



Information Asymmetry and Host Country Institutions in Cross-Border Acquisitions

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Abstract

Mergers and acquisitions (M&As) are often dubbed as a market for lemons because of the extent of information asymmetry embedded in M&A transactions. A country's institutional environment influences the quality and overall reliability of formal disclosures, thereby altering the extent of information asymmetry affiliated with an M&A transaction. We argue that the caliber of the host country's institutions—formal *market-supporting institutions* and the informal cultural institution of *uncertainty avoidance*—affects the *public arbitration phase* of M&A transactions, i.e., the phase in which firms attempt to resolve issues related to information asymmetry. We test our hypotheses using a sample of 3376 foreign acquisitions completed by U.S. firms between 2006 and 2016. Our results indicate that formal institutions lower arbitration duration. But, while high uncertainty avoidance lowers duration as expected for countries with low market-supporting institutions, it more strongly raises the duration for countries with high market-supporting institutions.

Keywords Mergers and acquisitions · Information asymmetry · Arbitration · Negotiation · Institutions · Uncertainty avoidance

1 Introduction

Firms entering foreign markets face substantial transaction-level hazards from the potential opportunistic behavior of a transacting partner (Stevens and Makarius 2015). These hazards are exacerbated in terminal transactions such as cross-border mergers and acquisitions (M&As) (Ragozzino and Reuer 2007).

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Yet while cross-border M&A transactions are highly vulnerable to such hazards, they remain persistently popular in recent decades. In 2018, cross-border M&As reached the all-time high of 62% of all global FDI inflows (UNCTAD 2019), despite the fact that they regularly fail to create value for acquirers (King et al. 2004; Moeller and Schlingermann 2005). Accordingly, M&A research that expands our understanding of predictors related to M&A success (Rottig 2013; Stahl et al. 2005) is valuable for the M&A activity that is estimated at \$1 trillion by US firms alone in 2018.

One indicator of potential issues between M&A partners is proxied by the duration of the M&A arbitration phase. The longer this process, the more indicative that either a greater number, or more difficult, transaction-level tasks are being managed through the process, given that swift negotiations are preferable and less costly for both partners. Thus, longer arbitration usually indicates that increased effort is needed to protect the acquiring firm from overvaluing an acquisition based on adverse selection (e.g., Mukherji et al. 2013; Ragozzino and Reuer 2007). Specifically, Akerlof's (1970) seminal depiction of a 'market for lemons', explained that this adverse selection arises from the information asymmetry that exists between buyers and sellers (Bergh et al. 2019). In cross border mergers, though, acquirers face unique host-country related information asymmetry, as there is variance in the comprehensiveness and accuracy of information for evaluating a target, due strongly to the variance in requirements and efficacy of institutions in the host country (Hitt et al. 2006).

Indeed, the potential impact of both formal and informal national institutions on transactions, specifically cross-border transactions, is well recognized (Holmes et al. 2013). Formal *market supporting institutions* function as key in establishing and maintaining mechanisms that support successful market economies, particularly through adopting and enforcing rules that improve market functioning and reduce inefficiency costs (Fleck 2000). In addition to the direct effects on information quality from this formal institutional system, informal cultural mechanisms can also strongly influence the efficacy of these institutions, as societal actors respond to the demands for greater information production and transparency. Of the several cultural attributes that may reveal insights about this response, *uncertainty avoidance*, especially as measured in the GLOBE study, is especially compelling, as it measures the extent to which individuals in a country prefer to rely on regulations, rules, and order to lower uncertainty.

Evidence already shows that host country characteristics are meaningful to cross-border investment outcomes (Bhardwaj et al. 2007). To date, though, the M&A literature has not extended such impacts to the arbitration phase. Moreover, with a notable exception (Baik et al. 2015) regarding earnings management behavior, theory is also underdeveloped on how features of the macro-level host context relate to a greater probability of producing transactional information asymmetry that can lengthen arbitration. Thus, we investigate: "*How does the quality of the host country market-supporting institutions and level of uncertainty avoidance interact to affect the length of the public arbitration phase of an acquisition?*". Here we draw on a sample of 3376 cross-border acquisitions conducted within the years 2006–2016 from a single home country (United States) to 39 host countries.

We make contributions to three major veins of research. First, we draw attention to the wide-ranging models that describe the M&A process to highlight the unique importance of the arbitration phase, theorizing ties to the role of information asymmetry. In this effort we tested, and found, that a lower duration of the arbitration phase has a significant positive association with post-acquisition performance. Our findings suggest some boundary conditions on the inverted-U relationship found in Thompson and Kim (2020) which may reflect our important sample feature limited to international investments. It also incorporates more recent data (2006–2016), which is less impacted by the 2008 recession impacting their data period (2000–2010). Thus, we offer new empirical evidence examining this strong assumption in the literature.

Secondly, we theorize about conditions that are likely to shape the informational environment of host countries and hence potential for information asymmetry, and under which, cross-border M&A transactions take place. We did find that greater levels of market-supporting institutions (MSI) in a host country lowered the duration of the public arbitration process, which we attribute to a likelihood of greater informational transparency and reliability, and lower information asymmetry. We also posited that higher uncertainty avoidance (UA) cultures inherently inculcate more rigor and rule adherence in the practices of the firms in the economy, and our findings indicate it may at least partially substitute for a lack of strong market institutions in low MSI countries, as evidenced by lowering the duration of the public M&A process in those low MSI countries.

Our third insight expands on our unexpected result that a host country's uncertainty avoidance (UA) acts very differently on arbitration duration in countries with a high level of market-supporting institutions (MSI). As we built our hypotheses around the availability and reliability of information at the transaction level, we concentrated on the above finding that cultural UA preferences may improve transparency in low MSI environments. It turns out, though, that such cultural uncertainty avoidance has a much more dramatic effect on the duration of the arbitration phase in high MSI host countries, lengthening it considerably—indicating potentially that such host countries incorporate substantial process burdens on the acquirers as precautionary measures.

In sum, our findings inform managers about the role of the host country context on the process of pursuing an M&A deal, noting that country-level impacts that slow arbitration also imply the possibility of some decrement in future performance. Governments should consider how the adoption of market-supporting institutions enhance arbitration speed overall, but that such institutions are similarly subject to slowing processes if uncertainty avoidance becomes paramount. By examining the interaction between MSI and UA, we provide further evidence of the value of more configurational/interactional views in depicting the role of institutions (Jackson and Deeg 2008).

Below we develop our theory and hypotheses. In Sect. 3, we describe our sample data and our variable specifications. Section 4 provides our analyses and results, and we conclude with a discussion of our findings in Sect. 5.

2 Background and Hypotheses

M&As are the most popular form of corporate expansion, both domestically and across-borders. Management research has increasingly taken a behavioral turn in this arena, including the incorporation of institutional perspectives (Devers et al. 2020). Studies, though, have traditionally downplayed the key role of the pre-acquisition M&A process (Sacek 2016), in favor of post-acquisition integration (Birkinshaw et al. 2000; Dikova et al. 2010). But, with the rise of global value chains, multinationals have been faced with increasing market pressure to build competencies in flexibly assembling and governing transnational supply chains to remain competitive (Gereffi et al. 2005).

There is certainly no ‘standard M&A process’, and thus multiple frameworks exist in the literature. Haspeslagh and Jemison (1991) identified two central phases: a pre-deal decision making phase, and post-deal integration process. Voss (2007) depicted acquisition processes across three phases, which included the preparation, the transaction, and the integration of the M&A. Other more elaborate frameworks include DePamphilis’ (2009) extensive book length, ten-phase structured process (DePamphilis 2009), and frameworks that further break down pre-deal processes into foundation, pre-contacts and analysis, negotiations, and transaction (McSweeney and Happonen 2012).

Notwithstanding this variety, the existing frameworks show broad consensus that the acquisition process contains at least the two vitally important phases of ‘pre-deal’ process and ‘post-deal’ integration. They are interdependent, with the pre-deal acquisition process affecting both post-deal integration and overall acquisition success (Dikova et al. 2010; Haspeslagh and Jemison 1991; McSweeney and Happonen 2012).

Our study concerns the ‘*public arbitration phase*’ of the pre-deal process. As described by Dikova et al. (2010), the pre-deal process consists of the three events of private initiation, public announcement, and resolution. In the initial period, a private takeover process begins with negotiations between the seller and the buyer under confidentiality and non-solicit clauses (Dikova et al. 2010). Next, after a public announcement, the public take-over process starts as the seller and buyer engage in the process of arbitration and come to a resolution, which we define as the public arbitration phase. This phase revolves around an exchange of additional information, due-diligence and revaluation, deal structuring and financial planning, integration planning, and the drafting and negotiation of the purchase agreement (Dikova et al. 2010) (Fig. 1).

2.1 The Role of Information Asymmetry

A central task in the pre-deal M&A phase is the effort by an acquirer to lower their information asymmetry, i.e., close the opportunity that some unknown aspect of the target will threaten its calculated value. Selling firm managers have “a natural propensity to exaggerate the value” of the selling firm’s assets, and they have no incentive to share private information, given that M&A deals are

Pre-deal Phase							Post-deal Integration Phase					
Private Initiation		Private Takeover Process			Public Announcement		Public Takeover Process		Resolution	Human Integration	Task Integration	Conclusion
Search and Screening	Information Exchange	Due Diligence and Valuation	Multi-bidder Negotiation	Preliminary Agreement	Public Announcement	Additional Information Exchange	Due Diligence and Re-valuation	Structuring and Financial Planning	Integration Planning, Purchase Agreement, and Closing	Integration Implementation and Value Creation		

Fig. 1 The acquisition process

terminal transactions (Ragozzino and Reuer 2007, p. 82). On the other hand, unresolvable uncertainty can be resolved in favor of the acquiring firm (Lee 2018) who will discount the value of the seller’s assets to mitigate the information asymmetry risk.

Studies have highlighted that the information asymmetry with international investments is more severe than with domestic counterparts, compounding the problem of adverse selection (Buchner et al. 2018). Thus, Dikova et al. (2010) hypothesized that uncertainty over expropriation risks significantly lengthened the negotiation process, and empirically showed that indeed institutional distance between home-host countries predicted arbitration duration, and decreased completion rate. Still, other theory (Clampit et al. 2015) and evidence (Chakrabarti et al. 2009) indicates that M&As may actually perform better in the long term with the complementarities gained in precisely the highest cultural distance (home-host) environments.

Theory on the M&A process, therefore, may benefit from expanding its scope to include how contextual features within the host country uniquely increase information asymmetry threats. Drawing from North (1991), a country’s institutions are composed of both formal (written laws and policies) and informal (usually unwritten, norms and traditions) dimensions that vary widely across countries and that “are humanly devised constraints that structure political, economic and social interaction” (North 1991, p. 97). Consequently, these institutions should influence, if not dictate, the quantity, accessibility, and accuracy of information about target firms.

The ensuing interaction between country institutions and firms (Kumar 2009; Lawrence et al. 2006; Pearce et al. 2009) thus leads to predictable patterns in organizational outcomes such as information quality. As a result, such variance of institutions across nations (Hoskisson et al. 2013) has indeed been found to influence firms, decision making, and performance (Peng et al. 2008).

In the next sections, we begin with our hypothesis on the relationship between public arbitration duration and ensuing performance. We then present our hypotheses linking host country characteristics of market-supporting institutions and uncertainty avoidance to transactional features of the acquisition process, specifically the duration of the arbitration phase.

2.2 Public Arbitration Duration and Performance

Research suggests that new information in the arbitration phase affects critical features such as risk perception (Mitchell and Pulvino 2001; Mitchell et al. 2004) and possibly deal completion (Dikova et al. 2010). In general, greater information asymmetry implies higher transaction costs and agency conflicts (Wright and Robbie 1998; Wuebker et al. 2015) and can result in biases against foreign investments (Dahlquist and Robertsson 2001).

Importantly, the value of appropriate due diligence during the entire M&A process cannot be overstated. Hitt et al. (1998) reported over 91% of firms suffering low post-acquisition performance cited inadequate evaluation of the target contributed to their failure. Notable reasons for this inadequacy included managerial hubris, and a rush to complete the acquisition. Similarly, Haunschild et al. (1994) cited managerial overcommitment in their arguments on inadequate target evaluation, and McIntyre (2004) also noted human deficits contributing to inadequate evaluation. In sum, a substantial body of research indicates acquirers need to spend sufficient time to evaluate a target adequately to reap any benefits.

At the same time, M&A negotiations often involve considerable time pressures (Adler 1997; Stark 1994) to accelerate the process as a central feature (Zeira and Newburry 1999). Both Dikova et al. (2010) and Meyer and Altenborg (2008) argue that a longer duration results in accruing additional costs along with other disadvantages, and advocate that a shorter duration is better. Acknowledging the priority to resolve information symmetry, Saorín-Iborra (2008) similarly argued that a shorter duration in completing an acquisition is a preferred. Critically, longer periods can materially affect target value as factors such as interim market volatility are borne by the acquirer (Bhagwat et al. 2016).

Given these countervailing predictions for the impact of duration, Thompson and Kim (2020) tested a sample in the 2000–2010 timeframe, with a range of domestic and cross-border acquisitions, with varied home and host countries. Their upside-down U relationship between duration and performance with their sample provides preliminary evidence that the process can suffer either from too little diligence, or too-delayed costs.

We expect features of our sample will favor the importance of lower duration in predicting performance. A key feature of our study is the home country control in our restriction to acquirers from the United States. We expect that these firms, hailing from the largest takeover market, and sharing a small coterie of investment bankers, enter the public phase at relatively the same point with similar routines. Many of the identified due diligence drawbacks (e.g., hubris, over confidence) are likely to be salient aspects of the pre-public period when deals are formed, and in fact appear sensitive to feedback and processes in the public arbitration period (Chikh and Filbien 2011; Fralich and Papadopoulos 2018; Renneboog and Vansteenkiste 2019). Further, our study examines more recent data to 2016, which captures both a rise in the spread of target countries, but also powerful forces of global integration that favored M&A activity. In sum, given the incentives from severe market implications in withdrawing takeover offers (Varmaz and Labner 2016), we expect that shorter public arbitration duration is

preferable, reflecting lower levels of tasks associated with information asymmetry, and leading to better performance, i.e.,

Hypothesis 1: A shorter public arbitration duration will be related to better financial performance for cross border acquisitions by U.S. firms.

Launching from this premise, we next identify host country characteristics that may predictably impact the potential information asymmetry between acquiring and target firms.

2.3 Formal Market-Supporting Institutions and Arbitration Phase Duration

An array of formal country institutions are essential to the functioning of markets, both in providing contract enforcement mechanisms and constraining coercive power (Greif 2005). Market-supporting institutions (MSI) help firms to engage in markets by lowering unnecessary risks and additional costs (Meyer et al. 2009). Consequently, changes in MSI have been found to affect firm performance (Cuervo-Cazurra and Dau 2009a), in some cases helping foreign firms even more than domestic firms (Cuervo-Cazurra and Dau 2009b). Further, evidence indicates that even the adoption of singular reforms aligned with MSI (e.g., adoption of International Financial Reporting Standards) can improve information quality as proxied by earning management behaviors (Wijayana and Gray 2019).

Research regularly incorporates MSI in the arena of cross-border M&As, with especially relevant evidence that it facilitates market entry by acquisition (Meyer et al. 2009). Important to our arguments here, Cuervo-Cazurra and Dau (2009a) found compelling evidence that pro-market reforms in countries enhanced the profitability of firms in their sample through the improvement of “external monitoring mechanisms that ameliorate managerial misbehavior, thus reducing agency costs” (2009, p. 1362). A key outcome of such mechanisms is increased information transparency, lowering the information asymmetry that lengthens arbitration duration.

Therefore, while firm-specific disclosure of information should act to lower information asymmetry, the process is contingent on the quality of that disclosure (Francis et al. 2005; Leuz and Verrecchia 2005). The institutional environment in a country, in turn, directly influences the quality of information available in the public domain (Piotroski and Wang 2012), and more indirectly, the expected reliability of company disclosures (Healy and Pallepu 2001). Indeed, countries producing lower quality information suffer severely reduced portfolio (stock) investments by foreign investors in their firms (Wu et al. 2012).

Acquiring firms are especially sensitive to reducing the information gap and overcoming information problems (Devigne et al. 2013); accordingly, discrepancies between the market information from firm disclosure and information uncovered during due-diligence will increase risk perceptions; set the stage for negotiations and renegotiations (Mitchell and Pulvino 2001; Mitchell et al. 2004); and possibly threaten deal completion (Dikova et al. 2010). As these behaviors combine into delay, countries with high quality MSI that limit the probability of missing or

incorrect market information are likely to exhibit lower public arbitration duration than their low quality MSI peers. We thus hypothesize:

Hypothesis 2: The quality of market-supporting institutions in the host country will be negatively associated with the public arbitration duration of a cross-border M&A transaction.

2.4 Moderating Role of Uncertainty Avoidance

According to Hofstede and Bond (1988) in their framework for advising business, culture is the “collective programming of the mind that distinguishes the members of one category of people to those of another. Culture is composed of certain values, which shape behavior as well as one’s perception of the world”. Notable to M&A outcomes include studies showing how culture affects managerial attitudes (Kelley et al. 1987), firm performance (Newman and Nollen 1996), acquisition performance (Morosini et al. 1998), investment decisions (Grinblatt and Keloharju 2001), and capital structures (Chui et al. 2002). Moreover, cultural variables are likely to interact with their formal institutional counterparts to affect firm outcomes (Daniel et al. 2012).

Uncertainty avoidance (UA) may be one cultural attribute that could compensate for low information quality in low-MSI environments by lowering the relative level of information asymmetry. The UA dimension of culture taps the extent to which a society relies on social norms, rules, and procedures to alleviate the unpredictability of future events. Specifically, the “greater the desire to avoid uncertainty, the more people seek orderliness, consistency, structure, formal procedures, and laws to cover situations in their daily lives” (GLOBE Project 2011). Countries with high UA cultures tend to use more formal mechanisms for their interactions, keep more scrupulous records in a systematic fashion, and employ more formalized rules and processes (Grove 2005; House et al. 2004). Conversely, countries with a low UA culture tend toward more informal interactions and norms to conduct business, consequently keeping fewer and less systematically organized records (Grove 2005; House et al. 2004). Indeed, UA in home and host countries has been linked to many cross-border transactional features, including: acquisition number and premiums (Frijns et al. 2013); the amount of equity purchased (Moschieri et al. 2014); the cost of equity capital (Gray et al. 2013); and overall levels of country FDI (Bhardwaj et al. 2007).

We expect the value of UA in a culture for M&A processes is contingent on the need to compensate for information asymmetry generated by contextual deficits. As explained above, low quality MSI societies are more likely to have lower standards, poorer enforcement, and less guidance to firms regarding the generation, access and reliability of economic information. Conversely, high UA cultures value precisely this sort of structure and information, and it is expected that firms in countries with high UA cultures will tend to institute higher self-imposed standards for information generation and management. Together, a high UA culture may significantly counteract the information voids in low MSI environments, helping to reduce information asymmetry, and in turn, contribute to shorter arbitration phases than their low UA peers in low MSI countries. Therefore, we investigate:

Hypothesis 3: The host country's level of uncertainty avoidance will moderate the relationship between host country MSI and public arbitration duration such that it will provide a substitution effect in low MSI countries.

3 Research Design

3.1 Sample and Data Collection

All M&A related transaction data was obtained from *Thompson Financials SDC platinum* database. *SDC platinum* is a premium source of M&A transaction data and is used in the majority of M&A research (e.g., Dikova et al. 2010; Hope et al. 2011; Kedia and Reddy 2016). As evidence shows that home country environments also contribute to diversification processes (Wan and Hoskisson 2003; Zhu et al. 2019), we restricted our sample to acquisitions originating from one country, the United States. The sample consists of all M&A transactions with a deal value of over 1 million USD, drawn from a sample of cross-border acquisitions between 2006 and 2016. Data sources also include the Heritage foundation's *Index of Economic Freedom*, the *GLOBE Project*, and Hofstede's cultural *Dimension data matrix* commonly used in IB research. Descriptions of all variables, definitions and sources of data are presented in Table 1.

For our test of whether the duration of the public arbitration phase predicted performance, we were limited to publicly-traded firms which report market returns, producing a sample of 1890 transactions. After removing missing data, our tests are based on the remaining sample which represented 939 cross-border transactions initiated by 582 US firms.

For our focal analysis on arbitration duration, we included all cross-border transactions by US companies, public and private, in our data range. After deleting transactions with missing data and removing outliers, our data contained a sample from 39 target countries with a final sample size of 3376 transactions. A list of all countries and the number of transactions by country-year are provided in Table 2.

3.1.1 Dependent Variables

Performance is measured as the *excess returns* over 24 months (Buy and Hold Returns). We also measured excess returns for 12-months and 36-months periods around the deal announcement date. Excess return of the acquirer was computed with

$$\text{BHAR}_i = \prod_{t=1}^T (1 + R_{it}) - \prod_{t=1}^T (1 + E(R_{mt}))$$

Duration of the public arbitration phase is our focal dependent variable. Acquisition duration in the pre-deal public takeover process of an acquisition is measured by number of days between acquisition announcement and acquisition completion (Dikova et al. 2010). This duration represents the formal negotiation period between

Table 1 Variables, definitions and data sources

Variable	Definitions and operationalization	Source
<i>Dependent variable</i>		
Acquisition duration	A measure of duration of the arbitration phase, calculated as the difference in the number of days between the date of deal announcement and date of deal completion. Acquisition duration was \log_{10} transformed	SDC Platinum
<i>Independent variables</i>		
Market supporting institutions	Average of business freedom, investment freedom, trade freedom, freedom from corruption and property rights	Heritage Foundation Economic Freedom Index
Uncertainty avoidance	A measure of the extent to which a society, firm, or group relies (and should rely) on social norms, rules, and procedures to alleviate unpredictability of future events. The greater the desire to avoid uncertainty, the more people seek orderliness, consistency, structure, formal procedures, and laws to cover situations in their daily lives	GILOBE Project and Hofstede
<i>Control variables</i>		
Acquirer public	Dummy variable indicating the public status of the Acquiring firm. 1 indicates that the acquirer is publicly listed, and 0 indicates it is not a publicly listed firm	SDC Platinum
Target public	Dummy variable indicating the public status of the target firm. 1 indicates that the target is publicly listed, and 0 indicates that the target firm is not a publicly listed firm	SDC Platinum
Equity sought	The percentage of ownership sought by the acquiring firm in the target firm	SDC Platinum
Transaction value	A measure of the value of the transaction in millions of dollars (USD)	SDC Platinum
Acquirer size	The value of acquirer's current assets in millions of US dollars	SDC Platinum
Cash deal	Dummy variable. Assigned 1 if cash is 100% the means of payment, 0 if unknown or not 100%	SDC Platinum
Stock deal	Dummy variable. Assigned 1 if stock is 100% the means of payment, 0 if unknown or not 100%	SDC Platinum
Number of bidders	The number of bidders involved in the transaction	SDC Platinum
Pre-deal equity	Dummy variable. Assigned 1 if acquiring firm owned equity in the target firm before initiating the focal transaction, 0 if no equity was owned	SDC Platinum

Table 2 U.S. Acquisitions in Foreign Countries

Country	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Argentina	2	7	5	1	5	5	2	2	1	3	0	33
Australia	31	36	41	39	22	30	24	33	34	25	25	340
Austria	0	4	4	2	2	4	2	2	0	1	1	22
Bolivia	0	1	1	0	0	0	1	0	0	0	0	3
Brazil	9	13	11	13	19	16	12	20	12	11	12	148
Canada	0	98	0	0	0	0	0	74	52	62	53	339
China	0	0	7	2	0	0	1	2	0	0	0	12
Colombia	0	0	0	0	0	2	0	0	0	1	0	3
Costa Rica	0	0	1	1	0	0	0	0	0	1	0	3
Czech Republic	0	3	0	0	0	0	0	1	1	0	2	7
Denmark	6	3	4	5	0	4	2	7	1	4	3	39
Ecuador	0	0	0	0	1	0	2	0	0	0	0	3
Egypt, Arab Rep	0	1	0	0	2	1	0	0	0	3	3	10
El Salvador	0	1	1	0	0	0	1	0	0	0	0	3
Finland	1	0	0	0	0	0	0	0	0	0	0	1
France	42	27	36	18	9	16	17	18	12	18	20	233
Georgia	1	0	1	0	0	1	0	0	0	0	0	3
Germany	45	44	32	26	15	12	21	23	23	28	27	296
Greece	0	0	0	1	0	0	1	1	0	2	0	5
Guatemala	1	2	1	1	0	1	0	1	0	1	0	8
Hong Kong	17	18	17	2	4	8	3	6	1	6	1	83
Hungary	2	2	3	0	0	0	2	0	1	0	0	10
India	19	22	30	21	17	23	23	10	16	17	16	214
Indonesia	0	1	2	1	0	1	2	0	0	1	0	8
Ireland	5	7	4	4	3	3	7	9	2	13	9	66
Israel	16	19	8	12	6	8	11	10	5	9	16	120
Italy	15	8	13	9	2	9	8	3	6	14	15	102
Japan	8	6	34	15	10	12	10	10	6	6	8	125
Kazakhstan	1	0	0	0	0	0	0	0	0	0	0	1
Malaysia	2	3	3	1	3	1	2	1	1	1	3	21
Mexico	6	10	22	2	0	7	4	6	11	8	3	79
Morocco	1	0	0	0	0	0	0	2	0	0	0	3
Netherlands	20	19	13	13	8	10	11	10	12	11	15	142
Philippines	3	2	0	0	0	0	0	0	1	0	0	6
Poland	3	3	5	0	2	0	2	1	3	5	3	27
Portugal	1	0	2	0	1	0	0	0	0	0	0	4
Qatar	0	0	1	1	0	0	0	0	0	0	0	2
Russia	2	8	4	6	1	3	1	2	0	2	0	29
United Kingdom	103	87	93	74	43	65	79	75	75	75	54	823
Total	362	455	399	270	175	242	251	329	276	328	289	3376

the target and acquiring firm. After eliminating missing data and extreme outliers, duration ranged between 1 and 386 days.

3.1.2 Independent/Moderator Variables

Our principal independent variable for the quality of host country formal institutions uses the measure of *market-supporting institutions* (MSI) from Meyer et al. (2009). The measure uses data from the annual *Heritage Foundation's Economic Freedom Index* (Kane et al. 2007), commonly used in the international business literature (e.g., Bengoa and Sanchez-Robles 2003; Holmes et al. 2013; Meyer and Sinani 2009). We conducted a factor analysis using nine dimensions reported by *Index of Economic Freedom*. The results of the factor analysis are presented in Table 3. One factor solution was adopted, which had five items with 0.7 or higher factor loading, which includes: *business freedom*, *trade freedom*, *investment freedom*, *freedom from corruption*, and *property rights*. The loadings for these items were 0.86, 0.78, 0.81, 0.96, and 0.94. These factors are measured on a scale of 0–100, with 0 representing the poorest, and 100 the highest, level of quality. Scores of these five dimensions were averaged to calculate the level of MSI quality for the corresponding year. MSI scores for the target nations were calculated for years 2005–2016. The MSI quality data was lagged one year from the year of the transaction.

Uncertainty avoidance (UA) is our moderating variable. While the more rule-oriented GLOBE project UA measure is theoretically more consistent with rules for firm-level information handling, we also recognize valid arguments for the more individual stress-orientation Hofstede UA measure, and thus test both in accordance with prescriptive advice (Venaik and Brewer 2010). UA from the GLOBE project,

Table 3 Factor analysis results

	Factors	Factor 1 loadings Market-supporting Insti- tutions	Factor 2 loading Fiscal policy
1	Property rights	<i>0.94</i>	0.15
2	Freedom from corruption	<i>0.96</i>	0.16
3	Business freedom	<i>0.86</i>	0.18
4	Trade freedom	<i>0.78</i>	0.01
5	Investment freedom	<i>0.81</i>	-0.04
6	Labor freedom	0.34	0.59
7	Monetary freedom	0.49	0.11
8	Fiscal freedom	-0.44	0.68
9	Government spending	-0.5	<i>0.73</i>
	Eigen value	4.59	1.43
	% variance explained	74.6	23.27
	Cumulative % variance explained	74.6	97.87
	Number of observations	3376	3376

The italicized font indicates the factors on which the variable loads

or *UASP*, (Uncertainty Avoidance as a Societal Practice) is defined as a measure of “the extent to which a society, firm, or group relies on social norms, rules, and procedures to alleviate unpredictability of future events. The greater the desire to avoid uncertainty, the more people seek orderliness, consistency, structure, formal procedures, and laws to cover situations in their daily lives” (House et al. 2004, p. 618). Hofstede’s uncertainty avoidance index (Hofstede 1980), or *UAHof*, is described: “Uncertainty-avoiding cultures shun ambiguous situations. People in such cultures look for structure in their organizations, institutions and relationships, which makes events clearly interpretable and predictable” (Hofstede 2001, p. 148). We test both to assess the generalizability and robustness of our results.

3.1.3 Control Variables

We included several variables related to cross-border M&As to control for characteristics commonly understood to affect the acquisition process.

For both regressions (performance and duration) we included the following control variables: *Acquirer size* measures the acquirer’s current assets in millions of US dollars, and was obtained from the SDC platinum database. Larger firms have more resources to both pursue and manage acquisitions. *Transaction value* is the value of the transaction under observation, (millions of US dollars), larger deals can be expected to raise more hurdles during negotiations. After eliminating extreme outliers, the transaction value ranged between 1 million and 2 US billion dollars. *Cash deal* indicates whether the transaction was cash financed (coded 1 if the transaction was predominantly (> 99%) cash financed/0 if it is not) and *Stock deal* indicates whether the transaction was predominantly stock financed (coded 1 if the transaction was predominantly stock financed and 0 if it is not). Stock financed transactions are more complex than cash-financed transactions (Dikova et al. 2010). Incorporating both dummy variables accommodates part stock/part cash deals (coded 0/0). *Number of Bidders* is a variable indicating the number of potential buyers competing for the target firm, which can signify greater potential value of the target firm, as well as time pressure on acquirers to conclude the transaction. *Pre-Deal Equity* is an indicator if the acquirer owned equity in the target firm before the focal transaction. This is a dummy variable (coded 1 if the acquirer held equity in the target firm before initiation of the focal transaction and 0 if no equity was held).

The performance regression also incorporated common acquirer characteristics found to affect M&A performance. *Leverage* measures total debt to total assets in the acquiring firms. *Profitability* is measured by the acquirer’s return on assets (Li et al. 2017a, b). *Experience* reflects the acquirer’s cross border acquisition experience and is a count of the acquirer’s prior cross border acquisitions within the prior 5 years (Kim et al. 2015). The variable *friendly* is a dummy variable where 1 is indicated if the acquisition is friendly, and 0 for hostile. *Same industry* is a dummy variable where 1 indicates if the 3-digit SIC code was the same for both the acquirer and target, and 0 if different.

For our central investigation on how host country characteristics affect the duration of the public arbitration phase, we included the following along with the previously noted variables. *Acquirer public* and *target public* are dummy variables

indicating whether the acquirer and target firms are publicly listed firms; coded as 1 if they are a publicly listed firm, and 0 if they are not publicly-held firms. Publicly-held firms have different disclosure requirements as opposed to privately-held firms, which influence the information available about either firm (Dikova et al. 2010). *Equity sought* is the percentage of shares the acquirer opts to acquire in the observed transaction (Chari & Chang, 2009). The value ranges between 0 and 100% and can represent the entry mode degree of control, which has implications for M&A performance (Giachetti et al. 2019) and the duration of the arbitration phase. *Pre-deal equity* is a dummy variable which indicates whether the acquirer held over ten percent equity in the acquired target firm prior to the transaction, indicating greater access to target firm information. The value of 1 indicates the acquirer held more than 10%, and 0 indicates zero to ten percent equity. *Target Industry* and the *Year of transaction* were also tested as control variables.

We also compared our model to previous studies in considering additional control variables. Dikova et al. (2010) included acquisition experience for their duration model and did not find significance; we also tested this variable and it was clearly insignificant ($p > 0.0.1$) and removed it from our analyses as it detracted from our model fit statistics (R squared and RMSE). Their institutional distance variable was not appropriate for this study as our single host country led to too high of a correlation to the MSI of the host country, our central variable of interest ($r = 0.87$; $VIF = 14$ above cutoff limits). Thompson and Kim also incorporated proxies for institutional distance which are similarly confounded with our effort to isolate MSI and UA effects here.

3.2 Analysis and Results

As the independent variable and the moderating variable are country-level variables, and the dependent variable and control variables are transaction-level variables, the hierarchical structure of the data warrants a multilevel analysis as the most suitable method of analysis. Therefore, we examined the distribution of variances at each level in the dependent variable and calculated the interclass correlations. The interclass correlation value of 0.042 (Variance at country level = 309.74 and at transaction level is 7089.14) indicated that grouping by countries is of no use for the analysis, and a standard OLS regression best fits as the method of analysis. Thus, we employed an OLS regression technique to test all of the hypothesized relationships, which is appropriate for testing the specified relationship as both the dependent and independent variables are continuous variables.

Descriptive statistics and bivariate correlations were next assessed to assure no violation of statistical assumptions and are shown in Table 4. The final sample of 3376 observations, or individual transactions, is based on 2132 individual acquirers. On average, acquiring firms included in the sample had 1.58 acquisitions during the sample period. Correlations for all variables used in the final analysis ranged between -0.42 and 0.56, which are within the acceptable range (< 0.7). While there were no high correlations (≥ 0.7) between industry dummies and other variables, diagnostics further suggested no multicollinearity was associated with these factors

Table 4 Descriptive and correlation matrix

Variable	N	Mean	S.D	1	2	3	4	5	6	7	8	9	10	11	12
1 Duration	3376	47.34	79.81	1.00											
2 MSI	3376	77.35	14.58	0.01	1.00										
3 UASP	3376	4.436	0.44	0.09	-0.37	1.00									
4 UA HoF	3357	55.34	20.37	0.07	-0.41	0.56	1.00								
5 TgT public status	3376	0.28	0.45	0.20	-0.04	0.04	0.03	1.00							
6 Acq-public status	3376	0.56	0.50	0.08	0.13	-0.01	-0.03	-0.14	1.00						
7 Equity sought	3376	80.17	33.26	0.06	0.32	-0.14	-0.08	-0.36	0.29	1.00					
8 Transaction value	3376	294.39	1187.27	0.38	0.09	0.03	0.03	0.03	0.02	0.15	1.00				
9 Acquirer size	3376	3478.21	182.86	0.05	-0.09	0.04	0.05	0.15	-0.42	-0.21	0.30	1.00			
10 Cash deal	3376	-	-	0.05	0.11	-0.07	-0.03	0.05	0.03	0.06	0.13	0.01	1.00		
11 Stock deal	3376	-	-	0.11	0.04	0.02	-0.03	0.03	0.18	0.10	-0.04	-0.34	-0.23	1.00	
12 Num. of bidders	3376	1.01	0.12	0.08	0.03	-0.02	-0.01	0.08	0.01	0.04	0.10	0.01	0.02	0.02	1.00
13 Pre-deal equity	3376	-	-	0.05	-0.10	0.04	0.09	0.21	-0.06	-0.41	-0.07	0.06	0.03	-0.02	-0.01

This table represents the Pearson correlations in the lower diagonal. Correlations that are significant at 5 percent are italicized

Table 5 Regression results for post-acquisition performance

	Controls only	BAHR ₁₂ months	BAHR ₂₄ months	BAHR ₃₆ months
Constant	- 0.04 (0.09)	- 0.04 (0.09)	- 0.34** (0.13)	- 0.25 (0.16)
Leverage	0.02 (0.08)	0.02 (0.08)	0.07 (0.13)	0.15 (0.15)
Profitability	0.78*** (0.20)	0.78*** (0.21)	0.80** (0.31)	0.73(0.46)
Firm size	0.01 (0.01)	0.01 (0.01)	0.02 (0.01)	0.01 (0.02)
Experience	0.00 (0.01)	0.00 (0.01)	0.00 (0.00)	0.01 (0.01)
Deal size	- 0.01 (0.01)	- 0.00 (0.01)	0.02 (0.01)	0.03* (0.02)
Friendly	0.08 (0.07)	0.08 (0.07)	0.26* (0.11)	0.28* (0.13)
Stock deal	- 0.02 (0.05)	- 0.01 (0.05)	- 0.07 (0.07)	- 0.13* (0.06)
100% cash deal	0.02 (0.03)	0.02 (0.03)	0.01 (0.04)	- 0.02 (0.05)
Horizontal	- 0.01 (0.04)	- 0.01 (0.04)	0.00 (0.05)	0.06 (0.06)
Log_Duration		- 0.01 (0.02)	- 0.05* (0.02)	- 0.07* (0.03)
N	939	939	939	939
F stats	2.49**	2.23*	4.07***	2.77**
R-squared	0.044	0.045	0.053	0.044

Standard error adjusted for 66 clusters

Standard errors in parenthesis

* $p < 0.05$, ** $p < 0.01$, *** $p < .001$

(VIF < 10). Additional multicollinearity diagnostics suggested no multicollinearity among variables in the specified relationships (VIF ranged between 1.0 and 1.4).

The first analysis we conducted was to test our hypothesis that duration will be negatively related to financial returns of the acquirers. We conducted an analysis of the relationship of duration to financial returns by evaluating excess return based on buy and hold returns for the window of five days pre-completion and 12 months, 24 months, and 36 months post-completion. Our results found that there is a significant negative association between the duration and post-acquisition excess returns 24 months ($b = -0.05$, $p < 0.05$) and 36 months ($b = -0.07$, $p < 0.05$) post-completion. Duration was not significant for 12 months excess return ($b = -0.01$, $p > 0.10$) as measured by BAH (Table 5).

Results of the regression analyses testing our focal hypotheses are presented in Table 6 (MSI and UASP). Model 1 enters all of the control variables, and explains 21.8% of the variance in the duration of arbitration phase. Acquirer public status, target public status, equity sought, transaction value, stock deal, and pre-deal equity were significant at the 0.05 significance level or higher. Results in Model 1 demonstrate a negative association of acquirer size with the dependent variable; all other variables demonstrated a positive association. Model 2 introduces the independent variable market-supporting institutions (MSI); MSI is shown to have a negative and significant effect ($\beta = -0.06$; $p < 0.01$) supporting hypothesis 2.

Model 3 adds the moderator UASP, and it demonstrates a positive and significant association with duration. UASP was positive and significant ($\beta = 0.07$; $p < 0.001$) indicating higher levels of UASP actually extended duration, contrary to our expectation based on lower information asymmetry.

Table 6 Results of regression models of arbitration duration—GLOBE UASP

	Model 1		Model 2		Model 3		Model 4	
	b	β	b	β	b	β	b	β
Constant	- 0.31† (0.15)		- 0.36* (0.16)		- 0.37* (0.16)		- 0.36* (0.16)	
Acquirer public	0.08* (0.03)	0.04	0.08* (0.03)	0.04	0.08* (0.03)	0.04	0.08* (0.03)	0.04
Target public	0.44*** (0.04)	0.21	0.46*** (0.04)	0.22	0.46*** (0.04)	0.22	0.46*** (0.04)	0.22
Equity sought	0.00*** (0.00)	0.07	0.00*** (0.00)	0.09	0.00*** (0.00)	0.10	0.00*** (0.00)	0.10
Transaction value	0.43*** (0.02)	0.38	0.44*** (0.02)	0.38	0.43*** (0.02)	0.37	0.43*** (0.02)	0.37
Acquirer size	- 0.03 (0.02)	- 0.02	- 0.03 (0.02)	- 0.02	- 0.03 (0.02)	- 0.02	- 0.03 (0.02)	- 0.02
Cash deal	0.01 (0.03)	0.01	0.02 (0.03)	0.01	0.03 (0.03)	0.01	0.03 (0.03)	0.01
Stock deal	0.41*** (0.07)	0.10	0.41*** (0.07)	0.10	0.40*** (0.07)	0.10	0.40*** (0.07)	0.10
Number of bidders	0.14 (0.12)	0.02	0.14 (0.12)	0.02	0.16 (0.12)	0.02	0.15 (0.12)	0.02
Pre-deal equity	0.22*** (0.06)	0.07	0.22*** (0.06)	0.07	0.23*** (0.06)	0.07	0.22*** (0.06)	0.07
Ind. fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
MSI	-		- 0.05*** (0.02)	- 0.06	- 0.03† (0.02)	- 0.03	- 0.06** (0.02)	- 0.06
UASP	-		-		0.07*** (0.02)	0.07	0.04* (0.02)	0.05
MSI × UASP	-		-		-		0.06** (0.02)	0.05
R-squared	0.224		0.227		0.232		0.233	
Adj-R squared	0.218		0.221		0.225		0.226	
F stats	35.87***		35.16***		34.75***		33.89***	
N	3376		3376		3376		3376	

†p < 0.1, *p < 0.05, **p < 0.05, ***p < 0.005. Standard errors in parenthesis

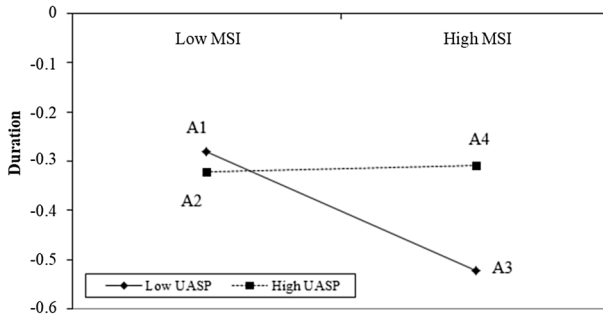


Fig. 2 Duration of the arbitration phase, host country institutional quality (MSI), and uncertainty avoidance as societal practice (GLOBE measure)

Model 4 adds the interactions of MSI with the moderator UASP. The interaction with UASP was positive and significant ($\beta=0.05$; $p < 0.01$) supporting our expectations of an interaction in hypothesis 2.

To better interpret the interaction effect of uncertainty avoidance, we plotted an interaction graph for the moderating role of UASP, see Fig. 2. The strong moderating effect does show that M&A transactions in countries with poorly developed institutional environments (low MSI), and with higher uncertainty avoidance (UASP), actually have a shorter duration for their arbitration phase than their low MSI peers with low uncertainty avoidance—consistent with our theoretical argument. But unexpectedly, in countries with well-developed MSI, the transactions take notably longer to complete in host countries with higher UA than their high MSI/low uncertainty avoidance counterparts. Finally, the slope of the low UASP curve was negative and significant while the slope of the high UASP curve while positive, was not significant.

3.3 Endogeneity

As is common in strategic management research, OLS estimates suffer from endogeneity from unobserved country-specific factors that can bias the results. To address this issue of endogeneity, we sought out two separate instrumental variables that may persuasively explain the significance of market-supporting institutions (MSI). Specifically, we tested political stability (Džunić 2007) and government effectiveness (Hadfield 2005), both of which we obtained from the World Bank's World Governance Indicators. Conceptually, both political stability and government effectiveness are essential to support market mechanisms and supporting institutions, and represent compelling test variables. Therefore, testing each independently, we conducted a two stage least square regression (2SLS). First, we conducted a 2SLS regression using a full set of control variables with our independent variable (MSI), moderator (UASP) and the interaction variable, with specification of political stability as an instrumental variable for MSI. Similarly, we repeated the test with government effectiveness as an instrumental variable. Finally, we repeated the same

Table 7 Tests for endogeneity

	OLS (Model 1)	Instrumental variable		Political stability + government effectiveness (Model 4)
		Political stability (Model 2)	Government effectiveness (Model 3)	
	b	b	b	b
<i>Controls +</i>				
MSI	- 0.05** (0.02)	- 0.05** (0.02)	- 0.07* (0.02)	- 0.06* (0.02)
UASP	0.07* (0.02)	0.02 (0.00)	0.04 (0.02)	0.01** (0.00)
MSI x UASP	0.06** (0.02)	0.09** (0.00)	0.06** (0.02)	0.01** (0.00)
Adj-R ²	0.213	0.213	0.217	0.14
RMSE	0.824	0.827	0.824	0.865
N	3376	3376	3376	3376

†p < 0.1, *p < 0.05, **p < 0.05, ***p < 0.005. Standard errors in parenthesis

process using both political stability and government effectiveness as instrumental variables for MSI.

Results for the 2SLS for these two instrumental variables are presented in Table 7, which contrasts results to the OLS without instrument variables. For Model 4, which used both instrumental variables, several diagnostic tests were performed which confirm the appropriateness of these instruments for MSI. First, we examined that the correlation between MSI and the instrumental variables, which indicates that correlation (partial R-squared=0.7313) is high. Second, we examined 2SLS relative bias tests. The resulting F-stats ($F_{(2, 3352)} = 2647.3$; $p < 0.001$) are higher than any of the critical values presented by 5% Wald test of 2SLS relative bias. Both these tests indicate that the instrumental variables used are good instrumental variables for MSI. For over-identification, we conducted Sargan χ^2 test and Basman χ^2 test, both tests indicate that the model was correctly specified. The co-coefficients and significance of the tested relationship indicate that MSI remains significant and does not suffer from the effects of endogeneity from these variables. The RMSE in the test model without the instrumental variables and the tests with the instrumental variables indicate that the model fit is comparable. Our results thus suggest that MSI likely adds significant explanatory value as a host country characteristic to the duration of the public arbitration phase.

3.4 Robustness Checks

To further test the robustness of our results, we substituted UASP with Hofstede's uncertainty avoidance measure (UAHoF). We found that our results held with this measure, and are consistent and similar to the results of the first regression analysis. The moderator UAHoF is positive and significantly ($\beta = 0.05$; $p < 0.01$) associated with duration and the interaction term is positive and significantly ($\beta = 0.05$; $p < 0.005$) associated with duration. We also plotted these interactions for interpretation. Figure 3 demonstrates the moderating role of UAHoF on the relationship of

Table 8 Results of regression robustness test—arbitration duration with Hofstede UA

	Model 1		Model 2		Model 3		Model 4	
	b	β	b	β	b	β	b	β
Constant	-0.31 [†] (0.15)		-0.36* (0.16)		-0.35* (0.16)		-0.35* (0.16)	
Acquirer public	0.08* (0.03)	0.04	0.08* (0.03)	0.04	0.08* (0.03)	0.04	0.08* (0.03)	0.04
Target public	0.44*** (0.04)	0.21	0.46*** (0.04)	0.22	0.46*** (0.04)	0.22	0.45*** (0.04)	0.22
Equity sought	0.00*** (0.00)	0.07	0.00*** (0.00)	0.09	0.00*** (0.00)	0.09	0.00*** (0.00)	0.09
Transaction value	0.43*** (0.02)	0.38	0.44*** (0.02)	0.38	0.43*** (0.02)	0.38	0.43*** (0.02)	0.38
Acquirer size	-0.03 (0.02)	-0.02	-0.03 (0.02)	-0.02	-0.03 (0.02)	-0.02	-0.03 (0.02)	-0.02
Cash deal	0.01 (0.03)	0.01	0.02 (0.03)	0.01	0.02 (0.03)	0.01	0.02 (0.03)	0.01
Stock deal	0.41*** (0.07)	0.10	0.41*** (0.07)	0.10	0.41*** (0.07)	0.10	0.42*** (0.07)	0.10
Number of bidders	0.14 (0.12)	0.02	0.14 (0.12)	0.02	0.15 (0.12)	0.02	0.15 (0.12)	0.02
Pre-deal equity	0.22*** (0.06)	0.07	0.22*** (0.06)	0.07	0.22*** (0.06)	0.06	0.22*** (0.06)	0.07
Ind. fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
MSI	-		-0.05*** (0.02)	-0.06	-0.04* (0.02)	-0.04	-0.03 [†] (0.02)	-0.04
UAHof	-		-		0.04** (0.02)	0.05	0.06*** (0.02)	0.06
MSI × UAHof	-		-		-		0.04** (0.02)	0.05
R-squared	0.224		0.227		0.230		0.232	
Adj-R squared	0.218		0.221		0.224		0.225	
F stats	35.87***		35.16***		34.34***		33.52***	
N	3376		3376		3357		3357	

[†]p < 0.1, *p < 0.05, **p < 0.05, ***p < 0.005. Standard errors in parenthesis

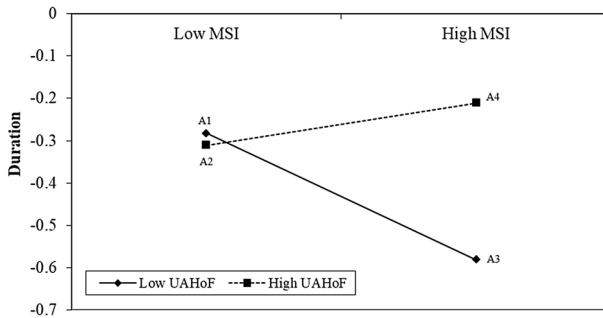


Fig. 3 Duration of the arbitration phase, host country institutional quality (MSI), and uncertainty avoidance (Hofstede measure)

host country institutions and the duration of the arbitration phase, which is highly similar to the results for UASP. The results of this regression analysis are presented in Table 8.

Finally, we did check our dependent variable for a curvilinear effect as found by Thompson and Kim (2020); as expected, it was not significant (full results available from authors).

4 Discussion and Conclusion

Our research examines how the host country context can systematically affect the processes associated with M&A transactions, specifically focusing on the arbitration phase. Employing insights from information asymmetry and institutional perspectives, we argued that contextual features that raise information quality and transparency will in turn lower the duration of the public arbitration phase. By restricting our sample of acquirers to a single home country, we were better able to assess impacts associated with the target country context.

In particular, we hypothesized that market supporting institutions (MSI) would generally lower information asymmetry. Next, we hypothesized that in those countries where such formal institutions are lacking (low MSI), the informal institutional practices associated with uncertainty avoidance (UA) could moderate this relationship, as higher UA culture would substitute as a mechanism for improving information.

In accordance with our second hypothesis, we indeed found higher MSI had a negative relationship with duration, indicating that the arbitration phase is prolonged in host countries with lower quality MSI environments, which we attribute to lower quality firm information available in the public domain, thus exacerbating the problem of information asymmetry. Secondly, our results showed that the host country's level of uncertainty avoidance strongly moderates this relationship, but in very different ways for the low MSI and high MSI environment. We expand on this finding next.

Consistent with our reasoning that uncertainty avoidance could decrease information asymmetry in host countries with low levels of MSI development, the duration of the arbitration phase of M&A transactions is indeed shorter when the host country has a high UA culture (A2 in Figs. 2, 3) as opposed to when a host country has low UA (A1 in Figs. 2, 3). In other words, M&A transactions will take longer in countries like Bolivia and Russia, (represented in Q1 of Fig. 4) where the MSI are poorly developed and the cultural value places low emphasis on rules and procedures to avoid future uncertainty. In comparison, duration will be slightly shorter for countries like India and Indonesia (represented in Q2 of Fig. 4), where the cultural value system places an emphasis on avoiding future uncertainty. We attribute these findings to the substitution effect of a high uncertainty avoidance culture that encourage formal interactions, usage of formal process and policies, and systematic and scrupulous maintenance of records. Such cultural attributes create a better environment of information access and information transparency that can reduce

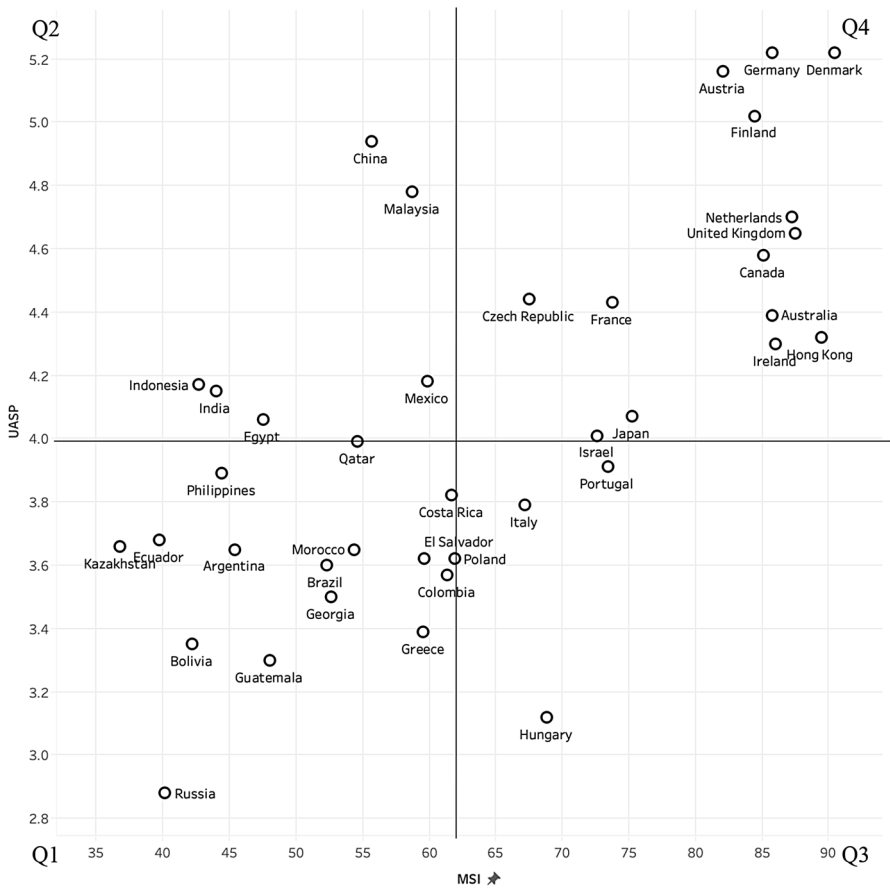


Fig. 4 Distribution of the host countries based on institutional quality (MSI), and uncertainty avoidance (UASP)

the information gap and asymmetry, thus partially substituting for the role usually played by better quality MSIs.

To our surprise, though, our results indicate that uncertainty avoidance is related to how long arbitration takes in an opposite manner—and quite dramatically—in high MSI environments. As indicated by A3 and A4 in Figs. 2 and 3, the arbitration phase in a cross-border M&A transaction in countries with high MSI is considerably longer in countries with a high UA culture such as Germany and Finland (Q4 of Fig. 4), than it takes when compared to countries like Hungary and Portugal (Q3 of Fig. 4) that have well developed MSI, but low UA cultures.

From these findings, we can deduce that the interaction between the attributes of societal value systems and formal institutional systems can be unexpectedly complex, and sometimes in fact, counterintuitive. For example, we argued for a substitution effect of the cultural attribute of uncertainty avoidance for problems of information asymmetry in the absence of well-developed MSI. However, our results showed, while supporting our initial hypothesis, that in fact the interaction effect is more pronounced, and related to a different task of the arbitration phase, for countries in high MSI/high UA cultures like Germany and Finland.

Specifically, we speculate that uncertainty avoidance in host countries with existing high levels of MSI acts in a substantially different manner in relation to duration because of its impact on the design and management of the arbitration process in these environments. High UA cultures have a powerful tendency to reduce risk, and demonstrate strong resistance to change. Such attributes are likely to lead to requirements for more detailed plans for post-acquisition integration, and may lead to hindering the transaction until all uncertainties are addressed, either internally for the acquired firm (Egeberg 2007) or governmentally, as indicated increasingly in regulatory trends (Ghuri and Buckley 2003), or other government influence (Thompson and Kim 2020). Thus, despite the potential time savings enabled by developed market-supporting institutions (indicated in the relative drop in duration for low UA countries across the low to high MSI continuum A1 to A3 in our figures), the cultural dynamic to fend off uncertainty appears to counter this potential advantage in high UA countries. This result was also robust whether UA was measured with the GLOBE project or Hofstede measure.

Our findings reinforce the importance of understanding that assumed positive institutional features are not unmitigated goods; similar to the surprising finding that foreign affiliate performance was actually higher in less institutionally developed host countries (Chan et al. 2008). By dividing both the high and low MSI countries by the countries UA levels, we were able to detect these opposing influences of UA on merger and acquisition processes. This result reinforces calls to improve our accuracy in understanding the interrelationships among institutions; across countries, institutions can fall into different configurations with different logics of action (Hinings 2018; Jackson and Deeg 2008), providing gains in some contexts and losses in others.

4.1 Implications for Theory and Practice

Though the pre-acquisition phase of M&As is of interest for both research and practice, empirical studies examining one or more of the process elements were rare prior to Dikova et al.'s (2010) publication on M&A duration and completion. The duration of the arbitration phase has now raised interest in a number of studies (e.g., Gaffney 2012; Li et al. 2017a, b; Thompson and Kim 2020). We found only one study (Thompson and Kim 2020) that considered the impact of duration on performance; but it was not able to control for the home country and isolate host country impacts. Our findings indicate that holding the home country constant, (in this case for acquirers hailing from the highly developed U.S. market unlikely to proceed with under-researched acquisitions), once a public announcement is made, these acquirers benefit from a lower duration that can lower costs (Dikova et al. 2010) and mitigate the threats of interim market volatility (Bhagwat et al. 2016).

These results strengthen the argument presented in earlier studies (Dikova et al. 2010; Gaffney 2012) that state that longer duration impedes value creation in M&A transactions, and with Thompson and Kim's (2020) conclusions regarding delay costs, i.e., that at some point greater arbitration duration is associated with a decline in merger performance.

Along with documenting a practical basis for greater attention to duration, we turned our attention to generating theory suggesting the host country context can contribute predictable impacts on the functioning of merger and acquisition processes. In particular, we were interested in how institutions could help compensate for the natural information asymmetry that arises in the merger transaction. Our significant results offer a platform for further investigation of both MSI and UA, as well as other institutional dimensions, in this light.

Managers in both target and acquiring firms need to recognize how host country institutions shape the informational environment for firms and influence the efficiency and credibility of the M&A process. We offer two key insights. First, decisionmakers need to understand that with transactions in host countries with poorly developed market institutions, the problem of inefficient transactions remain; however, the culture of high uncertainty avoidance in such countries may alleviate these problems to a degree. This may be due to the cultural propensity to reduce uncertainty through improved record keeping, which results in resolving some of the issues arising from information asymmetry.

Secondly, decision makers may need to accommodate a need for greater preparation when conducting M&A transactions in countries with high uncertainty avoidance cultures, by, for instance, drafting more detailed post-acquisition integration plans, or interacting pro-actively with government oversight. High UA cultures in high MSI countries, in particular, appear likely to incorporate more procedural obstacles to meet the higher demand for certainty and stronger resistance to change in these countries.

4.2 Limitations and Conclusion

Because this study controlled for home country variance by limiting our sample to acquirers from the United States, the generalizability to other home countries is unknown. There may be specific features within these transactions that may not apply to transactions originating from other nations, specifically if origination countries have differing levels of MSI development or UA. Thus, further studies may want to probe the degree to which this phenomenon translates to other home country pairings.

Secondly, the analysis and results were conducted on a large set of M&As that were successfully completed. This is a limited representation of the obstacles in the M&A process due to information asymmetry, as transactions that are abandoned may reveal different relative weights for variables such as institutions than their successful counterparts. While our data selection process was employed to be consistent with past research publications on this topic, future research may be interested in evaluating the failed population in more detail (cf., Chatterjee et al. 2003).

This study offers the information asymmetry framework for identifying key institutional variables in the pre-acquisition process, with some supportive empirical support. Given this foundation from archival data, researchers should pursue further primary data and qualitative studies that can thoroughly gather and study the pre-acquisition process around an information asymmetry lens. Such studies would require process comparisons across countries to determine mechanisms by which institutions promote or dampen the efficient generation of information for M&A decisions.

Finally, in the face of the drastic ramifications from the COVID-19 pandemic on the world economy, strategic decision makers will increasingly evaluate whether relationships from the pre-COVID era can still inform the current disarray in markets. Here we found a significant impact from a country's level of uncertainty avoidance on M&A process functioning. We suggest that as governments and citizenries experience considerable threat from the global market downturn, more and more countries may respond to foreign M&A behavior in similar ways to the risk-averse UA countries. Accordingly, the recent rise in defensive obstacles to cross border transactions (Clark and Dummett 2020) has not been surprising given the insights presented here.

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