

# **Cross-border Mergers & Acquisitions and Policy Uncertainty**

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## Abstract

This thesis examines the effect of policy uncertainty on cross-border mergers and acquisitions. I find that only medium investor protection countries reject the hypothesis indicating a positive relationship. Moreover, I provide evidence that countries with weak and strong investor protection react negatively at a policy uncertainty shock. The results are robust for political sensitive and manufacturing industries. I also show that policy uncertainty affects the likelihood of cash financing at cross-border deals using the method of instrumental variables.



# Contents

1.1. Introduction . . . . .	1
2.1. Mergers and Acquisitions . . . . .	5
2.2. Neoclassical Theories . . . . .	5
2.3. Behavioral Theories . . . . .	6
2.4. M&As as irreversible investments under uncertainty . . . . .	7
2.5. Policy uncertainty and M&As . . . . .	8
2.5.1. Cascading effects . . . . .	9
2.6. Investor protection as a determinant . . . . .	10
2.6.1. Investor Protection Origin . . . . .	10
2.7. Other determinants of cross-border M&As . . . . .	11
2.7.1. Governance Effectiveness . . . . .	12
2.7.2. Politically Sensitive Industries . . . . .	12
2.7.3. Manufacturing Industries . . . . .	13
2.8. M&A activity variation and Method of Payment . . . . .	13
3.1. Main Hypothesis . . . . .	15
3.2. Other hypotheses . . . . .	16
4.1. Hypothesis Testing . . . . .	17
4.1.1. Testing the main Hypothesis 1 . . . . .	17
4.2. Deal level Decomposition . . . . .	18
4.2.1. Logistic Model . . . . .	18
4.2.2. Endogeneity Control . . . . .	19
5.1. Data and Data Manipulation . . . . .	21
5.1.1. Variables description . . . . .	22
5.1.2. M&A Activity Description . . . . .	22
5.1.3. EPU index . . . . .	23
5.1.4. Other Macroeconomic Determinants . . . . .	23
6.1. The impact of policy shocks on cross-border merger activity . . . . .	29
6.1.1. Interpreting the dynamics . . . . .	32

6.1.2. Why do policy shocks have a different impact on acquirers from Medium Investor Protection countries? . . . . .	33
6.2. Analysis of deal level characteristics . . . . .	34
6.2.1. Method of payment Likelihood and Investor Protection . . . . .	34
6.2.2. Method of payment likelihood and Governance Effectiveness . . . . .	34
7.1. Robustness check . . . . .	39
8.1. Discussion . . . . .	41
8.2. Limitations and Further Research . . . . .	42
9.1. Academic references . . . . .	43
9.2. Non-Academic References . . . . .	47
<b>A. Descriptives and Summary Statistics</b>	<b>49</b>
<b>B. Logistic Results</b>	<b>55</b>
<b>C. Policy Uncertainty on cross-border M&amp;As through countries</b>	<b>61</b>



# Chapter 1.

## 1.1. Introduction

*“Uncertainty is often a deal breaker. [...] There is added pressure because any deal that is signed now will have to gain regulatory approval under a new administration ...”*

— June 2016, The New York Times

Mergers and acquisitions are confidence driven and this is well documented in literature. Bernanke (1983) asserts that increases in uncertainty lead firms to defer investment. Pastor (2013) argues that “policy uncertainty impedes economic growth, investment, and employment,” the costly to reverse choices are postponed due to the returns from waiting. Moreover, Bonaime et al. (2016) document the immediate negative effect of policy shocks on M&A activity. Although many other papers focus on merger decisions in periods of uncertainty (Cao et al. (2015)) or policy uncertainty (Atanassov et al. (2015)), there is a research gap dealing with cross-border merger activity amid policy uncertainty. As cross-border merger activity I define the integration of two companies from different countries. This thesis aims to fill this gap, regarding the international cross-border M&A activity during policy shocks, which indicate contagion effects, in view of behavioral bias of managers.

The goal of this thesis is to delve into the cross-border mergers and acquisitions in periods of policy uncertainty. The research question that I investigate is as follows: *How does policy uncertainty affect the cross-border merger activity internationally?* I predict that domestic policy uncertainty proceeds as a hedging incentive for cross-border mergers and that behavioral bias twist this effect. This statement finds support in two theories. Under the neoclassical theory, industries capture the policy shocks with reorganization



and restructuring techniques such as mergers and acquisitions. In contrast, less than rational managers take action cross-border while policy uncertainty is high, driven by psychological bias or misvaluation. Indeed, both of these views are valid as the conclusion confirms, although they provide different frames to approximate the topic.

As the figures in the Appendixes show merger activity and policy uncertainty manifest trends. In 2007 there is a peak for cross-border merger activity while the lowest volume appears to be in 2009. On the other hand, policy uncertainty indicates the highest points in 2009 and 2012 and smooths in 2007. Consequently, there is evidence of a negative relationship between policy uncertainty and cross-border merger activity.

Thus far, I have analyzed the trends of M&A and of policy uncertainty. For many reasons academia, policy principles and managers care about policy uncertainty on merger activity. In spring 2016, Brexit concerns marked the largest EPU (Economic Policy Uncertainty) index spike accelerating the postponement of investments and new projects while fears of an unexpected presidency in the US further slowed merger and acquisition activity. To that end, global deal volumes in the first half of 2016 fell by 23 percent (Financial Times (2016)). In other respects, periods of prolonged policy uncertainty coincide with decreases in the volume of merger activity. Hence, there is evidence and intuition that policy shocks affect M&As.

Whereas risk is quantifiable randomness, uncertainty in all its aspects is not, because of insufficient worldview or the constant changes that do not allow us to measure precisely our expectations about the future. Thus, because policy uncertainty cannot be quantified, I measure it with the use of proxy indexes. There are plenty of papers (Arbatli et al. (2017), Davis (2014)), financial applications (Moody's (2016), Deloitte (2016)) and federal, congressional and policy testimonials (Federal Reserve (2017), US Senate Committee (2013), New Zealand Reserve Bank (2016)) that extract information from the EPU index developed by Baker, Bloom, and Davis (2013). Accordingly, for the measurement of policy uncertainty, since there are no forward-looking measures (predictive value) available in the literature, I also use the EPU index.

In the thesis, I examine subsamples of 9 countries (Australia, Canada, India, Japan, Germany, South Korea, France, Netherlands, Spain) as suggested by LaPorta et al. (1998), who indicated the effect of legal origins, that capture the differences in the legal systems among countries, in finance. As follows, I show the relative importance of economic policy uncertainty. The cross-border direction of the asset reallocation

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falls under the hypothesis that policy shocks are internalized shocks to administration changes. In order to describe the cross-border merger activity, I conduct a twofold deal analysis, that is, I analyze the method of payment and deal financing. For the deal level analysis, I employ as instrumental variables the investor protection and governance effectiveness, isolating the shock-event from the behavioral bias. Investor protection in the home country as instrumental variable bears an intuitive rational as M&As are confidence driven (Rossi and Volpin (2002)). In addition, governance effectiveness is strongly linked with administrative decisions and the structure of the legal origin (LaPorta et al.(1998)). Hence, I delve into the analysis of the cross-border activity from the lens of neoclassical theory.

I find that acquirers from medium investor protection environments benefit from the policy shocks at both measures of merger activity, deal value and volume of M&As. Germany and Canada are exceptions from their clusters (investor protection) due to contagion effects of policy uncertainty as documented in the literature (Klobner and Sekkel (2014), Tiwari et al. (2015)). At deal level, the results show statistically significant results for both instrumental variables for low and high investor protection countries. On the grounds that the nature of the sample and the methodological approach allow the generalizability of the results, these findings raise the awareness for selective sampling in future studies.

Next, I study the cross-border activity as an irreversible investment under uncertainty, as implied by LaPorta et al. (1998). M&As are irreversible investments as it is costly to cancel this decision. The expectations on policy fluctuations and the incentives of managers for exploitation purposes are important reasons to estimate a regime switching model. I model an MSVAR in order to capture the assigned probabilities. The results diverge in the varying levels of governance effectiveness and investor protection, and suggest market inefficiency and less than rational managers. It is obvious that there is an effect of the surrounding uncertainty on the instrumental variables. Thus, I provide insight on the side-effects of policy uncertainty as there is an impact on administration authorities and confidence levels. This empirical strategy lies upon the behavioral theories (Roll (1986), Baker et al.(2012), Malmendier and Tate (2006), Giglio and Shue (2014), Shleifer and Vishny (2003)) on merger activity. Correspondingly, I generate a spherical approach on the topic.

I find that behavioral bias are major determinants of the cross-border merger activity. Overconfidence (Malmendier and Tate 2012), herd behavior ( Griffin et al. (2011), and representativeness bias (Kahneman and Tversky (1974)) , as well the

misvaluations (Rhodes-Khorp et al. (2003), incentives (Coles et al. 2006) and noise or fake signals (Giglio et al. (2001), deceive the rationality of managers. I observe that countries from low or high investor protection systems and of poor governance effectiveness present more persistent impulse responses. They indicate extreme peaks and wide bands of confidence intervals. The above findings could be the stepping stone for further research, as academia and managers should be attentive of such bias (Cao (2015), Julio and Yook (2012), Erel et al. (2012)).

The main contribution of this thesis is the approach in the analysis of the impact of policy uncertainty on the volume and value of mergers and in the light of two strands of literature. To the best of my knowledge, there are no studies that link behavioral finance with cross-border M&A activity in periods of increased policy uncertainty. On that account, future researchers could validate the findings of this thesis studying other samples or industry classifications.

The rest of the thesis is organized as follows. Chapter 2 briefly reviews the theories on mergers and acquisitions, the impact of policy shocks on M&A, the determinants and the method of payment variation. Chapter 3 describes the hypotheses development and chapter 4 exposes the methodology. At chapter 5, I present the data and describe data manipulation techniques. The next chapter outlines the results, following a discussion on them and chapter 7 shows the robustness checks. Last, chapter 8 concludes and enquires into limitations and suggestions for further research.

# Chapter 2.

Previous research analyzes the impact of policy shocks on cross-border M&As on a sample of individual countries but significantly less work documents international evidence and the behavior of the determinants for an outbound decision at a deal level. In this regard, the literature review accords to M&As literature on motives, determinants for cross-border decisions and method of payment. In Section 2.1, I present the neoclassical theories on M&As classified by the nature of their determinants and in Section 2.2 the behavioral theories. Section 2.3, epitomizes the up-to-date work on the impact of policy shocks and the subsequent sections the other two axes of M&As on this thesis: the determinants of cross-border activity and the variation on the method of payment.

## 2.1. Mergers and Acquisitions

Mergers and acquisitions refer to the integration of assets or companies through financial transactions. Merger, acquisition, consolidation, tender offer, acquisition of assets and management acquisition are the various types of this integration. In this thesis I focus on the mergers and acquisitions as extracted from the databases Thomson One and Zephyr. The following sections analyze all the varieties of mergers and acquisitions.

## 2.2. Neoclassical Theories

The neoclassical theories are well examined in the literature and could be clustered in strategic and nonstrategic depending on their determinants: on *exogenous*, meaning governmental environment shocks and on *endogenous* factors which trigger issues

of sustainability and profitability via strategic interdependences among firms. The following paragraph present the non-strategic theories related to the approach of this thesis.

Economic shocks, regulatory changes, and technological innovations are the main drivers which shape merger waves due to industry reorganizations. Policy changes as economic shocks prompt deregulations or technological innovations. Gort (1969) deals with the impact of technological changes through economic shocks in mergers activity and valuation. A technological innovation in the production maybe require changes in the organization's structure such as plants, machinery, human capital and financial sources through mergers. Mitchell and Mulherin (1996) perceive the takeover as the least-cost method for industry restructuring as a response to either a positive or negative shock, shed light on industry level merger activity. Deregulations and innovations in financing technology alternate more the industries than changes in input costs. Industry restructuring is a response to the environmental changes. Moreover, capital liquidity and ratios dispersion in periods of increased uncertainty provoke merger waves. Hafford (2005) indicates the clustered industry shocks as drivers of merger waves, as a response to the environmental changes and highlights that market timing has little explanatory value relative to capital liquidity accompanied to the reduction of financial constraints. Finally, Jovanovic and Rousseau (2002) examine through Tobin's Q theory merger waves as Q dispersion waves. M&As are the route for better future reallocation opportunities when there is a dispersion at ratios of market value to the replacement cost of capital between the firms. Therefore, the industry reorganization could occur in several ways, as described above, and form a new merger wave.

### **2.3. Behavioral Theories**

There is also a behavioral view on the motives of mergers and acquisitions, as the neoclassical theories do not comply with the markets. Stock market valuations, overconfidence on risk perception and CEO traits, expectations, incentives and market anomalies are well-examined in literature. Shleifer and Vishny (2002) highlight the impact of the relative market mispricing of merging firms on the merger activity and merger waves. Overvaluation, as they show, is in many cases the incentive for being an acquirer. On the other hand, undervalued firms are targeted more often.

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Andrade et al. (2001) and Mitchell and Stafford (2000) provide statistically insignificant evidence of low long-run bidder returns as a reaction of the market on merger activity. Except the behavioral bias, determinants in the decision-making process (preferences) also impact on M&As. Target CEOs' retirement preferences, as Jenter and Lewellen (2015) highlight, increase the takeover possibility while premiums and announcement returns decline after the age of 65. Concluding, the behavioral theories provide another approach on merger motives, when the rational theories fall apart.

## 2.4. M&As as irreversible investments under uncertainty

Among all the other investments, mergers and acquisitions, have been examined in the literature in a three-dimensional framework of uncertainty, irreversibility and the choice of timing. First Tobin (1958) formed **a theory channel for investment** through Keynes and Leontief theories on liquidity preference on the cost of capital. The subjective to investor bias and to changes in monetary and fiscal policy estimates of the risk, increase borrowing cost, cutting investment and spending. Another critical point of view for the hypothesis of mergers and acquisitions amid uncertainty is the real options theory. Arrow (1959) highlighted the functions of the **theory of behavior under uncertainty** and introduced the importance of information as the basic difference between the worlds of certainty and uncertainty, examined the economic phenomena related to the latter as a source of it. Bernanke (1983), based on considerations such as real options, built **a theory on the irreversibility of choices under uncertainty** developing that the significance of random changes in the environment increases the returns to waiting for information (the option value of waiting). Thereafter Dixit and Pindyck (1994) established **the theory of irreversible investment under uncertainty** which proximate to the topic of the thesis. Contrary to the orthodox view on quantitative and qualitative effects of the framework of uncertainty, they perceive volatility and economic uncertainty as more important factors than tax and interest rate changes, making firms cautious when the choices are partially or completely irreversible. They articulate why neoclassical theories fail to explain the investment behavior of firms in a more dynamic framework. The last strand of literature focus on an environment of uncertainty as a trigger for the financial constraints such as credit spreads on mergers decisions as Gilchrist, Sim, and Zakrajsek (2010) indicated on their research paper. As follows, the option value of waiting is the most advanced scheme under the spectrum

of behavioral theories in order to explain the potential weaknesses of the neoclassical theory.

The incentive of this thesis lies in the neoclassical rational hypothesis, disposed to acquiesce in the expectations about mergers activity being affected by environmental changes. Policy changes are shocks in which firms and industries act in response to absorb them. Notwithstanding the evidence, the behavioral theory is employed to confirm the results as the decision for going abroad embeds managerial characteristics provided that there are contagion effects of policy uncertainty.

## **2.5. Policy uncertainty and M&As**

Theory suggests several reasons, why economic policy uncertainty slows down the world economy by distorting the view of managers and investors. Bloom (2009) shows that large uncertainty shocks in the US can lead to sharp recessions. This occurs both because uncertainty makes firms more cautious about investing and hiring, but also because it makes it harder to raise finance. Tight lending conditions in uncertain periods, squeeze the ability of firms to invest and consequently a number of firms proceed to an M&A. Julio and Yook (2012) unveil that uncertainties associated with a possible policy change increase the value of waiting to invest (updated beliefs on expected returns) as the outcome will have implications for how firms allocate assets and they find a decline in investment in the year of the government's election. Therefore, there is key evidence that policy uncertainty disrupts economy through the detriment of investments.

Turkey's attempted coup d'état prompted the downgrading of its economy from credit rating agencies and raised concerns about the rule of law and the government policy. External events like this, usually, have an impact on policy regulations. First, monetary and fiscal policy were unpredictable, non-transparent and weak to stabilize to reduce policy uncertainty (IMF(2015)). Second, the stability of the financial system, which struggles to recover (Cynamon et al. (2013)) from the crisis, was blocked. Last, the impact of a policy was lowered by uncertainty so a larger monetary and fiscal stimulus is needed for a given response (Stark 2009)). From the model of Pastor and Veronesi (2013) we conclude that government's policy tends to change when the economy is weak and therefore stocks are more volatile effectively providing put protection to the market. The asset pricing implications of their model show that

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political shocks, orthogonal to economic shocks, that derive from the potential change in policies, drive stock prices. These are indicators that policy uncertainty matters.

Remarkable evidence for the impact of policy uncertainty on investment decisions is demonstrated by Gulen and Ion (2015) who indicate a decline of 32% in corporate investments during a crisis. This investigation shows a strong negative relationship between capital investments and the median value of EPU index in a sample of European countries and Canada from 1987 to 2013. Higher levels of investing irreversibility, financial constraints of firms and industries of low competitiveness pronounce that are more related to policy instability. Additionally to these findings, lower levels of corporate investment slowdown the economic growth. This thesis aims to indicate an alternative way to correlate policy uncertainty with mergers although the use of the index does not avoid the fact that the two factors are endogenously determined. The development of models that endogenize uncertainty and the costs of policy changes is also a subject of this thesis.

### **2.5.1. Cascading effects**

In light of previous studies for EPU indices, a related point to consider is the international transmission of policy uncertainty across the sample of examined countries. Using the BBD index Klobner and Sekkel (2014) investigated the dynamics of policy uncertainty from 1997 to September 2013 for Germany, France, Italy, US, Canada, and the UK. The United States and the United Kingdom emerged as the net exporters of policy uncertainty to the remaining countries while Germany is underlined as the net importer for the whole sample period. Furthermore, Tiwari et al. (2015) scrutinized for both frequency and time-varying co-movement of the EPU indices which is more noticeable during the crisis period. They analyzed the synchronization and witnessed spillovers in selected major European countries which are more connected in consequence of trade dependences and monetary union. It is worth noting that the international spillover examined by Klobner and Sekkel (2014) highlights only the directional connectedness among indices and does not bear a causal interpretation. For instance, a fiscal stimulus in US that impacts on exchange rates and capital flows has a possible effect to its trading partners, regarding their reaction to these changes and their domestic policy stability. As a consequence of these studies, I should take into account potential comovement effects and their cause.



## 2.6. Investor protection as a determinant

It is undeniable that different national borders give another perspective for mergers and acquisitions due to their influence on the costs and benefits of the whole activity. Rossi and Volpin (2002) analyze the determinants of cross-border mergers and acquisitions. According to the authors, a cross-border deal plays a governance role by enhancing the level of investor protection for the targets. They provide evidence that effective investor protection is a requirement for both domestic and international mergers and acquisitions analyzing a large sample of deals from 1990-2001 in 49 major countries. Among their findings is the low-level activity of weak investor protection countries in contrast to medium investor protection origins and they examine the relationship between legal origin and investor protection. They conclude that one of the determinants is tax regime that alters acquirer's decision. Thus far, Rossi and Volpin (2002) first implement the findings of LaPorta et al. (1998) in their research and display investor protection as a requirement for mergers.

### 2.6.1. Investor Protection Origin

All these sources of endogeneity on grounds of differences in the nature and effectiveness of financial systems around the world could induce inconsistent estimations. LaPorta et al. (1996) attributed these differences in investor protection against expropriation by insiders and in 2008 they showed that legal origins outweigh political variables. The character of legal rules and the quality of their enforcement, as measures of investor protection, vary among countries in content and in their history of adoption.

Bonaime et al (2016) extract the exogenous variation in BBD index using variables that capture the policy makers disagreements over time and the exposure of economy in election events and find support in evidence of the strong negative impact of policy uncertainty on M&A activity. Withal, this thesis implies the legal origin, as determinant of financial development, to alleviate the threat of endogeneity among different countries of the sample. In conjunction with legal origin, measures of antidirector and creditor rights are used to control the quality of legal origins and rule of law variable to assess the law enforcement and the order tradition in each country.

Civil and common law are the two principal traditions that segregate the extent of investor protection among countries worldwide as a result of the empires that spread their legal systems across the colonies or by occupation.

Common law is English in origin and rules countries such as Australia, Canada and India, which have the strongest investor protection. The civil law system, which is not as flexible and fast moving as common law, consists of: French, German, Scandinavian and Eastern European law. French law countries have the weakest legal protection and investors at German origin law countries are medium to strong protected by law as concluded by LaPorta et al. (1998), who examined the legal origins and their economic consequences with several papers.

Investor protection is an important factor for the economic growth through the acceleration of financial development and of financial markets. The savings enhancement is followed by channeling these savings for investment opportunities and allowing for more efficient capital flow (Beck et al. 2000). Hence, investor protection rules the readiness to finance firms (La Porta et al. (1999)) and as to cross-border activities target companies are of lower investor protection and consequently the likelihood a completed deal is cross border is higher where investor protection is low (Rossi and Volpin (2002)).

A reflection of investor protection is the inverse attitude to own shares. La Porta et al. (1998) provide evidence of this negative relationship and that dispersed ownership of shares and the size of capital markets as well as the control of agency problem are incidental to higher quality of law enforcement.

## **2.7. Other determinants of cross-border M&As**

Accounting standards, macroeconomic performance, and financial markets growth are a few other determinants of cross-border mergers. Erel et al. (2012) using a sample of 56,978 completed deals between 1970 and 2007 suggest that national borders, accounting disclosure, and bilateral trade increase the likelihood of an outbound merger. Through an in-depth analysis, Reddy (2015) focuses on the host country's economic performance, political and cultural factors and financial markets development. On the other hand, Garita and van Marrewijk (2007) identify macroeconomic factors as underlying forces for cross-border merger activity. Financial openness and macroeconomic

performance are the most important contributors for the cross-border decision. Many other previous types of research focus on various determinants but this thesis analyzes the topic based mainly on investor protection as suggested by Rossi and Volpin (2002).

### **2.7.1. Governance Effectiveness**

LaPorta et al. (1998) question the mechanisms of countries with poor law enforcement to cope with the weaknesses of their legal origin. "Bright-line" rules and high ownership concentration are highlighted as adaptive strategies and this provides insight in the governance nature of the countries. Therefore besides legal origin, the country governance characteristics clarify the degrees of freedom of corporate governance. Insofar as the bright-line rules are legal interventions related to retention and distribution of capital and higher ownership concentration is a reflection of investor protection, it is worthwhile to examine what lies beneath. The quality of law enforcement is already mentioned by LaPorta et al. (1998) but there are also other factors that in periods of policy uncertainty impact on the upcoming changes. Political stability, voice accountability, corruption control, governance effectiveness, regulatory quality and rule of law may differ among countries of the same legal origin. I examine the effect of policy shocks on these characteristics to avoid omitted variables bias.

### **2.7.2. Politically Sensitive Industries**

The prediction of the fourth hypothesis is based on the findings of Atanassov et al. (2015) about the increase of the percentage at R&D investments for politically sensitive industries in election years. The classification of politically sensitive industries is according to Fama and French (1997) 48 industries. With the dummy approach I set one for each company that belongs to one of these categories and zero otherwise and run the models. Butchkova et al. (2011) controlling for industries more dependent on trade, contract enforcement, and labor provide evidence that equity return volatility is greater around elections. Idiosyncratic volatility according to their findings is more associated with global political risks while domestic uncertainty affects systematic volatility. With the rationale that regulatory changes influence more corporate decisions in these industries, the impact on M&A activity is consequent. Since VIX captures systematic volatility and based on the aforementioned results it will be used to control for domestic M&A activity. Based on these evidence from previous studies Athanassov

et al. controlled for these categories in environments of higher political uncertainty indicate that there is increased sensitivity. More specifically industries of health, pharmaceuticals, defense, petroleum and natural gas, tobacco, telecommunications and transportations increased their R&D intensity by 15%. Table at the appendix contains the characteristics for the identification of these industries as were identified by Heron et al. (1999) and as they were firstly assorted in 48 categories from Fama and French (1997).

### **2.7.3. Manufacturing Industries**

A related point to consider is that changes of specific policies, such as energy market prices and interest rate movements have an impact on manufacturing companies and thus they tend to operate more globally and compete internationally. To the contrary non manufacturing industries are heavily affected by uncertainty over the social security policy and labor market regulations (Masayuki, 2013). Subsequently managers among these broad categories perceive policy uncertainty in a different way. I expect cross-border merger activity will decrease in periods of increased policy uncertainty due to the sensitivity of these industries in environmental changes.

## **2.8. M&A activity variation and Method of Payment**

Previous research reports that merger activity varies due to differences in determinants but there is no significant reference relative to the impact of these determinants on the method of payment. From the behavioral point of view Ferris et al. (2013) notice that cash payments in mergers are the result of CEOs overconfidence. On the other hand Hafford (2005), lying upon the neoclassical theory, indicates that firm-level and partial-firm level acquisitions were cash financed since the hypothesis predicts the quick reallocation of assets in contrast to the behavioral hypothesis that doesn't predict cash in managerial incentives. Rossi and Volpin (2002) at their paper, reveal a decline in cash financing of cross-border M&As at environments of higher shareholder protection. In cases of intense competition for a merger or acquisition, there is the incentive to immediately close the deal which suggests cash financing (Berkovitch and Narayanan (1990) & Fishman (1989)). Jovanovic and Rousseau (2011) applying the Q theory of investment on M&As state that firms merge with other firms when there is

Q dispersion using cash but not only for "free cash flow" reasons. As stated above, external shocks and CEOs' bias, have an impact on cash financing. Along these lines, though, there is evidence that the method of payment varies in agreement with the merger activity.

I examine the sensitivity in the choice of payment method at policy uncertainty shocks and the relative impact among legal origins based on evidence from literature. Dutta, Saadi and Zhu (2013) provided evidence for a positive reaction of market at stock financed cross-border acquisitions as an overestimation for the synergy gains. Although, stock financed deals underperform cash financed deals in the long run, Dutta et al (2013) show that stock financing is more preferable as mitigating information asymmetry and lower corporate governance rating at cross border deals. In support to this, Huang et al (2016) attribute this choice in method of payment to the remedy of failure and overpayment in riskier deals. According to Karampatsas et al (2012) cost of debt is an important determinant of the selected method since higher spread pronounce a decreasing use of cash. Market timing and growth opportunities theories also indicate a preference in stock financing to rule out underinvestment problems. Faccio and Masulis (2005) controlled for information asymmetry as a determinant of payment method on account of the incentives for stock use with the relative size and private variables. The pecking order theory of Myers(1984) recommends the financing hierarchy which is also considered as a determinant of means of payment by many previous studies. As well Jensen (1986) investigated the value destroying investments conducted with cash resulted from the strong balance sheet of potential acquirers.

# Chapter 3.

## 3.1. Main Hypothesis

From the large stream of literature, many questions arise for the cross-border activity in periods of increased policy uncertainty. The main hypothesis is :

*H1: Do policy uncertainty shocks decrease cross-border mergers and acquisitions?*

Is this a hedging mechanism reaching through all countries and types of industries? Do other elements at acquirer's level affect the decision for cross-border M&As? The key objective of this thesis is to describe the cross-border merger activity in periods of increased policy uncertainty and answer these questions.

The neoclassical theory on merger waves holds for the main hypothesis. Mergers are an internalized response to environmental changes in an attempt of rational managers to take advantage of them. This fact prevents the failure of deals which according to literature is also a determinant for M&As. The intuition for this hypothesis is an application of Le and Zak (2006) findings that firms deal with political uncertainty through outward investment and not at the home country. While political uncertainty is a more broad and pervasive situation, policy uncertainty is related with administration of each regulator, thus I expect a similar but of higher frequency application of Le and Zak (2006) findings. The main challenge is that there are two basic theories on M&As. Therefore, I approach the topic from two different views, neoclassical theory and behavioral theory.

## 3.2. Other hypotheses

H2: *Political sensitive industries decrease more their cross border M&A activity while the policy uncertainty is increased.*

H3: *Manufacturing industries decrease more their cross border M&A activity while the policy uncertainty is increased.*

Hypotheses 2 and 3 are formed on the grounds that there is an increased sensitivity of these two types of industries in environmental changes. Policy matters influence more the industries which are related to governmental decisions and macroeconomic factors.

H: *Policy uncertainty increases the deal payments by cash*

Merger activity requires a quick close of the deal when there is a pervasive uncertainty in the environment and for this reason a cash payment is preferred.

# Chapter 4.

## 4.1. Hypothesis Testing

This section describes the rationale for VAR model for estimating the relationships between policy uncertainty measures and M&A activity. It also covers stationarity and units roots, Granger Causality, model specification, and modeling dynamics. Additionally to VAR , in order to estimate the relative importance of each predictor and the interaction with the other variables among investor protection classification a logit model is the appropriate type of predictive analysis to conduct as the dependent variable is categorical.

### 4.1.1. Testing the main Hypothesis 1

VAR is adopted for examining the dynamics between economic policy uncertainty and cross-border M&A activity for several reasons. Economic policy uncertainty is not a discrete event but generated continuously over periods and VAR allows to investigate immediate and lagged term effects. Moreover VAR is suitable for examining the direct and indirect feedback among the endogenous variables while it captures carryover effects through the impulse response functions. IRFs summarize the resulting causal impacts of policy uncertainty shocks to M&As volume. Finally VAR model is robust and controls for deviations of assumptions for trends, seasonality, reverse causality, non stationarity and serial correlation (Luo (2009), Luetkepohl (2011 )) . VAR models the relationship among economic policy uncertainty and M&A activity as following:

$$\Pr(y_t|Y_{t-1,s_t}) = \{f(y_t|Y_{t-1})\} \quad (4.1)$$



Where  $Y_t$  the endogenous variables: measures of M&A activity, policy uncertainty, control variables. I carry out the analysis in the following steps: 1) Estimate the stationarity properties 2) Test for causal relationship among the variables through Granger Causality test. 3) Estimate dynamics of carryover effects through analysis of the impulse response functions. The carryover effects capture the probability that the subjects perform in more than one conditions. 4) Estimate the contribution of the metrics using variance decomposition. Finally, to check the generalizability of the results across categories, I run an additional VAR to reveal managerial motives.

## 4.2. Deal level Decomposition

### 4.2.1. Logistic Model

I conduct a deal level study in order to describe the effect of policy uncertainty on cross-border merger activity. By following Bonaime et al(2016) I employ the logit model in order to delve into the endogeneity problem of cross-border M&As and to avoid the inconclusive evidence resulting from VAR. With logistic regression, I intend to examine the presence or absence of a relationship between the categorical dependent variable of payment and financing method in different legal systems and the EPU index.

It could be assumed linearity of independent variables and log odds while it does not need a linear relationship between the dependent and independent variables. In this thesis, as the dependent variable is the method of payment and the independent policy uncertainty, I cannot infer the linearity of these two factors due to nonlinear changes in policy uncertainty. Moreover the independent variable and the error terms are not assumed to be multivariate normal. The dependent variable is coded since it could take different values e.g. 0 or 1.

$P_i = \text{Prob}(\text{Method of payment}_i = 1 \mid \text{EPU}_i + \text{Macroeconomic determinants}_i + \text{error term})$

where Method of payment  $i = 1$  if Method of payment is the questioned and Method of payment  $i = 0$  if other method of payment employed.

$P_i = \text{Prob}(\text{Deal Financing } i = 1 \mid \text{EPU}_i + \text{macroeconomic determinants } i + \text{error term})$

where Deal Financing  $i = 1$  Deal Financing is the questioned and Deal Financing  $i = 0$  if othe method of deal financing was employed.

The logistic regressions are run separately for each legal system and they are also instrumented by governance characteristics to avoid endogeneity problems due to the nature of the sample.

#### **4.2.2. Endogeneity Control**

The use of macroeconomic indexes and the EPU index does not avoid the endogeneity problem which describes the relation of the explanatory variable with the error term. To mitigate any concerns regarding omitted variables bias, measurement error and reverse causality or simultaneity, the method of instrumental variables is employed. The two instruments that I imply are the investor protection origin and the governance effectiveness. This method measures only the magnitude of association and does not capture the direction of causation, as it is necessary for the analysis of this thesis.



# Chapter 5.

## 5.1. Data and Data Manipulation

The data about cross-border mergers and acquisitions deals for Germany, Japan, South Korea, Australia, Canada, India, Netherlands, France and Spain are gathered from Thomson One and Zephyr and macroeconomic variables from Worldbank, IMF statistics and other sources. The examined countries are selected from three different continents to provide evidence around the world about the effect of regime uncertainty.

The countries are classified according to LaPorta et al. (1997,1998,1999) (LLSV index) by legal origins at high, medium and low investor protection countries. The sample of the companies from English, French and German legal background (not available data for EPU for Scandinavian and limited sample of Eastern European origin) is controlled for politically sensitive and manufacturing industries as they cited from Rossi and Volpin (2004). The sample period is January 2004 to December 2014 and aggregated monthly in order to match the availability of monthly data of BBD index. The indices were normalized with a mean 100 to enter the VAR model and in order to examine the impact of policy instability for this period without carryover effects and GDP-PPPadjusted-weighted to get the average for each investor protection level. There is evidence from previous studies about comovement of the indexes as part of EU zone as will be discussed in a following section. Figure 5.2 presents the policy uncertainty levels for the classified sample and indicate simultaneous peaks and historic highs. The data manipulation adds value to the methodology and the results as I explain below.

### 5.1.1. Variables description

The VAR model includes a variety of endogenous and exogenous variables depending on the hypothesis. For the two hypothesis related to political sensitive and manufacturing industries I use the deal description (volume or value) or 0 when there is a month without these type of industries active as endogenous variables.

For the logistic model I set as dependent variable the method of payment or the deal financing in order to provide a deal level analysis. The independent variables are the EPU index and the macroeconomic determinants and the subject is hypothesis 6. I use as instruments investor protection origin and governance effectiveness. The investor protection origin variable has values from 1 to 3 according to the level of protection as LaPorta et al. (1998) indicate. The figure 5.1 below summarizes the coefficients of the impact of policy uncertainty instrumented with investor protection origin. Finally for the appropriate use of governance effectiveness of legal systems according to LaPorta et al(1998), I converted annual values of the indexes from Worldbank to qualitative time varying indexes based on percentiles. The indexes from the Worldbank are: Governance effectiveness, Corruption Control, Political Stability, Regulatory Quality, Rule of law and Voice Accountability. With this set of data I run the logistic model and provide evidence for the effect of policy uncertainty on deal level.

### 5.1.2. M&A Activity Description

The impact of policy uncertainty at mergers and acquisitions activity will be examined at deal level dimension for cross borders deals and controlling for political sensitivity of industry and manufacturing industries. The volume of M&A activity describe the ability of the acquirer country to reallocate control over corporate assets. One of the volume measures is number of completed cross border deals. The value of completed cross-border deals divided by real GDP growth to control for business cycles is an alternative measure. A minimum of 10 millions value was setted to consider the merger in the sample. Table 5.2 summarize the cross border deal value information and the plots in Figure 5.3 show the time varying ratio of cross border to total deals.

From 6.795 completed cross border deals in the eleven years the average value paid for the merger was lower when the acquirer came from a stronger investor protection environment and higher value for weaker origins. While the number of completed

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cross border deals does not vary significantly each year among countries the significant difference in the amount paid indicate that there are no more incentives for the latest to be more merger active abroad but the mergers are more sound. For example, in 2005 Netherlands' cross border deals had an average value of 1.429 million dollars (the highest among all countries between 2004-2014) because the deal value of the merger between Royal Dutch Petroleum Co and the UK based Shell Transport and Trading Co was 74.560 dollars. After careful observation of the highly paid deals for the weaker investor protection countries, it is worth to examine the trend of politically sensitive industries to merge abroad as they contribute to high annual means.

### **5.1.3. EPU index**

The EPU index is an application of Baker et al. (2014) research and has three components: newspaper articles, federal tax code provisions and forecasts. Going backwards in time, the EPU index shows a dramatic rise in the 1930 and after 1960 moves steadily upwards. The index is linked with changes in output, employment, stock price volatility and investment. There are many research papers and applications which employ EPU in order to conduct their analysis.

### **5.1.4. Other Macroeconomic Determinants**

To measure the net effect of policy uncertainty on M&As we'll control for some other factors that affect the cross border activity. I treat these variables as exogenous in order to capture the neoclassical theories.

Developed economies are awash with economic indicators which serve as lenses for investors, businesses, analysts and politicians. The below determinants are correlated with GDP real growth and oil prices with EPU. Therefore, in order to deal with multicollinearity issues, in a future robustness check could be used the PCA components of these determinants.

### **VIX Index**

VIX is a forward-looking measure and is widely used to capture market risk. The VIX index is strongly correlated with EPU although it is at a disadvantage to

reflect events that involve major policy concerns such as government battle over taxes and elections. It is often referred to as "investors fear gauge" and captures domestic economic uncertainty according to Buchkova et al. (2011).

Bhagwat et al. (2014) provided evidence that uncertainty as macrovolatility (VIX) agitate deal activity through firm level volatility distress. The intensity and timing of merger activity hinge on the risk levels implied by markets.

### **BCI Index**

The Business Confidence Index (BCI) is a leading economic indicator which captures the current situation of a country and the expectations about the future of the economy, thus in periods of uncertainty the generalized concerns it shows extreme lows. The domestic business confidence at acquirer's level is examined as a possible determinant for the direction of the investment decisions.

### **CPI Index**

Another one leading economic indicator is the Consumer Price Index (CPI). Understanding and modelling inflation as a determinant at investment decisions is important since it captures changes in money supply. Asset valuation amid periods of increased inflation may lead to the decision exercising the option of exit through acquisitions.

### **REER**

According to Blonigen (1997) exchange rate movements have an impact on the strategic decision for asset reallocation. The motives for cross-border activity are firm specific transferable assets which are not available in the host country. Erel et al. (2012) in line with Froot and Stein (1991) provide evidence of the impact of currency depreciation on cross-border activity trends in an imperfect capital market. On that account, REER and CPI could be considered as proxies for the asset valuation changes in the acquirer's home country.

## **Oil Prices**

Oil price shocks as control variable is motivated from the link between oil prices and real GDP growth since GDP data are of lower frequency than the sample-based monthly volumes of M&As by country. Moreover, structural oil price shocks are significantly associated with the fluctuations of economic policy uncertainty. Oil price shocks present a dynamic spillover with EPU (Kang et al. (2013)).

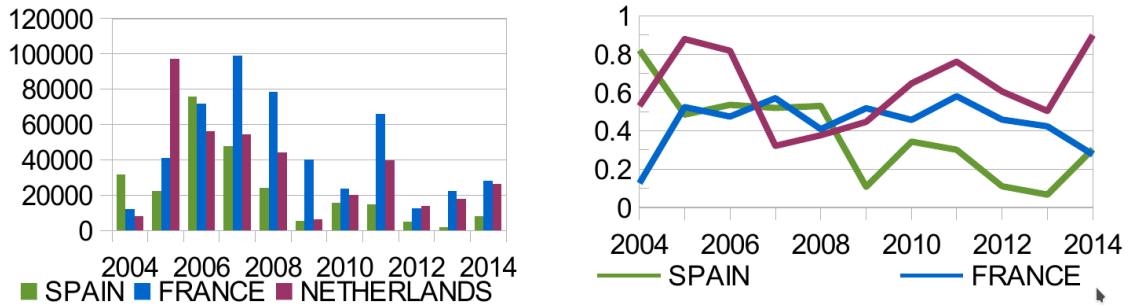


	German Civil Code						French Civil Code						English Common Law											
	Cash	Earnout	Shares	Other	Debt Assumed	Converted Debt	Cash	Earnout	Shares	Other	Debt Assumed	Converted Debt	Cash	Earnout	Shares	Other	Debt Assumed	Converted Debt	Loan Notes	Cash Assumed				
<b>EPU</b>	-0.006* (0.003)	0.01 (0.005)	0.001 (0.004)	0.07 (0.0560)	0.006 (0.003)	-	0.02 (0.021)	0.002 (0.004)	0.008** (0.002)	0.0007 (0.002)	0.008** (0.002)	-2.65 (0.002)	-	0.09 (0.009)	0.00 (0.009)	-0.01 (0.011)	0.011*** (0.003)	0.002 (0.002)	0.009*** (0.005)	-0.003 (0.003)	0.001 (0.003)	-0.02 (0.022)	0.012 (0.005)	0.005 (0.006)
<b>Politic</b>	0.56 (0.409)	0.74 (0.555)	0.39 (0.409)	-	1.01* (0.387)	-	0.39 (1.737)	0.77 (0.469)	2.02** (0.557)	0.10 (0.419)	0.31 (0.430)	-	0.28 (0.360)	-	-0.8 (0.965)	0.38 (0.360)	0.02 (0.333)	1.01** (0.328)	0.79 (0.651)	1.59** (0.486)	2.29 (1.762)	-0.61 (0.764)	0.78 (0.931)	
<b>Manufacturing</b>	1.96** (0.377)	-0.83 (0.614)	1.02 (0.769)	-	-	-	-0.65 (0.568)	1.63** (0.471)	1.15 (0.769)	0.49 (0.671)	0.34 (0.536)	-	-	-	1.35*** (0.372)	0.21 (0.338)	0.33 (0.332)	0.38 (0.646)	0.47 (0.439)	0.34 (1.349)	0.22 (0.779)	0.66 (0.910)		
<b>Rates Spread</b>	2.74** (1.036)	0.19 (1.711)	-1.02 (1.021)	-9.84 (11.452)	0.54 (0.870)	-	1.59 (3.892)	1.01 (0.987)	-1.98 (1.126)	-0.40 (1.000)	-1.57 (1.460)	-1.46 (1.095)	-864.51 (4.158)	-1.58 (2.051)	2.81 (2.051)	-2.00 (0.957)	0.86 (0.928)	-0.34 (0.917)	0.23 (1.580)	-1.78 (1.199)	1.10 (2.921)	-1.79 (2.818)	0.73 (2.008)	
<b>Oil Change</b>	2.22 (2.954)	-2.70 (4.300)	4.86 (3.471)	44.74 (28.158)	3.53 (3.031)	-	28.78 (22.719)	-2.91 (3.395)	-2.46 (3.538)	-2.74 (3.205)	-3.46 (3.559)	-8.08** (2.901)	-484.02 (20.160)	30.66 (7.439)	3.13 (7.439)	-8.98* (3.507)	3.13 (3.170)	-7.80* (3.047)	0.76 (5.515)	-3.66 (3.794)	23.81 (17.250)	-9.31 (7.192)	-11.53 (7.654)	
<b>CPI</b>	-0.18 (0.123)	0.10 (0.239)	0.04 (0.129)	-0.21 (2.085)	-0.12 (0.142)	-	-0.44 (0.896)	-0.15 (0.172)	0.15 (0.562)	0.61 (0.669)	1.09 (0.980)	0.09 (0.799)	50.29 (1.733)	0.66 (1.905)	0.56 (1.905)	2.04*** (0.490)	0.37 (0.351)	1.64*** (0.385)	0.62 (0.614)	1.11 (0.448)	2.13 (1.359)	-0.47 (0.940)	2.09 (0.924)	
<b>BCI</b>	-0.12 (0.161)	0.37 (0.261)	0.17 (0.186)	0.17 (1.132)	-0.06 (0.166)	-	-0.91 (0.899)	-0.54* (0.200)	0.37 (0.294)	-0.23 (0.241)	1.05** (0.379)	115.57 (0.317)	98.29 (0.798)	-0.17 (0.709)	-0.03 (0.798)	0.46 (0.215)	0.38 (0.208)	0.10 (0.204)	0.003 (0.384)	0.67 (0.288)	-0.85 (0.891)	1.23 (0.575)	0.780 (0.716)	
<b>dREER</b>	10.14 (11.104)	-9.37 (0.261)	1.99 (12.464)	174.580 (-131.94)	-0.79 (10.787)	-	137.55 (82.193)	-20.82 (-13.065)	-55.94 (31.478)	-10.00 (28.007)	18.38 (31.136)	-35.32 (26.309)	294.96 (162.447)	-11.66 (66.720)	5.45 (10.079)	7.56 (9.193)	13.83 (9.156)	-4.25 (15.199)	-23.94 (10.998)	6.43 (35.857)	24.54 (27.543)	17.31 (20.749)		
<b>Volatility Index</b>	13.45 (16.289)	-0.09 (0.055)	0.03 (0.025)	-1.38 (1.088)	0.01 (0.023)	-	-0.26 (0.168)	-0.02 (0.024)	0.08 (0.019)	0.002 (0.017)	-0.008 (0.019)	-1.16 (0.017)	4.82 (0.017)	-0.02 (0.085)	-0.02 (0.043)	-0.05*** (0.021)	-0.02 (0.019)	-0.05** (0.036)	-0.01 (0.036)	-0.07 (0.025)	-0.03 (0.095)	-0.09 (0.049)	-0.01 (0.052)	

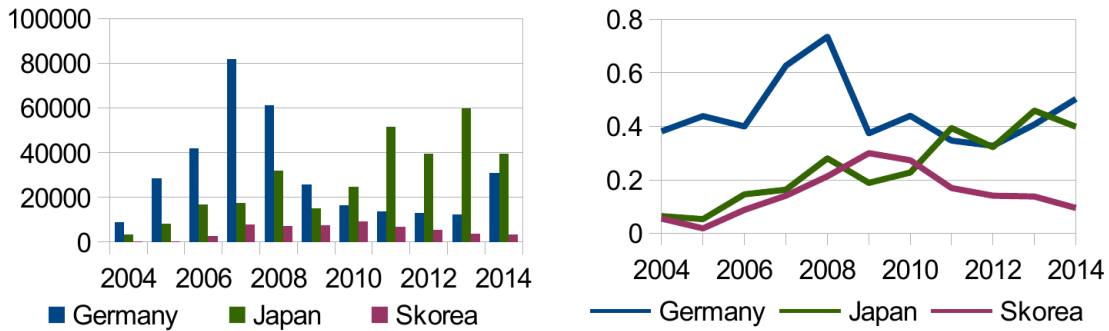
Figure 5.1.: Policy Uncertainty and Method of Payment Likelihood (Investor Protection Origin Instruments).

Year	ENGLISH LAW		GERMAN LAW		FRENCH LAW	
	No of M&As (Total)	Deal Value Means (Cr.border)	No of M&As (Total)	Deal Value Means (Cr.border)	No of M&As (Total)	Deal Value Means (Cr.border)
2004	162	135,45	135	117,55	172	374,21
2005	259	167,81	170	185,03	203	803,49
2006	307	231,59	145	369,91	249	850,17
2007	415	258,60	189	523,73	327	641,58
2008	254	248,15	211	456,29	279	541,57
2009	138	148,17	167	317,86	143	329,63
2010	244	374,96	190	295,38	165	433,23
2011	246	244,87	208	332,04	172	738,41
2012	217	191,22	187	313,85	150	222,68
2013	189	170,15	206	324,34	123	321,64
2014	232	281,92	175	469,44	149	510,05

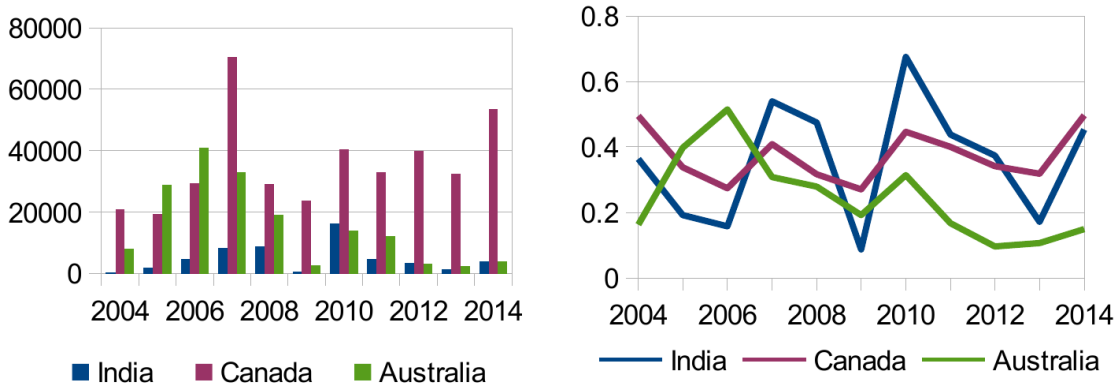
**Figure 5.2.: M&As deals by investor protection origin.** The average value and number of deals are calculated for all the legal systems of the initial sample. The initial sample is restricted at \$10 millions minimum deal value. Means are in million dollars for all the countries.



(a) French law



(b) German law



(c) English law

**Figure 5.3.: Descriptive figures of cross-border activities.** The following figures describe the cross border activity of each legal system. The line is the ratio of value (in million \$) of cross borders in terms of total deals. The bars and lines are in money value of 2004. Left figure shows Cross-border deal values and right figure cross border to total deals

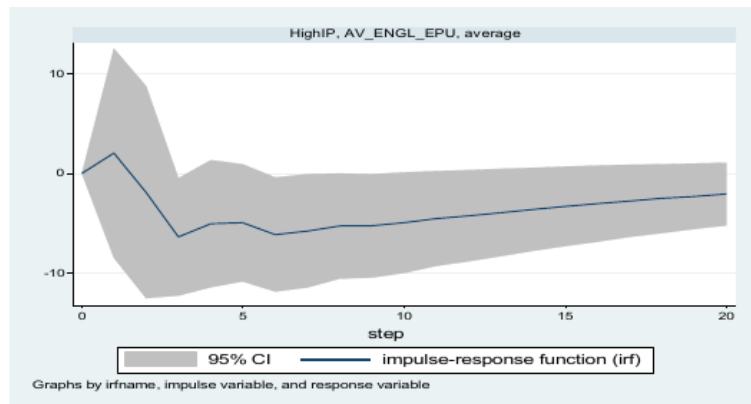
# Chapter 6.

## 6.1. The impact of policy shocks on cross-border merger activity

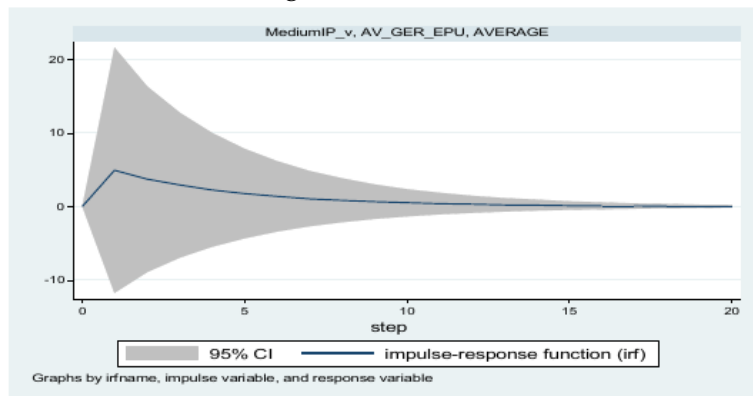
The figures 6.1 and 6.2 below exhibit the responses of M&A activity in terms of deal value and deal volume, respectively, to a policy uncertainty shock. The shocks among investor protection systems seem tenacious and turn insignificant after about 1 year although the impulse responses of each country turn insignificant after about 2,5 years. The two figures indicate similar patterns and the following analysis is related to both of them. The findings for strong and weak investor protection countries are similar to Bonaime et al. (2016), as expected since the legal tradition of US is based on the first class. Up to this point, there is consistency with previous researches and potential discrepancies are subject for further consideration.

The results are mostly insignificant with a large confidence interval which often includes zero. This finding reveals that after a policy shock the following turn on M&A activity may or may not occur, which is capable of clear reasoning. A rational manager would infer that increased/decreased (according to the investor protection system) cross-border activity may be partially caused due to the shock but outbound investment would not be a sound course of action (herd behavior) provided that these changes may be partly reversed or may cover underlying opportunities. So the large bands maybe capture the option value of waiting as suggested by Bernanke (1983). The option value of waiting has a bigger mass for the first two years of the shock in all the samples. Hence, the insignificance of results testifies the validity of behavioral theories and the implementation of a regime switching model.

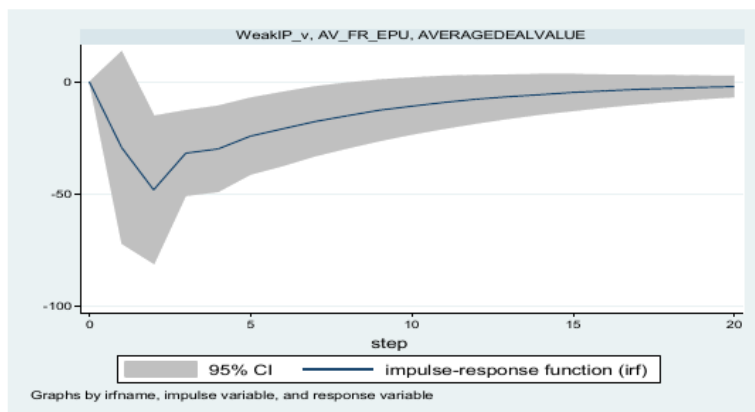
From a technical standpoint, according to Lutkepohl et al. (2013) the confidence intervals indicate the sampling uncertainty in estimation levels. "A number of pro-



(a) High Investor Protection



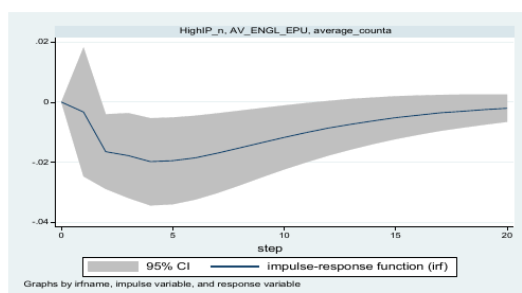
(b) Medium Investor Protection



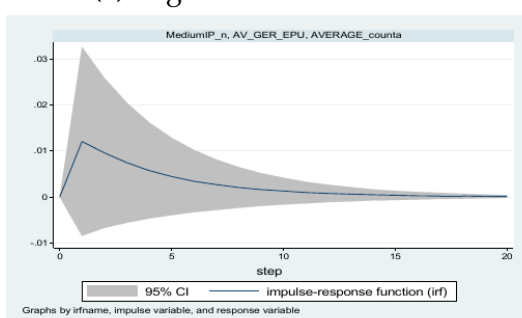
(c) Weak Investor Protection

**Figure 6.1.: Impulse Response Functions, M&As by deal value.** In all the panels the horizontal axis depicts the time. The graph shows the confidence band on either side of the response function. The results are robust to ordering selection.

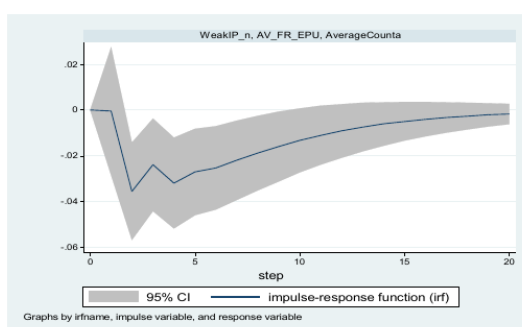
posals for constructing such bands in a classical setting are reviewed and it is argued that they either may not obtain the desired coverage level, are conservative or lack a



(a) High Investor Protection



(b) Medium Investor Protection



(c) Weak Investor Protection

**Figure 6.2.: Impulse Response Functions, M&As by number of deals.** In all the panels the horizontal axis depicts the time. The graph shows the confidence band on either side of the response function. The results are robust to ordering selection.

theoretical justification based on asymptotic theory", Lutkepohl et al. (2013). Therefore a posteriori interpretation, based on known theories, is a good alternative.

After the 5th period, the bands tend to be asymptotic so that the real options game becomes symmetric. Ex-ante the firms which are to perform the M&As are asymmetric in regards to their capability to execute the investment project, the access to technologies the financial capability, and all the real option game model parameters, i.e., investment cost, uncertainty about the futures revenues, revenues drift, etc. At

the close of period 5, the same investor protection level firms have adjusted to the environmental changes.

Due to this asymmetry, as the confidence intervals of the figures at Appendix G show, politically sensitive and manufacturing companies tend to be symmetric earlier than the mixed industry sample. The lower band is always below 0 because the option to defer the investment decision is below the impulse response line due to the usually irreversible nature of fiscal and monetary policy changes. Nevertheless, taking also into account the impulse responses of individual countries, there is weak evidence that some cross-border M&As will materialize the direction pointed out in the graphs and the Cholesky responses encourage a causal interpretation.

Only medium investor protection countries respond positively to policy shocks presenting a peak in the first period for both measures of merger activity. The strong investor protection sample initially rises to draw a sharp decline the first two periods at -10millions. The overall impact of EPU changes on strong investor protection countries is more comprehensible bearing in mind the individual graphs. The weak protection cluster provides results consistent with each individual graph of the sample elements. The previous findings hint the necessity for a more in depth analysis for medium investor protection countries.

The medium investor protection countries present abnormalities in the results because of Germany while Canada also deviates from the others. Canada and Germany are inconsistent with the results of their cluster because of their nature as net importers of policy uncertainty. Germany's dissimilar results are due to its importing nature while at the same time Canada has strong economic dependencies with the US and a divergent legal system among its states. However, the results could be generalized on the grounds that investor protection and governance effectiveness matters for the cross-border M&A activity in periods of policy uncertainty.

### **6.1.1. Interpreting the dynamics**

According to the impulse response functions, there is a leading effect of policy uncertainty shocks on M&A activity which could be attributed to several behavioral and economic reasons. Firstly, the attention on specific economic trends, such as a possible stagnation of China, is greater than in general macroeconomic indicators while tracking policy uncertainty consistently would be costly for the firms which could be

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characterized “rationally inattentive”. Correspondingly, stickiness of the information efficiency converts the news to outdated in acknowledgment of the fact that the extraction of information requires sophisticated techniques as proposed by Bonaime et al (2016) as well pursuing analysis of tax code provisions and forecasters disagreements is considered a troublesome process. Moreover, one could claim that the leading effect in IRFs represents the time period which is required so that the firms internalize the policy shock and adapt to it with industry restructuring. According to the neoclassical theory, the industry model is a function of government policies, technology, and market dynamics, consequently, cross-border mergers and acquisitions channel the policy-induced industry shocks externally. Concluding, except these reasons, the impact of policy uncertainty is a relatively new field as the BBD index and other indexes quantifying macroeconomic uncertainty were introduced only a few years ago.

### **6.1.2. Why do policy shocks have a different impact on acquirers from Medium Investor Protection countries?**

It cannot be stated that firms diversify policy uncertainty through outbound mergers and acquisitions. It could rather be stated that cross border activity offsets the noise of the shock and provides a hedge. Maybe the answer lies in the corporate governance strand of literature in consideration of the investor protection. According to LaPorta et al. (1998) weak investor protection reflects to higher ownership concentration. The predisposition of the legal system affects the employed corporate governance mechanisms and their efficiency. Moreover, countries with poor investor protection have substitute mechanisms of corporate governance which seem to be more resistant to a pervasive uncertainty or more easily reformed. Another possible explanation is the high quality of law enforcement in countries with medium investor protection. The exception of the rule is Germany as mentioned earlier. According to Klobner and Sekkel (2014) Germany is the net importer of policy uncertainty for the whole sample period of this thesis so that possible shocks in eurozone are magnified and captured on the German EPU. This could also mean that poor investor protection generate a vicious cycle in periods of crisis in the acquirer’s country which could explain the negative shock at cross-border activity. A further investigation regarding the domestic activity and the target’s investor protection level would break down the determinants of the shocks on M&As.



## **6.2. Analysis of deal level characteristics**

EPU does not affect significantly the method of payment but politically sensitive and manufacturing industries maybe represent the indirect effect of policy uncertainty on M&A activity. A possible explanation for this is the nature of these industries that require a quick close of the deal. The likelihood that the deal is financed with cash or shares have coefficients that are statistically significant at 1% and 5 % mostly. The following sections summarize the results of the tables from Appendix B.

### **6.2.1. Method of payment Likelihood and Investor Protection**

The likelihood for cash payments in every investor protection system gives statistically significant trivial coefficients for EPU and the coefficient for shares is statistically significant in high and low investor protection origin countries. All the others methods of payments derived from the database present insignificant results in policy shocks. Other macroeconomic determinants do not provide generalizable characteristics among investor protection systems in spite of the fact that volatility indexes and oil price changes as expected reveal as expected a negative relationship with the likelihood of methods of payment when significant. To this point, the likelihood of the method of payment is associated to the investor protection level.

### **6.2.2. Method of payment likelihood and Governance Effectiveness**

The governance instruments give an insight regarding the relationship between their enforcement and policy shock and strengthens the underlying assumption of their implementation. Otherwise stated, the varying levels of quality of governance characteristics feature other macroeconomic determinants more significant than policy changes in a few cases. When the governance enforcement is extremely high or extremely weak the significant coefficients are not indicative of patterns. This could be attributed to the anticipating mechanisms that LaPorta (1998) focused on. The acres of a situation is more easily controllable. On the other hand, policy uncertainty has a statistically significant impact on the method of payment in the middle 50% (for values 3 and 4 of the index) of governance enforcement. Hence, the governance effectiveness is a useful instrumental variable for future studies.

	CorCtrl=1					CorCtrl=2					CorCtrl=3					CorCtrl=4																						
	Cash	Ernout	Shares	Other	Assumed	Cash	Ernout	Shares	Other	Assumed	Debt	Converted	Loan	Notes	Assumed	Cash	Ernout	Shares	Other	Assumed	Debt	Converted	Loan	Notes	Assumed	Cash	Ernout	Shares	Other	Assumed	Debt	Converted	Loan	Notes	Assumed			
<b>EU</b>	-0.002	-0.02	0.015	2.88	0.01	-0.01	0.01	-0.01	-0.001	-0.01	-0.001	-0.01	-0.001	-0.01	-0.001	-0.04	0.007	0.007	0.006	0.006	0.001	0.01	0.006	0.006	0.001	0.01	0.007	0.007	0.006	0.006	0.001	0.01	0.006	0.006	0.001	0.01	0.006	0.006
	(0.003)	(0.008)	(0.015)	-	(0.010)	-	(0.029)	-	(0.002)	-	(0.011)	(0.017)	(0.002)	(0.011)	(0.002)	(0.004)	(0.004)	(0.003)	(0.003)	(0.007)	(0.004)	(0.014)	(0.004)	(0.014)	(0.004)	(0.014)	(0.004)	(0.004)	(0.003)	(0.007)	(0.004)	(0.014)	(0.004)	(0.014)	(0.004)	(0.014)	(0.004)	(0.014)
<b>Politic</b>	-0.37	-0.60	2.16	-	1.41	-	0.12	-	0.98	-	-	-0.17	1.86**	0.25	0.90*	-0.24	1.31**	-	1.40	0.02	-	1.40	0.02	-	1.40	0.02	0.72	0.256	0.61	1.05	0.13	1.74	-	0.09	-	0.09	-	0.09
	(0.375)	(0.830)	(1.369)	-	(0.906)	-	(1.774)	-	(0.401)	-	(1.106)	(0.596)	(0.378)	(0.327)	(0.724)	(0.471)	(1.147)	(0.479)	(1.147)	(0.479)	(1.147)	(0.479)	(1.147)	(0.479)	(1.147)	(0.479)	(0.514)	(0.394)	(0.355)	(0.875)	(0.387)	(1.490)	-	(1.124)	-	(1.124)	-	(1.124)
<b>Manufacturing</b>	1.50***	-0.24	-2.45	-	1.35	-	-	-	0.81	-	-	1.94***	-0.54	0.21	-0.219	0.7	-	-0.92	0.44	-	-	-0.92	0.44	-	-0.92	0.44	1.80***	0.256	-0.32	0.59	0.59	-0.49	-	-1.28	-	-1.28	-	-1.28
	(0.362)	(0.855)	(1.450)	-	(1.178)	-	-	-	(0.770)	-	-	(0.487)	(0.398)	(0.371)	(0.786)	(0.542)	-	(0.902)	(0.355)	-	-	(0.902)	(0.355)	-	(0.902)	(0.355)	(0.495)	(0.485)	(0.421)	(1.142)	(0.520)	(1.442)	-	(1.144)	-	(1.144)	-	(1.144)
<b>Rates Spread</b>	0.27	2.61	2.56	75.01	2.22	-	8.48	-	0.86	-	0.83	5.92	0.97	-1.14	-0.58	0.30	-0.98	-1.08	-0.29	1.85	-	-	-0.29	1.85	-	-0.29	-1.72	1.44	-0.54	-0.10	-3.62**	-2.27	-1.45	1.94	-	1.94		
	(0.922)	(2.157)	(4.659)	-	(2.367)	-	(8.912)	-	(0.528)	-	(3.189)	(3.726)	(1.105)	(1.168)	(0.853)	(1.660)	(1.240)	(5.817)	(4.140)	(1.176)	-	-	(1.176)	-	(1.176)	-	(1.205)	(0.969)	(0.976)	(2.118)	(1.211)	(4.032)	(10.960)	(2.224)	-	(2.224)	-	(2.224)
<b>Oil Change</b>	-1.05	-2.90	-1.70	-	7.31	-	26.16	-	-1.50	-	31.70	2.7	1.54	0.91	-1.63	4.28	-0.51	10.40	-5.78	-2.32	-	-	-5.78	-2.32	-	-5.78	-1.71	3.08	-6.11	-4.20	-9.05*	18.75	-1.96	-11.08	-	-11.08		
	(2.885)	(6.107)	(12.853)	-	(9.128)	-	(29.668)	-	(2.946)	-	(16.855)	(8.132)	(4.004)	(3.423)	(2.643)	(6.126)	(3.557)	(19.003)	(7.690)	(3.505)	-	-	(7.690)	(3.505)	-	(7.690)	(3.963)	(3.393)	(2.945)	(6.877)	(3.372)	(14.439)	(16.981)	(8.844)	-	(8.844)		
<b>CPI</b>	-0.52	-0.11	0.06	-90.20	-0.82	-	-1.11	-	-0.04	-	-0.13	0.2	0.40	0.13	0.52	0.17	0.31	0.26	-0.18	-0.27	-	-	-0.18	-0.27	-	-0.18	-0.06	0.73	2.42***	1.26	-0.06	1.58	3.42	2.19	-	2.19		
	(0.293)	(0.298)	(0.428)	-	(0.533)	-	(1.775)	-	(0.164)	-	(0.785)	(0.484)	(0.288)	(0.268)	(0.322)	(0.311)	(0.250)	(0.709)	(1.410)	(0.265)	-	-	(1.410)	(0.265)	-	(1.410)	(0.518)	(0.408)	(0.450)	(0.816)	(0.496)	(1.401)	(2.577)	(1.129)	-	(1.129)		
<b>BCI</b>	0.055	1.39	0.85	114.72	0.74	-	-1.04	-	0.12	-	0.14	0.31	-0.19	-0.1	-0.24	-0.30	-0.04	1.13	0.69	-0.68	-	-	0.69	-0.68	-	0.40	0.07	0.28	0.58	0.56	-0.28	2.68	0.57	-	0.57			
	(0.178)	(0.598)	(0.940)	-	(0.629)	-	(1.074)	-	(0.248)	-	(0.846)	(0.986)	(0.230)	(0.206)	(0.165)	(0.357)	(0.221)	(1.528)	(0.622)	(0.258)	-	-	(0.622)	(0.258)	-	(0.622)	(0.285)	(0.265)	(0.240)	(0.610)	(0.277)	(0.890)	(2.689)	(0.780)	-	(0.780)		
<b>dREER</b>	4.98	42.53	93.85	-	17.58	-	184.98	-	-10.89	-	86.29	-12.99	-1.35	11.89	9.08	-15.57	32.11	32.14	19.95	-35.22	-	-	19.95	-35.22	-	-1.35	4.72	3.72	2.25	8.37	-57.27***	-0.59	122.28	33.19	-	33.19		
	(10.640)	(27.602)	(51.346)	-	(30.232)	-	(118.721)	-	(10.674)	-	(59.516)	(28.817)	(17.235)	(14.382)	(12.427)	(25.742)	(17.294)	(114.340)	(38.061)	(8.421)	-	-	(38.061)	(8.421)	-	(16.128)	(12.947)	(13.519)	(23.575)	(15.803)	(47.524)	(118.667)	(33.343)	-	(33.343)			
<b>Volatility Index</b>	-0.03	0.06	-0.04	-54.87	-0.03	-	-0.09	-	-0.008	-	-0.03	-0.13	-0.09	-0.09**	-0.04	-0.01	-0.04	0.30	-0.21	-0.07	-	-	-0.21	-0.07	-	0.007	-0.001	-0.005	-0.01	-0.01	0.08	-0.30	0.001	-	0.001			
	(0.021)	(0.048)	(0.086)	-	(0.083)	-	(0.226)	-	(0.026)	-	(0.115)	(0.130)	(0.036)	(0.034)	(0.024)	(0.057)	(0.033)	(0.365)	(0.121)	(0.036)	-	-	(0.121)	(0.036)	-	(0.019)	(0.016)	(0.013)	(0.034)	(0.015)	(0.059)	(0.200)	(0.043)	-	(0.043)			

Figure 6.3.: Policy Uncertainty and Method of Payment Likelihood (Governance Effectiveness Instruments). The values of the governance characteristic are indexed at percentiles (1=the lowest 25%) from the monthly values of WorldBank.

	GovEff=1						GovEff=2						GovEff=3						GovEff=4										
	Cash		Loan		Converted		Cash		Loan		Converted		Cash		Loan		Converted		Cash		Loan		Converted						
	Earnout	Shares	Other	Assumed	Debt	Notes	Earnout	Shares	Other	Assumed	Debt	Notes	Earnout	Shares	Other	Assumed	Debt	Notes	Earnout	Shares	Other	Assumed	Debt	Notes					
<b>EFU</b>	0.002 (0.003)	-0.007 (0.011)	-0.001 (0.016)	1.87 (0.010)	0.01 (0.010)	-	-0.008* (0.002)	0.006 (0.002)	0.004 (0.011)	-0.001 (0.002)	-	-0.002 (0.018)	-0.004 (0.005)	0.004 (0.016)	0.008 (0.003)	0.004 (0.016)	0.004 (0.003)	0.008 (0.016)	0.02 (0.010)	-0.002 (0.005)	0.007 (0.006)	0.013 (0.003)	0.001 (0.006)	-0.001 (0.003)	-0.006 (0.022)	0.006 (0.005)	0.01 (0.010)		
<b>Politic</b>	-0.54 (0.401)	-1.20 (0.966)	2.52 (1.503)	1.13 (0.941)	0.12 (0.771)	-	1.51*** (0.452)	0.509 (0.508)	1.05 (0.415)	0.12 (1.438)	1.04 (0.422)	-	0.55 (0.768)	0.75 (0.542)	0.10 (0.370)	0.37 (0.341)	0.15 (0.819)	0.74 (0.399)	-0.29 (1.085)	-0.62 (0.553)	0.62 (0.676)	0.89 (0.471)	0.22 (0.390)	0.62 (0.986)	0.96 (0.409)	1.24 (1.659)	-	-	
<b>Manufacturing</b>	1.62*** (0.383)	-0.09 (0.886)	-2.88 (1.711)	1.08 (1.202)	-	-	1.50*** (0.452)	-0.41 (0.585)	-0.21 (0.504)	1.83 (1.464)	1.03 (1.038)	-	-0.45 (0.884)	2.37*** (0.508)	-0.20 (0.419)	0.91 (0.393)	0.81 (1.210)	0.65 (0.551)	0.65 (1.270)	-0.09 (0.587)	0.49 (0.609)	0.18 (0.544)	-0.61 (0.455)	0.18 (0.987)	-0.44 (0.472)	-0.76 (1.620)	-	-	
<b>Rates Spread</b>	0.46 (0.965)	2.06 (2.622)	1.77 (5.245)	143.95 (2.361)	1.62 (8.933)	-	-0.41 (0.980)	-1.28 (1.816)	0.01 (1.407)	1.11 (5.188)	0.90 (0.908)	-	-0.48 (4.118)	4.05 (1.925)	0.07 (0.903)	-0.98 (0.836)	-2.03 (1.134)	-1.14 (3.643)	-0.08 (3.817)	0.51 (1.083)	0.56 (1.600)	1.05 (1.348)	2.96 (2.876)	-3.04 (4.118)	-1.01 (3.730)	-2.48 (5.261)	-	-	
<b>Oil Change</b>	-0.89 (3.162)	-1.41 (6.587)	0.02 (4.851)	3.96 (9.656)	25.74 (29.871)	-	-3.61 (3.558)	-8.59 (4.433)	0.21 (3.495)	18.49 (16.372)	-1.36 (2.646)	-	44.6 (31.159)	-8.74 (4.586)	1.27 (2.885)	-3.98 (2.616)	5.36 (6.099)	-2.12 (3.111)	13.05 (16.885)	-3.75 (7.971)	2.02 (3.948)	7.12 (4.955)	-2.36 (4.589)	2.59 (8.531)	-8.54 (3.680)	17.07 (18.163)	7.91 (11.984)	-40.15 (317.74)	-
<b>CPI</b>	-1.21 (0.617)	-0.64 (0.627)	1.15 (1.201)	-80.03 (1.138)	-1.79 (1.792)	-	-0.17 (0.141)	0.14 (0.216)	0.04 (0.164)	-0.07 (0.695)	0.01 (0.165)	-	0.18 (1.328)	0.10 (0.388)	0.50 (0.299)	0.01 (0.249)	0.82* (0.317)	0.19 (0.322)	0.12 (1.629)	0.32 (1.131)	-0.52 (0.317)	1.11 (0.694)	2.01 (0.527)	1.92 (1.108)	0.89 (0.517)	2.34 (1.722)	-1.59 (2.295)	4.17 (2.006)	-
<b>BCI</b>	-0.08 (0.190)	2.16* (0.816)	0.87 (1.024)	123.75 (0.665)	0.83 (0.665)	-	0.29 (0.264)	-1.8* (0.451)	0.29 (0.295)	-2.00 (1.566)	0.01 (0.245)	-	-0.97 (1.231)	-0.16 (0.522)	-0.04 (0.224)	-0.31 (0.177)	-0.18 (0.347)	0.18 (0.199)	0.79 (0.755)	0.29 (0.690)	-0.65* (0.247)	0.36 (0.315)	0.33 (0.272)	1.36 (0.879)	0.41 (0.252)	-0.64 (1.052)	2.62 (1.350)	1.3 (1.054)	-
<b>dREER</b>	7.92 (11.078)	55.11 (31.563)	86.71 (52.390)	17.87 (30.957)	183.75 (118.622)	-	10.18 (16.468)	-15.96 (20.456)	-0.24 (16.454)	110.89 (91.505)	-16.99 (11.572)	-	173.89 (132.033)	-45.04 (18.588)	21.87 (12.617)	23.1 (11.154)	8.99 (27.035)	11.35 (13.964)	79.72 (73.062)	53.3 (36.591)	-7.46 (16.724)	-4.01 (17.718)	-13.08 (14.818)	-3.95 (15.968)	-36.86 (14.088)	-20.57 (49.199)	-11.05 (46.980)	36.14 (38.722)	-
<b>Volatility Index</b>	-0.03 (0.022)	0.07 (0.052)	-0.03 (0.089)	-40.13 (0.078)	0.02 (0.226)	-	-0.01 (0.024)	-0.22*** (0.063)	-0.07 (0.037)	-0.42 (0.219)	0.08 (0.025)	-	-0.19 (0.212)	-0.04 (0.050)	-0.03 (0.028)	-0.04 (0.020)	0.01 (0.044)	0.01 (0.026)	0.19 (0.116)	-0.03 (0.033)	0.03 (0.027)	0.01 (0.021)	-0.04 (0.040)	-0.01 (0.016)	0.01 (0.105)	-0.06 (0.047)	0.01 (0.057)	-	

Figure 6.4.: Policy Uncertainty and Method of Payment Likelihood. The values of the governance characteristic are indexed at percentiles (1=the lowest 25%) from the monthly values of WorldBank.

	PolStab=1						PolStab=2						PolStab=3						PolStab=4								
	Cash		Debt		Loan		Cash		Debt		Loan		Cash		Debt		Loan		Cash		Debt		Loan				
	Ernout	Shares	Other	Assumed	Debt	Converted	Notes	Assumed	Cash	Ernout	Shares	Other	Assumed	Debt	Converted	Notes	Assumed	Cash	Ernout	Shares	Other	Assumed	Debt	Converted	Notes	Assumed	
<b>EPU</b>	0.004 (0.004)	-0.02 (0.016)	-0.01 (0.019)	1.44 (0.011)	0.01 (0.011)	0.02 (0.034)	-	-0.008*** (0.002)	-0.02 (0.002)	0.06* (0.002)	-0.01 (0.010)	-0.003 (0.003)	-0.003 (0.013)	-0.003 (0.013)	-0.003 (0.013)	0.007 (0.004)	-	-0.003 (0.006)	0.006 (0.005)	0.008* (0.003)	0.01*** (0.003)	-0.003 (0.007)	-0.006 (0.002)	-0.006 (0.021)	-0.009 (0.005)	0.001 (0.010)	
<b>Politic</b>	-0.77 (0.422)	-0.95 (1.036)	4.20 (2.366)	-	0.94 (1.010)	1.32 (2.360)	-	2.01*** (0.508)	0.06 (0.402)	0.27 (0.366)	0.90 (1.060)	-	-0.14 (0.562)	-0.09 (0.507)	-0.06 (0.423)	0.43 (0.340)	-	0.46 (0.637)	1.34 (0.566)	0.75 (0.465)	0.71 (0.363)	-	1.03** (0.371)	0.07 (0.1764)	0.88 (0.942)	0.57 (1.378)	
<b>Manufacturing</b>	1.66** (0.388)	0.34 (0.940)	-3.40 (1.778)	-	1.09 (1.196)	-	-	1.98*** (0.430)	0.38 (0.536)	0.24 (0.521)	1.12 (1.634)	0.99 (0.740)	-	-0.57 (0.645)	0.06 (0.502)	-0.68 (0.400)	-	-0.41 (0.703)	1.58** (0.503)	-0.71 (0.484)	-0.29 (0.440)	-	0.2 (0.459)	-2.14 (1.763)	-0.79 (0.860)	-	
<b>Rates Spread</b>	0.60 (0.985)	3.15 (2.890)	6.25 (5.697)	2.11 (2.514)	2.11 (2.514)	6.99 (8.616)	-	-1.16 (1.016)	-0.80 (0.388)	-0.54 (0.363)	-1.37 (2.130)	-0.26 (1.167)	0.36 (4.112)	3.44 (3.026)	0.43 (1.446)	-1.60 (0.988)	1.05 (2.157)	-	2.03 (1.235)	0.36 (1.300)	1.26 (1.362)	0.35 (1.140)	-2.15 (3.194)	-0.36 (1.117)	2.66 (4.319)	-2.21 (3.464)	3.13 (2.870)
<b>Oil Change</b>	-1.72 (3.277)	-7.63 (6.780)	1.63 (17.461)	-	6.38 (10.365)	22.66 (31.133)	-	-1.50 (3.376)	-2.60 (3.010)	0.58 (3.135)	-1.55 (6.671)	-3.84 (3.240)	9.44 (14.564)	26.39 (18.558)	-1.09 (4.319)	-0.97 (4.734)	2.89 (2.682)	-	-3.96 (4.377)	0.63 (3.561)	3.32 (3.682)	-2.79 (2.682)	-4.66 (6.745)	-6.00 (2.727)	19.27 (18.301)	-8.39 (6.366)	-6.64 (9.720)
<b>CPI</b>	-2.05 (1.215)	-3.56 (4.029)	11.91 (6.375)	-	-1.81 (3.475)	-7.26 (6.955)	-	-0.19 (0.608)	0.99 (0.601)	0.46 (0.591)	0.55 (1.020)	0.44 (0.764)	1.00 (2.091)	-1.16 (1.404)	1.38 (0.915)	0.21 (0.222)	0.63 (0.237)	-	-0.19 (0.215)	-0.28 (0.170)	0.17 (0.164)	0.23 (0.134)	0.22 (0.667)	-0.01 (0.158)	-0.07 (0.414)	0.08 (0.366)	0.29 (0.455)
<b>BCI</b>	-0.08 (0.197)	1.99* (0.722)	1.42 (1.278)	-	0.73 (0.652)	-0.45 (1.254)	-	0.27 (0.235)	-0.31 (0.216)	0.10 (0.207)	-0.63 (0.488)	0.72* (0.267)	0.28 (0.952)	-0.10 (0.847)	0.11 (0.360)	0.19 (0.246)	0.26 (0.247)	-	-0.89 (0.264)	0.49 (0.307)	-0.08 (0.260)	0.01 (0.215)	0.91 (0.738)	-0.14 (0.203)	-1.95 (1.549)	1.66 (0.820)	-0.10 (0.663)
<b>dREER</b>	16.75 (12.022)	39.95 (32.855)	140.65 (83.306)	-	19.94 (-33.023)	134.88 (94.051)	-	-23.66 (20.416)	28.33 (18.124)	29.1 (18.491)	-2.71 (42.838)	50.23 (22.355)	84.60 (81.682)	194.97 (124.057)	-46.02 (36.469)	-10.51 (15.730)	1.03 (9.080)	-	-30.54 (14.602)	27.1 (15.306)	0.09 (15.506)	-4.25 (13.503)	-58.26 (40.684)	-29.56 (13.237)	57.99 (72.383)	17.9 (34.234)	33.42 (36.400)
<b>Volatility Index</b>	-0.03 (0.022)	0.07 (0.055)	-0.06 (0.108)	-	-0.005 (0.0354)	-0.15 (0.354)	-	0.004 (0.002)	-0.01 (0.021)	0.03 (0.017)	0.03 (0.038)	-0.01 (0.021)	0.08 (0.075)	-0.11 (0.148)	-0.09 (0.046)	-0.12** (0.022)	-0.01 (0.046)	-	0.005 (0.028)	0.007 (0.024)	-0.03 (0.018)	-0.07 (0.071)	-0.01 (0.016)	-0.07 (0.109)	-0.05 (0.051)	0.04 (0.065)	

Figure 6.5.: Policy Uncertainty and Method of Payment Likelihood. The values of the governance characteristic are indexed at percentiles (1=the lowest 25%) from the monthly values of WorldBank.



# Chapter 7.

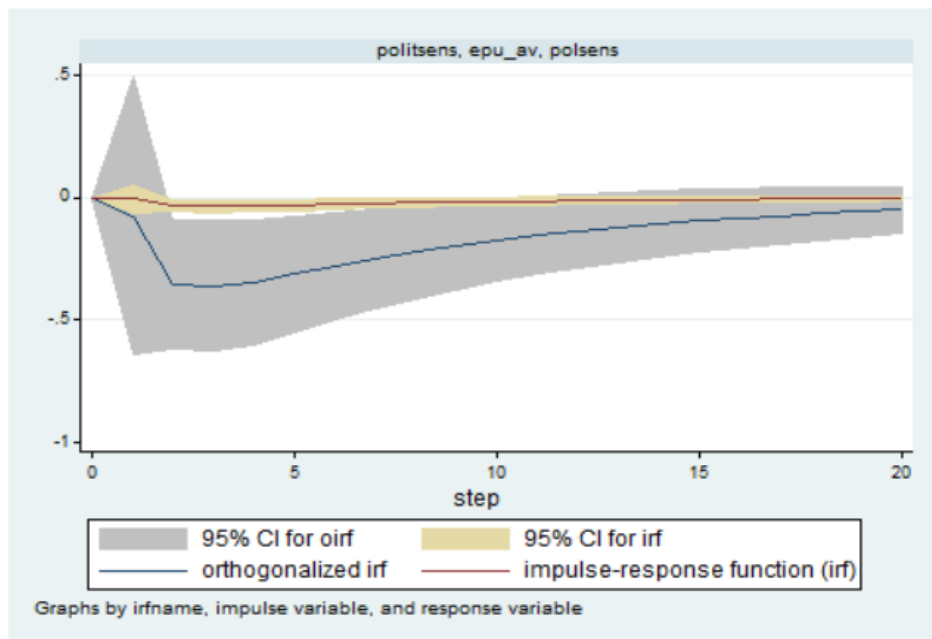
## 7.1. Robustness check

In order to assess the robustness of the results of the main hypothesis, I consider VAR models with a different order of variables. The VAR in this thesis allows the contemporaneous identification of policy shocks on merger activity. The order of the variables for the benchmark VAR is: EPU, Rates spread, Oil Shock, BCI, CPI, REER and volatility index. The different order that I test is: BCI, EPU, Oil shock, CPI, volatility index, REER. Since different orderings are subjects to different assumptions regarding the relationship between the variables I also use the Cholesky method for ordering robustness check. The results are consistent with the benchmark model as described in the previous sections.

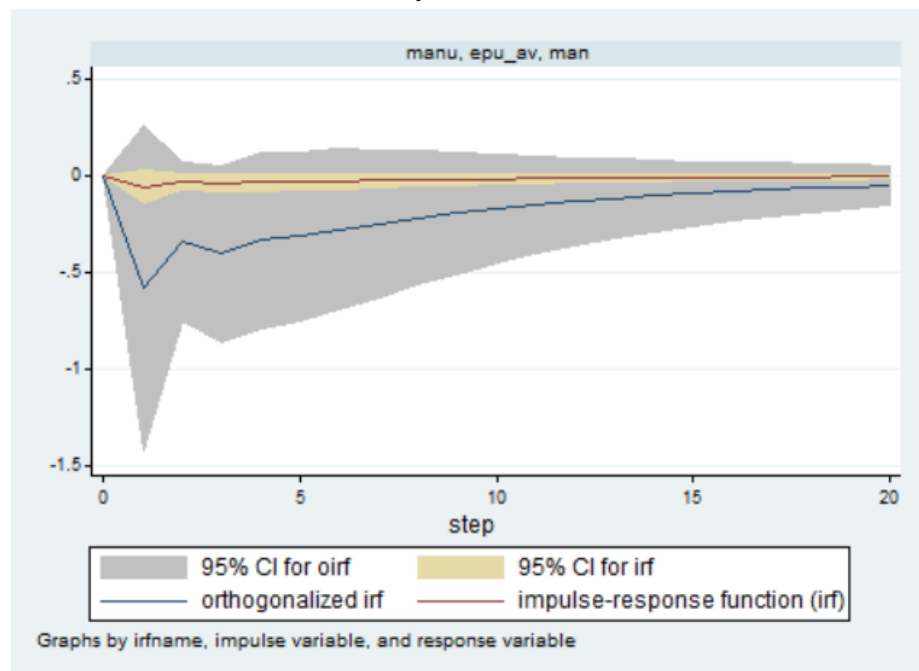
The impulse responses of political sensitive and manufacturing industries also perform as robustness tests for the results. The Figure 7.1 shows the graphs of impulse responses and provides evidence that the examined industries exhibit similar shocks and patterns in their responses. The results are robust and the effect is more pronounced in these two types of industries.

A VAR analysis on individual countries (Appendix C) also performs as a robustness check. The responses for the different aspects of M&A activity indicate similar patterns and the results are robust for the main hypothesis. There are peak responses for the following countries: Canada, South Korea, Japan and Netherlands. These 4 countries present positive responses due to contagion of policy uncertainty or their investor protection origin. This individual analysis sheds lights to the interpretation of the results as most of the countries indicate a negative shock. The country with the largest response in terms of number of deals is Australia while South Korea shows the smallest response. In terms of deals value Canada shows the highest value and Netherlands

the highest decrease. The impact of policy uncertainty disappears after the 5th period for all the countries. A more in depth analysis of the discrepancies in the results there is in the Section 6.



(a) Politically Sensitive Industries



(b) Manufacturing Industries

Figure 7.1.: Policy uncertainty effect on Politically Sensitive and Manufacturing Industries.

# Chapter 8.

## 8.1. Discussion

In this thesis I examine and analyze the effect of policy uncertainty and the deal characteristics of cross border mergers and acquisitions. In particular I provide evidence that policy uncertainty affects the likelihood of cash financing. In the analysis, I use an autoregressive econometric approach to provide evidence for this relationship and I reject my hypothesis only for medium investor protection countries, indicating a positive relation between policy uncertainty and outbounds mergers activity. However, an autoregressive VAR confirms the main hypothesis as mentioned above. Moreover, politically sensitive and manufacturing industries are indeed more prone to policy shocks and their responses present homogeneity so that a future industrial analysis could shed light in the impact of policy uncertainty on crossborder mergers and acquisitions. Policy uncertainty shocks in many countries of the sample are to some extent feedback to other economies but the drivers of these shocks do not have a direct impact on merger activity and if captured will blur the results. Therefore the baseline equation (1) involves the possibility of comovement or transmission of policy shocks among countries. Due to the systemic nature of policy shocks such as the crisis of 2008, it seems crucial to investigate for potential cascading effects in future research.

Hence, investor protection as introduced from LaPorta et al. (1998) and governance characteristics still hold as key instruments in order to provide a worldwide evidence for the above logistic model. Except this real interdependence among countries, there is also financial interdependence among the sample that implies an infection function in order to investigate the cross-border merger activity on account of contagion of policy uncertainty. Therefore, an in depth analysis of the contagion effects justifies the transmission channels of VAR, which addresses the issues of behavioral theories. The motivation for this thesis arise from the gap in the existing literature regarding the



cross-border merger activity. The data cover a period from 2004 to 2014 in order to provide evidence up to date. I collect data from Thomson One and Zephyr databases and I also construct variables and indexes to conduct the appropriate analysis as discussed in chapter 5. The sample countries are Australia, India, France, Canada, Spain, Netherlands, Germany, Japan and South Korea to provide international evidence.

## **8.2. Limitations and Further Research**

The analysis of this thesis is extended to as many aspects possible, but a number of weak points should be considered. Firstly, there are no available data either for many countries or for each separate measure of EPU. Thus an instrumental variable for EPU components, as implied by Bonaimé et al. (2016), is not possible. Moreover the target characteristics are not examined although they could reveal a more complete picture of the shock- events. The evidence presented thus far supports the idea that opportunities arise for further investigation. A cross country examination for both cross border and domestic deals at a firm level or industrial analysis on account of possible variation among industries depending on the degree of competitiveness could shed light on the impulse responses. Likewise, consideration of socioeconomic and cultural factors could widen the scope and depth of perception and unveil attitudes and trends. Lastly for further analysis an asymmetric effect of EPU on mergers activity and method of payment classifying the EPU+ and EPU- values could be examined. As a further matter, the effect of regime uncertainty over individual policies has not been examined to date and as derived from all the previous studies arises the need for more forward looking measures of uncertainty or measures with higher explanatory potentials.

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# Appendix A.

## Descriptives and Summary Statistics

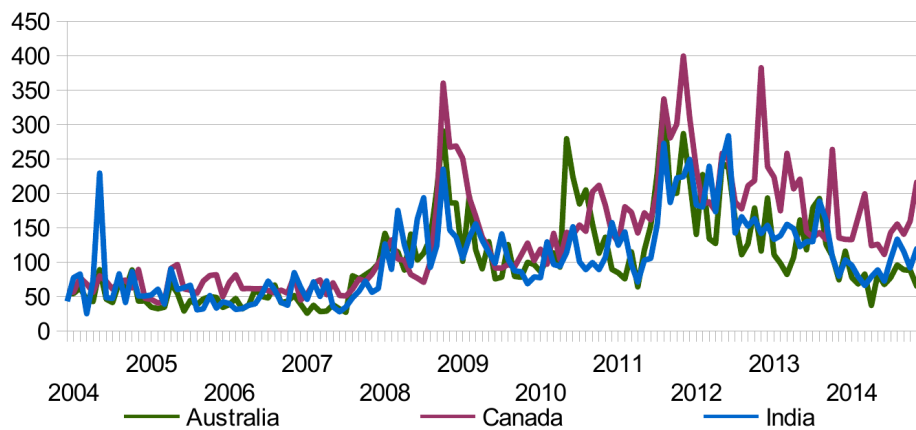
Politically sensitive industries		
Short Name	Long Name	SIC code
Smoke	Tobacco Products	2100-2199
Drugs	Pharmaceuticals	2830-2836
Hlth	Health Care Services	8000-8099
Guns	Defense	3480-3489, 3760-3769, 3795-3795
Enrgy	Petroleum and Natural Gas	1310-1389, 2900-2911, 2990-2999
Telcm	Telecommunications	4800-4899
Trans	Transportation	4000-4099, 4100-4199, 4200-4299, 4400-4499, 4500-4599, 4600-4699, 4700-4799

**Figure A.1.: Politically sensitive industries.** This tables presents the politically sensitive industries by short name, long name and SIC code, as they are classified by Fama and French (1997).

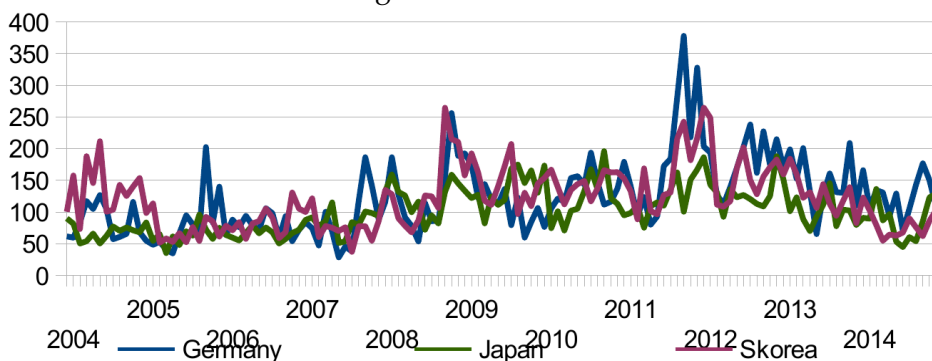


<b>Manufacturing industries</b>	
<b>Long Name</b>	<b>SIC code</b>
Food and Kindred products	2000-2099
Tobacco Products	2100-2199
Textile mill products	2200-2299
Apparel and other finished products made from Fabric and similar materials	2300-2399
Lumber and Wood products, except Furniture	2400-2499
Furniture and Fixture	2500-2599
Paper and Allied products	2600-2699
Printing, Publishing and Allied industries	2700-2799
Chemicals and Allied Products	2800-2899
Petroleum Refining and Related Industries	2900-2999
Rubber and miscellaneous Plastic Products	3000-3099
Leather and leather Products	3100-3199
Stone, Clay, Glass and Concrete Products	3200-3299
Primary Metal Industries	3300-3399
Fabricated Metal Products, except Machinery and transportation equipment	3400-3499
Industrial and Commercial Machinery and Computer Equipment	3500-3599
Electronic and other Electrical Equipment and Components, except Computer Equipment	3600-3699
Transportation Equipment	3700-3799
Measuring, Analyzing, and Controlling Instruments; Photographic, Medical and Optical Goods; Watches and Clocks	3800-3899
Miscellaneous Manufacturing Industries	3900-3999

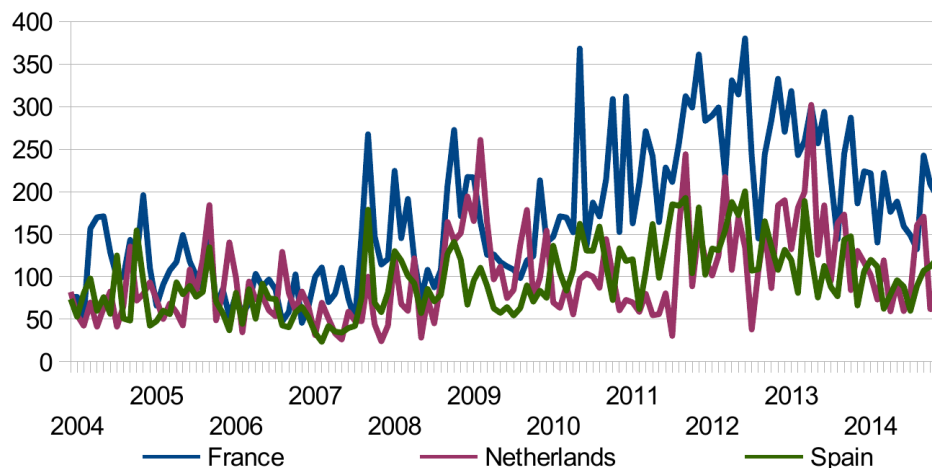
Figure A.2.: Manufacturing industries.



(a) High Investor Protection



(b) Medium Investor Protection



(c) Weak Investor Protection

**Figure A.3.: EPU Indexes.** The figures below provide evidence of the comovement of EPU indexes among environments of the same investor protection and ownership concentration characteristics.

<b>EPU</b>				
	<b>Mean</b>	<b>StDev</b>	<b>p25</b>	<b>p75</b>
<b><i>By country</i></b>				
Australia	87,42	54,68	40,81	109,82
Canada	116,48	64,84	66,15	152,77
India	13,10	7,72	6,42	18,39
Germany	77,15	37,41	49,12	96,92
Japan	37,00	12,64	27,13	45,07
	34,47	14,06	23,48	43,25
France	72,00	35,22	43,66	96,57
Spain	37,36	15,24	25,15	47,50
Netherlands	48,23	25,29	29,18	63,55
<b><i>By legal system</i></b>				
English Law	72,33	39,57	39,39	95,78
German Code	49,54	18,38	35,67	59,29
French Code	52,68	21,11	36,12	68,99
Number of Obs	132			

Figure A.4.: Summary statistics of EPU.

<b>Country</b>	<b>Legal Origin</b>	<b>Investor protection</b>	<b>Ownership Concentration</b>	<b>Quality of law enforcement</b>
Australia	English Common Law	Strong	Low	Medium
Canada	English Common Law	Strong	Low	Medium
India	English Common Law	Strong	Low	Medium
Germany	German Civil Code	Medium	Medium	Strong
Japan	German Civil Code	Medium	Medium	Strong
South Korea	German Civil Code	Medium	Medium	Strong
France	French Civil Code	Weak	High	Weak
Netherlands	French Civil Code	Weak	High	Weak
Spain	French Civil Code	Weak	High	Weak

Figure A.5.: Investor Protection Classification.

	Australia	Canada	India	France	Spain	Netherlands	Germany	Japan	S.Korea
Australia	1,00								
Canada	0.7546	1,00							
India	0.7771	0.7367	1,00						
Germany	0.6940	0.7805	0.6424	1,00					
S.Korea	0.6201	0.6293	0.6116	0.6058	1,00				
Japan	0.6137	0.6028	0.5075	0.4983	0.5186	1,00			
France	0.6489	0.7853	0.6495	0.7112	0.5515	0.4865	1,00		
Netherlands	0.4209	0.5300	0.4418	0.4686	0.3545	0.3011	0.4678	1,00	
Spain	0.6405	0.6175	0.5840	0.7019	0.4570	0.4072	0.7200	0.3954	1,00

Figure A.6.: Pairwise Correlations for EPU indices.

	Rates spread	Oil Shock	BCI	CPI	REER	Volatility Indexes
Rates Spread	1,000					
Oil Shock	-0,4843	1,000				
BCI	0,1565	0,0547	1,000			
CPI	-0,0414	0,097	0,002	1,000		
REER	-0,09	-0,1224	-0,0165	-0,0472	1,000	
Volatility Indexes	0,1117	-0,0902	-0,1915	-0,0318	-0,058	1,000

Figure A.7.: Correlations for Uncertainty Variables.

	All Industries		Politically Sensitive		Manufacturing	
	Mean	StDev	Mean	StDev	Mean	StDev
<b>Method of Payment</b>						
Cash	2,310	2,130	3,005	2,276	2,739	2,160
Earn-out	0,150	0,422	0,204	0,516	0,159	0,444
Shares	0,512	1,208	0,830	1,536	0,584	1,318
Other	0,044	0,236	0,063	0,270	0,047	0,227
Deffered Payment	0,001	0,029	0,002	0,042	0,001	0,034
Debt assumed	0,155	0,400	0,238	0,489	0,189	0,431
Converted Debt	0,010	0,112	0,016	0,139	0,012	0,118
Loan notes	0,019	0,144	0,027	0,172	0,022	0,155
Cash assumed	0,037	0,206	0,045	0,223	0,040	0,213
<b>Deal Financing</b>						
New bank facilities	0,197	0,484	0,291	0,570	0,228	0,508
Rights issue	0,028	0,174	0,029	0,177	0,030	0,185
Capital increase - VP	0,750	1,606	1,191	2,029	0,830	1,723
Private placing	0,525	0,803	0,611	0,847	0,619	0,845
Number of Obs	1188		560		854	

Figure A.8.: Summary statistics of deal level variables.

## **Appendix B.**

### **Logistic Results**

	RegQuar=1				RegQuar=2				RegQuar=3				RegQuar=4												
	Cash	Emout	Shares	Other	Cash	Emout	Shares	Other	Cash	Emout	Shares	Other	Cash	Emout	Shares	Other									
<b>EPU</b>	-0.002 (0.003)	-0.006 (0.009)	0.002 (0.010)	1.97 (0.006)	-0.02 (0.026)	-0.02 (0.035)	0.02 (0.026)	0.05 (0.006)	-0.05 (0.011)	-0.05 (0.011)	-0.05 (0.011)	-0.05 (0.011)	-0.05 (0.011)	-0.05 (0.011)	-0.05 (0.011)	-0.05 (0.011)	-0.05 (0.011)								
<b>Politic</b>	-0.46 (0.332)	0.34 (0.708)	1.65 (1.030)	1.27 (0.609)	0.31 (1.862)	-	1.15 (0.470)	-	-1.85 (1.598)	1.71** (0.602)	0.33 (0.425)	0.81 (0.349)	0.11 (0.978)	0.28 (0.451)	1.47 (1.161)	0.23 (0.524)	0.77 (0.498)	0.33 (0.358)	0.67 (0.348)	0.39 (0.664)	0.65 (0.368)	1.85 (1.639)	-2.02 (1.554)	0.37 (0.841)	
<b>Manufacturing</b>	1.76*** (0.340)	-0.31 (0.767)	-2.4 (1.089)	1.80 (1.067)	-	-	0.54 (0.798)	-	-	2.08*** (0.486)	-1.05 (0.461)	0.24 (0.452)	0.8 (0.678)	-	-0.98 (0.999)	-0.28 (0.598)	1.66*** (0.485)	0.34 (0.400)	-0.15 (0.371)	-0.08 (0.696)	0.66 (0.441)	-0.71 (1.533)	1.13 (1.435)	0.33 (0.889)	
<b>Rates Spread</b>	1.31 (0.810)	0.46 (1.744)	-4.62 (2.988)	1.17 (1.034)	0.85 (4.004)	-11.33 (18.771)	0.84 (1.296)	-	-1.3 (3.302)	6.53 (4.301)	-0.23 (1.369)	-0.55 (1.026)	1.21 (3.452)	-2.09 (1.517)	162.4 (3.532)	1.03 (1.223)	-0.86 (1.030)	0.39 (0.864)	-0.59 (0.827)	-0.99 (1.468)	-2.33 (1.022)	-0.02 (2.832)	-5.88 (4.995)	1.23 (1.843)	
<b>Oil Change</b>	-0.71 (2.489)	-5.60 (5.186)	5.08 (10.501)	4.11 (4.540)	21.17 (19.985)	-102.14 (91.733)	-1.62 (3.585)	-	37.63 (21.562)	13.67 (12.005)	1.69 (4.301)	1.74 (3.905)	2.23 (3.112)	16.12 (10.528)	-4.03 (3.795)	4.8 (10.162)	-2.65 (3.919)	-1.00 (3.710)	2.36 (3.044)	-8.71** (2.828)	-2.28 (5.334)	-5.98 (3.110)	20.03 (14.394)	-22 (11.405)	-4.86 (7.063)
<b>CPI</b>	-0.23 (0.175)	0.11 (0.202)	0.04 (0.265)	-15.42 (0.307)	-0.62 (0.996)	-0.08 (2.505)	-0.17 (0.193)	-	0.56 (1.273)	-0.01 (0.579)	0.23 (0.312)	0.15 (0.281)	0.48 (0.358)	-0.94 (0.866)	0.27 (0.277)	39.61 (1.195)	-0.54 (0.278)	-0.02 (0.506)	0.57 (0.379)	2.23*** (0.401)	1.10 (0.637)	0.42 (0.420)	2.06 (1.408)	0.38 (1.269)	1.81 (0.792)
<b>BCI</b>	-0.003 (0.160)	1.03 (0.467)	0.33 (0.543)	70.18 (0.291)	-0.99 (1.069)	1.56 (2.666)	0.61 (0.388)	-	0.35 (1.179)	1.07 (1.637)	-0.01 (0.579)	-0.23 (0.165)	0.08 (0.560)	-0.06 (0.219)	0.84 (0.649)	-0.47 (0.223)	0.59 (0.246)	0.08 (0.232)	-0.07 (0.213)	-0.29 (0.353)	0.52 (0.278)	0.11 (0.862)	1.36 (1.129)	0.29 (0.686)	
<b>dREER</b>	14.29 (9.193)	-2.91 (17.158)	24.15 (28.115)	2.34 (13.614)	-106.74 (69.555)	-181.23 (216.328)	-16.59 (14.862)	-	245.4 (161.085)	35.73 (49.940)	-13.04 (26.073)	9.79 (24.160)	-26.11 (20.974)	23.23 (59.380)	45.43 (25.654)	8.38 (49.651)	-61.30 (29.479)	-5.02 (13.380)	3.87 (9.962)	7.54 (10.235)	-4.52 (16.035)	-32.31** (11.422)	8.86 (35.873)	37.45 (43.678)	12.95 (18.870)
<b>Volatility Index</b>	-0.007 (0.015)	0.008 (0.034)	-0.08 (0.064)	-37.34 (0.024)	0.03 (0.163)	-0.25 (0.318)	-0.04 (0.042)	-	0.03 (0.190)	-0.06 (0.165)	-0.03 (0.029)	-0.05 (0.024)	-0.10 (0.059)	-0.05 (0.024)	-24.48 (0.059)	-0.09 (0.050)	0.04 (0.030)	-0.01 (0.016)	-0.02 (0.013)	0.02 (0.026)	-0.02 (0.017)	0.09 (0.058)	-0.12 (0.104)	-0.02 (0.046)	

**Figure B.1.: Policy Uncertainty and Method of Payment Likelihood.** The values of the governance characteristic are indexed at percentiles (1=the lowest 25%) from the monthly values of WorldBank.

	RuleLaw=1				RuleLaw=2				RuleLaw=3				RuleLaw=4																								
	Cash	Exmort	Shares	Debt	Converted	Loan	Cash	Assumed	Cash	Exmort	Shares	Other	Assumed	Debt	Converted	Loan	Cash	Assumed	Cash	Exmort	Shares	Other	Assumed	Debt	Converted	Loan	Cash	Assumed									
<b>EPU</b>	0.004 (0.004)	-0.02 (0.016)	-0.01 (0.019)	1.44 (0.011)	0.01 (0.011)	0.02 (0.034)	-	-	-0.009*** (0.002)	0.008 (0.003)	0.013*** (0.003)	-	-0.001 (0.002)	-	-	-	-0.01 (0.014)	-	-0.004 (0.003)	0.004 (0.002)	0.002 (0.002)	-0.003 (0.006)	-	-	-	0.01 (0.007)	0.0005 (0.011)	0.01 (0.007)	-0.003 (0.003)	0.006 (0.003)	0.003 (0.003)	0.008 (0.007)	0.003 (0.004)	-	0.05 (0.034)	-	-0.003 (0.010)
<b>Politic</b>	-0.77 (0.422)	-0.95 (1.036)	4.2 (2.286)	0.94 (1.010)	1.32 (2.380)	-	-	1.50** (0.492)	0.55 (0.595)	1.08 (0.566)	1.05* (0.392)	-	-	-	-	-	-0.2 (1.089)	-	1.72** (0.544)	0.58 (0.385)	0.77 (0.325)	-0.43 (0.731)	1.37** (0.467)	-	-	1.31 (1.161)	0.01 (0.479)	0.08 (0.405)	0.83 (0.391)	1.31 (0.881)	-0.008 (0.402)	-	-	-	-	-	-0.18 (0.995)
<b>Manufacturing</b>	1.66*** (0.338)	0.34 (0.940)	-3.4 (1.778)	1.09 (1.196)	-	-	-	-	1.13 (0.524)	1.25 (1.143)	0.75 (0.879)	0.92 (0.764)	-	-	-	-	-	-	1.71*** (0.461)	-0.66 (0.410)	0.09 (0.384)	-0.47 (0.783)	0.57 (0.546)	-	-	-1.15 (0.913)	0.001 (0.564)	0.34 (0.467)	-0.26 (0.437)	0.78 (1.138)	0.82 (0.509)	-	-	-	-	-	-0.45 (1.024)
<b>Rates Spread</b>	0.6 (0.945)	3.15 (2.890)	6.25 (5.697)	26.02 (25.14)	2.11 (8.618)	6.99 (8.618)	-	-	-0.92 (1.080)	-2.07 (1.998)	-2.08 (1.701)	0.96 (0.907)	-	-	-	-	0.32 (3.070)	4.7 (3.211)	0.81 (1.658)	-0.60 (0.986)	-1.08 (0.810)	0.07 (1.730)	-1.60 (1.119)	-4.19 (2.549)	-1.02 (3.687)	0.79 (0.898)	-2.54 (1.520)	1.42 (2.24)	1.98 (1.363)	0.22 (2.391)	-2.91 (1.254)	-	-	-	-	-	3.39 (3.187)
<b>Oil Change</b>	-1.72 (3.277)	-7.63 (6.788)	1.63 (17.461)	6.38 (10.585)	22.66 (31.133)	-	-	-4.13 (3.562)	-8.54 (5.192)	2.31 (4.902)	-0.87 (2.851)	-	-	-	-	-	2.33 (8.141)	2.33 (8.141)	2.25 (3.831)	-1.32 (3.085)	0.63 (2.571)	4.95 (6.289)	-2.29 (3.193)	10.22 (12.244)	-5.89 (7.481)	-1.43 (3.378)	-2.77 (4.118)	5.79 (3.644)	-10.17** (3.257)	-4.34 (7.023)	-8.31 (3.497)	-	-	-	-	-	-8.89 (18.380)
<b>CPI</b>	-2.05 (1.215)	-3.56 (4.029)	11.91 (6.375)	-81.08 (3.475)	-7.26 (6.955)	-	-	-0.26 (0.149)	0.12 (0.244)	-0.17 (0.220)	-0.08 (0.143)	-	-	-	-	-	0.13 (0.428)	0.13 (0.428)	0.36 (0.298)	0.14 (0.238)	0.52 (0.337)	0.22 (0.319)	0.2 (0.233)	0.04 (0.605)	0.05 (1.431)	-0.28 (0.270)	0.09 (0.528)	0.57 (0.427)	2.85*** (0.463)	0.84 (0.860)	0.27 (0.463)	-	-	-	-	-	3.23 (2.480)
<b>BCI</b>	-0.08 (0.197)	1.99* (0.722)	1.42 (1.278)	85.3 (0.652)	-0.45 (1.254)	-	-	0.26 (0.232)	-0.90 (0.461)	0.32 (0.367)	0.05 (0.246)	-	-	-	-	-	0.1 (1.018)	0.1 (1.018)	0.13 (0.187)	0.05 (0.174)	-0.17 (0.159)	-0.29 (0.309)	0.15 (0.183)	0.05 (0.469)	0.99 (0.589)	-0.57** (0.185)	0.4 (0.300)	0.04 (0.280)	0.27 (0.264)	0.37 (0.570)	0.30 (0.266)	-	-	-	-	-	0.13 (0.659)
<b>dREER</b>	16.75 (12.022)	39.95 (32.855)	140.85 (83.306)	19.94 (33.023)	134.88 (94.051)	-	-	9.37 (19.977)	4.73 (23.864)	8.57 (21.434)	-10.02 (10.686)	-	-	-	-	-	-5.23 (27.668)	-5.23 (27.668)	-10.87 (18.261)	20.45 (15.010)	-11.1 (13.794)	-26.95 (31.880)	28.05 (16.588)	25.06 (60.794)	9.81 (39.172)	-39.43 (21.165)	-10.6 (15.536)	-5.67 (12.620)	27.2 (19.973)	15.26 (22.480)	-47.92 (14.492)	-	-	-	-	-	28.61 (26.429)
<b>Volatility Index</b>	-0.03 (0.022)	0.07 (0.055)	-0.06 (0.108)	-0.05 (0.086)	-0.15 (0.354)	-	-	-0.01 (0.027)	-0.16** (0.065)	-0.01 (0.038)	-0.01 (0.026)	-	-	-	-	-	-0.11 (0.120)	-0.11 (0.120)	-0.01 (0.020)	-0.04 (0.022)	-0.02 (0.017)	-0.03 (0.042)	-0.08 (0.019)	0.03 (0.054)	-0.21 (0.120)	-0.003 (0.022)	-0.001 (0.024)	-0.001 (0.021)	0.01 (0.040)	0.01 (0.040)	-0.01 (0.021)	-	-	-	-	-	-0.01 (0.197)

Figure B.2.: Policy Uncertainty and Method of Payment Likelihood. The values of the governance characteristic are indexed at percentiles (1=the lowest 25%) from the monthly values of WorldBank.





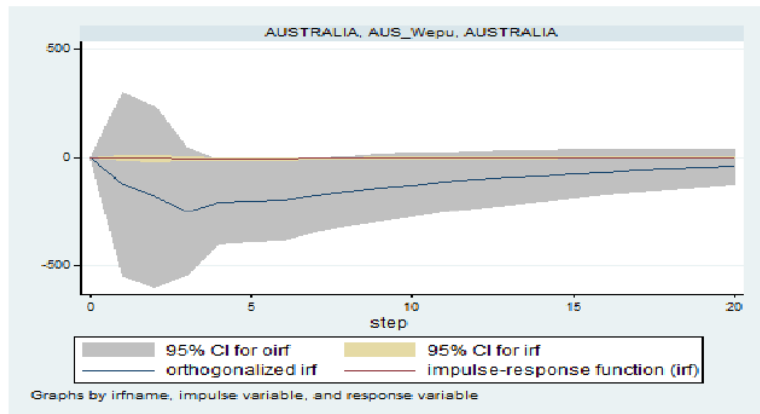
	Id=1					Id=2					Id=3							
	Corruption Control	Governance Effectiveness	Political Stability	Regulatory Quality	Rule of Law	All Instruments	Corruption Control	Governance Effectiveness	Political Stability	Regulatory Quality	Rule of Law	All Instruments	Corruption Control	Governance Effectiveness	Political Stability	Regulatory Quality	Rule of Law	All Instruments
<b>EPU</b>	0.13 (0.090)	1.57 (8.673)	-0.02 (0.010)	0.11 (0.071)	-2.69 (30.384)	-0.01 (0.009)	0.013 (0.005)	0.014 (0.005)	0.02** (0.009)	0.01 (0.006)	0.013 (0.005)	0.008 (0.005)	0.12*** (0.030)	0.09*** (0.016)	0.11*** (0.021)	0.13*** (0.040)	0.12*** (0.034)	0.07*** (0.011)
<b>Rates Spread</b>	-3.18 (3.420)	-46.10 (259.842)	1.52 (1.170)	-2.47 (2.817)	-	1.21 (1.134)	0.99 (1.007)	0.95 (1.015)	0.31 (1.207)	0.92 (1.032)	0.98 (1.012)	1.22 (0.967)	-6.00 (2.980)	-4.38 (2.274)	-5.65 (2.691)	-6.42 (3.365)	-6.03 (3.104)	-3.21 (1.958)
<b>Oil Change</b>	3.80 (7.205)	54.04 (310.046)	-1.71 (3.482)	2.96 (6.175)	-	-1.35 (3.384)	3.63 (3.087)	3.74 (3.113)	5.23 (3.657)	3.82 (3.151)	3.67 (3.100)	3.09 (2.973)	-8.64 (8.779)	-7.24 (7.184)	-8.33 (8.377)	-9.00 (9.284)	-8.66 (8.840)	-6.24 (6.305)
<b>CPI</b>	-0.26 (0.316)	-2.12 (11.564)	-0.06 (0.157)	-0.23 (0.272)	3.38 (39.491)	-0.07 (0.153)	1.10 (0.561)	1.10 (0.565)	1.13 (0.652)	1.10 (0.569)	1.10 (0.562)	1.09 (0.542)	3.27 (1.391)	2.38 (1.026)	3.08 (1.224)	3.50 (1.612)	3.29 (1.469)	1.73 (0.874)
<b>BCI</b>	1.40 (0.758)	12.05 (64.357)	0.23 (0.207)	1.23 (0.615)	-19.56 (##)	0.31 (0.200)	1.12*** (0.285)	1.15*** (0.286)	1.56*** (0.381)	1.17*** (0.304)	1.13*** (0.288)	0.97*** (0.266)	-0.01 (0.616)	0.15 (0.497)	0.02 (0.582)	-0.05 (0.660)	-0.01 (0.624)	0.28 (0.435)
<b>dREER</b>	2.09 (24.872)	-	-10.63 (12.741)	0.15 (21.516)	-	-9.79 (12.385)	-21.36 (26.791)	-21.64 (27.025)	-25.21 (31.217)	-21.81 (27.190)	-21.46 (26.877)	-20.07 (25.882)	87.9 (35.914)	62.15 (25.705)	82.3* (30.883)	94.55 (42.516)	88.38 (38.377)	43.68 (21.676)
<b>Volatility Index</b>	-0.14 (0.128)	-2.03 (11.446)	0.06 (0.029)	-0.11 (0.103)	3.68 (40.069)	0.05 (0.028)	0.02 (0.016)	0.02 (0.016)	0.02 (0.019)	0.02 (0.016)	0.02 (0.016)	0.03 (0.015)	-0.16* (0.061)	-0.14** (0.049)	-0.16** (0.057)	-0.17 (0.066)	-0.16* (0.062)	-0.13** (0.042)
<b>Politic</b>	2.30 (0.920)	8.25 (36.922)	1.64*** (0.451)	2.20** (0.790)	-	1.68*** (0.438)	1.47*** (0.390)	1.46*** (0.393)	1.42** (0.454)	1.46*** (0.396)	1.46*** (0.391)	1.48*** (0.377)	1.89 (1.097)	2.22 (0.883)	1.96 (1.033)	1.80 (1.180)	1.88 (1.114)	2.46*** (0.772)
<b>Manufacturing</b>	4.16** (1.360)	17.96 (83.969)	2.64*** (0.569)	3.93*** (1.143)	-	2.74*** (0.553)	2.73*** (0.518)	2.73*** (0.523)	2.74*** (0.603)	2.73*** (0.526)	2.73*** (0.520)	2.72*** (0.501)	1.25 (1.083)	1.50 (0.881)	1.30 (1.029)	1.19 (1.154)	1.24 (1.095)	1.67 (0.772)

Figure B.4.: M&As Volume and Policy Uncertainty. The id represents the investor protection origin. Where id=1 High Investor Protection, id=2 Medium Investor Protection and id=3 Weak Investor Protection.

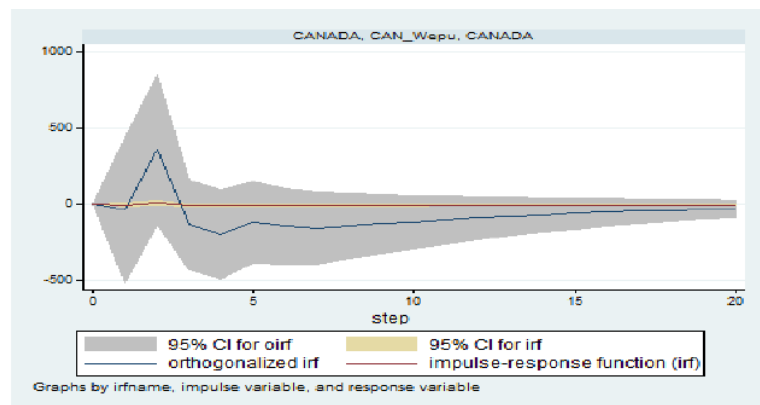


## **Appendix C.**

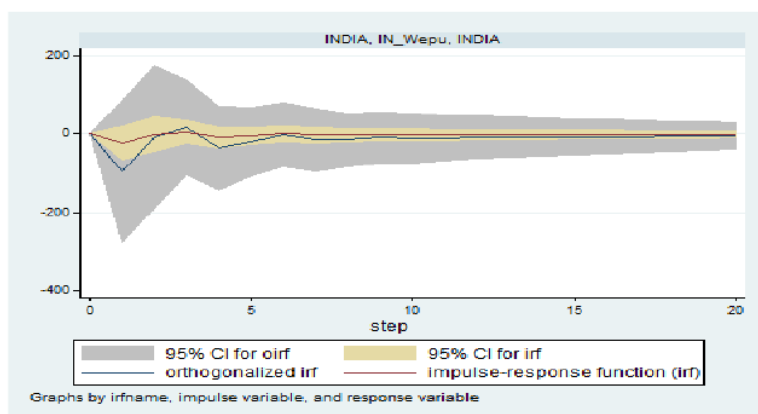
# **Policy Uncertainty on cross-border M&As through countries**



(a) Australia

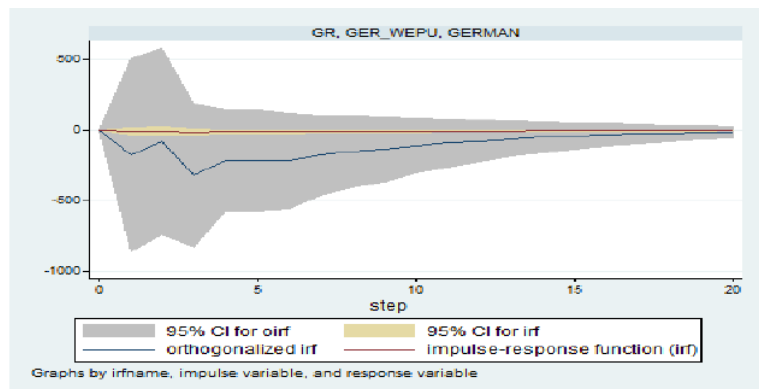


(b) Canada

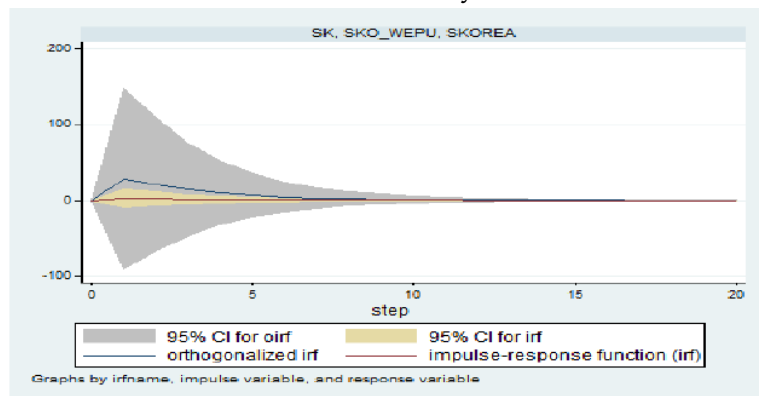


(c) India

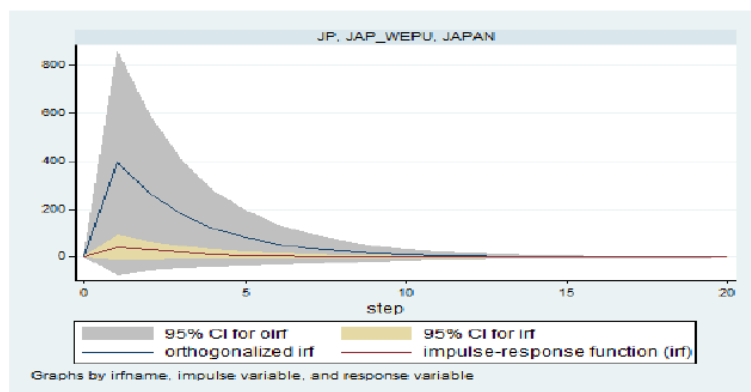
Figure C.1.: High Investor Protection Countries.M&amp;As by deal value



(d) Germany

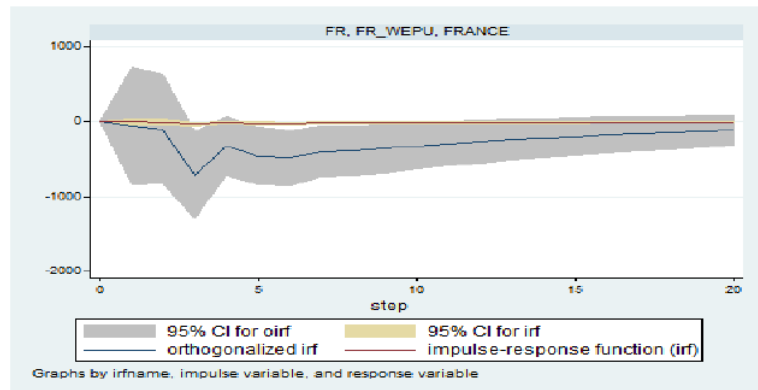


(e) SouthKorea

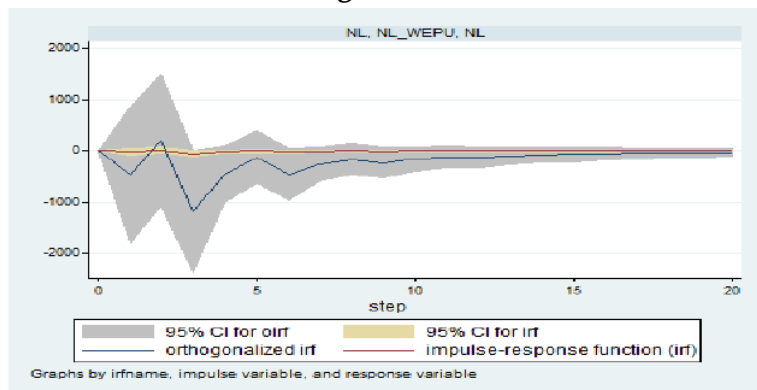


(f) Japan

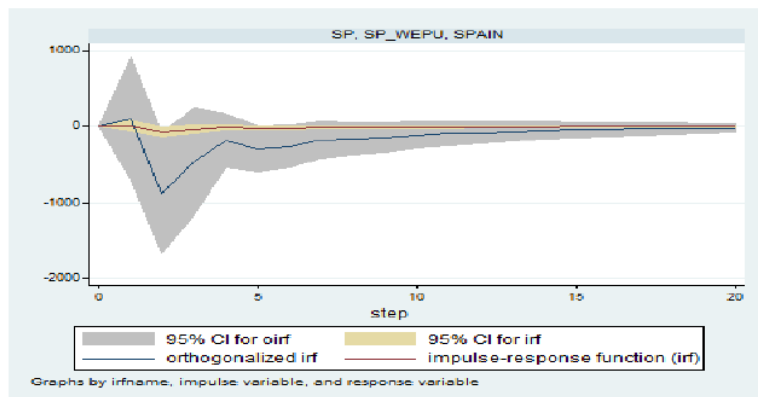
Figure C.1.: Medium Investor Protection countries. M&As by deals value.



(g) France



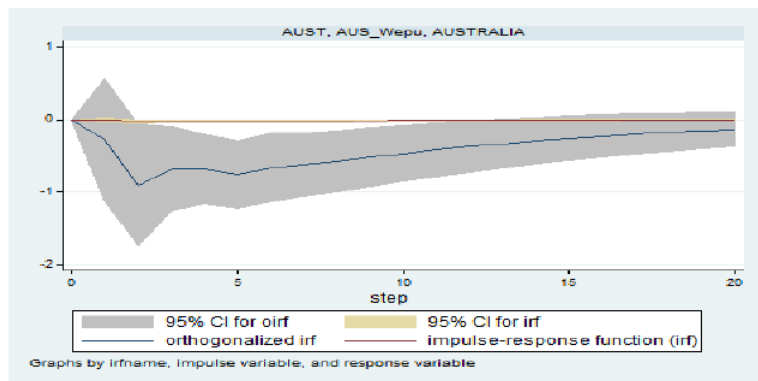
(h) Netherlands



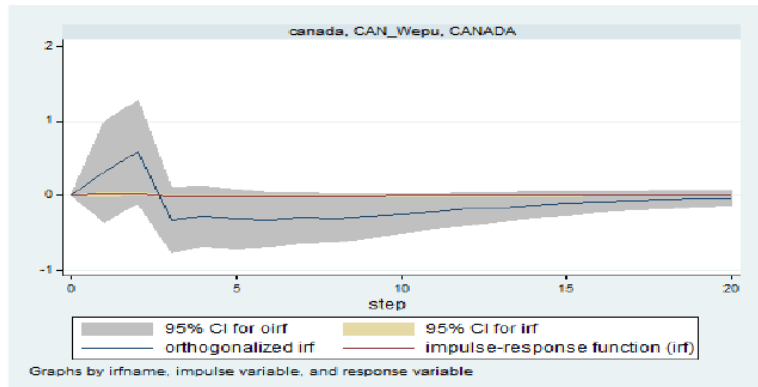
(i) Spain

Figure C.1.: Weak Investor Protection countries. M&amp;As by deals value.

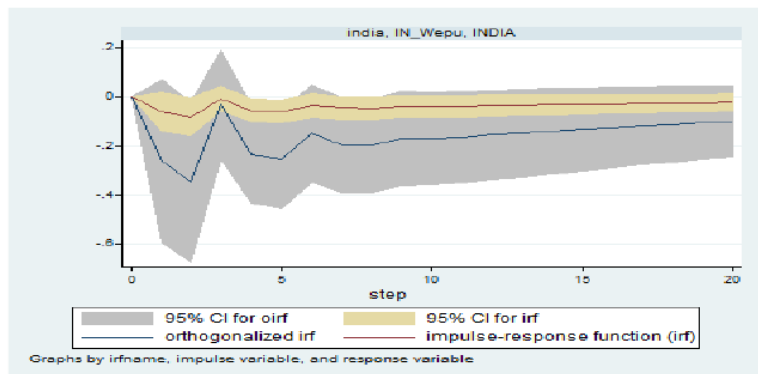
an



(j) Australia



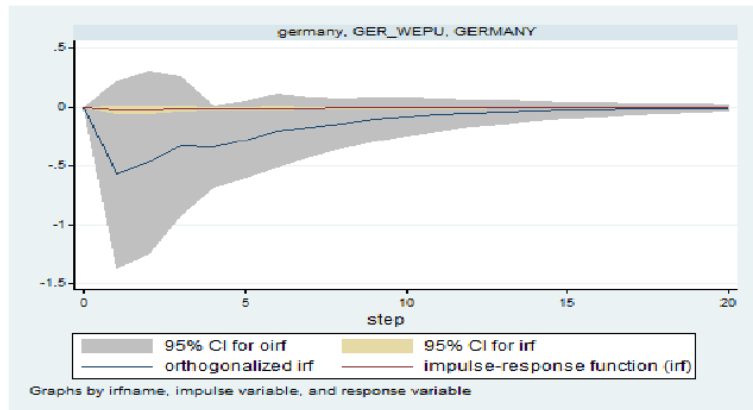
(k) Canada



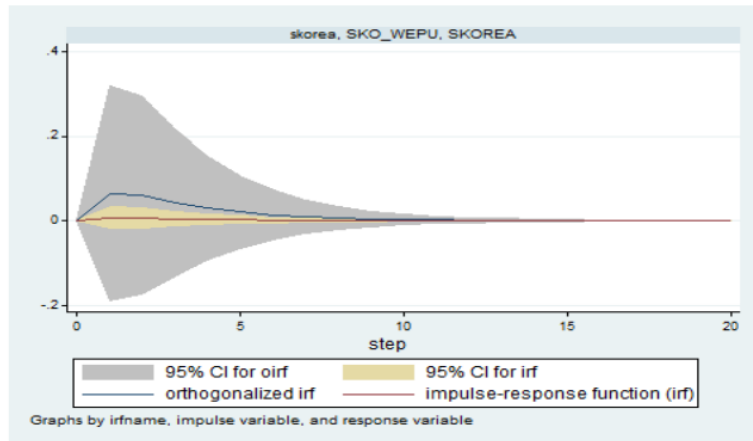
(l) India

Figure C.1.: High Investor Protection countries. M&As by number of deals.

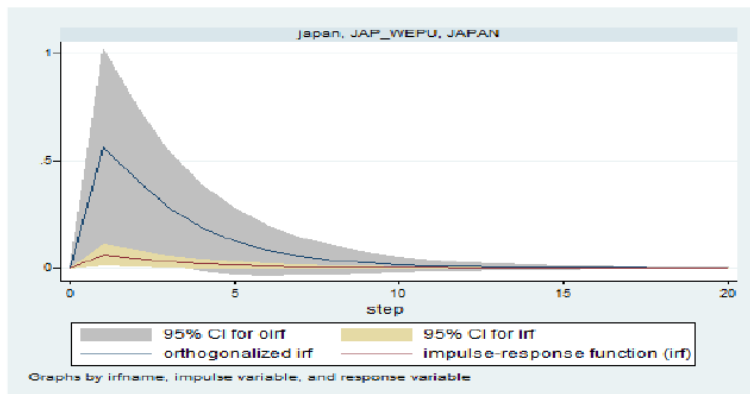




(m) Germany

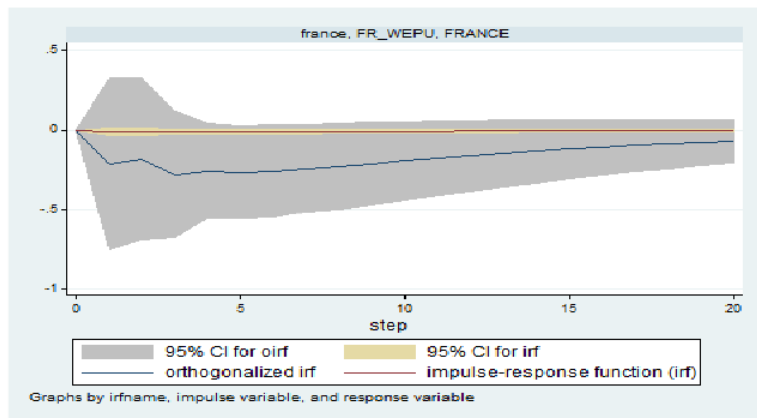


(n) South Korea

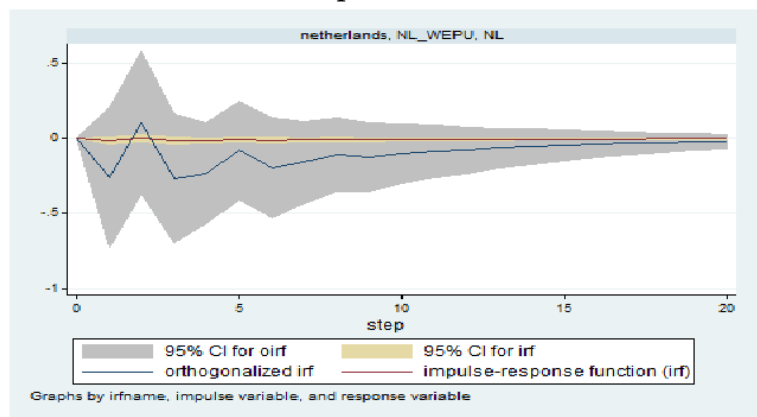


(o) Japan

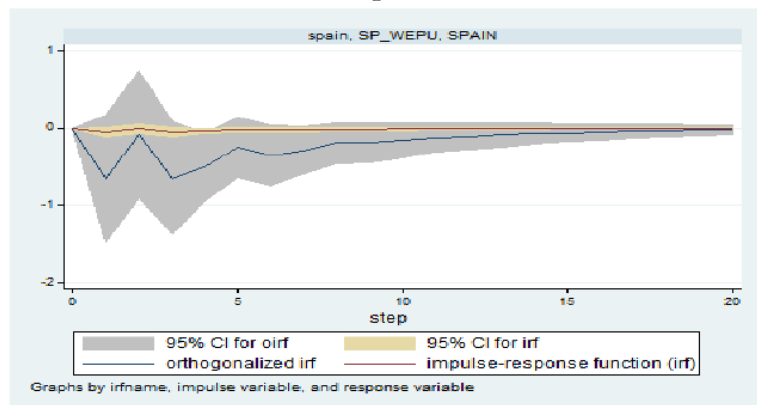
Figure C.1.: Medium Investor Protection countries. M&amp;As by number of deals.



(p) France



(q) Netherlands



(r) Spain

Figure C.1.: Weak Investor Protection countries. M&As by number of deals.