross-border M&A or targeting sellers in tax havens, where firm-specific political perceptions and strategic concerns are critical. Thus, relying solely on EPU may overlook critical, nuanced risks that directly impact firms' investment and tax decisions, while PRisk provides a comprehensive, nuanced perspective to better understand individual companies' behaviour in complex political environments.

Although corporate lobbying efforts can mitigate a firm's political risk, PRisk remains a significant determinant of corporate default risk (Islam et al., 2022). Successful lobbying moderates the adverse effects of political exposure on corporate investment (Choi et al., 2022), while companies with higher PRisk tend to maintain larger cash reserves (Hasan et al., 2022). Recent research additionally highlights that there is a strong and positive relationship for firms facing higher risk more likely to engage in political activities such as lobbying and possessing greater asymmetric information via the investigation of the link between company tax rates and managers' tone during earnings conference calls (Liu et al., 2022). Thus, while firm-level political risk influences business investments inversely, its impact will be affected by various contextual factors.

A novel determinant influencing US cross-border M&A transactions is the tax residence model (Meier et al., 2023). Studies have shown how US firms engage in cross-border M&A to leverage tax havens with lower effective tax rates (Meier and Smith, 2023). Corporations who are facing either political uncertainty or elevated PRisk are more likely to be involved in corporate tax avoidance (Hossain et al., 2023; Liu et al., 2022). Empirical evidence indicates that there is a positive association between PRisk and corporate tax evasion (Hossain et al., 2023). While previous research investigated the connection between political uncertainty and M&A activities, little attention has been given to the link between firm-level political risk and

cross-border transactions. This study aims to reveal the role of PRisk in US cross-border transactions while exploring the potential of the cash-effective tax rate in mitigating political risk as well as influencing acquisition probability.

To expand the existing literature, this study explores the association between firm-level political risk and the probability of US cross-border transactions, differentiating this study from prior studies where the correlation between policy uncertainty and domestic transactions was addressed (Nguyen and Phan, 2017; Bonaime et al., 2018). Despite various existing papers beforehand discovering various factors that could mitigate risk to encourage firms to get involved in acquisitions, no paper had addressed discovering cash-effective tax rates as a key determinant for initiating bids on targets from tax havens until Meier and Smith's (2023) findings, which identified tax avoidance as a new determinant for US companies engaging in cross-border M&A. Our research explores how PRisk influences the probability of cross-border acquisitions in the United States and how firms can lower its negative impact by targeting overseas firms while avoiding taxes.

By doing so, this study analysed 2,464 sample deals from 51 target nations from January 2003 to December 2022. Our preliminary results consistently endorse earlier research indicating that EPU has notable adverse effects on M&As (Bonaime et al., 2018; Nguyen and Phan, 2017). Firm-level political risk had a significant negative influence on US cross-border M&A performance and its components. Given the variation in each firm's PRisk, we categorised PRisk as high or low using the median and examined the propensity of acquisitions in each sample separately. Then, this paper assessed the real-option channel with these subsamples. Additionally, we employed Meier and Smith's (2023) technique to generate a tax haven dummy in the sample and investigated this channel. In conclusion, we advocate utilising the cash effective tax rate (CASH ETR) to rerun the test and determine its effects.

The probability of cross-border M&As is a 3.54% decrease for acquirers facing elevated PRisk. In addition, we also find the consistent results for the high-PRisk subsample test where firms reduce their propensity to be bidders by 3.44% while indicating a 23.86% raise in acquiring cross-border target firms when facing low PRisk. Therefore, this study shows a consistent association between PRisk and US cross-border M&As where they are correlated inversely. Our findings indicate that acquirers prioritise acquirer targets from tax havens, corroborating Meier and Smith's (2023) assertions. The incorporation of the cash effective tax rate into our analysis reveals its efficacy in mitigating PRisk's adverse effects on M&A likelihood, particularly when US acquirers target tax havens abroad. Our results underscore that while firms may decline M&A activities in the face of PRisk alone, their appetite for acquiring target companies in tax-resident jurisdictions increases significantly in the presence of PRisk while paying taxes. Next, we examine the shareholder wealth effects around the announcement of such mergers. To do so, we compute the CARs at event windows (-1, +1), (-2, +2), and (-3, +3) but are unable to detect a meaningful difference in outcomes in shareholders' returns.

Acquirers prefer to pay by stock under higher PU because it comes with lower stock returns in both the target and acquirer countries (Paudyal et al., 2021). Other literature states that PU negatively impacts bid premiums and target announcement cumulative abnormal returns (CARs) but is positively correlated with the transaction period because, according to Nguyen and Phan (2021), during PU, financially constrained target companies lose their bargaining power (Bonaime et al., 2018). When everything remains the same, but the standard deviation increases by one in the BBD index (Baker, Bloom, and Davis, 2016), it will cause a seventy-basis point (\$31.4 million) increase in the acquirer shareholder's value on average. Further results show that the positive impact of PU on the acquirer's capital adequacy ratio is attributable to the acquirer's caution in M&A and the transfer of value from financially restricted targets to the acquirer's shareholders. Acquirers gain more value from M&As during PU (Bernanke, 1983; Rodrik, 1991; Bloom et al., 2007; Gulen and Ion, 2016; Nguyen and Phan, 2017).

Prior research finds that when uncertainty increases, the acquirer will bid by stock while paying a lower premium (Nguyen and Phan, 2017). Due to high uncertainty, which correlates with lower stock returns, both bidders and sellers are affected (Paudyal et al., 2021). Financially constrained target firms are more likely to tend to lose bargaining power (Bonaime et al., 2018). Therefore, high PU will encourage stock bidders rather than cash bidders while allowing them to pay lower premiums (Nguyen and Phan, 2017), benefiting them to obtain more value from the acquisition during PU (Bernanke, 1983; Rodrik, 1991; Bloom et al., 2007; Gulen and Ion, 2016). In addition, US M&A transaction volume is inversely related to EPU because bidders target overseas companies to avoid taxes due to domestic uncertainty (Bonaime et al., 2018), which is also agreed by Meier and Smith (2023), who argue that when US acquirers face domestic corporate taxes, they are more likely to increase their preference for targets from overseas. Thus, despite the hypotheses above, we will continue to investigate whether and how PRisk and CASH ETR affect acquirer payments.

This study contributes to the burgeoning research on the economic implications of crossborder M&As, tax evasion, and firm-level political risk. By evaluating real-option theory, we shed light on the dynamics of transaction size and completion periods in the context of PRisk and corporate tax obligations. Our results subtle the nuanced link among PRisk, corporate tax strategies, and cross-border M&A dynamics to address valuable insights for practitioners and policymakers alike.

The remaining section is structured as follows: The literature review and elaboration of hypotheses are presented in <u>Section 2</u>. In <u>Section 3</u>, the data are presented along with some summary statistics. The methodology, baseline analyses, and empirical findings are covered in

<u>Section 4</u>. This paper is concluded in <u>Section 6</u> after certain robustness tests are covered in <u>Section 5</u>.

2.2. Literature Review and Hypothesis Development

2.2.1. Uncertainties and Mergers and Acquisitions (M&As)

Historical data indicates that performance and merger and acquisition determinants vary under different conditions and time periods. Deng and Yang (2015) conducted a study focusing on nine developing nations between 2000 and 2012: Brazil, China, India, Indonesia, Mexico, Russia, South Africa, Thailand, and Turkey. Their findings suggest that as enterprises in emerging markets seek to acquire the necessary resources to overcome restrictions, the likelihood of cross-border M&As increases. Early research suggests that determining the macroeconomic variables affecting M&A trends is more appropriate (Vasconcellos and Kish, 1998). Others propose that firms' success results from increased returns due to rising interest rates and economic expansion, which attract additional foreign investment (Green and Meyer, 1997). Uddin and Boateng (2011) argue that a firm's capital expenditures may impact its financial stability during an M&A transaction, as they are influenced by macroeconomic policies.

Researchers examined 56,978 cross-border M&A deals between 1990 and 2007; the results revealed the M&A volume increased by 22% (from 23% to 45%) in a decade from 1998 to 2007. Moreover, the majority of participants engaged were non-US private firms, with up to 75% of bidders being non-US companies and non-US companies being the target of 80% of acquisitions during the sample period. This suggests that the probability of M&As will be increased while bilateral trade risk, the quality of accounting disclosure, and the location among two nations incline (Erel et al., 2012).

Scholars prefer the Economic Policy Uncertainty (EPU) index over Political Uncertainty (PU) proxies because the former is considered the most crucial factor affecting cross-border M&A activities. PU proxies, on the other hand, cannot recognise the heterogeneity of political risk across banks but still measure it over longer periods of time and more comprehensively (Gregoriou et al., 2021). Existing literature argues that uncertainty has significant impacts on cross-border deal performance. The EPU index, used as a proxy for the presidential election, which occurs only every four years (Cao et al., 2017), provides a more thorough assessment of a country's political uncertainty. Subsequent research, however, indicates that firm-level political risk predominantly accounts for total risk and exhibits a strong correlation with EPU (Hassan et al., 2019).

2.2.2. Firm-level Political Risk

According to a study, federal elections exert a substantial and positive impact on firmlevel political risk (PRisk), which constitutes a significant portion of overall risk and exhibits a notable association with aggregate-level uncertainties. However, assessing the impact of political risk poses challenges due to the limitations of company-level data and the diverse political issues that may predominantly affect enterprises. Hassan et al. (2019) conducted a comprehensive analysis based on 178,173 regularly scheduled quarterly earnings conference calls with financial analysts and stakeholders. They collected responses from 7,357 US public companies on their past, current, and future actions between 2002 and 2016.

Their findings indicate that idiosyncrasies at the firm level influence the broader economy. Businesses facing higher PRisk are more likely to tend to engage in lobbying activities to build political connections and contribute to political campaigns. For every standard deviation increase in risk, lobbying activity on the relevant topic in the next quarter increases by 11%. Thus, based on the results, political risk and lobbying activities are persistent factors within stakeholders and businesses. Additionally, any escalation of risk will be positively associated with the company's political risk exposure, which could potentially lead to stock return volatility, lower investments, higher unemployment rates, and other adverse consequences.

The study found that when PRisk is dispersed, financial or other frictions may not escalate significantly. Corporations would strategically cultivate political connections and leverage lobbying effects to mitigate PRisk. Therefore, researchers imply PRisk as a metric to investigate various aspects of firm performance and corporate decision-making.

2.2.3. Firm level Political Risk and Corporate Performance

Since the firm-level political risk index introduced by Hassan et al. (2019), several studies have implied this measure to investigate various aspects of corporate performance, yielding diverse outcomes. Primarily, acquirers observe to adjust their deal announcement to respond to the election uncertainty. Chen et al. (2023) found that acquirers may choose to either postpone or make beforehand deal announcements, relocate targets away from constituency, shrink deal sizes during election periods, and also change the way of financing from equity to cash. This underscores the impact of funding considerations on companies' responses to election-related uncertainty, particularly affecting acquirers with stricter financial requirements and a higher likelihood of equity funding.

Furthermore, a recent study focusing on the US market explored the interplay between lenders and borrowers in the credit markets using transaction data. Gad et al. (2022) investigated how network effects propagate political risk throughout the economy. Political risk, transmitted to borrowers through loan agreements, influences firms' investment decisions at the lender level. According to empirical evidence, a rise in PRisk reveals the company's vulnerabilities, including financial constraints and investment delays, which promotes managers to preserve more cash regardless of financial constraints (Hasan et al., 2022). In addition, another study emphasised that due to various mechanisms, including information asymmetry and capital structure adjustment, there is a positive correlation between the increase in a company's PRisk and its default, and lobbying activities have become a potential strategy to reduce PRisk and prevent default risk (Islam et al., 2022).

Previous studies investigated that during the political uncertainty corporate investments will be delayed, which includes M&A (Jens, 2017; Nguyen and Phan, 2017; Bonaime et al., 2018; Choi et al., 2022). Successful political lobbying has been shown to mitigate detrimental effects on business investment and reduce political risk (Choi et al., 2022). However, there is limited research examining how firms adjust their investment plans to mitigate political risk. Additionally, the relationship between company tax evasion and managers' discourse on political matters during earnings conference calls has been investigated. Liu et al. (2022) found that managers engage in aggressive tax planning in response to political risk disclosure requirements. Moreover, Meier and Smith (2023) utilised the tax residence model to explore the phenomenon of US firms engaging in cross-border M&A to capitalise on tax havens offering lower effective tax rates. Furthermore, firms either experiencing political uncertainty or firm-level political risk are more likely to tend to engage in corporate tax avoidance (Hossain et al., 2023; Liu et al., 2022). Hossain et al. (2023) investigated the relationship between management behaviour and PRisk; their findings reveal a favourable association between firm-level political risk and corporate tax evasion.

2.2.4. Tax Avoidance

Given the diverse interpretations of corporate tax avoidance across organisations and individuals, it remains a contentious topic. Nevertheless, governments are actively pursuing measures to narrow the tax gap to bolster revenue, thereby perpetuating ongoing debates (Hanlon et al., 2010). To scrutinise the impacts of tax avoidance on business decisions and shareholder returns, Hossain et al. (2023) outlined four corporate tax evasion methods: cash effective tax rate (CASH ETR), generally accepted accounting principles effective tax rate (GAAP ETR), unrecognised tax benefits (UTB), tax avoidance prediction score (SHELTER), and discretionary permanent book tax difference (DTAX). They found a significant correlation between corporate tax evasion propensity and increased PRisk. Similarly, another study examined three tax evasion strategies: CASH ETR, GAAP ETR, and UTB, indicating that the political orientation of managers has a positive impact on the active implementation of tax policies (Liu et al., 2022).

Emerging literature underscores US acquirers' preference for cross-border M&A via tax havens (Meier and Smith, 2023). A recent study argues that tax evasion through tax havens affects companies' participation in overseas transactions. The researchers used a complex algorithm that takes into account the residence laws of 150 countries to accurately assign tax residence, thereby reassigning the tax residence of a significant portion of companies compared to the typical proxy method, significantly changing previous conclusions. For instance, in a cross-border M&A involving a US acquirer, a reassigned acquirer accounted for sixteen per percent of the deal value. Additionally, reassigned enterprises frequently exhibit different effective tax rates compared to other firms, particularly in certain jurisdictions. The study examined seven havens, including two small havens (the Cayman Islands and Bermuda) and five large havens (Hong Kong, Ireland, the Netherlands, Singapore, and Switzerland) (Meier and Smith, 2023).

2.2.5. Hypothesis Developments

Political and economic policy uncertainty are notable ways to gauge uncertainty overall, although their effects on company performance differ. Economic policy uncertainty (EPU) has a detrimental effect on the volume of mergers and acquisitions (M&A) (Bonaime et al., 2018; Nguyen and Phan, 2017). However, according to a study, political uncertainty (PU) has a favourable impact on M&A announcements since managers think that because investors are

not paying as much attention, they may build an empire without having to react immediately (Julio and Yook, 2016). Duchin and Schmidt (2013) concur that M&A and uncertainty have a beneficial association, suggesting that M&A is driven by managers seeking to establish an empire, believing that waves of M&A create instability at the company level. Harford (2005) indicates that industry defaults in clusters will drive merger waves.

Finding a likelihood of M&A under PRisk is our initial hypothesis. Furthermore, based on a recent study, US acquirers prefer to bid on target companies based on tax residency (Meier and Smith, 2023). We will thus analyse the possibility that acquirers will purchase companies located in tax havens. Lastly, we will examine how the intersection of PRisk and Cash ETR affects bids and transaction likelihood in tax havens. In doing so, we will develop the following hypotheses:

H1: Firms with high PRisk are more likely to engage in M&As.

H2: Acquirers with high PRisk are more likely to target firms in tax havens.

Moreover, because waiting is an expensive alternative, according to the real option theory (Pástor and Veronesi, 2012), the completion period would get shorter as uncertainty rose (Bonaime et al., 2018). In a similar vein, acquirers face significantly more obstacles when trying to cope with constraints and obtain money from other sources (Nguyen and Phan, 2017). The likelihood of a transaction varies, and bids and targets are subject to the influence of macro factors that exert a substantial effect on overall performance. According to Gregoriou et al. (2021), acquirer offer ratios will drop by 6.56% for every standard deviation increase in a target region's PU. Additionally, for those acquirers who invest in cross-border deals, the PU of the home country would increase by 6.09%. There will be an 18.7% increase in volume and a 4.6% decrease in the number of inward cross-border transactions when the monthly EPU Index rises by 1% (Paudyal et al., 2021). Furthermore, it might alter business operations like profits and

stock volatility, as well as investment choices like volume, withdrawals, and outstanding transactions. For example, PU, capital expenditures, and M&A were found to have a substantial adverse association by Gulen and Ion (2016). They discover that the likelihood of enterprises becoming acquisitive typically decreases by 5.8% for every standard deviation increase in EPU. Moreover, during the gubernatorial elections, there was a significant negative association between capital spending and PU (Julio and Yook, 2016). We will utilise the ordinary least squares (OLS) model to determine if PRisk affects deal value and completion time.

H3: Firms with high PRisk, prefer the option of delaying deals for extended periods to complete them.

H4: Firms with high PRisk and facing CASH ETR prefer to reduce deal value.

2.3. Data and Methodology

In this section, we will describe the firm-level political risk index (Hassan et al., 2019) and cash effective tax rate (Meier and Smith, 2023) as well as US cross-border mergers and acquisitions data and accounting data for each acquirer. We conclude our data for industry-level and firm-level control variables. And in all regressions, standard errors are clustered at the firm level.

2.3.1. Sample Data

In the following section, we will first provide the summary statistics of the entire sample data, excluding financial industries that are heavily regulated. Second, we will present the number of target nations during the sample period and the frequency of being targeted. Third, we will indicate the overall likelihood of deal transactions under firm-level political uncertainty risks. Additionally, we will examine the likelihood that US acquirers will bid on target firms from tax havens. Then, we will report the additional relationship between political risk at the firm level and cross-border performance in a detailed manner, including the payment type

while facing high and low PRisk. Finally, we will redo all the investigations by adopting Cash ETR and determining how and whether it affects cross-border M&A performance differently from PRisk. We will then employ PRisk and Cash ETR intercepts to explore whether the results driven by PRisk are mitigated.

To do so, we are using 2,464 deals from 51 target nations between January 2003 and December 2022, obtained from the Thomson Reuters database. The accounting data is gathered from Compustat. This sample of M&A data was collected after applying the criteria below:

- Include all cross-border M&As by U.S. public firms from 2003 to 2022 (Thomson Reuters).
- 2) Bidder acquired at least 50% of the target firm in the transaction.
- 3) Accounting data are available in Compustat.
- 4) Firm-level political index at: <u>https://www.firmlevelrisk.com/download</u>.

2.3.1.1. Summary Statistics

Table 1 presents the summary statistics of the overall sample and M&A subsample, as well as the correlation between the main variables. The following tables show summary statistics for the aggregate sample and M&A subsample as well as the correlation between main independent variables and control variables.

2.3.1.2. Target Nation

The following table indicates the number of deals in which target countries were involved within the sample period. There are 2,464 deals, and 51 target nations are engaged. The overall frequency of targets to be acquired is 878 times, while the frequency of the nations targeted varies; the United Kingdom remains the most popular target nation, with bids up to 195 times, while Canada accounts for 162 times of being targeted by the United States, which takes

account of 40% of all. There are eighty-nine deals in tax havens, which contribute 10% of the total bid; however, the overall deal value in tax havens consists of 12% of the overall value.

2.3.2. Main Variable

2.3.2.1. Measuring Firm-Level Policy Uncertainty (PRisk)

The primary interest of this paper is the firm's political risk impacts on mergers and acquisitions. We will use the firm-level political risk index which was developed by Hassan et al. (2019) to measure the policy risk exposure of individual firms. Researchers use text analytics in quarterly earnings call transcripts to measure political risk exposure. They use a pattern-based ordinal enumeration developed by computational linguistics to differentiate between political and non-political problems, where P stands for the political topic and N represents the non-political topic. Besides, count the number of bigrams related to the political topic in up to ten words, like risk or uncertainty, then divide by the total number of bigrams in the transcript from the quarterly earnings conference call, following the formula below:

$$PRisk_{it} = \frac{\sum_{b=1}^{B_{it}} (1[b \in P \setminus N] * 1[|b - r| < 10] * \frac{f_{b,P}}{B_{P}}}{B_{it}}$$

where 1 [•] is the indicator function, P\N means bigrams included in P but excluded in N, and r is a synonym for risk or uncertainty. In the above equation, the first two terms account for the frequency of bigrams shown among the political topic discussions adjacent to synonyms (ten words or less) for risk or uncertainty. The third term also assigns each bigram a score that reflects how relevant it is to political topic discussions (the third term in the numerator), whereas the bigram b in the political training library and is the total number of bigrams in the political training library. Thus, it is the political risk measurement where a weighted sum of bigrams specifically for risks related to political topics in conference quarterly earnings calls.

2.3.2.2. Cash Effective Tax Rate (Cash ETR)

The measurements of a corporation's tax residence have been discussed crucially due to various ways of determining its residence; some nations determine firms' tax residence based on the area of incorporation, while some others take into account the location of the firm's headquarters. Due to the lack of a company-level tax residence database, studies often use a unified term for the company's place of incorporation, headquarters, or centre of business activities. To accurately determine tax residence, the researchers used a unique algorithm that embeds the residence laws of 150 countries. This approach alters the tax residency of a substantial portion of businesses compared to conventional proxies and shows that this has a major impact on conclusions. For example, in cross-border M&A involving a US acquirer, reassigning an acquirer accounts for 16% of the deal value.

Furthermore, reassigned businesses consistently differ from other businesses in several ways, including effective tax rates. Specifying a company's tax residence when it is incorporated and has its headquarters in several nations, rather than assuming it, Meier and Smith (2023) are the first to quantify a firm's tax residence directly. First, they create a panel of tax laws for 150 nations using EY's Worldwide Corporate Tax Guides and PwC's Worldwide Tax Summaries for Corporate Taxes from 2004 to 2017. Every year, using this reference sheet, they divide all the countries into five groups: incorporation or management and control, incorporation, management and control, does not matter, and no taxes.

Using novel tax residence data, the authors investigate 13,307 cross-border, tax-haven mergers and acquisitions (M&A) from 1990 to 2017, totalling \$4.1 trillion in deal value, or 29% of cross-border M&A volume. \$2.4 trillion of the \$4.1 trillion exceeds their prediction based on a gravity model with economic fundamentals. Tax-haven M&A results in \$30.7 billion in recurring annual tax avoidance. To illustrate the magnitude, a US firm buying an Irish firm worth 5% of its assets would experience a 3.32 percentage point decline in its effective tax rate.

Their results document that tax avoidance through havens is a significant determinant of crossborder M&A (Meier and Smith, 2023).

2.3.2.3. Other variables

In this paper, we first adopt firm-level political risk as the main independent variable to identify whether and how it affects M&A. PRisk indexes are shown as quarterly data; we sort them by annual mean data to match our annual accounting data, which include total assets, cash asset ratio, leverage, liquidity, book-to-market ratio, and turnover ratio as control variables. Regarding the fixed effects variables, we only obtain the SIC 2-digit industry data while excluding the heavily regulated financial industry and involving year-fixed effects. Besides, we also consider the cash effective tax rate and tax havens from the prior studies. Additionally, based on our research questions, in the following section we examine the deal completion period, payment type, and the acquirer's shareholder's return under the high and low PRisk as well as the Cash ETR.

2.3.3. Methodology

Motivated by Hassan et al. (2019), firm-level measurement captures the firm-level variations in political risk. In this study, we will explore the economic impact of firm-level political risk on cross-border M&As. We use the logit model to simulate the probability of a deal being disclosed in year t as a function of industry-level controls in year t-1 and firm-level political risk. We also explore the probability that bidders seek targets in tax havens or not. We additionally investigate the effects on deal size and time to completion of whether acquirers pay with cash or stock during the acquisition and how these change in high and low PRisk. Lastly, we look at the shareholder's CARs from the acquirer side. Every test that the subsample evaluated categorised the high- and low-PRisk based on the median PRisk. Using the same process, we assess if and how the cash effective tax has an influence on M&A and, if so, how.

By doing so, we use the following logit model to test **H1** and **H2**, the likelihood of crossborder M&A and the target firms from tax havens.

 $M\&A_{dummy_{i,t}} = \alpha + \beta * PRisk_{t-1} + \lambda * C_{i,t-1} + \gamma * Industry_{fe} + \delta * Year_{fe} + \varepsilon_{i,t}$ (1) Tax Havens_{dummy_{i,t}} = \alpha + \beta * PRisk_{t-1} + \lambda * C_{i,t-1} + \gamma * Industry_{fe} + \delta * Year_{fe} + \varepsilon_{i,t} (2)

where *M&A_dummy* or Tax *Havens_dummy* is an indicator that equals 1 if a firm i merged at least once in a year, t, and 0 otherwise. PRisk is the firm-level political risk variable, measured as the ratio of earnings calls by devoting discussion to risk within political topics, including eight topics that involve economic PRisk, environmental PRisk, technological PRisk, tax PRisk, trade PRisk, institutional PRisk, health PRisk, and security PRisk. All these indexes are indicated quarterly based on conferences; thus, we manually calculate the index in an annual average sense. Then, we will investigate how those risks, including year-fixed and industry-level effects, affect the dependent variable. We will continue to evaluate the impacts that CASH ETR and intercept have on the likelihood of acquirers targeting firms in tax havens.

Additionally, based on our hypotheses and developments above, we will test H3 and H4 by adopting the following OLS regression model to investigate the impacts of PRisk on the US cross-border transaction complete period and the deal value.

 $\begin{aligned} \text{Completion time}_{i,t} &= \alpha + \beta * \text{PRisk}_{t-1} + \lambda * \text{C}_{i,t-1} + \gamma * \text{Industry}_{fe} + \delta * \text{Year}_{fe} + \\ \text{Stock}_{dummy} + \text{Cash}_{dummy} + \epsilon_{i,t} \end{aligned} \tag{3}$

 $LnDealSize_{i,t} = \alpha + \beta * PRisk_{t-1} + \lambda * C_{i,t-1} + \gamma * Industry_{fe} + \delta * Year_{fe} +$ $Stock_{dummy} + Cash_{dummy} + \epsilon_{i,t}$ (4)

where *Completion_time* is the number of days calculated from the effective date minus the announced date; it takes deal j of firm i from its announcement in year t to its effectiveness date. *Deal Size* is the value of a deal, and we take the logarithm into account. C is the control variable, which involves total assets, cash ratio, liquidity, leverage, book-to-market ratio, and turnover ratio. Fixed effects include fiscal year and industry-level effects. We will continue to assess the impacts of CASH ETR and intercept on deal completion time and deal volume.

2.4.1. Baseline Results

2.4.1.1. The Likelihood of Cross-border Mergers and Acquisitions

In our research, we find that firm-level political risk negatively affects the overall performance of cross-border M&A, in line with previous literature (Nguyen and Phan, 2017; Bonaime et al., 2018). Our findings indicate that the likelihood of cross-border transactions decreases by 3.54% for all sample enterprises when they face PRisk (Column 1). Similarly, in the high PRisk subsample, we find that the preference for transactions decreases by 3.44% (Column 4); both results are significant at the 10% level. By contrast, the likelihood of acquisition rises by 23.86% for low-PRisk enterprises, significant at the 5% level (Column 7).

We discover that, across every sample, Cash ETR has a significant positive impact on the likelihood of US cross-border transactions. When firms face a cash-effective tax rate, their likelihood of being an acquirer increases by 18.65%, which is significant at the 1% level. Additionally, when firms face PRisk while paying tax, the negative impact of PRisk is moderated, and corporations' willingness to bid on cross-border deals increases by 16.77% (Column 3).

Moreover, we continuously find similar results in the high PRisk subsample, where the likelihood of transactions increases by 19.12% when firms face tax payments and the decision to engage in cross-border deals increases by 15.49%, successfully mitigating the negative impacts of PRisk on the possibility of transactions (Column 6) (refer to Table 3).

Table 3. The likelihood of Cross-border M&A

2.4.1.2. The Likelihood of Target Firms in Tax Havens

In line with prior research, corporations facing policy uncertainty reduce their corporate investments (Bonaime et al., 2018; Nguyen and Phan, 2017). Companies with high PRisk exhibit significant negative effects on the likelihood of bidding for target firms in tax havens, both in the overall sample and the M&A sample. Specifically, the willingness to buy a tax haven firm decreases by 23.36% in the overall sample (Column 1) and by 21.57% in the M&A sample with a one standard deviation increase in PRisk (Column 7).

However, when these companies face both PRisk and Cash ETR, the likelihood of purchasing target companies in tax havens increases significantly. This results in an increased desire to acquire by 48.29% in the combined sample (Column 3) and by 26.49% in the M&A sample (Column 9). In the high PRisk subsample, the evidence is even stronger: the likelihood of transactions decreases by 29.6% with a one standard deviation increase in PRisk (Column 4), which is a 6.24% lower overall probability. Additionally, the propensity for involving cross-border M&As declines by 22.5% for firms facing both high PRisk and tax rates, but the preference for bidding on tax haven firms is slightly higher by around 1% compared to the average (Column 6).

When firms face only PRisk, the likelihood of transactions in tax havens drops by 25% (Column 10). However, when facing both high PRisk and high tax rates, the probability of engaging in transactions in tax havens decreases by approximately 30% (Column 12), mitigating 5% of the negative effects on the likelihood of such transactions.

Our findings are in line with a prior study which shows U.S. acquirers are considerably inclined to bid for targets in tax havens when U.S. corporations are subject to taxation (Meier and Smith, 2023). We discover that other factors have a considerable impact on transaction incentive in addition to PRisk and tax avoidance. For instance, we find that firms with higher

total assets are up to 30% more likely to engage in cross-border transactions in both overall and high- and low PRisk subsamples. However, aside from total assets, other control variables in our sample—such as liquidity, leverage, book-to-market ratio, and turnover ratio—show significant negative impacts on the likelihood of transactions across all sample tests (refer to Table 3).

Table 3. The likelihood of Cross-border M&A (Cont'd)

2.4.2. Further Test

2.4.2.1. Payment Types during the Transactions

Higher stock price volatility is linked to policy uncertainty (Baker et al., 2016). Corporations tend to prefer stock payments when facing policy uncertainty, which exacerbates their financial constraints. Moreover, acquirers show a preference for paying a higher proportion of stock in such situations (Nguyen and Phan, 2017). However, based on our sample results, we did not find significant determinants indicating that PRisk substantially impacts the decision to pay with cash or stock.

Nevertheless, we found evidence that, across the entire sample, corporations under PRisk will reduce the percentage of stock paid in transactions by 25.55% (Column 1). When firms under PRisk also need to pay corporate tax, the percentage of stock payments declines by 97.14% (Column 3). These results are consistent in high PRisk subsample tests (Columns 4 and 6). The percentage of cash paid during transactions under PRisk alone decreases by 63.47% (Column 7), while facing both tax payment and PRisk, the percentage of cash payments in transactions drops by around 42.13% (Column 9). These results are again consistent in the high PRisk subsample (Columns 10 and 12) (refer to Panel A in Table 4).

In the M&A sample, we find that firms prefer to pay with pure stock up to 11.96% under significant PRisk (Column 1). However, the likelihood of stock payment decreases by 41.78%
when facing both tax payment and PRisk (Column 3), with similar results found in the high PRisk sample test (Columns 7 and 9). By contrast, the likelihood of pure cash payment in overall and subsample tests shows a positive effect when considering either PRisk alone or both factors (refer to Panel B in Table 4).

Table 4. The Payment Type

Table 4. The Payment Type (Cont'd)

2.4.3. Deal Value and Time to Completion

The economy suffers from policy uncertainty. The findings corroborate earlier research showing that a rise in uncertainty significantly reduces deal size (Nguyen and Phan, 2017). Bonaime et al. (2018) indicate that if policy uncertainty (PU) increases by one standard deviation, it will decrease the overall deal value by 6.6%. Additionally, when economic policy uncertainty (EPU) increases by one standard deviation, it reduces the M&A transaction value by an average of \$30.1 million (Nguyen and Phan, 2017). Our data indicates that deal value will drop by 12.1% for every standard deviation increase in firm-level political risk (PRisk) (Column 1). Furthermore, companies that must pay taxes under PRisk will reduce deal size by about 18.86% (Column 3), and these results remain consistent under high PRisk (Columns 4 and 6).

Regarding the completion period, our sample data shows inverse results under significant PRisk compared to Nguyen and Phan (2017), who find that PU and time to completion have a positive correlation (Column 7). However, when firms face tax payments under PRisk, the completion period becomes longer, which aligns with Nguyen and Phan (2017) (Column 9). Similar results are observed in the high PRisk subsample test (Columns 10 and 12) (refer to Table 5).

Table 5. Deal Value and Time to Complete

2.4.4. Endogeneity Test

If there is a causal relationship between firm-level political risk and cross-border transactions, the endogeneity problem may have an adverse impact on it. For example, any significant exogenous shock that causes uncertainty may have a significant impact on PRisk but not immediately on cross-border transactions. Furthermore, an unidentified factor associated with PRisk may influence the probability of cross-border deals, causing a spurious correlation. Early studies to further gain insight about these endogeneity problems should adopt propensity score matching (PSM) and two-stage least squares (2SLS) methods while investigating the relationship between firm-level political risk and corporation performance (Islam et al., 2022; Hassan et al., 2022; Hossain et al., 2023).

We accomplish this by using two distinct identification techniques. First, we use propensity score matching to reduce heterogeneities between high- and low-PRisk firms. Secondly, in line with early research (Hsu et al., 2015; Hossain et al., 2023), we imply the industry mean of political risk (IND_PRisk) as our instrumental variable in our first stage of the two-stage least squares test.

2.4.4.1. Propensity Score Matching (PSM) Model

To alleviate potential causal effects caused by function misspecification and systematic variations in firm characteristics, we employ the Propensity Score Matching (PSM) approach developed by Rosenbaum and Rubin (1983). In line with previous studies examining whether corporate default risk can be mitigated via PRisk (Islam et al., 2022) or whether PRisk impacts the preference of holding cash (Hasan et al., 2022), we classify firms with high and low PRisk based on the median PRisk, considering high PRisk (above median) as the treatment and low PRisk (below median) as the control.

Following this structure, we match the probability of cross-border M&A firms using a PRisk dummy variable, where high PRisk equals one and low PRisk equals zero. Initially, we investigate the probability of firms with high PRisk and then use the PRisk dummy to estimate the propensity score, controlling for all explanatory variables included in the baseline models in Table 3. The results are shown in Table 6. Next, we match each observation with high and low PRisk using the closest propensity score, ensuring that the maximum difference between the propensity scores of each firm observation and its matched peer does not exceed 0.1% in absolute value.

To verify, we re-run the logit regressions in the post-match sample to ensure that the treatment and control firms are identical. The evidence shows no apparent distinctions in the firm characteristics of the categories. The post-match empirical results indicate that PRisk negatively correlates with the volume of US cross-border transactions, decreasing by 3.53% for the entire sample (Column 1). Conversely, firms facing Cash ETR under PRisk exhibit a significant positive influence on US acquirers' propensity to bid on foreign companies, with a 16.77% rise in their willingness to be bidders (Column 3), and these results remain consistent in the post-PSM sample (Columns 4 and 6).

Furthermore, firms under PRisk only show a 23.34% decrease in the willingness to bid for target firms in tax havens (Column 7). This effect is even stronger for firms facing both PRisk and tax payments, with a 48.29% increase in the likelihood of bidding on tax haven firms (Column 9), and these results are similarly indicated in the post-PSM sample test (Columns 10 and 12). Our findings suggest that eight additional components reinforce this idea. In summary, our baseline results are verified: firms facing PRisk alone negatively affect the probability of cross-border transactions. However, if firms face both PRisk and tax payments, the negative impacts of PRisk on transaction likelihood are moderated in every sample, as supported by post-PSM analysis (refer to Table 6).

Table 6. PSM Sample

Table 6. PSM Sample (Cont'd)

2.4.4.2. Instrumental Variable (IV) Approach

Consistent with previous studies, we adopt the instrumental variable (IV) technique (Islam et al., 2022; Hasan et al., 2022; Hossain et al., 2023) to further mitigate potential endogeneity problems. PRisk is generally countercyclical, and political stability and uncertainty affect cross-border M&A and PRisk. Scholars have studied the link between PRisk and cash holdings using two-stage least squares (2SLS) and found that they are positively correlated (Hasan et al., 2022), suggesting that the party conflict index (PCI) is an IV. This method has also been used to test the significant negative effect of PRisk on corporate default risk.

As addressed by Hassan et al. (2019), industry-level policy uncertainty, regulatory uncertainty, local political and policy uncertainty, and idiosyncratic circumstances may affect PRisk. Since our main goal is not to conduct research at the national level, we use the average value of industry risk preference (IND_PRisk) as an instrumental variable. The evidence suggests that there is a significant positive relationship between IND_PRisk and PRisk, although PRisk still has a sizable negative impact on the likelihood of US cross-border deals, reducing its overall deal preference by 47.32% (Column 2). Moreover, the reverse effect on the likelihood of US acquirers bidding for tax havens remains valid, decreasing by 55.25% (Column 4) (refer to Table 7).

Table 7. Two Stage Test

2.5. Robustness Test

This section includes robustness tests that we conducted. Previous studies show that political uncertainty significantly reduces US M&A activity (Nguyen and Phan, 2017;

Bonaime et al., 2018). Conversely, some studies find that external factors can mitigate PRisk. Additionally, recent research has examined US firms' preferences for acquiring target entities from tax havens when facing taxation (Meier and Smith, 2023).

To strengthen our analysis, we excluded Canada and the UK, which together account for about 40% of all M&A transactions, from the sample. Our findings demonstrate that PRisk significantly reduces the likelihood of M&A in tax havens by 23.89% (Column 1). Conversely, supporting the findings of Meier and Smith (2023), who indicate that businesses prefer to bid on tax haven firms, we find that the negative impact of PRisk on the likelihood of transactions within tax havens is significantly mitigated, driving transactions above 106% (Column 3). Furthermore, by evaluating eight components of political risk, we also discover comparable results (refer to Table 8).

Table 8. Robustness Test

Table 8. Robustness Test (Cont'd)

2.6. Conclusion

This study highlights the vital determinants that adopt firm-level indicators rather than overall macroeconomic ones – the Economic Policy Uncertainty Index (EPU) – and shows that firm-level political risk (PRisk) has a strong inverse impact on US cross-border M&A activity. The PRisk Index, based on text analysis of earnings conference calls, reflects complex perceptions of complex factors such as trade tensions, regulatory changes, health crises, and tax uncertainty, which directly affect the strategic choices of individual firms. The results support previous research that policy uncertainty can hinder investment, as an increase in PRisk generally reduces firms' opportunities to conduct transactions, especially in tax havens (Bonaime et al., 2018; Nguyen and Phan, 2017).

In this paper, we evaluate the performance under firm-level political risk and the likelihood of US cross-border M&A by adopting the approaches of Bonaime et al. (2018) and Nguyen and Phan (2017). However, our study differs in two important ways: first, we use a firm-level political risk index that explains up to 90% of firm-level uncertainty; second, our sample covers cross-border transactions in the United States, including both domestic and foreign transactions. Our results show that PRisk is negatively correlated with M&A likelihood, which is consistent with previous research on domestic uncertainty (Bonaime et al., 2018; Nguyen and Phan, 2017). This further supports the theory of Meier and Smith (2023) that taxes significantly affect cross-border trade in the United States. We also include the cash effective tax rate (Cash ETR), which is consistent with other studies and is effective in reducing firm-level political risk and is positively associated with the likelihood of US acquirers bidding in tax havens even when PRisk is high.

In addition, the results also show that companies engage in a strategic balancing act between perceived risk and tax advantages and are more inclined to pursue tax advantages when effective tax rates are low and public risks are high. Although some companies still explore tax havens for certain strategic reasons, the willingness to conduct cross-border mergers and acquisitions will decline as public risks and tax rates rise. Although financial factors such as leverage and liquidity generally have a negative impact on transaction activities, larger companies with more assets are more inclined to conduct international business. In summary, the results highlight that in an unpredictable political and tax environment, risk perception and financial stability at the corporate level are crucial in influencing overseas transaction decisions.

This study finds that there are several implications for policymakers. First, there is evidence that firms with higher PRisk are less likely to target tax havens, which means that increased political stability and openness may encourage more cross-border M&A and international investment. Open regulatory frameworks and consistent policy implementation are two strategies that policymakers should consider when attracting foreign direct investment. In addition, understanding how firms strategically deal with tax and political issues suggests that developing a stable and balanced tax code is essential to reducing uncertainty and fostering a safer international investment environment.

Future research should examine the different impacts of various political risks (e.g., trade, regulatory, or health-related crises) on business behaviour across industries and regions. The dynamic impact of political risk, especially in unstable geopolitical environments, may be a topic for future research. In addition, incorporating more firm-specific factors, such as ownership structure or corporate governance, may provide a better understanding of how a company's internal characteristics affect how it responds to external political threats. In summary, broadening the scope of research to include longitudinal analysis and more detailed risk dimensions may help us better understand the complex relationship between business strategy and the political environment.

Table 1. Summary Statistics

Note: This table summarises Hassan et al.'s (2019) firm-level political risk from January 2002 to March 2022, including its eight components. Panel A and B include the number of overall samples and M&A subsample observations (i.e., N), mean, and standard deviation (i.e., sd) for the key variables used in our regressions. Panel C represents a correlation matrix for use to investigate the dependence of all variables in the research. All control variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Summary Statistics (All Sample)									
Variables	Ν	Mean	Sd	Min	Max				
PRisk	40,164	1.148	1.233	0	7.136				
Environment PRisk	40,164	34.88	46.26	0	287.8				
Economic PRisk	40,164	32.82	38.17	0	231.2				
Trade PRisk	40,164	24.73	35.85	0	231.5				
Institutions PRisk	40,164	20.90	26.66	0	166.2				
Health PRisk	40,164	30.29	42.84	0	288.1				
Security PRisk	40,164	30.78	37.14	0	227.7				
Tax PRisk	40,164	31.45	38.97	0	237.9				
Technology PRisk	40,164	23.99	30.47	0	187.1				
Cash Asset Ratio	40,164	0.137	0.151	0	0.977				
Total Assets	40,164	7.066	1.993	-3.101	12.31				
Leverage	40,164	0.557	0.449	0.0255	28.46				
Liquidity	40,164	2.638	2.647	0.0131	35.43				
Book to Market	40,164	0.472	0.889	-11.61	4.305				
Turnover Ratio	40,164	0.475	0.413	0	2.421				
Cash ETR	40,164	0.148	0.374	-1.466	1.925				

Panel B: Summary Statistics (M&A Subsample)								
Variables	Ν		Mean	(Sd	Min		Max
PRisk	11,200	1	1.075	1.	086	0		6.273
Environment PRisk	11,200		31.54	38.79		0		237.5
Economic PRisk	11,200		30.52	33	3.04	0		201.4
Trade PRisk	11,200		24.32	34	4.01	0		219.5
Institutions PRisk	11,200		19.16	22	2.88	0		141.3
Health PRisk	11,200		26.61	33	3.05	0		213.7
Security PRisk	11,200		28.64	32	2.28	0.116		195.4
Tax PRisk	11,200		30.19	35	5.26	0		211.4
Technology PRisk	11,200		22.15	25	5.62	0		154.0
Cash Asset Ratio	11,200		0.137	0.	132	0.00136		0.753
Total Assets	11,200		7.508	1.	954	1.200		12.81
Leverage	11,200		0.518	0.	246	0.0702		1.974
Liquidity	11,200		2.647	2.	047	0.498		14.23
Book to Market	11,200		0.444	0.	385	-0.813		2.263
Turnover Ratio	11,200		0.380	0.	308	0.00347		1.495
Cash ETR	11,200		0.180	0.	418	-1.788		2.269
Completion	505		7.344	1.	138	3.738		8.702
Deal Size	878		4.287	1.	813	0.523		8.820
Panel C: Correlations								
	PRisk	Total Assets	Cash Asset Ratio	Liquidity	Leverage	Book to Market	Turnover Ratio	Cash ETR
PRisk	1.000							
Total Assets	0.028***	1.000						
Cash Asset Ratio	0.020***	-0.378***	1.000					
Liquidity	0.003	-0.276***	0.273***	1.000				
Leverage	0.024***	0.094***	-0.159***	-0.394***	1.000			
Book to Market	0.028***	0.004	-0.073***	0.087***	-0.265***	^c 1.000	1 000	
Turnover Ratio	-0.037/**	* 0.108*** 0.000***	-0.2/0***	-0.150***	0.120***	• 0.022***	1.000	1 000
Cash ETR	-0.001	0.089***	-0.053***	-0.016**	-0.020***	* -0.011*	-0.031***	1.000

Table 1. Summary Statistics (Cont'd)

Table 2. Target Nation

between January 2003 and December 2022 (Thomson Reuters).								
Argentina	2	France	56	Norway	11			
Australia	43	Germany	58	Peru	2			
Austria	5	Greece	1	Portugal	2			
Belgium	13	Hong Kong	5	Puerto Rico	2			
Bermuda	1	India	17	Russia	6			
Brazil	19	Indonesia	1	Serbia	1			
British Virgin Islands	1	Ireland	18	Singapore	8			
Bulgaria	3	Israel	43	Slovenia	1			
Canada	162	Italy	17	South Africa	2			
Chile	1	Japan	10	South Korea	7			
China (Mainland)	23	Jersey	1	Spain	14			
Colombia	2	Liechtenstein	1	Sweden	10			
Costa Rica	1	Luxembourg	3	Switzerland	31			
Czech Republic	1	Mexico	7	Taiwan	9			
Denmark	11	Netherlands	26	Turkey	2			
Egypt	2	New Zealand	11	United Kingdom	195			
Finland	8	Nigeria	1	Uruguay	1			

Note: This table represents all the target nations and their frequency of being targeted by US public firms, including bidders who acquired at least 50% of the target firm in the transaction. We are using M&As from 51 target nations between January 2003 and December 2022 (Thomson Reuters).

Total: 878

Table 3. The likelihood of Cross-border M&A

Note: This table presents the results of the likelihood of cross-border M&As by adopting the logit model. In Panel A, we investigated the probability of the overall M&As while considering the firm facing PRisk, Cash ETR, and its intercept. By doing so, first, we separated the sample into high and low PRisk based on the median PRisk. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: The likelihood of M&A										
			De	ep Var = M&A_d	lummy					
		All Sample			High PRisk			Low PRisk		
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
PRisk	-0.036*		-0.034	-0.035*		-0.030	0.214**		0.231**	
	(-1.69)		(-1.54)	(-1.70)		(-1.42)	(2.14)		(2.19)	
Cash ETR		0.153***	0.171***		0.113**	0.175**		0.135***	0.167*	
		(3.59)	(3.11)		(2.04)	(2.02)		(2.62)	(1.74)	
PRisk × Cash ETR			-0.016			-0.031			-0.073	
			(-0.49)			(-0.87)			(-0.38)	
Total Assets	0.312***	0.309***	0.309***	0.354***	0.353***	0.351***	0.279***	0.280***	0.276***	
	(11.28)	(11.16)	(11.16)	(11.14)	(11.13)	(11.05)	(9.14)	(9.22)	(9.06)	
Cash Asset Ratio	-0.198	-0.189	-0.185	-0.124	-0.104	-0.112	-0.512*	-0.485	-0.498	
	(-0.81)	(-0.77)	(-0.75)	(-0.43)	(-0.36)	(-0.39)	(-1.66)	(-1.58)	(-1.62)	
Liquidity	-0.030*	-0.030*	-0.029*	-0.066**	-0.066**	-0.065**	-0.035	-0.034	-0.034	
	(-1.79)	(-1.79)	(-1.77)	(-2.24)	(-2.24)	(-2.20)	(-1.21)	(-1.19)	(-1.19)	
Leverage	-0.885***	-0.875***	-0.869***	-1.363***	-1.355***	-1.344***	-1.096***	-1.080***	-1.077***	
	(-4.08)	(-4.04)	(-4.02)	(-4.72)	(-4.70)	(-4.66)	(-4.14)	(-4.09)	(-4.07)	
Book to Market	-0.086***	-0.086***	-0.085***	-0.314***	-0.315***	-0.309***	-0.405***	-0.397***	-0.398***	
	(-3.00)	(-2.98)	(-2.93)	(-3.55)	(-3.55)	(-3.49)	(-4.19)	(-4.11)	(-4.11)	
Turnover Ratio	-0.557***	-0.551***	-0.555***	-0.482***	-0.475**	-0.479***	-0.607***	-0.606***	-0.606***	
	(-3.58)	(-3.54)	(-3.56)	(-2.59)	(-2.56)	(-2.58)	(-3.56)	(-3.55)	(-3.55)	
Constant	-1.338	-1.373	-1.344	-1.975*	-2.043**	-1.990**	-0.263	-0.214	-0.284	
	(-1.49)	(-1.54)	(-1.51)	(-1.94)	(-2.03)	(-1.96)	(-0.28)	(-0.23)	(-0.30)	
Ν	39,714	39,714	39,714	18,846	18,846	18,846	20,798	20,798	20,798	
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	
SIC-2digits FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	

Table 3. The likelihood of Cross-border M&A (Cont'd)

Note: This table presents the results of the likelihood of cross-border M&As by adopting the logit model. In Panel B, we investigated the probability of the M&As in the subsample while considering the firm facing PRisk, Cash ETR, and its intercept. By doing so, first, we separated the sample into high and low PRisk based on the median PRisk. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. Tax haven dummy: where we manually adopted according to Meier and Smith's (2023) large and small tax haven indices, the tax haven dummy is an indicator that equals 1 if a deal merged in tax havens and 0 otherwise. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel B: The likelihood of Target in Taxhavens													
Dep Var = Taxhavens _dummy													
Variables		All Sample		High PRisk (All Sample)		Sample)	M&A Sample			High F	High PRisk (M&A Sample)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
PRisk	-0.266**		-0.362***	-0.351		-0.575**	-0.243*		-0.323**	-0.288		-0.446*	
	(-2.00)		(-2.77)	(-1.43)		(-2.02)	(-1.74)		(-2.37)	(-1.29)		(-1.89)	
Cash ETR		0.384	0.116		0.127	-0.721		0.234	0.010		-0.055	-0.757	
		(1.32)	(0.37)		(0.20)	(-0.92)		(0.82)	(0.03)		(-0.11)	(-1.25)	
PRisk × Cash ETR			0.278***			0.466***			0.225*			0.398**	
			(2.58)			(2.77)			(1.66)			(2.18)	
Ν	29,075	29,075	29,075	8,470	8,470	8,470	9,114	9,114	9,114	2,615	2,615	2,615	
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
SIC-2digits FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	

Table 4. The Payment Type

Note: This table presents the stock and cash payments. In Panel A, we adopted OLS regression to evaluate the impacts of PRisk, Cash ETR, and its intercept on % of stock or % cash payment. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise. The Cash (or Stock) dummy is an indicator that equals 1 if an M&A deal is funded by cash (or stock) and 0 otherwise. And M&A data and payment type data are collected from the Thomson One Banker Securities Data Company (SDC) database. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A													
Dep Var			% of \$	Stock Paid					% of Cas	h Paid			
		M&A Sample	:	High	PRisk (M&A Sa	mple)		M&A Sample			High PRisk (M&A Sample)		
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
PRisk	-0.295		-0.294	-1.956***		-2.055***	-1.007		-1.760	-1.633		-2.913*	
	(-0.60)		(-0.52)	(-2.80)		(-2.72)	(-0.88)		(-1.33)	(-1.16)		(-1.79)	
Cash ETR		-3.554**	-3.822**		-2.264	-2.899		-0.339	-3.644		0.232	-8.046	
		(-2.55)	(-2.06)		(-1.45)	(-1.30)		(-0.12)	(-0.92)		(0.07)	(-1.61)	
PRisk × Cash ETR			0.268			0.431			3.097			4.892**	
			(0.35)			(0.56)			(1.31)			(2.11)	
Ν	878	878	878	410	410	410	878	878	878	410	410	410	
R-squared	0.279	0.284	0.285	0.402	0.393	0.404	0.500	0.500	0.502	0.579	0.577	0.584	
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
SIC-2digits FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	

Table 4. The Payment Type (Cont'd)

Note: This table presents the stock and cash payments. In Panel B, we applied the logit model to evaluate how PRisk, Cash ETR, and its intercept affect the likelihood of respondents choosing between stock payment and cash payment. The Cash (or Stock) dummy is an indicator that equals 1 if an M&A deal is funded by cash (or stock) and 0 otherwise. The payment type data are collected from the Thomson One Banker Securities Data Company (SDC) database. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel B												
Dep Var		Stock_dumn	ny		Cash_dummy	Y		Stock_dumm	y	(Cash_dummy	
			M&A Sa	ample					High PRisk (M	1&A Sample)		
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
PRisk	0.113		0.091	0.002		0.003	0.026		0.009	0.043		0.050
	(0.68)		(0.51)	(0.05)		(0.06)	(0.16)		(0.05)	(0.75)		(0.76)
Cash ETR		-0.492*	-0.793**		0.095	0.102		-0.356	-0.635*		0.102	0.176
		(-1.76)	(-2.31)		(0.81)	(0.64)		(-0.93)	(-1.89)		(0.62)	(0.54)
PRisk × Cash ETR			0.252			-0.007			0.155			-0.044
			(0.92)			(-0.07)			(1.05)			(-0.32)
Ν	3,596	3,596	3,596	10,980	10,980	10,980	1,189	1,189	1,189	5,126	5,126	5,126
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
SIC-2digits FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table 5. Deal Value and Time to Complete

Note: In this table, we adopted OLS regression to test the impacts of PRisk, Cash ETR, and its intercept on the US cross-border deal size and time to completion. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise. Deal Value, Completion time (effective date minus announcement date), and M&A data were collected from the Thomson One Banker Securities Data Company (SDC) database. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Dep Var		Deal Size					Completion						
		M&A Sample		High PRisk (M&A Sample)			M&A Sample			High Pl	High PRisk (M&A Sample)		
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
PRisk	-0.129**		-0.126**	-0.104*		-0.099	-0.055		-0.103	-2.280**		-2.870***	
	(-2.58)		(-2.28)	(-1.69)		(-1.22)	(-0.88)		(-1.57)	(-2.22)		(-2.83)	
Cash ETR		-0.228**	-0.215		-0.203	-0.231		0.036	-0.099		2.298	-1.425	
		(-2.12)	(-1.34)		(-1.49)	(-1.10)		(0.30)	(-0.64)		(0.99)	(-0.44)	
PRisk × Cash ETR			0.006			0.016			0.133**			2.253*	
			(0.05)			(0.16)			(2.18)			(1.82)	
Ν	878	878	878	410	433	433	505	505	505	410	410	410	
R-squared	0.305	0.302	0.307	0.496	0.472	0.476	0.164	0.162	0.168	0.261	0.253	0.265	
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
SIC-2digits FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	

Table 6. PSM Sample

Note: This table presents the results of the PSM model. We evaluated the PSM sample following the same procedure as above (see Panel A). All the evidence shows that our baseline results remain the same as well as eight components' effects (see Panel B). The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. Tax haven dummy: where we manually adopted according to Meier and Smith's (2023) large and small tax haven indices, the tax haven dummy is an indicator that equals 1 if a deal merged in tax haven indices. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: The likelihood of Cross-border deals and US acquirers Targeting in Tax Havens													
Dep Var			M&	A_dummy			Taxhavens _dummy						
Variables		All Sample			Post-PSM Sam	ple		M&A Sample			Post-PSM Sample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
PRisk	-0.036*		-0.034	-0.036*		-0.034	-0.266**		-0.362***	-0.261*		-0.356***	
	(-1.69)		(-1.54)	(-1.70)		(-1.55)	(-2.00)		(-2.77)	(-1.81)		(-2.63)	
Cash ETR		0.153***	0.171***		0.150***	0.173***		0.384	0.116		0.467	0.157	
		(3.59)	(3.11)		(3.22)	(2.71)		(1.32)	(0.37)		(1.27)	(0.36)	
PRisk × Cash ETR			-0.016			-0.016			0.278***			0.266**	
			(-0.49)			(-0.48)			(2.58)			(2.22)	
Ν	39,714	39,714	39,714	29,959	29,959	29,959	29,075	29,075	29,075	17,738	17,738	17,738	
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
SIC-2digits FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	

Table 6. PSM Sample (Cont'd)

Note: This table presents the results of the PSM model. We evaluated the PSM sample following the same procedure as above (see Panel A). All the evidence shows that our baseline results remain the same as well as eight components' effects (see Panel B). The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. Tax haven dummy: where we manually adopted according to Meier and Smith's (2023) large and small tax haven indices, the tax haven dummy is an indicator that equals 1 if a deal merged in tax havens and 0 otherwise. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel B: The likelihood of Cross-border deals and US acquirers Targeting in Tax Havens								
Dep Var	M&A_0	lummy	Taxhaven	s_dummy				
Variables	(1)	(2)	(3)	(4)				
Environment PRisk	-0.001	-0.001	-0.011**	-0.015***				
	(-1.50)	(-1.31)	(-2.51)	(-2.97)				
Environment PRisk × Cash ETR		-0.001		0.009**				
		(-0.77)		(2.49)				
Economic PRisk	-0.001*	-0.001*	-0.011*	-0.015**				
	(-1.85)	(-1.84)	(-1.74)	(-2.36)				
Economic PRisk × Cash ETR		0.000		0.010**				
		(0.01)		(2.11)				
Trade PRisk	-0.000	-0.000	-0.008	-0.011				
	(-0.50)	(-0.69)	(-1.20)	(-1.22)				
Trade PRisk × Cash ETR		0.001		0.008				
		(0.59)		(1.17)				
Institutions PRisk	-0.002**	-0.002*	-0.007	-0.013**				
	(-1.99)	(-1.96)	(-1.31)	(-1.99)				
Institutions PRisk × Cash ETR		0.000		0.014***				
		(0.04)		(2.75)				
Health PRisk	-0.002***	-0.002***	-0.006	-0.008				
	(-2.65)	(-2.64)	(-1.27)	(-1.53)				
Health PRisk × Cash ETR		0.000		0.007				
		(0.11)		(1.54)				
Security PRisk	-0.002**	-0.002**	-0.013**	-0.017***				
-	(-2.23)	(-2.09)	(-2.25)	(-2.74)				
Security PRisk × Cash ETR		-0.000		0.012**				
-		(-0.43)		(2.47)				
Tax PRisk	-0.000	-0.000	-0.015***	-0.016**				
	(-0.80)	(-0.67)	(-2.67)	(-2.19)				
Tax PRisk × Cash ETR		-0.001		0.004				
		(-0.49)		(0.41)				
Technology PRisk	-0.002**	-0.002**	-0.014	-0.019**				
	(-2.22)	(-2.09)	(-1.54)	(-2.22)				
Technology PRisk \times Cash ETR		-0.001		0.015***				
		(-0.43)		(2.93)				
		()		()				
Ν	29,959	29,959	17,738	17,738				
Controls	YES	YES	YES	YES				
Year FE	YES	YES	YES	YES				
SIC-2digits FE	YES	YES	YES	YES				

Table 7. Two Stage Test

Note: In this table, we unstilled the two-stage least squares (2SLS) method while adopting the IV approach to test whether our main theory still holds by replacing PRisk by IND_PRisk, which was generated by the mean PRisk. In line with early research (Hsu et al., 2015; Hossain et al., 2023), we employ the industry mean of political risk (IND_PRisk) as our instrumental variable in our first stage of the two-stage least squares test. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. Tax haven dummy: where we manually adopted according to Meier and Smith's (2023) large and small tax haven indices, the tax haven dummy is an indicator that equals 1 if a deal merged in tax havens and 0 otherwise. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Dep Var	PRisk	Risk M&A dummy PRisk		Tax Havens dummy		
	A	l Sample	M&A Sample			
Variables	(1)	(2)	(3)	(4)		
IND_PRisk	1.035***		1.105***			
	(0.0428)		(0.0481)			
PRisk		-0.641***		-0.804**		
		(0.101)		(0.404)		
Ν	40.164	40,164	11.200	9.114		
R-squared	0.102	-, -	0.178	-)		
Controls	YES	YES	YES	YES		
Year FE	YES	YES	YES	YES		
SIC-2digits FE	YES	NO	YES	YES		

Table 8. Robustness Test

Note: In this table, we excluded Canada and the UK and reran the test, which consists of a 40% overall sample. The results that intercept will dramatically determine whether US public acquirers will buy target firms among the tax havens that are still held, which were delivered from the baseline and empirical tests. Panel A indicates the robustness test for PRisk impacts on the likelihood of transactions in tax havens. Tax haven dummy: where we manually adopted according to Meier and Smith's (2023) large and small tax haven indices, the tax haven dummy is an indicator that equals 1 if a deal merged in tax havens and 0 otherwise. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A									
Dep Var = Taxhavens_dummy	(1)	(2)	(3)						
PRisk	-0.273**		-0.540***						
	(-2.06)		(-3.31)						
CASH ETR		0.611*	-0.213						
		(1.68)	(-0.38)						
PRisk × Cash ETR			0.935**						
			(2.02)						
Ν	462	462	462						
Controls	YES	YES	YES						
Year FE	YES	YES	YES						
SIC-2digits FE	YES	YES	YES						

Table 8. Robustness Test (Cont'd)

Note: In this table, we excluded Canada and the UK and reran the test, which consists of a 40% overall sample. The results that intercept will dramatically determine whether US public acquirers will buy target firms among the tax havens that are still held, which were delivered from the baseline and empirical tests. Panel B indicates the robustness test for eight PRisk (Hassan et al., 2019) impacts on the likelihood of transactions in tax havens. Tax haven dummy: where we manually adopted according to Meier and Smith's (2023) large and small tax haven indices, the tax haven dummy is an indicator that equals 1 if a deal merged in tax havens and 0 otherwise. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel B		
Dep Var = Taxhavens_dummy	(1)	(2)
Environment PRisk	-0.011**	-0.022***
	(-2.10)	(-2.97)
Environment PRisk × Cash ETR		0.042**
		(2.30)
Economic PRisk	-0.011*	-0.024***
	(-1.91)	(-3.56)
Economic PRisk × Cash ETR		0.043***
		(2.61)
Trade PRisk	-0.008	-0.017**
	(-1.52)	(-2.03)
Trade PRisk × Cash ETR		0.045**
		(2.27)
Institutions PRisk	-0.010*	-0.028***
	(-1.88)	(-3.28)
Institutions PRisk × Cash ETR		0.064***
		(3.14)
Health PRisk	-0.006	-0.014*
	(-1.01)	(-1.68)
Health PRisk × Cash ETR		0.029**
		(2.00)
Security PRisk	-0.014**	-0.027***
	(-2.35)	(-2.83)
Security PRisk × Cash ETR		0.042*
		(1.93)
Tax PRisk	-0.017***	-0.019***
	(-3.15)	(-2.77)
Tax PRisk × Cash ETR		0.004
		(0.26)
Technology PRisk	-0.018**	-0.034***
	(-2.00)	(-3.68)
Technology PRisk × Cash ETR		0.055**
		(2.41)
Ν	462	462
Controls	YES	YES
Year FE	YES	YES
SIC-2digits FE	YES	YES



The Inflation impact on U.S. M&A activity.

This study investigates the impact of excess cash and inflation on US mergers and acquisitions (M&As). To address our research question, we examine a large panel of 6,821 US public firms spanning from January 1990 to April 2023. We find that firms with excess cash are more likely to become acquirers, especially during high inflation periods. By contrast, when inflation is low, or when real interest rate is high, excess cash does not have an impact on the likelihood of M&As. This result may indicate that when the value of cash does not erode quickly, firms are less willing to spend their excess reserves in acquisitions. In support of this argument, we find acquirers are more willing to pay with cash during high inflation periods. Finally, we also find that during inflationary periods, cash-financed acquisitions do not enjoy positive abnormal returns, a finding which contrast the well-established literature regarding the method of payment effects in M&As.

3.1. Introduction

There are diverse determinants of mergers and acquisitions (M&A); recently, excess cash holdings have become an important factor. Previous research shows that companies are more likely to hold excess cash when facing growth opportunities (Opler et al., 1999; Yang et al., 2019), and capital structure changes can motivate bidders and sellers in M&A activities (Bruner, 1988). In addition, increased domestic liquidity and lower financing costs not only significantly promote cross-border transactions (Shleifer & Vishny, 1992; Uddin & Boateng, 2011) but also promote domestic transactions (Erel et al., 2021). Scholars have found that companies holding

excess cash are more likely to make acquisitions when the macroeconomic situation is favourable to reduce sensitivity to macroeconomic factors (Erel et al., 2021). According to Uddin and Boateng (2011), the volume of cross-border M&As is influenced by inflation variability, which is inversely correlated with investment rates (Beaudry et al., 2001) and affects business cycles and the broader economy. While some studies have examined the influence of inflation on M&A activities, limited research has focused on its specific effect on cross-border transactions (Black, 2000). The uncertainty caused by both permanent and temporary inflation can negatively impact corporate investment decisions (Byrne & Davis, 2004), and lower inflation rates tend to attract more foreign acquirers, as high domestic inflation raises the costs of acquiring domestic targets (Uddin & Boateng, 2011). Nevertheless, the effect of inflation on the relationship between cash holdings and M&As remains underexplored. A deeper understanding of how inflation affects decision-making in M&As, particularly among firms with substantial cash reserves, could provide valuable insights into corporate financial strategies. This study is aiming to fill this gap by investigating the role of inflation in these dynamics.

The various factors that influence the type of M&A payment to choose, either cash or stock, include market conditions and company characteristics. Research shows that acquirers strategically choose the type of payment based on perceived market mispricing and growth opportunities. When acquirers believe that the firms are overvalued or there are more favourable investment prospects, they often choose stock payment instead of cash payment (Giuli, 2013; Myers & Majluf, 1984). In contrast, companies with great growth opportunities tend to avoid cash payments, especially when faced with financial constraints and high opportunity costs (Yang et al., 2019). In addition, the preference for cash or stock payment has fluctuated over time, and recent research has pointed out that these trends have reversed (Boone et al., 2014).

Market reactions to the choice of payment method in M&As vary, with cash offers generally receiving more favourable responses compared to stock offers. Cash offers are often interpreted as a positive sign by the market, as they signal the acquirer's confidence in the undervaluation of their firm, whereas stock offers may suggest overvaluation (Jensen & Ruback, 1983; Travlos, 1987). Empirical evidence shows that acquirers who pay with stock tend to experience lower returns, reflecting market scepticism about the firm's valuation (Travlos, 1987). In addition, stock transactions are typically tax-free, allowing shareholders from the sellers to defer capital gains taxes, which may affect the transaction structure (Travlos, 1987). The variation in market reactions highlights the strategic importance of payment methods in M&A transactions.

Mergers and acquisitions are significantly affected by the extent of liquidity and cash holdings, which includes the means of payment and acquisition decisions. Firms that hold excess cash are more likely to be involved in transactions consistently in line with the historical tendency where corporate liquidity drives M&A waves (Shleifer & Vishny, 1992; Erel et al., 2021). Nonetheless, a firm with a potential business expansion opportunity in the near future would prefer to choose stock payments over cash payments to preserve capital, particularly when facing significant opportunity costs (Yang et al., 2019). Stock bidders are frequently underperforming compared to cash bidders in many markets, such as the M&A landscape in China, where the impact of liquidity and payment methods differ (Yang et al., 2019). These results imply that further research is necessary to fully understand how market conditions and liquidity affect M&A outcomes in various circumstances and economies.

However, the link between means of payments, inflation, and M&A performances remains not well explored. The research discovers the impacts of various monetary policies on the likelihood of acquisitions and the choice of payment types. We also explore how firms that hold excess cash tend to participate in value-destroying transactions while facing inflation. This research enriches the understanding of the factors that influence M&A activity and favourable payment methods in different economic conditions while tackling these issues. Additionally, this research will provide valuable insights for policymakers and corporate strategists in many jurisdictions and economies.

To address this gap, we calculate excess cash for each firm using the methodology established by Opler et al. (1999) and Yang et al. (2019) in different economies. This study defines excess cash (XCash) by adopting Opler et al.'s (1999) measure, which takes the difference between actual cash holdings and the optimal cash level. In contrast, another study where scholars calculated the cash ratio by considering cash and marketable securities relative to the total assets while excluding overall cash balance (Bates et al., 2009). Our study provides a more sophisticated view of the influence of excess cash on the probability of mergers and acquisitions.

No study has yet investigated the effect of inflation on mergers and acquisitions (M&As) in the United States. This research addresses that gap by exploring the interaction between inflation and M&A activity in the U.S. context. While Yang et al. (2019) found that firms with high cash reserves in China tend to spend more cash on M&As, our study reveals that U.S. firms with excess cash are more (less) likely to engage in transactions when inflation is high (low). Unlike Erel et al. (2021), who underscore the influence of corporate liquidity and macroeconomic circumstances on the likelihood of M&A, their study concentrates on the direct link between M&A preferences and excess cash via the lens of inflation. Moreover, Boateng et al. (2017) emphasise the crucial factors such as GDP, liquidity, interest rates, and inflation in shaping Chinese firms' cross-border M&A outflows. Nevertheless, their research scope is mainly focused on transactions within the Asia-Pacific region, which constrains the generalisability of their findings.

Furthermore, the empirical approach of this study explores the association between the rate of inflation and U.S. M&A performance. Previous research by Adra et al. (2020) examined the effects of monetary expansionary and contractionary policies on acquirer cumulative abnormal returns around the announcement period (-2, +2) for U.S. domestic M&As between January 1986 and December 2017, involving targets from public firms, private firms, and subsidiaries disclosed. Our research continuously extends this investigation by analysing short-term bidder cumulative abnormal returns and variations based on different payment methods, such as cash and stock payments. Our study includes 6,821 sample deals involving only U.S. public bidders and sellers from Thomson Reuters between January 1990 and April 2023. This extension provides a novel insight into how M&A activities would be affected by inflation rates, contributing to the existing studies that have underscored the critical role of inflation on acquisitions (Black, 2000; Uddin & Boateng, 2011).

According to our research, a rise in the real interest rate causes stock prices to become inflated, leading businesses to prefer cash acquisitions. We observe that as inflation increases by one standard deviation, the likelihood that acquirers will choose a cash payment increases significantly by 18.7%, while a corresponding increase in real interest rates leads to a 16.8% decrease in the likelihood of a cash payment.

Additionally, corporations with higher cash reserves reveal a substantial preference for cash payments, according to a subsample test, which classified based on median excess cash holdings. For example, businesses with excess cash that has increased by one standard deviation, especially during periods of high real interest rates or inflation, are significantly more likely to choose to pay with stock or cash, respectively. To address concerns about endogeneity, we employ two-stage least-squares regression (2SLS) and propensity score matching (PSM) models.

This study makes a few contributions to some underexplored areas in the M&A. It examines the impact of excess cash holdings on the likelihood of M&A by US firms, a topic that has not been studied. Previous studies have mainly focused on other contexts, such as the Chinese market (Yang et al., 2019), leaving a significant gap in the literature on the US market. Our study differs from previous studies, such as Adra et al. (2020), which used the federal funds rate (FFR) as a proxy to examine the impact of monetary expansion and contraction on US domestic transactions. Instead, we use inflation as a monetary proxy to analyse US M&A activity. In addition, although prior studies investigate the impact of FFR cuts on stock returns (Kontonikas et al., 2013) and explore how inflation affects firm decisions and the means of payments leading to differences in shareholder returns (Travlos, 1987), there are still gaps in understanding these dynamics in the M&A context. This paper builds on previous studies to further explore the impact of monetary policy on US domestic transactions to fill these gaps.

This paper follows the following structure: <u>Section 2</u> presents a literature review; <u>Section</u> <u>3</u> outlines data collection and sample selection procedures; <u>Section 4</u> presents empirical tests; <u>Section 5</u> discusses robustness tests; <u>Section 6</u> concludes the study.

3.2. Literature Review

The literature on the relationship between inflation and M&As is rather scarce. However, there are a plethora of papers examining how economic or monetary policy uncertainty impacts the market for corporate control. Recent research by Nguyen and Phan (2017) and Bonaime et al. (2018) has shown that economic policy uncertainties (hereafter EPU, developed by Baker et al., 2016) negatively affect U.S. domestic mergers and acquisitions (M&As). This argument is consistently supported by Husted et al. (2020), who further emphasised the adverse impact of monetary tightening on firm investments, particularly for smaller and riskier companies, by developing a new monetary policy uncertainty (hereafter MPU) measurement. Conversely,

there was no finding about MPU having significant effects on transactions; instead, the study highlighted the crucial role of monetary contraction in negatively influencing US domestic M&A activities (Adra et al., 2020). Similarly, Bolton and Freixas (2006) discussed the role of monetary policy in adjusting corporate funding structures, demonstrating how monetary contraction decreases the likelihood of engaging in transactions. Overall, it appears that both economic and monetary policy uncertainties have a negative impact on M&As. In our study, the focus is not whether a macroeconomic indicator, namely inflation, impacts M&As. Instead, we examine whether inflation can impact the propensity of cash-rich firms to engage in M&As.

3.2.1. Excess Cash, Mergers and Acquisitions, and the method of Payments

According to a prior study, buyers and sellers in mergers and acquisitions are significantly impacted by capital structural changes (Bruner, 1988). Firms with excess cash tend to engage more with acquisitions (Harford, 1999). When holding excess cash, companies prefer M&A over other investments because M&A provides a way to quickly and strategically use liquidity to achieve growth and competitive advantage. M&A enables firms to deploy cash immediately and avoid the inefficiency of holding excess cash, which generally has a low rate of return (Opler et al., 1999). Yang et al. (2019) emphasise that companies facing financing constraints tend to value internal funds more and prefer to use them for acquisitions, which aligns with another study that asserts that firms prefer internal financing over external sources whenever possible (Myers and Majluf, 1984). Additionally, Bates et al. (2009) emphasised the precautionary motive of holding cash, which significantly leads to an increase in the cash ratio. Companies with strong growth prospects and higher cash flow risk tend to have a higher proportion of cash to total non-cash assets. Whereas large corporations and firms with higher credit ratings, who have fewer restrictions to access to capital markets, tend to maintain lower ratios of cash to total non-cash assets (Das et al., 2023).

Due to rapidly entering new markets, new technologies, and customer segments, firms tend to engage in M&A. A study shows that cash-rich Chinese firms increasingly engage in transactions rather than organic growth to expand businesses, especially under the favourable institutional and regulatory changes (Yang et al., 2019). However, excess cash can also drive agency problems. The free cash flow hypothesis (Jensen, 1986) argues that excess cash may be used to finance value-destroying transactions, whose acquisitions are sometimes driven by agency problems rather than strategic needs (Harford, 1999; Yang et al., 2019). The extent of excess cash affects bidding decisions and the choice of payment method.

The propensity of acquirers to adopt either cash or stock as payment significantly varies. Both small and large acquirers tend to opt for stock payments, particularly in acquisitions of public targets (Eckbo, 2009). This diversity in payment methods is shaped by variables such as the target's familiarity with the acquirer and potential competition from private purchasers (Eckbo et al., 2018). Alternatively, acquirers strategically choose payment modalities based on market mispricing and investment opportunities. For instance, acquirers frequently favour stock payments when they perceive superior investment prospects (Giuli, 2013), while those with substantial growth potential tend to avoid cash payments, particularly when confronted with financial constraints and elevated opportunity costs (Yang et al., 2019). Similarly, bidders with fewer growth opportunities were more likely to use cash, especially while facing financial constraints with a higher opportunity cost of holding cash (Das et al., 2023). While target preferred stock payments due to perceived benefits (Boone et al., 2014). Tender offers involving cash are generally viewed more favourably by the market compared to those involving stock payments (Jensen and Ruback, 1983). Managers also tend to favour cash offers when they perceive their firm to be undervalued and stock offers when they perceive it to be overvalued (Myers and Majluf, 1984). Thus, the way of choosing the payments depends on

various reasons, such as mispricing or investments, but also on the different shareholders' returns.

3.2.2. Shareholder's Return and the method of Payments

In the context of mergers and takeover bids, the effects of payment types, such as stock and cash, on acquirer returns have been extensively examined. These studies consistently support earlier findings that the method of payment in acquisitions can significantly affect shareholder returns (Travlos, 1987). Eckbo (2009) indicates that stock deals by both small and large bidders tend to erode shareholders' returns, while cash payments often yield the reverse. The choice of payment method varies based on factors such as target familiarity and market mispricing (Giuli, 2013). Acquirers prefer stock payments when they foresee superior investment prospects but avoid cash payments due to financial constraints (Yang et al., 2019). The impact of payment types on acquirer returns remains of interest, with cash offers generally viewed favourably, especially in undervalued firms (Jensen and Ruback, 1983; Myers and Majluf, 1984). Harford (1999) observed that financially affluent companies engaging in acquisitions often experience decreased value, and alterations in leverage impact shareholder wealth (Bruner, 1988).

3.2.3. The relationship between Inflation Rate and M&As

Inflation plays a crucial role in the total flow of cross-border mergers and acquisitions (M&A), which can drive or hinder M&A waves that affect the entire economy (Uddin & Boateng, 2011). External factors such as the pandemic significantly affect the business cycle and inflation, thereby affecting the overall flow of cross-border M&A (Al-Thaqeb et al., 2020; Boateng et al., 2017). A study argues that inflation significantly affects the inflow and outflow of M&A (Raji and Ibrahim, 2017), and this view is continuously supported by other scholars who found that inflation has a significant effect on M&A activity (Gregoriou et al., 2021).

During inflation, bidders tend to target foreign countries that have lower inflation rates (Nguyen & Phan, 2017), as high domestic inflation can inhibit domestic M&As. Therefore, inflation is a key determinant of M&As in target countries and associated positively with outbound cross-border M&As (Višić & Perić, 2011).

Furthermore, the crucial role of GDP in influencing M&A activities was highlighted by a prior study, focusing on resource dependence and macro-level factors but excluding an examination of the role of inflation (Boateng et al., 2017). Although their study has not yet provided definitive conclusions on the effects of GDP, inflation, liquidity, and host-country trade linkages on M&As, subsequent research has explored these aspects further. For instance, evidence from the recent economic - pandemics can affect the business cycle significantly, thus causing significant economic disruption by reducing a nation's real GDP (Jelilov et al., 2020). In March 2020, global industrial production experienced a peak decline of 1.6%, accompanied by a 14% loss in cumulative abnormal returns (CARs) over the year (Caggiano et al., 2020). Additionally, the first lockdown in the UK resulted in a spike in inflation (Jaravel & O'Connell, 2020). Conversely, Kontonikas et al. (2013) found that outside of financial crises, unexpected Federal Funds Rate (FFR) cuts led to positive stock market reactions, while stock prices remained steady during financial crises.

Figure 1 illustrates the volume of U.S. domestic transactions in a given year, alongside the corresponding inflation and interest rates. In our sample, we cover two crises: the financial crisis of 2008, during which the inflation rate fell below zero, and the COVID-19 era, when interest rates turned negative, but inflation peaked at around 8%. During these periods, we observed a positive association between the M&A preferences and inflation rates, indicating further support for our baseline and additional results.

However, there are only two studies that have examined the relationship between inflation and M&As, focusing on the UK and China as acquirers to the best of our knowledge.

The UK's inflation rate continued to decline from 1987 to 2006 (Uddin & Boateng, 2011); however, under economic policy uncertainty in the late 1990s, the UK's inflation rate turned from negative inflation to positive inflation (Jones & Olson, 2013). The lower inflation rate contributes to target value while reducing debt costs and facilitating the frequency of cross-border M&A. Consequently, firms in the countries with low inflation rates tend to attract more overseas bidders, while firms from higher inflation rates in the home country render domestic targets more expensive. This dynamic motivates potential buyers to engage in cross-border deals in countries with lower inflation rates than their own countries (Black, 2000). Conversely, high inflation in the home country impedes domestic acquisitions, while lower inflation in the host country stimulates increased transaction volumes (Boateng et al., 2017).

This study investigates the direct link between the likelihood of M&As and excess cash via inflation, which differs from Erel et al. (2021), who find that M&A probability is affected by both corporate liquidity and macroeconomic conditions. Boateng et al. (2017) studied key M&A determinants, including GDP, liquidity, interest rates, inflation, resource-seeking motivations, and cultural distance, as important determinants of the historical trends in cross-border M&A outflows from Chinese firms. Their study highlights the key role of home country economic policies in influencing firms' cross-border expansion through overseas transactions, especially in the context of emerging economies. However, the main limitation of their study is the scope of the study, which focuses on Chinese overseas transactions in the Asia-Pacific region, which may limit the generalisability of their findings.

Based on the aforesaid literature, in this paper we will develop the following hypothesis:

H1: During inflationary periods, firms with excess cash are more likely to become cash bidders, expecting a higher shareholder's abnormal cumulative return.

3.3. Research Design

In the following section, first, we will present the summary statistics table for the entire sample and subsamples. Next, we will show the correlation matrix for our main variables and the frequencies of each payment method. Additionally, this paper will explore the likelihood of mergers and acquisitions, and the means of payment adopted under the main independent variables. Furthermore, we will analyse shareholders' cumulative abnormal returns (CARs) under the different payment types.

3.3.1. Sample Data

We will use 6,821 US deals announced from January 1, 1990, to April 30, 2023. Our sample data consists of several components. We collected deal-level data from Thomson Reuters, focusing on acquirers and targets that are mainly public firms and considering only completed deals. All consideration structures are included, and the deal value exceeds \$1 million. Additionally, our accounting data and shareholders' abnormal cumulative return index were sourced from both Compustat and CRSP via WRDS (Wharton Research Data Services). Finally, our monthly real interest rate and inflation rate data were obtained from the World Bank.

3.3.1.1. Summary Statistic

Table 1 presents the sample summary statistics. We logarithm total assets, cash, and deal size, then winsorise all control variables at the 1st percentile. The average excess cash for individual firms is approximately -0.0003 (Panel A), whereas the excess cash (after XCash) for acquirers' averages around 0.00677 (Panel C), exceeding the overall sample average. The average real interest rate is 3.043%, with a volatility of 1.999%; each firm faces an average inflation rate of 2.421%. The mean leverage for firms in our sample is 0.511 (Panel A), but it

is smaller for bidders at an average of 0.312. Additionally, we observe that short-term acquirers' CARs exhibit a negative trend, gradually declining (Panel C).

Table 1. Summary Statistics

Table 2 shows an association between XCash and the control variables. We detect a positive and substantial correlation between XCash and Tobin's Q, leverage, and earnings per share (EPS). Inflation and the real interest rate, however, correlated insignificantly (Panel A). Nevertheless, we observe slightly different correlation results in the M&As sample. XCash has a significant and positive effect on the real interest rate but is insignificantly correlated with Tobin's Q. Firm Size, EPS, and Deal Size are significantly influenced by XCash at the 1% significance level, while leverage shows a negative and significant relationship with XCash at the 1% level, contrasting with the overall sample results. Additionally, we find that inflation is significantly correlated with earnings per share at the 1% level, indicating a positive effect; it also suggests that an increase in inflation significantly decreases deal size at the 1% level (Panel B).

Table 2. Correlation Table

Moreover, our evidence shows that there are eight different types of payments. The dominant payment types that acquirers prefer to adopt are stock full payments, comprising around 38%, which is 2,619 occurrences of the whole sample. Additionally, cash payments take the second-largest proportion observed by the bidders, accounting for around 28% of deal payments, with 1,921 instances being adopted. In addition, cash and stock mixed payment is the third largest payment method, totalling 1,175 transactions, accounting for about 17% of the total number of payments. These three payment methods constitute the main body of payments, totalling 5,715 transactions, accounting for about 84% of the total number of payments.

Table 3. Payment Type

3.3.2. Measuring Excess Cash

Excess cash (XCash) is used to determine the relationship between having surplus cash and making acquisition decisions. Based on the approach by Opler et al. (1999), excess cash is calculated by subtracting the optimal level of cash holdings from the actual cash and cash equivalents. In the OPSW model, cash holdings depend on various factors: Tobin's Q (the firm's market-to-book ratio), Firm size (the natural logarithm of the firm's total assets), Cash flow (the ratio of net profit plus depreciation to total assets), NWC (the ratio of net working capital to total assets), CAPEX (the ratio of capital expenditures to total assets), Leverage (the ratio of short- and long-term debt to total assets), DivDum (a dividend payout dummy, set to one if the firm pays dividends and 0 otherwise), and Var CF (the mean of the standard deviations of cash flow over total assets of firms in the same industry). Yang et al. (2019) adopted the OPSW model to investigate excess cash effects on the Chinese corporate market by considering the importance of ownership in the Chinese context; a control for state ownership is included, represented by a dummy variable (SOEs) that is set to 1 if the firm is state-owned in a given year and 0 otherwise. State-owned enterprises (SOEs) typically face fewer financial constraints, so according to the precautionary motive, SOEs are expected to hold less cash than non-stateowned firms (Yang et al., 2019).

In our paper, we will consider two notable literatures above while measuring US excess cash. By doing so, we include Cash Flow (depreciation, depletion, and amortisation), NWC, Cash (cash ratio), Leverage, and CAPEX, which are scaled by total assets. Firm Size (take the natural logarithm of total assets), Var_CF (average of cash flow standard deviations over total assets of corporations in the same sector), Div_dummy (a dummy variable for dividend payments, defined as 1 if the firm pays dividends and 0 otherwise), and State_dummy (if the firms are in the US states, 0 otherwise). Then, we adopt a fixed effects model to measure the fitted values derived from the form as follows:

 $\begin{aligned} & \mathsf{Cash}_{i,t} = \alpha + \Sigma_s \beta_s X_{s,i,t} = \alpha + \beta_1 \mathsf{Tobin'sQ}_{i,t} + \beta_2 \mathsf{Firm} \: \mathsf{Size}_{i,t} + \beta_3 \mathsf{Cash} \: \mathsf{Flow}_{i,t} + \\ & \beta_4 \mathsf{NWC}_{i,t} + \beta_5 \mathsf{CAPEX} + \beta_6 \mathsf{Leverage} + \beta_7 \mathsf{Var}_{-} \mathsf{CF}_{i,t} + \beta_8 \mathsf{Div}_{dummy_{i,t}} + \beta_9 \mathsf{State}_{dummy_{i,t}} + \\ & k_i + k_t + k_s + \varepsilon_{i,t} \end{aligned}$ (1)

The vector of *s* explanatory factors that affect the pros and cons of holding excess cash is denoted by $X_{s,i,t}$. In addition to incorporating state dummy variables and time, equation (1) also takes into account unobserved firm-specific heterogeneity (k_s) , which explains the year (k_t) and state (k_s) fixed effects related to the cash holdings for the firm. The cash value we get after running our model serves as a stand-in for the ideal amount of cash held by the company. Next, we calculate excess cash (XCash), which is the difference between the fitted values $(Cash_{i,t})$ and the actual cash holding values. The Appendix 2 contains comprehensive definitions for each variable.

3.3.3. Methodology

Our study aims to suggest the following questions drawing upon previous studies: Firstly, do cash-rich US firms exhibit a propensity to engage in mergers and acquisitions? Secondly, in light of potential inflation instability, do acquirers tend to pursue acquisitions during periods of high inflation? If so, does the presence of excess cash moderate the impact of inflation, either encouraging or discouraging such transactions? Are acquirers more inclined to opt for stock rather than cash payments? Do shareholder returns vary depending on the chosen payment method? Additionally, do differences exist between the returns of cash bidders and stock bidders, and if so, do these differences vary based on the level of inflation? Furthermore, does inflation instability affect CARs differently from both perspectives? Lastly, do the effects of inflation on deal size and other variables differ across various groups?

This study will imply various methodologies, including logistic regression, to determine the propensity of bidders to engage in transactions by addressing beforehand research questions. This study, consistent with prior research (Bruner, 1988, and Harford, 1999), which highlighted the impacts of changes in M&A capital structure, pays particular attention to the propensity of well-funded companies to make acquisitions. But differs from Adra et al. (2020), who investigated the impact of monetary policy on transaction outcomes using federal fund rates. In this paper, we will focus on inflation rates through real interest rates as a proxy. Thus, we will examine whether excess cash moderates' inflation, influencing bidders' decisions to engage in transactions.

In line with a prior study by Boone et al. (2014), which addressed that targets prefer to receive stock payments when they expect higher profits, our study will examine bidders' preferences for payment in either stock or cash. We will continuously investigate the bias of stock market mispricing on the preferences of payment choice, as suggested by previous studies (Giuli, 2013). Lastly, research shows that bidders who prefer to pay by stocks during mergers and acquisitions may tend to be holding a higher level of cash to avoid higher levels of opportunity costs (Yang et al., 2019). In our study, we will take into account the influences of financial constraints on the preferences of means of payment choices. By integrating insights from the literature, we can construct our initial model as follows:

$$M\&A_{dummy_{it}} = \alpha + \beta * XCash_{t-1} + \lambda * C_{i,t-1} + \gamma * Industry_{FE} + \delta * Year_{FE} + \varepsilon_{i,t}$$
(2)

where M&A_dummy is an indicator that equals 1 if a firm, denoted as "i", announced an acquisition in a given year, denoted as "t", and 0 otherwise. Additionally, we will test the effects of XCash and the Real Interest Rate (or Inflation Rate) on the likelihood of the US transactions. We classify the Real Interest Rate (or Inflation Rate) into two subsamples, high and low, based on their respective median values. In addition to "C", which represents the control variables, we include firm-level control variables such as Tobin's Q, Firm Size, Networking Capital (NWC), Leverage, Earnings Per Share (EPS), shareholder dummy, and state dummy variables. Furthermore, year- and industry-fixed effects are also included in the analysis.
In addition, we will investigate the likelihood of stock or cash paid during the transactions under high and low real interest rates and include all control variables and fixed effects from above to adopt the logit method to develop the following model.

 $Cash_{dummy_{it}} = \alpha + \beta * XCash_{t-1} + \lambda * C_{i,t-1} + \gamma * Industry_{FE} + \delta * Year_{FE} + \varepsilon_{i,t}$ (3)

where Cash_dummy (or Stock_dummy) is an indicator that equals 1 if a firm denoted as "i" adopt full stock (cash) payment in transactions in a given year, denoted as "t", and 0 otherwise. Additionally, we will test the effects of XCash and the Real Interest Rate (or Inflation Rate) on the likelihood of the payment choices. We classify the XCash and Real Interest Rate (or Inflation Rate) into two subsamples, high and low, based on their respective median values. In addition to "C", which represents the control variables, we include firm-level control variables, and year- and industry-fixed effects are also included in the analysis.

3.4. Empirical Results

3.4.1. Baseline Results

3.4.1. The Likelihood of Mergers and Acquisitions

Table 4 illustrates the various motivations for acquirers to engage in transactions. Our findings consistently support the notion that cash-rich firms are more likely to become acquirers (Bruner, 1988; Harford, 1999; Opler et al., 1999; Yang et al., 2019). An increase of one standard deviation in this excess cash corresponds to a 138.45% increase in the likelihood of the firm becoming an acquirer (Column 1).

Additionally, at the 1% significance level, real interest rates have a positive and significant impact on transaction likelihood. A one-standard deviation increase in real interest rates results in a 6.61% increase in the probability of firms engaging in deals (Column 2 in Table 4). Furthermore, cash-rich firms tend to reduce their probability of engaging in

acquisitions during periods of monetary contraction, with an observed 12.63% overall decrease in the likelihood of such transactions at the 1% significance level (Column 2 in Table 4).

Further analysis, incorporating the inflation rate, indicates consistent results. Specifically, in the presence of inflation, the probability of engaging in transactions decreases by 6.85% at the 1% significance level. However, when firms face high inflation while holding excess cash, their likelihood of becoming bidders increases by 7.36%, which is a 14.21% increase compared to facing only inflation (Column 3 in Table 4).

Similar patterns arise from our examination of subsamples with high real interest rates and high inflation. There is a 75.24% rise in the likelihood of transactions for businesses with surplus cash. On the other hand, during times of severe financial contraction, there is a 15.96% rise in the probability of businesses becoming acquirers; however, this effect is mitigated when businesses confront high interest rates while having surplus cash. There is a 7.96% decrease in the probability of companies becoming acquirers in high-inflation scenarios. Nonetheless, this probability is mitigated when companies possess additional capital, leading to a 24.36% rise in their inclination towards acquisitions, which might offset the adverse effects of inflation (Column 4 in Table A1, Appendix 2).

Among the control variables, Tobin's Q is negative and statistically significant at the 5% level, while both Firm Size and Earnings Per Share (after, EPS) are positive and statistically significant at the 1% level. These results are consistent across all samples, including those with high real interest rates and high inflation rates.

Table 4. The likelihood of Mergers and Acquisitions

Table A1.

3.4.1.2. The Likelihood of Payment Type

Table 5 illustrates the preferences of acquirers towards different payment types in both the overall sample and various subsamples. When firms experience monetary contraction, the likelihood of choosing to pay solely in cash decreases by 15.46% (Column 1), whereas the probability of purchasers opting for pure cash payments in the face of high inflation rises by 20.56% (Column 2). These trends persist across subsamples, as seen in Table A2. In the subsample with high excess cash, the probability of a cash-only payment decreases significantly by 17.96% (Column 1 in Table A2), while the likelihood of choosing stock payments increases by 38.54% with a one standard deviation rise (Column 2 in Table A2). We found that corporations are 31.39% more likely to pay purely in stock and 23% more likely to pay with a combination of cash and stock when facing monetary contraction (Columns 3 and 4, respectively, in Table 5).

In the high real interest rate subsample test, we observe a systematic decline of 24.8% in the probability of cash payments (Column 3 in Table A2), alongside a notable 56% increase in the preference for pure cash payments (Column 4 in Table A2). The impact of real interest rates on cash payments is negative in each subsample and overall sample test, while stock payments show a positive and significant effect at the 1% level in all sample tests. In Column 6, when inflation occurs, the likelihood of cash payments increases by 31.26% at the 1% significance level (Table A2).

Overall, the results of both the overall sample test and subsample tests remain consistent. The evidence suggests that firms exhibit a significant and positive association with a high level of leverage at the 1% significance level. Specifically, a one standard deviation increases in a firm's leverage results in the firm being approximately four times more likely to be pure cash bidders (Columns 1 and 2 in Table 5). In contrast, the likelihood of being pure stock bidders drops by 79.4% (Column 3 in Table 5). Firm size and EPS continue to exert strong favourable impacts on the choice of cash deals, with stock payment preferences showing the opposite trend. A one-standard deviation increase in Firm Size leads to approximately a 75% probability of being pure cash bidders, while stock preferences drop by 21.8%, all of which are significant at the 1% level (Columns 1 and 2 in Table 5). Additionally, when EPS increases by one standard deviation, the preference for being cash bidders increases by 12.86% (Columns 1 and 2 in Table 5), while the likelihood of being stock bidders drops by 19.59%, all results significant at the 1% level (Column 3 in Table 5). When adding deal size as an additional control variable, we find a significant negative influence on the likelihood of acquirers tending towards pure cash bids, which drops by 47.58% (Columns 1 and 2 in Table 5), but a strong tendency to choose stock deals up to 19.36%, all results significant at the 1% level (Column 3 in Table 5).

Table 5. The Likelihood of Payment Type

Table A2.

3.4.2. Further Tests

3.4.2.1. Shareholder's Cumulative Abnormal Return (CARs)

Adra et al. (2020) explored that a one-standard deviation fluctuation in the monetary policy uncertainty index was associated with an average decrease of 0.4% in the acquirers' shareholders' cumulative abnormal returns on the announcement day in the US market. However, scholars focused solely on examining the effects of monetary expansion and contraction on CARs (Adra et al., 2020). In our paper, we aim to investigate the CARs for different choices of payments during transactions.

To analyse shareholders' cumulative abnormal returns in relation to pure cash and pure stock payments, we will adopt Travlos's (1987) methodological framework. Travlos (1987) conducted a comprehensive examination of shareholders' CARs across diverse payment types. His research discerned that tender offers yield higher returns compared to mergers (Jensen and Ruback, 1983). Additionally, the market tends to construe cash payments as favourable news while perceiving stock settlements as negative news, influenced by the information effects (Travlos, 1987).

This study investigated event windows between pre- and post-10 days based on the designated sample period. Furthermore, the sample is divided into high and low inflation subcategories, utilising the 75th percentile as the demarcation point. All cumulative abnormal returns will be valued at 1% to mitigate the influence of outliers.

The empirical findings of our study reveal a consistent trend: acquirer shareholders tend to experience negative cumulative abnormal returns irrespective of the payment method employed, whether cash or stock. Subsequent t-tests comparing mean CARs between cash and stock bidders unveiled a significant revelation: shareholders tend to receive lower returns from cash transactions compared to stock transactions. Specifically, in cases where firms exclusively utilise cash for payment, shareholders witness a gradual decline in returns, and this decline persists, nearing a 5% significance level as the event window extends to (-7, +7), with all ensuing results remaining statistically significant.

Conversely, in transactions involving stock payments, shareholders observe a comparatively lesser deterioration in returns over time during periods of high inflation. However, the overall trend suggests that cash bidders tend to yield higher returns than their stock counterparts (refer to Table 6).

Table 6. Shareholder's Cumulative Abnormal Return (CAR)

3.4.2.2. Propensity Score Matching (PSM) Model

To address potential causal effects stemming from function misspecification and systematic variations in firm characteristics, we employ the propensity score matching (PSM) technique, initially introduced by Rosenbaum and Rubin (1983). We first examine the

probability of companies exhibiting high excess cash and subsequently estimate the propensity score using its dummy variable. All explanatory variables from the initial model in Table 4 are controlled, and Table 7 presents the outcomes. Each observation is matched to high and low excess cash (XCash) based on the closest propensity score. Furthermore, we ensure that the absolute difference between each firm's observation propensity score and that of its matched peer does not exceed 0.1%. We then follow the same procedure to continually test the real interest rate, its interaction with XCash, inflation, and its interaction with XCash, respectively.

We ascertain the similarity between treatment and control firms by re-running the logit regressions in the post-match sample. The data show that there are no significant differences in the characteristics of companies in different categories. The empirical results obtained after matching show that XCash has a significant positive impact on the likelihood of acquisition, increasing it by about 115% at the 1% significance level (Column 1). Companies experiencing monetary tightening are about 4.5% more willing to participate in transactions (Column 2). However, when firms face a high real interest rate while holding excess cash, they prefer to decrease their involvement in transactions by 13.15% (Column 2), which continuously supports our baseline results in Table 4. Conversely, within the high XCash subsample, corporations with excess cash facing monetary expansion witness an 8.24% decrease in the likelihood of being bidders (Column 3). However, during monetary expansion, if firms hold excess cash, the solid negative impacts of inflation will be strongly moderated, and the motivation for firms to engage in transactions will increase by 28.15% at the 5% significance level (Column 3). In conclusion, all post-PSM analyses (refer to Table 7) reaffirm our baseline findings in Table 4.

Table 7. The likelihood of M&A in PSM Sample

3.4.2.3. Marginal Effects

Following our primary research question—whether firms holding excess cash are more likely to be acquirers during periods of monetary contraction—we employ marginal effects analysis to investigate whether the level of excess cash is influenced by real interest rates and inflation rates. We conduct tests on both the overall sample and the Propensity Score Matching (PSM) sample, which are classified into high- and low-XCash subsamples, and we find contrasting results for real interest rates and inflation.

To begin, we examine the effect of a 1% increase in real interest rates on firms' excess cash spending in transactions. Firms tend to reduce the excess cash spending gradually in transactions while the real interest rate is rising. For example, when the real interest rate is 0%, the percentage of excess cash spent on transactions increases by 23% at a 1% significance level. However, when the real interest rate rises by 1%, the probability that a company holds excess cash and tends to acquire it will decrease by 19%, with a significance level of 1%. In addition, as the real interest rate rises by 1%, monetary tightening intensifies, and the probability that a company will use excess cash for acquisitions will decrease by 4%. Nevertheless, when real interest rates reach 2% and 3%, firms are still more likely to spend excess cash on transactions (16% and 12%, respectively).

As monetary contraction tightens, the probability of using excess cash in transactions declines further. For example, when the real interest rate reaches 4%, the probability of excess cash spending on transactions falls to 9%, with a 5% significance level. The likelihood of spending excess cash on transactions increases by 6% at the 10% significance level when the interest rate rises by 1% to around 6%. However, at this level, firms with excess cash are significantly less likely to engage in transactions, and the preference for cash spending declines sharply (see Panel A in Table 8).

To test whether these results hold consistently, we also examine the Propensity Score Matching (PSM) sample, and all results remain robust. The overall trend demonstrates a significant negative relationship between real interest rates and the likelihood of excess cash spending in transactions across the PSM sample.

Similarly, firms are more likely to engage in transactions during periods of monetary expansion. When firms face a low inflation rate of around 0.12%, there are no significant effects on their willingness to spend excess cash on mergers and acquisitions (M&As). However, when inflation increases by 1.2%, reaching 1.32%, the likelihood of firms spending excess cash on M&As rises by 9% at a 5% significance level. Moreover, the probability of spending excess cash increases by 12% at the highest significance level immediately after a 1.2% rise in the inflation rate.

These trends persist for each period when inflation rises by 1.2%, leading to a 3% increase in the probability of excess cash outlays in transactions at least at the 1% significance level. These results strongly support our previous finding that the probability of excess cash outlays increases by 23% when real interest rates reach their lowest level of 0%. Similarly, during the highest inflationary expansion, firms' preference for spending excess cash on M&As increases by 25%.

To ensure the robustness of these results, we applied the same methodology to the Propensity Score Matching (PSM) model, and our findings remained consistent. (Panel B in Table 8).

Table 8. Marginal Effects

3.5. Robustness Test

3.5.1. Instrumental Variable (IV) Approach

To further mitigate the risk of endogeneity issues, we employ the instrumental variable (IV) technique. This study utilises instrumental variables such as lagged twice-instrument XCash, sales growth, and firm size at the firm level. The evidence demonstrates a strong positive correlation between our IV and XCash at the 1% significance level (Column 1). Furthermore, we observe that the instrumental variables of XCash positively influence the probability of acquisitions at a significant level of 5%; specifically, a one standard deviation increase in XCash (IV) results in a 51-fold increase in the likelihood of engaging in transactions (Column 2).

Additionally, when testing the interaction between XCash (IV) and inflation, the results remain consistent with our preliminary findings. When inflation solely increases by one standard deviation, the likelihood of transactions sharply decreases by 2.76% at the 1% significance level. Moreover, under both inflation and the interaction term, firms' preferences incline by 59.2%, which continuously supports our baseline results where inflation's negative impact is significantly moderated, thus encouraging firms to engage in transactions (Column 3).

In the M&A subsample, XCash (IV) positively affects the preference for pure cash payments (Column 5). Overall, our findings consistently support the baseline evidence established previously (refer to Table 9).

Table 9. 2SLS Test

3.5.2. Robustness Test

Based on our research questions and baseline results, we decided to test the sample excluding California, which has the highest percentage overall and in subsamples. We find that

our robustness results remain consistent with our baseline evidence presented in Tables 4 and 5. The possibility of M&As driven by excess cash shows that for every standard deviation incline in excess cash, the M&As probability arises by 216.45% (Column 1 in Table 10). When a firm holds excess cash while facing high real interest rates, the likelihood of turning a bidder drops sharply by 18.37% (Column 2 in Table 10). These robustness results continuously support our primary findings. Additionally, when only inflation occurs, the probability of acquisitions drops by 5.45%, but this effect is moderated by excess cash, resulting in firms facing higher inflation while holding excess cash, likely increasing transactions by 7.47% (Column 3). These results are consistently supported by subsample tests in both high real interest rate and inflation rate conditions.

In the high real interest rate subsample test, we find that firms are likely to engage in transactions under high interest rates alone by 10.74%, while holding excess cash during monetary contraction decreases the preference of being acquirers by 13.76% (Column 5). In the high-inflation subsample, we find that firms facing high inflation alone will decrease the likelihood of transactions by 7.13%. However, while facing high inflation but also holding excess cash, firms tend to moderate their probability of being acquirers, increasing by 36.62% at a significant level (Column 7). Our robustness tests consistently support our initial results presented in Table 4 (see Panel A).

In Panel B, Table 10 represents the robustness results of the likelihood of cash payment, which continues to be negatively influenced by the real interest rate at a significant level of 1%, with an 18.54% decrease in preferences (Column 1). However, the preference to pay in pure stock while facing a high interest rate will increase by 28.79% at the 1% significance level (Column 2). Additionally, the likelihood that cash and stock combination payment bidders opt to adopt increases by around 24% (Column 3). These results remain consistent with our baseline results from Table 5.

Nevertheless, a one-standard deviation increase in inflation leads to a 19.84% increase in the preference for cash payments (Column 4). These results are further supported by outcomes from the high real interest rate subsample, where each increase in real interest rates results in a 24.8% decrease in the preference for cash payments (Column 3 in Table A2). If companies are from the high real interest rate subsample and have excess cash, they prefer to pay in pure cash, with a willingness to pay 70 times the real interest rate (Column 5). In general, when interest rates rise, acquirers prefer to pay in pure stock, and vice versa. Conversely, if inflation rises, acquirers prefer to pay in cash, with a 31.26% increase in willingness to pay in cash at a 1% significance level.

Table 10. Robustness Test

Table 10. Robustness Test (Cont'd)

Table A2.

3.6. Conclusion

To bolster the credibility of our findings, we applied propensity score matching (PSM) and two-stage least squares (2SLS) methods following our initial results. Despite conducting several supplementary tests and a robustness check, where we excluded the largest proportion of sample deals from California, we consistently observed the stability of our baseline results. This reaffirms the reliability of our initial findings.

Our analysis reveals that firms tend to prefer cash payments during periods of high inflation. Furthermore, the probability of U.S. transactions is notably and positively influenced by excess cash, as evidenced by both our preliminary and robustness tests, along with our assessments of endogeneity. Cash-rich firms exhibit the capacity to mitigate the adverse impacts of inflation on the likelihood of acquisitions, thereby fostering participation in transactions. By contrast, when firms are facing monetary contraction, the likelihood of spending excess cash on the transactions will shrink over time.

Furthermore, we observe differences in the cumulative abnormal returns of cash and stock acquirers: during periods of inflation, cash acquirers experience decreasing returns over time, while stock acquirers face the opposite trend. Our results are thus consistent with the view that cash-rich firms tend to engage in value-destroying deals. However, overall, cash bidders' returns are favourable compared to stock bidders' returns.

This study provides fresh insights into the interaction between excess cash, inflation dynamics, payment modalities, and shareholder returns in M&As, offering valuable implications for both scholars and practitioners navigating M&A decision-making in diverse economic environments.

Policymakers should be able to use regulatory frameworks to ensure that capital market regulation encourages the efficient use of cash reserves and reduces barriers to profitable, liquidity-driven M&A. From a corporate governance perspective, by increasing transparency and aligning management incentives with shareholder interests, agency problems associated with excess cash can be addressed, and M&A decisions can be made to enhance value rather than pursue self-interest. To promote industrial consolidation and economic growth, developing financial infrastructure to reduce costs from external funding will allow associate firms to allocate cash more effectively and support more favourable M&A activities.

From an inflation management perspective, uncertain macroeconomic policies are unable to inhibit inflation, and vice versa, thereby reducing uncertainties and the need for excessive precautionary cash reserves, allowing corporations to allocate liquidity to productive activities more effectively, including M&A. To identify any market distortions or speculative behaviour and maintain fair competition and market stability, regulators should pay close attention to large cash accumulation and M&A activities.

3.7. Figure and Tables



Note: Figure 1 indicates the link between historical US domestic M&A volume and real interest rate or inflation rate from January 1990 to April 2023.

Table 1. Summary Statistics

Note: This table summarises main variables and other variables from January 1990 to April 2024. Panel A indicates the overall sample, Panel B is the Propensity Score Matching (PSM) sample, and Panel C is the M&A sample. These three tables include the number of overall samples and M&A subsample observations (i.e., N), mean, and standard deviation (i.e., sd) for the key variables used in our regressions. XCash is the difference between the fitted values (Cash_{*i*,*t*}) and the actual cash holding values. Real Interest Rate (RIR) is the yearly real interest rate, and Inflation Rate (INF) is the yearly real inflation rate in the United States and is collected from *the World Bank*. All control variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. All Sample							
VARIABLES	Ν	Mean	Sd	Min	Max		
Tobin's Q	34,915	0.449	1.052	-12.81	4.64		
Firm Size	34,921	6.509	2.378	-2.645	11.8		
NWC	34,921	0.171	0.865	-15.88	0.92		
Leverage	34,921	0.511	0.949	0.016	18.5		
XCash	34,922	-0.0003	0.114	-0.274	0.39		
EPS	34,911	0.877	2.729	-9.4	11.5		
RIR	34,758	3.043	1.999	-1.189	7.15		
INF	34,758	2.421	1.454	-0.356	8		
	Р	anel B. PSM Sam	ple				
VARIABLES	Ν	Mean	Sd	Min	Max		
Tobin's Q	26,163	0.461	1.047	-12.81	4.64		
Firm Size	26,163	6.672	2.477	-2.645	11.8		
NWC	26,163	0.157	0.935	-15.88	0.92		
Leverage	26,163	0.516	1.028	0.016	18.5		
XCash	26,163	0.0278	0.114	-0.274	0.39		
EPS	26,163	0.973	2.818	-9.4	11.5		
RIR	26,035	3.049	1.996	-1.189	7.15		
INF	26,035	2.423	1.454	-0.356	8		
	Pa	anel C. M&A San	nple				
VARIABLES	Ν	Mean	Sd	Min	Max		
Tobin's Q	2,792	0.536	0.363	-0.142	1.887		
Firm Size	3,667	8.058	2.091	1.952	12.64		
NWC	3,667	0.111	0.177	-0.190	0.722		
Leverage	3,667	0.312	0.240	0	0.979		
XCash	1,564	0.00677	0.0816	-0.216	0.268		
EPS	3,701	1.631	2.405	-5.190	11.86		
Deal Size	6,821	5.126	2.089	-0.129	10.16		
RIR	6,818	4.385	2.156	-1.189	7.148		
INF	6,818	2.555	1.127	-0.356	8.003		
CAR (-7, +7)	1,023	-0.00913	0.0932	-0.705	0.508		

Table 2. Correlation Table

Note: This table represents a correlation matrix for use to investigate the dependence of all variables in the research from January 1990 to April 2024. Panel A indicates the overall sample, and Panel B is the M&A sample. XCash is the difference between the fitted values (Cash_{*i*,*t*}) and the actual cash holding values. Real Interest Rate (RIR) is the yearly real interest rate, and Inflation Rate (INF) is the yearly real inflation rate in the United States and is collected from *the World Bank*. All control variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, ***, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. All Sample									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
XCash	1.000								
RIR	-0.001	1.000							
INF	0.001	-0.143***	1.000						
Tobin's Q	0.016**	0.030***	0.009	1.000					
Firm Size	0.006	-0.216***	0.030***	0.036***	1.000				
NWC	-0.055***	0.035***	0.011*	0.226***	0.135***	1.000			
Leverage	0.055***	-0.029***	-0.004	-0.265***	-0.198***	-0.952***	1.000		
EPS	0.013*	-0.119***	0.071***	0.027***	0.378***	-0.011*	-0.033***	1.000	
Panel B. Ma	&A Sample								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
XCash	1.000								
RIR	0.071**	1.000							
INF	0.024	0.005	1.000						
Tobin's Q	0.025	-0.087***	0.032	1.000					
Firm Size	0.164***	-0.221***	0.016	-0.112***	1.000				
NWC	-0.007	0.105***	-0.015	-0.134***	-0.360***	1.000			
Leverage	-0.091***	0.020	-0.012	-0.382***	-0.050**	0.084***	1.000		
EPS	0.095***	-0.132***	0.103***	-0.133***	0.416***	-0.175***	-0.055***	1.000	
Deal Size	0.118***	-0.132***	-0.065***	-0.222***	0.569***	-0.053***	0.250***	0.238***	1.000

Table 3. Payment Type

Note: This table represents the frequency of the means of payment adopted for each category. The consideration structure data was collected from the Thomson One Banker Securities Data Company (SDC) database.

Panel A. M&A All Sample	Freq.	Cum.
Cash And Stock Consideration Offered	1175	17.23
Cash Consideration Offered	1921	45.39
Choice between Cash or Stock or Combination of Both	496	52.66
Choice between Types of shares/stocks	10	52.81
Choice involving Other non-cash and non-stock Consideration	11	52.97
Consideration Offered Unknown	385	58.61
Other Consideration Offered	204	61.60
Stock Consideration Offered	2619	100.00
Total	6821	100.00

Table 4. The likelihood of Mergers and Acquisitions

Note: This table presents the results of the likelihood of US domestic M&As by adopting the logit model. We investigated the probability of M&A while the firm faced XCash, real interest rate, inflation, and its intercept. By doing so, we also separated our sample into high and low XCash based on the median XCash, real interest rate, and inflation rate subsample, also based on the same structure. XCash is the difference between the fitted values (Cash_{*i*,*t*}) and the actual cash holding values. Real Interest Rate (RIR) is the yearly real interest rate, and Inflation Rate (INF) is the yearly real inflation rate in the United States and is collected from *the World Bank*. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. All control variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	M&A_dummy					
VARIABLES	(1)	(2)	(3)			
XCash	0.869***	1.483***	0.514			
	(3.30)	(3.82)	(1.42)			
RIR		0.064***				
		(4.03)				
$XCash \times RIR$		-0.199***				
		(-2.63)				
INF			-0.071***			
			(-4.04)			
$XCash \times INF$			0.142*			
			(1.72)			
Tobin's Q	-0.119**	-0.117**	-0.117**			
	(-2.57)	(-2.55)	(-2.56)			
Firm Size	0.298***	0.300***	0.298***			
	(10.93)	(10.95)	(10.92)			
NWC	0.016	0.015	0.020			
	(0.12)	(0.11)	(0.15)			
Leverage	0.143	0.143	0.148			
	(1.11)	(1.12)	(1.16)			
EPS	0.036***	0.035**	0.035***			
	(2.64)	(2.57)	(2.61)			
Shareholder_dummy	-0.235	-0.226	-0.221			
	(-1.28)	(-1.23)	(-1.21)			
State_dummy	-0.042	-0.060	-0.061			
	(-0.11)	(-0.16)	(-0.16)			
Constant	-2.037*	-2.530**	-1.934			
	(-1.70)	(-2.10)	(-1.60)			
Year FE	YES	YES	YES			
Industry FE	YES	YES	YES			
Ν	34,518	34,358	34,358			
Adj. R^2	0.106	0.106	0.106			

Table 5. The Likelihood of Payment Type

Note: The table presents the results of the probability of acquirers adopting stock or cash in the overall sample (Columns 1, 3, and 4) and the inflation period (Column 2). Real Interest Rate (RIR) is the yearly real interest rate, and Inflation Rate (INF) is the yearly real inflation rate in the United States and is collected from *the World Bank*. Shareholder dummy is an indicator that equals 1 if the shareholder holds stock (common ordinary shareholders) in year t and 0 otherwise. State dummy is an indicator that equals 1 if an M&A deal is funded by cash (or stock), and 0 otherwise. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise. Deal Size, which is the value of the transaction, payment type, and dummy variable, is collected from the Thomson One Banker Securities Data Company (SDC) database. All control variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Cash_dummy	Cash_dummy	Stock_dummy	Cash and Stock
VARIABLES	(1)	(2)	(3)	(4)
RIR	-0.168**		0.273***	0.207*
	(-2.05)		(6.21)	(1.92)
INF		0.187**		
		(2.05)		
Tobin's Q	-0.429	-0.429	-0.128	0.922***
	(-1.44)	(-1.44)	(-0.43)	(4.17)
Firm Size	0.559***	0.559***	-0.246***	-0.393***
	(7.80)	(7.80)	(-3.93)	(-6.77)
NWC	-0.407	-0.407	0.241	-0.187
	(-0.70)	(-0.70)	(0.44)	(-0.41)
Leverage	1.633***	1.633***	-1.580***	0.253
	(3.10)	(3.10)	(-2.77)	(0.56)
EPS	0.121***	0.121***	-0.218***	-0.001
	(3.64)	(3.64)	(-4.31)	(-0.03)
Deal Size	-0.646***	-0.646***	0.177***	0.613***
	(-9.70)	(-9.70)	(3.40)	(9.73)
Shareholder_dummy	0.075	0.075	-0.840*	0.690
	(0.18)	(0.18)	(-1.72)	(1.09)
State_dummy	-0.056	-0.056	0.068	0.311
	(-0.12)	(-0.12)	(0.13)	(0.77)
Year FE	YES	YES	NO	YES
Industry FE	YES	YES	YES	NO
Ν	1,386	1,386	1,288	1,622
Adj. R^2	0.285	0.285	0.193	0.127

Table 6. Shareholder's Cumulative Abnormal Return (CAR)

Note: The following tables show the different shareholders' CAR results under the different payment methods, which are tested by t-test and include an event window (-7, +7). CAR: The cumulative abnormal stock return over the windows centred on the M&A announcement day. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. All variables are explained in the Appendix 2. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A.	Cash payment	Stock payment
High inflation	-0.78%	-4.40%
Low inflation	0.81%	-3.00%
Difference	1.6%**	1.40%
t-statistic	(t=1.992)	(t=0.7316)

Table 7. The likelihood of M&A in PSM Sample

Note: The following table presents the results of the PSM model. We evaluated the PSM sample following the same procedure as above (Table 4) and found all the evidence shows that our baseline results remain the same. XCash is the difference between the fitted values $(Cash_{i,t})$ and the actual cash holding values. Real Interest Rate (RIR) is the yearly real interest rate, and Inflation Rate (INF) is the yearly real inflation rate in the United States and is collected from *the World Bank*. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. All control variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	M&A_dummy						
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	
XCash	0.766***	1.335***	-0.759	0.869***	1.483***	0.514	
	(2.80)	(3.22)	(-1.25)	(3.30)	(3.82)	(1.42)	
RIR		0.044**			0.064***		
		(2.34)			(4.03)		
$XCash \times RIR$		-0.185**			-0.199***		
		(-2.21)			(-2.63)		
INF			-0.086**			-0.071***	
			(-2.27)			(-4.04)	
$\textbf{XCash} \times \textbf{INF}$			0.334**			0.142*	
			(2.07)			(1.72)	
Controls	YES	YES	YES	YES	YES	YES	
Year FE	YES	YES	YES	YES	YES	YES	
Industry FE	YES	YES	YES	YES	YES	YES	
Ν	25,849	25,724	12,463	34,518	34,358	34,358	
Adj. R^2	0.117	0.117	0.130	0.106	0.106	0.106	

Table 8. Marginal Effects

Note: The following table indicates the marginal effects of the level of real interest rates or inflation rates and the level of cash-holding effects on the likelihood of US M&As. Real Interest Rate (RIR) is the yearly real interest rate, and Inflation Rate (INF) is the yearly real inflation rate in the United States and is collected from *the World Bank*. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. All variables are explained in the Appendix 2. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A.				
	All Sample		PSM Sample	
RIR	dy/dx	Z-score	dy/dx	Z-score
0	0.23***	3.84	0.21***	3.57
1	0.19***	3.85	0.18***	3.58
2	0.16***	3.72	0.14***	3.46
3	0.12***	3.34	0.12**	3.11
4	0.09**	2.65	0.09**	2.47
5	0.06*	1.77	0.06*	1.65
6	0.04	0.93	0.03	0.87

Panel B.	
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	All Sample		PSM Sample		
INF	dy/dx	Z-score	dy/dx	Z-score	
0.12	0.07	1.45	0.06	1.28	
1.32	0.09**	2.33	0.09**	2.13	
2.52	0.12***	3.31	0.11**	3.08	
3.72	0.15***	3.97	0.14***	3.74	
4.92	0.19***	4.09	0.17***	3.87	
6.12	0.22***	3.89	0.21***	3.69	
7.32	0.25***	3.63	0.24***	3.45	

Table 9. 2SLS Test

Note: We instilled the two-stage least squares (2SLS) method while adopting the IV (instrument variable) approach to test whether our main theory still holds by replacing IV by XCash. XCash is the difference between the fitted values ($Cash_{i,t}$) and the actual cash holding values. Instrumental Variable (IV) is the component of lagged twice XCash, sales growth, and firm size. The inflation rate (INF) is the yearly real inflation rate in the United States, collected from *the World Bank*. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. All control variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	XCash	M&A_dummy	M&A_dummy	XCash	Cash_dummy
VARIABLES	(1)	(2)	(3)	(4)	(5)
IV	0.008***			-0.000	
	(9.91)			(-1.23)	
IV		3.945**	8.188***		20.220*
		(2.53)	(5.65)		(1.72)
INF			-0.028***		
			(-5.96)		
$IV \times INF$			0.493*		
			(1.87)		
Controls	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES
Ν	46,297	46,232	46,232	217	219
Kleibergen-Paap	200.539***			3.006*	
rk LM statistic					
Cragg-Donald	316.436			1.027	
Wald F statistic					
Adj. R^2	0.0225	0.247	0.242	0.197	0.166

Table 10. Robustness Test

Note: In this table, we exclude deals from California and rerun the test, as they constitute the largest proportion of all samples and subsamples. The results reveal that the intercept significantly determines whether acquirers are willing to bid, consistently supporting the baseline findings. In Panel A, the outcomes align with our baseline results, which demonstrate that all variables exhibit statistical significance, as denoted by p-values presented in parentheses. XCash is the difference between the fitted values (Cash_{*i*,*t*}) and the actual cash holding values. Real Interest Rate (RIR) is the yearly real interest rate, and Inflation Rate (INF) is the yearly real inflation rate in the United States and is collected from *the World Bank*. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. All control variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A.									
	M&A_dummy								
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)		
XCash	1.152***	1.940***	0.837**	0.706**	1.733**	1.183***	-0.182		
	(3.71)	(4.15)	(2.00)	(2.13)	(2.50)	(3.57)	(-0.25)		
RIR		0.049***			0.102***				
		(2.87)			(3.56)				
$XCash \times RIR$		-0.252***			-0.250**				
		(-2.76)			(-1.96)				
INF			-0.056***				-0.074***		
			(-2.94)				(-2.92)		
$XCash \times INF$			0.128				0.386**		
			(1.34)				(2.12)		
Controls	YES	YES	YES	YES	YES	YES	YES		
Year FE	YES	YES	YES	YES	YES	YES	YES		
Industry FE	YES	YES	YES	NO	YES	YES	YES		
Ν	27,758	27,758	27,758	14,442	14,656	12,374	12,374		
Adj. R^2	0.116	0.116	0.116	0.119	0.0644	0.111	0.111		

Table 10. Robustness Test (Cont'd)

Note: In this table, we exclude deals from California and rerun the test, as they constitute the largest proportion of all samples and subsamples. The results reveal that the intercept significantly determines whether acquirers are willing to bid, consistently supporting the baseline findings. Panel B indicates that the intercept significantly influences acquirers' propensity to bid with pure cash, aligning with our baseline results. Real Interest Rate (RIR) is the yearly real interest rate, and Inflation Rate (INF) is the yearly real inflation rate in the United States and is collected from *the World Bank*. Cash (or Stock) dummy is an indicator that equals 1 if an M&A deal is funded by cash (or stock), and 0 otherwise. The payment type data are collected from the Thomson One Banker Securities Data Company (SDC) database. All control variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, ***, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel B.				
	Cash_dummy	Stock_dummy	Cash and Stock	Cash_dummy
VARIABLES	(1)	(2)	(3)	(4)
RIR	-0.205***	0.253***	0.215**	
	(-4.81)	(5.01)	(1.98)	
INF				0.181**
				(2.14)
Controls	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Ν	1,054	959	1,300	1,300
Adj. R^2	0.234	0.185	0.124	0.156

Chapter

Insider Trading Laws and Mergers and Acquisitions.

This study examines the direct influence of the insider trading law enforcement on the probability of U.S. bidders engaging in cross-border acquisitions. To investigate our research question, we discovered sample data between January 1980 and April 2024, covering 5,063 cross-border bids for public targets across various nations. The evidence indicates that the implementation of insider trading law enforcement significantly raises the preferences of U.S. bidders, who have a 57% higher probability of bidding for foreign targets. We find that more than 80% of these deals are likely to involve cash bidders, regardless of high or low stock price informativeness, as all-cash deals consistently yield positive outcomes across our event windows. Additionally, the negative influence of price informativeness on US bidders will be significantly mitigated by the enforcement of insider trading laws.

4.1. Introduction

Empirical evidence shows that insider trading enforcement in developed markets helps improve liquidity, reduce the cost of equity, and improve capital market efficiency (Bris, 2005; Fernandes & Ferreira, 2009). However, the impact of these regulations on company valuations in mergers and acquisitions varies, especially in emerging markets where enforcement varies (Bhattacharya, 2023). In M&A contexts, firm valuation is intricately linked to insider trading dynamics, law enforcement efficacy, market reactions, and strategic decisions made by insiders and managers. Effective enforcement ensures market integrity and transparency, although insider trading can both depress and inflate firm value, particularly when involving executives with significant stock ownership (Masson & Madhavan, 1991).

The relationship between overpriced shares and M&A activity, particularly in the context of goodwill growth and subsequent write-offs, highlights the intricacies of valuation and decision-making during acquisitions (Gu & Lev, 2011). The misvaluation hypothesis suggests that market mispricing fuels takeovers, affecting payment methods, deal dynamics, and postacquisition outcomes (Dong et al., 2006). Additionally, insider trading regulations play an essential role in theories of asymmetric information, market efficiency, and investor confidence (Bainbridge, 1998). According to empirical evidence, rigorous regulatory enforcement enhances overall market functionality by improving capital allocation efficiency while mitigating information asymmetry and lowering equity costs (Chen et al., 2017; Agrawal & Nasser, 2012; Fernandes & Ferreira, 2009; Bhattacharya, 2023).

A key factor in M&A transactions is price efficiency, with insider trading exacerbating information asymmetry and posing challenges to investors (Agrawal & Nasser, 2012; Bhattacharya, 2023; Fernandes & Ferreira, 2009). Regulatory intervention, especially insider trading law enforcement, has been shown to improve market efficiency by increasing liquidity and accelerating stock price transparency while reducing transaction costs (Fernandes & Ferreira, 2009; Acharya & Johnson, 2007). In M&A scenarios, managers consider the amount of information in stock prices, which can reduce financing constraints by reducing reliance on external sources of capital (Chen et al., 2017). Effective regulation of insider trading also affects managerial decisions and firm valuations, especially in terms of capital allocation strategies and competitive dynamics in M&A (Bhattacharya, 2023). It is critical to further explore how insider trading and market misvaluation affect M&A outcomes, especially to understand the role of regulatory enforcement in shaping these dynamics.

Our research attempts to explore the association between insider trading laws and crossborder M&A activities in the United States, underlining the key role of stock price informativeness as a mediator. Through our analysis of these mechanisms, we seek to shed light on how regulatory dynamics influence corporate behaviour and deal performances in cross-border M&A contexts. Our quantitative study obtained 5,063 cross-border bids for public firms in multiple countries between January 1980 and April 2024, including M&A deals involving US public acquirers.

About 42.17% of the deals in this study sample involved public companies in the UK (1,090 deals) and Canada (1,045 deals). The results show that the implementation of insider trading regulations significantly increases the likelihood of US cross-border deals by 57.46% at the 1% significance level. On the other hand, the transaction likelihood is significantly reduced by 48.52%, which is related to the increase in pricing information. However, the negative influence of price informativeness on the preferences of transactions is dramatically mitigated by insider trading enforcement and by up to a 45.64% likelihood to engage in deals. Over 80% of transactions involved cash offers, occurring under conditions of both high and low price informativeness. All-cash deals consistently yielded positive and statistically significant shareholder returns within the ranges of (-1, +1) and (-10, +10), which were even higher under conditions of elevated firm-level political risk.

Chen et al. (2017) reinforce prior findings by illustrating the relationship between efficient capital allocation strategies and reduced market frictions due to moral hazards and adverse selection. Studies have shown that countries with more advanced financial markets (Wurgler, 2000; Fisman & Love, 2004), more robust protection for investors (Wurgler, 2000; McLean et al., 2012), more transparent information environments (Biddle & Hilary, 2006; Francis et al., 2009), and more rapid loss recognition in accounting practices (Bushman et al., 2011; Lara et al., 2016) exhibit more sufficiently allocated resources.

Insider trading laws derive from economic theories emphasising information asymmetry, market efficiency, and investor confidence. Legal and economic experts are divided on insider trading regulation. Some advocate deregulations, suggesting self-regulation by businesses (Bainbridge, 1998; Acharya & Johnson, 2010), while others argue for corporations to retain insider knowledge rights, preventing contractual reassignment (Bainbridge, 1998). Empirical studies underscore that insider trading laws enhance capital allocation efficiency, reduce equity costs, and enhance stock price informativeness (Chen et al., 2017; Fernandes & Ferreira, 2009; Jayaraman, 2012). Stricter enforcement of these laws proves critical in lowering capital costs and boosting market efficiency (Bhattacharya, 2023; Bhattacharya & Daouk, 2002, 2009). Research also reveals that insider trading laws impact M&A activities, influencing firm valuations and strategic behaviours (Agrawal & Nasser, 2012; Bris, 2005; Bhattacharya & Daouk, 2009). The effectiveness of these laws varies, with robust enforcement yielding better outcomes in developed markets, while seemingly insignificant implications emerge in markets (Fernandes & Ferreira, 2009). In sum, insider trading regulations shape corporate decisionmaking, capital allocation, and market behaviour, highlighting the need for effective enforcement.

This research examines the mechanisms linking insider trading regulations and US crossborder mergers and acquisitions (M&A), mainly focusing on the mediating impacts of price efficiency and stock price informativeness. Referring to economic theories that emphasise information asymmetry, market efficiency, and investor confidence, this study investigates the vital role of insider trading laws on various aspects of M&As, involving deal frequencies, means of payments, and shareholders' abnormal cumulative returns (CAR) after the insider trading laws are implemented.

The impact of insider trading on stock performance has been discovered previously. For instance, Bris (2005) conducted a comprehensive global study of insider trading laws and

suggested that initial enforcement of laws tends to increase the frequency and profitability of insider trading, thereby increasing the expected returns from such activities. Accordingly, laws prohibiting insider trading failed to eliminate insider profits, but stricter regulations proved more effective in reducing illegal trading occurrences. Generally, stock bidders tend to be overvalued, whereas cash bidders are more accurately valued. The degree of overvaluation or undervaluation significantly affects abnormal returns upon announcement. Furthermore, competitive bidding dynamics are often affected by the presence of cash bidders, highlighting the critical role of private information in driving deal outcomes (Chemmanur et al., 2009). Moreover, Tavakoli et al. (2012) argue that insider trading activity can provide insightful predictions about future market returns, especially in the US market. Building on these insights, we extend the literature to examine how insider trading laws specifically affect shareholder returns after M&A transactions.

In addition, insider trading significantly affects price informativeness, especially in terms of how M&A transactions are paid. Eckbo et al. (2018) show that as the target company has more information about the bidder, it becomes increasingly difficult to pay the target company with high-priced bidder stock. Thus, for more informed targets, the share of shares in the deal payment tends to be smaller when bidders are opportunistic. Additionally, the presence of private competitors often stimulates public cash bids; both bidders and targets possess insider information, which plays a pivotal role in determining the choice of payment method (Rhodes-Kropf, Robinson, & Viswanathan, 2004). Furthermore, insider trading laws also influence M&A firm valuations, influencing means of payments and transaction characteristics (Dong et al., 2006). Our study investigates the effects of insider trading laws on the choice of payment type in bidding for overseas target firms.

To accomplish this, this study adopts the price informativeness measure as a proxy for investor consensus, which was developed by Bai et al. (2016) based on how accurately current

market values predict future profits. Theoretically, disagreement among investors over a firm's value should decrease as stock prices become more predictive of future earnings. Our empirical results indicate that stock price informativeness plays an intermediary role between insider trading laws and mergers and acquisitions. The gained insights could assist policymakers in realising the vital role of strict enforcement measures to improve market efficiency and protect investor interests. Firms are possibly enabled to make better strategic decisions and predict market reactions in M&A transactions if management and stakeholders have a better knowledge of these dynamics.

The study shows that insider trading laws are significantly associated with cross-border transactions in the United States. It is worth noting that company size is positively correlated with the likelihood of cross-border transactions, increasing by 19.84% at the 1% significance level. However, turnover rate and earnings per share have a negative impact on the likelihood of cross-border transactions, decreasing by 17.47% and 1.88% at the 5% and 1% significance levels, respectively. Cash-effective tax rate and firm-level political risk do not show significant influences on overseas transaction preferences. Price informativeness has reverse impacts on both the probability of overseas transactions and insider trading laws. There is a significant decrease in the preferences for cross-border deals by 48.52%. The interaction between price informativeness and insider trading laws mitigates the negative impact of price informativeness on transactions by resulting in a 45.65% probability of engaging in the acquisitions. The study also investigates the preferences of diverse payments during cross-border transactions, categorising price informativeness into high and low subsamples. Cash bidders exhibit significant positive abnormal cumulative returns, while stock bidders experience negative returns, particularly during periods of high firm-level political risk.

The structure of this paper is as follows: A review of the literature is presented in <u>Section</u> <u>2</u>; data collection and sample selection processes are described in <u>Section 3</u>; empirical tests are presented in <u>Section 4</u>; robustness tests are covered in <u>Section 5</u>; conclusion in <u>Section 6</u>.

4.2. Prior Literature and Hypotheses Development

4.2.1. Insider Trading

Insider trading has long been a significant issue, with the most critical issues being the diverse perspectives on its first introduction and first enforcement observed across different countries, including developed and emerging markets. According to Bhattacharya (2023), insider trading laws are in place in 195 nations, with the United States witnessing its first prosecution in 1961. Bhattacharya and Daouk (2009) suggest that in certain countries, the absence of any law might be preferable to poorly enforced legislation. In common law jurisdictions, strict insider trading regulations typically enhance corporate valuation. However, the effects of these laws in civil law countries vary depending on local conditions (Beny, 2008). In emerging markets, the implementation of insider trading laws often drives raising analysts' coverage. Nonetheless, this increase is less significant in nations that have liberalised capital markets and robust investor protection (Bushman et al., 2005). Despite current regulations, insider trading remains prevalent, with firms often failing to enforce or strengthen these restrictions. There are critical arguments by scholars that the existing regulatory framework is inefficient (Carlton and Fischel, 1982). Bris (2005) conducted the first comprehensive global review of insider trading laws, finding that their implementation correlates with increased transaction volumes and profitability, although these laws are more effective at reducing illegal insider trading than eliminating profits altogether.

Insider trading is a dynamic process, and rational traders will choose investment projects with different degrees of insider activity, and investment tends to be fewer private assets.

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However, information-elastic investment can improve welfare (Bernhardt et al., 1995). A large amount of literature explores the impact of insider trading laws on stock markets. Bhattacharya and Daouk (2002) found that while the introduction of these laws insignificantly impacts a country's cost of equity, the first prosecution of insider trading leads to a notable reduction in this cost. Acharya and Johnson (2007) discovered that information flow from credit default swap markets to stock markets is consistent, particularly for firms with extensive banking relationships, but did not find that insider trading adversely affects credit market pricing or liquidity. Empirical evidence from prior research shows that the majority of firms (92%) have insider trading policies, which tend to reduce spreads for bid-ask and raise the profitability of legal insider trading slightly (Bettis et al., 2000). In addition, a study finds that insider trading law is more common in a country that is democratic and individualistic, which is favourable to financial development and refutes previous arguments against insider trading law (Cline et al., 2021). The debate for insider trading regulation remains crucial, with some researchers supporting deregulation and allowing firms to set their own laws, while others advocate providing firms property rights to control insider trading (Bainbridge, 1998).

The impact of insider trading law enforcement, whether positive or negative, on firms has remained arguable. A study finds that insider trading and the firm's future returns are positively correlated (Tavakoli et al., 2012). This argument agreed with a prior study, which found that when the insiders buy stocks, their abnormal return rises, and vice versa (Seyhun, 1986). Seyhun (1992) also aligns with this, finding that aggregate insider trading could predict future stock returns and therefore contribute to changes in the environment of businesses. While Beny (2005) finds insignificant influence of the enforcement of insider trading laws on corporation values. The benefits of enforcement of insider trading laws can effectively reduce the pre-announcement abnormal stock returns (Panetsidou et al., 2022). There is a 3% average abnormal return on insider trading periods, and almost half of the stock price arises pre-

announcement on insider trading days; thus, these trading characteristics, such as the trading volume, will expose insider trading (Meulbroek, 1992). From the marginal perspective, insider trading is value-destroying, while a firm's value will rise if executive shareholders hold more and more stock ownership (Masson and Madhavan, 1991). Overall, insider trading laws enforcement has crucial influences on the stock market.

4.2.2. Insider Trading Law and Price Informativeness

Insider trading and its enforcement have a complex relationship with market efficiency, with arguments both for and against its impact. Stricter insider trading laws correlate with more accurate stock prices, greater market liquidity, and wider equity ownership, highlighting the importance of enforcement in stock market development (Beny, 2005). For instance, the first prosecution of insider trading has a steady impact on the equity cost, while the initial enactment of insider trading law significantly lowers it (Bhattacharya and Daouk, 2002). In a study that adopted the hidden data, which is illegal insider trading, from the Securities and Exchange Commission, it was shown that stock prices have been significantly influenced by illegal insider trading, with insider trading days with an average return of more than 3% accounting for about half of all pre-announcement stock price run-ups before takeovers (Meulbroek, 1992). Furthermore, concurrent insider trading, often driven by directors, is strongly correlated with future stock returns, with insider buy signals being stronger than sell signals (Tavakoli et al., 2012). As the number of insiders increases, detection and punishment policies should also become stricter. Acharya and Johnson (2010) suggest a correlation between suspicious stock and option activities and an increase in stock participants and argue that stricter enforcement is essential for effective regulation. Bhattacharya and Spiegel (1991) explored market manipulation among risk-averse traders and revealed that when outsiders refused to trade with insiders due to the insiders' information advantage, the market collapsed.

On the other hand, some studies have shown that insider trading can have beneficial effects under certain conditions. For example, in Mexico, unrestricted insider trading led to information being fully incorporated into stock prices before it was publicly released, suggesting that insider trading can benefit outsiders with stochastic liquidity needs by strengthening risk sharing (Bhattacharya et al., 2000; Bhattacharya and Nicodano, 2001). Insider trading rules can also improve capital allocation efficiency, particularly for resourceconstrained businesses and those facing agency issues, with rising liquidity and transparent information settings influencing these laws (Chen et al., 2017). The presence of misinformed traders can complicate the linkage between insiders' purchases and price rises, impacting market liquidity (Cornell and Sirri, 1992). A theory proposed by Copeland and Galai (1983) that price level, return variance, market activity, depth, continuity, and competitiveness are all influenced by the information effects on the bid-ask spread. Investors demand higher returns for stocks with more private information, and firms can influence their capital cost via various means (Easley and O'Hara, 2004). However, enforcement prosperity varies across nations in developed markets where price informativeness is improving, while it is unsuccessful in emerging markets where there are weak legal institutions (Fernandes and Ferreira, 2009). Finnerty (1976) refutes the strong form of the efficient market hypothesis by demonstrating that insiders can identify profitable and unprofitable situations within their corporations. Overall, while stricter enforcement of insider trading rules enhances market efficiency and the utility of accounting information, its impact varies depending on the market context and regulatory environment (Jayaraman, 2012; Seyhun, 1986).

4.2.3. Insider Trading in Mergers and Acquisitions

Shareholders' abnormal cumulative returns, firm value estimation, and means of payment drive various results for the impact of insider trading enforcement on mergers and acquisitions (M&A) performance. Fishman and Hagerty (1992), analysing insider trading regulations, find

that it can enhance information efficiency but also may reduce market competitiveness and disincentivise shareholders from independently regulating insider activities. Masson and Madhavan (1991) find that firm value would be boosted while executive stock ownership is increasing, whereas insider trading reduces it. Another study by adopting the event-study methodology investigates significant value gains on announcement day by examining legal insider trading in deals around 1900, noting substantial pre-announcement stock price run-ups like modern transactions (Banerjee and Eckard, 2001). Nonetheless, it is critical to investigate the means of payment that have been chosen during the transactions, as they have vital impacts and lead to various returns (Travlos, 1987).

The choice of payment in M&A transactions is influenced by insider trading enforcement. A study of registered insider stock trading at 3,700 takeover target firms between 1988 and 2006 found no evidence of increased purchases before takeover announcements. Instead, insiders decreased their purchases and sales, resulting in increased net purchases, especially when the completion of transactions is uncertain (Agrawal and Nasser, 2012). Acquirers tend to overestimate stock offers and underestimate cash offers, and those facing greater overestimates are more likely to use stock, while those facing more information asymmetry tend to use cash (Chemmanur et al., 2009). Competing bids would be deterred by cash bids, suggesting that private information influences the medium of exchange (Chemmanur et al., 2009). In contrast, public bidders use more stock when the target has additional information about the bidder, and market mispricing does not support bidder opportunism. Additionally, the likelihood of paying in cash increases with greater potential competition from private bidders (Eckbo et al., 2018). Despite the means of payment, insider trading also affects the shareholder's abnormal cumulative returns.

Insider trading also affects returns upon acquisition announcements. The extent of undervaluation significantly impacts equity returns (Chemmanur et al., 2009). Profits from
insider transactions are higher in firms without anti-shareholder mechanisms, challenging the role of internal monitoring (Cziraki et al., 2014). The likelihood of information-based trading and stock trading volumes correlated inversely (Easley et al., 1996). Another study using a market microstructure model and an asset pricing framework found that the annual return difference was 2.5% due to private information. (Easley et al., 2002). Insider trading correlates significantly with future stock returns, especially from buys rather than sells (Tavakoli et al., 2012). Evidence of excess returns in acquired firms before merger announcements indicates significant insider information leakage up to 12 trading days prior to the first public announcement (Keown and Pinkerton, 1981). A study of the UK Alternative Investment Market (AIM) and Main Markets shows that stock returns prior to acquisition announcements are abnormal, with lower pre-announcement returns for AIM companies and no evidence that stricter laws reduce stock price appreciation in either market. Management often takes advantage of overvalued stocks during acquisitions, leading to poor post-acquisition returns and goodwill impairment (Gu and Lev, 2011). Between 1975 and 1989, the buying and selling of shares by company insiders on the open market was able to predict up to 60% of stock return fluctuations (Seyhun, 1992).

4.2.4. Hypotheses Development

According to the literature reviewed above, insider trading laws enhance market efficiency by providing managers with relevant data for investment decisions and reducing market frictions. Misvaluation, a key factor in takeovers, motivates acquirers to finance at favourable prices, affecting payment choices, transaction combativeness, premiums, and success rates. The following testable hypotheses result from the discussion.

H1: After the enforcement of insider trading laws, the acquirer's CAR decreases as privileged trading is eliminated.

Before merger announcements, investors in the acquired companies had excess profits due to insider knowledge leaks that occurred up to 12 trading days prior to the announcement (Keown and Pinkerton, 1981). Additionally, a study also found that insiders largely refrain from profitable active trading before takeover announcements, indicating the effectiveness of private enforcement of insider trading regulations (Agrawal and Nasser, 2012).

H2: After the first prosecution of insider trading laws, price informativeness increases, leading to an increase in the means of stock payment among cross-border acquisitions.

The study reveals that acquirers' private information influences the exchange medium, with cash offers increasing with knowledge asymmetry and stock offers increasing with overvaluation, indicating that targets' and acquirers' private information influences the choice (Chemmanur et al., 2009). Public bidders use more stock in deal payments when the target knows them better, and private bidders increase cash propensity (Eckbo et al., 2018). Insiders can predict stock price changes and exploit valuable information (Seyhun, 1986). Bidders and targets exploit insider information, affecting payment methods, transaction frequency, and firm valuation (Rhodes-Kropf, Robinson, and Viswanathan, 2004). Increased knowledge increases stock use in payments (Eckbo et al., 2018).

H3: Enforcement to prohibit privileged trading, while leading to more profitable privileged trading, decreases overall transaction favourableness.

A study investigates how insider trading affects ex ante managerial behaviour between insider trading and non-insider trading initiatives, particularly how insiders choose which investment projects to pursue. Because of the higher volatility of the results, insider trading makes investments riskier while also increasing earnings. Insiders' risk aversion, however, might sometimes result in cautious investing practices (Bebchuk and Fershtman, 1994). Nevertheless, no research has been done on how insider trading rules affect the chance of M&A.

4.3. Research Design and Data

In the forthcoming section, our focus will be on the countries where insider trading laws are actively enforced. Following this, we present summary statistics encompassing the entirety of our sample, with a specific emphasis on M&A transactions. Subsequently, we provide a correlation matrix to explain the interplay between our primary variables and the frequencies of various means of payment. Furthermore, this study investigates the likelihood of crossborder mergers and acquisitions and its impact on the acquirer's shareholder abnormal cumulative return (CAR) across different means of payment. Additionally, we investigate the influence of deal size and completion time on M&A transactions. This different aspect analysis seeks to contribute to the understanding of M&A dynamics in the context of regulatory frameworks and transactional characteristics.

4.3.1. Sample Data

The overall sample consists of public bidders and targets, with the sample period spanning from January 1980 to April 2024, including 5,063 cross-border deals exclusively involving US acquirers, as recorded by Thomson Reuters. Accounting data was collected from Compustat.

Table 1 indicates that US acquirers initiated 5,063 cross-border transactions across 108 different countries. Notably, the majority of the data is contributed by the UK and Canada, which account for 1,090 (21.53%) and 1,045 (20.64%) of the overall deals, respectively. Following these are Germany with 342 (6.75%), France with 280 (5.53%), and Australia with 245 (4.84%) transactions. These five target countries collectively represent approximately 60% of the total sample. According to Bhattacharya (2023), the enforcement of insider trading laws in these countries commenced in 1981 (UK), 1976 (Canada), 1995 (Germany), 1975 (France), and 1996 (Australia).

Table 1. Target Country

4.3.2. Summary Statistics

The summary statistics table for the overall sample and the M&A subsample, with all control variables winsorized at the 1% level (see Table 2). In the M&A sample (Panel B), the average Deal Size (deal value scaled by the natural logarithm) is 4.616, with a minimum of 0.215 and a maximum of 8.624. All deals were completed within the sample period. Additionally, the average Firm Size (firm value calculated as the natural logarithm of total assets) is 8.042, with a standard deviation of 2.075, ranging from 1.268 to 13.66. Deal-level control variables in Table 2 include an average relative Tobin's Q (book-to-market ratio) of 0.384 and an average Leverage (the sum of short- and long-term total debt scaled by total assets) of 0.408. The event windows between -10 and +10 days reveal that the minimum average return for each window is negative, while the maximum average return is positive. With the overall minimum and maximum returns increasing gradually over time, particularly from CAR (-5, +5), the average return started increasing over 1% as well as the maximum return above 41.4%.

Table 2. Summary Statistics Table

Table 3 presents the correlations among control variables used in our study. We find that Firm Size, NWC (net working capital scaled by total assets), Liquidity (total assets divided by total liabilities), and EPS (earnings per share) exhibit strong positive correlations with Tobin's Q. Conversely, Leverage and the Cash Asset Ratio (cash divided by total assets) display significant negative correlations with Tobin's Q. All these control variables are significant at the 1% level, either positively or negatively. Despite these findings, the Turnover Ratio (property, plant, and equipment total gross divided by total assets) shows a negative correlation with Tobin's Q, but this correlation is not statistically significant.

Table 3. Correlation Matrix

4.3.3. Methodology

In our study of insider trading regulation and cross-border M&A, Bai et al.'s measure is particularly important. It quantifies how the quality of enforcement affects the informativeness of prices, especially the revelatory component (RPE) that is critical to valuation accuracy in M&A decisions. We find that stronger enforcement weakens the negative relationship between informativeness and transaction frequency: while more accurate pricing reduces the number of overvalued target firms, enforcement increases trust in price signals, leading to better strategic choices. Thus, Bai et al.'s measure not only supports our mediation hypothesis but also reinforces the policy implications—emphasising that strong enforcement regimes can both protect investors and improve the efficiency and credibility of cross-border M&A markets.

The Bai et al. (2016) measure of price informativeness is grounded in a welfare-based framework that distinguishes between two vital dimensions: Forecasting Price Efficiency (FPE) and Revelatory Price Efficiency (RPE). FPE captures how well current stock prices forecast future firm cash flows, incorporating both public and firm-disclosed information. In contrast, RPE isolates market-generated information that is revealed independently through trading and price discovery—and that is not yet known to company insiders. This distinction is critical because RPE reflects the market's true contribution to improving capital allocation. Informativeness measures also vary by time horizon, with stronger predictive power over a 3-to 5-year horizon—particularly important for M&A planning—and are sensitive to factors such as institutional ownership, liquidity, and company growth potential, providing a nuanced, company-level view of how prices effectively aggregate and convey information.

Dong et al. (2006) explore the misvaluation and Q theories of takeovers using pre-offer market values. It links bidder and target valuations to payment methods, acquisition strategies, premiums, target hostility, offer success, and announcement-period returns. The misvaluation hypothesis is stronger in the 1990-2000 era, while the Q hypothesis is stronger in the former. In this paper, we will adopt the price informativeness index, which was developed by following the literature. Bai et al. (2016) created a metric to evaluate the informativeness of stock prices, specifically how accurately current market values forecast future revenues. This welfare-based measure of price informativeness predicts changes in future cash flows based on current market prices. It is calculated using firm-level cash flow and stock price data and assesses the extent to which the market distinguishes between future profitable firms and loss-making firms. To calculate this measure, Pyrgiotakis et al. (2024) perform cross-sectional regressions of future profits on current market prices with the following estimations:

$$\frac{E_{i,t+h}}{A_{i,t}} = a_{t,h} + b_{t,h} \log\left(\frac{M_{i,t}}{A_{i,t}}\right) + c_{t,h} \left(\frac{E_{i,t}}{A_{i,t}}\right) + c_{t,h}^{s} I_{i,t}^{s} + e_{i,t,h}$$
(1)

where *E* denotes the percentage of current earnings pre-interest and taxes, and *M* stands for market capitalisation of the company. $I_{i,t}^s$ indicates the industry indicator for company *i* (2digit SIC). Then, price informativeness is estimated in the following way:

Price Informativeness =
$$\widehat{b_{t,h}}\sigma_t(\log\left(\frac{M_{i,t}}{A_{i,t}}\right))$$
 (2)

By incorporating ideas from existing literature, we can formulate our initial model as follows:

$$M\&A_{dummy_{i,t}} = \alpha + \beta * ITL_{dummy_{i,t-1}} + \lambda * C_{i,t-1} + \gamma * Industry_{FE} + \delta * Year_{FE} + \varepsilon_{i,t}$$
(3)

where $M\&A_dummy$ is an indicator that equals 1 if a firm, denoted as "*i*," engages in transactions in a given year, denoted as "*t*," and 0 otherwise. *ITL_dummy* is another indicator that equals 1 if a firm enforces insider trading laws and 0 otherwise. Additionally, we will test the effects of insider trading laws and other control variables "*C*", which represents the control variables. We include firm-level control variables such as Tobin's Q, Firm Size, Networking Capital (NWC), Leverage, Earnings Per Share (EPS) on the likelihood of US cross-border transactions. Furthermore, year- and industry-fixed effects are also included in the analysis.

Furthermore, we will adopt a fixed effects model to explore the probability of stock or cash being utilised in the transactions while incorporating all the control variables.

$$Cash_{dummy_{i,t}} = \alpha + \beta * ITL_{dummy_{i,t-1}} + \lambda * C_{i,t-1} + \gamma * Industry_{FE} + \delta * Year_{FE} + \epsilon_{i,t}$$
(4)

where *Cash_dummy* (or *Stock_dummy*) is an indication that equals 0 otherwise and 1 if a firm, represented by the letter "*i*", accepts full stock (cash) payment in transactions for a specific year, represented by the letter "t", We will also investigate the effects of the other control variables, denoted by "*C*", as well as the *ITL_dummy*. When estimating the probability of US cross-border transactions, we consider firm-level control factors, as included above. Moreover, the analysis incorporates year- and industry-fixed effects.

$$CAR_{bidder_{i,t}} = \alpha + \beta * ITL_{dummy_{i,t-1}} + \lambda * C_{i,t-1} + \gamma * Industry_{FE} + \delta * Year_{FE} + \varepsilon_{i,t}$$
(5)

where *CAR_bidder* is shareholders receive an abnormal cumulative stock return in year *t*, firm *i*. We will also follow the same procedure to investigate the effects of the other control variables, denoted by "*C*", as well as the *ITL_dummy*, considering all the control variables and fixed effects addressed beforehand. We will present both stock and cash shareholder return at different event windows in the following sections in a detailed manner.

4.4. Empirical Results

4.4.1. Baseline Results

Table 4 investigates the probability of cross-border deals. The empirical evidence shows that insider trading laws significantly affect US bidders' engagement with cross-border transactions by up to 57.46% at the 1% significance level (Column 1 in Table 4). The likelihood that US bidders engage in overseas transactions has remained the same after including all the controls from our sample. The results are consistent at the 1% significance level, which is up to 40.35% probability of motivating bidders (Column 2 in Table 4). We find that Firm Size and

Cash Asset Ratio also have a significant positive influence on the preferences of cross-border transactions, which increased by 19.84% at the crucial 1% level and 50.08% at the 5% significant level. However, Tobin's Q, Turnover Ratio, and earnings per share (EPS) negatively impact the possibility of cross-border deals by decreasing by 7.04%, 17.47%, and 1.88% at the 10%, 5%, and 1% critical levels, respectively. We failed to examine any significant influences from the cash-effective tax rate and firm-level political risk, but the former shows that a one-standard increase will lead to 3.56% M&A probabilities, while the latter shows that it will decrease the transaction volume (Column 2 in Table 4).

Table 4. The likelihood of Mergers and Acquisitions

4.4.2. Further Test

So far, our data has demonstrated a strong positive correlation between insider trading and cash deals. The fundamental processes underlying this link remain unknown. The literature discusses price informativeness channels as underlying the choice of transaction payment methods. In this study, we examine the relationship between insider trading and the likelihood of cash payouts to uncover potential mechanisms.

Table 5 shows that price informativeness significantly reduces cross-border mergers and acquisitions by 48.52% (Column 1). Additionally, we find that insider trading laws and price informativeness have an inverse relationship; when insider trading laws are enforced, the price informativeness will drop by 68.56% when we only consider year fixed effects (Column 4), and this result remains consistent while including industrial and state fixed effects, which decreased price informativeness by 11.57% (Column 5). This may suggest that managers prefer to adopt cash payments over stock payments when they possess private information to identify noise in stock price information. Moreover, the interaction between price informativeness and insider trading reduces the negative impact of price informativeness on transactions, showing

a 45.64% probability of engaging in these transactions (Column 3), which is a reduced negative impact of 2.88% (48.52%; see Column 1).

Table 5. The likelihood of Mergers and Acquisitions (Cont'd)

Beyond the price informativeness channel, we utilised the cash-effective tax rate and firm-level political risk index to further investigate whether M&A volume is influenced by insider trading. Table 6 indicates that these two indices have significant and positive impacts on overseas transaction preferences when insider trading laws are enforced. To clarify, we divided the M&A sample into two subsamples for each high and low cash effective tax rate and firm-level political risk. We found that the results for both high and low subsamples remained consistent.

Table 6. The likelihood of Mergers and Acquisitions (Cont'd)

4.4.2.1. The likelihood of Payments

To investigate the likelihood of different means of payment during cross-border transactions, we classified price informativeness into high (above the 75th percentile) and low subsamples. In our sample, we identify either high or low price informativeness; overall, bidders exhibit a strong preference for cash payments, which account for more than 80% in both subsamples. In the high-price informativeness subsample test, we find that cash and stock combination payments comprise 12.25% and 8.84% in the low-price informativeness subsample. Accordingly, stock payments represent 5.63% and 3.77% in the high and low subsamples, remaining the smallest proportion among all payment methods. However, we find that when price informativeness is high, the number of cash deals is lower by 5.27% compared to cash deals in the low price informativeness sample. In contrast, stock deals and combination deals are more likely to be chosen when price informativeness is high than when it is low (see Table 7).

Table 7. The likelihood of Payments (Post-Insider Trading)

4.4.2.2. Shareholder's Cumulative Abnormal Return (CAR)

Following the above literature, we investigate the acquirer's shareholder abnormal cumulative return (CAR) over various event windows, from (-1, +1) to (-10, +10), in each sample. We failed to observe any significant return for CAR (-1, +1) under different payment methods. In the overall M&A sample and the insider trading-enforced M&A sample, cash bidders exhibit significant positive abnormal cumulative returns, averaging above 2%. Furthermore, the high firm-level political risk subsample test also shows significant positive abnormal cumulative returns for cash bidders, around 5% (Panel C in Table 8). In this subsample, 24.8% of the sample fits our model, which is higher than the proportions in Panel A (20.7%) and Panel B (22.5%). In contrast, stock bidders lose around 4% at event windows (-8, +8). This negative effect is particularly pronounced during periods of high political risk at the firm level, where shareholder returns shrink by more than 13% at the event windows (-7, +7) (Panel C in Table 8). In addition, firms adopted insider trading laws, suffering around 4% of losing shareholders' return at the event window (-8, +8) (Panel B in Table 8).

Table 8. Shareholder's Cumulative Abnormal Return (CARs)

4.5. Robustness Test

To further test, based on our primary research questions and preliminary results, we decided to robustness test while excluding Canada, which accounts for 1,045 observations, or 20.64% of the overall sample. We find that our robustness results remain consistent with the baseline evidence presented in Table 4. In Table 9, the probability of transactions motivated by the enforcement of insider trading laws shows a 57.3% increase for a one standard deviation increase in enforcement (Column 1). Even after including all control variables, as listed in

Table 4, Column 2, our baseline evidence remains consistent. The empirical evidence from our study indicates that the probability of U.S. bidders increases by 40.35% (Column 2).

Despite the aforementioned test in which the target (i.e., Canada) was excluded from the subsample, our additional robustness test also examined the acquirer side, excluding the largest bidders from California and Texas, which together comprise approximately a quarter of the overall sample. We proceeded to follow the process outlined in Table 4, beginning with testing the likelihood of acquisitions being affected solely by enforcement of insider trading laws and then including all relevant controls. Our baseline results remained consistent even after exploring transaction preferences with and without all controls included. In Column 3, we observed that around 53.88% of bidders were in favour of engaging in acquisitions at a significant level of 1%. Furthermore, we consistently found that there was a significant level. In our former test, where all controls were excluded to primarily consider the impact of insider trading laws on US bidder probabilities, and in our latter test, where all controls were included, we found that acquirers significantly increased their involvement following the enforcement of insider trading laws (Column 4). We find that there are around 65% of target countries in this study enforced insider trading laws (Table A3).

Table 9. Robustness Test

Table A3.

4.6. Conclusion

To increase the credibility of our research findings, we incorporated firm-level political risk and a cash-effective tax index to test the robustness of our results. Our evidence consistently supports the baseline findings, even when employing different measurements. We observed that firms enforce insider trading laws and remain strongly inclined to bid for

overseas targets, regardless of variations in the cash effective tax rate or firm-level political risk. Despite conducting several supplementary tests and robustness checks, which included the subsample that excluded the sample of Canada, our preliminary results remain steady, reaffirming the reliability of our initial evidence.

Our research indicates that during the periods of high price informativeness, firms tend to prefer choosing cash payments. Additionally, the enforcement of insider trading laws positively affects the probability of U.S. cross-border deals at a significant level, as confirmed by both our preliminary and robustness tests. Furthermore, the enforcement of insider trading laws mitigates the negative impact of price informativeness significantly, thereby promoting cross-border transactions.

Moreover, we observed discrepancies in shareholder cumulative abnormal returns between cash bidders and stock bidders. Cash bidders consistently experience positive returns over time within the sample event windows, while stock bidders exhibit a contrasting trend. This finding aligns with the notion that cash bidders achieve favourable yields, as suggested by Travlos (1987).

This study provides fresh insights into the interaction between the enforcement of insider trading laws and U.S. cross-border mergers and acquisitions (M&As) by examining the impact of different payment choices under varying levels of price informativeness, as well as the resulting shareholder returns. These findings offer valuable implications for both scholars and practitioners involved in M&A decision-making in diverse economic environments.

There are some insights from our study for the policymakers. As we found that the likelihood of cross-border M&As increased roughly by 57.46% while firms enforced insider trading laws where indicated, a robust regulatory environment that reduced asymmetric information and enhanced investors' confidence while bidding in foreign countries. Thus,

policymakers may prioritise the enforcement of regulations in both home and host countries to foster cross-border investment flows and strengthen market integration globally. Additionally, our study finds there is an inverse relationship between the enforcement of insider trading laws and price informativeness, which means insider trading law enforcement improves stock market efficiency, which can provide informational transparency and thus can reduce equity cost and promote efficient capital allocation. Besides, these are continuously supported by our evidence, where we find that higher price informativeness declines preferences of transactions by 48.52%; however, enforcement mitigates these negative effects by reducing them by 2.88% (45.64%). Cash deals consistently generate positive abnormal returns across high and low price informativeness circumstances while facing high firm-level political risk. Policymakers ensure transparent information to limit asymmetric information to protect all stakeholders to restrict overvalued stock payments. Overall, in our sample, up to 65% of target nations have implied insider trading laws. Thus, our study suggests that insider trading laws affect the deal frequencies, firm valuations, payment types, and shareholder's return; thus, policymakers should be integrated with insider trading law enforcement to ensure both parties engage with transactions under compatible regulatory expectations.

4.7. Tables

Table 1.	Target Country	
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Antigua and Barbuda	3	0.06	Ecuador	2	0.04	Liechtenstein	1	0.02	Rwanda	1	0.02
Argentina	25	0.49	Egypt	4	0.08	Lithuania	2	0.04	Saint Kitts and Nevis	1	0.02
Aruba	1	0.02	El Salvador	2	0.04	Luxembourg	16	0.32	Saudi Arabia	1	0.02
Australia	245	4.84	Finland	38	0.75	Madagascar	1	0.02	Serbia	3	0.06
Austria	23	0.45	France	280	5.53	Malaysia	9	0.18	Seychelles	1	0.02
Bahamas	5	0.1	Georgia	2	0.04	Malta	2	0.04	Sierra Leone	1	0.02
Belgium	57	1.13	Germany	342	6.75	Mexico	71	1.4	Singapore	49	0.97
Belize	1	0.02	Ghana	2	0.04	Monaco	2	0.04	Slovakia	1	0.02
Bermuda	20	0.4	Greece	8	0.16	Montenegro	1	0.02	Slovenia	1	0.02
Bolivia	4	0.08	Guam	1	0.02	Morocco	1	0.02	South Africa	14	0.28
Botswana	1	0.02	Guatemala	1	0.02	Mozambique	1	0.02	South Korea	49	0.97
Brazil	64	1.26	Guernsey	5	0.1	Netherlands	153	3.02	Spain	82	1.62
British Virgin Islands	37	0.73	Honduras	1	0.02	Netherlands Antilles	5	0.1	Sweden	124	2.45
Bulgaria	2	0.04	Hong Kong	80	1.58	New Zealand	40	0.79	Switzerland	99	1.96
Canada	1045	20.64	Hungary	5	0.1	Nicaragua	1	0.02	Taiwan	29	0.57
Cayman Islands	5	0.1	Iceland	3	0.06	Nigeria	2	0.04	Thailand	6	0.12
Chile	22	0.43	India	56	1.11	Norway	52	1.03	Trinidad and Tobago	2	0.04
China (Mainland)	113	2.23	Indonesia	3	0.06	Panama	3	0.06	Turkey	16	0.32
Colombia	11	0.22	Ireland	96	1.9	Papua New Guinea	1	0.02	U.S. Virgin Islands	2	0.04
Congo (DRC)	1	0.02	Isle of Man	2	0.04	Paraguay	1	0.02	Ukraine	2	0.04
Costa Rica	4	0.08	Israel	158	3.12	Peru	8	0.16	United Arab Emirates	8	0.16
Croatia	1	0.02	Italy	107	2.11	Philippines	4	0.08	United Kingdom	1090	21.53
Cyprus	2	0.04	Jamaica	1	0.02	Poland	11	0.22	Uruguay	2	0.04
Czech Republic	11	0.22	Japan	63	1.24	Portugal	9	0.18	Uzbekistan	1	0.02
Denmark	56	1.11	Jersey	5	0.1	Puerto Rico	20	0.4	Venezuela	4	0.08
Dominica	1	0.02	Jordan	3	0.06	Romania	3	0.06	Vietnam	1	0.02
Dominican Republic	2	0.04	Kazakhstan	3	0.06	Russia	17	0.34	Zambia	1	0.02
					Total		5063	100			

Note: This table indicates public targets of firms across various countries, covering 5,063 cross-border bids between January 1980 and April 2024.

Table 2. Summary Statistics Table

Note: This table summarises main variables and other variables from January 1980 through April 2024. Panel A indicates the overall sample, and Panel B is the M&A sample. These two tables include the number of overall samples and M&A subsample observations (i.e., N), mean, and standard deviation (i.e., sd) for the key variables used in our regressions. Price Informativeness index was manually calculated. All variables are explained in the Appendix 2 including the price informativeness index. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. All Sample						
VARIABLES	N	Mean	Sd	Min	Max	
Tobin's Q	28,759	0.46	0.449	-4.99	3.765	
Firm Size	28,759	7.509	1.895	-0.524	12.54	
NWC	28,759	0.217	0.207	-2.086	0.913	
Leverage	28,759	0.438	0.228	0.0219	4.271	
Cash Asset Ratio	28,759	0.119	0.129	0	0.95	
Liquidity	28,759	2.548	2.227	0.202	29.19	
Turnover Ratio	28,759	0.495	0.368	0	2.07	
EPS	28,759	1.631	2.636	-8.11	16.33	
Cash_ETR	28,759	0.197	0.363	-1.411	1.997	
PRisk	28,759	109.2	115	0	718.4	
Price Informativeness	28,759	-0.0147	0.0591	-0.246	0.107	
	Pane	el B. M&A Sam	ple			
VARIABLES	Ν	Mean	Sd	Min	Max	
Tobin's Q	1,488	0.384	0.286	-0.0885	1.601	
Firm Size	1,488	8.042	2.075	1.268	13.66	
NWC	1,488	0.214	0.2	-0.348	0.782	
Leverage	1,488	0.408	0.199	0.0174	1.099	
Cash Asset Ratio	1,488	0.131	0.143	0	0.714	
Liquidity	1,482	2.6	2.059	0.813	14.17	
Turnover Ratio	1,488	0.347	0.306	0	1.463	
EPS	1,488	2.087	3.165	-5.37	19.29	
Deal Size	1,488	4.616	1.799	0.215	8.624	
Cash_ETR	1,488	0.166	0.441	-2.373	2.191	
Completion	964	4.139	0.995	0.693	6.174	
Price Informativeness	1,105	-0.0201	0.0603	-0.248	0.101	
PRisk	1,217	113	113.4	0	610.9	
CAR5	1,485	0.0101	0.0905	-0.276	0.414	
CAR7	1,483	0.0128	0.105	-0.328	0.442	
CAR8	1,483	0.00061	0.103	-0.373	0.434	

Table 3. Correlation Matrix

Note: This table represents a correlation matrix for use to investigate the dependence of all variables in the research from January 1980 to April 2024. Price Informativeness index was manually calculated. All variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Tobin's Q	1.000										
Firm Size	-0.068***	1.000									
NWC	0.057***	-0.458***	1.000								
Leverage	-0.284***	0.195***	-0.458***	1.000							
Cash Asset Ratio	-0.114***	-0.371***	0.578***	-0.211***	1.000						
Liquidity	0.090***	-0.340***	0.501***	-0.590***	0.313***	1.000					
Turnover Ratio	0.097***	0.191***	-0.342***	0.049***	-0.282***	-0.166***	1.000				
EPS	-0.171***	0.375***	-0.132***	0.021***	-0.143***	-0.103***	0.015*	1.000			
Cash_ETR	-0.045***	0.059***	-0.005	-0.011	-0.051***	-0.015*	-0.024***	0.138***	1.000		
PRisk	0.009	0.065***	-0.050***	0.014*	0.003	-0.015*	-0.003	0.037***	-0.007	1.000	
Price Informativeness	0.039***	-0.016**	-0.045***	0.023***	-0.072***	-0.014*	0.058***	0.008	0.015**	-0.052***	1.000

Table 4. The likelihood of Mergers and Acquisitions

Note: This table presents the results of the likelihood of cross-border M&As by adopting the logit model. In Column 1, we investigated the probability of the overall M&As while considering the enforcement of insider trading laws. Then, in Column 2, we include control variables to do the further test. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. The Insider Trading Index was collected from Bhattacharya (2023) manually; if the country enforced insider trading regulation, then it equals 1, and 0 otherwise. Price Informativeness index was manually calculated. All variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	M&A_dummy					
Variables	(1)	(2)				
Insider Trading	0.454***	0.339***				
	(16.89)	(12.40)				
Tobin's Q		-0.073*				
		(-1.90)				
Firm Size		0.181***				
		(12.12)				
NWC		0.043				
		(0.29)				
Leverage		-0.048				
		(-0.41)				
Cash Asset Ratio		0.406**				
		(2.16)				
Liquidity		-0.013				
		(-1.14)				
Turnover Ratio		-0.192**				
		(-2.24)				
EPS		-0.019***				
		(-3.12)				
Cash_ETR		0.035				
		(1.55)				
PRisk		-0.000				
		(-0.99)				
Constant	0.724*	0.353				
	(1.93)	(0.90)				
Industry FE	YES	YES				
State FE	YES	YES				
Year FE	YES	YES				
Ν	28,558	28,558				
Adj. R^2	0.0275	0.0417				

Table 5. The likelihood of Mergers and Acquisitions (Cont'd)

Note: This table presents the results of the likelihood of cross-border M&As by adopting the logit model. In Column (1~3), we investigated the probability of the overall M&As while considering Price Informativeness, Insider Trading Enforcement, and its intercept. Then, in Columns (4&5), we explored the relationship between Price Informativeness and Insider Trading Enforcement, accordingly. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. The Insider Trading Index was collected from Bhattacharya (2023) manually; if the country enforced insider trading regulation, then it equals 1, and 0 otherwise. Price Informativeness index was manually calculated. All variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

		M&A_dummy		Insider	Trading
Variables	(1)	(2)	(3)	(4)	(5)
Price Informativeness	-0.664**	-0.181	-0.203	-1.157*	-0.123
	(-2.17)	(-0.60)	(-0.65)	(-1.78)	(-0.17)
Insider Trading			0.346***		
			(12.41)		
Intercept			0.376		
			(1.08)		
Controls	YES	YES	YES	YES	YES
Industry FE	NO	YES	YES	NO	YES
State FE	NO	YES	YES	NO	YES
Year FE	YES	YES	YES	YES	YES
Ν	28,759	28,558	28,558	28,759	27,895
Adj. R^2	0.000875	0.0405	0.0418	0.00722	0.0822

Table 6. The likelihood of Mergers and Acquisitions (Cont'd)

Note: This table presents the results of the likelihood of cross-border M&As by adopting the logit model. We investigated the probability of the overall M&As while considering firms enforced Insider Trading Laws facing Cash ETR (see Panel A) or Firm-level political risk (see Panel B), respectively. This table indicates that these two indices have significant and positive impacts on overseas transaction preferences when insider trading laws are enforced. To clarify, we divided the M&A sample into two subsamples for each high and low cash effective tax rate and firm-level political risk. We found that the results for both high and low subsamples remained consistent. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. The Insider Trading Index was collected from Bhattacharya (2023) manually; if the country enforced insider trading regulation, then it equals 1, and 0 otherwise. Price Informativeness index was manually calculated, and all variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A.	Insider Trading Law
High Effective Cash Rate	0.286***
	(9.61)
Low Effective Cash Pate	0.385***
Low Effective Cash Rate	(10.88)
Panel B.	Insider Trading Law
High Firm-level Political Risk	0.312***
	(9.35)
Lever Firme level Delitical Diele	0.349***
Low Firm-level Pollical Kisk	
	(11.14)

Table 7. The likelihood of Payments (Post-Insider Trading)

Note: This table presents the stock and cash payments. To investigate the likelihood of different means of payment during cross-border transactions, we classified price informativeness into high (above the 75th percentile) and low subsamples. Cash (or Stock) dummy is an indicator that equals 1 if an M&A deal is funded by cash (or stock), and 0 otherwise. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise. Both payment type and M&A data are collected from the Thomson One Banker Securities Data Company (SDC) database. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A.	Cash Payment	Stock Payment	Cash and Stock Payment
High Price Informativeness	82.12%	5.63%	12.25%
Low Price Informativeness	87.39%	3.77%	8.84%
Difference	5.27%**	-1.86%	-3.41%**
t-test	(2.6773)	(-1.5971)	(-2.0256)

Table 8. Shareholder's Cumulative Abnormal Return (CARs)

Note: This table indicates the shareholder's cumulative abnormal return in different samples at various event windows from (-1, +1) to (-10, +10) under the different payment methods. Panel A shows the overall M&A sample, Panel B represents the insider trading-enforced M&A sample, and Panel C explores the high firm-level political risk subsample, respectively. Cash (or Stock) dummy is an indicator that equals 1 if an M&A deal is funded by cash (or stock), and 0 otherwise. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise. Both payment type and M&A data are collected from the Thomson One Banker Securities Data Company (SDC) database. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. M&A Sample							
Variables	Cash	Stock	Cash and Stock				
CAR (-8, +8)	2.079**	-4.186*	-1.747*				
	(-2.09)	(-1.91)	(-1.65)				
Controls	YES	YES	YES				
Industry FE	YES	YES	YES				
Year FE	YES	YES	YES				
Ν	1,098	558	1,005				
Adj. R^2	0.207	0.321	0.2				
	Panel B. M&A Sam	ple (Insider Trading Law	<i>י</i>)				
Variables	Cash	Stock					
CAR (-8, +8)	1.954*	-3.985*					
	(-1.87)	(-1.77)					
Controls	YES	YES					
Industry FE	YES	YES					
Year FE	YES	YES					
Ν	984	468					
Adj. R^2	0.225	0.344					
	Panel C. M&A	A Sample (High Prisk)					
Variables	Cash	Stock	Cash and Stock				
CAR (-7, +7)	5.297***	-13.297*	-5.188**				
	(-2.82)	(-1.71)	(-2.45)				
Controls	YES	YES	YES				
Industry FE	YES	YES	YES				
Year FE	YES	YES	YES				
Ν	506	139	426				
Adj. R^2	0.248	0.332	0.268				

Table 9. Robustness Test

Note: In this table, we excluded Canada and reran the test, which accounts for 1,045 and consists of 20.64% of the overall sample. In Column 1, we examined the probability of deals motivated by the Insider Trading Enforcement only. In Column 2, we included all control variables. Additionally, in Column (3&4), we excluded bidders from California and Texas, which take up to a quarter of the overall sample. All control variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

		M&A_dum	my	
Variables	(1)	(2)	(3)	(4)
Insider Trading	0.453***	0.339***	0.431***	0.338***
	(16.89)	(12.43)	(13.97)	(10.86)
Controls	NO	YES	NO	YES
Industry FE	YES	YES	YES	YES
State FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Ν	28,558	28,558	21,462	21,462
Adj. R^2	0.0275	0.0417	0.0308	0.0441

Chapter 2

Concluding Remarks

This study comprehensively explores the influence of various macroeconomic factors on mergers and acquisitions (M&A) in the U.S. market. We investigate macro factors, particularly economic policy uncertainty (EPU), firm-level political risk (PRisk), taxation, inflation, and insider trading regulations. The analysis confirms that US domestic M&A activity and the extent of EPU, which developed by Baker et al. (2016), are associated reversely. Similarly, an inverse relationship occurs for the study between PRisk and the likelihood of cross-border M&A transactions, emphasising the vital role of external risks—such as political uncertainty and tax-related considerations—in shaping corporate acquisition decisions. The study also underscores that cash-effective tax rates (Cash ETR) allow firms to mitigate political risks, particularly when target firms are in tax havens, contributing to the literature on the role of taxation in M&A decisions.

In addition, the study also explored the link between inflation and excess cash holdings on the likelihood of payments, and revealed outcomes showed that during inflationary periods, cash-rich companies are more likely to use cash as a payment method in M&A transactions, thereby enhancing their ability to actively participate in such transactions. The study also explores the enforcement of insider trading regulations, showing that stricter regulations enhance stock price informativeness, improve investor confidence, and favour cash payments, especially in cross-border transactions. Across these dimensions, the study provides critical insights into the interaction between macroeconomic conditions, regulatory factors, and firm-specific characteristics in driving M&A behaviour, offering practical implications for policymakers, corporate strategists, and academics alike.

In Chapter 2, our analysis reveals a significant negative correlation between firm-specific political risk (PRisk) and the likelihood of mergers and acquisitions (M&A), particularly crossborder transactions. Our finding consistently supports a prior study which confirms that political risk is one of the crucial factors affecting a corporation's strategic decisions. Additionally, support the prior study where addressed taxes and PRisk are key determinants of U.S. cross-border M&A decisions (Meier and Smith, 2023). By utilising the cash effective tax rate (Cash ETR), we further illustrate that firms can mitigate the adverse effects of political risk, especially when it comes to cross-border acquisitions involving tax havens. These pieces of evidence further expand the growing body of literature on the impact of external factors—such as taxation and political risk in shaping U.S. cross-border deals.

This study has several limitations while providing valuable insights. A key drawback is the political risk may be oversimplified. The PRisk index is a useful tool, but it could not adequately capture the complexity of political instability or the variety of regulatory changes that may affect corporate behaviour. Political risk covers a variety of factors, which include government intervention, policy changes, or international relations, that are unable to be completely explained by the index used in this study.

Additionally, our analysis focuses mainly on U.S. firms, which limits the generalisability of our findings to firms in other countries or industries that may face different political, economic, and regulatory environments. The corporate behaviours in emerging markets or heavily regulated industries, for instance, could vary significantly from the U.S. context discovered in this paper.

Another limitation is the question of payment methods. While our research shows that high PRisk firms prefer to target companies in tax havens, it is unclear whether these bidders are more likely to offer stock or cash as payment. According to Travlos' (1987) argument, stock bidders might be more favourable, as target shareholders can defer taxation until they sell their shares. This aspect requires further investigation, especially when firms face financing constraints. Riskier businesses, especially those that have limited liquidity, prefer using stock payments or prefer acquiring targets that are in tax havens, where the tax burden is the lowest. It is critical to understand whether target firms from tax havens are more likely to accept stock payments rather than cash payments to defer immediate tax payments. Overall, our study highlights the significant impact of firm-level political risk and tax avoidance on US crossborder M&A decisions, while also highlighting the need for future research to examine the complexity of payment methods and the broader applicability of these results to different regions and industries.

Chapter 3 examines the impact of inflation and excess cash holdings on the preferences of US domestic firms' mergers and acquisitions (M&A) and means of payment. Our analysis demonstrates that during periods of high inflation, firms—especially those with substantial cash reserves—prefer cash payments over stock payments. This preference enables cash-rich firms to leverage their liquidity to mitigate inflation's adverse effects and continuously actively participate in M&A markets. To ensure the robustness of our evidence, we apply the application of propensity score matching (PSM) and two-stage least squares (2SLS) methods. In conclusion, the robustness results remained consistent even after supplementary tests and the exclusion of a significant portion of deals from California.

Our results indicate a strong positive relationship between excess cash and the likelihood of M&A transactions during inflationary periods. Conversely, during periods of monetary contraction, the likelihood of utilising excess cash for acquisitions diminishes. The analysis further reveals discrepancies in cumulative abnormal returns (CARs) between cash and stock bidders, with cash bidders experiencing declining returns during inflationary periods, while stock bidders exhibit opposite trends. Despite this, cash transactions generally yield more favourable returns compared to stock-based deals, in line with the hypothesis that stock payments signal overvaluation to the market. These results provide new insights into the relationship between inflation, excess cash, payment preferences, and shareholder returns in M&A transactions, offering implications for both scholars and practitioners.

In addition, our study offers valuable insights by examining the direct link between inflation and M&A activity in the United States, a topic that has not received much attention in the literature. We extend our understanding of corporate financial strategies under inflationary pressure by introducing the concept of excess cash (XCash), which is the difference between a firm's actual cash holdings and its optimal cash level. Our results show that firms tend to avoid cash payments while facing overvalued deals; thus, when the real interest rates increase dramatically, the preferences for stock payments arise significantly as well. Overall, cash bidders tend to receive higher cumulative shareholder's abnormal returns (CARs) than stock bidders, aligning with the existing literature that suggests disinflationary periods drive higher stock prices and more cost acquisitions.

Although this study addresses vital insights for the role of excess cash and inflation in M&A deals, it still has several limitations. First, this analysis mainly concentrates on short-term performance rather than long-term. This study should be extended to investigate the long-term performances of firms that engaged in M&A transactions, suggesting a more

comprehensive and inclusive understanding of the link between inflation impacts and corporate acquisition strategies.

Second, this study focused on US firms, which may not be able to fully discover firms' performance in different economic or political circumstances. Inflation, cash holding, and means of payment would differ strongly across the globe, especially in areas that have distinct macroeconomic policies. Future studies should expand this while continuing to involve cross-border M&A transactions to determine whether similar trends appear in other nations.

Additionally, this study excluded other factors such as regulatory changes, geopolitical risks, or industry-specific dynamics which may influence M&A decisions. Lastly, the study does not sufficiently investigate macro-financial uncertainties, those which arise during crises and may influence the way an M&A means of payment is to be chosen. Future research should explore how these factors, as well as distinct crisis-era features, affect stock price informativeness and the acquirer's shareholder's cumulative return, particularly under various economic conditions. By addressing these limitations, future studies can provide a more complete understanding of the complex dynamics that drive M&A decision-making in various economic climates.

Chapter 4 explores the link between insider trading regulations and U.S. cross-border M&A activities, particularly concentrating on investors' confidence and informative stock prices. It suggests that the enforcement of stringent insider trading laws is strongly raising the probability of M&A deals, with a strong preference for cash payments. This preference for cash payments is especially prominent when stock price informativeness is high, enhancing the transparency and perceived fairness of the transactions.

This study suggests that cash buyers continuously observe gains at critical levels, while stock buyers and those who are using a combination of both cash and stock are experiencing losses. These results suggest that cash deals not only benefit from heightened regulatory oversight but also outperform stock-based acquisitions in terms of shareholder value. The findings contribute to improved market outcomes and investor confidence while highlighting the key impact of insider trading regulations on the formation of payment preferences and the success of cross-border M&A. Although this study provides valuable insights, it still has some limitations. First, it mainly studies the short-term impact of the enforcement of insider trading regulations on M&A activities and acquirer returns. Future research can expand the research on the long-term impact of these regulations on stock price informativeness and firm performance after M&A transactions.

In addition, this study is concentrated on U.S. cross-border M&As, which may not consider the political regulations and economic circumstances from other nations or regions. Mainly investigate the US firms that engaged in the cross-border M&A activities, which may be subject to different regulatory frameworks, which could alter the dynamics observed in this study.

Furthermore, while this study highlights the key impact of price informativeness on stock markets, it fails to fully reveal the role of macro-financial uncertainty in shaping stock market reactions and shareholders' cumulative abnormal returns (CAR). Future research should build on the work of Kontonikas et al. (2013) and analyse how various economic conditions, such as monetary expansion or contraction, affect stock market behaviour in M&A activities under different regulatory regimes. By addressing these limitations, future research could more fully examine the relationship between regulatory enforcement, market uncertainty, and M&A outcomes.

Despite the key contributions addressed, the study is still facing a few factors that are unexplored. First, the suggestions are delivered from short-term M&A investigations, particularly buyer-side performances, excluding the examined firm's post-M&A for the longterm performance. In future research, it should extend the analysis to understand how these macroeconomic and regulatory factors affect long-term success. Second, this study has geographic limits which mainly concentrate on research on U.S. firms, which may reduce the generalisability of the outcomes to firms in other countries that are under different economic, political, and regulatory circumstances. To offer a wider global perspective, future research should continue to expand to include mergers and acquisitions from outside of US firms and explore how different regional or national regulations could affect M&A activities outside of U.S. firms.

Additionally, the study simplifies political risk and does not fully reveal its complexity. PRisk encompasses a wide array of factors—such as government policy changes, international relations, and regulatory shifts—that may not be adequately captured by the index used. Similarly, the study assumes uniform enforcement of insider trading laws across jurisdictions, which may not hold true, and the study does not explore the possible negative consequences of overly stringent regulation, such as increased transaction costs or reduced market liquidity. Lastly, the study excluded delving deeply into the dimensions of payment methods during the high-risk or crisis periods. The choice between either cash or stock payments in responding to market circumstances, liquidity constraints, or tax incentives requires further investigation, particularly in relation to firms in tax havens or those with limited financial flexibility. Addressing these limitations in further research would help to gain a more nuanced and comprehensive understanding of the complex dynamics which influence strategies for M&A decisions across various economic conditions.

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Appendix 1 – Additional Results

Additional Results – Chapter 3

Table A1.

Note: This table presents the additional results of the likelihood of US domestic M&As by adopting the logit model. We investigated the probability of M&A while the firm faced XCash, real interest rate, inflation, and its intercept. By doing so, we divided the sample into high RIR and INF. Columns (1 & 2) represent the high real interest rate subsample, and Columns (3 & 4) indicate the high inflation rate subsample. XCash is the difference between the fitted values (Cash_{*i*,*t*}) and the actual cash holding values. Real Interest Rate (RIR) is the yearly real interest rate, and Inflation Rate (INF) is the yearly real inflation rate in the United States and is collected from *the World Bank*. The M&A dummy is an indicator that equals 1 if a deal merged and 0 otherwise, and M&A data is collected from the Thomson One Banker Securities Data Company (SDC) database. All control variables are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	M&A_dummy			
VARIABLES	(1)	(2)	(3)	(4)
XCash	0.561**	1.272**	0.999***	-0.082
	(2.00)	(2.11)	(3.57)	(-0.13)
RIR		0.148***		
		(5.04)		
$XCash \times RIR$		-0.157		
		(-1.41)		
INF				-0.083***
				(-3.64)
XCash ×I NF				0.301**
				(2.05)
Controls	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Ν	17,963	17,803	15,590	15,431
Adj. R^2	0.112	0.113	0.102	0.102

Additional Results – Chapter 3

Table A2.

Note: This table presents additional results for the likelihood of means of payment during cross-border transactions. To do the additional test, we divided samples into high XCash (Columns 1 & 2), RIR (Columns 3 \sim 5), and INF (Column 6). Cash (or Stock) dummy is an indicator that equals 1 if an M&A deal is funded by cash (or stock), and 0 otherwise. Payment types of data are collected from the Thomson One Banker Securities Data Company (SDC) database. Then, we include all control variables, which are explained in the Appendix 2. Firm characteristic variables were obtained from *Compustat* and winsorized at the 1% level. We present p-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Cash	Stock	Cash	Stock	Cash	Cash
	_dummy	_dummy	_dummy	_dummy	_dummy	_dummy
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
RIR	-0.198*	0.326***	-0.285*	0.445***		
	(-1.69)	(4.16)	(-1.77)	(5.90)		
XCash					4.269***	
					(3.01)	
INF						0.272***
						(3.02)
Controls	YES	YES	YES	YES	YES	YES
Year FE	YES	NO	YES	NO	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Ν	626	542	666	636	666	718
Adj. R^2	0.332	0.276	0.293	0.214	0.304	0.288

Additional Results – Chapter 4

Table A3.

Fiscal Year	Insider Trading Laws			
	0	1	Total	
1980	1	0	1	
1981	0	1	1	
1982	1	1	2	
1983	1	1	2	
1984	2	3	5	
1985	2	3	5	
1986	4	3	7	
1987	2	3	5	
1988	9	3	12	
1989	4	3	7	
1990	10	3	13	
1991	15	6	21	
1992	14	5	19	
1993	17	5	22	
1994	19	10	29	
1995	17	13	30	
1996	18	17	35	
1997	10	21	31	
1998	12	22	34	
1999	13	25	38	
2000	8	20	28	
2001	6	20	26	
2002	8	23	31	
2003	10	22	32	
2004	10	21	31	
2005	11	25	36	
2006	19	26	45	
2007	9	24	33	
2008	9	20	29	
2009	11	24	35	
2010	11	21	32	
2011	7	27	34	
2012	3	24	27	
2013	13	23	36	
2014	11	24	35	
2015	5	25	30	
2016	9	23	32	
2017	5	30	35	
2018	9	23	32	
2019	14	27	41	
2020	13	28	41	
2021	8	31	39	
2022	6	23	29	
2023	1	7	8	
Total	387	709	1096	

Note: This table indicates the historical data for the countries that enforced insider trading laws across the globe at each time given.

Appendix 2 – Variables

- % of Cash Paid: It represents the ratio of cash paid during the transaction. *Source: Thomson Reuters*.
- % of Stock Paid: It represents the ratio of stock paid during the transaction. *Source: Thomson Reuters*.
- **Book value per share:** Book Value Per Share is an annual figure calculated from the calendar year-end index data. *Source: Compustat.*
- **Book-to-Market:** The ratio of the total book value to the total market value. *Source: Compustat.*

CAPEX: This is the ratio of capital expenditures to total assets. Source: Compustat

CAR: The cumulative abnormal stock return over the windows centred on the M&A announcement day. *Source: Compustat.*

Cash Asset Ratio: A ratio of cash to total assets. Source: Compustat.

- Cash ETR: Cash paid tax divided by pre-income. Source: Compustat
- **Cash Flow:** It is the component of defined as the ratio of the sum of net profit and depreciation to total assets. *Source: Compustat.*
- **Cash_dummy:** An indicator that equals 1 if an M&A deal is funded by cash, and 0 otherwise. *Source: Thomson Reuters.*

Cash: It is the component of cash and short-term investments. Source: Compustat.

- **Common shares outstanding:** This item represents the net number of all common shares outstanding at year-end, excluding treasury shares and scrip. *Source: Compustat.*
- **Completion:** It is the duration that complete per transaction, date effective subtract announcement date. *Source: Thomson Reuters*.

Deal Size: This is the value of the transactions. Source: Thomson Reuters.

Deal value: This is the value of the transactions. Source: Thomson Reuters.

EPS: Earning per Share. Source: Compustat.

Firm Size: The nature logarithm of sum of current assets, PPE (NET: property, plant, and equipment), investment& advances (equity and other), intangible assets, and other assets. *Source: Compustat.*

Inflation Rate: The yearly real inflation rate in the United States. *Source: World Bank.*

- **Insider Trading Index:** If the country enforced insider trading laws, then it equals 1, and 0 otherwise. *Source:* Bhattacharya (2023) *manually collected*.
- **Instrumental Variable (IV Ch2):** To use the average value of industry risk preference (IND_PRisk) as an instrumental variable. *Source: Compustat.*
- **Instrumental Variable (IV Ch3):** It is the component of lagged twice XCash, sales growth, and firm size. *Source: Compustat.*
- Leverage: The ratio of the short- and long-term debt to total assets (or the ratio of the total liabilities to the total assets). *Source: Compustat.*
- Liquidity: A component of Assets-Total/Liabilities and shareholders' equity (or the ratio current assets divided by current liability). *Source: Compustat.*
- NWC: This is the ratio of net working capital to total assets. Source: Compustat.

PRisk: Firm-level political risk. Source : https://www.firmlevelrisk.com/

- Property, Plant, and Equipment-Total (Gross): It represents the cost and/or valuation of tangible fixed assets used in the production of revenue. It is the component of Property, Plant and Equipment (Net) Total (PPENT). Source: Compustat.
- Real Interest Rate: The yearly real interest rate in the United States. Source: World Bank.
- M&A_dummy: An indicator that equals 1 if a deal merged, and 0 otherwise. *Source: Thomson Reuters.*

- Shareholder_dummy: An indicator that equals 1 if shareholder holds stock (common ordinary shareholders) in year t, and 0 otherwise. *Source: Compustat*.
- State_dummy: An indicator that equals 1 if acquirer state in year t, and 0 otherwise. *Source: Compustat.*
- Stock_dummy: An indicator that equals 1 if an M&A deal is funded by stock, and 0 otherwise.
 Source: Thomson Reuters.
- **Tax havens_dummy:** An indicator that equals 1 if the acquirer bids on a target within the tax havens and 0 otherwise. *Source: Meier and Smith (2023) manually collected.*

Tobin's Q: The ratio of the total book value to the total market value. Source: Compustat.

- Total Assets: The sum of current assts, PPE (NET: property, plant, and equipment), investment& advances (equity and other), intangible assts, assets other. *Source: Compustat.*
- **Turnover Ratio:** It is the ratio of property, plant, and equipment-total (gross) to total assets. *Source: Compustat.*
- **XCash:** The difference between the fitted values $(Cash_{i,t})$ and the actual cash holding values. *Source: Compustat.*

Appendix 3 – Methodologies

Key Index – Chapter 2

The primary interest of this paper is the firm's political risk impacts on mergers and acquisitions. We will use the firm-level political risk index which was developed by Hassan et al. (2019) to measure the policy risk exposure of individual firms. Researchers use text analytics in quarterly earnings call transcripts to measure political risk exposure. They use a pattern-based ordinal enumeration developed by computational linguistics to differentiate between political and non-political problems, where P stands for the political topic and N represents the non-political topic. Besides, count the number of bigrams related to the political topic in up to ten words, like risk or uncertainty, then divide by the total number of bigrams in the transcript from the quarterly earnings conference call, following the formula below:

$$PRisk_{it} = \frac{\sum_{b}^{B_{it}} (1[b \in P \setminus N] * 1[|b - r| < 10] * \frac{f_{b,P}}{B_{P}}}{B_{it}}$$

where 1 [•] is the indicator function, P\N means bigrams included in P but excluded in N, and r is a synonym for risk or uncertainty. In the above equation, the first two terms account for the frequency of bigrams shown among the political topic discussions adjacent to synonyms (ten words or less) for risk or uncertainty. The third term also assigns each bigram a score that reflects how relevant it is to political topic discussions (the third term in the numerator), whereas the bigram b in the political training library and is the total number of bigrams in the political training library. Thus, it is the political risk measurement where a weighted sum of bigrams specifically for risks related to political topics in conference quarterly earnings calls.

Key Index – Chapter 3

In our paper, we will consider two notable literatures above while measuring US excess cash. By doing so, we include Cash Flow (depreciation, depletion, and amortisation), NWC, Cash (cash ratio), Leverage, and CAPEX, which are scaled by total assets. Firm Size (take the natural logarithm of total assets), Var_CF (average of cash flow standard deviations over total assets of corporations in the same sector), Div_dummy (a dummy variable for dividend payments, defined as 1 if the firm pays dividends and 0 otherwise), and State_dummy (if the firms are in the US states, 0 otherwise). Then, we adopt a fixed effects model to measure the fitted values derived from the form as follows:

$$\begin{aligned} \text{Cash}_{i,t} &= \alpha + \Sigma_s \beta_s X_{s,i,t} = \alpha + \beta_1 \text{Tobin'sQ}_{i,t} + \beta_2 \text{Firm Size}_{i,t} + \beta_3 \text{Cash Flow}_{i,t} + \\ \beta_4 \text{NWC}_{i,t} + \beta_5 \text{CAPEX} + \beta_6 \text{Leverage} + \beta_7 \text{Var}_{\text{C}} \text{CF}_{i,t} + \beta_8 \text{Div}_{\text{dummy}_{i,t}} + \beta_9 \text{State}_{\text{dummy}_{i,t}} + \\ k_i + k_t + k_s + \varepsilon_{i,t} \end{aligned}$$
(1)

The vector of s explanatory factors that affect the pros and cons of holding excess cash is denoted by $X_{s,i,t}$. In addition to incorporating state dummy variables and time, equation (1) also takes into account unobserved firm-specific heterogeneity (k_s), which explains the year (k_t) and state (k_s) fixed effects related to the cash holdings for the firm. The cash value we get after running our model serves as a stand-in for the ideal amount of cash held by the company. Next, we calculate excess cash (XCash), which is the difference between the fitted values (Cash_{i,t}) and the actual cash holding values.

Key Index – Chapter 4

Bai et al. (2016) created a metric to evaluate the informativeness of stock prices, specifically how accurately current market values forecast future revenues. This welfare-based measure of price informativeness predicts changes in future cash flows based on current market prices. It is calculated using firm-level cash flow and stock price data and assesses the extent to which the market distinguishes between future profitable firms and loss-making firms. To calculate this measure, Pyrgiotakis et al. (2024) perform cross-sectional regressions of future profits on current market prices with the following estimations:

$$\frac{E_{i,t+h}}{A_{i,t}} = a_{t,h} + b_{t,h} \log\left(\frac{M_{i,t}}{A_{i,t}}\right) + c_{t,h} \left(\frac{E_{i,t}}{A_{i,t}}\right) + c_{t,h}^{s} I_{i,t}^{s} + e_{i,t,h}$$
(1)

where *E* denotes the percentage of current earnings pre-interest and taxes, and *M* stands for market capitalisation of the company. $I_{i,t}^s$ indicates the industry indicator for company *i* (2digit SIC). Then, price informativeness is estimated in the following way:

Price Informativeness =
$$\widehat{b_{t,h}}\sigma_t(\log\left(\frac{M_{i,t}}{A_{i,t}}\right))$$
 (2)