Cultural Values, CEO Risk Aversion and Corporate Takeover Decisions†

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Abstract

In this paper, we examine the role of culture in corporate takeover decisions. In particular, we argue that managerial risk aversion, at the national level, is a cultural trait and affects the required net synergies. First, we propose a model that links CEO risk aversion to the required net synergies. Second, we empirically show that CEOs of firms located in countries with higher levels of risk aversion, measured by Hofstede's (2001) uncertainty avoidance score, show less takeover activity, engage more in diversifying takeovers and require higher premiums on takeovers. Third, we show that risk aversion plays a greater role in relatively large takeovers. Our results are robust to the inclusion of many other possible explanatory variables, such as legal structures, method of payment, etc.

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1. Introduction

There is an established literature that has linked culture to economic decisions, outcomes and institutions (see e.g. Weber, 1905; Landes, 2000, among others). As culture can be seen as "the collective programming of the mind that distinguishes the members of one group or category of people from another" (Hofstede, 2001, p. 9), it is not surprising that culture also affects the way that people in a society shape their legal structures and financial institutions. Several studies have examined the role of culture in finance. For example, Stulz and Williamson (2003) show that culture (measured by the principle religion of a country) plays an important role in explaining the protection of creditor rights (more so than traditional arguments such as a country's wealth or legal system). Licht, Goldschmidt and Schwartz (2005) and Doidge, Karolyi and Stulz (2007) further show that culture affect the corporate governance of firm within a country.

Besides affecting legal structures and institutions at the aggregate level, culture may also affect the individual decisions made by people in a society. As Hilary and Hui (2009, p. 455) note, "firms do not make decisions, people do and what they do outside work is likely to affect the way they make these decisions inside work", and several studies have empirically shown how culture affects financial decision making. For instance, Beugelsdijk and Frijns (2010) and Andersen et al. (2011), show that culture (in particular a country's degree of uncertainty avoidance) affects foreign investment decisions. Further, in corporate finance, Hilary and Hui (2009) use religiosity of people within a US county as a measure of risk aversion and show that firms located in counties with higher levels of religiosity display lower degrees of risk exposure. Their study suggests that risk aversion may to some extent be culturally determined. Beyond this, little empirical research has been done on the effects of culture in financial decision making. This paper intends to fill part of this gap.

One question in corporate finance that has yet to be resolved convincingly is why firms undertake takeovers. Several studies have suggested that a CEO's personal interests and characteristics often drive these decisions, one factor being the CEO's degree of risk aversion. Since CEOs have a disproportionate exposure to the performance of the firm and are unable to fully diversify, takeovers have a direct effect on their personal wealth. Amihud and Lev (1981) first explored this idea and found evidence that risk aversion indeed causes managers to acquire outside their core industries as a way to diversify their personal wealth. This suggests that the degree of CEO risk aversion has an impact on takeover decisions as has been suggested by various other studies (e.g., May, 1995; Hall and Murphy, 2002; Lewellen, 2006; and Graham, Harvey and Puri, 2010).

In this paper, we revisit the issue of how risk aversion affects the corporate takeover decision. In contrast to prior studies, we explore the question of how risk aversion as a cultural trait affects takeover decisions at a country level using a national measure of risk aversion, Hofstede's (2001) uncertainty avoidance score. We argue that since takeovers are a risk to the firm's value and hence a CEO's position, a more risk averse CEO will require higher compensation before undertaking an acquisition. Hence, a more risk averse CEO will only engage in a takeover if the expected *net synergies*[1] are large enough.

[1]Net synergies refer to the value of the target to the acquiring firm minus the price paid for the target firm.

To examine this issue, we first develop a theoretical model based on Aktas et al. (2009) that establishes a link between CEO risk aversion and expected net synergies. This model suggests that 1. expected net synergies are higher for CEOs with higher degrees of risk aversion; 2. there will be less takeover activity for CEOs with higher degrees of risk aversion; and 3. risk version plays a greater role for deals that can potentially lead to greater losses. Next, we empirically examine these predictions using Hofstede's (2001) degree of uncertainty avoidance as a measure for risk aversion and short-term cumulative abnormal returns (CARs), as a measure of expected net synergy. Using a sample of 25,843 takeovers from 39 countries, we confirm that CEOs from more risk avoiding nations engage in less takeover activity and when they engage in a takeover, they have a preference for diversifying takeovers (see Amihud and Lev, 1981). We further find that risk aversion has a strong positive relationship with CARs, indicating that CEOs from more risk averse nations require higher premiums on takeovers, leading to a more than 2.4% difference in average CAR between the most and the least uncertainty avoiding nation. We also find that relative deal size is positively related to CARs, indicating that larger takeovers require higher premiums, and that uncertainty avoidance plays a greater roll in relatively large deals compared with relatively small deals. We perform several robustness checks to validate our results, such as alternative estimations techniques, sub-sample analysis and the addition different controls. However, our main results largely obtain.

The paper proceeds as follows. In section 2, we provide a theoretical framework to show the relationship between CEO risk aversion and expected net synergies and develop several testable hypotheses. Section 3 discusses the data employed in the empirical part of the study. Section 4 presents and discusses our empirical results and robustness tests. We conclude in section 5.

2. CEO Risk Aversion and Net Synergies

2.1 Theoretical Framework

In this section, we argue that the CEO's degree of risk aversion is positively related to the expected net synergies on takeovers. We establish this link by developing a framework similar to Aktas et al. (2009).

We assume that the CEO is facing a takeover decision on target firm *T*. Let V_T be the current market value of the target firm and $\widetilde{s}$ be the potential (percentage) synergies that the acquiring firm can obtain by acquiring the target. The potential synergies, $\widetilde{s}$, are not known with certainty, but come from a distribution with a mean and variance known to the CEO of the acquiring firm. Let $\widetilde{V}_T$ be the value of the target firm to the acquirer, i.e.,

$$\widetilde{V}_T = V_T(1+\widetilde{s}), \tag{1}$$

which is also a random variable dependent on $\widetilde{s}$. The *net synergies* of the target, $\widetilde{\delta}_T$, will be defined as the difference between the value of the target to the acquirer and the price paid for the target firm, *P*, i.e.,

$$\widetilde{\delta}_T = \widetilde{V}_T - P, \tag{2}$$

which again is a random variable. The percentage net synergies of the target to the acquiring firm, $\widetilde{\delta}_A$, are given as

$$\tilde{\delta}_A = \frac{V_A + \tilde{\delta}_T}{V_A}, \tag{3}$$

where V_A is the current market value of the acquiring firm.

The CEO will need to decide what price, P, he is willing to pay for the target. In doing so, we assume that he faces the following decision problem. The CEO has a current wage package, W, from which he derives utility $U(W)$.[2] Based on the expected net synergies that can be obtained, the CEO makes a bid for the target. The bid can be accepted with probability ϕ_D, or can be rejected with probability (1 - ϕ_D), where ϕ_D is an increasing function in P (i.e. if the CEO bids more, there is a greater probability of the bid being accepted). If the bid gets rejected nothing will happen and the CEO keeps his current utility, $U(W)$. If the deal gets accepted, the acquisition may be considered successful (i.e. positive net synergies are realized) with probability ϕ_S, or a failure with probability (1 - ϕ_S), where ϕ_S is a decreasing function in P (i.e. if the CEO offers more, there is a lower probability of positive net synergies being realized). If positive net synergies are realized the CEO receives a bonus $C(\tilde{\delta}_A)$, which is increasing in $\tilde{\delta}_A$. As in Aktas et al. (2009), we assume that $C(\tilde{\delta}_A)$ is linear in $\tilde{\delta}_A$, i.e.

$$C(\tilde{\delta}_A) = a + b\tilde{\delta}_A, \tag{4}$$

[2] W can be thought of as the present value of his wage package and bonuses conditional on no offer being made for the target firm.

consisting of a fixed component a and a variable component b depending on the size of the net synergies. In the case of a successful deal the CEO's total expected utility will be $E[U(W + C(\tilde{\delta}_A))]$. If the acquisition is considered a failure, the CEO stands to make a loss, L, and his total utility will be $U(W – L)$.[3] The decision problem facing the CEO is summarized in Figure 1.

INSERT FIGURE 1 HERE

From this decision problem, we can compute the expected utility of the CEO

$$E[U] = (1 - \phi_D)U(W) + \phi_D\{(1 - \phi_S)U(W - L) + \phi_S E[U(W + C(\tilde{\delta}_A))]\}, \tag{5}$$

where we can obtain expressions for $E[U(W + C(\tilde{\delta}_A))]$ and $U(W – L)$ by using a first and second order Taylor approximations around W. As per Pratt (1964), we obtain

$$E[U(W + C(\tilde{\delta}_A))] = U(W) + E[C(\tilde{\delta}_A)]U'(W), \tag{6}$$

and

$$U(W - L) = U(W) - LU'(W) + 1/2L^2U''(W), \tag{7}$$

[3]Similar to Aktas et al. (2009), we assume that L represents a major loss to the CEO (e.g. the CEO may lose his job, bonuses or other perks, reputation, etc.). This idea is supported by the findings of, for example, Lehn and Zhao (2006) who show that CEOs who initiate value destroying takeovers face a much higher probability of being involuntarily replaced.

where $U'(W)$ and $U''(W)$ are the first and second order derivatives with respect to W. Substituting (6) and (7) into (5) yields

$$E[U] = U(W) + \phi_D \{(1 - \phi_S)(-LU'(W) + \frac{1}{2}L^2U''(W)) + \phi_S E[C(\tilde{\delta}_A)]U'(W)\}. \quad (8)$$

To determine the price at which the CEO will undertake the acquisition, or stated differently, to determine the premium the CEO requires on the takeover, we maximize Equation (8) with respect to P. Thus we solve

$$\begin{aligned} \frac{\partial E(U)}{\partial P} &= (\phi_D\phi_S)' E[C(\tilde{\delta}_A)]U'(W) - \phi_D\phi_S bU'(W) - \phi_D'(1 - \phi_S)LU'(W) + \phi_D\phi_S' LU'(W) \\ &+ \frac{1}{2}\phi_D'(1 - \phi_S)L^2U''(W) - \frac{1}{2}\phi_D\phi_S' L^2U''(W) = 0 \end{aligned} \quad (9)$$

for $E[\,C(\tilde{\delta}_A)\,]$, which yields

$$E[C(\tilde{\delta}_A)] = \frac{\phi_D\phi_S b + \phi_D'(1 - \phi_S)L - \phi_D\phi_S' L + \frac{1}{2}\phi_D'(1 - \phi_S)L^2\gamma - \frac{1}{2}\phi_D\phi_S' L^2\gamma}{(\phi_D\phi_S)'}, \quad (10)$$

where, assuming that utility is increasing and concave in W, $\gamma = -\frac{U''(W)}{U'(W)}$ is the Arrow and Pratt coefficient of absolute risk aversion, and ϕ_D', ϕ_S' and $(\phi_D\phi_S)'$ are the first-order derivatives with respect to P. Since $\phi_D' > 0$ (as the probability of getting a deal accepted increases in P) and $\phi_S' < 0$ (as the probability of positive net synergies decreases in P), Equation (10) shows that there is a positive relationship between the compensation required by the CEO and his degree of risk aversion (for $\gamma > 0$, $\frac{1}{2}\phi_D^{'}(1-\phi_S)L^2\gamma > 0$, as $\phi_D' > 0$, and $-\frac{1}{2}\phi_D\phi_S^{'}L^2\gamma > 0$, as $\phi_S' < 0$).

We can further solve Equation (10) for the expected net synergies, E[$\widetilde{\delta}_A$], as we have assumed an explicit form for $C(\widetilde{\delta}_A)$:

$$E[\widetilde{\delta}_A] = \frac{\phi_D\phi_S}{(\phi_D\phi_S)'} + \frac{\phi_D'(1 - \phi_S)L - \phi_D\phi_S' L + \frac{1}{2}\phi_D'(1 - \phi_S)L^2\gamma - \frac{1}{2}\phi_D\phi_S' L^2\gamma}{b(\phi_D\phi_S)'} - \frac{a}{b}\ . \tag{11}$$

Several implications can be derived from Equation (11). First, Equation (11) shows that the required (expected) net synergies are a positive function of the CEO's risk aversion (since ϕ_S' is negative). Thus a higher degree of risk aversion would induce a CEO to offer less, so that greater net synergies can be expected. Second, as a risk averse CEO would offer less, it is expected that less deals would get accepted (as ϕ_D is increasing in *P*). Hence, we would expect to see less takeover activity for more risk averse CEOs. Finally, Equation (11) shows that the required net synergies are positively related to *L*, i.e. expected net synergies need to be greater when the loss is greater. This loss furthermore interacts with the degree of risk aversion.

2.2 Implementation of the Theoretical Framework

The framework presented above establishes a positive relationship between net synergies and CEO risk aversion. However, net synergies and CEO risk aversion are not directly observable. In this section, we first establish a link between net synergies and cumulative abnormal returns (CARs), and second argue that risk aversion at the national level is a cultural trait. As a result, the link between net synergies and CEO risk aversion can be tested by examining the relationship between cumulative abnormal returns and cultural traits.

While expected net synergies are unobservable, they can be evaluated on the basis of CARs. As expected net synergies (E[$\tilde{\delta}_A$]) obtained from the takeover are the expected gains to the shareholders of the acquiring firm, we can expect the value of the acquiring firm to increase by the value of net synergies created (see also Lehn and Zhao, 2006). The expected percentage net synergies (E[$\tilde{\delta}_A$]), should be the same as the percentage increase in the share price of the acquirer at the time of the announcement(controlling for the dilution that may take place if all or part of the acquisitions is financed by equity).[4] Hence, the short-term cumulative abnormal returns (CARs) around the announcement should provide a signal of the expected net synergies.

We further argue that aggregate risk aversion at the national level is a cultural trait. Although risk aversion itself is an individual characteristic, Hilary and Hui (2009) argue that individuals have the tendency to conform to the dominant values and behavior of the group. In their study on how religiosity affects risk aversion and corporate decision making, they note that, "To the extent that religious individuals cluster in a county, firms located in this county should employ a larger proportion of religious people at different levels of the organization. As a result, the extent to which religious employees, managers in particular, tend to be more risk averse should be reflected in a firm's corporate culture and its behaviour. This should generate a greater aggregate risk aversion for firms that are located in more religious counties than for firms that are located in less religious counties" (Hilary and Hui,

[4]We control for the potential dilution in section 4.5.

2009, pp. 458-459). Hilary and Hui (2009) empirically confirm the relationship between religiosity, risk aversion and corporate decision making by showing that firms located in US counties with high levels of religiosity have lower risk exposures, higher returns on assets and lower investment rates.

This argument for the impact of religiosity on corporate decision making can easily be extended to culture and its impact on corporate decision. Focusing on the decision making of executive management, Geletkanycz (1997) notes that culture has an important impact on the executive mindset. Geletkanycz (1997) notes: "As members of national societies, managers not only contribute to the collective formulation of cultural norms and views, they experience social reinforcement pressures which bring their individual-level assumptions and preferences into close alignment with those of their native culture" (Geletkanycz, 1997, pp. 617). Indeed Geletkanycz (1997) empirically shows that culture, as measured by Hofstede's (2001) cultural values affects the executive mindset.

In line with Hilary and Hui (2009) and Geletkanycz (1997), we argue that as individuals with the same cultural norms and views are clustered in a country, firms in this country are more populated by people that are driven by the same cultural norms and values. Consequently, risk aversion at a national level should be reflected in a firm's corporate culture and its behaviour, in particular that of its management (see Geletkanycz, 1997). This should generate more risk averse behavior, on aggregate, for firms located in more uncertainty avoiding/risk averse countries and, therefore, should generate differences in risk aversion across countries.[5]

[5]We note that in our study we measure risk aversion for the country where the acquiring firm is located and not risk aversion of the CEO's nationality. One could argue that as firms may be run by foreign CEOs, it is the CEO's national culture that should affect his risk aversion. However, as Geletkanycz (1997) argues social reinforcement pressures bring individual-level assumptions and preferences into close alignment with their

The above mentioned literature provides arguments why culture may affect risk aversion and decision making of individuals within a country. Besides these arguments, there has been a vast amount of empirical literature studying the impact of culture on economic decision making (see e.g. Kirkman et al., 2006 for an overview of this literature). Many of these studies rely on the cultural framework provided by Hofstede (2001). Hofstede (2001) defines four cultural dimensions that capture the cultural traits of members of that society. These dimensions are: Uncertainty Avoidance; Individualism; Power Distance and Masculinity.[6] These four dimensions are assumed to reflect key aspects of a society's culture. Hofstede (2001) then assigns a score to each country on each cultural dimension to indicate how people from different cultures feel about the above societal issues.

Of these four dimensions, we are particularly interested in uncertainty avoidance as a national measure of risk aversion, and although Hofstede's (2001) uncertainty avoidance score captures more than just risk aversion, numerous studies have used uncertainty avoidance as a measure for risk aversion. For example, Kwok and Tadesse (2006) show that high uncertainty avoiding countries are characterized by a (relatively risk-averse) bank-based financial system,

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native culture, suggesting that the risk aversion for the country of the acquiring firm should matter more than the risk aversion of the CEO's nationality. Furthermore, Graham, Harvey and Puri (2010) demonstrate that there is a link between CEO characteristics and company profile, suggesting that CEO either select firms whose corporate culture fits their personal characteristics or vice versa. If, however, the CEO's decisions are driven by his national culture, then our results should understate the true relationship between risk aversion and required net synergies.

[6]Uncertainty Avoidance captures a society's tolerance for uncertainty and ambiguity. It indicates to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. Individualism measures the degree to which individuals are integrated into groups. Power distance measures the extent to which members of organizations accept and expect that power is distributed unequally. Masculinity refers to a society's focus on assertiveness and competitiveness on one side (masculine features) versus modesty and caring for the quality of life on the other side (feminine features).

and low uncertainty avoiding countries by a market-based financial system. Chui and Kwok (2008) further show that high uncertainty avoiding countries have higher levels of life insurance consumption. Finally, in a cross-country study on international mutual funds' asset allocations, Beugelsdijk and Frijns (2010) and Anderson et al. (2011) show that high uncertainty avoiding countries allocate fewer funds to foreign markets and display a greater home bias. These studies demonstrate a clear link between uncertainty avoidance and risk aversion.

Based on the arguments presented above, we expect that CARs around the takeover announcement reflect the net synergies created by a takeover, while Hofstede's (2001) uncertainty avoidance score is related to (country-level) risk aversion. We use these measures to test various implications of the framework presented in section 2.1.

3. Data

We obtain data on mergers and acquisitions undertaken around the world from the Thomson One Banker database. This database contains detailed information on mergers and acquisitions around the world, including details on the specific deal (date of announcement, completion status, date of completion, percentage of shares bought, dollar size of the deal, etc.), the acquirer (acquirer nationality, industry, etc.) and the target (target nationality, industry, etc.). From this database, we collect data on all mergers and acquisitions over the period January 1990 to August 2008. The database contains data on 136,086 mergers and acquisitions attempted within this period. However, to be included in the sample, we only select those takeovers for which the deal size is at least US$ 1 million, at least 50% of the shares are sought in the takeover, and the deal has been completed. Furthermore, the acquirer needs to be a publicly traded company from a country where Hofstede (2001) scores are available. Finally, we only select those firms for which we obtain daily stock price and firm size data from Thompsen Datastream. This provides us with a final sample of 25,750 acquisitions made by 7,681 firms from 39 countries.

In Table 1, we report some summary statistics of our sample per country. The first and second columns report the number of acquisitions and the number of acquirers originating from each country. The number of acquisitions are the largest for the US (17,757 acquisitions), covering nearly 70% of all acquisitions, followed by Canada, Japan and the UK. These are also the countries with the largest number of acquirers. The smallest number of acquisitions is from emerging markets, such as the Philippines, Hungary and Thailand. Acquiring firms from less developed markets appear to be smaller, with the smallest average firm size in the Philippines at US$272 million, although interestingly the largest firms, on average, are from Spain at US$25 billion. The smallest average deal size is for Hungary at US$35 million, while the largest is for France at US$808 million.

INSERT TABLE 1 HERE

In column 5 of Table 1, we report the average CARs for the -1 to 1 day window for each country. In most countries, we find that the average CARs are positive, and CARs are highest in the Philippines at 4.60% and lowest in Argentina at -1.08%.

The last column of Table 1 reports the Hofstede (2001) uncertainty avoidance score for each country. There is a wide variation in the degree of uncertainty avoidance per country. The most uncertainty avoiding nations, according to Hofstede (2001), are Greece and Portugal, while the least uncertainty avoiding countries are Singapore, Hong Kong and Sweden.

INSERT TABLE 2 HERE

In Table 2, we report summary statistics for our sample over time. In the first column of Table 2 we report the number of takeovers per year. Over time, we observe an increase in the number of takeovers, with a spike in the number of takeovers in the years 1997-2000 (which to some extent may be driven by the large merger wave in the US over this period). The final year shows a drop in the number of takeovers. This is due to the fact that our sample ends in August 2008. The next column shows the average cumulative abnormal return per year. Although we do not observe any discernable trend in CARs, we do note that CARs are positive for all years. CARs seem to be most depressed in 1990, 1991 and during the merger wave from 1997-2001, an observation which is in line with Moeller et al. (2005). The next two columns of Table 2 report the average deal size and average acquiring firm size (in millions of US dollars). As with CARs there is no clear trend although again we note a spike in both deal and firm size during the 1997-2001 merger wave.

4. Empirical Findings

4.1 Takeover Activity and Uncertainty Avoidance

As a first empirical test to establish the link between risk aversion, uncertainty avoidance and corporate decision making, we investigate the relationship between takeover activity (the number of acquisitions made) and the uncertainty avoidance score. Based on our model, we expect a negative relationship between the degree of uncertainty avoidance and the number of acquisitions. If more risk averse managers require higher premiums on takeovers, then we also expect them to engage in fewer takeovers, because there are fewer takeovers offering the required net synergies. We test this hypothesis by estimating the following regression:

$$NUM_{ij} = \alpha + \beta_1 UA_j + \gamma_k Controls_{jk} + \varepsilon_{ij}\,, \tag{12}$$

where NUM_{ij} is the total number of acquisitions made by firm i from country j over the sample period, UA_j is the Hofstede (2001) uncertainty avoidance score for country j, and $Controls_{jk}$ is a set of control variables that are added to the model. Since NUM_{ij} is a count variable we use Poisson regressions to estimate Equation (12).[7]

INSERT TABLE 3 HERE

In the first column of Table 3, we report the results of Equation (12), where we add a control variable that captures the fact that firms in emerging markets engage in less takeover activity. The relationship between the number of acquisitions made and the uncertainty avoidance score is negative and significant at the 1% level. These results support our argument that if more risk averse managers require higher premiums on takeovers they will engage in less takeover activity, and is consistent with the findings of Graham, Harvey and Puri (2010), who show that more risk tolerant CEOs engage in more M&A activity. To examine the robustness of these results, we extend Equation (12) by including industry effects and the average (log) size of the acquiring firm (columns 2 and 3). However, these factors do not affect the

[7]Note that we only observe NUM_{ij} for firms that have completed an acquisition, which introduces a self-selection bias. This bias cannot be resolved as we cannot observe whether or how often a CEO has contemplated not to make a bid. However, we can give our results of this regression a conditional interpretation, i.e. for the subset of firms that have completed takeovers, how does risk aversion affect their takeover activity.

significance and direction of the relationship between uncertainty avoidance and number of acquisitions.

4.2 Industry Diversification and Uncertainty Avoidance

Our second test follows Amihud and Lev (1981) who argue that more risk averse CEOs engage in more diversifying takeovers. They measure diversifying takeovers by a dummy variable that is equal to 1 if the acquisition is outside the industry of the acquiring firm and measure risk aversion by considering the equity stake of managers in the firm. Amihud and Lev (1981) find a positive relationship between the proportion of equity held by management and diversifying takeovers. We investigate the same issue by linking diversifying takeovers to uncertainty avoidance, and estimate the following relationship,

$$Divers_{ijt} = \alpha + \beta_1 UA_j + \beta_2 \frac{DealSize_{ijt}}{MV_{ijt}} + \beta_3 Log(MV_{ijt}) + \varepsilon_{ijt}, \qquad (13)$$

where $Divers_{ijt}$ is an indicator variable equal to 1 if the deal is diversifying, and 0 if it is not. We classify a takeover as diversifying if the acquirer and target have different SIC codes. We look at two separate definitions of a diversifying takeover. We first consider situations where there is a difference in all four digits of the SIC code (incorporating both major and minor industry diversification) and second where there is a difference in the first two digits of the SIC (major industry diversification). We control for the relative size of the deal ($\frac{DealSize_{ijt}}{MV_{ijt}}$) and the (log) size of the acquirer ($Log(MV_{ijt})$). In addition, we control for time effects and industry fixed effects. Since the dependent variable is an indicator variable, we estimate Equation (13) as a Probit model.

INSERT TABLE 4 HERE

In the first two columns of Table 4 we show the results for the Clustered-Probit model, where we control the standard errors for clustering at the country-level (see Petersen, 2009). In the last two columns we estimate the coefficients using the Fama and McBeth (1973) approach, by estimating cross-sectional Probit models for each year. For both Clustered-Probit and Fama-McBeth, we find that uncertainty avoidance is significant for both groups of diversifying takeovers. However, the relationship is stronger for major diversifying takeovers. These results suggest that more risk averse CEOs (from more uncertainty avoiding nations) engage more in diversifying takeovers. This confirms the findings of Amihud and Lev (1981) and provides additional evidence that uncertainty avoidance indeed captures risk aversion. In addition, the results also show that larger acquirers engage more in diversifying takeovers (confirmed by both Probit and Fama-McBeth), and relatively smaller deals are more likely to be diversifying.

Combined, these two results suggest that acquirers from high uncertainty avoiding countries tend to engage in less takeover activity altogether, but when they engage in a takeover, they are more inclined to engage in diversifying takeovers.

4.3 Cumulative Abnormal Returns and Uncertainty Avoidance

The framework developed in section 2 posits a positive relationship between risk aversion (measured by uncertainty avoidance) and expected net synergies (measured by short-term CARs around the announcement of a takeover). We assess this relationship by regressing CARs on uncertainty avoidance scores, i.e.

$$CAR_{ijt} = \alpha + \beta UA_j + \gamma_k Controls_{ijt,k} + \varepsilon_{ijt} \,, \tag{14}$$

where CAR_{ijt} is the cumulative abnormal return of firm i from country j in year t. $Controls_{ijt,k}$ captures other factors that may affect CARs around takeovers. We add the following controls. First, we control for the relative size of the deal (computed as deal size divided by market value of the acquiring firm). Second, we control for the (log) size of the acquiring firm (measured in millions of US dollars), because small firms typically make acquisitions that result in higher CARs (see Moeller et al., 2004). Third, we control for whether a takeover was diversifying or not. We do this at two levels: 1) by controlling for country diversification (i.e. whether an acquisition was made in a foreign country); and 2) by controlling for industry diversification (based on difference in 2-digit SIC codes). Fourth, we control for the number of prior acquisitions made by the firm as CEOs may learn over time, and this may affect the net synergies on subsequent takeovers (see e.g. Aktas et al., 2009). Fifth, we control for legal origin (see La Porta et al., 1998, 1999, 2000) as the effect of uncertainty avoidance may just be a proxy for different legal structures. Finally, we control for time effects, by including year dummies, as CARs are shown to vary over time (see e.g. Moeller et al., 2005 and Table 2), and include industry dummies, because Mulherin and Boone (2000) document significant industry clustering in acquisition and divestitures activity.

INSERT TABLE 5 HERE

Table 5 reports the regression results for CARs (in percentages) on uncertainty avoidance, where we include the different control variables incrementally. For all regressions, we compute robust standard errors controlling for clustering at the country level (see Petersen, 2009). Column 1 reports the regression results where we only include uncertainty avoidance, relative deal size and acquiring firm size. Uncertainty avoidance has the expected positive sign, i.e. CARs are positively related to the degree of uncertainty avoidance of a nation, and a coefficient value of 0.018. This finding is highly significant, providing strong evidence for our theoretical motivation. Moreover, this finding is also economically significant. As seen in Table 1, uncertainty avoidance scores range from 8 to 112, more than a 100 point difference. In our model this translates to more than a 1.8% difference in CARs between the most and least uncertainty avoiding country. Relative deal size is positively related to CAR implying that relatively larger deals provide greater CARs. This may be linked back to our framework, as the consequences for the CEO of getting a relatively large deal wrong may be greater than the consequences of getting a small deal wrong. Hence larger deals should carry a greater risk premium and should therefore result in a greater CAR. Finally, we find a negative and significant relationship between the size of the acquiring firm and CARs, i.e. larger firms have lower CARs on the takeover announcement. Again, this can be linked back to our model, as we may expect that an unsuccessful takeover may be more consequential for a small firm than for a large firm.

The next variables that we consider are our diversification measures (column 2). We find that country diversification is positively related to CARs while industry diversification is insignificant. This suggests that acquiring abroad generates higher net synergies. However, inclusion of these variables does not affect the relationship between uncertainty avoidance and CAR in a material way.

In columns 3 to 5 we add time effects and industry effects separately and jointly. Although the inclusion of these variables affects the R^2 of the regression, it does not affect the magnitude and significance of all other coefficients.

Next, we include a variable for the number of prior acquisitions. As noted by Aktas et al. (2009), CEOs may learn about the distribution of possible outcomes from a deal in the process of undertaking acquisitions. This reduces the uncertainty of future deals, and so reduces the risk premium CEOs require when undertaking future acquisitions. Accordingly, CARs should decrease as CEOs undertake more deals. Alternatively, it could be argued that CEO's become better at identifying the synergy gains from deals, and so would only pursue deals with higher CARs. This would lead to a positive relationship between CARs and prior acquisitions. The results in column 6 of Table 5 show a positive and significant relationship between number of prior acquisitions and the CARs earned in a deal. This suggests that CEOs become better at identifying target companies that could generate synergies and therefore pick better deals. Again the relationship between uncertainty avoidance and CAR is not affected by the inclusion of this variable.

Finally, we add the legal origin dummies based on the studies of La Porta et al. (1998, 1999, 2000), where we include three dummies for French, German and Scandinavian Civil law countries (using Common law countries as the base case). The results in column 7 show that including legal origin dummies actually strengthens the relationship between risk aversion and CARs. None of the basic controls are affected by legal origin. Of the legal origin variables, the German dummy is significantly negative and the Scandinavian dummy shows a significantly positive coefficient. This latter finding is in line with the evidence presented by

Mueller and Yurtoglu (2007), who find that Scandinavian mergers perform better than US mergers.

4.4 Robustness Tests

To assess the robustness of our findings we proceed in two ways. First, we estimate the previous regressions using the Fama and McBeth (1973) approach. These Fama-McBeth results are presented in Table 6. Broadly speaking, the results are in line with the Clustered OLS results presented in Table 5, supporting the hypothesis that risk aversion affects CARs. Most of the control variables also remain unchanged with the exception of prior acquisitions which loses significance in these models and the legal origin dummies, where Scandinavian loses its significance.

INSERT TABLE 6 HERE

Second, we investigate various sub-samples and report results in Table 7. We first split our sample approximately in half and examine the pre-2000 period (1990 – 1999) and the post-2000 period (2000 – 2008). Columns 1 and 2 show that uncertainty avoidance is significant only in the post-2000 period and not the pre-2000 period. The insignificance of uncertainty avoidance in the earlier part of the sample could be attributed to the merger wave of the late 1990s (see Moeller et al., 2005), as acquisitions in this period are likely more affected by hubris than risk aversion. Some evidence for this possible explanation can be found when considering the coefficient on prior acquisitions in both sub-samples. In the pre-2000 sample the coefficient on prior acquisitions is significantly negative, indicating that the cumulative abnormal returns for repeat acquirers decrease. This has often been used as an indicator of managerial hubris (see Billett and Qian, 2008). In the post-2000 sub-sample, we observe that the coefficient on prior acquisitions becomes significantly positive, suggesting that learning (i.e. recognizing better deals) dominates over hubris.

As a second test, we exclude the US from the sample. We do this because takeovers originating from the US make up nearly 70% of the total sample, and so the results reported in Table 5 and 6 may be driven by the US. In column 3 of Table 7, we report the regression results for the model excluding the US. We note that the sample size decreases considerably to 8,291 takeovers. However, we find that the coefficient on uncertainty avoidance remains significant, showing that uncertainty avoidance is not a US effect. Most of the significance of other variables remains unchanged as well, except for prior acquisitions, which becomes insignificant after dropping the US.

INSERT TABLE 7 HERE

As a third test, we split the sample into developed and emerging markets. In our sample, we have 26 developed nations and 13 emerging nations. We report the results for the two sub-samples in the last two columns of Table 7. For the developed markets, we find that the results are similar to the results reported in Table 5. For emerging markets, uncertainty avoidance becomes insignificant, indicating that uncertainty avoidance does not play a role in these markets. However, we note that the sample size for emerging markets is considerably smaller with 545 acquisitions.

4.5 Omitted Variables

One remaining concern is that our results may be driven by an omitted variable bias. For this to be the case the omitted variable would have to be correlated with uncertainty avoidance and with the different dependent variables used in our analysis. These correlations would have to be consistent with the results found in our study. Although we may postulate a relationship between several omitted variables, uncertainty avoidance and CARs, postulating a consistent relationship between with all other dependent variables (number of deals and diversification) is more difficult. We nevertheless examine the relevance of several control variables that may affect our results (see also Hilary and Hui, 2009 who address this issue in a similar way) and report the results in Table 8.[8]

A first factor that may affect the relationship between risk aversion and CARs is the method of payment (note that we do not include method of payment in our main results as we only have payment data for approximately half of our sample). Many studies have shown that the method of payment (cash versus shares) affects the CARs of the bidding firm (see e.g. Travlos, 1987; Martin, 1996, among many others). Payment in shares is often shown to have a negative impact on the CARs of the bidding firm (see Travlos, 1987) as share payments dilute the equity of the merged entity and also dilute the expected net synergies of the takeover. Method of payment can also be related to risk aversion. Cash payments raise the leverage of the bidding firms and risk averse managers may have a tendency to maintain lower levels of leverage. Therefore, risk averse managers may prefer financing by means of shares. Moreover, Martin (1996) finds that acquiring firms with higher managerial ownership are more likely to pay in shares. This again suggests a link between risk aversion and payment in shares as CEOs with higher ownership are likely to be less diversified and would engage more in risk reducing activities (see Amihud and Lev, 1981). To examine whether the relationship between uncertainty avoidance and CARs is driven by the method of payment

[8]We only report the results for the uncertainty avoidance score and the specific variable that we have added. However, all other controls used in Table 5 are included in these regressions as well.

we include two dummy variables, one being equal to 1 if the payment was entirely in shares and 0 otherwise, and one being equal to 1 if the payment is mixed (shares and cash) and 0 otherwise. This leaves pure cash payments as the base case. In column 1 of Table 8 we present the results of this regression. We first note that the sample size reduces considerably as we only have payment data for 13,213 observations in our sample. The results show that the inclusion of method of payment does not affect the positive relationship between uncertainty avoidance and CARs. In fact, the relationship becomes stronger with a coefficient of 0.033. Method of payment does have an impact on CARs, where payment in shares reduces CARs significantly, whereas mixed payments are insignificant.

A second factor that may affect the relationship between risk aversion and CARs is the degree of legal protection of shareholders against expropriation by corporate insiders, also known as self-dealing (see Djankov et al., 2008). We could expect a relationship between the degree of uncertainty avoidance of a country and its strength of investor protection laws, where more uncertainty avoiding nations would likely have stronger regulations. We could also expect a positive relationship between CARs and stronger regulations, because if regulation with regards to self-dealing is weak, management could extract private benefits from takeovers which could compensate for lower cumulative abnormal returns (and hence lower bonuses) on the takeover. To examine whether this relationship actually drives the relationship between uncertainty avoidance and cumulative abnormal returns, we employ Djankov et al.'s (2008) anti-self-dealing index and add this to our regression model. In column 2 of Table 8, we report the results for this regression. The relationship between uncertainty avoidance and CAR is not affected by the inclusion of the anti-self-dealing index and remains significant. Furthermore, the anti-self-dealing index is not significant in the regression.

Another possibility is that the lack of transparency about the financial situation of the firm is driving the relationship between uncertainty avoidance and CARs. If disclosure requirements of a firm are relatively weak, not well enforced, or open to managerial manipulation, then there will be greater uncertainty about the performance and position of the firm with regards to the takeover. We would therefore expect a positive relationship between disclosure standards and CARs.[9] In countries with higher levels of uncertainty avoidance we would also expect disclosure standards to be more rigorous. Hence the positive relationship between CAR and uncertainty avoidance may be driven by disclosure standards. To examine whether disclosure standards affects the relationship between CARs and uncertainty avoidance, we employ Bushman and Piotroski's (2004) disclosure index (see also La Porta et al., 2006). This index measures the prevalence of disclosure of specific accounting items including R&D, capital expenditure, segment break-downs and subsidiary information, amongst others. As shown in column 3 of Table 8, disclosure standards do not have a significant relationship with CARs. The inclusion of this variable also does not affect the direction or strength of the relationship between uncertainty avoidance and CARs.

A fourth control we add is ownership concentration as used by La Porta et al. (2006). We include this variable, because the relationship between uncertainty avoidance and cumulative abnormal returns so far has been attributed to managerial risk aversion. However, when ownership is concentrated, shareholder face the same issue as managers in that they may not be fully diversified, giving them an exposure to the firm's specific risk. If this is the case, it may be the risk aversion of shareholders that defines the relationship between uncertainty

[9] If disclosure standards are low, the announcement could be a noisy signal. If the noise in the announcement is random, CARs would be biased down towards zero.

avoidance and CARs. As shown in column 4 of Table 8, ownership concentration does not have a significant relationship with CARs, and does not affect the relationship between uncertainty avoidance and CARs.

Finally, we add the other Hofstede (2001) cultural dimensions to the regression model, individualism, masculinity and power distance. We include these variables to examine whether the uncertainty avoidance score of a nation may be a proxy for another cultural characteristic of a nation. We include these variables and show the result in column 5 of Table 8.We find that none of the other cultural scores are significant and that the result for the uncertainty avoidance score remains highly significant.

4.6 The Interaction of Relative Deal Size and Uncertainty Avoidance

According to our model, relatively larger deals could lead to larger losses for the CEO. If risk aversion affects the CEO's decision making, then relatively larger deals should be considered more risky and carry a higher premium than smaller deals. In this case, risk aversion should play a greater role in relatively large deals. We explore this issue by creating quartiles based on the relative deal size and construct four new uncertainty avoidance variables. UA_1 is equal to the country's uncertainty avoidance score for the acquiring firm if the relative deal size was in the smallest quartile and zero otherwise and UA_2, UA_3, and UA_4 are defined similarly. Next, we perform a regression where we replace the uncertainty avoidance score with our four new variables.

INSERT TABLE 9 HERE

In Table 9, we report the results of this regression. In column 1, we report the results for the Clustered OLS. We find that uncertainty avoidance is significant in all size quartiles and coefficients on uncertainty avoidance increase as the relative deal size gets larger. Therefore, as predicted by our model, the importance of uncertainty avoidance increases when the relative size of the deal becomes larger. Individual Wald tests on the coefficients show that only the increase between quartile 2 and 3 is significant (and hence also between 1 and 3, 1 and 4, and 2 and 4). A joint Wald test confirms that uncertainty avoidance has a significantly different impact for different size quartiles. The next column shows the results for the same model using the Fama-McBeth (1973) estimation procedure. The results are supportive of the Clustered OLS results. We see a similar pattern of the increasing importance of uncertainty avoidance as deal sizes increase.

5. Conclusion

In this paper, we examine the role of culture in corporate takeover decisions. In particular, we argue that risk aversion, to some extent is a cultural trait and affects the takeover decision of the CEO. We propose a theoretical framework that shows how expected net synergies are linked to CEO risk aversion, and this model predicts that 1. more risk averse CEOs require higher expected net synergies on a takeover; 2. more risk averse CEOs will engage in less takeover activity; and 3. CEO risk aversion plays a greater roll in takeovers where the potential losses are greater.

In the empirical part of our study we use Hofstede (2001) uncertainty avoidance score as a measure of country-level measure of managerial risk aversion. Using a sample of 25,843 takeovers from 39 countries, we find that more risk averse CEOs engage in less takeover activity. Additionally, we confirm the findings of previous work that shows that a more risk averse manager engages in more diversifying takeovers. In line with our theoretical model, expected net synergies, approximated by the short-term CARs around the takeover announcement, are positively related to the degree of uncertainty avoidance of a country. This finding is not only statistically significant but also economically so, yielding a difference of more than 2.4% in CAR between the most and least uncertainty avoiding country. We perform several robustness checks to validate our results, such as alternative estimations techniques, sub-sample analysis and the addition different controls. However, our main results largely obtain. In line with our prediction we also find that the relative size of a deal is an important determinant of CAR, and that risk aversion plays a greater role in relatively large deals than in relatively small ones.

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Table 1: Summary Statistics per Country

This table reports summary statistics per country on the firms and acquisitions included in our sample for the period January 1990 to August 2008. Number of Acquisitions is the total number of acquisitions per country; Number of Acquirers is the total number of acquirers per country; Firm Size is the average market value of the acquiring firms (in millions of US dollars); Deal Size is the value of the transaction (in millions of US dollars); CAR (-1, 1) is the cumulative return of the acquiring firm over the period one day before the announcement to one day after the announcement; and Uncertainty Avoidance is the uncertainty avoidance score of Hofstede (2001).

Country	Number of Acquisitions	Number of Acquirers	Firm Size	Deal Size	CAR(-1, 1)	Uncertainty Avoidance
Argentina	20	9	1,898	173	-1.08%	86
Australia	1,142	402	1,703	111	1.60%	51
Austria	53	24	2,559	283	-0.02%	70
Belgium	82	28	5,605	322	1.85%	94
Brazil	28	14	2,252	478	2.44%	76
Canada	1,758	662	1,537	173	1.16%	48
Chile	24	18	1,767	139	2.96%	86
China	48	37	1,364	50	-1.06%	30
Czech Rep.	11	4	8,016	309	-0.74%	74
Finland	199	56	9,713	186	1.53%	59
France	444	176	7,236	809	1.17%	86
Germany	431	150	19,724	805	0.49%	65
Greece	19	13	2,363	167	1.33%	112
Hong Kong	229	135	2,275	184	-0.12%	29
Hungary	6	2	1,681	36	-0.27%	82
India	97	51	2,978	105	0.36%	40
Indonesia	13	10	1,026	110	1.02%	48
Ireland	215	34	2,519	87	0.92%	35
Israel	30	14	623	53	2.28%	81
Italy	206	84	3,861	170	0.74%	75
Japan	1,217	629	4,054	174	1.34%	92
Malaysia	81	51	478	82	0.56%	36
Mexico	14	5	4,543	387	-0.52%	82
Netherlands	192	51	7,297	419	0.77%	53
New Zealand	85	39	736	90	0.60%	49
Norway	133	55	985	58	1.98%	50
Philippines	5	5	273	100	4.60%	44
Poland	42	18	733	94	0.41%	93
Portugal	21	12	2,298	110	0.66%	104
Singapore	128	85	991	91	-0.07%	8
South Africa	167	81	1,030	118	2.11%	49
South Korea	129	90	2,502	187	2.92%	85
Spain	15	12	25,578	232	1.56%	86
Sweden	231	81	2,221	124	1.83%	29
Switzerland	36	21	716	64	3.25%	58
Taiwan	53	39	2,933	299	-1.00%	69
Thailand	8	6	467	101	0.09%	64
United Kingdom	768	202	4,921	109	1.05%	35
United States	17,522	4,276	7,182	264	0.62%	46

Table 2: Summary Statistics per Country

This table reports summary statistics for different takeover characteristics per year. Number of Takeovers is the total number of takeovers per year for all countries in the sample; CAR(-1, 1) is the average cumulative return per year over the period one day before the announcement to one day after the announcement; Average Deal Size is the average value of the transaction per year (in millions of US dollars); and Average Firm Size is the average size of the acquirer per year (in millions of US dollars).

Year	Number of Takeovers	CAR(-1, 1)	Average Deal Size	Average Firm Size
1990	350	0.42%	151.04	3,512.76
1991	382	0.32%	99.34	2,254.36
1992	461	1.36%	85.28	1,771.66
1993	642	1.10%	110.01	1,909.75
1994	845	0.67%	101.28	2,314.97
1995	976	0.60%	203.27	2,228.69
1996	1,375	1.15%	165.14	2,423.24
1997	1,830	0.69%	175.59	2,992.66
1998	2,162	0.49%	272.65	4,226.37
1999	1,863	0.78%	415.34	10,083.72
2000	1,880	0.51%	395.14	14,292.04
2001	1,581	0.56%	294.17	8,082.11
2002	1,568	1.18%	185.53	5,296.69
2003	1,570	0.70%	203.20	4,894.09
2004	1,849	0.95%	239.58	5,885.20
2005	2,112	1.07%	308.06	6,153.22
2006	2,016	0.84%	273.62	6,138.15
2007	1,838	0.93%	301.37	8,766.68
2008	608	0.62%	139.04	10,308.07

Table 3: Number of Deals and Uncertainty Avoidance

This table reports results for the Poisson regressions of the number of deals per acquiring firm on uncertainty avoidance and several control variables. Number of Deals is measured as the total number of deals made by one acquiring firm over the sample period January 1990 to August 2008. Uncertainty Avoidance is the uncertainty avoidance score of Hofstede (2001); Emerging is an emerging markets dummy, equal to 1 if the firm is from an emerging market and 0 otherwise; Log Av. Market Cap. is the natural log of the average market capitalization of the acquiring form over time; and Industry Effects are dummies that are equal to 1 if the firm is from a specific industry (measured by the 2-digit SIC code) and 0 otherwise. We compute robust standard errors controlling for clustering at the country level and report t-statistics in parentheses where we indicate significance at the 10%, 5%, and 1% levels by *, **, ***, respectively.

	(1)	(2)	(3)
Uncertainty Avoidance	-0.0093***	-0.0088***	-0.0098***
	(-2.66)	(-2.64)	(-2.97)
Emerging	-0.6609***	-0.6552***	-0.6449***
	(-4.94)	(-4.64)	(-4,44)
Log Av. Market Cap.			0.0801***
			(8,18)
Industry Effects	NO	YES	YES
N	7,681	7,681	7,681

Table 4: Diversification and Uncertainty Avoidance

This table reports results for the Probit regression. We report Probit regression results for diversification dummy variables on uncertainty avoidance and several controls. The 4-digit (2-digit) diversification dummy is equal to 1 if the acquiring firm conducts a takeovers of firm that is outside its own industry (measured by the difference in the 4-digit (2-digit) SIC code) and 0 otherwise. The diversification variable based on 4-digit SIC codes measures all diversifying takeover activity, whereas the diversification variable based on 2-digit SIC codes measures major diversifying takeover activity. Uncertainty Avoidance is the uncertainty avoidance score of Hofstede (2001); Rel. Deal Size is computed as the size of the deal divided by the market capitalization of the firm; Log Market Cap. is the natural logarithm of the size of the acquiring firm (measured in US dollars); Time Effects are dummies equal to 1 if the takeover took place in a given year and 0 otherwise; and Industry Effects are dummies that are equal to 1 if the firm is from a specific industry (measured by the 2-digit SIC code) and 0 otherwise. The first two columns report Clustered - Probit results, where we compute robust standard errors controlling for clustering at the country level. The last two columns report the Fama-McBeth (1973) estimator based on probit regressions for each year. We report t-statistics in parentheses and indicate significance at the 10%, 5%, and 1% levels by *, **, ***, respectively.

	Clustered – Probit		Fama-McBeth	
	4-digit SIC	2-digit SIC	4-digit SIC	2-digit SIC
Uncertainty Avoidance	0.0034*	0.0038**	0.0025*	0.0038**
	(1.75)	(2.15)	(1.90)	(2.59)
Rel. Deal Size	-0.125***	-0.148***	-0.005	-0.040
	(-3.45)	(-3.13)	(-0.19)	(-1.61)
Log Market Cap.	0.012***	0.015***	0.032***	0.039***
	(2.77)	(2.71)	(3.15)	(4.22)
Time Effects	YES	YES	-	-
Industry Effects	YES	YES	YES	YES
N	25,741	25,741		

Table 5: Cumulative Abnormal Returns and Uncertainty Avoidance

This table reports results for clustered OLS regressions of the Cumulative Abnormal Return (CAR) around takeover announcements over the period January 1990 to August 2008 on uncertainty avoidance and various control variables. CAR is measured as the cumulative return of the acquiring firm over the period one day before the announcement to one day after the announcement. Uncertainty Avoidance is the uncertainty avoidance score of Hofstede (2001); Rel. Deal Size is computed as the size of the deal divided by the market capitalization of the firm; Log Market Cap. is the natural logarithm of the size of the acquiring firm (measured in US dollars); Country Divers. is a dummy variable equal to 1 if the acquiring firm conducts a takeovers of firm that is outside its own country and 0 otherwise; Industry Divers. is a dummy variable equal to 1 if the acquiring firm conducts a takeovers of firm that is outside its own industry (measured by the difference in the 2-digit SIC code) and 0 otherwise; Prior Acquisitions is a count variable indicating the number of prior acquisitions the firm has already conducted in the sample period; French is a dummy variable that is equal to 1 if the country has French civil law as legal origin and 0 otherwise; German is a dummy variable that is equal to 1 if the country has German civil law as legal origin and 0 otherwise; Scandinavian is a dummy variable that is equal to 1 if the country has Scandinavian law as legal origin and 0 otherwise; Time Effects are dummies equal to 1 if the takeover took place in a given year and 0 otherwise; and Industry Effects are dummies that are equal to 1 if the firm is from a specific industry (measured by the 2-digit SIC code) and 0 otherwise. We compute robust standard errors controlling for clustering at the country level and report t-statistics in parentheses. Significance at the 10%, 5%, and 1% levels are indicated by *, **, ***, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Uncertainty Avoidance	0.016***	0.015***	0.015***	0.014***	0.013***	0.014***	0.024***
	(6.26)	(6.08)	(5.98)	(4.99)	(4.95)	(5.18)	(3.97)
Rel. Deal Size	0.668***	0.670***	0.669***	0.658***	0.660***	0.659***	0.657***
	(4.29)	(4.23)	(4.04)	(4.64)	(4.42)	(4.40)	(4.42)
Log Market Cap.	-0.348***	-0.359***	-0.359***	-0.353***	-0.353***	-0.365***	-0.361***
	(-10.69)	(-9.68)	(-9.50)	(-10.73)	(-9.99)	(-10.41)	(-10.85)
Country Divers.		0.427***	0.428***	0.316*	0.321*	0.325*	0.316*
		(3.12)	(3.17)	(1.79)	(1.84)	(1.88)	(1.83)
Industry Divers.		-0.087	-0.089*	-0.082	-0.086	-0.088	-0.089
		(-1.58)	(-1.69)	(-1.21)	(-1.32)	(-1.35)	(-1.35)
Prior Acquisitions						0.009***	0.009**
						(2.93)	(2.74)
French							-0.369
							(-1.24)
German							-0.514*
							(-1.79)
Scandinavian							0.707***
							(2.85)
Time Effects	NO	NO	YES	NO	YES	YES	YES
Industry Effects	NO	NO	NO	YES	YES	YES	YES
N	25,750	25,750	25,750	25,750	25,750	25,750	25,750
R^2	0.0162	0.0170	0.0182	0.0234	0.0246	0.0247	0.0251

Table 6: Cumulative Abnormal Returns and Uncertainty Avoidance (Fama-McBeth)

This table reports Fama-McBeth results for the Cumulative Abnormal Return (CAR) around takeover announcements over the period January 1990 to August 2008 on uncertainty avoidance and various control variables. CAR is measured as the cumulative return of the acquiring firm over the period one day before the announcement to one day after the announcement. Uncertainty Avoidance is the uncertainty avoidance score of Hofstede (2001); Rel. Deal Size is computed as the size of the deal divided by the market capitalization of the firm; Log Market Cap. is the natural logarithm of the size of the acquiring firm (measured in US dollars); Country Divers. is a dummy variable equal to 1 if the acquiring firm conducts a takeovers of firm that is outside its own country and 0 otherwise; Industry Divers. is a dummy variable equal to 1 if the acquiring firm conducts a takeovers of firm that is outside its own industry (measured by the difference in the 2-digit SIC code) and 0 otherwise; Prior Acquisitions is a count variable indicating the number of prior acquisitions the firm has already conducted in the sample period; French is a dummy variable that is equal to 1 if the country has French civil law as legal origin and 0 otherwise; German is a dummy variable that is equal to 1 if the country has German civil law as legal origin and 0 otherwise; Scandinavian is a dummy variable that is equal to 1 if the country has Scandinavian law as legal origin and 0 otherwise; and Industry Effects are dummies that are equal to 1 if the firm is from a specific industry (measured by the 2-digit SIC code) and 0 otherwise. We compute Fama-McBeth standard errors and report t-statistics in parentheses. Significance at the 10%, 5%, and 1% levels are indicated by *, **, ***, respectively.

	(1)	(2)	(3)	(4)	(5)
Uncertainty Avoidance	0.009***	0.008***	0.010***	0.010***	0.023***
	(2.83)	(2.82)	(3.31)	(3.19)	(4.83)
Rel. Deal Size	0.692***	0.694***	0.589***	0.579***	0.595**
	(3.27)	(3.30)	(2.72)	(2.69)	(2.72)
Log Market Cap.	-0.363***	-0.370***	-0.358***	-0.364***	-0.363***
	(-9.11)	(-9.91)	(-10.89)	(-10.79)	(-10.56)
Country Divers.		0.321***	0.195*	0.197*	0.193*
		(2.92)	(1.69)	(1.72)	(1.70)
Industry Divers.		-0.123	-0.195	-0.202*	-0.205*
		(-1.34)	(-1.64)	(-1.70)	(-1.74)
Prior Acqs.				-0.027	-0.025
				(-1.14)	(-1.10)
French					-0.477*
					(-1.77)
German					-0.628***
					(3.18)
Scandinavian					0.616
					(1.44)
Industry Effects	NO	NO	YES	YES	YES

Table 7: Cumulative Abnormal Returns and Uncertainty Avoidance for Different Sub-Samples

This table reports results for clustered OLS regressions of the Cumulative Abnormal Return (CAR) around takeover announcements on uncertainty avoidance and various control variables. CAR is measured as the cumulative returns of the acquiring firm over the period one day before the announcement to one day after the announcement. Uncertainty Avoidance is the uncertainty avoidance score of Hofstede (2001); Rel. Deal Size is computed as the size of the deal divided by the market capitalization of the firm; Log Market Cap. is the natural logarithm of the size of the acquiring firm (measured in US dollars); Country Divers. is a dummy variable equal to 1 if the acquiring firm conducts a takeovers of firm that is outside its own country and 0 otherwise; Industry Divers. is a dummy variable equal to 1 if the acquiring firm conducts a takeovers of firm that is outside its own industry (measured by the difference in the 2-digit SIC code) and 0 otherwise; Prior Acquisitions is a count variable indicating the number of prior acquisitions the firm has already conducted in the sample period; French is a dummy variable that is equal to 1 if the country has French civil law as legal origin and 0 otherwise; German is a dummy variable that is equal to 1 if the country has German civil law as legal origin and 0 otherwise; Scandinavian is a dummy variable that is equal to 1 if the country has Scandinavian law as legal origin and 0 otherwise; and Industry Effects are dummies that are equal to 1 if the firm is from a specific industry (measured by the 2-digit SIC code). Column 1 presents the results for the period 1990-1999; column 2 presents the results for the period 2000-2008; column 3 presents the results for the model excluding the US; column 4 presents the results for the model including only developed markets; and column 5 presents the results for the model including only emerging markets. For all models we compute robust standard errors controlling for clustering at the country level and report t-statistics in parentheses. Significance at the 10%, 5%, and 1% levels are indicated by *, **, ***, respectively.

	Pre 2000	Post 2000	Excluding US	Developed Markets	Emerging Markets
Uncertainty Avoidance	0.014	0.027***	0.025***	0.022***	0.007
	(1.07)	(5.40)	(4.22)	(3.25)	(0.66)
Rel. Deal Size	0.893***	0.478***	0.430*	0.686***	0.096
	(3.16)	(3.79)	(1.74)	(4.69)	(0.18)
Log Market Cap.	-0.279***	-0.414***	-0.426***	-0.357***	-0.676**
	(-9.86)	(-9.20)	(-5.61)	(-10.79)	(-2.28)
Country Divers.	0.256	0.357**	0.631**	0.270	1.491*
	(1.44)	(2.03)	(2.67)	(1.60)	(1.90)
Industry Divers.	-0.159**	-0.070	-0.037	-0.075	-1.046***
	(-2.07)	(-0.62)	(-0.24)	(-1.07)	(-3.20)
Prior Acquisitions	-0.015***	0.019***	-0.004	0.009***	-0.128
	(-2.99)	(4.82)	(-0.23)	(2.79)	(-1.24)
French	-0.054	-0.432**	-0.356	-0.259	-0.104
	(-0.09)	(-2.04)	(-1.27)	(-0.78)	(-0.12)
German	-0.523	-0.538*	-0.490*	-0.365	-1.513**
	(-1.12)	(-1.92)	(-1.85)	(-1.20)	(-2.92)
Scandinavian	0.887*	0.659***	0.633**	0.736***	-
	(1.94)	(3.14)	(2.63)	(3.21)	
Time Effects	YES	YES	YES	YES	YES
Industry Effects	YES	YES	YES	YES	YES
Number of countries included	38	39	38	26	13
N	10,795	14,955	8,291	25,205	545
R^2	0.0257	0.0300	0.0390	0.0251	0.2082

Table 8: Omitted Variables

This table reports results for clustered OLS regressions of the Cumulative Abnormal Return (CAR) around takeover announcements over the period January1990 to August 2008 on uncertainty avoidance and various control variables. CAR is measured as the average cumulative return of the acquiring firm over the period one day before the announcement to one day after the announcement. Uncertainty Avoidance is the uncertainty avoidance score of Hofstede (2001); Payment in Shares is a dummy variable equal to 1 if the takeover was completely financed by shares and 0 otherwise; Mixed Payment is a dummy variable equal to 1 if the takeover was financed by a mix of shares and cash and 0 otherwise; Anti-Self-Dealing is the anti-self-dealing index of Djankov et al. (2008); Disclosure is the disclosure index by Bushman and Piotroski (2004); Ownership Concentration is the ownership concentration measure used by La Porta et al. (2006); Individualism is the individualism score of Hofstede (2001); Masculinity is the masculinity score of Hofstede (2001); Power Distance is the power distance score of Hofstede (2001); Other controls represents all other control variables as in column (7) of Table 5; Time Effects are dummies equal to 1 if the takeover took place in a given year and 0 otherwise; and Industry Effects are dummies that are equal to 1 if the firm is from a specific industry (measured by the 2-digit SIC code) and 0 otherwise. We compute robust standard errors controlling for clustering at the country level and report t-statistics in parentheses. Significance at the 10%, 5%, and 1% levels are indicated by *, **, ***, respectively.

	(1)	(2)	(3)	(4)	(5)
Uncertainty Avoidance	0.033***	0.023***	0.022***	0.019***	0.024***
	(3.93)	(4.44)	(3.63)	(3.24)	(4.99)
Payment in Shares	-0.260***				
	(-3.41)				
Mixed Payment	-0.069				
	(-0.91)				
Anti-Self-Dealing		-0.688			
		(-1.42)			
Disclosure			-0.429		
			(-1.20)		
Ownership Concentration				-0.426	
				(-0.79)	
					0.008
					(1.48)
Individualism					-0.008
					(-1.09)
Masculinity					-0.003
					(-0.49)
Power Distance					
Other Controls	YES	YES	YES	YES	YES
Time Effects	YES	YES	YES	YES	YES
Industry Effects	YES	YES	YES	YES	YES
Countries	37	39	36	36	39
N	13,213	25,750	25,642	25,642	25,750
R^2	0.0247	0.0251	0.0252	0.0252	0.0253

Table 9: Interaction of Uncertainty Avoidance and Relative Deal Size

This table reports results for clustered OLS and Fama-McBeth (1973) regressions of the Cumulative Abnormal Return (CAR) around takeover announcements over the period January 1990 to August 2008 on interaction terms of uncertainty avoidance and relative deal size, and various control variables. CAR is measured as the average cumulative return of the acquiring firm over the period one day before the announcement to one day after the announcement. In the first two columns, UA_1 is the uncertainty avoidance score of Hofstede (2001) if the relative deal size was in the first quartile; UA_2, UA_3, and UA_4 are defined likewise. In the last two columns, UA_1 is the uncertainty avoidance score of Hofstede (2001) if the relative deal size was in the first quartile (relative to the size of the firm); UA_2, UA_3, and UA_4 are defined likewise. Rel. Deal Size is computed as the size of the deal divided by the market capitalization of the firm; Log Market Cap. is the natural logarithm of the size of the acquiring firm (measured in US dollars); Country Divers. is a dummy variable equal to 1 if the acquiring firm conducts a takeovers of firm that is outside its own country and 0 otherwise; Industry Divers. is a dummy variable equal to 1 if the acquiring firm conducts a takeovers of firm that is outside its own industry (measured by the difference in the 2-digit SIC code) and 0 otherwise; Prior Acquisitions is a count variable indicating the number of prior acquisitions the firm has already conducted in the sample period; French is a dummy variable that is equal to 1 if the country has French civil law as legal origin and 0 otherwise; German is a dummy variable that is equal to 1 if the country has German civil law as legal origin and 0 otherwise; Scandinavian is a dummy variable that is equal to 1 if the country has Scandinavian law as legal origin and 0 otherwise; Time Effects are dummies equal to 1 if the takeover took place in a given year and 0 otherwise; and Industry Effects are dummies that are equal to 1 if the firm is from a specific industry (measured by the 2-digit SIC code) and 0 otherwise. We compute robust standard errors controlling for clustering at the country level and report t-statistics in parentheses. Significance at the 10%, 5%, and 1% levels are indicated by *, **, ***, respectively.

	Relative Deal Size	
	Clustered OLS	Fama-McBeth
UA_1	0.020***	0.019***
	(3.21)	(3.43)
UA_2	0.022***	0.022***
	(3.63)	(4.14)
UA_3	0.026***	0.024***
	(4.41)	(4.64)
UA_4	0.030***	0.026***
	(4.28)	(6.16)
Rel. Deal Size	0.453**	0.481**
	(2.27)	(1.99)
Log Market Cap.	-0.332***	-0.341***
	(-10.38)	(-8.38)
Country Divers.	0.335*	0.195*
	(1.87)	(1.74)
Industry Divers.	-0.068	-0.191
	(-0.98)	(-1.64)
Prior Acquisitions	0.010***	-0.026
	(3.42)	(-1.08)
French	-0.384	-0.460*
	(-1.27)	(-1.67)
German	-0.465	-0.563***
	(-1.65)	(-2.94)
Scandinavian	0.707***	0.557
	(2.76)	(1.30)
Time Effects	YES	-
Industry Effects	YES	YES
N	25,750	
R^2	0.025	
*		
Wald Tests:		
$UA_1 – UA_2 = 0$	0.14	
$UA_2 – UA_3 = 0$	18.49***	
$UA_3 – UA_4 = 0$	1.55	
$UA_1 – UA_2 – UA_3 – UA_4 = 0$	9.53***	

Figure 1: CEO's Decision Problem