



# The Role of Currencies in M&A

*A Comparative Analysis of Emerging and Developed Economies*

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Master thesis, Economics and Business Administration

Major: Financial Economics

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This thesis was written as a part of the Master of Science in Economics and Business Administration at NHH. Please note that neither the institution nor the examiners are responsible – through the approval of this thesis – for the theories and methods used, or results and conclusions drawn in this work.



# Acknowledgements

This thesis marks the end of our two years at NHH, which have been challenging and incredibly exciting. We are deeply grateful to our friends and families for their constant support and for making these years in Bergen enjoyable and memorable. The relationships and experiences we have gained here will remain with us long after we leave.

We sincerely appreciate our supervisor, Karin S. Thorburn, for her expert guidance, thoughtful feedback, and invaluable support throughout this thesis process. Additionally, we would like to extend our thanks to Dmitrii Pugachev and Thore Johnsen. Their support, advice, and assistance have been crucial in completing this thesis.

Lastly, we would like to thank our family and friends for their support, review, and valuable feedback on our thesis. We also want to express our gratitude to everyone who has supported us throughout our years in Bergen and during the work on this thesis.

Norwegian School of Economics

Bergen, December 2024

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Erik Storøy Sookermany

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Magnus Plowman Kårbø

# Abstract

This thesis examines how currency fluctuations affect cross-border mergers and acquisitions (M&A), focusing on the differences between emerging and developed economies. We analyze a dataset comprising 124,381 M&A deals, which includes 23,458 cross-border transactions, across 36 countries from 1999 to the second quarter of 2024.

We study how currency appreciation, depreciation, and volatility influence international investment decisions. We find that currency appreciation in the target country significantly increases cross-border M&A activity. This suggests that a stronger currency indicates robust economic conditions, making the country more attractive to foreign investors. In contrast, higher currency volatility negatively impacts cross-border M&A, deterring investments, as it can be perceived as an increase in risk and uncertainty.

We demonstrate that emerging markets are more sensitive to currency movements than developed markets. We argue that this sensitivity is due to the greater instability in emerging economies.

**Keywords** – Cross-border M&A, Currency Fluctuations, Emerging Countries, Developed Countries, Currency Volatility, FX

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# 1 Introduction

This thesis looks into how currency fluctuations affect cross-border M&A. Could it make a target company appear *cheap* in the eyes of a foreign acquirer? In times of volatile exchange rates, we observe how firms respond to the additional risks introduced in cross-border M&A. Could what is considered *cheap* differ depending on whether the country is developed or emerging?

M&A occurs with the belief that the combined entity will create future value. Whether the deal is domestic or cross-border, the motivation remains the same. The critical difference here is currency fluctuation, which causes friction in cross-border transactions. We examine whether exchange rate volatility can deter foreign investors and make cross-border M&A more uncertain. Furthermore, do acquirers pay attention to currency volatility, or does it simply not matter?

We analyze three hypotheses. First, we examine whether currency appreciation or depreciation of the target's currency is associated with a shift in the proportion of cross-border M&A deals. Second, higher currency volatility is negatively related to the proportion of cross-border M&A deals. Finally, acquisitions of targets in emerging countries are more sensitive to currency volatility and fluctuations than developed countries.

We find that an appreciation in the target country's currency significantly and positively affects the proportion of cross-border M&A activity. In practical terms, this means that an appreciation in the target's exchange rate is associated with an increase in relative cross-border M&A deals. This contradicts the notion that a weakened currency could be seen as an opportunity to buy *on the cheap*.

Our analysis also reveals a significant relationship between currency volatility and cross-border M&A activity. While currency appreciation is positively associated with increased cross-border deal activity, volatility tends to reduce the likelihood of cross-border transactions relative to domestic. Our findings indicate that increased currency volatility is perceived as an additional risk factor, contributing to heightened uncertainty for investors.

Furthermore, we explore the differences between developed and emerging countries. We propose that M&A activity in developed countries is less affected by currency fluctuations

than in emerging countries. We find a significant difference in M&A activity between emerging and developed countries. Our results suggest that emerging countries are more affected by changes in the exchange rate; a strengthened currency leads to a greater increase in cross-border deals in emerging relative to developed countries. However, we find no significant difference related to volatility.

We analyze the relationship between currency fluctuations and cross-border M&A activity, by using a panel data regression approach. Our dataset includes 124,381 M&A deals, including 23,458 cross-border transactions from 1999 to the second quarter of 2024, across 36 countries and 18 currencies. We collect the data from the London Stock Exchange Group (LSEG)<sup>1</sup> Refinitiv Workspaces and Federal Reserve Bank of St. Louis (FRED).

We use a fixed-effects regression model to ensure robustness and valid results. Our regression controls for country-specific characteristics like institutions and macroeconomic factors, including changes in real gross domestic product (GDP), interest rates, inflation, and stock market performance.

Our tests use the one-to-two-year change in currency and their lagged values, with rolling measures of exchange rate volatility. We include lagged values because of the duration of an M&A process and to address endogeneity concerns. We introduce interaction terms to explore differences between developed and emerging countries, classifying countries based on International Monetary Fund (IMF) criteria (IMF, 2023).

Our findings extend the existing literature on the role of exchange rates in cross-border M&A. Previous studies, such as Choi and Jeon (2007), Erel et al. (2012), Lin et al. (2014), and Uddin and Boateng (2011), show that currency fluctuations have a significant relationship with cross-border M&A. Similarly, Darby et al. (1999) and Kiyota and Urata (2004) finds that exchange rate volatility can negatively impact cross-border investments, as increased uncertainty deters investors. While our results confirm these trends, we provide additional insights by showing that M&A activity in emerging countries is more sensitive to currency fluctuations than in developed countries.

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<sup>1</sup>Formerly known as Thomson Reuters.

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## 2 Literature

M&A is an essential tool for firms to expand into new markets, grow or diversify. Meanwhile, fluctuations in the currency exchange rate can influence firms' decisions to engage in cross-border M&A transactions. For instance, a foreign firm may appear inexpensive due to recent currency depreciation, or a region may seem more uncertain because of high exchange rate volatility. This section reviews literature that explores the role of currency rates in M&A, and how emerging and developing countries differ when affected by currency fluctuations. The review highlights existing methodological approaches and identifies gaps in the literature. Specifically, there is a need for a comprehensive global analysis of how foreign exchange (FX) rate movements affect M&A activity across diverse markets.

### 2.1 Exchange Rates and M&A

Froot and Stein (1991) provide early evidence of how exchange rate shifts impact M&As within the framework of market inefficiencies in capital markets. The study argues that, due to informational asymmetries, foreign investors may receive lower relative financing fees than domestic investors, especially when the domestic currency depreciates. The domestic currency's depreciation increases foreign investors' purchasing power, making US assets seem less expensive in foreign currency terms. Due to this, foreign investors can be more willing to acquire US assets. The paper finds empirical evidence that cross-border M&A, as a form of foreign direct investments (FDI)<sup>2</sup>, is highly correlated with exchange rate changes, emphasizing that cross-border acquisitions increase when the dollar depreciates. This shows how currency can improve foreign investors' competitiveness in foreign acquisitions, indicating that exchange rates significantly motivate FDI.

Building on Froot and Stein, Blonigen (1997) shows that real dollar depreciation significantly increases the likelihood of Japanese acquisitions of U.S. firms, particularly in industries characterized by firm-specific assets. By analyzing data on Japanese acquisitions in the United States from 1975 to 1992, the study finds that when the dollar weakens relative to the yen, Japanese firms are more inclined to pursue acquisitions, leveraging the

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<sup>2</sup>In our context, FDI refers to cross-border M&A.

favorable exchange rate to enhance the value of their investments. Blonigen acknowledges that the findings are based on a specific dataset focused on Japanese acquisitions during this period, which may limit the generalizability of the results to other contexts or time-frames.

Further, Erel et al. (2012) finds that countries with depreciated currencies were likelier to be targets. They also find that geography, specifically the physical proximity, regional clustering, and shared cultural or institutional characteristics between countries, plays a crucial role in cross-border M&A. Additionally, companies in countries with better stock-market performance tend to be more active in cross-border acquisitions.

Lin et al. (2014) shows that a bidder in a country whose currency has appreciated has greater purchasing power and lower financing costs, leading to increased activity towards targets with a depreciated currency and receiving an abnormal return.<sup>3</sup> On average, acquirers in countries with an appreciated currency over the last year achieve higher returns on announcements in cross-border deals than domestic deals. The analysis reveals that exchange rates are essential to the market's deal valuation.

Similarly, Choi and Jeon (2007) finds that an appreciation of the acquirer country's currency is associated with increased FDI outflows. They argue that a stronger currency increases wealth and reduces the cost of capital for companies, enabling them to invest more abroad. Their research primarily focuses on the United States, United Kingdom, Germany, and Japan.

Currency volatility emerges as another important factor, with Shetty et al. (2019) finding a significant relationship between bidder returns and exchange rate volatility. Specifically, their results indicate that bidder returns tend to be higher in countries experiencing high FX rate volatility. They interpret the finding as evidence that heightened currency fluctuations may create strategic opportunities and diversification benefits in cross-border M&A, enhancing such investments' perceived attractiveness and profitability.

However, Kiyota and Urata (2004) suggests that exchange rate volatility significantly deters cross-border M&A and FDI. Their analysis of Japanese firms shows increased volatility creates uncertainty, likely discouraging investment in the target country. Thus,

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<sup>3</sup>Abnormal returns refer to returns exceeding those expected based on the asset's risk and the overall market return.

maintaining exchange rate stability is essential to encourage FDI, as excessive volatility creates a barrier for investors. Further, Hanusch et al. (2018) examines the relationship between exchange rate volatility and FDI inflows by analyzing a panel of 80 developed and developing countries from 1990 to 2015. Hanusch et al. findings indicate a significant negative relationship between exchange rate volatility and FDI inflows. They argue that volatility increases uncertainty and risk for foreign investors. The study highlights that ensuring exchange rate stability can reduce uncertainty and encourage cross-border investment.

Campa (1993) provides evidence that exchange rate conditions influence FDI decisions. Campa finds that greater exchange rate volatility negatively correlates with the number of foreign firms entering U.S. wholesale industries. The paper reports that this deterrent effect is robust in sectors with high sunk costs. Although the negative relationship between exchange rate volatility and foreign investment holds for all countries examined, the article notes that it is especially significant for investments by Japanese firms.

Moreover, Darby et al. (1999) employs an econometric analysis to demonstrate how currency volatility increases investment uncertainty, leading firms to delay or reduce cross-border investments. Their study indicates that increased exchange rate volatility generally discourages firms from undertaking new investments by complicating the timing and valuation of transactions. Similarly, De Santis et al. (1999) demonstrates that currency volatility significantly deters international portfolio investment flows, as exchange rate instability increases investors' perceived risk.

## 2.2 What Drives Cross-Border M&A?

Dewenter (1995) examines how exchange rate fluctuations impact cross-border M&A in the U.S., using data from 1975 to 1989. The paper studies how deviations from the purchasing power parity (PPP) theory<sup>4</sup> suggest that exchange rates should neutralize the differential in inflation over time, impacting FDI. Dewenter draws attention to how short- and long-term deviations from PPP can impact foreign investors' purchasing power, indicating that a weak dollar can make acquisitions of U.S. firms more attractive. The study finds that a depreciation in the U.S. dollar correlates with an increase in foreign

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<sup>4</sup>Exchange rates should adjust according to the cost of the same goods in different countries.

acquisitions and higher takeover premiums. These findings stem from foreign investors leveraging their currency advantage when the domestic currency depreciates, making U.S. assets cheaper in foreign currency terms.

Dewenter (1995) challenges the view that exchange rates significantly impact foreign investments relative to domestic ones. While her study finds that absolute levels of FDI are linked to exchange rates, the relative proportion of foreign to domestic investments does not show a consistent relationship with exchange rate fluctuations.

Globerman and Shapiro (2003) reinforces the importance of governance infrastructure in shaping foreign direct investment outcomes. Their study, focusing on U.S. FDI, demonstrates that countries with robust legal and regulatory frameworks, transparent governance, and effective public institutions attract consistently higher levels of inbound investment. In other words, while currency fluctuations may sway short-term capital movements, the paper shows that sustainable, long-term foreign investment is more closely aligned with the quality of governance infrastructure.

Building on Globerman and Shapiro (2003), Di Giovanni (2005) examines the determinants of capital flows, focusing specifically on cross-border M&As. Their results indicate that while exchange rate movements have some explanatory power, factors related to financial market development, such as credit availability, regulatory quality, and efficient financial services, are more influential in attracting foreign direct investment. The analysis indicates that the structure and depth of a country's economic system are more significant than the independent effects of currency fluctuations.

## 2.3 Emerging and Developed Countries

When comparing emerging and developed markets, Krugman (2000) suggests that sharp economic downturns in emerging markets may lead to significant depreciation in local currencies, making distressed assets more affordable to foreign buyers. Under these *fire-sale conditions*, foreign investors can acquire local firms at reduced prices, increasing both FDI inflows and cross-border M&A activity.<sup>5</sup> Interpreting these results, Krugman argues that crises reflect underlying vulnerabilities in emerging markets and shift the negotiating

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<sup>5</sup>In this context, "fire-sale conditions" refer to situations where companies are sold quickly and at a steep discount, typically due to economic downturns or crises.

power balance toward foreign investors, whose relative financial strength allows them to capitalize on undervalued opportunities.

Rossi and Volpin (2004) finds that when the acquirer country has strong investor protection, this leads to more M&A, but this is not the case for the target. This indicates that M&A activity is largely determined by the governance and market conditions in the acquirer's home country. These findings imply that countries with strong governance and capital markets are likelier to lead M&A activity, showing a difference between developed and emerging markets in cross-border M&As.

Tesar et al. (2010) examines shareholder value gains from developed-market acquisitions of emerging-market targets. They find that acquirers from developed countries experience significantly positive abnormal returns when acquiring majority control in emerging markets. The authors attribute these gains to the institutional weaknesses in emerging markets, allowing developed-market acquirers to implement improvements such as enhanced governance and transferring intangible assets like R&D or brand value. Their findings underscore the pivotal role of institutional differences between developed and emerging markets in shaping cross-border M&A outcomes.

Likewise, Erel et al. (2012), examining acquirer countries' perspectives, finds that corporate governance quality plays a vital role in emerging markets. It measures it through various indicators, including accounting standards, legal protections, investor rights, and the regulatory environment. In this context, transparent and reliable financial information, alongside supportive institutional frameworks, can significantly influence investor confidence and M&A success.

Furthermore, Uddin and Boateng (2011) examines cross-border M&A and finds that macroeconomic factors, such as GDP growth and financial stability, significantly influence FDI. Their findings suggest that in developed markets, strong institutional quality and economic stability may reduce the sensitivity of M&A activity to currency fluctuations. Their analysis, focusing primarily on the United Kingdom, highlights the importance of robust institutional frameworks in sustaining foreign investor interest.

As Deng and Yang (2015) indicates, factors influencing cross-border M&A activity differ between developed and emerging markets. They find that resource dependence and

the government's effectiveness in the target country have a more substantial impact on M&A intensity in developed markets, while these effects are less pronounced in emerging markets.

## 2.4 Behavioral Aspects

Malmendier and Tate (2008) finds that CEOs classified as overconfident are approximately 65% more likely to initiate acquisitions than their less confident counterparts. These CEOs often pursue deals at inflated prices and experience lower announcement returns, indicating that their personal biases can lead to irrational, value-destroying corporate decisions.

Furthermore, Baker et al. (2012) demonstrates that reference points, such as last year's stock price, influence the pricing and likelihood of mergers and acquisitions. Their analysis shows that offer prices cluster around these reference points. This suggests that anchoring effects lead bidders to overpay or proceed with deals they might otherwise avoid under entirely rational decision-making.

Ben-David et al. (2013) finds that executives often overestimate future performance outcomes. When firms have executives who miscalculate these expectations, they are more likely to adopt aggressive corporate policies, including making higher investments and increasing their reliance on debt. This evidence suggests that managerial over-optimism leads to riskier and less financially prudent corporate strategies.

Goldberg and Kolstad (1995) researches the underlying reasons for the relationship between exchange rate variability and FDI. They propose that this connection arises from the risk aversion effect,<sup>6</sup> arguing that exchange rate volatility is closely tied to firms' varying risk tolerance levels and is thus explained by risk-averse behavior in investment decisions.

## 2.5 Summary of Key Literature

Our thesis builds on existing literature by focusing on M&A activity within developed and emerging regions. Foreign firms may appear inexpensive due to recent currency

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<sup>6</sup>The "risk aversion effect" refers to the tendency of firms to diversify their investment across different countries to mitigate the uncertainties associated with fluctuating exchange rates. In this context, higher volatility leads firms to increase engagement in foreign direct investment to hedge against currency risk.



depreciation (Blonigen, 1997; Froot & Stein, 1991), or a region may seem more uncertain because of high exchange rate volatility (Kiyota & Urata, 2004; Shetty et al., 2019). Existing literature, such as Erel et al. (2012), Lin et al. (2014), and Shetty et al. (2019), shows how exchange rate movements impact M&A returns and target attractiveness.

Prior work indicates that exchange rate movements and volatility affect cross-border M&A activity differently in emerging and developed markets. Krugman (2000) highlights *fire-sale conditions* in emerging markets, where currency depreciation makes domestic assets cheaper to foreign investors. Meanwhile, differences in governance, institutional quality, and financial market development can play a decisive role in developed markets, potentially diminishing the direct impact of currency fluctuations (Di Giovanni, 2005; Globerman & Shapiro, 2003). Moreover, factors like bidder overconfidence and reference point effects can influence M&A decisions and outcomes, adding a behavioral dimension to the role of exchange rates in cross-border deals (Baker et al., 2012; Ben-David et al., 2013; Malmendier & Tate, 2008).

## 3 Hypothesis

This section elaborates on each hypothesis, the null hypothesis ( $H_0$ ), and the corresponding alternative hypothesis ( $H_1$ ).

### 3.1 Hypothesis 1

*$H_0$ : A change in the target's home currency is not associated with a shift in the proportion of acquisitions by foreign acquirers.*

*$H_1$ : A change in the target's home currency is associated with a shift in the proportion of acquisitions by foreign acquirers.*

Existing research establishes that exchange rate movements influence cross-border M&A. Empirical evidence links depreciated currencies to increased foreign acquisitions (Erel et al., 2012), while appreciated bidder currencies enhance purchasing power (Lin et al., 2014). Dewenter (1995) finds that deviations from purchasing power parity can affect investment patterns. Meanwhile, Uddin and Boateng (2011) argues that stable institutions in the target country can sustain foreign interest in cross-border M&A, even when acquisition costs are higher. Additionally, financial crises can create conditions that influence how currency changes relate to foreign acquisitions (Krugman, 2000).

Moreover, behavioral aspects also matter, as managerial overconfidence and reference points can influence acquisition decisions due to currency fluctuations (Baker et al., 2012; Ben-David et al., 2013; Malmendier & Tate, 2008). These findings suggest that currency fluctuations, alongside varying market conditions, affect the proportion of cross-border M&A.

We test this hypothesis by examining deal activity, using a two-sided test to avoid assuming the direction of the effect. We also consider various time frames for currency returns to identify which periods provide explanatory power.

## 3.2 Hypothesis 2

*H<sub>0</sub>: Currency volatility is non-negatively associated with the proportion of cross-border M&A deals.*

*H<sub>1</sub>: Currency volatility is negatively associated with the proportion of cross-border M&A deals.*

Prior research indicates that increased currency volatility aligns with greater uncertainty, reducing the attractiveness of cross-border M&A (Darby et al., 1999; De Santis et al., 1999). When uncertainty rises, firms may delay or reduce investment due to the complexity of valuation and forecasting. This deterrent effect is evident across various contexts, as volatility can discourage foreign firm entry (Campa, 1993) and create investment barriers (Kiyota & Urata, 2004). These findings support the view that volatility discourages overall deal-making.

We test this hypothesis by measuring volatility over different periods. The analysis considers the relative proportion of cross-border deals, expecting a negative and significant relationship between volatility and cross-border M&A activity.

## 3.3 Hypothesis 3a

*H<sub>0</sub>: Cross-border acquisition activity is not more sensitive to currency movements in emerging markets compared to developed countries.*

*H<sub>1</sub>: Cross-border acquisition activity is more sensitive to currency movements in emerging markets compared to developed countries.*

Emerging countries commonly demonstrate greater sensitivity to external economic forces due to weaker governance structures, less stable macroeconomic conditions, and higher exposure to external shocks (BIS, 2018; OECD, 2014; Reinhart & Rogoff, 2009). Empirical evidence suggests that these conditions can amplify the influence of currency movements on cross-border M&A. Studies show that developed market acquirers can earn positive abnormal returns when targeting firms in emerging markets. This stems from weaker contracting environments and corporate governance (Erel et al., 2012; Tesar et al., 2010).

We examine deal activity to determine whether emerging markets respond more strongly

to currency movements than developed markets.

### 3.4 Hypothesis 3b

*H<sub>0</sub>: Cross-border acquisition activity is not more sensitive to currency volatility in emerging markets compared to developed markets.*

*H<sub>1</sub>: Cross-border acquisition activity is more sensitive to currency volatility in emerging markets compared to developed markets.*

Currency volatility can introduce uncertainty that prevents firms from engaging in cross-border M&A transactions (Darby et al., 1999). These effects may become more pronounced in markets with weaker governance and heightened perceived risks, often prevalent in emerging markets. Some studies further highlight risk aversion as a critical factor, noting that heightened volatility reduces the attractiveness of M&A activity (Goldberg & Kolstad, 1995). Conditions like financial crises can intensify these effects, allowing foreign acquirers to capitalize on discounted assets (Krugman, 2000).

By analyzing deal activity, we assess whether emerging markets are more sensitive to currency volatility than developed markets.

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## 4 Data

This section explains how we obtain, clean, and filter the data in our analysis. First, we outline our data collection process and discuss the data sources. Next, we provide a detailed description of how we clean our dataset and the specific filters we apply to ensure the data is representative. Finally, we present a descriptive analysis to provide an overview of the dataset.

### 4.1 Data Collection Process

Transaction data is collected from LSEG Refinitiv Workspaces. The dataset includes information about the acquiring and target firm, as well as deal value. Our control variables are obtained from FRED. These variables are imported as quarterly data, aligning with the time frame used throughout our analysis.

Our analysis includes 36 countries, resulting in 18 currencies and 287 currency pairs, as shown in Table B.1. The currency data is sourced from Refinitiv and processed using Python. The dataset spans from 1996 to September 30, 2024. Currency pairs are imported as quarterly values and used to calculate currency returns and volatility for each cross-border deal in our dataset. These calculations are conducted over different periods, as further explained in the methodology section.

### 4.2 Sample Cleaning

Table 4.1 shows that our dataset consists of 124,381 deals involving 18 currencies as targets. We collect data from several countries where the target company is based in this region. We include deals from 1999 to account for the euro's introduction on January 1, 1999. To take into consideration the most recent trends, our transaction data extends through September 2024. When downloading the data from LSEG, we exclude stake purchases, repurchases, self-tenders, and recapitalization deals. We focus on transactions where the acquirer obtains a controlling stake<sup>7</sup> in the target company. Lastly, we include

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<sup>7</sup>A controlling stake is owning enough shares to influence or decide a company's major decisions, typically over 50%. Either raising its interest from below to above 50%, or acquiring the remaining interest it does not already own.

deals with disclosed and undisclosed dollar values.

Table 4.1: **Data Cleaning Steps**

This table provides an overview of the cleaning process applied to the M&A data for this analysis.

<b>Criteria</b>	<b>Observations</b>
Number of deals valued over \$10 million USD	151,075
Retain only currencies associated with over 100 acquirers	150,111
Remove deals with a currency different from the target	144,836
Remove cross-border deals without a currency match	139,426
Trim currency returns on a 2.5% level	135,801
Time period from Q1 1991 to Q2 2024	124,381
<b>Number of deals used in our thesis</b>	<b>124,381</b>
Number of cross-border deals	23,458
Number of domestic deals	100,923

The dataset includes domestic and cross-border deals, as we aim to assess whether the number and volume of cross-border deals increase relative to total deals.

To refine the dataset, we first limit our sample to deals with values greater than \$10 million USD to focus our analysis on substantial transactions. Second, we exclude deals where the acquiring currency has conducted fewer than 100 deals over the period to ensure we have sufficient data points per currency and minimize the influence of outliers. Further, we exclude deals where the currency of the deal value does not match the target's currency, ensuring alignment between the deal's currency and the target country.

Moreover, currency returns are trimmed at a 2.5% level, to control for significant outliers. Lastly, we only include data from the first quarter of 1999 to the second quarter of 2024 to align with our analysis's period. This results in a final dataset of 124,381 deals, of which 23,458 are cross-border and 100,923 are domestic deals.

### 4.3 Data Sorting Process

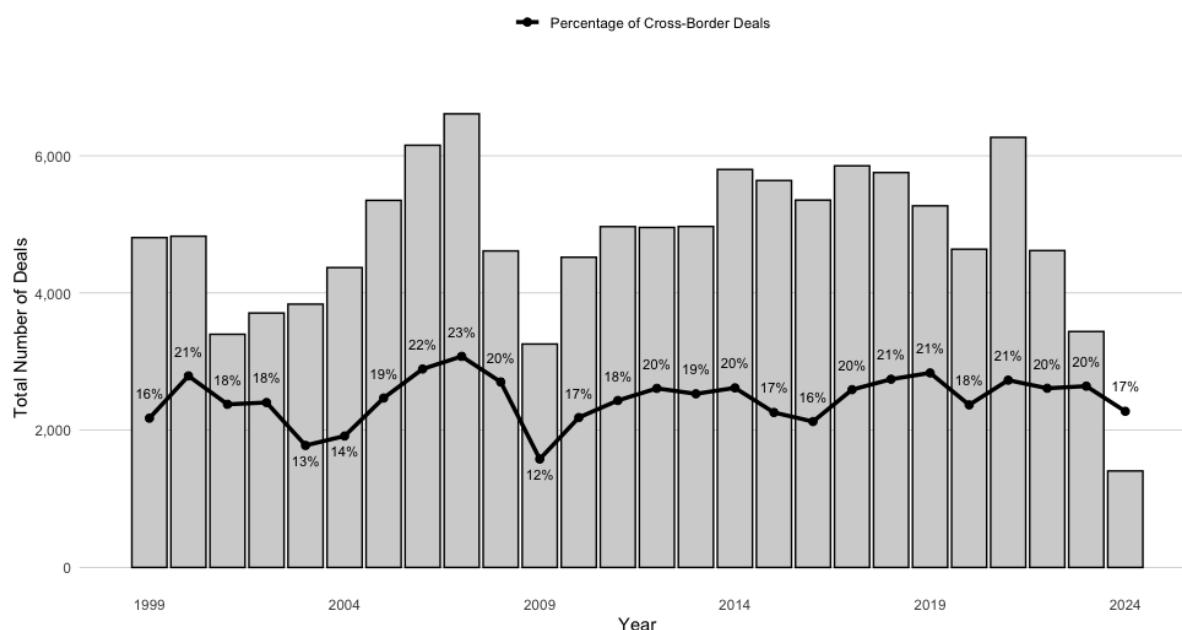
We analyze the data on a quarterly basis, to research how currency returns and volatility influence M&A activity. Since the dataset provides only announcement dates, we adjust these dates to align with the quarters. This ensures that all deals fall into consistent time frames for better comparison and analysis. We calculate 1-year, 1-year lag, 2-year, and 2-year lag currency returns and volatility, capturing both recent and historical trends

to understand how currency fluctuations might impact cross-border M&A. Each deal is paired with the relevant exchange rate based on the acquirer and target countries. For instance, if a Norwegian company is the target and the acquirer is from the United States, we use the USD/NOK currency pair to track the relevant returns and volatility.

## 4.4 Descriptive Statistics

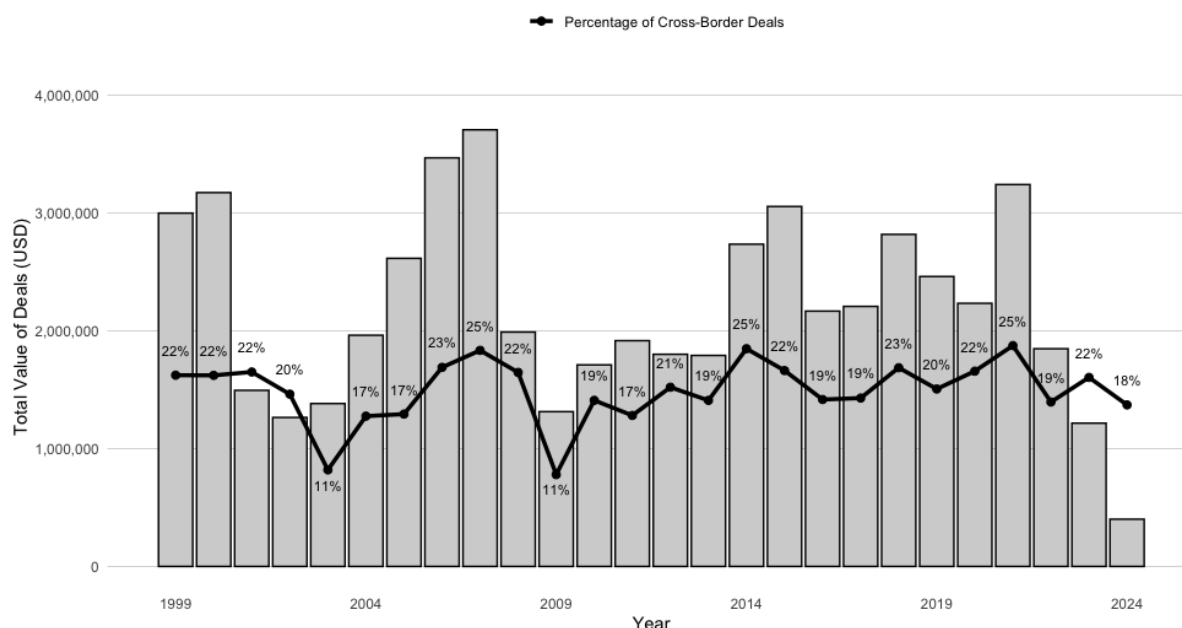
Figure 4.1 and Figure 4.2 provide a summary of our dataset, illustrating the yearly total and cross-border M&A activity for targets denominated in one of the 18 base currencies analyzed. Figure 4.1, displays the deal activity as the total number of deals each year. Figure 4.2, plots the total deal volume over time. In both figures, the line shows the percentage of total deals and volume classified as cross-border.

Figure 4.1: **Total Number of Deals**



This figure presents the total number of deals (bars) and the percentage (solid line) of cross-border mergers and acquisitions from 1999 to 2024. Bars represent the number of deals each year, while the solid line represents the fraction of cross-border deals relative to the total number of all acquisitions, including domestic ones.

Figure 4.2: Total Value of Deals



This figure plots the total value of deals (bars) and the percentage (solid line) of cross-border deals between 1999 and 2024. Bars represent the total value of deals in each year, while the solid line shows the fraction of cross-border acquisitions relative to the total value of all acquisitions, including domestic transactions. All values are inflation-adjusted and presented in the current USD.

From Figure 4.1 and Figure 4.2, we observe that cross-border M&A activity peaked in 2007. This peak aligns with the period just before the financial crisis, which began in late 2007, following a period characterized by low interest rates and expansionary monetary policies that fueled economic growth. A similar pattern of heightened deal activity is evident before the COVID-19 crisis in late 2019, aligning with periods of strong economic growth. In recent years, deal activity has remained relatively modest. Notably, the proportion of cross-border deal activity tends to decline during periods of overall reduced deal activity.

To provide an overview of the dataset, Table 4.2 presents a matrix with the number of deals for each currency pair. The row labels represent the acquirer's currency, while the column headers correspond to the target firm's currency. The figure shows that USD accounts for the highest total number of deals in the dataset, with 45,992 deals. As mentioned, we apply a filter requiring the acquirers to have over 100 deals in the dataset, which includes more acquiring currencies than target currencies, as Table 4.2 shows.



Table 4.2: Deal Matrix: M&amp;A by Currency Pair

The columns represent the countries of the target companies, while the rows represent those of the acquiring companies. The diagonal entries of the matrix indicate the number of domestic mergers for a particular country, while the off-diagonal entries show the number of deals between specific country pairs. The total includes domestic and cross-border mergers, representing the number of deals in our dataset. The data shown is for the sample period from 1999 to 2024.

Nation	AUD	BRL	CAD	CHF	CNY	EUR	GBP	ILS	INR	JPY	KRW	MXN	NOK	PLN	RUB	SEK	USD	ZAR	Sum
AUD	5098	7	88	7	9	113	172	6	7	9	6	2	11	5	0	7	276	16	5839
BRL	3	1881	6	3	0	9	3	0	1	0	0	3	1	0	0	0	11	0	1921
CAD	134	18	4865	20	20	210	207	17	15	3	1	32	17	6	9	23	1639	10	7246
CHF	21	4	28	299	10	254	71	8	8	5	4	4	7	5	4	18	217	2	969
CNY	47	0	44	12	12643	137	48	11	2	19	15	3	3	2	1	2	153	4	13146
EUR	126	51	139	175	87	11209	973	34	95	39	46	63	139	217	102	306	1329	20	15150
GBP	184	9	166	50	41	1597	9524	26	45	13	18	12	74	64	35	137	1427	23	13445
ILS	0	2	8	9	0	69	22	320	1	0	3	1	1	2	2	2	153	0	595
INR	15	5	7	11	2	69	52	3	1455	4	3	3	2	1	3	3	165	9	1812
JPY	43	6	19	18	29	100	48	2	30	5803	20	1	1	1	3	5	260	0	6389
KRW	11	3	11	2	31	57	21	2	7	18	3421	1	0	1	2	0	122	0	3710
MXN	1	9	4	1	25	1	0	1	0	0	397	2	0	0	0	0	41	0	483
NOK	7	7	8	6	2	106	42	0	2	1	3	0	705	8	2	101	44	1	1045
NZD	91	0	2	2	2	4	6	0	0	0	0	0	0	0	0	0	19	0	126
PLN	0	0	1	1	0	45	1	0	0	0	0	0	1	489	6	3	2	0	549
RUB	0	0	8	1	0	40	16	0	0	0	0	0	1	0	1016	1	22	1	1106
SEK	28	2	24	20	6	394	124	3	7	1	5	2	137	13	11	1350	152	2	2281
SGD	132	3	8	7	146	98	104	2	102	41	39	3	6	5	2	3	116	3	820
TWD	0	0	2	1	36	17	8	0	1	13	6	1	0	0	0	1	53	0	139
USD	351	54	1146	150	1215	1667	1554	221	163	126	101	111	63	33	40	104	39791	0	46890
ZAR	26	3	6	0	0	9	12	0	2	0	4	0	0	1	0	0	657	720	
Cross Border	1220	183	1725	496	1637	5020	3485	335	489	292	274	242	466	364	222	716	6201	91	23458
Total	6318	2064	6590	795	14280	16229	13009	655	1944	6095	3695	639	1171	853	1238	2066	45992	748	124381

## 4.5 Control Variables

Control variables are included to help establish a more robust relationship by accounting for external factors. Omitting these variables may distort the estimated causal effects (Stock & Watson, 2020, p. 232). The control variables in our analysis include policy interest rates, real GDP, Brent crude oil prices, inflation rates, and stock market prices, all of which are specific to each country. These variables are collected through FRED using their API package in R Studio.

According to Erel et al. (2012) findings, we include stock market prices and GDP growth as control variables. We include them to control for the overall economic environment when assessing the relationship between exchange rates and M&A activity. Moreover, fluctuations in oil prices significantly impact economies worldwide, particularly those of major oil-exporting and oil-importing nations. Oil price changes affect exchange rates and trade dynamics (Huang et al., 2021).

In addition, policy interest rates and inflation rates are key indicators of broader economic conditions. Traditional economic theory suggests that interest and currency rates are highly correlated and that one affects the other. Lower interest rates stimulate investment and economic activity, while higher inflation can drive nominal firm valuation.<sup>8</sup> Inflation

<sup>8</sup>Nominal firm valuation refers to the monetary value assigned to a firm's equity or enterprise in

is also closely linked to exchange rates, as central banks may raise interest rates to control inflation, affecting currency valuations and cross-border M&A (Uddin & Boateng, 2011).

Finally, incorporating these control variables helps validate our results and ensure they are not subject to omitted variable bias. This also helps us isolate the relationship between exchange rates and M&A activity, ensuring that other confounding factors do not drive the observed effects. Table B.2 provides a description of all variables used in our thesis, including control variables.

## 5 Methodology

This section reviews our method, construction of variables, and potential issues in our analysis.

### 5.1 Method

We conduct a panel data analysis using two dependent variables as a measure of deal activity: the proportion of cross-border transactions by deal count and the proportion by total deal value. By focusing on proportions rather than absolute numbers, we control for variations in overall M&A activity across regions and time periods. This approach helps us identify clearer trends in cross-border transactions, making comparisons across different economies more meaningful. Highlighting the influence of foreign bidders without distorting broader M&A waves.

Our approach is similar to Erel et al. (2012) analysis. However, our method differs by focusing on the target country rather than the bidder and incorporating deal value as an additional measure of M&A activity to strengthen the analysis. Furthermore, with panel data, we can identify whether FX fluctuations, such as appreciation or depreciation, affect cross-border M&A activity between countries differently.

The model for our analysis is specified as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Z_{it} + \beta_3 (X_{it} \times Z_{it}) + \alpha_i + \varepsilon_{it} \quad (5.1)$$

Further, in our analysis, we use a fixed-effects model, which allows us to account for time-invariant country-specific characteristics. This allows us to control for unobserved country-specific characteristics, such as institutional frameworks, legal systems, and cultural differences, which might influence M&A activity independently of FX fluctuations. We do not include time-fixed effects, as they would remove the impact of global events like economic crises, which are important for understanding how volatility influences M&A activity.<sup>9</sup>

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<sup>9</sup>Time-fixed effects could unnecessarily complicate the model, especially when our primary focus is on cross-country differences.

Additionally, we propose that there are systematic differences between emerging and developed countries regarding how M&A activity responds to currency fluctuations. To test this, we include a dummy variable for the country's development status, where 1 indicates a developed country, and 0 indicates an emerging economy. However, in the regression model, this dummy is captured by the fixed effects, which indirectly control the country's development status and only show the interaction variable.

## 5.2 Developed and Emerging Countries

IMF (2023) divides countries into two primary categories: Advanced Economies (Developed) and Emerging Countries. This classification considers per capita income levels, export diversification, and integration into the global financial system.<sup>10</sup>

Our analysis follows the IMF classification to distinguish between developed and emerging currencies. This results in 11 developed and 7 emerging currencies in our dataset. Table 5.1 below provides an overview of this classification.

Table 5.1: **Developed and Emerging Currencies overview**

This table presents a classification of developed and emerging market currencies used in the analysis

<b>Developed Currencies</b>	<b>Emerging Currencies</b>
USD (United States Dollar)	BRL (Brazilian Real)
EUR (Euro)	CNY (Chinese yuan)
GBP (British Pound Sterling)	INR (Indian Rupee)
JPY (Japanese Yen)	MXN (Mexican Peso)
AUD (Australian Dollar)	PLN (Polish Zloty)
CHF (Swiss Franc)	RUB (Russian Ruble)
SEK (Swedish Krona)	ZAR (South African Rand)
CAD (Canadian Dollar)	
NOK (Norwegian Krone)	
KRW (South Korean Won)	
ISL (Israeli Shekel)	

## 5.3 Hypothesis 1

We analyze how currency fluctuations impact cross-border deal proportions using a panel data framework. Our analysis focuses on the weighted average currency return with key

<sup>10</sup>Advanced economies generally having more diversified exports beyond primary commodities (IMF, 2023)

control variables. We estimate four models for deal activity and volume based on specific time periods for the currency returns: 1-year, 1-year lag, 2-year, and 2-year lag returns.

The first model is expressed as follows:

$$\begin{aligned} \text{Fraction}_{it} = & \beta_0 + \beta_1 \text{Currency Return}_{it} + \beta_2 \text{GDP}_{it} + \beta_3 \log(1 + \text{Policy Rate}_{it}) \\ & + \beta_4 \text{Oil Price}_{it} + \beta_5 \text{Inflation}_{it} + \beta_6 \text{Stock Market}_{it} + \alpha_i + \epsilon_{it} \end{aligned} \quad (5.2)$$

In the regression, *Fraction* denotes the proportion of cross-border deals as a percentage of the total number of deals<sup>11</sup> in the target nation for each quarter, categorized by currency. *Currency Return* reflects the weighted average currency return for that quarter. *GDP* represents the percentage change in GDP from the previous year. *Log(1 + Policy Rate)* corresponds to the policy interest rate of the target country or region. *Oil Price* captures the annual return on oil prices, while *Inflation* measures the one-year inflation rate. Finally, *Stock Market* indicates the market return over the past year for the respective country or region. The currency fixed effects, denoted by  $\alpha_i$ , account for unobserved, time-invariant characteristics specific to each currency.

## 5.4 Hypothesis 2

To determine if volatility has a negative effect on the proportion of cross-border deals, we include the variable *Volatility* in the regression model in Equation 5.1. Volatility is defined using the quarterly currency returns. The model includes the same control variables and the currency return for the corresponding time period. The model is as follows:

$$\begin{aligned} \text{Fraction}_{it} = & \beta_0 + \beta_1 \text{Currency Return}_{it} + \beta_2 \text{Volatility}_{it} + \beta_3 \text{GDP}_{it} \\ & + \beta_4 \log(1 + \text{Policy Rate}_{it}) + \beta_5 \text{Oil Price}_{it} \\ & + \beta_6 \text{Inflation}_{it} + \beta_7 \text{Stock Market}_{it} + \alpha_i + \epsilon_{it} \end{aligned} \quad (5.3)$$

## 5.5 Hypothesis 3a & 3b

To examine hypotheses 3a and 3b, we continue to use panel data, but we now include interaction terms to test whether there is a significant difference between developed and

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<sup>11</sup>This will be the total value of deals when analyzing deal volume

emerging countries. We use the four different measures of currency returns and volatility and test both hypotheses for deal activity and deal value. We also include the dummy variable indicating whether the target is classified as a developed or emerging country.

For hypothesis 3a we continue to build on the model from hypothesis 2, now including the interaction term between developed countries and the currency return. The regression includes the same control variables as in Equation 5.2, and is defined as:

$$\begin{aligned} \text{Fraction}_{it} = & \beta_0 + \beta_1(\text{Currency Return}_{it} \times \text{Developed}_i) + \beta_2\text{Currency Return}_{it} \\ & + \beta_3\text{Volatility}_{it} + \beta_4\text{GDP}_{it} + \beta_5 \log(1 + \text{Policy Rate}_{it}) \\ & + \beta_6\text{Oil Price}_{it} + \beta_7\text{Inflation}_{it} + \beta_8\text{Stock Market}_{it} + \alpha_i + \epsilon_{it} \end{aligned} \quad (5.4)$$

The interaction term,  $\beta_1(\text{Currency Return}_{it} \times \text{Developed}_i)$ , tests whether the impact of currency returns on the proportion of cross-border deals differs between emerging and developed countries.

For hypothesis 3b, we extend the model by including an interaction term between volatility and the developed dummy variable, as follows:

$$\begin{aligned} \text{Fraction}_{it} = & \beta_0 + \beta_1(\text{Currency Return}_{it} \times \text{Developed}_i) + \beta_2\text{Currency Return}_{it} \\ & + \beta_3(\text{Volatility}_{it} \times \text{Developed}_i) + \beta_4\text{Volatility}_{it} \\ & + \beta_5\text{GDP}_{it} + \beta_6 \log(1 + \text{Policy Rate}_{it}) + \beta_7\text{Oil Price}_{it} \\ & + \beta_8\text{Inflation}_{it} + \beta_9\text{Stock Market}_{it} + \alpha_i + \epsilon_{it} \end{aligned} \quad (5.5)$$

The interaction term,  $\beta_3(\text{Volatility}_{it} \times \text{Developed}_i)$ , tests whether the impact of currency returns on the proportion of cross-border deals differs between emerging and developed countries.

## 5.6 Construction of Variables

### 5.6.1 Quarterly Return

We import a currency dataset containing 287 currency pairs. Using this data, we compute the one-year, one-year lag, two-year, and two-year lag returns. The one- and two-year returns are calculated using simple returns. To compute the lagged returns, we take the

respective return from one year earlier and lag it by one year, following the same procedure for both one-year and two-year lagged returns. Once the returns are calculated for all currency pairs, they are matched with the corresponding deals in the dataset, matched by currency pair and quarter.

Since multiple deals may be associated with the same currency pair in a given quarter, this results in multiple return values for the same period. To aggregate these values into a single return per quarter, we use the weighted mean. The rationale for using a weighted mean is that currency pairs with a larger number of deals within a quarter should carry more weight in the calculation, as they are more representative of the quarter's activity.

The weighted mean formula used for this aggregation is:

$$\text{Weighted Mean Return} = \frac{\sum_{i=1}^n w_i \cdot R_i}{\sum_{i=1}^n w_i} \quad (5.6)$$

The equation calculates the weighted mean return for currency pairs in a given quarter.  $R_i$  is the return of the currency pair  $i$  and  $w_i$  is the weight based on the number of deals associated with that currency pair in the quarter. The numerator sums the weighted returns, while the denominator normalizes by the total weight. This approach ensures that currency pairs with a higher volume of trades have a larger impact, allowing the return to better reflect the overall M&A activity for the quarter.

### 5.6.2 Quarters with Zero Deals

We construct a custom index for each target currency in our sample to estimate currency returns for quarters with zero cross-border deals. This ensures that such quarters are not excluded, which could otherwise distort the results.

We first identify quarters where the number of cross-border deals is zero and flag them accordingly. For each target currency, we calculate the average weight of each acquirer currency pair over the entire dataset. The weight of a currency pair is determined by its proportion of total deals involving the target currency:

$$w_{ij} = \frac{N_{ij}}{\sum_k N_{ik}} \quad (5.7)$$

where  $w_{ij}$  is the weight of acquirer currency  $j$  relative to target currency  $i$ ,  $N_{ij}$  is the

number of deals involving  $i$  and  $j$ , and  $\sum_k N_{ik}$  is the total number of deals for target currency  $i$ .

Using the pre-computed weights, we estimate the weighted mean return for each target currency during quarters with no deals:

$$R_i = \sum_j w_{ij} \cdot R_{ij} \quad (5.8)$$

where  $R_i$  is the estimated return for target currency  $i$ ,  $w_{ij}$  is the weight of acquirer currency  $j$ , and  $R_{ij}$  is the return for the currency pair  $ij$ .

Finally, we integrate these weighted returns into the dataset, replacing missing values in zero-deal quarters while leaving other observations unchanged:

$$R_{final} = \begin{cases} R_i, & \text{if Number of Deals} = 0 \\ R_{obs}, & \text{otherwise} \end{cases} \quad (5.9)$$

where  $R_{final}$  is the return used in the analysis,  $R_i$  is the estimated return, and  $R_{obs}$  is the observed return.

### 5.6.3 Volatility

To further investigate the role of currency volatility in the proportion of cross-border M&A in the target nation, we calculate volatility measures based on currency returns for four periods. Using a rolling volatility approach, we compute each quarter's one-year, one-year lag, two-year, and two-year lag volatility. This approach allows volatility to be recalculated as new data points are added, ensuring that each observation reflects the most recent historical fluctuations.

The rolling volatility is computed as the standard deviation of the currency returns over four quarters within a moving period. To provide comparable results, we annualize the rolling volatility by multiplying it by the square root of four, converting quarterly fluctuations into an annualized measure. Additionally, we group the data by the target nation's currency and sort it by quarter, avoiding any overlap or mixing of data between



currencies. The formula is:

$$\sigma_t = \sqrt{\frac{1}{n-1} \sum_{i=t-n+1}^t (R_i - \bar{R})^2} \quad (5.10)$$

The equation calculates rolling volatility ( $\sigma_t$ ), which measures the standard deviation of currency returns over a rolling window of  $n$  periods (quarters). The term  $R_i$  represents the currency return in quarter  $i$ , and  $\bar{R}$  is the mean return over the  $n$ -quarter window. The summation  $\sum_{i=t-n+1}^t$  computes the squared deviations of each return from the mean within the rolling window. Dividing by  $n - 1$ , adjusting for the degrees of freedom in the sample, and taking the square root ensures the result is expressed in the same units as the original returns.

#### 5.6.4 Interaction, Logarithm and Fraction

We calculate the proportion of cross-border deals as a percentage of cross-border deals relative to the total number of deals in that quarter in the target country. In quarters without cross-border or domestic deals, we assign a value of zero. This ensures consistency in periods without transactions, resulting in quarters where the fraction is 100%. This approach maintains the integrity of the dataset, allowing for important comparisons across different periods and countries.

To address potential skewness in the data, we employ the natural logarithm transformation for variables where we are interested in understanding percentage changes. This transformation stabilizes variance, addresses non-linearity, and allows us to interpret the coefficients in our regression models in terms of relative changes. Specifically, the coefficients represent the percentage change in the dependent variable associated with a one-percent change in the independent variable, a framework that we find more meaningful than absolute changes in this context. We take the natural logarithm of the policy interest rates since they are not in percentage change.

Notably, some control variables, such as inflation rates and stock market indices, are already expressed in percentage changes. Applying the natural logarithm would be redundant and potentially misleading for these variables. This methodological approach is relevant to the extent of this thesis, given the focus on the relationship between M&A

activity, exchange rate levels, and volatility across multiple countries. By expressing variables in percentage changes, we can more effectively compare the relative impacts of macroeconomic factors, such as currency fluctuations, real GDP, and oil prices, on cross-border and domestic deal activity.

## 5.7 Potential Panel Data Issues

The use of panel data introduces several potential issues, which may affect the reliability of our results. These could include heteroscedasticity, multicollinearity, or any endogeneity concerns.

### 5.7.1 Heteroscedasticity Concerns

Heteroscedasticity occurs when the variance of the error terms varies across observations, leading to inefficient estimates and biased standard errors. This could typically occur in panel data analysis. Even if heteroscedasticity is absent, correcting for heteroscedasticity does not significantly alter coefficient estimates, but it is still essential for ensuring valid statistical inference. We use robust standard errors clustered by time to ensure that the results remain consistent even in the presence of heteroscedasticity.

### 5.7.2 Multicollinearity Concerns

Multicollinearity can lead to unstable regression coefficient estimates and inflate the variance of these estimates. To ensure that the coefficients do not suffer from multicollinearity, we use the Variance Inflation Factor (VIF) to detect it in our regression model. Our model does not suffer from multicollinearity.<sup>12</sup> A VIF higher than five indicates problematic multicollinearity; however, this does not apply to our variables. Additionally, we run separate regressions when analyzing returns and volatility over one- and two-year periods.

### 5.7.3 Endogeneity Concerns

We use lagged variables when modeling the effects of currency rate fluctuations and volatility. This choice is methodologically sound and contextually appropriate, given how

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<sup>12</sup>This is shown in our appendix, Table B.3.

long the M&A processes can take. Using lagged variables helps address reverse causality, as the dependent variable, like M&A activity at time  $t$ , cannot directly influence the lagged independent variables ( $X_{t-1}$ ).

We also assume exogeneity, meaning that the lagged independent variables are not correlated with the error term at time  $t$ . However, we recognize that our estimates could be biased if this assumption is violated. This underscores the importance of testing and validating model assumptions in interpreting the results (Bellemare et al., 2015).

To mitigate omitted variable bias, we include a set of exogenous control variables, such as policy interest rates, GDP, inflation rates, and oil prices. These variables are chosen based on their relevance to exchange rate dynamics and M&A activity, ensuring that our model accounts for confounding influences.

Additionally, we use country-fixed effects to control for unobservable factors that vary across countries but remain constant over time, such as institutional differences or cultural influences on M&A activity. Fixed effects help account for these latent factors, reducing the risk of bias and improving the reliability of our estimates. This approach ensures that cross-country differences are not reflected in the relationship between the independent variables and M&A activity.

## 6 Results

This section reviews each hypothesis and its results, highlighting whether we can reject  $H_0$ , along with a related regression table.

### 6.1 Hypothesis 1: Currency Changes

$H_0$ : A change in the target's home currency is not associated with a shift in the proportion of acquisitions by foreign acquirers.

$H_1$ : A change in the target's home currency is associated with a shift in the proportion of acquisitions by foreign acquirers.

Table 6.1: **Cross-Border M&A Activity: Currency Return**

This table presents regression estimates of cross-sectional analysis on cross-border M&A activity and deal value, focusing on the effects of currency changes. The dependent variables are the percentage of cross-border activity and the percentage of cross-border deal value relative to total deal value. Columns 1 to 4 analyze the determinants of cross-border activity measured as number of deals in the given quarter, while Columns 5 to 8 focus on cross-border deal value. For further explanation of variables look at Table B.2 in the appendix. Country-fixed effects are included in all regressions. Heteroskedasticity-corrected  $t$ -statistics are shown beneath each coefficient.

	Cross-Border M&A Share (%)				Cross-Border Deal Value Share (%)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
One-Year Currency Change (%)	0.037 t = 0.616				0.095 t = 1.235			
One-Year Lagged Currency Change (%)		0.152** t = 2.386				0.214** t = 2.357		
Two-Year Currency Change (%)			0.117*** t = 2.594				0.184*** t = 2.899	
Two-Year Lagged Currency Change (%)				0.091** t = 2.224				0.134** t = 2.539
GDP Change (%)	0.394*** t = 3.239	0.376*** t = 3.107	0.376*** t = 3.176	0.371*** t = 3.008	0.469*** t = 2.760	0.445*** t = 2.586	0.442*** t = 2.666	0.436** t = 2.490
Log(1 + Policy Rate)	-0.870 t = -1.339	-0.891 t = -1.377	-0.954 t = -1.467	-0.855 t = -1.314	-2.922*** t = -2.902	-2.926*** t = -2.904	-3.034*** t = -2.982	-2.877*** t = -2.862
Oil Price Change (%)	-0.002 t = -0.110	-0.002 t = -0.158	-0.005 t = -0.374	-0.0004 t = -0.027	-0.022 t = -1.127	-0.022 t = -1.114	-0.027 t = -1.349	-0.020 t = -0.986
Inflation	0.089 t = 0.434	0.219 t = 0.988	0.222 t = 1.018	0.182 t = 0.823	0.038 t = 0.137	0.207 t = 0.684	0.236 t = 0.800	0.163 t = 0.548
Stock Market Change (%)	0.006 t = 0.279	0.015 t = 0.680	0.011 t = 0.479	0.011 t = 0.508	-0.001 t = -0.015	0.013 t = 0.389	0.007 t = 0.220	0.008 t = 0.231
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	No	No	No	No	No	No	No	No
Observations	1,662	1,662	1,662	1,662	1,662	1,662	1,662	1,662
R <sup>2</sup>	0.010	0.015	0.015	0.013	0.011	0.014	0.015	0.013
Adjusted R <sup>2</sup>	-0.003	0.001	0.001	-0.001	-0.003	0.0001	0.001	-0.001

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table 6.1 indicates that currency appreciation of the target country positively affects cross-border M&A activity; we reject  $H_0$ . We find a positive and statistically significant relationship between one-year lagged and two-year currency return on cross-border M&A activity. These results indicate that last year's currency appreciation can drive cross-border M&A. The two-year lagged currency variable also shows a positive relationship, with significance at the 5% significance level.

These results suggest that a strengthened currency signals better market conditions or improves the economic outlook in the target country, attracting foreign acquirers despite potentially higher costs. This could suggest that an appreciation signals an opportunity for foreign investors. Our findings imply that currency appreciation enhances foreign acquisition interest, which is contrary to Erel et al. (2012) and Lin et al. (2014) findings.

Although we see a statistical significance, the economic significance of the relationship appears modest. Even substantial currency appreciation corresponds to a limited increase in cross-border M&A activity, suggesting that, while currency movements matter, their overall impact on foreign acquisition decisions remains constrained. This tells us that FX rates overall impact remains constrained because other macroeconomic and firm-level factors could play more dominant roles (Blonigen, 1997; Erel et al., 2012; Globerman & Shapiro, 2003).

GDP growth shows statistical and economic significance. An increase in GDP corresponds to a rise in cross-border M&A activity, according to measures of deal activity. This indicates that economic growth, measured in GDP, leads to more foreign acquisitions, suggesting that a stronger economy drives foreign M&A activity (Erel et al., 2012). Further, this underscores the importance of controlling for broader macroeconomic factors, as a stronger economy is often a key determinant of foreign investment decisions (Chiriac, 2021). Additionally, the positive impact of GDP growth and the negative effect of policy interest rates are consistent with prior studies emphasizing the importance of macroeconomic stability and cost of capital in driving foreign investment (Di Giovanni, 2005; Uddin & Boateng, 2011).

A depreciated currency might seem cheap if firms or investors behave irrationally. Baker et al. (2012), Ben-David et al. (2013), and Malmendier and Tate (2008) show how biases in CEO decision-making can affect M&A activity. Traditionally, cross-border mergers

and acquisitions rely on the expected return of a target's assets rather than just the nominal price. When a target's currency depreciates against the acquirer's, its nominal asset value drops in the acquirer's currency. This depreciation lowers nominal returns upon conversion, theoretically leaving expected returns unchanged.

Foreign investors may find lower asset prices appealing due to market imperfections like information asymmetries, financing constraints, and the belief in mean reversion in the FX market. Therefore, exchange rate movements can influence acquisition behavior, as a weaker currency can enhance the attractiveness of target companies to foreign investors (Erel et al., 2012). Conversely, evidence from Table 6.1 suggests that currency appreciation does not deter cross-border M&A; it may signify economic attractiveness, especially over one to two years. These findings challenge simplistic views on currency fluctuation effects and reveal the complexity of cross-border investment decisions.

## 6.2 Hypothesis 2: Currency Volatility

*H<sub>0</sub>: Currency volatility is non-negatively associated with the proportion of cross-border M&A deals.*

*H<sub>1</sub>: Currency volatility is negatively associated with the proportion of cross-border M&A deals.*

The results in Table 6.2 find a negative relationship between higher currency volatility and the proportion of cross-border M&A activity; we reject  $H_0$ . All periods show a significant negative relationship, at the 1% level, between the proportion of cross-border M&A and exchange rate volatility.

The findings align with the notion that heightened volatility signals greater risk for acquirers, potentially leading to uncertainty about the final enterprise value or reflecting broader macroeconomic instability in the target country (Campa, 1993). Furthermore, our analysis indicates that higher currency volatility negatively affects M&A activity, while economic stability enhances deal-making (Darby et al., 1999). The relationship highlights that increased exchange rate volatility creates uncertainty among investors, discouraging cross-border M&A (Hanusch et al., 2018; Kiyota & Urata, 2004). We therefore argue that financial stability is crucial for creating an environment for cross-border M&A, as it

Table 6.2: Cross-Border M&amp;A Activity: Volatility

This table presents regression estimates of cross-sectional analysis on cross-border M&A activity and deal value, focusing on the role of currency changes and their volatility. The dependent variables are the percentage of cross-border M&A activity and the percentage of cross-border deal value relative to total deal value. Columns 1 to 4 analyze the determinants of cross-border activity measured as the number of deals in the given quarter, while Columns 5 to 8 focus on cross-border deal value. For further explanation of variables look at Table B.2 in the appendix. Country-fixed effects are included in all regressions. Heteroskedasticity-corrected t-statistics are shown beneath the coefficient.

	Cross-Border M&A Share (%)				Cross-Border Deal Value Share (%)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
One-Year Currency Change (%)	0.117** t = 2.029				0.190** t = 2.380			
One Year Currency Volatility (%)	-0.634*** t = -8.352				-0.746*** t = -6.044			
One Year Lagged Currency Change (%)		0.209*** t = 3.379				0.285*** t = 3.184		
One Year Lagged Currency Volatility (%)		-0.448*** t = -6.591				-0.501*** t = -4.089		
Two Year Currency Change (%)			0.159*** t = 3.563				0.245*** t = 3.921	
Two Year Currency Volatility (%)			-0.337*** t = -5.699				-0.459*** t = -4.875	
Two Year Lagged Currency Change (%)				0.140*** t = 3.441				0.194*** t = 3.532
Two Year Lagged Currency Volatility (%)				-0.331*** t = -5.829				-0.376*** t = -3.778
GDP Change (%)	0.299*** t = 2.852	0.349*** t = 2.934	0.370*** t = 3.319	0.344*** t = 2.799	0.339** t = 2.214	0.395** t = 2.294	0.416*** t = 2.594	0.386** t = 2.141
Log(1 + Policy Rates)	-0.632 t = -1.006	-0.763 t = -1.154	-0.821 t = -1.255	-0.549 t = -0.834	-2.810*** t = -2.842	-2.945*** t = -2.948	-3.017*** t = -2.995	-2.690*** t = -2.693
Oil Price Change (%)	-0.005 t = -0.374	0.004 t = 0.319	-0.007 t = -0.496	0.001 t = 0.070	-0.027 t = -1.416	-0.016 t = -0.831	-0.031 t = -1.522	-0.019 t = -0.973
Inflation	0.245 t = 1.171	0.220 t = 0.916	0.292 t = 1.263	0.142 t = 0.622	0.348 t = 1.276	0.343 t = 1.144	0.454 t = 1.571	0.251 t = 0.840
Stock Market Change (%)	0.018 t = 0.874	0.033 t = 1.555	0.010 t = 0.448	0.025 t = 1.200	0.012 t = 0.376	0.033 t = 0.999	0.004 t = 0.112	0.023 t = 0.700
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	No	No	No	No	No	No	No	No
Observations	1,625	1,625	1,625	1,625	1,625	1,625	1,625	1,625
R <sup>2</sup>	0.055	0.037	0.032	0.032	0.037	0.026	0.029	0.023
Adjusted R <sup>2</sup>	0.040	0.023	0.018	0.017	0.023	0.012	0.014	0.008

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

reduces risks related to currency fluctuations.

Additionally, our findings reveal that increased exchange rate volatility significantly deters FDI (Darby et al., 1999; Goldberg & Kolstad, 1995). Thus, we reason that economic stability encourages cross-border M&A. Moreover, the results suggest that currency volatility negatively impacts international portfolio investment flows (De Santis et al., 1999). These findings highlight investors' risk-averse behavior in volatile currency environments, emphasizing the need for currency stability to attract and retain international investments (Goldberg & Kolstad, 1995).

When we compare our two dependent variables, we find consistent results. All coefficients are negative and statistically significant at the 1% level, reinforcing the hypothesis's robustness. The economic significance of our findings is notable; for instance, a 10% increase in *One-Year Currency Change (%)* volatility corresponds to a 6.34% reduction in the proportion of cross-border M&A.

Including volatility measures enhances the significance of currency return variables, indicating that volatility captures additional aspects of the relationship between currency returns and cross-border M&A. This strengthens our findings for our first hypothesis and points to the importance of considering volatility in further analyses to address potential omitted variable bias.

### 6.3 Hypothesis 3a: Emerging and Developed

$H_0$ : *Cross-border acquisition activity is not more sensitive to currency movements in emerging markets compared to developed markets.*

$H_1$ : *Cross-border acquisition activity is more sensitive to currency movements in emerging markets compared to developed markets.*

Based on the results presented in Table 6.3, we reject  $H_0$ . Further, these results indicate that emerging countries are significantly more sensitive to currency movements than developed countries. We observe this by the positive and significant interaction terms for one-year and two-year lagged currency variables. Specifically, the one-year currency lag is significant at the 1% level, while the two-year lag is at a 5% level, showing consistent effects on cross-border M&A activity.



Table 6.3: Cross-Border M&amp;A Activity: Return - Emerging and Developed

This table presents regression estimates of cross-sectional analysis on cross-border M&A activity and deal value, focusing on the impact of currency changes. The dependent variables are the percentage of cross-border M&A activity and the percentage of cross-border deal value relative to total deal value. Columns 1 to 4 analyze cross-border M&A activity measured as number of deals in the given quarter, while columns 5 to 8 focus on cross-border deal value. For further explanation of variables look at Table B.2 in the appendix. Country-fixed effects are included in all regressions. Heteroskedasticity-corrected t-statistics are shown beneath the coefficient.

	% - Cross-Border M&A Activity				% - Cross-Border Deal Value of Total Deal Value			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
One-Year Currency Change (%)	0.108 t = 1.206				0.214* t = 1.692			
One-Year Currency Volatility (%)	-0.635*** t = -8.304				-0.744*** t = -5.928			
One-Year Lagged Currency Change (%)		0.046 t = 0.572				0.232* t = 1.931		
One-Year Lagged Currency Volatility (%)		-0.471*** t = -7.047				-0.508*** t = -4.164		
Two-Year Currency Change (%)			0.099* t = 1.928				0.271*** t = 3.315	
Two-Year Currency Volatility (%)			-0.341*** t = -5.770				-0.457*** t = -4.826	
Two-Year Lagged Currency Change (%)				0.046 t = 0.891				0.094 t = 1.146
Two-Year Lagged Currency Volatility (%)				-0.331*** t = -5.830				-0.376*** t = -3.789
GDP Change (%)	0.299*** t = 2.845	0.335*** t = 2.886	0.364*** t = 3.285	0.330*** t = 2.702	0.340** t = 2.212	0.390** t = 2.281	0.418*** t = 2.600	0.370** t = 2.067
Log(1 + Policy Rate)	-0.633 t = -1.005	-0.825 t = -1.256	-0.853 t = -1.297	-0.575 t = -0.879	-2.807*** t = -2.838	-2.965*** t = -2.981	-3.003*** t = -2.976	-2.717*** t = -2.727
Oil Price Change (%)	-0.005 t = -0.372	0.005 t = 0.419	-0.006 t = -0.459	0.002 t = 0.120	-0.028 t = -1.425	-0.016 t = -0.808	-0.031 t = -1.535	-0.019 t = -0.939
Inflation	0.244 t = 1.170	0.295 t = 1.233	0.313 t = 1.337	0.206 t = 0.886	0.351 t = 1.291	0.368 t = 1.208	0.445 t = 1.503	0.318 t = 1.062
Stock Market Change (%)	0.018 t = 0.869	0.035* t = 1.656	0.009 t = 0.407	0.025 t = 1.195	0.013 t = 0.392	0.033 t = 1.019	0.004 t = 0.123	0.023 t = 0.698
One-Year Currency Change (%) * Emerging	0.015 t = 0.148				-0.039 t = -0.266			
One-Year Lagged Currency Change (%) * Emerging		0.279*** t = 2.774				0.091 t = 0.626		
Two-Year Currency Change (%) * Emerging			0.101 t = 1.435				-0.043 t = -0.408	
Two-Year Lagged Currency Change (%) * Emerging				0.163** t = 2.242				0.173 t = 1.592
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	No	No	No	No	No	No	No	No
Observations	1,625	1,625	1,625	1,625	1,625	1,625	1,625	1,625
R <sup>2</sup>	0.055	0.041	0.033	0.034	0.037	0.026	0.029	0.024
Adjusted R <sup>2</sup>	0.040	0.026	0.018	0.019	0.022	0.011	0.014	0.009
F Statistic (df = 8; 1599)	11.536***	8.599***	6.880***	7.051***	7.754***	5.430***	5.983***	4.994***

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

These findings indicate that currency movements have a greater impact on the proportion of foreign M&A activity in emerging countries than in developed countries. An appreciated currency in these markets may signal better economic prospects, attracting foreign investors (Erel et al., 2012). In contrast, developed economies, characterized by more stable and

predictable economic conditions, show weaker responses to currency fluctuations (Klein & Rosengren, 1994). The impact of currency appreciation over time is less pronounced in developed markets, as we believe that investors already perceive these markets as stable and safe, reducing the influence of additional incentives from currency movements on cross-border M&A decisions.

Our results align with prior research, which indicates that macroeconomic factors, including currency movements, significantly influence cross-border M&A activity, especially in markets with higher economic volatility, such as emerging economies (Erel et al., 2012; Hanusch et al., 2018). The sensitivity in emerging markets reflects their dependence on exchange rate signals as indicators of financial stability and investment attractiveness, emphasizing the importance of macroeconomic stability in encouraging cross-border M&A activity in these regions (Froot & Stein, 1991).

## 6.4 Hypothesis 3b: Emerging and Developed

*H<sub>0</sub>: Cross-border acquisition activity is not more sensitive to currency volatility in emerging markets compared to developed markets.*

*H<sub>1</sub>: Cross-border acquisition activity is more sensitive to currency volatility in emerging markets compared to developed markets.*

The findings in Table 6.4 indicate no significant difference in how emerging and developed countries are affected by currency volatility; we cannot reject  $H_0$ . The analysis shows consistent results for deal activity and value, enhancing the robustness of our findings.

Higher exchange rate volatility negatively impacts cross-border M&A activity in emerging and developed countries. This implies that currency volatility can discourage cross-border investments, regardless of whether the target nation is emerging or developed (Hanusch et al., 2018). Our findings suggest that exchange rate volatility is a universal concern for investors, as currency volatility adversely affects capital inflows across emerging and developed markets. This suggests that currency stability is critical for attracting and maintaining cross-border M&A (Globerman & Shapiro, 2003).

We observe that the interaction term between developed currencies and the two-year lagged currency return is statistically significant at the 5% level, compared to the 10% level

Table 6.4: Cross-Border M&amp;A Activity: Volatility - Emerging and Developed

This table presents regression estimates of cross-sectional analysis on cross-border M&A activity and deal value. The dependent variables are the percentage of cross-border M&A activity and the percentage of cross-border deal value relative to total deal value. Columns 1 to 4 analyze cross-border M&A activity measured as the number of deals in the given quarter, while columns 5 to 8 focus on cross-border deal value. For further explanation of variables look at Table B.2 in the appendix. Country-fixed effects are included in all regressions. Heteroskedasticity-corrected t-statistics are shown beneath the coefficient.

	% - Cross-Border M&A Activity				% - Cross-Border Deal Value of Total Deal Value			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
One-Year Currency Change (%)	0.107 t = 1.189				0.214* t = 1.692			
One-Year Currency Volatility (%)	-0.583*** t = -4.296				-0.754*** t = -3.413			
One-Year Lagged Currency Change (%)		0.045 t = 0.560				0.233* t = 1.934		
One-Year Lagged Currency Volatility (%)		-0.417*** t = -3.705				-0.544*** t = -2.973		
Two-Year Currency Change (%)			0.098* t = 1.898				0.270*** t = 3.276	
Two-Year Currency Volatility (%)			-0.325*** t = -4.117				-0.435*** t = -3.319	
Two-Year Lagged Currency Change (%)				0.047 t = 0.904				0.106 t = 1.258
Two-Year Lagged Currency Volatility (%)				-0.342*** t = -5.461				-0.482*** t = -3.981
GDP Change (%)	0.296*** t = 2.800	0.332*** t = 2.853	0.364*** t = 3.283	0.331*** t = 2.700	0.340** t = 2.199	0.392** t = 2.285	0.418*** t = 2.600	0.381** t = 2.136
Log(1 + Policy Rates)	-0.629 t = -0.992	-0.797 t = -1.193	-0.847 t = -1.278	-0.574 t = -0.877	-2.808*** t = -2.840	-2.984*** t = -3.002	-2.996*** t = -2.965	-2.704*** t = -2.727
Oil Price Change (%)	-0.005 t = -0.370	0.006 t = 0.439	-0.006 t = -0.456	0.002 t = 0.118	-0.028 t = -1.425	-0.016 t = -0.820	-0.031 t = -1.533	-0.019 t = -0.962
Inflation	0.251 t = 1.193	0.292 t = 1.214	0.312 t = 1.331	0.207 t = 0.891	0.349 t = 1.275	0.371 t = 1.216	0.443 t = 1.497	0.330 t = 1.105
Stock Market Change (%)	0.019 t = 0.907	0.035* t = 1.650	0.009 t = 0.407	0.025 t = 1.175	0.013 t = 0.387	0.033 t = 1.020	0.004 t = 0.123	0.020 t = 0.599
One-Year Currency Change (%) * Emerging	0.020 t = 0.200				-0.040 t = -0.272			
One-Year Currency Volatility (%) * Emerging	-0.083 t = -0.529				0.017 t = 0.068			
One-Year Lagged Currency Change (%) * Emerging		0.286*** t = 2.778				0.086 t = 0.588		
One-Year Lagged Currency Volatility (%) * Emerging		-0.091 t = -0.647				0.061 t = 0.297		
Two-Year Currency Change (%) * Emerging			0.104 t = 1.428				-0.040 t = -0.365	
Two-Year Currency Volatility (%) * Emerging			-0.031 t = -0.272				-0.044 t = -0.229	
Two-Year Lagged Currency Change (%) * Emerging				0.160** t = 2.146				0.144 t = 1.256
Two-Year Lagged Currency Change (%) * Emerging				0.025 t = 0.209				0.241 t = 1.165
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	No	No	No	No	No	No	No	No
Observations	1,625	1,625	1,625	1,625	1,625	1,625	1,625	1,625
R <sup>2</sup>	0.055	0.041	0.033	0.034	0.037	0.026	0.029	0.025
Adjusted R <sup>2</sup>	0.039	0.026	0.018	0.018	0.022	0.011	0.013	0.009

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

in Hypothesis 3a. Additionally, the interaction term between developed currencies and the two-year lagged currency return now becomes insignificant, indicating that including the interaction with currency, volatility captures some of the variation previously attributed to currency returns.

## 6.5 Subsample: Developed Countries

In Table 6.5, we can observe the differences between developed and emerging countries. Focusing only on developed countries does not reveal the strong significance seen in emerging countries, which supports the results in Table 6.3.

Our findings suggest that foreign investors are willing to engage in M&A deals in developed countries despite currency appreciations (Dewenter, 1995; Uddin & Boateng, 2011).<sup>13</sup> This suggests that factors such as market stability, corporate governance, and the availability of information encourage cross-border deals, even when target firms' valuations increase due to a stronger currency (Di Giovanni, 2005). Further, our results indicate how well-developed financial systems in developed countries can help reduce the risks and concerns associated with exchange rate fluctuations, making foreign investors more confident in pursuing cross-border M&A deals (De Santis et al., 1999).

We argue that one explanation for the increase in cross-border deal activity in developed countries is lower levels of risk and greater market efficiency. Developed markets tend to be more predictable with well-established legal and financial systems, reducing the uncertainty foreign investors face. This makes investments more attractive despite the higher valuation costs that might arise due to currency appreciations, making exchange rate fluctuations an insignificant factor in determining the interest from foreign acquirers (Rossi & Volpin, 2004).

On the other hand, emerging markets exhibit different characteristics due to higher volatility, political risk, and market inefficiencies, which might deter foreign investors. Despite these risks, when emerging market currencies depreciate, firms in those countries may appear attractive acquisition targets due to their perceived lower cost. However,

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<sup>13</sup>Dewenter finds that absolute levels of FDI are linked to exchange rates, the relative proportion of foreign to domestic investments does not show a consistent relationship with exchange rate fluctuations. (Dewenter, 1995)

Table 6.5: Regression Analysis of Developed and Emerging Markets

This table presents estimates of cross-sectional regressions for developed and emerging markets, comparing the determinants of cross-border mergers and acquisitions. The dependent variables are the percentage of cross-border deals measured as the number of deals and the percentage of cross-border deal value relative to the total deal value, for both developed and emerging markets, in a given quarter. Columns 1 to 8 focus on developed countries, while columns 9 to 16 examine emerging markets. For further explanation of variables look at Table B.2. Country-fixed effects are included in all regressions. Heteroskedasticity-robust t-statistics are reported beneath the coefficient.

	Developed Countries								Emerging Markets							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
One-Year Currency Change (%)	0.107 t = 1.192				0.188 t = 1.455				-0.011 t = -0.152				0.042 t = 0.462			
One-Year Lagged Currency Change (%)		0.088 t = 0.452				0.212* t = 1.732				0.264*** t = 3.074				0.256** t = 2.145		
Two-Year Currency Change (%)			0.087* t = 1.708				0.237*** t = 2.811				0.148** t = 2.287				0.173** t = 2.050	
Two-Year Lagged Currency Change (%)				0.003 t = 0.048				0.035 t = 0.427				0.176*** t = 2.877				0.243*** t = 3.304
GDP Change (%)	0.634*** t = 2.190	0.635** t = 2.177	0.631** t = 2.187	0.636** t = 2.174	1.250*** t = 2.907	1.247*** t = 2.877	1.241*** t = 2.917	1.251*** t = 2.864	0.273** t = 2.200	0.226* t = 1.883	0.243** t = 2.086	0.211* t = 1.707	0.145 t = 0.862	0.100 t = 0.586	0.110 t = 0.672	0.059 t = 0.340
Log(1 + Policy Rates)	-0.552 t = -0.789	-0.523 t = -0.744	-0.534 t = -0.763	-0.530 t = -0.754	-2.590** t = -2.481	-2.511** t = -2.392	-2.564** t = -2.448	-2.544** t = -2.426	-2.561 t = -1.307	-3.302* t = -1.654	-3.450* t = -1.700	-2.750 t = -1.368	-4.678 t = -1.625	-5.238* t = -1.864	-5.550* t = -1.914	-4.767* t = -1.691
Oil Price Change (%)	-0.035** t = -2.320	-0.033** t = -2.085	-0.036** t = -2.320	-0.032** t = -2.078	-0.073*** t = -3.136	-0.071*** t = -3.003	-0.078*** t = -3.300	-0.068*** t = -2.899	0.043* t = 1.898	0.045** t = 2.096	0.037 t = 1.643	0.047** t = 2.205	0.030 t = 0.890	0.034 t = 1.044	0.025 t = 0.755	0.039 t = 1.182
Inflation	0.342 t = 1.170	0.292 t = 0.973	0.358 t = 1.226	0.280 t = 0.928	0.176 t = 0.411	0.138 t = 0.313	0.279 t = 0.648	0.079 t = 0.180	0.112 t = 0.375	0.486 t = 1.436	0.374 t = 1.088	0.401 t = 1.174	0.146 t = 0.356	0.491 t = 1.086	0.433 t = 0.950	0.527 t = 1.216
Stock Market Change (%)	0.018 t = 0.520	0.017 t = 0.512	0.020 t = 0.605	0.016 t = 0.480	0.009 t = 0.172	0.014 t = 0.270	0.019 t = 0.363	0.007 t = 0.143	-0.002 t = -0.051	0.013 t = 0.478	-0.001 t = -0.030	0.003 t = 0.111	-0.021 t = -0.544	-0.004 t = -0.104	-0.017 t = -0.472	-0.011 t = -0.309
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Observations	1,073	1,073	1,073	1,073	1,073	1,073	1,073	1,073	589	589	589	589	589	589	589	589
R <sup>2</sup>	0.014	0.013	0.015	0.013	0.025	0.026	0.029	0.023	0.020	0.036	0.029	0.033	0.008	0.016	0.015	0.021
Adjusted R <sup>2</sup>	-0.001	-0.002	-0.0003	-0.002	0.010	0.011	0.014	0.008	-0.0005	0.016	0.009	0.013	-0.013	-0.005	-0.006	0.001

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

the risk premium investors require in these markets can offset the attractiveness, which explains the lower significance levels in emerging market cross-border deals (Erel et al., [2012](#)).

## 7 Conclusion

In this thesis, we analyzed the impact of currency movements and volatility on cross-border M&A activity. Additionally, we examined how the effects of currency fluctuations on deal activity vary between emerging and developed countries. We analyzed 124,381 deals, where 23,458 were cross-border, with 18 currencies from 1999 to mid-2024, examining the impact of currency appreciation, depreciation, and volatility on the share of cross-border deals in target nations.

The first hypothesis proposed that a change in the target's home currency is associated with a change in the proportion of acquisitions by foreign acquirers. Our findings indicated that an appreciated currency is associated with an increased proportion of cross-border deals in the target country. Therefore, we rejected  $H_0$ . Further, the second hypothesis proposed that higher currency volatility would negatively impact cross-border M&A activity, leading to a decline in transactions, leading us to reject  $H_0$ . This revealed a significant negative relationship between currency volatility and cross-border M&A.

Testing hypothesis 3a, we found evidence that emerging countries are more sensitive to currency fluctuations than developed countries. Consequently, we rejected  $H_0$ . Specifically, the results suggested that a currency appreciation in emerging countries significantly impacts cross-border M&A activity more than in developed countries. However, regarding hypothesis 3b, we found no significant difference in the target nation's currency volatility. This suggested that volatility is a general concern for investors, regardless of a country's development status. Therefore, we did not reject the  $H_0$  for hypothesis 3b.

We acknowledge certain limitations in our study. While we included control variables for various macroeconomic factors, variables such as political risk and regulatory environments were not part of our analysis. Our sample was restricted to cross-border M&A deals valued at greater than USD 10 million, which may limit our findings. Moreover, our model may not fully capture the relationship between financial events and currency movements over the period.

Future research could explore these additional variables to provide a more comprehensive understanding of the relationship between currency movements and M&A activity. Investigating the role of currency hedging strategies and the impact of political risk

on M&A could offer valuable insights into how firms manage currency fluctuations in cross-border transactions. Furthermore, extending the analysis to include acquisition premiums could enhance the robustness of the findings, especially if they align with the results presented in this study.

In conclusion, this thesis provides valuable insights into how currency movement and volatility affect cross-border M&A, contributing to the broader field of research. It further examines the varying impacts of currency movements in emerging versus developed countries. Understanding the relationship between currency dynamics and M&A activity is essential for investors and managers seeking to navigate the complexities of international M&A in a globalized economy.



# Declaration on the use of AI tools in the work on this master's thesis

**Name and version of the AI tool:** ChatGPT-4-turbo

**Purpose of using the tool:** Data analysis and processing, literature review assistance, writing support with grammar, idea generation.

We acknowledge that we are responsible for all content in this master's thesis, including sections where AI tools have been used. We confirm our responsibility for ensuring that the thesis adheres to ethical guidelines regarding privacy and publication.

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# Appendices

## A Before and After the Financial Crisis of 2008

In our further analysis, we believe that the impact of the 2008 financial crisis would affect the dynamics of cross-border M&A. Although the financial literature on this specific subject is limited, we believe it would be insightful to examine the effects on our data. We introduce a dummy variable for the time after the second quarter of 2009, which is defined by the National Bureau of Economic Research (NBER), as the end of the recession (NBER, [2023](#))

We do not observe any significant changes following the financial crisis. The analysis indicates that there are fewer relative cross-border deals after the crisis compared to the whole sample. The reasons for this decline may vary and are beyond the scope of our research. Alternatively, it could also be argued that markets have become more concentrated, resulting in fewer companies being acquired.

Moreover, in Table A.2, we observe significance at the 5% level for the interaction term *Two-Year Lagged Currency Change \* After 2009 Q2*. However, since the results are not consistent across other interaction terms, we do not rely on these findings and therefore do not conclude that there is a significant relationship.

Furthermore, in Table A.1, we find no significant relationship between the interaction terms observed in the table and our dependent variable. Ultimately, we conclude that we cannot indicate a significant difference after the financial crisis concerning our variables of interest.

Table A.1: Regression Analysis: Time Comparison

	% - Cross-Border M&A Activity			
	(1)	(2)	(3)	(4)
One-Year Currency Change (%)	0.147** t = 2.214			
One-Year Currency Volatility (%)	-0.673*** t = -9.302			
One-Year Lagged Currency Change (%)		0.241*** t = 3.322		
One-Year Lagged Currency Volatility (%)		-0.463*** t = -6.884		
Two-Year Currency Change (%)			0.175*** t = 3.284	
Two-Year Currency Volatility (%)			-0.351*** t = -6.065	
Two-Year Lagged Currency Change (%)				0.112** t = 2.193
Two-Year Lagged Currency Volatility (%)				-0.339*** t = -5.726
After 2009 Q2	-0.036*** t = -2.924	-0.023* t = -1.698	-0.026* t = -1.938	-0.027** t = -1.970
GDP Change (%)	0.275*** t = 2.726	0.335*** t = 2.862	0.356*** t = 3.260	0.337*** t = 2.776
Log(1 + Policy Rates)	-0.024*** t = -2.969	-0.019** t = -2.148	-0.022** t = -2.440	-0.019** t = -2.172
Oil Price Change (%)	-0.010 t = -0.785	0.002 t = 0.164	-0.010 t = -0.729	-0.004 t = -0.279
Inflation	0.391* t = 1.863	0.321 t = 1.299	0.403* t = 1.704	0.234 t = 1.002
Stock Market Change (%)	0.017 t = 0.839	0.033 t = 1.548	0.008 t = 0.393	0.025 t = 1.231
One-Year Currency Change (%) * Developed * After 2009 Q2	-0.088 t = -0.674			
One-Year Lagged Currency Change (%) * Developed * After 2009 Q2		-0.130 t = -1.088		
Two-Year Currency Change (%) * Developed * After 2009 Q2			-0.051 t = -0.667	
Two-Year Lagged Currency Change (%) * Developed * After 2009 Q2				0.122 t = 1.456
Currency FE	Yes	Yes	Yes	Yes
Time FE	No	No	No	No
Observations	1,625	1,625	1,625	1,625
Adjusted R <sup>2</sup>	0.046	0.025	0.021	0.021

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Table A.2: Regression Analysis: Time Comparison

	% - Cross-Border M&A Activity			
	(1)	(2)	(3)	(4)
One-Year Currency Change (%)	0.133 t = 1.438			
One-Year Currency Volatility (%)	-0.671*** t = -9.322			
One-Year Lagged Currency Change (%)		0.141 t = 1.584		
One-Year Lagged Volatility (%)		-0.448*** t = -6.676		
Two-Year Currency Change (%)			0.121* t = 1.933	
Two-Year Currency Volatility (%)			-0.350*** t = -5.967	
Two-Year Lagged Currency Change (%)				0.054 t = 0.915
Two-Year Lagged Currency Volatility (%)				-0.346*** t = -5.931
After 2009 Q2	-0.036*** t = -2.923	-0.023* t = -1.709	-0.026* t = -1.936	-0.025* t = -1.862
GDP Change (%)	0.277*** t = 2.723	0.339*** t = 2.919	0.356*** t = 3.294	0.324*** t = 2.701
Log(1 + Policy Rates)	-0.024*** t = -2.954	-0.020** t = -2.201	-0.022** t = -2.463	-0.019** t = -2.222
Oil Price Change (%)	-0.010 t = -0.785	0.002 t = 0.164	-0.010 t = -0.729	-0.004 t = -0.279
Inflation	-0.010 t = -0.800	0.00001 t = 0.001	-0.012 t = -0.861	-0.004 t = -0.279
Stock Market Change (%)	0.018 t = 0.878	0.033 t = 1.577	0.010 t = 0.461	0.026 t = 1.267
One-Year Currency Change (%) * After 2009 Q2	-0.007 t = -0.059			
One-Year Lagged Currency Change (%) * After 2009 Q2		0.126 t = 1.163		
Two-Year Currency Change (%) * After 2009 Q2			0.089 t = 1.157	
Two-Year Lagged Currency Change (%) * After 2009 Q2				0.169** t = 2.297
Currency FE	Yes	Yes	Yes	Yes
Time FE	No	No	No	No
Observations	1,625	1,625	1,625	1,625
Adjusted R <sup>2</sup>	0.046	0.026	0.021	0.023

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

## B Supplementary Tables and Figures

Table B.1: **Country & Currency**

The table summarizes the nations we have used in our dataset, with their respected currency. The table provides a clear mapping of each country to its currency, aiding in understanding the monetary context of cross-border transactions

#	Target Nation	Currency
1	Australia	AUD
2	Austria	EUR
3	Belgium	EUR
4	Brazil	BRL
5	Canada	CAD
6	China (Mainland)	CNY
7	Cyprus	EUR
8	Estonia	EUR
9	Finland	EUR
10	France	EUR
11	Germany	EUR
12	Greece	EUR
13	India	INR
14	Ireland	EUR
15	Israel	ILS
16	Italy	EUR
17	Japan	JPY
18	Latvia	EUR
19	Lithuania	EUR
20	Luxembourg	EUR
21	Malta	EUR
22	Mexico	MXN
23	Netherlands	EUR
24	Norway	NOK
25	Poland	PLN
26	Portugal	EUR
27	Russia	RUB
28	Slovakia	EUR
29	Slovenia	EUR
30	South Africa	ZAR
31	South Korea	KRW
32	Spain	EUR
33	Sweden	SEK
34	Switzerland	CHF
35	United Kingdom	GBP
36	United States	USD



Table B.2: **Description of Variables**

This table describes all variables used in the paper. Country-level data items are measured at the annual frequency. Deal-level items are measured in the year-end prior to the deal announcement date.

Variable	Description
Cross-Border M&A Share (%)	The proportion of total M&A deals that are cross-border in each target country. This is calculated by counting all deals within a given quarter and determining the cross-border percentage. (Source: LSEG Refinitive)
Cross-Border Deal Value Share (%)	The proportion of the cross-border deal value of the total M&A deal value in each target country. Calculated by taking the sum of all deal's value within a given quarter and determining the cross-border percentage. Deal value is inflation-adjusted according to the target's country CPI. (Source: LSEG Refinitive)
One-Year Currency Change (%)	The percentage change in the FX rate for a given currency over a one-year period, weighted by the number of deals in the target country by the corresponding acquirer in the given quarter. (Source: LSEG Refinitive)
One-Year Currency Volatility (%)	The percentage volatility change in the FX rate for a given currency over a one-year period, weighted by the number of deals in the target country by the corresponding acquirer in the given quarter. (Source: LSEG Refinitive)
One-Year Lagged Currency Change (%)	The percentage change in the FX rate for a given currency lagged over a one-year period, weighted by the number of deals in the target country by the corresponding acquirer in the given lagged quarter. (Source: LSEG Refinitive)

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Variable	Description
One-Year Lagged Currency Volatility (%)	The percentage volatility change in the FX rate for a given currency lagged over a one-year period, weighted by the number of deals in the target country by the corresponding acquirer in the given lagged quarter. (Source: LSEG Refinitive)
Two-Year Currency Change (%)	The percentage change in the FX rate for a given currency over a two-year period, weighted by the number of deals in the target country by the corresponding acquirer in the given quarter. (Source: LSEG Refinitive)
Two-Year Currency Volatility (%)	The percentage volatility change in the FX rate for a given currency over a two-year period, weighted by the number of deals in the target country by the corresponding acquirer in the given quarter. (Source: LSEG Refinitive)
Two-Year Lagged Currency Change (%)	The percentage change in the FX rate for a given currency lagged over a two-year period, weighted by the number of deals in the target country by the corresponding acquirer in the given lagged quarter. (Source: LSEG Refinitive)
Two-Year Lagged Currency Volatility (%)	The percentage volatility change in the FX rate for a given currency lagged over a two-year period, weighted by the number of deals in the target country by the corresponding acquirer in the given lagged quarter. (Source: LSEG Refinitive)
GDP Change (%)	The annual percentage change in real Gross Domestic Product (GDP), measuring economic growth in the target country. (Source: FRED)

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Variable	Description
Log(1 + Policy Rates)	Three-months short-term interest rates used. The natural logarithm is used to ensure non-negativity. Policy rates reflect monetary policy conditions in the target country. (Source: FRED)
Oil Price Change (%)	The percentage change in global Brent Crude oil prices, reflecting changes in global commodity markets that could influence deal flows. (Source: FRED)
Inflation	The annual rate of inflation in the target country, measured using consumer price indices (CPI, HICP). (Source: FRED)
Stock Market Change (%)	The annual percentage change in stock market, representing equity market performance in the target country. (Source: FRED)
Emerging	A dummy for emerging countries, capturing differential effects of Currency fluctuations. Interaction term with each corresponding Currency change and volatility variable. (Source: FRED)
After 2009 Q2	A Dummy variable equal to 1 for periods after 2009 Q2, capturing structural changes post the global financial crisis. Interaction terms include currency changes, returns, and volatility lags. (Source: NBER, <a href="#">2023</a> )

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Table B.3: **Summary of VIF by Model**

The table summarizes the Variance Inflation Factors (VIF) for each model, presenting the maximum, minimum, and mean VIF values. VIF measures multicollinearity among independent variables, with values above 5 indicating moderate multicollinearity and values above 10 suggesting high multicollinearity. This summary helps identify potential issues with variable correlation in the regression models.

Model	Max VIF	Min VIF	Mean VIF
Activity One-Year Currency Change (%)	1.63	1.07	1.34
Activity One-Year Lagged Currency Change (%)	1.74	1.14	1.37
Deal Value One-Year Currency Change (%)	1.63	1.07	1.34
Deal Value One-Year Lagged Currency Change (%)	1.74	1.14	1.37

Table B.4: **Currency Exchange Correlation**

This table presents the correlation coefficients between different currency exchange rates, based on a one-year change in the exchange rate. A positive value suggests that the two currencies tend to move in the same direction. In line with our thesis, the currency values are weighted according to the transaction volume from the respective nation during the corresponding quarter.

	AUD	BRL	CAD	CHF	CNY	EUR	GBP	ILS	INR	JPY	KRW	MXN	NOK	PLN	RUB	SEK	USD	ZAR	
AUD	1																		
BRL	0.20	1																	
CAD	0.31	0.45	1																
CHF	-0.07	-0.05	-0.26	1															
CNY	-0.06	0.04	0.19	-0.10	1														
EUR	-0.08	0.01	-0.04	-0.07	-0.08	1													
GBP	-0.26	-0.18	-0.33	-0.12	0.00	-0.12	1												
ILS	0.08	0.29	0.15	-0.01	0.29	-0.07	-0.24	1											
INR	0.07	0.30	0.27	-0.17	-0.07	-0.08	0.08	0.12	1										
JPY	0.24	-0.12	0.16	-0.02	-0.06	0.21	-0.28	0.03	0.00	1									
KRW	0.20	0.08	0.18	-0.26	-0.18	-0.22	0.07	-0.12	0.06	-0.02	1								
MXN	0.06	0.23	0.12	-0.06	-0.01	-0.17	0.43	-0.02	0.17	-0.35	0.19	1							
NOK	0.03	0.11	0.28	0.02	0.23	-0.16	-0.24	-0.02	0.10	0.04	0.16	0.05	1						
PLN	-0.20	0.39	0.23	0.00	0.14	-0.07	-0.05	0.32	0.24	-0.27	0.05	0.32	0.24	1					
RUB	0.27	0.44	0.38	-0.05	0.01	0.24	-0.19	0.18	0.18	0.02	0.03	0.15	0.29	0.11	1				
SEK	0.35	-0.01	0.22	-0.03	0.08	-0.24	-0.37	0.36	0.00	0.19	0.29	-0.02	0.06	-0.02	-0.01	1			
USD	-0.26	-0.18	-0.32	0.20	0.01	-0.21	-0.13	-0.12	-0.20	-0.32	-0.16	-0.17	-0.03	0.03	-0.27	-0.09	1		
ZAR	0.15	0.20	0.31	-0.11	-0.14	-0.03	-0.28	0.06	0.41	0.21	0.04	-0.12	0.11	-0.07	0.21	0.01	-0.10	1	