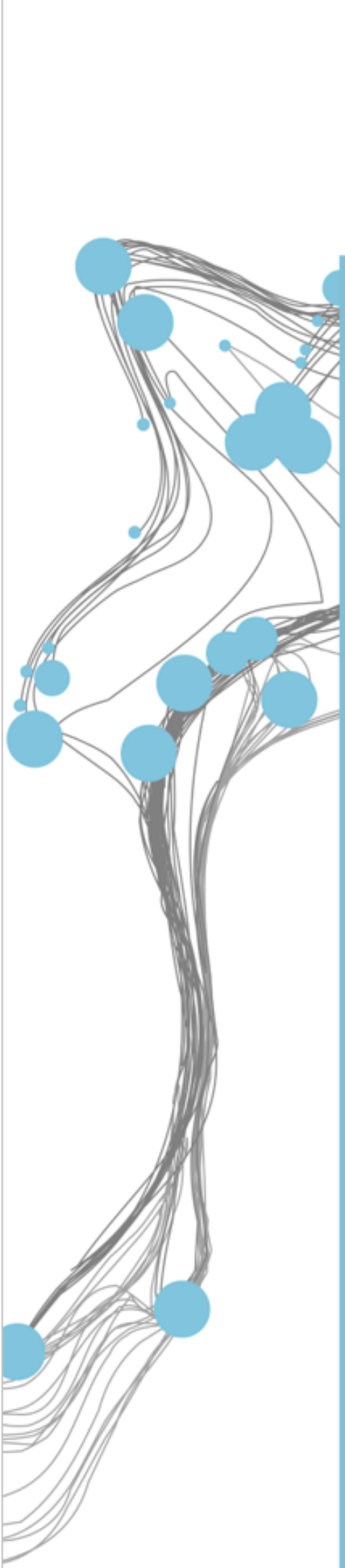

MASTER THESIS

Economic Policy Uncertainty and Mergers and Acquisitions:

An Empirical Study on European firms

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Abstract

The aim of this thesis is to investigate the relationship between economic policy uncertainty (EPU) and merger and acquisition (M&A) likelihood in Europe. At first, the relationship between EPU and domestic M&A is studied. Secondly, this thesis intends to investigate the effect of EPU of home countries on cross-border M&A activities of a European acquirer and to investigate the effect of EPU of target countries on cross-border M&A activities of a European acquirer. Thirdly, this thesis aims to study the effect of EPU on intra-EU M&A likelihood. This study has found results that for United Kingdom and Sweden (although not entirely robust), EPU has a significant negative effect on domestic M&A likelihood. For Belgium, Germany and the Netherlands, the results of this study show a negative effect on inbound acquisition likelihood. For outbound acquisition likelihood, Belgium, France and the UK the results showed a robust negative effect. Out of the results on EPU and acquisition likelihood between subregions, it can be concluded that EU firms reduce the amount of acquisition to the eastern part when EPU rises. Next to this, EPU showed to have a negative effect on the number of intra-EU acquisitions. It can also be concluded that EU firms reduce the amount of acquisition to the eastern part when EPU rises. All these results are expected to be driven by the real option theory. This means that firms in these countries are more likely to delay with their M&A decision making process, in order to wait until the uncertainty is to some extent over.

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1. Introduction

Brexit, two recent tense US presidential elections, the annexation of Crimea, terror threats, the refugee crises and now the COVID pandemic; all of these events create major challenges for global politics and economic stability in the last decade. These situations have contributed to the growing concerns about uncertainty. This uncertainty about the future result in actual implications for the behaviour of economic agents (Bloom et al., 2007; Bloom, 2009). Governmental policy can "contribute to uncertainty regarding fiscal, regulatory, or monetary policy" (Brogaard & Detzel, 2014, p.3). The uncertainty related to these economic policies and financial decisions is called economic policy uncertainty or EPU for short. EPU is the uncertainty that arises when it is unclear what economic policy actions are about to be taken, who will make these decisions and when, and what the effects are of these actions (Baker, Bloom & Davis, 2016). This type of uncertainty can be triggered by various reasons, such as natural disasters, future growth prospects, changes in the basis of an economy and geopolitical shifts (Baker et al., 2016).

The relevance of EPU in academic research can be substantiated with the fact that this type of uncertainty, in contrast uncertainty in general, can be managed to a certain extent by policy-makers. In 2009, the US government expenditure was $5.9 trillion, which was 42.45% of the gross domestic product (Brogaard & Detzel, 2014). This means that a change in economic policy could have a massive impact on the economy. Pástor and Veronesi (2012) also state that the private sector economy environment is strongly affected by governmental interference in the market. Examples of these governmental interferences are subsidies, taxes, law enforcement and regulations regarding competition. Therefore, it is interesting what the effects of EPU are and how the public and private sector should deal with this type of uncertainty.

During the past years, economic policy uncertainty has become a hot topic in academic literature. Besides the relevance of the topic, this has two other reasons, one practical and one academic. First of all, over the last decade, EPU has risen. During the financial crises of 2008 and its aftermath, the global uncertainty about economic policy decisions has reached a new record. Even more recently, the world has seen some major challenges as mentioned in the beginning of this thesis, that have increased the EPU. In the period 2008-2018 the average EPU was two times higher than the periods of 1988-1998 and 1998-2008 (Baker et al., 2016). Currently, the beginning of COVID pandemic brought the global policy uncertainty to a new all-time high.

Another reason why EPU has become a hot topic is due to a new measurement method that has highly increased the amount of academic research on EPU. Baker, Bloom and Davis (2016) have developed a proxy in which uncertainty from policy, economic indicators, market and news is represented in one simple index: the BBD index (Baker et al., 2016). Before the BBD index, another proxy called the implied market volatility index (VIX) has been used for many years to measure firm uncertainties. However, the VIX proxy has some limitations regarding measuring the economic policy uncertainty and is more related to equity market events (Nguyen & Phan, 2017). Several other proxies are used in academic literature, but have limitations in measurements, replication or availability (Al-Thaqeb & Algharabali, 2019). To improve existing measurements, Baker et al. (2016) created the BBD index as a proxy for EPU.

Many scholars have identified the BBD index as a useful method to investigate the position of EPU in the field of finance. For example, empirical evidence in which the BBD index is used, show that economic policy uncertainty affects the market volatility (Aye et al., 2018), bond prices (Li et al., 2015), currency exchange returns (Dai et al., 2017), Bitcoin rates (Demir et al., 2018) and gold prices (Fang et al., 2018). More specifically for the field of corporate finance, scholars show using the BBD

index a negative relationship between EPU and corporate capital investment (Gulen & Ion, 2015), a positive relationship between EPU and dividends (Attig et al., 2021) and a positive relationship between EPU and firm cash holdings (Demir & Ersan, 2017). This all indicates the usefulness of the new BBD index. However, Al-Thaqeb and Algharabali (2019) state that regarding the EPU topic, many questions are still unanswered. The current level of EPU, the usefulness of the new measurement method and the many paths of future research may explain the rise of the popularity of economic policy uncertainty as a topic.

Next to the aforementioned relationships of EPU and corporate finance decisions, scholars also show a relationship between EPU and merger and acquisition activities. For instance, a high economic policy uncertainty leads to less M&A announcements in the US (Nguyen & Phan, 2017; Bonaime et al, 2018), more M&As being paid with stocks (Nguyen & Phan, 2017; Sha et al. 2020), more outgoing cross-border M&A activity and less incoming cross border M&A activity (Coa et al., 2019; Li et al., 2021). This means that M&A decisions are also affected by the level of EPU.

For decades, mergers and acquisitions (M&As) have been a growth strategy option for firms. Over the years M&As has increased in popularity. In 2017 an all-time high was reached in amounts of worldwide M&A activities. Over 52,000 transactions were announced that year. Whereas worldwide in 1985 only 2,676 M&As were announced with a value of 347 billion USD, in 2019 this has risen to 49,327 transactions with a value of 3,370 trillion USD (IMAA, 2021). This increasing number indicates the importance of the M&A topic in the world of finance. According to Segal, Guthrie and Dumay (2020) this subject is also of significance due to M&As having “disruptive consequences on a firm’s organization life, corporate growth strategy, strategic renewal, forms of change and ability to meet market challenges” (p.2). This means that the relevance of M&A is also mentioned in existing academic literature.

Although some effects between economic policy uncertainty and M&A are found, research on this relationship is rather limited. A few scholars studied the effect of EPU on domestic M&A activity (Bonaime et al., 2018; Borthwick et al., 2020; Nguyen & Phan, 2017; Sha et al., 2020). Some others investigate the effect of EPU on cross-border M&A likelihood (Cao et al., 2017; Lee, 2018; Li et al., 2021). However, there are some contradicting results within this research. Using the BBD index, Nguyen and Phan (2017) and Bonaime et al. (2018) show that a high uncertainty leads to less M&A activity in the US. In a similar study, Borthwick et al. (2020) confirm this for Chinese firms. However, Sha et al. (2020) show contradicting results, as they have found that firms are more likely to engage in M&A activities in China when uncertainty is high. This means that research on the relationship between EPU and M&A is not only limited, but also contradicting.

Additionally, above mentioned research only used two countries of observation. Studies on M&A likelihood and cross-border M&As only investigate US and Chinese firms. It is therefore arguable if the results of these studies are also applicable for firms located somewhere else. Coa et al. (2019) did researched the effect of EPU on cross-border M&A in multiple countries. However, they use national elections as a proxy for policy uncertainty, ignoring other moments of economic policy uncertainty and the level of EPU. This means that prior research did not study the relationship between EPU and M&A with the use of the BBD index outside of the US or China.

In this thesis, the setting of the study on the relationship between EPU and M&A likelihood is Europe. The continent of Europe provides a combination of an integrated economic market and a variety of political and cultural aspects. This makes the European setting a unique market. Ownership structures of firms differ enormously among the countries. The concentrated ownership characteristic and market conditions of European firms influences M&A attitude, acquisition

techniques, payment methods and yield premia (Faccio & Masulis, 2005; Moschieri & Campa, 2009). Next to this, each country varies in their regulations on takeovers, corporate laws and governance rules and securities regulations (Faccio & Masulis, 2005; Moschieri & Campa, 2014). At the same time did governmental measures lead to a wider economic integration, that reduced transaction costs between European firms and stimulated intra-European M&A deals (Jensen-Vinstrup, et al., 2018; McCarthy & Doflsma, 2014). This combination provides the opportunity to not only study the impact of economic policy uncertainty on domestic and cross-border M&A likelihood in Europe, but also to investigate the effect of EPU on intra-EU M&A likelihood.

This all calls for more research on the effect of EPU on domestic M&A likelihood, M&A cross-border activity and intra-EU M&A likelihood. EPU is a hot topic in academic literature, but yet under investigated. M&A is a massive phenomenon, responsible for transactions with a value of trillions of US dollars each year. Research on the relation between these topics is limited, contradicting and only explored for US and Chinese firms. Consequently, this thesis aims to build upon existing literature to investigate the effect of EPU on domestic M&A activity in Europe. Secondly, this thesis intends to investigate the effect of EPU of home countries on cross-border M&A activities of a European acquirer and to investigate the effect of EPU of target countries on cross-border M&A activities of a European acquirer. Thirdly, this thesis aims to study the effect of EPU on intra-EU M&A likelihood. The research question to support the research objective is:

To what extent does economic policy uncertainty affect merger and acquisition likelihood of European firms?

This research builds upon existing research of Bonaime et al. (2018), Borthwick et al. (2020), Nguyen and Phan (2017) and Sha et al. (2020), by researching how economic policy uncertainty affect domestic merger and acquisition likelihood outside the US and China, namely Europe. Next to this, the research extends the study of Coa et al. (2019) by using the BBD index to investigate the effect of EPU on cross-border M&A deals, instead of national elections. This enables to see how this effect behaves dealmakers between elections and this enables to see how the strength of EPU effects the likelihood of cross-border M&A deals. Next to this, the research is the first to study the effect of EPU on intra-EU M&A activity. Both the amount of intra-EU M&As are investigated as well as the M&A activity between European subregions. Therefore, this research creates a foundation on how EPU influences M&A activity in an economically and politically integrated market with cultural differences.

The practical relevance of this study is mainly focussed on policymakers. The intention of this research is to show the consequences of uncertainty created by these policymakers, both on national level and on EU level. This research intents to show what the consequences are for the M&A market of policymakers who refrain from prompt and adequate policymaking, creating uncertainty for firms. Mainly policymaking regarding monetary, fiscal and regulatory policies. Next to this, this research intents to show the consequences of the economic, political integration within the EU on the M&A market. It also tries to show how the cultural aspect reacts to economic policy uncertainty. This way, policymakers can adjust not only their economic policy on these outcomes, but also their integration and cultural policy.

2. Theoretic Framework

In this chapter the existing theories and empirical research regarding the relationship between EPU and M&A are discussed. At first, the concepts M&A and EPU are explained. After this, existing theories linking uncertainty and M&As are discussed. At last, prior empirical research regarding the effect of EPU on domestic M&As and cross-border M&As are discussed. This section also contains the hypotheses that are based on the existing theories and empirical research.

2.1. Mergers, acquisitions and motivations

In this section, the definition of M&A is explained. After this, the motivations for engaging in M&As are discussed. The latter is separated into two different sections. First the motives for M&As in general are described. Secondly, the motives for cross-border M&As are clarified.

M&A in general

Mergers and acquisitions is a term for the consolidation of assets or companies through financial transactions. A merger is the amalgamation of companies that have a similar size, whereas an acquisition is gaining of control by one company over another company. Because both actions have similar results, as in both cases the assets of the companies involved are consolidated, these terms are often used together. Cross-border M&As are mergers and acquisitions in which the two firms, that are consolidating their assets, are located in different countries. As stated before, M&As are predominantly used as a growth strategy option for firms and the M&A market is huge and growing. In this section is further elaborated why firms choose to engage in M&A activity. In discussing the M&A motives, a distinction is made between M&As in general and cross-border M&As. Please note that the theories discussed below are usually not the sole reason for a firm to engage in M&A activity, as firms often have multiple motives to do so (Ahammad & Glaister, 2010; Nguyen et al., 2012).

<u>Neo-classical motives</u>

One of the reasons that M&As provide firm economic growth is due to the neo-classical approach. This approach has the assumption that firms strive towards shareholder maximization. Shareholder value can be increased by M&As through the economic value added that arises from the M&A. This economic value emerges from synergy gains and obtaining strategic resources. These motives are described by Nguyen, Yung and Sun (2012) as value increasing M&A motives.

Synergy gains refer to the benefits of working together. In M&A context, this means that companies that work together can obtain economic benefits due to consolidating their activities. Devos et al. (2008) mentions that for example, fixed costs can be reduced in the merged company, due to the reduction of duplicate and obsolete activities that previously occurred in separate entities. Next to this, synergy gains arise due to increased market share or cross-selling the absorbed companies products. Economies of scale is also a recourse for synergy gains due to an increased opportunity of specialization and increased order sizes.

From a resource-based theory point of view, obtaining strategic assets is another motive to engage in M&A activities. These strategic assets could be tangible assets like technology or intangible assets like brand names and expertise. Barney (1991) argues that a firm could make use of their resource advantage to operate more efficiently and effectively. The resource advantage emerges from assets that are “valuable, rare, imperfectly imitable, and non-substitutable” (Barney, 1991, p.116). This means that these assets have the potential to increase the competitiveness of their firm. Closing M&A deals are a way to acquire these resources from another company and thus results in a better competitive advantage.

Behavioural motives

Next to the theories that explain the economic value that is added through M&A, another set of theories explain the behavioural motives of managers to engage in M&A activities. These motives are linked to the agency problem theory. In this theory the emphasis is made on the agent having different interest than the principal. In business context, this means that the manager has different interests than the shareholders. A manager could engage in M&A activity for the benefit of himself instead of maximizing the wealth of the shareholder. Because these motives focusses on the interest of the manager rather than the firm as a whole, Nguyen et al. (2012) describes the behavioural motives as value decreasing.

The agency problem occurs, for instance, when managers want to close M&A deals in order to offset the operational risk of their firm to reduce the risk of criticism on their managerial performance. However, this diversification of the company can be far more easily replicated by the individual shareholder. Next to this, a manager could be incentivized to engage in M&A activity due to certain manager compensation agreements, in which the manger gets paid (partly) based on a firm's amount of profit or size. Another theory is the empire-building theory, in which the manager wishes to gain power by creating larger companies (Bonaime et al., 2018). Above motives are arguably not increasing the economic value and are not in the interest of the shareholders.

The hubris theory is also linked to the agency problem. This theory states that the overconfidence of the manager could lead to overpaying for acquiring a target, due to a high estimation of the synergy benefits. Even though, in fact little or even no synergy at all arises from this acquisition. This means that the hubris of a manager could affect the amount of premium that is paid for the acquisition (Nguyen et al. 2012). This is also an example of an M&A activity that not increases the economic value of the shareholders.

Cross-border M&As

For cross-border M&As, firms and managers have alternative motives to engage in M&A activity. Similarly in the case of cross-border M&As, often multiple motives are simultaneously present for a firm to acquire another firm. This means that the motives for a regular M&A also exist for cross-border M&As. Both neo-classical motives like creating synergy and obtaining strategic resources, and behavioural motives that are a result of the agency problem, are also linked to cross-border M&As. In addition to these motivations, cross-border mergers are also motivated by the international advantages that they may offer.

One international advantage motivation for a cross-border M&A arises from the potential of facilitating faster entry into the target's market. Several researchers have argued that a cross-border M&A will provide easier access to new markets (Martin et al., 1998; Datta & Puia, 1995). This is mainly due to the fact that entering a new market and building up a competitive company in a foreign country is expensive and time consuming (Ahammad & Glaister, 2010). Cultural differences, alternative business customs and institutional restrictions are the primary causes of the fact that entering a new market is difficult. Therefore, acquiring a foreign company can save time when looking to expand to a new market.

Diversification is another motive to engage in cross-border M&A activity. To acquire a foreign company that does not operate in the same business can create a type of portfolio diversification. According to Ahamaad and Glaister (2010) this is one of the predominant motives to engage in cross-border M&A. This motivation involves offsetting not only industry risk, but also country specific risk, especially when the target firm's countries economy is scarcely to not correlated with the economy of the acquiring firm (Vasconcellos and Kish, 1998). As previously stated, diversification as a tool to

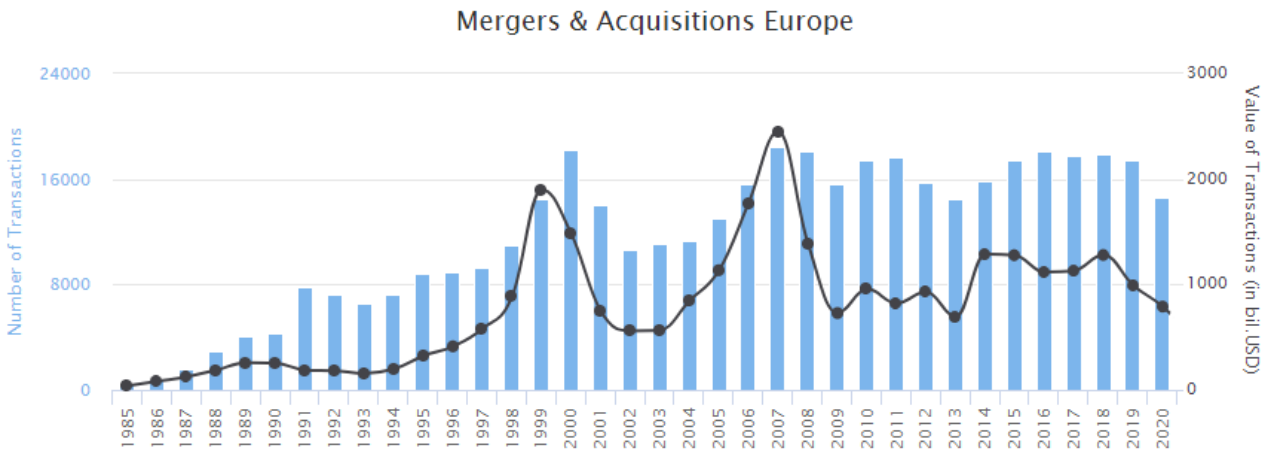
reduce risk is arguably not in the interest of the shareholders, as they can diversify their portfolio much easier individually. Next to this, if this is the sole motivation of the M&A activity, it does not lead towards any additional economic value.

2.2. European M&A market

As mentioned in the introduction, in this research the European M&A market is used as setting. In this section the specific and distinguishing characteristics of the European M&A market is explained. The M&A market size plus the unique country and firm level characteristics, make the European setting relevant for to study the effect of EPU on domestic, cross-border and intra-EU M&A.

Over 2019, Europe had 17456 M&A announcements with a value of 1 trillion USD, the US had a similar amount of announcements of 17759 with a value of 1,8 trillion USD and China only had 4307 announcements with a value of 300 billion USD (IMAA, 2021). As the second largest economy, Europe and its countries could therefore provide relevant results regarding the known effect of EPU on M&A in the US and China. The number of transactions and the total value of M&A deals in Europe is presented in figure 2.1.

Figure 2.1: Number of M&A deals in Europe presented in the blue bars and the cummulative total value of M&A transactions in Europe presented in the black line over the period from 1985 till 2020 (IMAA,2021)



Special about the M&A market in Europe is the economic integration between the European countries. Over the last four decades, European integration has been a key driver for the rising M&A market. The European Monetary Union and the EU single market are seen as institutional changes that drove investments from Europe, to Europe and between European countries (Coeurdacier, et al., 2009). On top of this, the implementation of the euro boosted this effects, especially for intra-EU M&As (McCarthy & Dolfsma, 2014; Coeurdacier, et al., 2009; Jensen-Vinstrup et al., 2018). This means that even though Europe exists out of many different countries, the economic integration stimulated capital allocation to and from other continents plus between the European countries.

That being said, the political and cultural differences between European countries are still present. Both the US and China also have an integrated economy, probably even more integrated than the European situation. The big difference is that each European countries vastly differs in culture, rules and regulations. Di Guardo et al. (2015) argue in their study on cultural and political-institutional distances on the European M&A market, that these factors have a negative effect on M&A likelihood. The driver behind this effect is that these factors “tend to discourage business relations by inducing higher uncertainty and thus higher risks for foreign investors” (Di Guardo, et al., 2015, p. 848). In an early study, Lodorfos and Boateng (2006) already found that cultural distances negatively affected M&A deals in the Europe. Faccio & Masulis (2005) already argued that the European political and

institutional differences affected trading and M&A activity. This all means that even though Europe has stimulated economic integration, the political and cultural differences still affect firm behaviour in M&A decision making. This makes the European setting differ from other M&A markets.

Next to country level characteristics making the European sector varying, on firm level Europe is also distinctive. The main unique characteristic of European firms, that is dissimilar from Asia and North America, is the concentrated ownership of firms. In a study by Faccio and Masulis (2005), the authors state that 63% of western European listed firms have a "single large shareholder, who directly or indirectly controls at least 20% of their votes" (p.1345). Of US listed firms, only 28% have a single large shareholder, with a control of 20% of the votes (Faccio & Masulis, 2005). According to Moschieri and Campa (2009), this distinct ownership structure of European companies affects M&A likelihood, premia and payment methods. As a results, in Europe M&A transactions are more likely to be domestic, premia are lower than in the US and the payment methods is most likely to be in cash (Haspeslagh & Jamison, 1991). Despite the fact of the increasing regulatory and economic convergence, this means that the ownership concentration of European firms create a unique M&A market (Moschieri & Campa, 2014). This means that Europe has both distinctive firm and country level characteristics.

2.3. Economic Policy Uncertainty

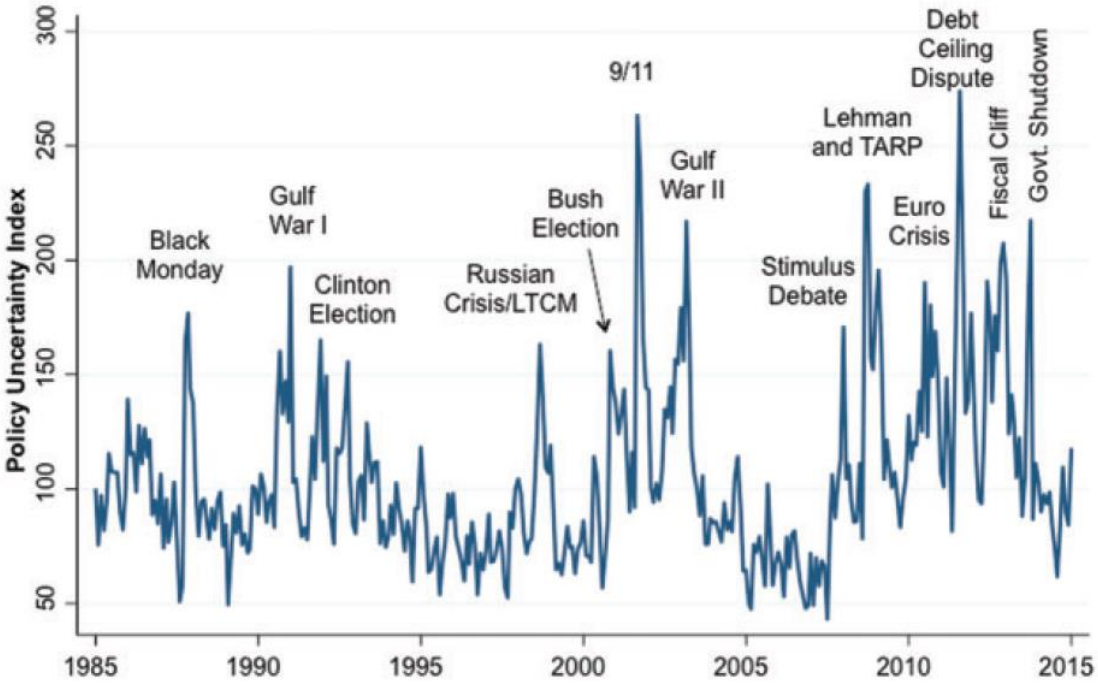
Uncertainty in general is no doubt of importance for corporations and financial decisions. With his book "The Age of Uncertainty", Galbraith (1977) introduced uncertainty as an economic factor that has gained significance and importance ever since. In this book, the first effects of uncertainty on corporations was studied. Since then, more studies on uncertainty and corporate and financial decisions have been published. In academic literature, there is not just a singular definition about uncertainty, nor does a specific mapping of the types of uncertainty exists. That being said, Al-Thaqeb and Algharabali (2019) define economic uncertainty as "unexpected changes that influence the economic ecosystem" (p.2). A few cases of economic uncertainty are industry-specific events, geopolitical uncertainty or firm-specific news. Examples of the latter are change in management, an unclear forecast of sales or a CEO's departure. In this research the economic uncertainty of future policy is investigated. Throughout academic literature, this is called economic policy uncertainty.

Economic policy uncertainty can be described as undefined future changes in governmental policy that affects the economic ecosystem. More specifically, this is the uncertainty of future governmental fiscal, regulatory, or monetary policy. The specific choice for these three types of economic policy is made due to two main reasons. First of all, each of these type play a significant role in any economic policy framework (Friedman, 1995; Tinbergen, 1956). Secondly, the combination of these three types are vastly used in early studies on economic policy uncertainty (Rodrik, 1991; Higgs, 1997; Hassett & Metcalf, 1999). Therefore, these three economic policy types combined are defined as economic policy uncertainty.

Each of these economic policy type can elicit economic policy uncertainty individually. To give a few examples, European monetary policy uncertainty can be evoked by a debate within the European Central Bank on the purchasing program of bonds to control inflation (Amaro, 2021), European fiscal policy uncertainty can be evoked by the EU framework on debt controlling (Migliaccio, 2021) and European regulation framework can be induced by the European Parliament debate on a COVID-19 recovery plan (Nikas & Tugwell, 2021). All these examples are discussions on the economic policy response to the COVID-crises. Meaning that a major external factor could create huge uncertainty on every type of economic policy with the consequence that this combination leads to a major level of EPU.

As mentioned before, EPU arises when it is unclear what economic policy actions are about to be taken, who will make these decisions and when, and what the effects are of these actions (Baker, Bloom & Davis, 2016). EPU is not only triggered by governmental affairs such as elections, engaging in war or fiscal debates. It is also elicited by external affairs such as COVID-19, 9/11, spill-overs and financial market crises. As an example for this, Figure 2.1 visually presents the EPU as measured by the BBD index of the United States, including the main events of that period. This figure clearly shows how some events elicit times of high EPU. As stated previously, the predominant reason to study EPU is to search for options to minimize negative economic effects of this type of uncertainty.

Figure 2.2: EPU index for the United States over time (Baker, Bloom & Davis, 2016)



2.4. Uncertainty and domestic M&A activity

When consulting prior research to study theories that could explain the effect of EPU on M&A activity, a helicopter view was used to zoom out. This way, not specifically research on EPU and M&A is consulted, but also uncertainty in general on firm investments. By doing this, it can be concluded that there are four main theories which could explain the effect of uncertainty on M&A activity. These are the real options theory, the interim risk theory, the empire building theory and the risk management theory. These four theories are elucidated in this section.

Real options theory

Using the traditional investment theory, investments should be valid if the net present value (NPV) of the project is nonnegative. However, as one of the first academics to research investments under uncertainty, Bernanke (1983) suggests that aside from the choice to invest or not, there is also an option to wait. In this paper is argued how firms can wait with deciding to take on irreversible investment projects during periods of uncertainty. Irreversible investments are projects that cannot be reversed without investing more money. Bernanke (1983) states that investments are irreversible if "once constructed, they cannot be undone or made into a radically different type of project without high costs" (p.86). M&As are therefore a type of irreversible investments or sunk costs, as they usually cannot be reversed without lowering the price for which you bought the shares. The timing of these investments are crucial, as new information gained by waiting with investing can be

more profitable than the returns from investing early on. In an environment in which the future is uncertain, information becomes more valuable and so does the option to wait.

Just like Bernanke (1983), Dixit and Pindyck (1994) compare the mechanism of the option to wait with a call option as it is used in financial markets. The buyer of a call option is granted the right, for a certain amount of time, to pay a specified price for a stock. When the option is bought, the future price of the underlying asset is uncertain. The future price of an investment project is also uncertain, especially in an unstable environment. If by acquiring new information when waiting the underlying asset becomes less valuable, the firm can refrain from starting the project. This only results in losing the capital that is spend to acquire the opportunity. However, if the projects becomes more valuable, the firm can exercise their right to engage in the project and increase the net payoff. Because the option to wait is not only applicable for financial instruments, but also with real, tangible investments, academics refer to this mechanism as the 'real option theory'. Bloom et al. (2007) phase this process as "[a] firm prefers to 'wait and see' rather than under taking a costly action with uncertain consequences" (p.391). The real option theory results in firms becoming more cautious in investing during an uncertain environment.

The real option theory suggests that the value of the option to wait increases when uncertainty about the value of the underlying assets increases. This means that in times of high economic policy uncertainty, it is more valuable to put irreversible investments like M&As on hold until the uncertainty decreases. For example, if a new fiscal policy on oil is being drafted, firms with the intention to acquire a firm in the industry of oil, refinery, plastics, asphalt or any other oil based products are better off waiting with their investment. The impact of the new policy is unknown and the firm risks that the acquisition could lead to less synergy gains than previously expected. After the policy is ratified, firms can calculate what the impact of the new policy is on their intended acquisition and if the acquisition is still desirable. This way, unnecessary risk is avoided. In conclusion, according to the real option theory EPU has a negative effect on M&A activity.

However, there is a flaw in this theory according to Grenadier (2002). The real option theory captures the investment opportunity in isolation, without its strategic context. The real option theory does not account for external factors, such as market competitiveness. By putting the investment decision in a game-theory framework, Grenadier (2002) has found that a high competitive environment severely evaporates the value of the option to wait. In this competitive environment, the option to wait when making investment decisions in an uncertain period of time, declines heavily due to the fact that the competition can gain advantage by exercising the investment.

This effect is illustrated in the following example: Firm A has investigated that acquiring target Z will result in a positive NPV. However, due to uncertainty on a new fiscal policy about the products of target Z, the value to wait with the acquiring decision is high. In a competitive environment, competing Firm B is also aware of the fact that acquiring target Z will result in a positive NPV. Firm B does not wait and acquires target Z. Firm A now loses the opportunity and also loses some degree of competitive advantage. Therefore, competitiveness results in that the option to wait becomes irrelevant. Due to the fact that other agents can capture part of the value of the investments, putting an M&A deal on hold, even in uncertain times, could be very costly in a competitive market.

Interim risk

In extension to the real options theory, M&A activity could also be effected through interim risk in times of uncertainty. The value of the investment can markedly change between the moment of deal agreement and the deal closing. This is especially the case for M&As, in which this period can be quite lengthy opposed to other investments. The risk that originates from the firm value changing

during this period is referred to Bhagwat et al. (2016) as interim risk. If during the period between deal agreement and deal closing, a substantial change of value occurs, the costs of the M&A will rise for one or both parties. Examples of these costs are renegotiation costs, overpayment and litigation. These costs are more likely during times of uncertainty due to the higher risk of a value change. When an M&A has a higher level of interim risk, firms are somewhat less interested in making a M&A deal. This means that interim risk is another channel through which economic policy uncertainty can affect M&A activity.

An example of interim risk would be the following. A firm has reached an initial agreement with a potential target and announces the acquisition to the public. After the announcement, both firms are still negotiating the fine print of the agreement. During the finalization of the acquisition, due to economic circumstances the central bank is discussing if they should pump extra money in the economy, causing inflation. The deal value of the acquisition is all of a sudden for debate as the shareholders of the targets company are likely to receive relatively less valued money than initially agreed upon. In this situation the monetary policy uncertainty has led to an increase in interim risk which drove to difficulties in M&A activity.

Empire building

As stated before, the empire building theory is based on the situation that managers would like to gain power by enlarging their company. This theory is an extension of the agency theory in which the stakeholders wishes are not completely aligned with the interest of the manager. Duchin and Schmidt (2013) have shown that during M&A waves, uncertainty around acquisitions rose and managers provided more often a poorer quality of analyses. This has resulted in a worse long-run performance and corporate governance. These researchers also state that managers were less likely to be punished for their performance, than managers engaging in M&A outside of M&A waves. Bonaime et al. (2018) build on this research by stating that these results raise the possibility that mangers could engage in empire building in times of high economic policy uncertainty. They state that “this uncertainty allows them to engage in empire-building without immediate consequences, to initiate suboptimal mergers” (Bonaime et al., 2018, p.549). Therefore, if empire building is a leading driver for EPU to affect M&A activity, this relationship would be positive. Empire building is a behavioural motive for firms the engage in M&A activity.

This means that during major uncertainty on a governmental response on certain external situation, like COVID-19 or the Lehman crash, managers that are financial incentivized by their shareholders to acquire more assets or turnover, are more likely to engage in M&A activity. If the decisions to merge or acquire turns out to be less profitable than expected or required, the manager can successfully shift the blame to the uncertainty of that period, as they were less likely to be punished. Therefore, empire building is a mechanism trough which economic policy uncertainty can positively affect M&A activity.

Risk management

Another behavioural theory used in literature regarding the effect of uncertainty on M&A is the risk management theory. Garfinkel and Hankins (2011) state, in their paper on risk management and vertical M&A, that finance literature increasingly recognizes operational hedging occurs by merging and acquisitions. They argue that hedging through derivatives is not always a possibility, and when it is, it could be quite expensive. Engaging in M&As could be an alternative option to hedge certain risk. In times of high uncertainty the need to hedge risks grows. Merging or acquiring vertically, is a method to hedge especially input and output price risk. Next to this, contractual problems can be solved using vertical integration. These problems increase in times of high uncertainty (Garfinkel and Hankins, 2011). Firms can engage in M&A activity with their customer or supplier during, for

example, monetary uncertainty to avoid risks concerning contractual agreements. Due all above arguments, these authors argue that periods of high uncertainty lead to more vertical M&A activity to offset their position to manage their operational risks.

2.5. Uncertainty and cross-border M&As

For cross border mergers and acquisitions, academic literature has also argued some channels through which uncertainty affects this type of M&A activity. In this section, the theories between the two types of cross-border M&As are distinguished. These are outbound M&As and inbound M&As. Outbound M&As are acquisitions by the home country's acquiring firm of foreign country firms. Inbound M&As are acquisitions by firms of other countries of home country firms. At first the inbound M&A theories are discussed. Secondly, the outbound M&A theories are elaborated.

As for inbound M&As, uncertainty in the target's country could deter potential acquirers to engage in cross-border M&A activity. In times of uncertainty, "ensuing changes in investor protection, regulatory regimes, and monetary, fiscal and taxation policies can result in uncertain investment returns" (Coa et al., 2019, p.443). Therefore, firms are reluctant in investing in countries with high uncertainty. Dinc and Erel (2013) state that uncertainty about nationalism during political elections could deter foreign acquirers, due to nationalistic governmental measures are not in the interest of foreign companies. This could lead to investment losses by potential expropriation. This does not have to mean expropriation in the direct sense of the word, but also by change in taxes, exchange rate manipulation and overregulation. These arguments are in line with the real options theory, as the uncertainty increases the value of the option to wait of the investment decision. Therefore, uncertainty in a target's country deters foreign potential acquirers.

For outbound cross-border M&As, the real option theory is also applicable. Uncertainty in the targets environment increases the value to wait with the investment for the potential acquirer. This could mean that while the environment in the targets country is stable, the acquiring firm could suffer from uncertainty in its country that for example is about to hold national elections. The high level of uncertainty in a home country's environment can make potential acquirers delay their decision to engage in cross-border M&As, according to Coa et al. (2019). Delaying their decision could reduce the risks regarding future currency rates and trade agreements induced by economic policy.

Another possibility for the potential acquirer is to hedge the risk that arises from the uncertainty with diversifying by investing in another country who's sources of risk are not perfectly correlated with that of the home country. This risk management theory is therefore, similarly like vertical integration, also applicable to outbound cross-border M&A. To reduce operational risk, firms can diversify by engaging in outbound cross-border acquisition (Brewer, 1981). According to Denis et al. (2002) about 30% of US public firms display global diversification to a certain degree. This global diversification results in flexibility in order to adapt to changes regarding tax code differences and price elasticity (Coa et al., 2019). Le and Zak (2006) argue that a significant driver for firms to engage in global diversification is to avoid risk, instability and variability that arises from the country's politics. For example, banks engage in cross-border M&A to enhance their capital allocation and avoid strict regulations by targeting a firm from a country with less strict laws and regulations (Karolyi & Taboada, 2015). Due to the benefits of global diversification, firms use cross-border M&As to escape from the uncertainty that arises in their home country. Therefore, through the risk management argument, uncertainty could stimulate firms to engage in cross-border M&As.

2.6. Empirical evidence and hypothesis building

As stated in the introduction, this research will examine the relationship between EPU and three different M&A types. At first, the effect of EPU on domestic M&A likelihood is investigated. Secondly,

it is studied what the effect of EPU on cross-border M&A likelihood is. As last, the consequences of EPU on intra-EU M&A likelihood is examined. In this section, the prior empirical research regarding these relationships are discussed. Next to this, based on the theories mentioned above and the prior empirical evidence, hypotheses are formed in this section.

EPU on domestic M&A likelihood

One of the first papers to research EPU and corporate investments empirically, is that of Julio and Yook (2012). Using election years as a proxy for EPU, these authors have found that investments decline with an average of 4,8% in election years, compared to non-election years. For this research, they used firm observations from 48 countries. Gulen and Ion (2015) followed this research, investigating investments during times of EPU in the US, using the BBD index. Just like Julio and Yook (2012), they have discovered a negative significant relationship between EPU and investments. On top of this, they have found that this relationship becomes even stronger when the investment is irreversible. The latter finding of this research has influenced future research on the relationship between EPU and M&A. From these results can be derived that M&A activity, as irreversible investment, is more likely to decline in times of high EPU. The authors state that the real option theory is the theoretical foundation of their results. This research has formed the basis for the hypothesis of studies investigating the relationship between EPU and M&A activity.

Bonaime et al. (2018) have researched the effect of EPU on domestic M&A activity by US firms. They use the findings of the research by Gulen and Ion (2015) to hypothesise that M&A activity will decline in times of high EPU. Bonaime et al. (2018) show that EPU has a negative effect on M&A activity. Nguyen and Phan (2017) also show using the BBD index that policy uncertainty negatively relates to the announcements of M&A in the US. This means that a high level of uncertainty has a negative effect on M&A likelihood in the US.

In their research, Bonaime et al. (2018) also investigated through which channel EPU predominantly affects M&A activity. They show that the real options theory is the most likely factor that influences the decision making of managers to engage in M&A activity in times of high EPU. They support this statement by showing that in competitive industries the effect of EPU on M&A activity is dampened. By using the theory of Grenadier (2002) that in a competitive environment the real option theory does not hold, Bonaime et al. (2018) argue that their findings finds support for their conclusion that in less competitive industries the option to wait gains value in times of high economic policy uncertainty. Next to this, they also find support for the risk management theory. Their results show that vertical mergers are increasing in times of high EPU. However, because in general M&A activity is declining in times of high EPU, the risk management theory is not the predominant channel trough which EPU affects M&A likelihood.

Prior research has also investigated the effect of EPU on M&A activity for Chinese firms, Borthwick et al. (2020) replicated the study of Bonaime et al. (2018) with the difference of observing Chinese firms instead of US firms. They showed results that M&A deals are more likely to be delayed in China, supporting the results of Bonaime et al. (2018). However, Sha et al. (2020) found evidence that in times of high economic policy uncertainty, Chinese firms are more likely to make acquisitions. These authors argue that the Chinese environment is in general more competitive than the US firms. Therefore, the theory of Grenadier (2002) that competitiveness evaporates the value of the option to wait, is more applicable in the Chinese environment. This means that Bonaime et al. (2018) and Sha et al. (2020) show contradicting results regarding the effect of EPU on M&A activity in China and therefore this effect remains unclear for Chinese firms.

As for Europe, no prior studies have investigated the effect of EPU on M&A likelihood. However, Julio and Yook (2012) did investigate corporate investments in times of high EPU for among others European countries. The authors found that the real option theory is valid for these countries. Next to this, it can be argued that the industry competitiveness in Europe is more similar to the US than to China, as the environment in China is claimed to be highly competitive (Sha et al., 2020; Williamson et al., 2004; Gadiesh et al., 2007). Next to this, in an emerging market, speed of action is more critical to gain a competitive advantage than in a developed market (Yang & Meyer, 2015). Based on this assumption, for this research the following hypothesis is stated:

H1: Driven by the real options theory, economic policy uncertainty has a negative effect on the likelihood of mergers and acquisitions

EPU on cross-border M&A

One of the first studies regarding the relationship between EPU and cross-border investments, is the research of Julio and Yook (2016). Using elections as a proxy for EPU, they have researched the capital flows of US companies towards their affiliates abroad. The results show that foreign investments significantly drops in election years of their affiliated based country. This means that companies are more reluctant with investing in countries with a high economic policy uncertainty. In a study on the effect of policy uncertainty on foreign direct investment, Choi et al. (2020) also finds evidence for this effect. These findings finds support for the real option theory. This means that economic agents rather hold the option to wait with investing abroad until the uncertainty in the target's country clears.

Specifically on cross-border M&As, prior academic research show support for the real options theory. Using national elections as a proxy for EPU, Cao et al. (2019) finds that the number of inbound acquisitions declines when the EPU is high in the country that hosts the election. This shows that in times around elections, foreign companies are deterred to engage in M&A activity with firms from this country. In a study on Chinese multinationals using the BBD index, Li et al. (2021) confirm this effect. A higher uncertainty in host countries reduces the motivation of Chinese firms to engage in cross-border acquisitions. Based on the real options theory and prior research, the following hypothesis is stated:

H2: Driven by the real options theory, economic policy uncertainty in the target firm's country has a negative effect on the number of inbound acquisitions.

Due to the risk management theory, it is expected that a high EPU level leads to more outbound acquisitions than in times of low EPU. Coa et al. (2019) show that the number of outbound cross-border acquisitions increases when in the period before national elections in the home country. Li et al. (2021) confirms this effect using the BBD index. In their case, Chinese firms engage more often in cross-border M&A when the EPU is high in China. Based on the risk management theory, the following hypothesis can be derived:

H3: Driven by the risk management theory, economic policy uncertainty in European countries has a positive effect on the number of outbound cross-border acquisitions.

EPU on Intra-EU M&A

As far as known, previous studies did not study the effect of uncertainty specifically on intra-EU M&As, nor the drivers behind this relationship. The hypothesis building is, therefore, based on the current theories regarding the European setting and domestic and cross-border M&A likelihood.

Previous cross-border research showed that M&A likelihood rose in periods of high EPU due to the risk management theory (Coa et al., 2019; Li et al., 2021). However, it could be argued that the risk management theory is limited in the European setting. As mentioned earlier, the risk management theory involves offsetting country specific risk. This is helpful when the target firm's countries economy is scarcely to not correlated with the economy of the acquiring firm (Vasconcellos and Kish, 1998). Due to the integration of monetary and political institutions within Europe, one could argue if diversifying has any effect in this case. Not all European countries experience the same amount of political and economic stability, which could be diversified using cross-border M&A. However, it is the question if diversifying within the EU is as effective as diversifying outside the EU.

If European integration has gone far enough that diversifying within the EU is not an alternative, the real option theory is plausible to be applicable. If this is the case, the real options theory suggests a decline in M&A activity. EU firms would be more likely to wait with engaging in M&A activity until the period of uncertainty is over. There is one exception, if the EU M&A market is highly competitive, the real options theory would flawed. In this case, a high EPU would lead to an increasing amount of M&A activity as Sha et al. (2020) found in China. However, one could argue that the EU M&A market competitiveness is more similar to the US rather than China.

Based on the arguments stated above, the real options theory is considered being the most plausible driver that enables EPU to affect intra-EU M&A likelihood. Therefore, the following hypothesis is stated:

H4: Due to the real options theory, economic policy uncertainty in Europe has a negative effect on the number of intra-EU mergers and acquisitions.

As mentioned before, even though Europe is to some extent integrated economically and politically, culturally Europe is quite divers. Previous research has shown that cultural aspects are important when in the decision-making process of M&A (Lodorfos & Boateng, 2006; Di Guardo et al., 2015). This is due to the fact that synergy gains are harder to reach if the benefits of working together are harder to exploit. Because of this, it can be argued that this cultural hurdle is harder to take in times of high EPU. Therefore, firms are less likely to acquire firms from countries with high cultural differences in the EU. This leads to the following hypothesis:

H5: Economic policy uncertainty in Europe has a negative effect on the number of mergers and acquisitions between different cultural regions within the EU.

3. Methodology

In this chapter the methodology of this thesis is discussed. At first the research design is explained. After this, the problem if measuring economic policy uncertainty is elaborated. At third, the data analysis is discussed. After this, the data collection method is explained. At last, the data manipulation is explained.

3.1. Research design

To answer the general research question, panel data will be collected on firm year observations regarding domestic M&A likelihood. Observations per month will be collected regarding cross-border and intra-EU M&A likelihood. On this data, quantitative analysis will be executed to identify potential relationships. For this research, the independent variable is economic policy uncertainty. The dependent variable differs across the different data analyses. For domestic M&A likelihood a dummy is used to see if a firm engaged in M&A activity in a specific year. At investigating cross-border M&A activity, the inbound and outbound M&As per month will form the dependent variable. Regarding the intra-EU likelihood, the number of M&A between subregions of the EU will be the dependent variable. All this is elaborated more deeply in the data analysis section of this chapter.

3.2. Measuring EPU

The question how to measure economic policy uncertainty has puzzled academics for quite some time. The implied market volatility index (VIX) published by the Chicago Board Options Exchange measures the standard deviation of stock returns and stock prices. This is one of the most widely accepted and oldest proxies for measuring uncertainties on firm and equity market levels (Baker et al, 2016). However, the VIX is limited in measuring a broad range of uncertainty since it is restricted to identifying market uncertainty. Due to the difference in markets across industries and countries, the VIX cannot be used globally (Al-Thaqeb and Algharabali, 2019). This means that the VIX is limited in measuring events outside the market and is not compatible when comparing markets and countries. Therefore, academics have been searching for alternative measurements to capture EPU.

These alternative measurements are quite divergent from each other in methodology. The Federal Reserve Bank of Philadelphia surveys professional forecasters every quarter about macro-economic developments (FED Philadelphia, 2021). Results from this survey is used to create a proxy for economic policy uncertainty (Al-Thaqeb and Algharabali, 2019). However, this proxy only measures EPU in the US. Julio and Yook (2012) use national elections to capture economic policy uncertainty by using a dummy variable for election years in regression analyses. Although this methodology enables to investigate the effects of EPU across multiple countries, it does not capture EPU between elections and it also does not capture the weight of the election on the EPU.

Another proxy of EPU is called the FEARS index (Da et al., 2014). This index is composed using investigating the sentiments and fears of investors. This is done using an internet search. The text-data results from the search are calculated into the proxy. In addition, Hassan et al. (2017) uses conference call transcripts of firm-level quarterly earnings to transform a proxy on firm-level political risk using a textual analysis. A similar method is used by Scotti (2016) to derive a “surprise factor” to use in a proxy on EPU. This factor focusses on economic uncertainty by measuring optimistic and pessimistic sentiments of investors. Jurado et al. (2015) uses econometric techniques to create a proxy for macro-uncertainty that focusses on the financial market. All these measurements centres economic uncertainty and focusses on investor sentiments on macro-economic events, rather than capturing the policy aspect of EPU.

Baker, Bloom and Davis (2016) managed to capture economic policy uncertainty with both the policy and economic aspects. The BBD index, as academics refer to their proxy, can be measured monthly. Next to this, their methodology is applicable to create a BBD index for every country. Alongside these benefits, their index is open to the public and is easily accessible. For all these reasons, the EPU proxy of Baker et al. (2016) is widely recognized and broadly used by academics (Bonaime et al., 2018; Sha et al., 2020; Nguyen & Phan, 2017;Aye et al., 2018; Li et al., 2015; Dai et al., 2017; Demir et al., 2018; Fang et al., 2018; Gulen & Ion, 2015; Attig et al., 2021; Demir & Ersan, 2017). Therefore, in this research the BBD index will be used.

The BBD index is a news based index, which searches, in the top selling newspapers of a specific country, for the terms: ‘‘economic’’ or ‘‘economy’’; ‘‘uncertain’’ or ‘‘uncertainty’’; and one or more of policy related terms of which some that can be linked towards the political system of that country. For example, in the US these terms are “White House”, “Congress” and Federal Reserve”. In the Netherlands these terms are “minister”, “torentje” and “binnenhof”. The monthly counts are standardized to have a unit time-series standard deviation and normalized to mean 100 prior to the beginning of the measurement.

3.3. Data Analysis

EPU and domestic M&A likelihood

Using the main variables M&A activity and EPU, the effect of EPU on the likelihood of M&As can be investigated using a regression analysis. To analyse the effect of EPU on M&A likelihood, scholars have used firm-year observations as the unit of observation (Bonaime et al., 2018; Borthwick., 2020; Li et al., 2021; Coa et al., 2019; Nguyen & Phan, 2017; Sha et al., 2020). In this research, the unit of observation will also be firm-year observations. While some scholars use completed M&A deals (Sha et al., 2020), others use M&A announcements (Nguyen & Phan, 2017; Bonaime et al, 2018; Borthwick et al., 2020). Since this research is investigating the likelihood of engaging in M&A activity, M&A announcements is used in this research. When a firm announces a M&A deal, it has already engaged in M&A activity. This means that M&As that were announced but were not completed are also included in the sample.

Most scholars use a logit regression model for the dependent variable M&A activity (Bonaime et al., 2018; Borthwick., 2020; Li et al., 2021; Coa et al., 2019), where others use probit regression models (Nguyen & Phan, 2017; Sha et al., 2020). The probit and logit models do not differ much from each other (Liao, 1994). Due to the extensive use of the logit model by previous studies, this model is used in the main model of this research.

For operationalizing domestic M&As, prior research used a dummy variable in their regression, which equals one if a minimum of one M&A is announced in that year by a firm. The EPU is transformed into an average of the last 3 (Nguyen & Phan, 2017), 6 (Sha et al., 2020) or 12 (Bonaime et al, 2018; Borthwick et al., 2020) months in the preceding year. Nguyen and Phan (2017) state that their findings are qualitatively similar if the 6 or 12 months average are used. This research will use the 3 month average of the preceding year, as this better reflects the short term effect of EPU on the M&A market. Using robustness tests, the effect of using the last 6 months and 12 months average is tested.

Prior research included the firm control variables: market-to-book ratio, firms size, book leverage, ROA and cash to assets ratio (Nguyen & Phan, 2017; Bonaime et al., 2018; Sha et al., 2020). These firm control variables are of the preceding year. They also used industry fixed effect. In this research the aforementioned firm control variables and the industry fixed effect are used. The NACE REV 2 industry codes are used to distinguish the different industries. By including the industry and year

fixed effects, omitted variable bias regarding the industry of the acquiring firm is minimized. The endogeneity problem is therefore reduced.

Nguyen and Phan (2017) and Sha et al. (2020) do not include year fixed effects, because these would be obsolete. This is due to the fact that every firm is subject to the same EPU level in the same time-period, as the EPU is nationwide. Due to the fact that this is also the case for this study, year fixed effects will not be included.

The model to test the relationship between EPU and M&A likelihood is as follows, where *i* stands for the firm and *t* for the year:

M&A Dummy $_{i,t}$ = a + b x EPU x firm control variables $_{i,t-1}$ x industry fixed effects

EPU and cross-border M&A

Next to this, the effect of EPU on cross-border activity is investigated using data on M&A activity. Cao et al. (2019) use national elections as independent variable and uses two different models where the depended variables of these models are the number of inbound acquisitions and the number of outbound acquisitions. Li et al. (2021) study the impact of EPU in cross-border M&A likelihood of Chinese firms. They use the BBD index as proxy for EPU. The models of Coa et al. (2019) and Li et al. (2021) are applicable for this research, as they are suitable for the setting in which firms of multiple countries are analysed. However, instead of using national elections as in the case of Coa et al. (2019), the BBD index is used as a proxy for EPU. This is due to the fact that the BBD index is capable of measuring EPU between elections and can measure the height of EPU. This will give an extra dimension to the results, compared to the results of Coa et al. (2019). The EPU is transformed into a 3-monthly average as is done by Li et al. (2021). 6-month and 12-month average results will be analysed with robustness checks. The unit of observation is the month of each country and the OLS regression model is used.

Some country-level characteristics need to be included in the model. Prior research has found that it is necessary to include institutional environment, tax regulations and economic development (Rossi & Vulpin, 2004; Barbopoulos et al., 2012; Bhagat et al., 2011; Norbäck et al., 2009; Dang et al., 2018; Kiymaz, 2004; Marshall & Anderson, 2009). The institutional environment can influence the choice to engage in M&A. This is among other things due to government size, shareholder protection regulations and the legal system. To measure the institutional environment, this research will follow Dang et al. (2018), by using the Economic Freedom Index created by the Fraser Institute. The second concept is the tax regulations of the target's country. As stated, according to prior studies this can also significantly affect the decision to engage in cross-border M&A. To measure the tax regulation of a country, this research uses the proportion of the targets country's tax revenue to the country's GDP following Wang et al. (2014) and Li et al. (2021). The last influence of engaging in cross-border M&A is the economic development of the target's country. This will be measured using the GDP growth rate of target's country as used by prior research (Bhagat et al., 2011; Dang et al,. 2018; Rossi & Volpin, 2004; Li et al., 2021). With the inclusion of these variables, this research is trying to improve the models.

Omitted variable problems can arise from unobserved differences between the countries in a cross-country analysis. To reduce this, this research will follow Wooldridge (2013) by adding the dependent variable in a lagged form. This will create the following advantage as stated by Wooldridge (2013, p. 283), "Using a lagged dependent variable in a cross-sectional equation increases the data requirements, but it also provides a simple way to account for historical factors that cause current differences in the dependent variable that are difficult to account for in other ways." Therefore, to include a lagged dependent variable, endogeneity problems are reduced.

For this research, the models to test the relationship between EPU and cross-border M&A is the following, where *i* stands for the country and *t* for the month:

Number of outbound cross-border acquisitions $_{i,t}$ = a+b x EPU $_{i,t}$ x country variables

Number of inbound cross-border acquisitions $_{i,t}$ = a+b x EPU $_{i,t}$ x country variables

EPU and Intra-EU M&A

As stated previously, prior studies did not investigate the relationship between EPU and intra-EU M&A activity. Therefore, there are no existing models to analyse this relationship. In this section is explained which models are suitable for this analysis. Since this relationship has two hypotheses, there will be two models. At first the model for total amount of intra-EU M&A activity is described. Secondly, the model for the amount of intra-EU between subregions is elaborated upon.

For the total amount of intra-EU M&A activity, the OLS models of Coa et al. (2019) and Li et al. (2021) can be largely used. Creating M&A dummies in this case would be very difficult as not all EU-members use the same currency. This would make it more difficult to compare firm characteristics over the years. Therefore, the cross-border models of Coa et al. (2019) and Li et al. (2021) are more appropriate, since currency differences does not interfere with these models. Since multiple countries are analysed using the number of intra-EU M&As as dependent variable is the most suitable. The independent variable will be the average European EPU of the last 3 months. The 6 and 12 month EPU average will be used to test for robustness.

Just like the OLS model on cross-border M&A, country specific variables are also included in this model, as prior research has found these country variables significantly affecting M&A decision making (Rossi & Vulpin, 2004; Barbopoulos et al., 2012; Bhagat et al., 2011; Norbäck et al., 2009; Dang et al., 2018; Kiymaz, 2004; Marshall & Anderson, 2009). The institutional environment, government tax regulation and economic development of the European Union are added using respectively the Economic Freedom Index, the tax to GDP ratio and the GDP growth. To see if this model is accurate when controlled for endogeneity problems, the lagged dependent variable will be used in a robustness analysis, following Wooldrige (2013).

Considering this, the model to test the relationship between EPU and intra-EU M&A is the following, where *t* stands for the month:

Number of intra-EU M&A $_{t}$ = a+b x EPU $_{t}$ x country variables

For the fifth hypothesis on M&A likelihood between cultural regions within the EU, first these subregions need to be identified. Since this is not a study on European anthropology, existing mapping is used to identify these subregions. For this thesis, the standard geoscheme of subregions by the United Nations is used to divide the EU countries into the four subregions: North, East, South, West (United Nations, 1999). The mapping used by the UN is shown in table 3.1.

Table 3.1: Mapping of subregions for European Union countries based on the geoscheme by the UN (1999)

North	East		South	West
Denmark	Bulgaria		Croatia	Austria
Estonia	Czech Republic		Cyprus	Belgium
Finland	Hungary		Greece	France
Ireland	Poland		Italy	Germany
Latvia	Romania		Malta	Luxembourg
Lithuania	Slovakia		Portugal	Netherlands
Sweden			Slovenia	
			Spain	

For the analysis, the unit of observation is the monthly M&A announcements between the subregions and within the subregions. Domestic M&As are excluded to focus on the cross-border acquisitions within the EU. With the dependent variable being the number of intra-EU subregion M&A announcements, the model previously mentioned at intra-EU M&A likelihood can be largely used. The independent variable will be the average EPU in Europe of the last 3 months. The 6 and 12 month EPU average will be used to test for robustness. The same country variables are included as in the previous model.

For this research, the model to test the relationship between EPU and intra-EU M&A likelihood between the different subregions is the following, where *i* stands for the acquiring subregions and *j* stands for the target subregion:

Number of intra-EU M&A between subregions $_{i,j,t}$ = a+b x EPU x country variables

3.4. Data Collection

In this paragraph the data collection method is explained for domestic M&A, cross-border M&A and intra-EU M&A likelihood. A full view of the variables with their description and collection method is visible in table 3.2.

The data collection on EPU is the same for each analysis. Monthly data about the EPU is published publicly on the website of Baker, Bloom and Davis: policyuncertainty.com. These data contains the EPU value of eleven countries located in Europe. These countries are Belgium, Croatia, France, Germany, Greece, Ireland, Italy, the Netherlands, Spain, Sweden and the UK. Next to this, the EPU of Europe as a continent is collected from this source. The latter is used in the analysis on the incoming and outgoing cross-border M&As of the EU and intra-EU M&A likelihood.

The first data collection method that is discussed, is for the analysis on the relationship between EPU and domestic M&A likelihood. In order to collect data for this analysis, ORBIS is used to gather records on firm characteristics and M&A deals. The ORBIS dataset contains information from 2011 till 2020. Due to firm characteristics being one year lagged, the period between 2012 and 2020 is selected as time frame for this research. All publicly listed firms in one of the European countries with EPU data availability were selected. The only exemption are firms operating in the utilities industry with a NACE Rev. 2 code of 35-39 and firms with financial and insurance activities with a NACE Rev. 2 code of 64-66. This decision follows prior research and is due to the fact that these sectors are highly regulated (Bonaime et al., 2018; Sha et al., 2020: Nguyen & Phan, 2017; Li et al., 2021). Of the remaining firms, data on the total assets, market-to-book ratio, total debt, net return,

cash and sales growth are collected. This data is used to calculate the firm control variables. Next to this, all M&A deal announcements involving these firms were listed. The deals with a deal value of €1 million and in which the acquirer was at best a minority shareholder and intents to gain full ownership upon completion are selected, following prior studies (Bonaime et al., 2018; Sha et al., 2020: Nguyen & Phan, 2017; Li et al., 2021). From this data, a M&A dummy is created which equals one if the firm has announced at least one merger or acquisition in that year. The NACE Rev. 2 code of the firm is also extracted from ORBIS and is used to create the industry fixed effect dummy.

The data collection for the analysis and cross-border M&A and intra-EU M&A is the same. The second analysis is used to investigate to what extent EPU affects cross-border M&A likelihood. The third analysis is used to study to what extent EPU affects intra-EU M&A likelihood. The M&A deal information is extracted from ORBIS in the time frame from 2011 till 2020. Only deals of which the target or acquirer is not operating in the utility or financial industry are selected. Next to this, deals are only included if the acquirer was at best a minority shareholder and intents to gain full ownership upon completion. These selection criteria is in accordance with prior research (Sha et al., 2020; Li et al., 2021). This information is used to calculate how many incoming and outgoing M&A deals were announced per country per year. Next to this, this information is used to calculate how many intra-EU M&As were announced. For the country control variable Economic Freedom Index, data from the Fraser Institute is obtained. Other country control variables on the tax revenue and GDP growth are acquired from the Worldbank.

Table 3.2: Full overview of variable table including the source of data collection.

Variable	**Info**	**Source**
EPU	BBD-index	Baker, Bloom, Davis
Domestic	*(Firm year observation)*	
M&A Dummy	1 if company announced M&A, 0 otherwise	ORBIS
Firm Size	LN of Total Assets of firm	ORBIS
Market-to-Book ratio	current value of firm relative to book value	ORBIS
Leverage	Total debt relative to total assets	ORBIS
ROA	Net income divided by the total assets	ORBIS
Cash/TA ratio	Total cash in holding relative to total assets	ORBIS
Sales Growth	Turnover growth in percentage relative to the prior year	ORBIS
NACE Rev 2	Industry indication of base firm operations	ORBIS
Cross-Border	*(Country observation per month)*	
No. of outbound M&A	LN of number of outbound M&A of the country in that year	ORBIS
No. of inbound M&A	LN of number of inbound M&A of the country in that year	ORBIS
EFI	Economic Freedom Index	Fraser Institute
Tax/GDP	LN of amount of tax income relative to the GDP	Worldbank
GDP Growth	GDP growth of the country in that year	Worldbank
Intra-EU	*(Monthly observation)*	
No. Intra-EU M&A	LN of number of M&A from and towards each EU subregion	ORBIS
EFI	Economic Freedom Index	Fraser Institute
Tax/GDP	Percentage of tax income relative to the GDP	Worldbank
GDP Growth	LN of GDP growth of the country in that year	Worldbank

3.5. Data Modification

Previous research that used similar models when analysing the relationship between EPU and M&A likelihood altered their dataset to optimize the analyses. Therefore, in this study data is also modified to fit the model better. The first modification is the winsorizing of the data on firm characteristics. The data on firm size, market-to-book ratio, leverage, cash-to-assets ratio and sales growth are winsorized at the 1st and 99th percentiles following Bonaime et al. (2018) and Borthwick (2020). Next to this, the independent variable EPU is transformed using the natural logarithm function (Nguyen & Phan, 2017; Bonaime et al., 2018; Sha et al., 2020). In the firm characteristic variables, the firm size is the natural logarithm of the total assets of the firm (Bonaime et al., 2018; Nguyen & Phan, 2017; Borthwick et al., 2020). For cross-border and intra-EU M&A's, the dependent variable, the number of M&As, is also transformed using the natural logarithm function (Sha et al., 2020; Li et al., 2021). Finally, according to Li et al. (2021) the GDP growth also needs to be used in the form of the natural logarithm.

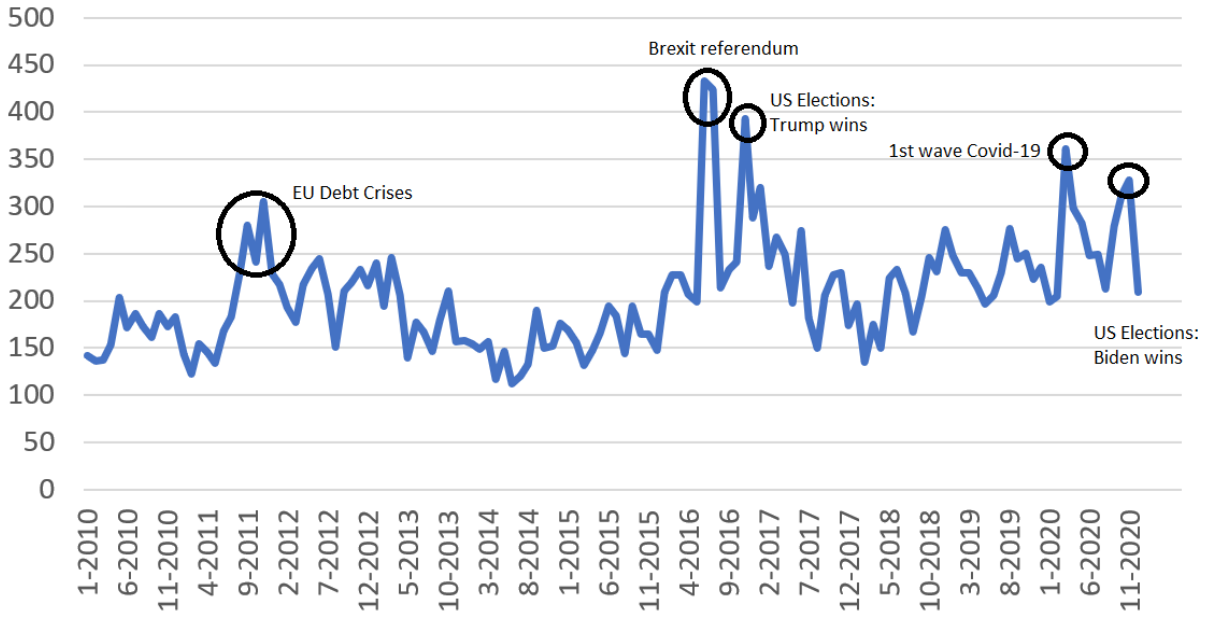
4. Data

This chapter will first discuss the EPU data and M&A data that is collected. Next to this, the descriptive statistics of all the collected data is discussed. At third, the coefficients of the datasets are presented.

4.1. EPU Data

In figure 4.1 the EPU trend for the European continent is visualized. With the visualization of the collected EPU data, some distinguishable events can be allocated to the graph. For instance in the second half of 2011, when the EU debt crises was at its height, alongside a potential Grexit. These events led to the uncertainty on how policymakers would fight this crises and avert a Grexit. The spike in the EPU graph of June 2016 is caused by the outcome of the Brexit referendum of the UK. Future trade and other economic activities between the EU and UK became uncertain due to the invocation of Article 50 of the Treaty of the European Union by the UK. This is also applicable for the election victory of Trump in November of 2016. Due to his protectionist agenda, trade with Europe and the impact of the US on the world stage became uncertain. This shows that events happening overseas can also raise uncertainty about European policy actions. At the start of 2020 the world was in lockdown by the COVID-19 pandemic. Uncertainty about the length of the lockdown, support packages and shifting supply and demand created a new EPU peak. In the prelude of the 2020 US presidential election, the EPU started to rise again. The month after the election, this uncertainty evaporated.

Figure 4.1: Graph of the EPU trend for the entire European continent.



4.2. M&A Data

Before discussing the M&A data collected form the ORBIS database, the abbreviations of the eleven European countries of which EPU is available is shown in table 4.1. After this, the domestic M&A distribution table is shown per country per year in table 4.2.

Table 4.1: Abbreviations of the eleven analysed countries as used in ORBIS.

Abbreviation	Country
BE	Belgium
HR	Croatia
DE	Germany
IT	Italy
FR	France
ES	Spain
GR	Greece
IE	Ireland
NL	Netherlands
SE	Sweden
UK	United Kingdom

Table 4.2: Distribution of domestic M&As per country per year.

Country	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
BE	0	1	0	2	1	0	0	0	1	5
HR	0	0	0	0	0	0	0	0	0	0
DE	7	3	5	5	4	5	8	3	6	46
IT	1	0	2	4	3	4	2	2	4	22
FR	0	0	3	0	2	1	0	0	0	6
ES	1	2	1	0	1	0	0	0	1	6
GR	0	0	1	0	0	0	0	0	0	1
IE	2	0	2	4	3	0	1	0	2	14
NL	0	0	0	0	0	0	1	0	0	1
SE	5	8	8	9	30	33	36	20	18	167
UK	60	97	84	101	100	77	78	80	74	751
Total	76	111	106	125	144	120	126	105	106	1019

The entire sample of the dataset on domestic M&A involves 1019 M&A deals by 4429 firms. Looking at the distribution of the domestic M&A deals in table 4.2, three quarter of the announcements came from the UK. Sweden is the second country with an appropriate amount of M&A announcements. In the other countries, the number of recorded domestic M&A announcements that fit the criteria are beneath 50. What is noticeable from table 4.2 is the small amount of domestic M&A announcements, that fit the criteria, recorded in some countries. This makes it hard to do a proper analysis.

In table 4.3 the collected cross-border M&A announcements within the eleven countries are presented. This table shows that the vast majority of incoming and outgoing M&A deals are to and from countries within the European Union. In total the outgoing M&A deals that were announced between 2011 and 2020 were slightly higher than the incoming M&A deal announcement. The reason why these numbers are much higher than the domestic M&A deal announcements, is due to the fact that the selection criteria as discussed in chapter 3 are far less strict. The reason for this is that country control variables are used in the analyses for cross-border M&A likelihood instead of firm characterises, that needed to be available for every deal.

Table 4.3: Cross-border M&A announcements within the eleven European countries of which EPU data is available.

	Incoming CB - outside EU	Outgoing CB - outside EU	Incoming Intra-EU	Outgoing intra-EU	Total incoming	Total outgoing
2011	442	420	527	633	969	1053
2012	363	459	514	618	877	1077
2013	409	409	497	597	906	1006
2014	517	537	588	725	1105	1262
2015	535	522	722	814	1257	1336
2016	465	472	741	891	1206	1363
2017	487	527	805	877	1292	1404
2018	510	466	792	920	1302	1386
2019	420	388	759	878	1179	1266
2020	279	292	504	643	783	935
Total	4427	4492	6449	7596	10876	12088

In table 4.4 the distribution of intra-EU M&A announcements, of the EU subregion which is acquiring, is visualized using the mapping of the subregions as presented in table 3.1. Noticeable is the amount of M&A announcements recorded in western EU countries opposed to the other subregions, with eastern EU having the lowest acquiring intra-EU announcements. From 2011 on, the number of intra-EU announcements kept on rising until 2019.

Table 4.4: Number of Intra-EU M&A announcements for each EU subregion. The distribution between the subregion is based on the acquiring subregion.

	West	North	South	East	Total
2011	843	399	254	105	1601
2012	942	414	314	132	1802
2013	979	485	417	219	2100
2014	1174	539	483	232	2428
2015	1247	562	391	242	2442
2016	1243	620	397	343	2603
2017	1239	648	379	427	2693
2018	1301	681	367	411	2760
2019	1149	528	315	226	2218
2020	718	480	256	210	1664
Total	10835	5356	3573	2547	22311

4.3. Descriptive statistics

In tables 4.5, 4.6 and 4.7, the descriptive statistics of respectively the domestic, cross-border and intra-EU M&A announcement database are presented. As stated previously, the firm characteristics in table 4.5 are winsorized at the 1st and 99th percentile. The frequency histograms for these variables are visible in appendix 1. In table 4.5, noticeable is the 0,04 mean of the M&A dummy in table 4.5. This means that 4% of the firm year observations have announced a M&A. This underlines the small number of domestic M&A deals collected, as mentioned previously. For the frequency histogram,

skewness of the firm leverage and the cash-to-assets ratio is clearly visible. Due to the fact that prior research also did not modified these variables (Nguyen & Phan, 2017; Bonaime et al., 2018), this research will also not use a natural logarithm in the main models. All regressions containing these control variables were also completed with a natural logarithm version of them. These results gave very little different results did not gave any significant difference.

Table 4.5: Descriptive statistics of the domestic M&A announcement database.

	N	Minimum	Maximum	Mean	Std. Deviation
Firm Size	32895	12,32	24,58	18,3464	2,64966
MTB	26654	-8,62	29,15	2,6634	4,33127
Lev	31494	0,01	2,20	0,5349	0,33590
ROA	32846	-2,19	0,33	-0,0787	0,34268
Cash/TA	32538	0,00	0,93	0,1673	0,19985
Sales Growth	27465	0,01	9,05	1,2274	1,03735
M&A dummy	39861	0,00	1,00	0,04	0,20
EPU_3months	39861	60,21	609,78	221,69	134,57
EPU_6months	39861	64,77	634,80	214,36	128,25
EPU_12months	39861	68,32	542,77	207,01	115,46
Valid N (listwise)	26465				

Table 4.6: Descriptive statistics of the cross-border M&A announcement database.

	N	Minimum	Maximum	Mean	Std. Deviation
EFI	1320	6,63	8,32	7,64	0,35
Tax/gdp	1320	11,19	28,13	21,53	21,54
gdpgrowth	1320	-9,13	25,16	1,57	3,30
EPU_3months	1320	73,76	457,84	204,52	52,67
EPU_6months	1320	86,50	368,67	203,34	60,08
EPU_12months	1320	91,13	299,59	201,06	51,61
Inbound CB	1320	0,00	76,00	12,84	14,55
Inbound CB - outside EU	1320	0,00	55,00	6,44	9,68
Outbound CB	1320	0,00	71,00	13,42	14,04
Outbound CB- outside EU	1320	0,00	41,00	5,72	7,52
Valid N (listwise)	1320				

Table 4.7: Descriptive statistics of the Intra-EU announcement database.

	N	Minimum	Maximum	Mean	Std. Deviation
M&A	120	112	276	184,6935	43,84801
EFI	120	7,550741	7,732963	7,659259	0,052848
Gdp-growth	120	-0,75183	2,789165	1,561449	1,051477
tax/gdp	120	19,3649	20,25618	19,88639	0,295544
EPU_3months	120	121,6818	357,0071	209,7272	49,05169
EPU_6months	120	130,7777	323,0302	209,1025	43,91976
EPU_12months	120	144,8562	291,5378	206,9135	38,85177
Valid N (listwise)	120				

4.4. Correlations

In tables 4.8, 4.9 and 4.10 are the Pearson correlation coefficients presented for respectively the dataset on domestic, cross-border and intra-EU M&A announcements. To make the present the data more clear, data in 4.10 is reduced. The entire Pearson correlation coefficient outcome of the intra-EU dataset is visible in appendix 2.

In table 4.8 is visible that the EPU average of 3, 6 and 12 months are all significant positively correlated with the M&A dummy. This suggests that a higher EPU is associated with more M&A announcements. This dataset includes the EPU data of all countries that are included in this study. The EPU data of every country is standardized and normalised using different conditions. Therefore, this data cannot be simple compared to one another (Baker et al., 2016). This means that one cannot draw any conclusion on the relationship between EPU and M&A likelihood based on these correlation coefficients. This is also the case for the coefficient results on cross-border M&A announcements in table 4.9. The intra-EU announcement coefficient results in table 4.10, can be compared. In this case the EPU data of the European continent is used, which are separately normalized and standardized (Baker et al., 2016).

The almost perfect correlation between the different EPU averages in table 4.8 and 4.9, suggests that results using the different averages should be similar to one another. This was also the case in the study by Nguyen and Phan (2017). In the chapter on the robustness test, this is further elaborated on.

Some independent variable correlate strongly with each other. In table 4.8 the firm size significantly correlates negatively with the cash-to-assets ratio. In the same dataset the firm leverage significantly correlates negatively with the return on assets. In table 4.9, the Economic Freedom Index correlates significantly with the GDP growth and the tax-to-GDP ratio. Because of these correlations, multicollinearity is checked in the regression using the Variance Inflation Factor (VIF) method. The VIF results are discussed in chapter five and presented in appendix 4.

Table 4.8: Pearson correlation results of the domestic M&A announcement dataset. Significance is indication with ** and *, indicating significance at respectively the 0.01 and the 0.05 level.

		1	2	3	4	5	6	7	8
Firm Size	**1**	1							
MTB	**2**	-0,007	1						
Lev	**3**	-,052**	0,000	1					
ROA	**4**	-,037**	0,000	-,427**	1				
Cash/TA	**5**	-,335**	0,005	,014*	,023**	1			
M&A dummy	**6**	,109**	-0,001	-0,003	-0,001	-,028**	1		
EPU_3months	**7**	,052**	0,000	0,002	-0,001	,022**	,059**	1	
EPU_6months	**8**	,052**	0,001	0,001	0,000	,031**	,067**	,981**	1
EPU_12months	**9**	,052**	-0,001	0,004	0,000	,030**	,067**	,957**	,972**

Table 4.9: Pearson correlation results of the cross-border M&A announcement dataset. Significance is indication with ** and *, indicating significance at respectively the 0.01 and the 0.05 level.

		1	2	3	4	5	6	7	8	9
EPU_3months	1	1								
EPU_6months	2	,941**	1							
EPU_12months	3	,869**	,947**	1						
Inbound CB	4	-0,025	-0,020	-0,002	1					
Inbound CB - outside EU	5	0,012	0,016	0,041	,901**	1				
Outbound CB	6	0,044	0,056	,079**	,836**	,763**	1			
Outbound CB- outside EU	7	,114**	,131**	,161**	,715**	,679**	,897**	1		
EFI	8	-0,038	-0,033	-0,024	,604**	,533**	,630**	,535**	1	
Gdp-growth	9	0,031	0,024	0,013	,271**	,213**	,300**	,257**	,418**	1
Tax/gdp	10	-,221**	-,235**	-,244**	-,315**	-,356**	-,165**	-,186**	-,312**	-,057*

Table 4.10: Pearson correlation results of the intra-EU M&A announcement dataset. Significance is indication with ** and *, indicating significance at respectively the 0.01 and the 0.05 level.

	ln3mon	ln6mon	ln12mon	EFI	Tax GDP	ln GDP growth
Total	-0,123	-0,094	-0,038	,543**	,496**	0,076
West North	0,177	,208*	,227*	,468**	,223*	,276**
North West	0,166	0,153	0,090	,475**	,252**	,308**
North South	0,115	0,163	0,145	,359**	0,114	,225*
South North	0,050	0,047	0,074	,187*	0,064	,205*
East North	0,024	0,019	0,006	0,107	0,125	0,053
North East	-0,176	-0,135	-0,064	0,112	,232*	-0,115
East West	-0,072	-0,077	-0,065	0,123	,218*	-0,143
West East	-,406**	-,426**	-,380**	-0,169	,417**	-,561**
West South	-0,012	0,010	-0,093	-0,097	-,249**	,341**
South West	0,132	0,149	0,135	,285**	0,047	,270**
South East	-,488**	-,524**	-,489**	-0,163	,304**	-,462**
East South	0,005	0,044	0,067	-0,001	-0,039	0,151
East East	0,130	,185*	,279**	,767**	,522**	0,117
North North	-0,003	0,030	0,086	,412**	,367**	0,024
West West	-0,029	-0,029	-0,015	,494**	,304**	,299**
South South	0,030	0,093	0,172	,374**	,299**	0,011

5. Results

In this chapter, the results of the analyses are discussed. In this chapter are first the results of EPU on domestic M&A likelihood discussed. Secondly, the results of EPU on cross-border M&A likelihood are presented. At last, the results of EPU on intra-EU M&A likelihood are explained.

EPU on domestic M&A likelihood

The first hypothesis is stated to study the relationship between economic policy uncertainty and domestic M&A likelihood. This hypothesis states that driven by the real options theory, economic policy uncertainty has a negative effect on the likelihood of domestic mergers and acquisitions in European countries. To study this hypothesis, a logit regression model is used. The three month EPU average prior the announcement is used to show the short term effect of EPU. In the robustness analysis the 6 and 12 month average will be used. To check for multicollinearity the VIFs are generated in presented in appendix 4. No factor exceeded the threshold of the VIF being larger than 5. Therefore, no multicollinearity issues are found. The results of the regression is presented in table 5.1.

Of the eleven European countries of which EPU data is available, only eight countries had listwise valid firm year observations in which at least one domestic M&A is announced. As stated previously, due to limited data availability a small number of domestic M&A announcements could be linked to firm characteristics of the acquirer. This means that for the Netherlands, Ireland, Croatia no analysis could be made due to the lack of a listwise valid number of domestic M&A announcement. For the other countries, the listwise valid number of domestic M&A announcement is shown in table 5.1.

Table 5.1 show support for hypothesis one for the United Kingdom (UK), Sweden (SE) and the entire dataset with the European EPU data as independent variable (last column). The EPU effect on domestic M&A likelihood for the United Kingdom is significant negative at the 0.01 level. For Sweden, this effect is significant negative at the 0.1 level. These are the two countries of which the most domestic M&A announcement were found. The last column shows the regression model with all firm year observations across the eleven European countries with the European continent EPU data as independent variable. These results also show a significant negative effect on the 0.01 level. Meaning that a higher level of economic policy uncertainty results to lead to a lower number of domestic M&A announcements. For the countries of France (FR), Germany (DE), Spain (ES), Italy (IT), Belgium (BE) and Greece (GR) no significant effect is found between economic policy uncertainty and domestic M&A likelihood. This has mainly to do with the data availability and the resulting small amount of domestic M&A announcements collected.

Due to the significant negative results for the United Kingdom, Sweden and the European continent, it can be argued that it is acceptable to partly accept the first hypothesis. This means that driven by the real options theory, economic policy uncertainty has at least partially a negative effect on the likelihood of domestic mergers and acquisitions in European countries.

These results are in line with prior research. This outcome supports the results of Julio and Yook (2012) in their study on the effect of corporate investments and EPU in Europe. Furthermore, these results is complementing to the findings of Bonaime et al. (2018) and Nguyen and Phan (2017) on their study on US firms and Borthwick et al. (2020) on their study on Chinese firms. The significant negative relationship suggests that the competitiveness in the researched European countries is not as high as in China as found in the study of Sha et al. (2020). The theory of Grenadier (2002) that competitiveness evaporates the real option value is not visible in these results.

Table 5.1: Logit coefficient results of domestic M&A likelihood of eight European countries and of the entire European sample. Dependent variable is the M&A dummy. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level .

	UK	FR	DE	ES	SE	IT	BE	GR	Europe
Firm Size	-0,023	0,675 ***	0,216 ***	0,270	0,053	0,365 ***	1,120 **	7,789	0,036 **
	(0,024)	(0,222)	(0,073)	(0,184)	(0,049)	(0,124)	(0,558)	(370,414)	(0,018)
MTB	0,000	0,001	0,000	0,029	-0,003	0,033	0,163	-0,319	0,000
	(0,001)	(0,044)	(0,000)	(0,028)	(0,008)	(0,037)	(0,219)	(62,367)	(0,000)
Lev	-0,022	-3,485	-0,658	0,506	0,188	-1,767	4,634	-59,280	-0,745 ***
	(0,047)	(3,191)	(0,821)	(1,448)	(0,479)	(1,161)	(3,148)	(3196,035)	(0,152)
ROA	0,663 ***	4,709	0,467	1,347	0,555	0,193	16,524	-44,314	0,493 ***
	(0,203)	(4,399)	(0,562)	(2,051)	(0,390)	(0,841)	(13,125)	(12485,696)	(0,121)
Cash/TA	-1,626 ***	3,966	1,496	6,123 *	-0,066	2,014	-4,021	-108,001	-1,004 ***
	(0,361)	(2,620)	(1,169)	(3,613)	(0,635)	(1,955)	(15,417)	(14798,551)	(0,281)
Sales Gr.	0,000	-4,471 ***	-0,018	0,181	0,000	-1,465	-4,621	0,092	0,000
	0,001	(1,710)	(0,087)	(0,964)	(0,001)	(0,916)	(4,621)	-20,015	(0,001)
EPU_3months	-0,337 ***	-2,432	0,197	-3,977	-2,595 *	0,014	0,117	-91,022	-0,591 ***
	(0,102)	(2,632)	(0,941)	(2,732)	(1,444)	(0,708)	(3,130)	(2274,419)	(0,184)
Industry fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	6393	4192	3255	1049	3528	1482	850	1173	23560
N domestic M&A	573	6	43	6	146	22	5	1	813

EPU on cross-border M&A

The second and third hypotheses are stated to study the effect of EPU on cross-border acquisition likelihood. The second hypotheses states that due to the real option theory, economic policy uncertainty has a negative effect on inbound cross-border acquisition likelihood. The value of the option to wait for foreign firms increases with the increasing EPU in the country of the potential target firm. To study this hypothesis, an OLS regression model is used. The dependent variable is the natural logarithm of the number of inbound cross-border acquisitions for each country. The independent variable is the 3 month average EPU prior to the acquisition announcement. Next to this, country control variables are used to control for institutional environment, tax regulations and economic development in the different countries. The regression model results are available for the eleven European countries of which EPU data is available as well as for the 10 EU countries combined using the EPU data for the entire European continent. To check for multicollinearity the VIFs are generated in presented in appendix 4. For Croatia the results exceeded the threshold of the VIF being larger than 5. In particular, for the tax-to-gdp ratio. However, since the VIF factor for the main independent variable is low, plus the fact that results for Croatia did not show any significant effect, this multicollinearity does not affect the study. The results of the analyses are presented in table 5.2.

The results shown in 5.2 show support for the second hypothesis for the countries of Belgium (BE), Germany (DE), the Netherlands (NL) and for the European Union (EU). For Belgium and Germany, the results show that economic policy uncertainty have a significant negative impact on inbound acquisition announcement at the 0.01 level. For the Netherlands and the EU, EPU is significant negative for inbound acquisitions at the 0.05 level. This means that, for these results, a higher EPU is associated with a lower amount of inbound acquisition announcements. For the other countries, no significant effect has been found regarding EPU.

Due to the negative significant results for Belgium, Germany and the Netherlands, it can be argued that it is acceptable to partly accept the second hypothesis. This means that foreign firms value to option to wait more in times of higher economic policy uncertainty. Therefore, they will delay their acquisition decision making process.

These results are in line with the findings from Coa et al. (2019) and Li et al. (2021). The results of table 5.2 present that, using the BBD index as a measurement for EPU instead of national elections, also a negative effect between EPU and inbound cross-border acquisition is visible. These results show that this effect is also valid for some European countries complementary to the findings in China of Li et al. (2021).

The third hypotheses is stated to investigate the effect of EPU on outbound cross-border acquisitions. It is predicted in this hypotheses, that driven by the risk management theory, EPU should have a positive effect on the number of outbound cross-border acquisitions. This is due to the fact that firms are likely to offset the political economic risk by diversifying through acquisitioning firms abroad. To study this hypothesis, the same regression model is used as the second hypothesis. The only difference is the dependent variable. In this model the dependent variable is the natural logarithm of the outbound cross-border acquisitions. The results are presented in table 5.3.

From table 5.3 can be derived that again some countries show significant results, were others do not. Belgium (BE), Italy (IT), France (FR), Sweden (SE) and the United Kingdom (UK) show significant negative results. This means that a rise in EPU suggests a lower amount of outbound acquisitions from these countries. Other countries and the European Union as a whole do not show a significant result. The results for Belgium and France are significant at the 0.01 level, the results for Sweden at the 0.05 level and the results for the UK at the 0.1 level.

These significant negative results are interesting, as it is opposed to the effect stated in the hypothesis. Due to these results, it is not possible to accept this hypothesis. These results do not show that firms are more likely to diversify their political risk by acquiring foreign countries, but rather show that firms are more likely to refrain from acquiring other firms during times of high economic policy uncertainty. Therefore, these findings are not in line with the results from Coa et al. (2019) and Li et al. (2021).

Table 5.2: OLS coefficient results of inbound cross-border M&A likelihood of eleven European countries and of the research countries in the European Union. Dependent variable is the natural logarithm of the number of inbound cross-border M&A announcements. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level

inCB	BE	HR	DE	IT	FR	ES	GR	IE	NL	SE	UK	EU
(Constant)	1,568	-1,940	-15,113 ***	-13,564 ***	5,078	-5,854	-2,933	0,787	4,396	-15,936 ***	-3,343	-1,913 ***
	(4,113)	(2,235)	(5,868)	(4,890)	(10,108)	(5,084)	(2,607)	(3,574)	(4,775)	(4,704)	(3,051)	(0,554)
EPU_3months	-0,451 ***	0,079	-0,170 ***	-0,146	-0,249	-0,228	0,006	0,033	-0,274 **	-0,261	-0,039	-0,137 **
	(0,136)	(0,144)	(0,076)	(0,130)	(0,083)	(0,245)	(0,092)	(0,177)	(0,126)	(0,059)	(0,051)	(0,068)
lagged dv	0,046	-0,132	0,200 ***	0,059	0,123	0,207 **	-0,060	0,117	0,098	0,027	0,101	0,616 ***
	(0,095)	(0,095)	(0,093)	(0,340)	(0,663)	(0,195)	(0,093)	(0,093)	(0,094)	(0,289)	(0,094)	(0,023)
EFI	-0,046	0,277	1,919 ***	0,600	-0,043	0,215	0,255	0,148	-0,356	2,273 ***	0,893 **	0,446 ***
	(0,454)	(0,507)	(0,430)	(0,173)	(0,181)	(0,142)	(0,302)	(0,390)	(0,580)	(0,335)	(0,388)	(0,060)
gdp-growth	1,076	0,602	0,482	0,804 ***	0,200	0,631 ***	0,003	0,043	0,844 *	0,700 **	0,294 ***	0,004
	(0,706)	(0,419)	(0,345)	(0,093)	(0,093)	(0,92)	(0,069)	(0,160)	(0,499)	(0,096)	(0,110)	(0,047)
Tax/gdp	0,005	-0,074	0,199	0,405 ***	-0,074	0,410 *	0,059 *	-0,053 *	-0,001	-0,002	-0,014	-0,014 ***
	(0,031)	(0,118)	(0,288)	(0,687)	(1,185)	(0,458)	(0,033)	(0,032)	(0,033)	(0,489)	(0,082)	(0,004)
N	119	119	119	119	119	119	119	119	119	119	119	1190
R2	0,13	0,061	0,343	0,284	0,07	0,245	0,04	0,107	0,217	0,261	0,145	0,585

Table 5.3: OLS coefficient results of outbound cross-border M&A likelihood of eleven European countries and of the European Union. Dependent variable is the natural logarithm of the number of outbound cross-border M&A announcements. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level

OutCB	**BE**	**HR**	**DE**	**IT**	**FR**	**ES**	**GR**	**IE**	**NL**	**SE**	**UK**	**EU**
(Constant)	2,604	-1,890	-14,195 **	5,646	-19,684 ***	-2,607	2,558	-13,252 ***	4,429	-5,182	-3,854	-2,431 ***
	(4,560)	(1,531)	(5,844)	(5,237)	(7,388)	(5,093)	(1,738)	(3,650)	(4,477)	(3,337)	(3,163)	(0,554)
EPU_3months	-0,456 ***	0,003	-0,076	-0,497 **	-0,343 ***	-0,187	-0,064	-0,019	-0,189	-0,522 **	-0,103 *	-0,062
	(0,151)	(0,098)	(0,077)	(0,197)	(0,131)	(0,142)	(0,061)	(0,173)	(0,1170	(0,251)	(0,053)	(0,067)
lagged dv	0,097	0,116	0,086	-0,071	0,117	-0,070	0,076	0,049	0,012	0,114	0,084	0,703 ***
	(0,095)	(0,096)	(0,094)	(0,095)	(0,091)	(0,094)	(0,095)	(0,093)	(0,096)	(0,094)	(0,092)	(0,021)
EFI	0,383	0,312	1,728 ***	-0,530	2,914 ***	0,356	-0,201	1,622 ***	-0,075	0,720 **	1,286 ***	0,403 ***
	(0,503)	(0,346)	(0,418)	(0,756)	(0,883)	(0,463)	(0,200)	(0,404)	(0,542)	(0,333)	(0,417)	(0,060)
ln(gdpg)	-0,391	0,019	0,569	0,298	-0,109	0,448 **	-0,031	0,248	0,535	-0,011	0,290 **	0,029
	(0,777)	(0,282)	(0,353)	(0,366)	(0,474)	(0,189)	(0,046)	(0,159)	(0,462)	(0,208)	(0,112)	(0,047)
Tax/gdp	-0,028	-0,014	0,216	0,081	0,118 **	0,124	-0,028	0,051 *	-0,075 **	0,169 ***	-0,106	-0,001
	(0,035)	(0,08)	(0,297)	(0,139)	(0,059)	(0,242)	(0,022)	(0,031)	(0,031)	(0,047)	(0,085)	(0,003)
N	119	119	119	119	119	119	119	119	119	119	119	1190
R2	0,132	0,037	0,119	0,091	0,168	0,069	0,560	0,235	0,102	0,212	0,207	0,643

EPU on intra-EU M&A

The fourth and fifth hypotheses are stated to investigate the effect of economic policy uncertainty on intra-EU M&A likelihood. The fourth hypothesis states that due to the real option theory, economic policy uncertainty has a negative effect on the number of intra-EU mergers and acquisitions. The hypothesis is analysed using an OLS regression with the natural logarithm of the number of total intra-EU M&A announcements as the dependent variable. The independent variable is the 3-month average prior to the announcement. Country control variables are used to control for institutional environment, tax regulations and economic development in the different countries. The results of this model are presented in Table 5.4.

Table 5.4: OLS coefficient results of intra-EU M&A. Dependent variable is the natural logarithm of the number of total intra-EU M&A announcements. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level.

	Total	
(Constant)	-17,464	***
	(2,555)	
EPU_3months	-0,440	***
	(0,085)	
EFI	2,724	***
	(0,486)	
Tax GDP	0,164	**
	(0,082)	
ln GDP growth	0,358	*
	(0,206)	
N	120	
R2	0,482	

The results show a negative effect significant at the 0.01 level. This means that a rise in economic policy uncertainty leads to less intra-EU mergers and acquisitions. This supports the prediction made in the fourth hypothesis. This means that firms are more inclined to delay their inter-EU M&A decision making process till the EPU has declined and the outcome of their future investments is more clear. Due to these results, hypotheses four is accepted.

Hypothesis five is stated to study the effect of economic policy uncertainty on acquisition likelihood between subregions of the EU. This is done to see if the cultural differences is affecting the economic policy uncertainty relationship with inter-EU acquisition likelihood. The same model as with hypothesis four is used to analyse this effect. The only difference is that the dependent variable is the natural logarithm of the number of acquisition announcements between the different subregions. To check for multicollinearity the VIFs are generated in presented in appendix 4. No factor exceeded the threshold of the VIF being larger than 5. Therefore, no multicollinearity issues are found. The results are presented in table 5.5. In the top row, first the subregion is mentioned in which the acquiring firm is located and secondly the subregion is mentioned in which the target firm is located.

The results of table 5.5. show that acquisitions to the east of the EU are significantly declining with an increase of European economic policy uncertainty. The third, fourth and fifth column show a significant negative result for firms of the western, southern and northern part of the EU to the

eastern part. This means that a rise in EPU leads to less firms from all the parts in the EU, who want to acquire a company from the eastern part. Next to this, firms are more deterred to acquire companies in the same region as them when EPU increases. This is the case for firms from the eastern, northern and western part of the EU. These parts of the EU show a significantly negative result in table 5.5.

Based on these findings, it could not be stated that EPU has a negative effect on the number of acquisitions between different subregions within the EU. This is due to the fact that within the subregions the intra-EU acquisitions are also declining. Nonetheless, these results do indicate that the eastern part of the EU is less attractive for other EU firms to invest in when EPU increases.

Table 5.5: OLS coefficient results of intra-EU M&A. Dependent variable is the natural logarithm of the number of total intra-EU M&A announcements between the subregions. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level.

	West→ North	**North→ West**	**West→ East**	**South→ East**	**North→ East**	**North→ South**	**South→ North**	**East→ North**
(Constant)	-24,718 ***	-24,598 ***	14,896 **	8,197	-12,327	-31,757 ***	-14,640 *	-5,739
	(5,031)	(4,861)	(6,634)	(7,615)	(7,666)	(7,814)	(7,824)	(6,859)
EPU_3months	-0,129	-0,143	-0,413 *	-1,012 ***	-0,531 **	-0,311	-0,201	0,005
	(0,169)	(0,163)	(0,223)	(0,256)	(0,258)	(0,263)	(0,263)	(0,231)
EFI	3,076 ***	2,713 ***	-3,185 **	-0,900	1,616	4,597 ***	1,560	-0,043
	(0,958)	(0,925)	(1,263)	(1,449)	(1,459)	(1,487)	(1,489)	(1,305)
Tax/GDP	0,106	0,202	0,952 ***	0,528 **	0,229	-0,132	0,092	0,261
	(0,161)	(0,156)	(0,213)	(0,244)	(0,246)	(0,251)	(0,251)	(0,220)
GDP growth	0,958 **	1,227 ***	-1,928 ***	-1,704 ***	-0,208	0,893	1,234 *	0,523
	(0,407)	(0,394)	(0,537)	(0,617)	(0,621)	(0,633)	(0,633)	(0,555)
N	120	120	120	120	120	120	120	120
R2	0,258	0,289	0,465	0,373	0,89	0,161	0,071	0,025

	East→ West	**West→ South**	**South→ West**	**East→ South**	**East→ East**	**North→ North**	**West→ West**	**South→ South**
(Constant)	-10,621	7,072	-16,079 ***	1,498	-69,571 ***	-14,045 ***	-23,571 ***	-26,603 ***
	(7,791)	(4,897)	(5,783)	(7,845)	(5,202)	(3,388)	(3,743)	(6,443)
EPU_3months	-0,203	-0,157	-0,128	-0,062	-0,629 ***	-0,211 *	-0,517 ***	-0,288
	(0,262)	(0,165)	(0,195)	(0,264)	(0,175)	(0,114)	(0,126)	(0,217)
EFI	1,341	-0,625	2,323 **	-0,660	9,412 ***	2,017 ***	3,241 ***	3,663 ***
	(1,483)	(0,932)	(1,101)	(1,493)	(0,990)	(0,645)	(0,712)	(1,226)
Tax/GDP	0,203	-0,110	-0,060	0,103	0,153	0,137	0,127	0,120
	(0,250)	(0,157)	(0,186)	(0,252)	(0,167)	(0,109)	(0,120)	(0,207)
GDP growth	-0,618	1,384 ***	0,933 **	1,087 *	0,188	0,115	1,150 ***	-0,063
	(0,631)	(0,397)	(0,468)	(0,635)	(0,421)	(0,274)	(0,303)	(0,522)
N	120	120	120	120	120	120	120	120
R2	0,061	0,157	0,129	0,027	0,647	0,224	0,4	0,167

6. Robustness

As stated in the methodology chapter, these results need to be tested to check the robustness of the outcomes. These robustness check are carried out on three different levels. First of all, the results are tested for robustness using the 6 and 12-month average EPU prior to the M&A announcement. This check is done on all previous regression models. The 12-month average results are presented in this chapter, whereas the 6-month average results are visible in appendix five. Secondly, for the robustness of the cross-border regression results, it is tested if the outcome differs when the dependent variable includes only announcements from and to outside of the EU. Thirdly, the total intra-EU regression model results are tested for endogeneity by adding a lagged dependent variable in the model.

Length of EPU

In table 6.1 the logit regression results are presented of the effect of 12 month EPU average prior to a M&A announcement on the domestic M&A likelihood. Noticeable is the fact that the significance level of Sweden has dropped. This means that this result is not robust for a longer period of economic policy uncertainty. However, as visible in appendix five, it does remain significant when the 6 month EPU average is used as an independent variable. The results for the UK does remain significant and is therefore robust.

The 12-month average EPU regression results for cross-border acquisition likelihood is presented in tables 6.2 and 6.3. For inbound acquisitions, more for countries a significant negative result is visible. This is the case for the countries of Croatia, Spain and Sweden. For Belgium, Germany and the Netherlands the results were already significant with the 3-month EPU average. This means that these results are robust for long term economic policy uncertainty. For the European Union as whole, this result become insignificant and is therefore not robust for long term EPU. The results for outbound acquisitions change quite a bit, when the 12-month EPU average is used. The results for Italy and Sweden lost their significance, while for Spain and the Netherlands a significant negative result is visible. This means that these results are not robust. However, for Belgium, France and the UK the results remain significant. All in all, even though the results for some countries change in significance, all significant results remain negative. Therefore it can be argued that for European countries, it is more plausible that EPU has a negative effect on both incoming and outbound acquisitions.

Table 6.1: Logit coefficient results of domestic M&A likelihood of eight European countries and of the entire European sample using the 12 month EPU average prior to the announcement. Dependent variable is the M&A dummy. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level .

	UK	FR	DE	ES	SE	IT	BE	GR	Europe
EPU_12months	-0,393 ***	-1,575	0,504	1,238	-0,891	0,066	2,501	-114,045	-0,559 ***
	(0,125)	(2,770)	(1,005)	(2,455)	(2,265)	(1,149)	(4,546)	(1292,726)	(0,217)
Firm control	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry fixed	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	6393	4192	3255	1049	3528	1482	850	1173	23560
N dom M&A	573	6	43	6	146	22	5	1	813

Table 6.2: OLS coefficient results of outbound cross-border M&A likelihood of eleven European countries and of the European Union using the 12 month EPU average prior to the announcement. Dependent variable is the natural logarithm of the number of incoming cross-border M&A announcements. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level

lnCB	BE	HR	DE	IT	FR	ES	GR	IE	NL	SE	UK	EU
EPU_12months	-0,609 ***	0,359 *	-0,272 **	-0,287	-0,193	-0,516 **	0,094	-0,173	-0,587 ***	-1,465 **	-0,094	-0,033
	(0,197)	(0,203)	(0,114)	(0,279)	(0,261)	(0,236)	(0,0142)	(0,417)	(0,192)	(0,641)	(0,067)	(0,078)
Country control	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	119	119	119	119	119	119	119	119	119	119	119	1190
R2	0,120	0,084	0,347	0,286	0,058	0,259	0,044	0,108	-0,247	0,290	0,155	0,760

Table 6.3: OLS coefficient results of outbound cross-border M&A likelihood of eleven European countries and of the European Union using the 12 month EPU average prior to the announcement. Dependent variable is the natural logarithm of the number of outbound cross-border M&A announcements. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level

outCB	BE	HR	DE	IT	FR	ES	GR	IE	NL	SE	UK	EU
EPU_12months	-0,592 ***	0,085	-0,127	-0,444	-0,399 **	-0,523 **	-0,046	-0,109	-0,319 *	-0,071	-0,157 **	-0,016
	(0,220)	(0,139)	(0,113)	(0,317)	(0,192)	(0,235)	(0,095)	(0,407)	(0,179)	(0,482)	(0,070)	(0,072)
Country control	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	119	119	119	119	119	119	119	119	119	119	119	1190
R2	0,118	0,041	0,201	0,056	0,150	0,094	0,049	0,235	0,106	0,182	0,215	0,831

The results using the 12-month EPU average for intra-EU acquisition likelihood are presented in tables 6.4 and 6.5. These results show that the total of intra-EU acquisitions are still negatively associated with EPU. Secondly, although the results for acquiring firms from the north to eastern targets became insignificant, the other two acquiring regions still show significant results. This means that the declining number of acquisition towards the east when EPU rises is robust. However, the results for the number of acquisition inside the subregions self, became less significant. Next to this, northern firms acquiring western firms do show a negative significant result. These two changes lack a clear explanation.

Table 6.4: OLS coefficient results of intra-EU M&A. Dependent variable is the natural logarithm of the number of total intra-EU M&A announcements using the 12 month EPU average prior to the announcement. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level.

	Total
EPU_12months	-0,513 ***
	(0,123)
Country control	yes
N	120
R2	0,447

Table 6.5: OLS coefficient results of intra-EU M&A. Dependent variable is the natural logarithm of the number of total intra-EU M&A announcements between the subregions using the 12 month EPU average prior to the announcement. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level.

	West→ North	**North→ West**	**West→ East**	**South→ East**	**North→ East**	**North→ South**	**South→ North**	**East→ North**
EPU_12months	-0,021	-0,498 **	-0,536 *	-1,634 ***	-0,253	-0,374	-0,092	-0,028
	(0,236)	(0,233)	(0,311)	(0,348)	(0,364)	(0,366)	(0,367)	(0,321)
Country control	yes	yes	yes	yes	yes	yes	yes	yes
N	120	120	120	120	120	120	120	120
R2	0,254	0,314	0,463	0,403	0,06	0,158	0,066	0,025
	East→ West	**West→ South**	**South→ West**	**East→ South**	**East→ East**	**North→ North**	**West→ West**	**South→ South**
EPU_12months	-0,389	-0,340	-0,172	0,392	-0,410	-0,152	-0,722 ***	-0,097
	(0,364)	(0,228)	(0,271)	(0,365)	(0,254)	(0,160)	(0,175)	(0,304)
Country control	yes	yes	yes	yes	yes	yes	yes	yes
N	120	120	120	120	120	120	120	120
R2	0,066	0,166	0,128	0,036	0,616	0,207	0,401	0,155

Cross-border acquisitions inside EU

Due to the economic integration within the EU, one could argue how strong the border effect is within the EU countries. Therefore, it is necessary to check to cross-border results for robustness if only the acquisitions from and to outside the EU are counted. This way, the border effect is evident. A column with the results for the entire European Union is missing. This is due to the fact that the results stayed the same as in the original model only acquisition from and to outside the EU were counted. In tables 6.6 and 6.7, the results are presented regarding the robustness check on the cross-border acquisition announcements. Whereas in the original model all the acquisitions from and to abroad where counted as a cross-border acquisition, in this model only the acquisition form and to outside the EU are counted. In table 6.6. the results for incoming acquisitions from outside the EU are shown, where table 6.7 shows the outcome for outbound acquisition to outside the EU.

From these results it can be derived that for incoming cross-border acquisitions, the negative effect of EPU on cross-border acquisition does not change very much. Italy (IT) has gained significance with its p value rising to 0.08. Belgium (BE) has lost some significance with now having a p-value of 0.14 instead of 0.001. These are the major differences. Therefore, it can be argued that the results are mostly robust for intra-EU acquisitions.

For outgoing cross-border acquisition, the results also do not change a lot. In table 6.6 it is visible that results from Belgium (BE) loses some statistical significance, from being significant with a p-value of 0.003 level to a p-value of 0.066. Next to this, the results from Germany (DE) gained significance from 0.326 to a p-value of 0.02. The results from Italy (IT) was significant with a p-value of 0.13 level, but it has dropped to 0.175. These results are a little more sensitive in comparison to inbound acquisitions. However, these results are still somewhat robust for intra-EU acquisitions.

Table 6.6: OLS coefficient results of outbound cross-border M&A likelihood of eleven European countries. Dependent variable is the natural logarithm of the number of outbound cross-border M&A announcements to outside the European Union. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level

lnCBoe	**BE**	**HR**	**DE**	**IT**	**FR**	**ES**	**GR**	**IE**	**NL**	**SE**	**UK**
(Constant)	7,728	-0,024	-11,279	-0,282	23,405 *	1,618	-0,477	1,663	6,028	-12,990 **	-0,008
	(5,266)	(1,232)	(6,996)	(5,468)	(12,966)	(7,156)	(1,566)	(3,810)	(6,332)	(6,213)	(3,244)
EPU_3months	-0,420 **	0,019	-0,315 ***	-0,356 *	-0,250	-0,308	-0,011	-0,254	-0,404 **	-0,185	-0,088
	(0,168)	(0,080)	(0,097)	(0,201)	(0,229)	(0,203)	(0,055)	(0,191)	(0,167)	(0,060)	(0,055)
lagged dv	-0,048	-0,020	0,124	0,177 *	-0,015	0,125	-0,025	0,008	0,001	-0,044	0,157 *
	(0,095)	(0,094)	(0,095)	(0,091)	(0,093)	(0,094)	(0,094)	(0,095)	(0,094)	(0,096)	(0,093)
EFI	-0,843	0,019	1,325 ***	-0,530	-2,034	-0,048	0,052	0,070	-0,246	1,842 ***	0,465
	(0,581)	(0,280)	(0,480)	(0,791)	(1,518)	(0,649)	(0,181)	(0,416)	(0,767)	(0,623)	(0,408)
ln(gdpg)	0,630	0,480 **	0,560	0,367	-0,210	0,278	-0,030	0,106	0,188	0,806 **	0,219 *
	(0,890)	(0,233)	(0,426)	(0,387)	(0,840)	(0,261)	(0,041)	(0,172)	(0,650)	(0,394)	(0,115)
Tax/gdp	0,004	-0,061	0,285	0,259 *	-0,198	0,060	0,013	-0,021	-0,044	-0,036	-0,019
	(0,039)	(0,065)	(0,356)	(0,148)	(0,106)	(0,340)	(0,020)	(0,033)	(0,043)	(0,081)	(0,087)
N	119	119	119	119	119	119	119	119	119	119	119
R2	0,061	0,058	0,224	0,154	0,062	0,050	0,008	0,031	0,820	0,114	0,118

Table 6.7: OLS coefficient results of outbound cross-border M&A likelihood of eleven European countries. Dependent variable is the natural logarithm of the number of outbound cross-border M&A announcements towards outside the EU. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level

lnCBoe	**BE**	**HR**	**DE**	**IT**	**FR**	**ES**	**GR**	**IE**	**NL**	**SE**	**UK**
(Constant)	-2,370	-1,563 *	-7,080	10,796	-12,162	-0,783	1,561 **	-18,342 ***	9,802	-5,697	8,083 *
	(5,727)	(0,944)	(7,068)	(6,205)	(8,975)	(6,981)	(0,763)	(4,349)	(6,498)	(4,330)	(4,114)
EPU_3months	-0,340 *	-0,039	-0,228 **	-0,310	-0,368 **	-0,171	0,008	-0,014	-0,071	-0,601 *	-0,128 *
	(0,183)	(0,06)	(0,096)	(0,227)	(0,164)	(0,194)	(0,026)	(0,205)	(0,167)	(0,322)	(0,069)
lagged dv	0,037	0,174 *	0,026	-0,116	0,207 **	0,175 *	0,224	-0,065	-0,015	-0,015	0,005
	(0,093)	(0,102)	(0,094)	(0,093)	(0,089)	(0,094)	(0,107)	(0,094)	(0,094)	(0,093)	(0,093)
EFI	1,181 *	0,273	1,230 **	-2,289	2,489 **	-0,207	-0,149 *	2,096 ***	-0,991	1,277 ***	-0,233
	(0,634)	(0,212)	(0,480)	(0,910)	(1,067)	(0,636)	(0,087)	(0,481)	(0,787)	(0,440)	(0,511)
ln(gdpg)	-1,421	-0,032	0,399	0,453	-0,890	-0,282	0,022	0,282	1,351 **	0,059	0,115
	(0,982)	(0,173)	(0,434)	(0,436)	(0,593)	(0,253)	(0,020)	(0,186)	(0,672)	(0,270)	(0,141)
Tax/gdp	-0,032	-0,004	-0,018	0,330	-0,025	0,342	-0,024 **	0,084 **	-0,156 ***	0,017	-0,096
	(0,043)	(0,049)	(0,366)	(0,167)	(0,073)	(0,333)	(0,010)	(0,036)	(0,046)	(0,057)	(0,110)
N	119	119	119	119	119	119	119	119	119	119	119
R2	0,094	0,079	0,118	0,073	0,308	0,072	0,122	0,209	0,171	0,123	0,089

Lagged dependent variable in intra-EU regression

In the models on intra-EU acquisition likelihood, the country variables were added to control for institutional environment, tax regulations and economic development in the different countries. However, omitted variables can form a problem as potential unobserved differences are not included. According to Wooldridge (2013) endogeneity problems can be reduced by adding a lagged dependent variable. Therefore, the previously stated outcomes are tested for robustness by including a lagged dependent variable in the original model. Tables 6.8 and 6.9 give the results for the adaptive models the total intra-EU acquisition likelihood and the likelihood between subregions of the EU.

Table 6.8 shows that the results stay the same as the original model. This means that the rise of EPU leads to less intra-EU acquisition announcements and that these results are robust when adding a lagged dependent variable.

Table 6.8: OLS coefficient results of intra-EU M&A including the lagged dependent variable. Dependent variable is the natural logarithm of the number of total intra-EU M&A announcements. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level.

	Total	
(Constant)	-11,848	***
	(2,935)	
EPU_3months	-0,317	***
	(0,089)	
Lagged DV	0,321	***
	(0,088)	
EFI	1,869	***
	(0,525)	
Tax GDP	0,109	**
	(0,080)	
ln GDP growth	0,239	*
	(0,200)	
N	119	
R2	0,532	

Table 6.9 presents the results for the inter-EU acquisition likelihood among the different subregions. From these results can be notified that the negative effect from west to east EU stopped being significant. Next to this, the effect between northern EU countries also have dropped in significance. However, it is still clear that when EPU rises, acquisitions to the eastern part of the EU are dropping. Next to this, the amount of acquisitions between firms inside eastern EU and inside western EU are declining. Both the statement on declining acquisitions towards east EU and the statement on declining acquisitions of countries among each other are therefore robust for adding a lagged dependent variable.

Table 6.9: OLS coefficient results of intra-EU M&A including the lagged dependent variable. Dependent variable is the natural logarithm of the number of total intra-EU M&A announcements between the subregions. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level.

	West→ North	**North→ West**	**West→ East**	**South→ East**	**North→ East**	**North→ South**	**South→ North**	**East→ North**
EPU_3months	-0,105	-0,033	-0,152	-0,594 ***	-0,511 *	-0,039	-0,179	0,001
	(0,169)	(0,093)	(0,193)	(0,250)	(0,269)	(0,265)	(0,261)	(0,232)
Lagged DV	yes	yes	yes	yes	yes	yes	yes	yes
County control	yes	yes	yes	yes	yes	yes	yes	yes
N	119	119	119	119	119	119	119	119
R2	0,269	0,3	0,613	0,48	0,09	0,0165	0,104	0,027

	East→ West	**West→ South**	**South→ West**	**East→ South**	**East→ East**	**North→ North**	**West→ West**	**South→ South**
EPU_3months	-0,169	-0,146	-0,129	-0,064	-0,481 ***	-0,161	-0,326 ***	-0,324
	(0,265)	(0,162)	(0,196)	(0,265)	(0,182)	(0,115)	(0,117)	(0,213)
Lagged DV	yes	yes	yes	yes	yes	yes	yes	yes
County control	yes	yes	yes	yes	yes	yes	yes	yes
N	119	119	119	119	119	119	119	119
R2	0,072	0,193	0,125	0,03	0,653	0,257	0,534	0,209

7. Conclusion

The aim of this thesis is to investigate the relationship between economic policy uncertainty and merger and acquisition likelihood. This thesis aims to give further insight on domestic M&A likelihood in Europe. Secondly, this thesis intends to investigate the effect of EPU of home countries on cross-border M&A activities of a European acquirer and to investigate the effect of EPU of target countries on cross-border M&A activities of a European acquirer. Thirdly, this thesis aims to study the effect of EPU on intra-EU M&A likelihood. For this thesis, the following research question was stated: To what extent does economic policy uncertainty affect merger and acquisition likelihood of European firms? Based on theories on uncertainty and M&A activity plus prior research on EPU and M&A likelihood, five hypotheses were stated. These five hypotheses are divided into three different M&A types: domestic, cross-border and intra EU.

To investigate the effect of EPU on domestic M&A likelihood, firms and M&A deals of eleven European countries were analysed. Due to prior research findings, it was predicted that EPU leads to a decrease in domestic M&A likelihood. Using logit regression, this study has found results that for United Kingdom and Sweden (although not entirely robust), EPU has a significant negative effect on domestic M&A likelihood. This is due to the real option theory. This means that firms in these countries are more likely to delay with their M&A decision making process, in order to wait until the uncertainty is to some extent over. For other countries in the analysis, no significant effect has been found. This has mainly to do with data availability.

For the study on the effect of EPU on cross-border M&A likelihood, M&A deals of the same European country were analysed. On the basis of prior findings, it was hypothesized that EPU would have a negative effect on inbound acquisition likelihood driven by the real options theory. For outbound acquisition likelihood, it was predicted that EPU would have positive effect. This would be driven by the risk management theory. The effect on inbound and outbound acquisition were analysed using an OLS regression model. For Belgium, Germany and the Netherlands, the results of this study show a negative effect on inbound acquisition likelihood. These results are robust for intra-EU cross-border acquisitions as well as long term EPU. For other countries no significant effect was found. For the effect of EPU on outbound acquisition likelihood, a significant negative effect was found for Belgium, France, Sweden and the United Kingdom. This effect was also found for Italy. However, this results was not robust for acquisition likelihood outside the EU. For other countries no significant effect was found. The other results were robust for acquisition likelihood outside the EU. The results for outbound acquisition likelihood were not entirely robust for long term EPU, as some countries changed in significance. However, all significant results showed a negative effect. Interestingly, this effect is the opposite of what was stated in the hypothesis. Therefore, this hypothesis was rejected.

The effect of EPU on intra-EU M&A deals was analysed next. Due to the lack of existing research on this relationship, hypotheses were stated based on theories of domestic and cross-border acquisition likelihood. It was predicted that EPU would have a negative effect on the number of intra-EU acquisitions. As well as it was hypothesized that EPU would have a negative effect on the number of acquisitions between EU subregions. A similar model of the cross-border analysis is used for this one. The outcome of the regression model was that EPU indeed is associated with a lower amount of intra-EU acquisitions. Out of the results on EPU and acquisition likelihood between subregions, it can be concluded that EU firms reduce the amount of acquisitions to the eastern part when EPU rises. These results were robust when a lagged dependent variable is added to reduce endogeneity problems and are robust for long term EPU.

8. Discussion

In this chapter the results and conclusion of this study are discussed. The limitations, theoretical implications and practical implication are reviewed.

Limitations

Naturally, this study has some limitations. The first and foremost limitation is regarding the data availability. Using ORBIS as a database has some disadvantages. At first, only firm characteristics and M&A deal announcements are available from 2011 till 2020. This means that M&A deals before this period could not have been taken into account. Therefore, the time frame of this study is from 2011 till 2020. However, prior research were able to investigate the relationship between EPU and M&A likelihood for a longer time period. For instance, Bonaime et al. (2018) use a sample period between 1985 and 2014, Nguyen and Phan (2017) also start their sample period in 1985 and end in 2012 and Li et al. (2021) use a sample period of 2001 till 2017. By using a longer sample period, the sample size increases which would make the results more robust. This would apply for all the types of M&A deals, domestic, cross-border as well as intra-EU.

Secondly, the amount of domestic M&A announcements recorded that fit the selection criteria is too low. Only for the UK and for Sweden a good amount of domestic M&A announcements could be used in the regression model. The other eight countries that were analysed had too little domestic M&A recordings to properly study the effect of EPU on domestic M&A likelihood.

Theoretical Implications and Future Research

In the introduction of this research, a research gap on the relationship between EPU and M&A likelihood in Europe is identified. For the effect of EPU on domestic M&A likelihood, prior research has found contradicting results in different settings. This research has found support for the findings of Bonaime et al. (2028), Nguyen and Phan (2017) and Borthwick et al. (2020) for their studies on EPU and domestic M&A likelihood in the US and China. This study also found that due to the real option theory, firms are less likely to engage in domestic M&A activity when EPU rises. This result is contradicting to the findings of Sha et al. (2020). Their results on the EPU and domestic M&A relationship in China shows a positive sign, as they argue that due to competitiveness a company will engage in a M&A with a positive NPV. In this research, no sign has been found that countries are more likely to engage in domestic M&A when EPU is rising.

In regards to cross-border M&A likelihood, Coa et al. (2019) and Li et al. (2021) has found that EPU has a negative effect on incoming acquisitions and a positive effect on outbound acquisitions. This study has found the same effect for incoming acquisitions. Meaning that when EPU rises, foreign firms are deterred by the EPU in a target country and refrain from acquiring. This study therefore complements existing research by showing that these results are also valid in a European setting.

However, this study has found results on the effect of EPU on outbound acquisitions that contradict the results from Coa et al. (2019) and Li et al. (2021). Results for European firms show that these firms are less likely to engage in outbound cross-border acquisitions when EPU rises, whereas prior research has found the opposite result. The results are even robust when controlled for intra-EU acquisitions. Meaning that European firms are less likely to engage in acquisitions with a target firm outside the EU when EPU is high.

Future research could help study why these results are contradicting. Prior research has argued that diversification is the main reason for firms to decide to acquire a foreign company in times of EPU. Diversification is part of the principal-agency problem theory, as shareholders van far easily create a diverse portfolio by themselves rather than a company. As stated before, European firms are known

for having concentrated ownerships (Faccio & Masulis, 2005). Corporate governance and the principal-agency problem are intertwined with each other. Therefore, further research could scrutinize the effect of concentrated ownerships towards diversification in Europe.

For the relationship between EPU and intra-EU acquisition likelihood, this thesis is the first to investigate this effect. The results from this study suggest that EU firms are acquiring less firms from eastern part of the EU when EPU rises. This effect could be explained by the cultural difference and the path-dependency. In the 20th century, these country were literally locked away for years behind the iron curtain. After the fall of the wall, these countries shifted little by little to the market economy of the rest of Europe. As stated before, these cultural differences could be another hurdle to take for foreign firms prior to the acquiring process.

According to Medve-Bálint (2013) the eastern EU countries have prospered due to foreign direct investments from other European countries, guided by the European Union. So much even, that the author argues that these new EU Members States have become dependent on the foreign investments. Therefore, these countries are vulnerable to economic shocks. This could be the reason that foreign firms argue that the economic uncertainty makes their invest even more unsure. Either way, future research could study why the eastern part of the EU is affected more by EPU than other parts of the EU. Due to these countries being dependent of foreign direct investments, this is a theoretical and practical relevant direction for future studies.

Although the European integration is a factor in this study, little can be said from our results about its effect on EPU and M&A likelihood. Future research could study the effect of new (de)integration measures on EPU and the M&A likelihood following this. For example, the effect of the implementation of the Euro or the Brexit referendum. It could be relevant to see how M&A activity reacted to these events. This way for future policy measures it could be more easily predicted what the effect is on capital flows between European countries.

Practical Implications

There are some practical implications that can be stated in regard to this study. First of all, this study shows the effect on the European M&A market if policymakers refrain from prompt and adequate policymaking. By raising discussion on fiscal, monetary or regulatory policy or abstain from reacting to external events, policymakers incentivize mangers to hold with engaging in any mergers and acquisitions. This is both the case for domestic, as cross-border acquisitions. For intra-EU, this effect could even be more disadvantageous, as eastern countries of the EU are hit more severely. This is due to the fact that firms from the EU are less likely to acquire firms from a country of the eastern part when EPU is rising.

Next to this, managers in Europe can use these results to better estimate the effect of economic policy uncertainty on their M&A negotiations. They could use EPU as a factor in the negotiations by stating that a firm is less likely to be acquired in times of high EPU. This way they could use these results into their advantage.

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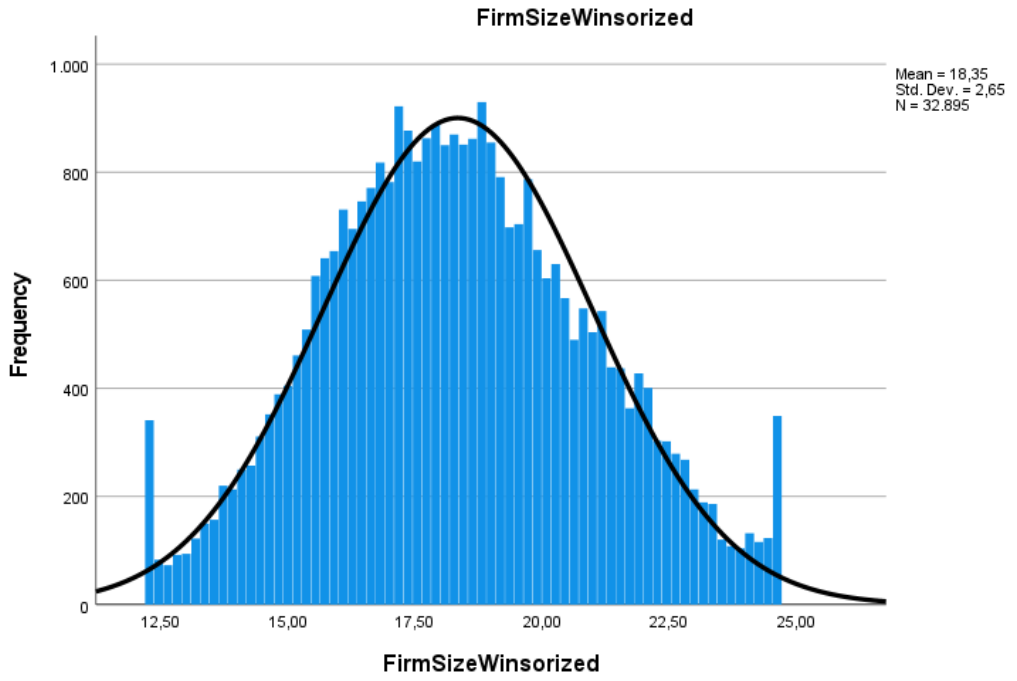
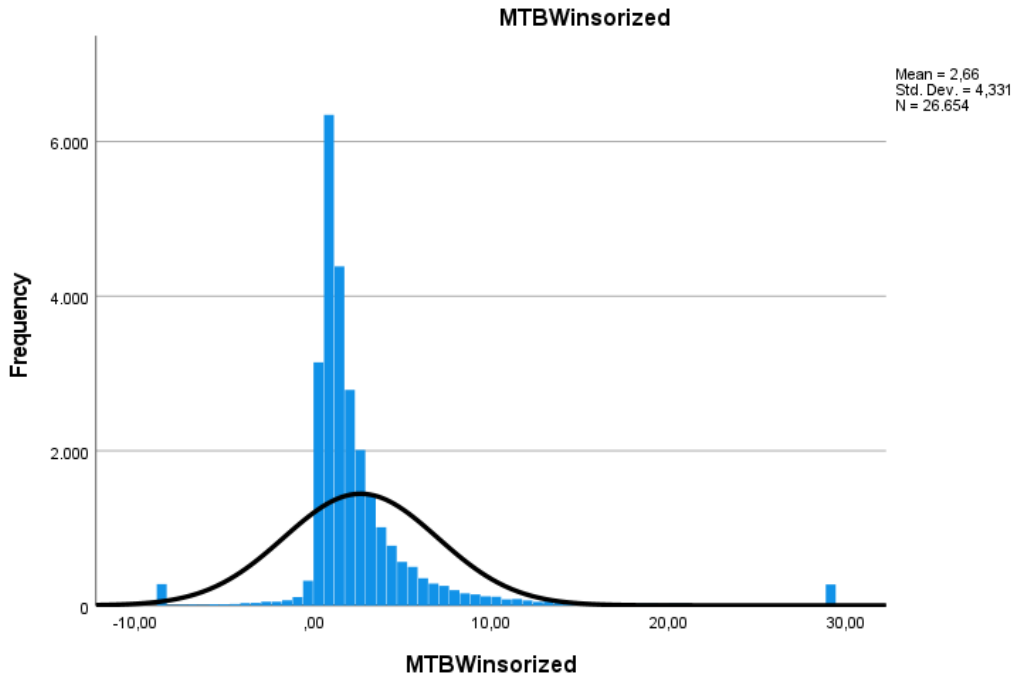
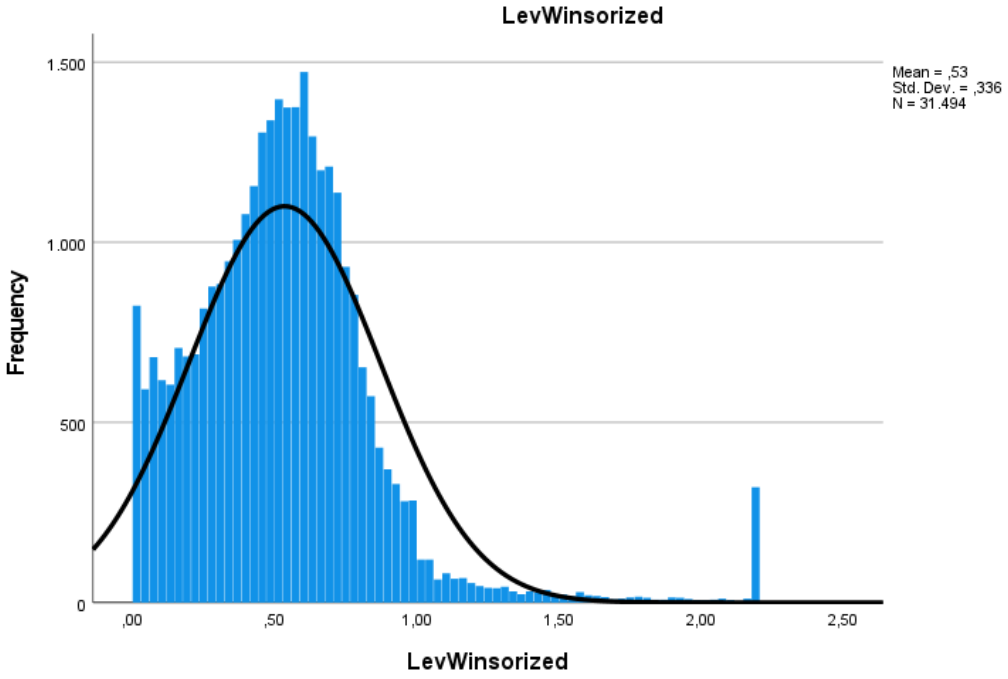
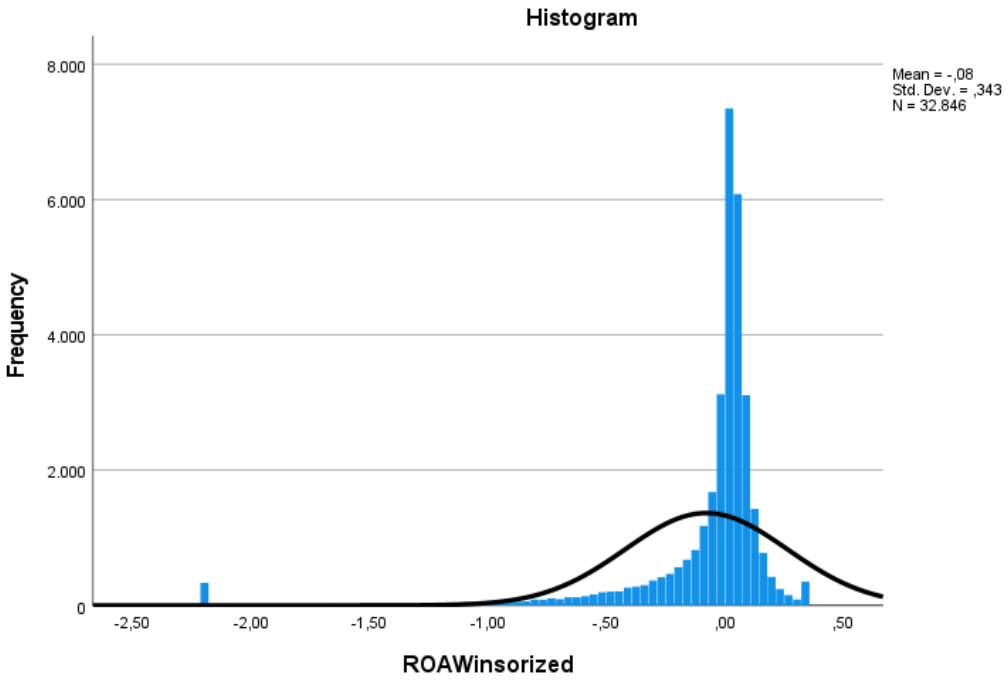
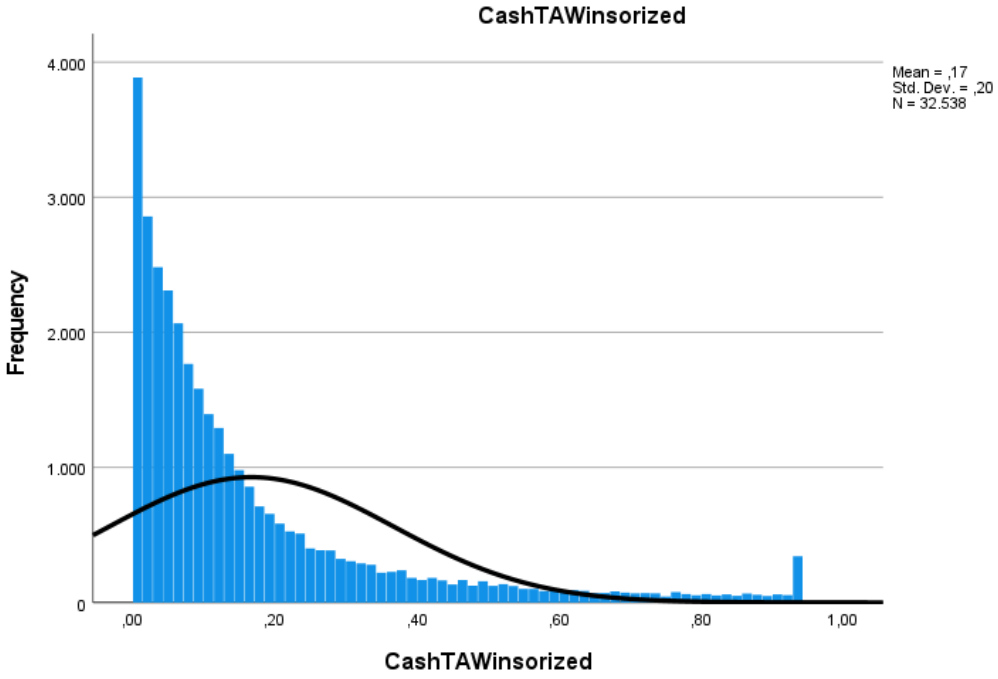
Appendix I: Histograms Variables

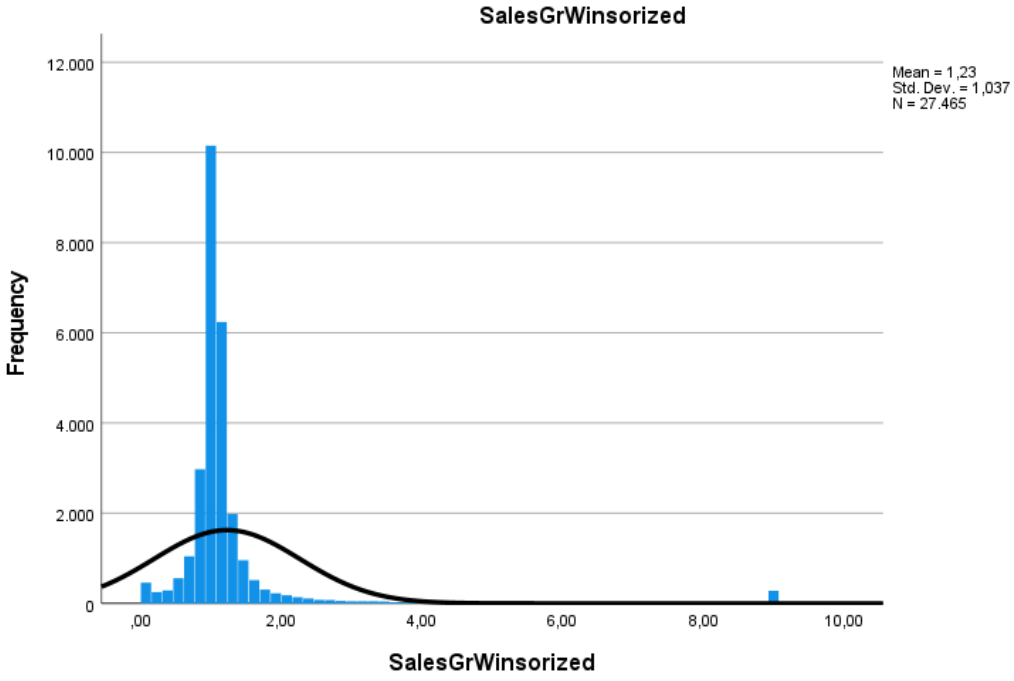


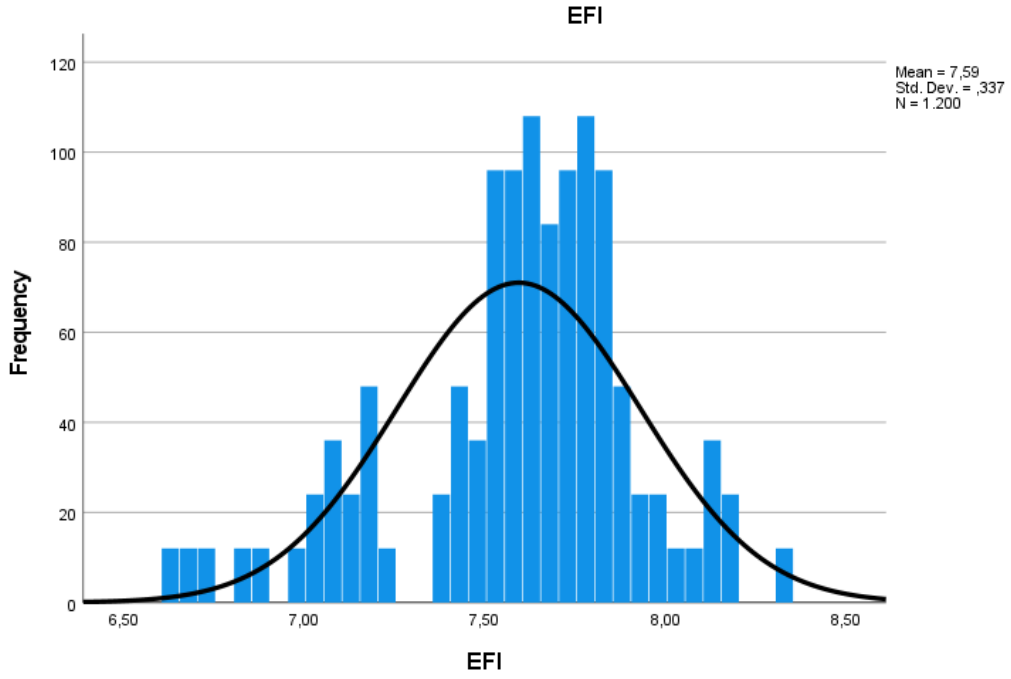


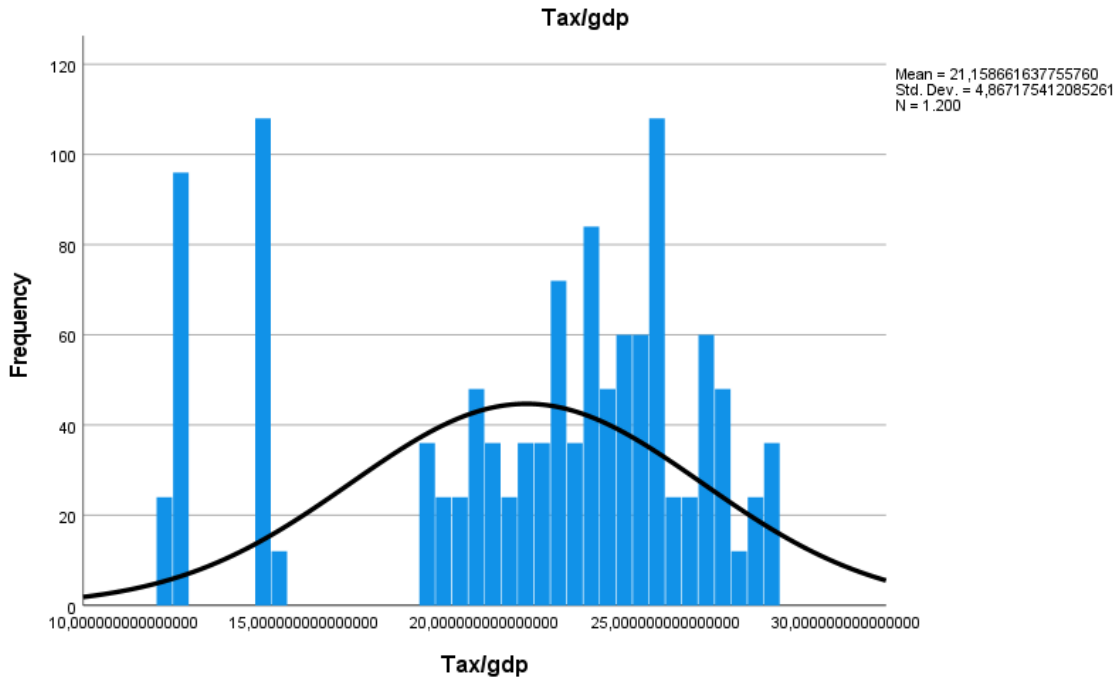

LevWinsorized
Mean = ,53
Std. Dev. = ,336
N = 31.494
Frequency
1.500
1.000
500
0
,00
,50
1,00
1,50
2,00
2,50
LevWinsorized

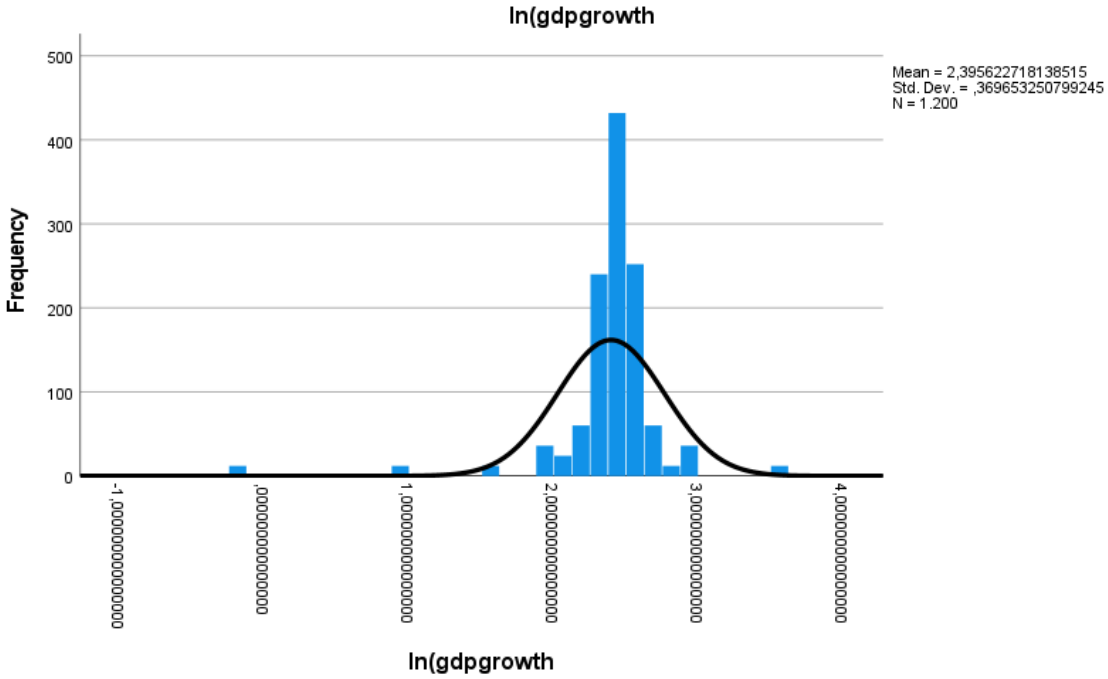

Histogram
Mean = -,08
Std. Dev. = ,343
N = 32.846
Frequency
8.000
6.000
4.000
2.000
0
-2,50
-2,00
-1,50
-1,00
-,50
,00
,50
ROAWinsorized


CashTAWinsorized
Mean = ,17
Std. Dev. = ,20
N = 32.538
Frequency
4.000
3.000
2.000
1.000
0
,00
,20
,40
,60
,80
1,00
CashTAWinsorized


SalesGrWinsorized
Mean = 1,23
Std. Dev. = 1,037
N = 27.465
Frequency
12.000
10.000
8.000
6.000
4.000
2.000
0
,00
2,00
4,00
6,00
8,00
10,00
SalesGrWinsorized


EFI
Mean = 7,59
Std. Dev. = ,337
N = 1.200
Frequency
120
100
80
60
40
20
0
6,50
7,00
7,50
8,00
8,50
EFI


Tax/gdp
Mean = 21,158661637755760
Std. Dev. = 4,867175412085261
N = 1.200
Frequency
120
100
80
60
40
20
0
10,000000000000000
15,000000000000000
20,000000000000000
25,000000000000000
30,000000000000000
Tax/gdp

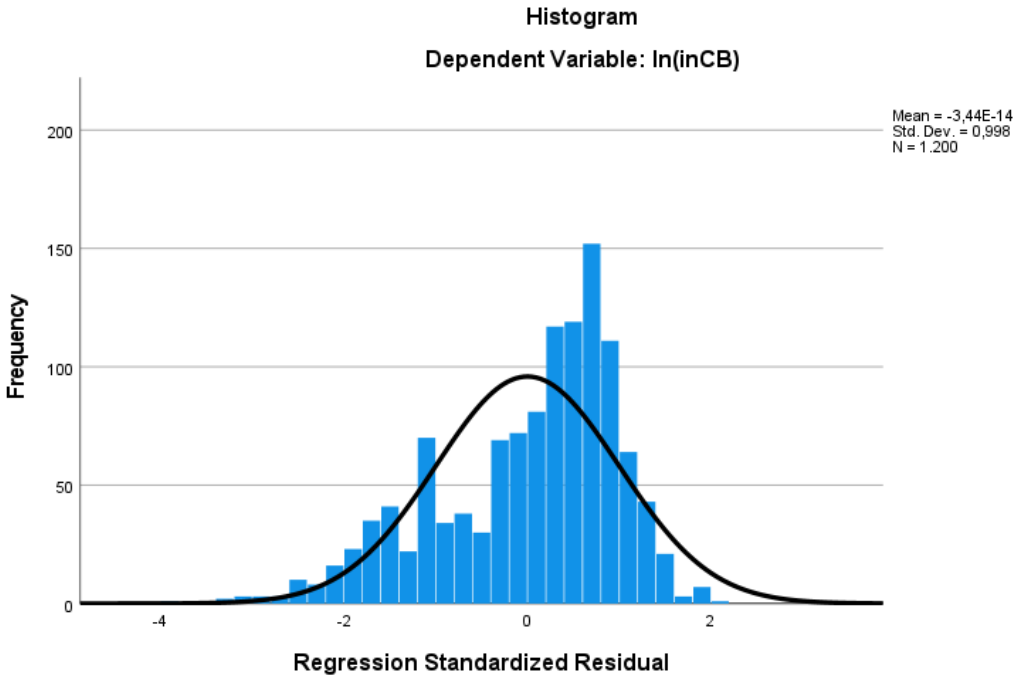

ln(gdpgrowth
Mean = 2,395622718138515
Std. Dev. = ,369653250799245
N = 1.200
Frequency
500
400
300
200
100
0
-1,000000000000000
,000000000000000
1,000000000000000
2,000000000000000
3,000000000000000
4,000000000000000
ln(gdpgrowth

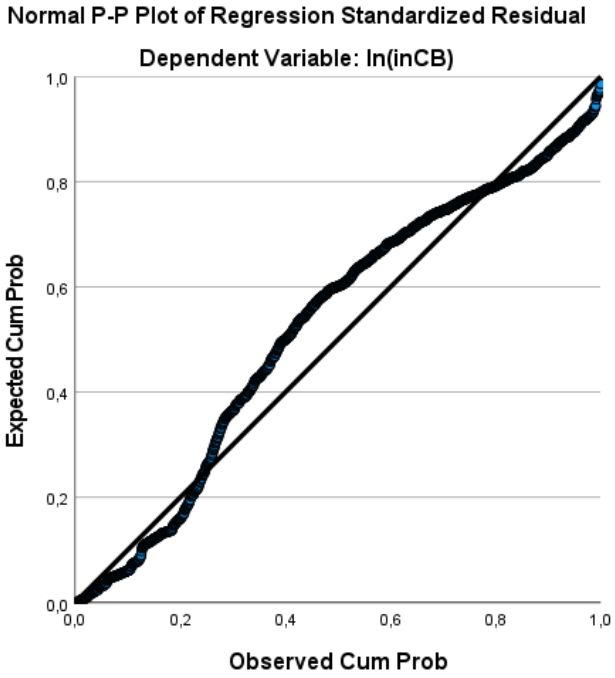
Appendix II: Pearson Correlation results Intra-EU

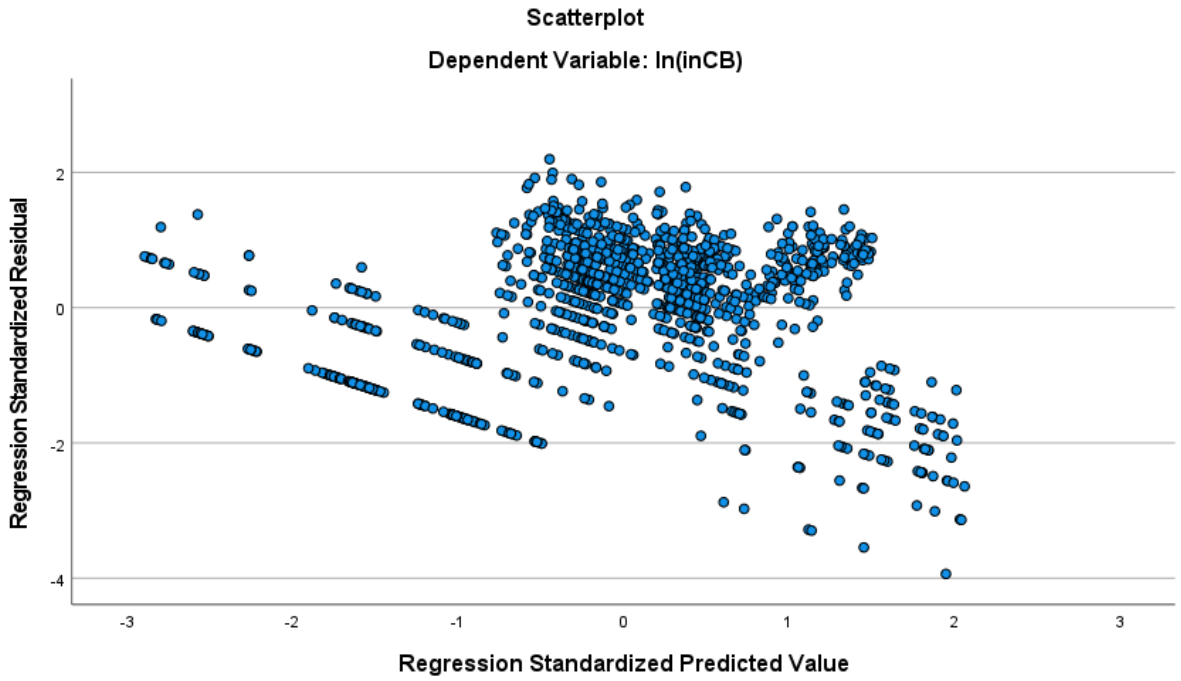
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
EPU3mon	1	1																					
EPU6mon	2	,916**	1																				
EPU12mon	3	,784**	,905**	1																			
Total	4	-0,123	-0,094	-0,038	1																		
West North	5	0,177	,208*	,227*	,490**	1																	
North West	6	0,166	0,153	0,090	,473**	,362**	1																
North South	7	0,115	0,163	0,145	,263**	0,179	,331**	1															
South North	8	0,050	0,047	0,074	,231*	,357**	0,115	0,087	1														
East North	9	0,024	0,019	0,006	,256**	,207*	0,106	0,105	0,040	1													
North East	10	-0,176	-0,135	-0,064	,309**	0,026	0,059	0,140	-0,093	0,054	1												
East West	11	-0,072	-0,077	-0,065	,340**	-0,007	0,152	-0,034	-0,015	,195*	0,092	1											
West East	12	-,406**	-,426**	-,380**	,300**	-,209*	-,183*	-,186*	-0,146	-0,012	,221*	,217*	1										
West South	13	-0,012	0,010	-0,093	,218*	0,032	0,152	0,150	0,067	0,046	-0,057	-0,040	-0,038	1									
South West	14	0,132	0,149	0,135	,390**	,202*	,328**	,197*	0,104	0,063	0,118	0,121	-0,104	0,132	1								
South East	15	-,488**	-,524**	-,489**	,456**	-0,131	-0,116	-0,174	-0,057	0,077	,215*	,220*	,654**	0,036	-0,030	1							
East South	16	0,005	0,044	0,067	0,168	0,105	0,082	0,065	0,100	,239**	-0,001	0,122	-0,099	0,113	0,004	0,007	1						
East East	17	0,130	,185*	,279**	,704**	,418**	,326**	,250**	,189*	,191*	,250**	0,153	0,034	-0,109	,207*	0,144	0,079	1					
North North	18	-0,003	0,030	0,086	,593**	,321**	,291**	0,164	0,023	0,134	,190*	,291**	0,086	0,063	0,144	0,052	0,082	,425**	1				
West West	19	-0,029	-0,029	-0,015	,837**	,418**	,459**	,217*	,226*	0,151	0,102	,256**	0,102	,196*	,357**	,285**	0,150	,545**	,401**	1			
South South	20	0,030	0,093	0,172	,612**	,342**	,396**	0,136	,241**	,187*	0,157	,197*	-0,035	0,116	,257**	0,174	,224*	,385**	,423**	,435**	1		
EFI	21	,445**	,496**	,528**	,543**	,468**	,475**	,359**	,187*	0,107	0,112	0,123	-0,169	-0,097	,285**	-0,163	-0,001	,767**	,412**	,494**	,374**	1	
Tax GDP	22	-0,070	-0,061	-0,062	,496**	,223*	,252**	0,114	0,064	0,125	,232*	,218*	,417**	-,249**	0,047	,304**	-0,039	,522**	,367**	,304**	,299**	,990**	1
GDP growth	23	,332**	,313**	,218*	0,076	,276**	,308**	,225*	,205*	0,053	-0,115	-0,143	-,561**	,341**	,270**	-,462**	0,151	0,117	0,024	,299**	0,011	,913**	,875**

Appendix III: Assumptions

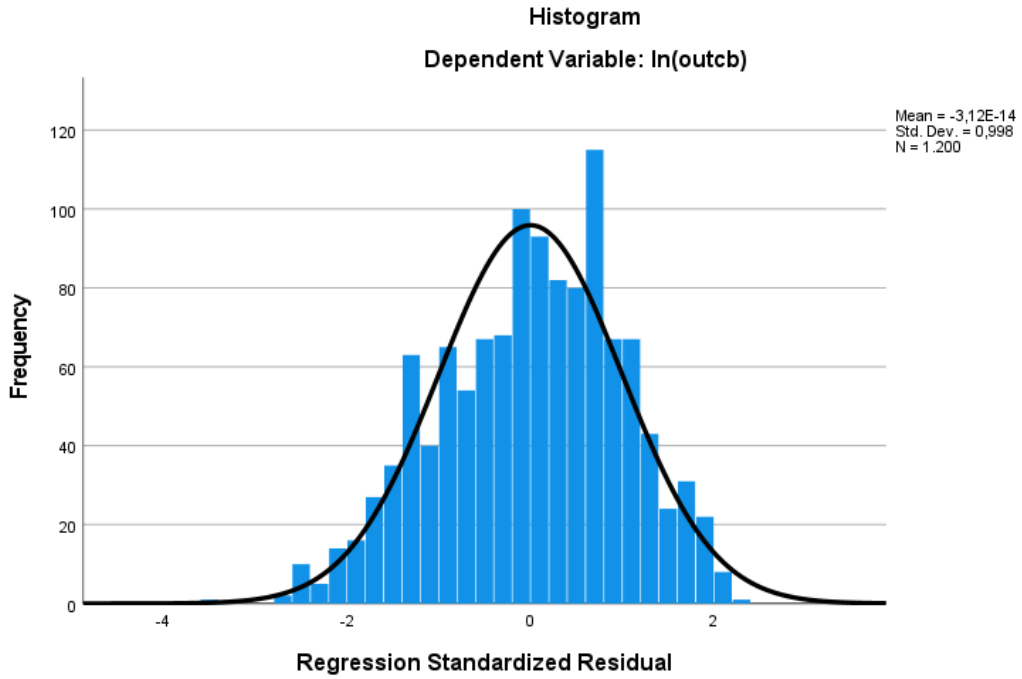
Inbound Cross-Border

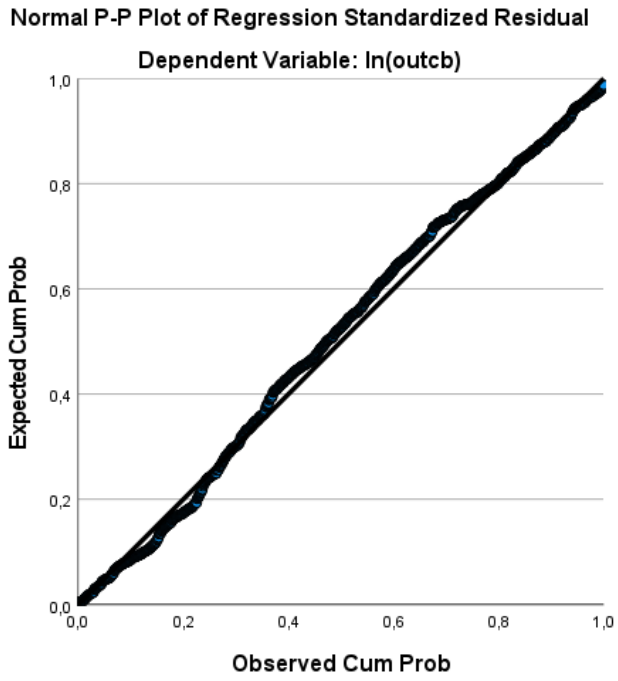


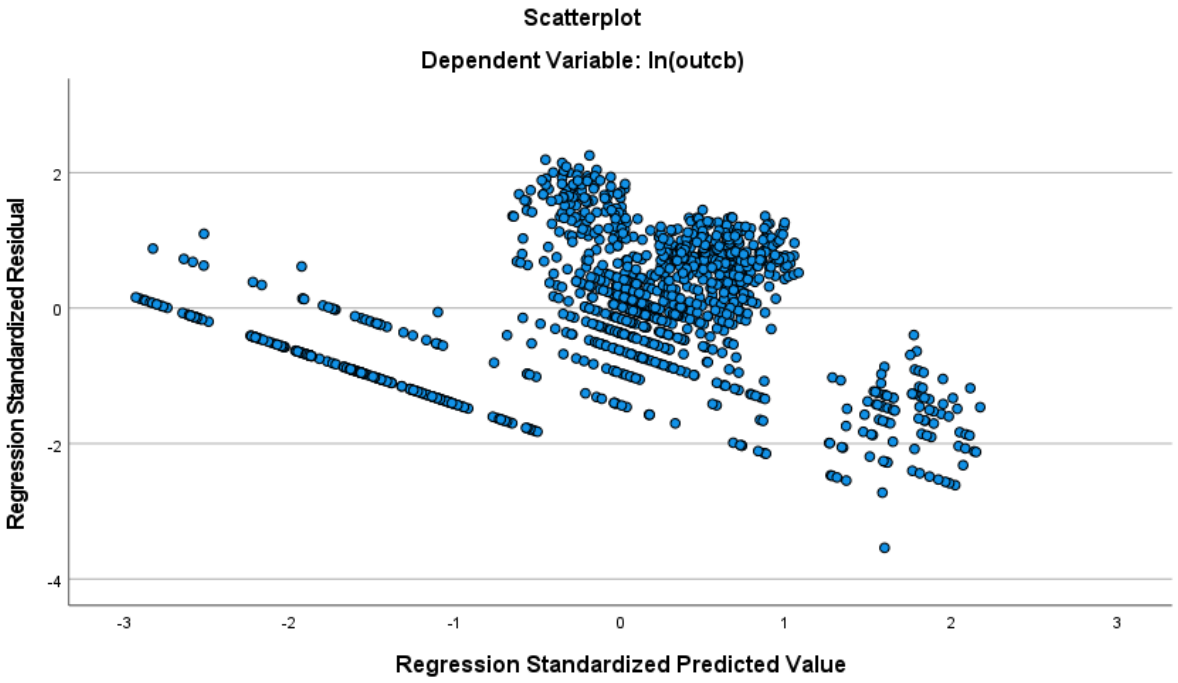




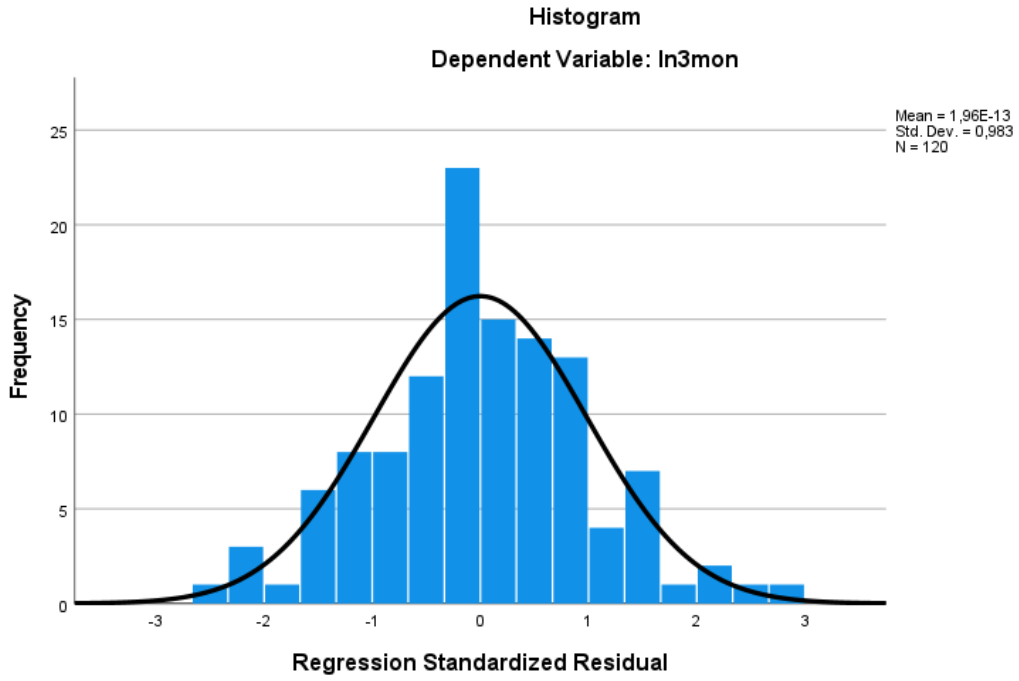
Outbound Cross-Border

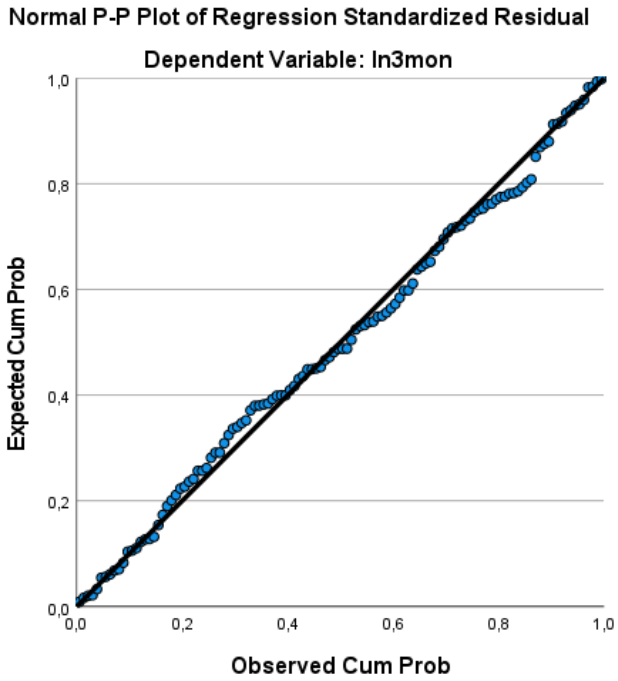


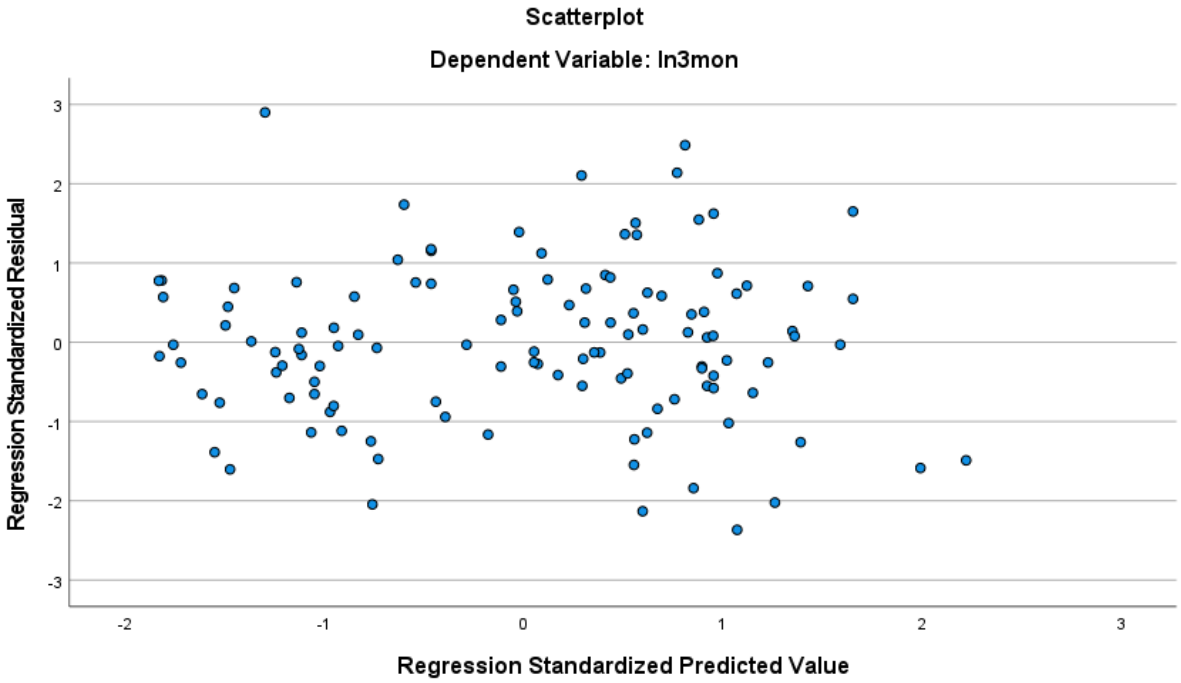

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: ln(outcb)
Expected Cum Prob
Observed Cum Prob
0,0
0,2
0,4
0,6
0,8
1,0


Scatterplot
Dependent Variable: ln(outcb)
Regression Standardized Residual
Regression Standardized Predicted Value
2
0
-2
-4
-3
-2
-1
0
1
2
3

Intra-EU


Histogram
Dependent Variable: ln3mon
Mean = 1,96E-13
Std. Dev. = 0,983
N = 120
Frequency
25
20
15
10
5
0
-3
-2
-1
0
1
2
3
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: ln3mon
Expected Cum Prob
1,0
0,8
0,6
0,4
0,2
0,0
0,0
0,2
0,4
0,6
0,8
1,0
Observed Cum Prob


Scatterplot
Dependent Variable: ln3mon
Regression Standardized Residual
Regression Standardized Predicted Value
3
2
1
0
-1
-2
-3
-2
-1
0
1
2
3

Appendix IV: VIFs

Domestic	GB	FR	DE	ES	SE	IT	BE	GR	EU
ln(EPU_3months)	1,004	1,001	1,002	1,058	1,003	1,017	1,017	1,002	1,001
Firm Size	1,275	1,228	1,168	1,336	1,343	1,338	1,343	1,368	1,170
MTB	1,002	1,003	1,008	1,034	1,021	1,021	1,120	1,010	1,000
Lev	1,046	1,492	1,302	1,132	3,196	1,159	1,947	1,237	1,023
ROA	1,071	1,564	1,234	1,135	3,194	1,068	2,217	1,231	1,038
Cash/TA	1,211	1,194	1,176	1,226	1,268	1,107	1,439	1,217	1,137
Sales Gr.	1,002	1,007	1,068	1,014	1,004	1,018	1,027	1,019	1,001

Inbound-CB	BE	HR	DE	IT	FR	ES	GR	IE	NL	SE	UK	EU
ln(3mon)	1,210	1,422	1,151	1,506	1,200	1,151	1,003	1,308	1,748	1,084	1,126	1,019
lagged dv 1	1,156	1,052	1,495	1,369	1,050	1,267	1,032	1,096	1,285	1,330	1,142	1,620
EFI	1,061	4,183	1,579	2,110	3,700	1,061	2,080	1,596	1,458	1,354	1,416	1,822
ln(gdpgrowth)	1,231	4,724	2,582	1,960	1,044	1,392	2,129	1,682	3,162	1,141	1,757	1,241
Tax/gdp	1,221	9,451	2,372	2,941	3,634	1,131	2,476	2,138	2,771	1,147	1,835	1,150

Outbound-CB	BE	HR	DE	IT	FR	ES	GR	IE	NL	SE	UK	EU
ln(3mon)	1,214	1,431	1,094	1,601	1,231	1,164	1,019	1,309	1,724	1,125	1,142	1,021
lagged dv 3	1,171	1,039	1,250	1,118	1,119	1,060	1,071	1,286	1,153	1,258	1,234	1,666
EFI	1,067	4,200	1,379	2,103	3,999	1,061	2,080	1,800	1,451	1,159	1,533	1,987
ln(gdpgrowth)	1,223	4,607	2,499	1,872	1,041	1,236	2,115	1,746	3,094	1,084	1,705	1,242
Tax/gdp	1,235	9,373	2,326	2,770	3,658	1,079	2,555	2,116	2,949	1,361	1,872	1,119

Intra-EU	Total	West North	North West	West East	South East	North East	North South	South North	East North
ln3mon	1,741	1,503	1,499	1,552	1,691	1,595	1,495	1,494	1,493
EFI	3,057	2,831	2,650	2,534	2,441	2,496	2,570	2,428	2,428
Tax GDP	2,223	2,143	2,152	2,566	2,273	2,147	2,146	2,159	2,172
ln GDP growth	1,545	1,547	1,600	1,680	1,572	1,513	1,534	1,578	1,525

Intra-EU	East West	West South	South West	East South	East East	North North	West West	South South
ln3mon	1,515	1,492	1,494	1,491	1,671	1,557	1,624	1,500
EFI	2,455	2,442	2,492	2,428	4,389	2,666	2,809	2,566
Tax GDP	2,152	2,154	2,142	2,142	2,155	2,164	2,168	2,150
ln GDP growth	1,517	1,641	1,539	1,523	1,515	1,514	1,670	1,508

Appendix V: Results with 6-month EPU average

Table ApV.1: Logit coefficient results of domestic M&A likelihood of eight European countries and of the entire European sample using the 6 month EPU average prior to the announcement. Dependent variable is the M&A dummy. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level .

	UK	FR	DE	ES	SE	IT	BE	GR	Europe
ln(EPU_6months)	-0,355 ***	-1,976	-0,045	1,085	-2,930 **	0,177	1,075	-200,226	-0,614 ***
	(0,110)	(2,866)	(0,779)	(2,458)	(1,391)	(0,875)	(3,825)	(2594,559)	(0,197)
Firm control	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry fixed	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	6393	4192	3255	1049	3528	1482	850	1173	23560
N dom M&A	573	6	43	6	146	22	5	1	813

Table ApV.2: OLS coefficient results of outbound cross-border M&A likelihood of eleven European countries and of the European Union using the 6 month EPU average prior to the announcement. Dependent variable is the natural logarithm of the number of outbound cross-border M&A announcements. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level

lnCB	**BE**	**HR**	**DE**	**IT**	**FR**	**ES**	**GR**	**IE**	**NL**	**SE**	**UK**	**EU**
ln(6mon)	-0,469 ***	0,126	-0,183 **	-0,113	-0,238	-0,405 **	0,020	-0,049	-0,378 **	-0,456	-0,035	-0,035
	(0,151)	(0,163)	(0,088)	(0,202)	(0,226)	(0,183)	(0,111)	(0,241)	(0,151)	(0,438)	(0,056)	(0,069)
Country control	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	119	119	119	119	119	119	119	119	119	119	119	1190
R2	0,121	0,063	0,339	0,281	0,063	0,260	0,040	0,107	-0,227	0,264	0,143	0,760

Table 5.3: OLS coefficient results of outbound cross-border M&A likelihood of eleven European countries and of the European Union using the 6 month EPU average prior to the announcement. Dependent variable is the natural logarithm of the number of outbound cross-border M&A announcements. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level

outCB	**BE**	**HR**	**DE**	**IT**	**FR**	**ES**	**GR**	**IE**	**NL**	**SE**	**UK**	**EU**
ln(6mon)	-0,504 ***	-0,013	-0,055	-0,469 **	-0,487 ***	-0,378 **	-0,100	0,128	-0,198	-0,094	-0,115 *	-0,027
	(0,168)	(0,111)	(0,089)	(0,229)	(0,164)	(0,181)	(0,075)	(0,234)	(0,139)	(0,330)	(0,059)	(0,063)
Country control	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	119	119	119	119	119	119	119	119	119	119	119	1190
R2	0,131	0,038	0,195	0,074	0,181	0,090	0,061	0,237	0,097	0,182	0,208	0,831

Table 5.4: OLS coefficient results of intra-EU M&A using the 6 month EPU average prior to the announcement. Dependent variable is the natural logarithm of the number of total intra-EU M&A announcements. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level.

	Total
Ln6mon	-0,511 ***
	(0,099)
Country control	yes
N	120
R2	0,483

Table 5.5: OLS coefficient results of intra-EU M&A using the 6 month EPU average prior to the announcement. Dependent variable is the natural logarithm of the number of total intra-EU M&A announcements between the subregions. Standard errors are reported in parentheses. Significance is shown using *, **, *** for respectively the 0.1, 0.05 and the 0.01 level.

	West→ North	**North→ West**	**West→ East**	**South→ East**	**North→ East**	**North→ South**	**South→ North**	**East→ North**
Ln6mon	-0,107	-0,253	-0,560 **	-1,374 ***	-0,485	-0,224	-0,264	-0,011
	(0,196)	(0,188)	(0,256)	(0,288)	(0,300)	(0,305)	(0,304)	(0,266)
Country control	yes	yes	yes	yes	yes	yes	yes	yes
N	120	120	120	120	120	120	120	120
R2	0,256	0,295	0,471	0,406	0,077	0,154	0,072	0,025
	East→ West	**West→ South**	**South→ West**	**East→ South**	**East→ East**	**North→ North**	**West→ West**	**South→ South**
Ln6mon	-0,297	-0,085	-0,128	-0,118	-0,671 ***	-0,220 *	-0,655 ***	-0,179
	(0,302)	(0,191)	(0,225)	(0,305)	(0,204)	(0,132)	(0,143)	(0,252)
Country control	yes	yes	yes	yes	yes	yes	yes	yes
N	120	120	120	120	120	120	120	120
R2	0,064	0,152	0,128	0,028	0,641	0,22	0,418	0,158