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The Cultural Foundations of Corporate Control: An Empirical Enquiry

Finance Working Paper N° 816/2022
Revised March 2023

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Abstract

Utilizing the patterns in settlement of Scots-Irish in the United States, this study examines the effects of honor culture on corporate control contests. This culture is characterized by the importance of building a personal reputation and maintaining this reputation at all cost. We find that bidding and target firms from an honor culture are less likely to initiate conflict with one another, as reflected by a lower likelihood of the bid being unsolicited and the bid turning hostile. Once the bid has become hostile, we find that targets from honor states are more defensive, as reflected by a smaller likelihood for the bid to be completed. If completed, such bids tend to have a longer deal duration, especially if the bidder is also from such a culture. These findings advance our understanding of the reasons behind takeover resistance above and beyond managerial incentives and regulatory provisions.

Keywords: Corporate Governance, Corporate Control, Hostile Takeovers, Takeover Resistance, Culture of Honor

JEL Classifications: G34,G40,M14

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1. Introduction

Starting with Manne's (1965) seminal paper, hostile takeovers have been advanced as an external disciplinary mechanism that comes into play in the wake of the failure of a firm's internal governance system to tackle poor managerial performance. The target firm's resistance to a hostile bid is then considered to be merely motivated by managerial entrenchment and the management's continued unsatisfactory performance.[1] While there is a extensive literature on hostility expressed by target firm management toward takeover bids, the role of cultural motives behind takeover hostility has been overlooked. Indeed, existing research is mainly limited to examining the post-takeover performance effects of differences or similarities in corporate culture between the target and bidding firms (see e.g. Renneboog and Vansteenkiste, 2019, for a review). As such, it is not clear whether and how culture might shape takeover hostility and resistance in the *pre-takeover* phase when one in five takeover attempts fails to be completed (Welch, Pavićević, Keil, and Laamanen, 2020).[2] This study attempts to address this gap in the literature.

We advance culture of honor as a novel explanation for takeover hostility and resistance. Culture of honor is characterized by concerns about reputation maintenance and social standing (Pitt-Rivers, 1965; Wyatt-Brown, 1982; Fischer, 1989; Nisbett and Cohen, 1996). Reputational concerns in this culture are directly associated with building social status and sustaining that status by remaining intolerant to threats directed at the self, family, or property (Cohen and Nisbett, 1994; Barnes, Brown, Lenes, Bosson, and Carvallo, 2014). We argue that corporate control contests are "arenas in which concerns about esteem, honor, and dignity are being played out" (Schneider and Dunbar, 1992, p.538) and such contests could therefore potentially threaten the organizational identity of the firms involved.[3] Given the significance of reputational concerns in honor culture, we propose that firms in honor places avoid initiating conflict with one another in a corporate control contest. However, once the conflict has escalated, the target firms tend to be more resistant to such a bid.

We consider the effect of honor culture on takeover hostility both at the collective and individual levels. First, the honor culture surrounding the firm's headquarters may affect corporate decisions (Bhandari and Golden, 2021). More specifically, local honor culture creates institutional pressure that affects all those who live in places with such a culture, whether they were born into this culture or not. In fact, institutions and other organizational entities in honor places are shown to promote – as well as being shaped by – the properties of honor culture (Cohen and Nisbett, 1997). To

[1] For examples, see Jensen and Meckling (1976), Jensen and Ruback (1983), Fama and Jensen (1983), Jensen (1988) and Heyden, Kavadis, and Neuman (2017). Earlier contributions include Coase (1937), Berle and Means (1932), Williamson (1963), and Manne (1965).

[2] This statistic is based on the data we collected from Thomson ONE Banker.

[3] The view that hostile takeover bids threaten the corporate identity of the target is evident in the terminology and the normative framing employed by the media and the actors involved to describe such bids(Hirsch, 1986; Morrill, 1991). Yet, this framing of the events has been neglected by the extant research as inaccurate media coverage (Jensen, 1991), deliberate products of the actors involved (especially the target firm management), or a way of facilitating the institutionalization of these events in society (Hirsch, 1986). In this study however we consider them to be a reflection of the cultural norms, values, and beliefs of the actors involved.

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investigate the effect of local honor culture, we consider the presence of this culture in the states where the firms are headquartered. Our analysis reveals strong support for the effect of local honor culture on takeover hostility and resistance. Second, the characteristics and values of the CEO may influence corporate decisions. Hence, takeover resistance may be due to the culture of target firm CEOs. We hand-collect data on the birthplaces of target CEOs to examine the possible effect of CEO culture. We find no support for the effect of CEO culture above and beyond the effect of local culture.

We focus on Scots-Irish culture of honor in the United States, which is the subject of a large body of literature in social psychology. Similar to Grosjean (2014), we use the variation in the population density of Scots-Irish to measure the strength of honor culture in the state where a firm is headquartered. While the presence of honor culture has also been documented for other settlers to the United States (e.g. the Italians), what is distinct about the Scots-Irish in the United States is that they were among the very first European settlers in the frontier South. Hence, their culture adapted to the living conditions they encountered in this new, lawless environment (Wyatt-Brown, 2001). In turn, the reaction of these first European settlers to this hostile environment had a major impact on shaping the cultural identity and the institutions of the South of the United States (Wyatt-Brown, 2001).[4]

We study the culture of the target firm relative to that of the bidding firm. More specifically, we investigate the reaction of both parties at the *bid initiation* stage when the likelihood of a provocation is still low, and at the *bid continuation* stage when a threat is more eminent. Being aware of the norms of their culture, we expect firms in honor places to be conscious of the costly consequences of initiating conflict with one another. As such, we hypothesize that bidding firms from an honor culture are less likely to make unsolicited bids (i.e. bids directly addressing the shareholders rather than the target management) for targets from the same culture to avoid offending the target management. Still, target firms from honor states are less likely to reject such bids from bidders from the same culture as this may be interpreted as a humiliation and a direct threat to the bidder's reputation. However, once the bid becomes hostile, we expect the probability of deal completion to be lower for targets from an honor culture, especially if the bid originates from a bidder from the same culture. Finally, we hypothesize that *ceteris paribus* hostile bids involving both a bidder and target from an honor culture take longer to complete and are withdrawn more quickly, if they fail to be completed. Using data on takeover bids for public bidder and target firms in the United States over the period of 1986-2018, we confirm the validity of these hypotheses.

While we focus on a very specific cultural factor, which is measured at the state level, i.e. the presence of Scots-Irish honor culture, a compelling argument can be made that our results are driven by other state-level cultural factors. To mitigate this concern, we adjust for other state-level factors, i.e. state-level religiosity, collectivism, and the political orientation of the target state.

[4]We provide further support for the argument that the persistence of honor culture depended on the reactions of these first settlers to this hostile environment as, unlike for the Scots-Irish, we find no evidence that the population density of Italians in each state predicts the probability that a bid turns hostile, the probability of a bid being completed, and the duration of completed and withdrawn bids.

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We also control for the geographical location of the target and bidder headquarters. Specifically, hostility toward an unsolicited takeover bid might be caused by a Northern bidder making an unsolicited bid for a Southern target. For reasons going back to the Civil War, targets of such bids may consider such bids to be inherently hostile. Further, we consider whether bidders that made unsolicited bids in the past are perceived to be hostile. In turn, such bidders may be more active in honor states. We are able to reject these alternative explanations for our results. Our results are also upheld when using a falsification test to account for omitted variable bias. Finally, our results are also robust to the use of a direct measure of the propensity for self-defense, which is based on a survey on the justification for the use of violence for self-defense (Blumenthal, Kahn, and Andrews, 1992).

This paper makes a major contribution to at least three strands of the literature. First, it adds to the literature that examines the reasons for resistance to takeover bids (Baron, 1983; Schwert, 2000; Franks and Mayer, 1996; Bates and Becher, 2017) by providing a novel reason for such resistance. While Manne (1965) argues that badly performing firms are likely to become the targets of hostile takeover bids, with the aim of getting rid of the badly performing management to reverse value destruction, there is little empirical support for this thesis. Indeed, Schwert (2000) and Franks and Mayer (1996) do not find any significant differences in pre-bid performance between targets of hostile takeovers and those of friendly takeovers, as well as for firms not being targeted by a takeover bid. We add to this literature by advancing a novel reason for takeover hostility, which is not related to the target's pre-bid performance.

Second, the paper adds to the growing literature on the impact of culture on corporate behavior (for a review of this literature, see e.g. Guiso, Sapienza, and Zingales, 2006; Karolyi, 2016). More specifically, the paper contributes to the literature on the impact of culture on merger and acquisition (M&A) activities (Weber, Shenkar, and Raveh, 1996; Serdar Dinc and Erel, 2013; Sarala, Junni, Cooper, and Tarba, 2014; Ahern, Daminelli, and Fracassi, 2015; Bereskin, Byun, Officer, and Oh, 2018; Doukas and Zhang, 2021). The empirical research in this area tends to focus on the *post-takeover* performance consequences of the fit of national and corporate culture between the bidder and target. We add to this literature by providing evidence that culture can determine takeover hostility as reflected by the unsolicited nature of the bid, the bid's duration, and its likelihood of being completed.

Finally, the paper answers the call by Welch et al. (2020), who identify significant gaps in the literature on the pre-deal negotiations for M&As. They note that while there is an extensive literature on the pre-deal phase of M&As, including hostile bids, we know little about the interaction between the bidder and target during the pre-deal phase. This paper attempts to fill in this gap by studying how bidders and targets from honor cultures interact with each other and how this interaction may affect resistance to the bid and ultimately its likelihood of being successful.

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2. Literature Review and Hypothesis Development

2.1. The Origins of Cultural Variation in the United States

In what follows, we define culture in the sense of Van den Steen (2010), i.e. the shared beliefs and values of people. Cultural geographies of the United States describe the patterns of settlement via vast, historical waves of migration. Such migration waves include the French Communitarians, English East Anglia Puritans, Dutch tradesmen, and the Scots-Irish. Woodard (2011) argues that these waves created different "American nations", which have persisted over time and which have been reinforced by regularities such as the ongoing choices of the actors involved. His argument relies on the work of Zelinsky (1971, 1980), whose articulation of migration is not just a movement within a geography, but a much richer movement within the social, cultural, economic, and informational sphere.

The historical roots of the emergence of honor culture in the United States are the settlement of herders from a fringe of Britain in the 18th century (McWhiney, 1988; Fischer, 1989). The people who became the early settlers in the South – and later on moved to the West where they were also frequently the first settlers (Nisbett, 1993) – were mostly Protestant Scots-Irish with an animal herding background.[5] They were different from the Northern settlers, who were German, English, and Dutch crop farmers. Unlike crops, herds were prone to theft. Hence, herders needed to demonstrate their willingness to engage in violent retribution against predatory behavior, thereby seeking and maintaining their status through their defensive abilities. In such an environment, a man's reputation for toughness and resorting to violent retribution, if needed, was vital to his economic survival (Nisbett and Cohen, 1996).

2.2. The Persistence of Culture over Time

For honor culture to affect how firms react to takeover bids nowadays, this culture needs to persist over time. Alesina, Giuliano, and Nunn (2013) provide evidence suggesting that culture in general tends to persist over time. They study whether past agricultural practices affect the beliefs about gender roles today. They argue that societies that used the traditional plough in agriculture relied on a strict division of labor between genders, with men tending to the fields while women taking care of the domestic chores. Importantly, they find a strong, positive relation between the use of the plough in the *past* and the degree of gender inequality *today*. Further, Nunn (2008) observes a negative relation between the number of slaves exported from an African country and its current level of economic development. Again, this supports the argument that culture persists over time.

Specifically related to honor culture, Cao, Enke, Falk, Giuliano, and Nunn (2021) provide cross-country evidence on the systematic links between traditional herding practices on the one side and the presence of an honor culture and greater contemporaneous conflict on the other

[5] Estimations suggest that more than 200,000 Scots-Irish migrated to the United States between 1717 and 1775 (Fischer, 1989).

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side. They document that today's descendants of herders report a greater willingness to take revenge, and engage significantly more frequently in conflict as well as engaging in more severe forms of conflict. Importantly, what contributed to the persistence of honor culture in the South and the West of the United States was not merely the cultural background that the Scots-Irish carried across the Atlantic but also the local environment the settlers encountered: When they arrived in the United States in the 18th century, they were pushed to the frontier of the South where the living environment required the qualities provided by an honor culture. Unlike in the North where strong formal institutions ensured social and political order, lawlessness and a lack of political centralization in the Antebellum South (Wyatt-Brown, 2001) as well as the West helped the private justice system provided by honor culture to thrive and become the prevailing (informal) institution. In fact, the historical Scots-Irish presence has only been associated with greater honor-related violence in places where the quality of the formal institutions has been low (Grosjean, 2014). This could explain the marked influence of the Scots-Irish in shaping the institutions of these regions despite forming a small population when compared to other settlers, including other migrant groups associated with an honor culture (e.g. the Italians).[6]

Three further arguments have been advanced to justify the persistence of honor culture to this day: First, honor culture has reached a stage of functional autonomy and is therefore able to operate in the absence of a herding economy (Cohen, Nisbett, Bowdle, and Schwarz, 1996; Cohen, Vandello, Puente, and Rantilla, 1999). Second, the prevalence of honor culture can be explained by "pluralistic ignorance" where no one questions the belief that the absence of a response to an affront harms the reputation for toughness of the targeted person, even if this belief is wrong (see the discussion in Vandello, Cohen, and Ransom, 2008). Last but not least, in an honor culture, both men and women tend to defend the social reputation of their family.[7] Importantly, Nisbett and Cohen (1996) argue that women play a key role in honor culture by passing the values of honor onto their children through active participation in the socialization process.

To conclude, the core of honor culture is reportedly still present in the South and the West of the United States three centuries later (Cohen et al., 1996). Today, many of the structures and practices in the South and the West, such as the absence of gun control legislation, greater interstate conflict, variation in the laws toward domestic violence, higher rates of gun ownership, and support for corporal punishment in schools (Cohen, 1996, 1998; Dafoe and Caughey, 2016), are linked to the honor culture associated with the settlement of Scots-Irish.

2.3. Honor Culture Permeating the Local Collective

An obvious way to examine the effect of honor culture on takeovers is to investigate the effect of CEO culture. However, honor culture does not only affect the behavior of individuals that are born

[6] As stated above, we do not find any evidence that the population density of Italians per state affects the resistance to takeover bids.

[7] As there are no target firms with a female CEO in our sample, we are not able to investigate whether honor culture affects firms with a female CEO differently.

[7] In addition, maintaining the family's honor entails sexual purity and loyalty from female family members (King, 2008; Cihangir, 2013).

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into this culture as culture can permeate its surrounding environment. Indeed, the psychological aspect of honor is important in emergence and penetration of an honor culture in a society, but what is more important is the social dimension of honor that becomes dominant when the culture is established in a new place. Referring to this duality of honor, Pitt-Rivers (1965, p.38) argues that: "If the honour felt by the individual becomes honour paid by the society, it is equally the case that the honour which is paid by the society sets the standards for what the individual should feel". Indeed, as we demonstrate later that CEO culture does not have an effect above and beyond the local culture.

Importantly, the influence of cultural forces on behavior is felt more strongly in an honor environment. Indeed, "honour commits men to act as they should (even if opinions differ as to how they should act)" (Pitt-Rivers, 1965, p.38). Hence, in studying why a target firm may resist a takeover bid, we consider the *collective* behavior of the firm's management to be the result of responding to local cultural forces and seeking legitimacy in the firm's environment, as well as being the result of the desire to maintain social status and reputation. The assumption that local culture affects corporate or managerial culture has been validated by extant literature such as Giannetti and Yafeh (2012) and Bloom, Sadun, and Van Reenen (2012). Therefore, we base our analysis on local honor culture while controlling for CEO culture.

Evidence for the existence of strong social support for the cultural norms of honor is provided by Cohen and Nisbett's (1997) two field experiments. More specifically, these experiments illustrate the social support for honor-related violence in the South and West of the United States. In the first experiment, letters from a job applicant who had committed a violent crime in defense of his honor were sent to organizations in the North, South, and West that were part of the same company. Recruiters in the South and West treated the job applicant less as an undesirable criminal and more like a decent citizen who deserved a second chance. In the second experiment, the authors sent a newswire describing a fictional honor-related stabbing to newspapers in the North, South, and West. They compared how newspapers in the three regions covered the story. They found that, unlike the newspapers in the North, newspapers in the South and West created stories that were more sympathetic toward the perpetrator, providing justifications for his action.

2.4. Honor Culture, Hostility, and Takeover Resistance

We base our hypotheses on the possible actions and reactions of bidders and targets located in honor and non-honor states by making a distinction between the *offer initiation* when the likelihood of reputational threat is low for both parties, and the *bid continuation* and development stage when the threat to reputation is much greater. Making such a distinction is important as in "honor cultures whether social interaction is cooperative or competitive depends on whether people's reputations are threatened" (Aslani, Ramirez-Marin, Brett, Yao, Semnani-Azad, Zhang, Tinsley, Weingart, and Adair, 2016, p.1180). As long as there is no threat to reputation, individuals in an honor culture enhance their social standing by being welcoming and polite (Nisbett and Cohen, 1996; Cohen et al., 1999; Aslani et al., 2016). However, in instances where there is "an opportunity

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to gain or a threat to lose reputation, people in honor cultures can be expected to act competitively or even aggressively" (Aslani et al., 2016, p.1180).

2.4.1. Offer initiation

At this stage, the nature of the bid, i.e. how it is made, matters. The bidder has the choice of making a bid that is directly addressed to the target shareholders (i.e. making an unsolicited bid) or presenting the bid to the management in a first instance (i.e. making a solicited bid). For the bidding firm, the choice between a solicited and an unsolicited bid, at least to some extent, rests on its assessment of how the bid will be interpreted by the target management. For the target management, the decision to resist the bid, among other things, depends on its interpretation and assessment of the bidder's intentions and motivation. For example, the CEO of North-Carolina-based KS Bancorp, which was the target of two unsolicited bids by First Citizens Bank located in the same state, commented that the approach (i.e. making an unsolicited bid) was not the norm in banking, thereby assessing the bidding firm's actions as being inappropriate. Indeed, referring to the unsolicited nature of the bid, the CEO of KS Bancorp noted that such bids "are not the norm in the banking industry. We are extremely surprised a $34 billion regional bank would pursue the hostile takeover of a $360 million community savings bank. First Citizens' corporate actions are evidence that First Citizens' corporate culture is not in line with KS Bank's community banking values" (Ohnesorge, 2017).

How should then a bidder from an honor culture approach a target from the same culture? Having an understanding of the norms and expectations of the culture, a bidder from an honor culture should be more conscious about the importance of its communication style when approaching a target from the same culture. This is especially important as communication can be a key source of conflict in an honor culture. More specifically, both the content and the way a message is communicated are significant causes for a dispute; yet, "the way things are said is more important than the substance of what is said" (Pitt-Rivers, 1965, p.27). As such, the framing of the message may signal the sender's intention, and the framing may involve "expressions of attitude which claim, accord or deny honour" (Pitt-Rivers, 1965, p.27). Hence, an inappropriately expressed message could potentially intensify the receiver's misinterpretation of the message, and negatively affect his or her estimation of the intention of the sender. To reduce the chance of such a negative interpretation by a target from an honor culture, the bidder from the same culture might be less likely to make an unsolicited bid. This leads us to our first hypothesis.

Hypothesis 1: *The bid is less likely to be unsolicited if both the target and bidder are from an honor culture.*

How a target from an honor culture responds to an unsolicited bid by a bidder from the same culture follows the same logic, i.e. the avoidance of conflict until a threat becomes eminent. As Cohen et al. (1999, p.258) argue, given the propensity for violent retribution, people in places with

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an honor culture "tread lightly and act in accordance with norms of politeness and hospitality so that they do not offend (and invite violence) from others. This politeness sometimes works in that it mutes some conflicts that will blow over." Accordingly, the immediate rejection of an unsolicited bid by the target might be misinterpreted by the bidder from an honor culture as a sign of humiliation and a reputational threat, resulting in the bidder being even more determined to pursue the bid. Therefore, targets from an honor culture may be more cautious about resisting an unsolicited bid from a bidder from the same culture. Hence, it should therefore be less likely for an unsolicited bid to turn hostile if both the target and bidder are from an honor culture. We formulate our second hypothesis as:

Hypothesis 2: *It is less likely for an unsolicited bid to turn hostile if the target and bidder are from an honor culture.*

2.4.2. Bid continuation

Once the offer has been initiated, if an insult has occurred, regardless of what the result might be, the aim of the target in an honor culture is to defend itself. "The essence of an affront is that another should dare to affront one" (Pitt-Rivers, 1965, p.26). Similarly, for a bidder from this culture it is important to pursue an already started conflict as its reputation will be at stake, and a reputational loss is costly. The social aspect of the outcome of a conflict is more pronounced in an honor culture "as [the actors] may lose more than what is directly at stake in the conflict, and they may lose their honor" (Harinck, Shafa, Ellemers, and Beersma, 2013, p.69). As such, the bidder and target may strive to protect their reputation and defend their honor. In turn, this generates a competitive aspiration and a tendency to outperform the other party in the contest (Aslani et al., 2016). This is clearly illustrated by the aforementioned case of First Citizens' takeover attempts of KS Bancorp's where the latter persistently defended itself, while the bidder demonstrated commitment to complete the deal, which even if it had been completed would only have added a mere one percent to First Citizens' assets.

Therefore, we hypothesize that for bids that turn hostile (i.e. bids where the target resists but the bidder persists), the probability of deal completion will be lower if the target is located in an honor state. This is due to the greater propensity for self-defense by targets from this culture. We expect this relationship to hold even more strongly when the bidder is also from an honor culture.

Hypothesis 3: *The probability of deal completion is lower for a target firm from an honor culture, especially if the bidder is also from an honor culture.*

In turn, the greater propensity for self-defense by a target from an honor culture should result in a shorter time until the bid is withdrawn or, alternatively, a longer time until it is completed.

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Indeed, once the target has decided to resist the bid, it might go to any extent to hold its fort. As a result, if the target is able to force the deal to be withdrawn, this should happen in a shorter time. The reverse is true for completed deals: It should take longer for the bidder to complete a deal for a target from an honor culture. Finally, we expect these effects to be stronger if both the target and bidder are from an honor culture. This is because the completion of the resisted bid is also crucial for a bidder from an honor culture as the bidder strives to maintain its social standing. Put differently, the competitiveness between the bidder and target is greater if both firms are from an honor culture. Accordingly, this discussion leads us to our last two hypotheses.

Hypothesis 4: *It takes a shorter time for a hostile takeover bid for a target from an honor culture to be withdrawn, especially if the bidder is also from an honor culture.*

Hypothesis 5: *It takes a longer time for a hostile takeover bid for a target from an honor culture to be completed, especially if the bidder is also from an honor culture.*

3. Sample Selection and Methodology

3.1. Sample Selection

We obtain our sample from the Platinum Mergers and Acquisitions Database provided by the Securities Data Company (SDC). SDC classifies a bid as unsolicited if the bidder makes an offer to the target shareholders without prior negotiations with the target firm's management. In turn, it classifies a bid as hostile if the target firm's management or board of directors officially rejects the offer but the bidder persists with the takeover. We use this definition of hostility, which is also used in prior literature (e.g. Schwert, 2000; Franks and Mayer, 1996).

Our sample consists of all takeover bids between 1986 and 2018 made by public firms incorporated in the United States for public firms also incorporated in the United States. We only retain those bids that aim for a transfer of control. These are bids for which the bidder owns less than ten percent of the common stock of the target firm prior to the bid and seeks to acquire more than half of the shares via the bid. Financial information on the target firms is obtained from Thomson ONE Banker as well as Compustat. The sample includes all the friendly and hostile takeover bids. For bids where *deal attitude* is stated as being "unsolicited" rather than friendly or hostile, we use the description of the deal in the event history and deal synopsis to determine whether the deal attitude is friendly or hostile.[8] In line with extant empirical research on culture of honor, we exclude bids for targets from the two states of Alaska and Hawaii.[9] After excluding bids with missing data, the final sample consists of 6833 bids. The vast majority of these 6833 bids, i.e. 6245

[8]We classify a bid as hostile if the description of the bid states that the bid was rejected by the target firm, and as friendly otherwise.

[9]There are only four and 11 bids for targets from Alaska and Hawaii, respectively. When including these 15 bids in our analysis, the results are qualitatively the same.

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bids, are solicited, whereas the remainder, i.e. 588 bids, are unsolicited. In turn, 424 of all the bids are hostile[10] whereas the remaining 6409 are friendly. Finally, a total of 344 of the 424 hostile bids are identified as unsolicited bids whereas the equivalent number for the 6409 friendly bids is only 244. Apart from the first regression table (i.e. Table 3), which is based on the entire sample (the first two columns), and the sub-sample of unsolicited bids (the third column), the remaining analysis focuses on the sub-sample of hostile bids.

We complement our takeover data with state-level data on the population of Scots-Irish in the United States from the 2000 US Census (Minnesota Population Center, 2016). The Census data starts in 1790 and is available every ten years thereafter. We use the 2000 Census as the earlier Censuses either do not report ancestry information (e.g. the 1950, 1960, and 1970 census) or they report such information but do not use the Scots-Irish ethnic background as a distinct category (e.g. the 1980 Census). Scots-Irish population density in each state is expressed as the percentage of the population with reported ancestry who reported one of their ancestries as Scots-Irish. The variation in population density of people with Scots-Irish ancestry as reported in the 2000 Census is depicted in Figure 1 and also in Table B in Appendix B. North (NC) and South Carolina (SC), Tennessee (TN), Maine (ME), and West Virginia (WV) are the states with the highest population density of people who reported Scots-Irish ancestry whereas Minnesota (MN), New Jersey (NJ), New York (NY), and Wisconsin (WN) are the states with the lowest.[11]. Figure 1 also documents considerable variation within each region. For example, California has a relatively low Scots-Irish population density as compared to neighbor state Oregon, even though both are located in the west. Similarly, Florida and Georgia are very different in this respect from North and South Carolina. Thomson ONE Banker reports the state where the bidder and target firms are headquartered. Importantly, the location of the corporate headquarters tends not to change over time as it is normally selected during the early life of the firm, many years prior to going public (Knyazeva, Knyazeva, and Masulis, 2013). We use this information to match the Census data with the takeover data.

3.2. Methodology

3.2.1. The Regressions and Key Variables

We use the following equations to test the validity of our hypotheses. We use Eq. 1 to test the validity of Hypothesis 1.

$$Prob(Unsolicited) = f(Target\ only\ from\ honor\ state;\ Bidder\ only\ from\ honor\ state;\ Target\ and\ bidder\ from\ honor\ state;\ X;\ \epsilon) \tag{1}$$

The equation predicts the probability that a bidder makes an unsolicited bid for another firm, taking into account whether the target, the bidder, or both are from an honor culture. The

[10] These 424 hostile bids are aimed at targets headquartered in 41 states.

[11] Although as stated above, Hawaii is excluded from the analysis, this state is one of the states with the lowest population density of people who reported Scots-Irish ancestry.

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dependent variable *Unsolicited* is an indicator variable set to one if the bid is unsolicited, and zero otherwise. Scots-Irish population density at the state level is used as a proxy for culture of honor.[12]

We estimate Eq. 1 via a probit regression. In contrast to ordinary least squares (OLS) regressions, probit regressions, similar to logistic regressions (Balcaen and Ooghe, 2006), are highly sensitive to multicollinearity (Locking, Månsson, and Shukur, 2014). Mulicollinearity results in inflated standard errors, leading to insignificant coefficients and wrong inferences. Including the interaction between Scots-Irish population density for the target state and that for the bidder state, *in addition* to the two Scots-Irish population densities on their own, (as per Eq. 1) almost certainly creates strong multicollinearity. To avoid this issue, we create the following three mutually exclusive indicator variables. *Target only from honor state* is set to one if Scots-Irish population density in the target state is above the median (the median being based on the 48 states[13] included in this study) but Scots-Irish population density in the bidder state is below the median, and zero otherwise. Similarly, *Bidder only from honor state* is the equivalent indicator variable for the bidder state. Finally, *Target and bidder from honor state* is set to one if *both* the target and the bidder are from an honor state, and zero otherwise. As the three indicator variables are mutually exclusive, their use avoids multicollinearity. The use of mutually exclusive indicator variables also makes the interpretation of the regression results more straightforward. The first hypothesis will be supported if the marginal effect of *Target and bidder from honor state* is negative and statistically significant. In Eq. 1, X is a vector of firm-level and deal-specific controls (see Section 3.2.2 for the details), and ϵ is the error term.

To test the validity of Hypothesis 2, we run a Heckman (1974) two-step selection model as specified in Eq. 2 and Eq. 3. As per Hypothesis 1, the likelihood of a target receiving an unsolicited bid is affected by whether the target and bidder are located in an honor state or not. Hence, we use a Heckman two-step model to control for potential selection bias. The first-step equation estimates the likelihood of the firm receiving an unsolicited bid using the above three indicator variables indicating whether the target, the bidder, or both are headquartered in an honor state (Eq. 2). The dependent variable is an indicator variable taking the value of one if the deal is unsolicited, and zero otherwise. The instrument we use in the first-step equation is the percentage of unsolicited bids for the entire sample period in the bidder industry. We expect this percentage to influence the probability that a bidder makes an unsolicited bid given its industry. Importantly, the instrument should have no or little impact on the decision of the target to reject the bid while it strongly predicts the probability of the bid being unsolicited. In other words, the exclusion restriction

[12]There are two alternative measures commonly used to proxy for honor culture in the social psychology literature. The first one is a regional indicator variable set to one for the South of the United States, and zero otherwise. The second one is Gastil's Southernness index, which ranks states on a scale of zero to 35 based on the prevalence of Southern culture (Gastil, 1971). However, using the regional indicator variable is methodologically crude, and Gastil's Southernness index, which is based on the degree to which a state was expected to be settled by Southerners, is not based on detailed data (see e.g. Huff-Corzine, Corzine, and Moore (1986)). In contrast, using actual Census data, we capture the movement of the Scots-Irish population across states and hence use a more accurate measure. Note that when we use regional, Southern indicator variable instead of the indicator variables based on Scots-Irish population density, our results remain qualitatively the same. These results are discussed in more detail in the robustness section.

[13]See Section 3 for the list.

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should not be violated.

Nevertheless, when both the bidder and target firms belong to the same industry, the exclusion restriction might be violated as a higher percentage of unsolicited bids in the bidder industry might then also translate into a higher probability of the bid being resisted by the target. Indeed, Servaes and Tamayo (2014) find that industry peers react to a hostile takeover bid for another firm in their industry by putting in place takeover defenses. Hence, using an indicator variable, we control for both firms belonging to the same industry in the first-step regression. While this way of proceeding may not be perfect, we find that this indicator variable is not significant. This gives further credence to the validity of this instrument.

The second-step equation (Eq. 3) estimates the probability that an unsolicited bid made by a bidder from an honor state is resisted by a target from an honor state (i.e. the bid turns hostile). The dependent variable in this second-step equation is an indicator variable taking the value of one if the deal is hostile, and zero otherwise. The key independent variables of interest are the above three indicator variables stating whether the target only, the bidder only, or both are from an honor culture. The first-step equation (Eq. 2) and the second-step equation (Eq. 3) contain all the controls used in Eq. 1. Additionally, the first-step equation contains the instrument whereas the second-step equation contains the Inverse Mills ratio (IMR) obtained from the first-step equation. A negative and statistically significant marginal effect for *Target and bidder from honor state* provides support for Hypothesis 2.

$$\begin{aligned} &Prob(Unsolicited) = f(Target\ only\ from\ honor\ state;\ Bidder\ only\ from\ honor\ state;\\ &Target\ and\ bidder\ from\ honor\ state;\ X;\ Instruments;\ \epsilon) \end{aligned} \tag{2}$$

$$\begin{aligned} &Prob(Hostile) = f(Target\ only\ from\ honor\ state;\ Bidder\ only\ from\ honor\ state;\\ &Target\ and\ bidder\ from\ honor\ state;\ X;\ IMR;\ \gamma) \end{aligned} \tag{3}$$

The validity of Hypothesis 3 is tested as follows. We estimate a probit regression based on Eq. 4, which predicts the probability that the target firm successfully resists a hostile bid given that it is located in an honor state or both the target and bidder are located in such a state. In a second instance, we address potential selection issues by running a two-step Heckman model. The first-step equation estimates the likelihood of the bid being hostile. It is identical to Eq. 2, but with the difference that the dependent variable is an indicator variable set to one if the bid is hostile, and zero otherwise. The second-step Eq. 4 is stated below.

$$\begin{aligned} &Prob(success) = f(Target\ only\ from\ honor\ state;\ Bidder\ only\ from\ honor\ state;\\ &Target\ and\ bidder\ from\ honor\ state;\ X;\ \psi) \end{aligned} \tag{4}$$

The instrument in the first-step regression is the percentage of hostile bids in the bidder's industry. The rationale for using this instrument is that the percentage of resisted bids in the bidder's industry can predict the probability of future bids by a firm from the same industry being

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resisted; yet it is unlikely that the percentage of hostile bids in the bidder's industry influences the outcome of the bid (i.e. for the bid to be completed or withdrawn). Again, when the bidder and the target are from the same industry, the outcome of the bid might be associated with the percentage of hostile bids in the bidder's industry. To mitigate this possible influence, the first step regression also includes an indicator variable controlling for the bidder and the target being from the same industry.

We use Eq. 5 below to estimate the effect of honor culture on the time until withdrawal (Hypothesis 4) and the duration for completed hostile bids (Hypothesis 5). *Duration* is the number of calendar days between the deal announcement date and the date when the deal was withdrawn for withdrawn deals and the date when the deal became effective for completed deals, respectively, as used in Dikova, Sahib, and Van Witteloostuijn (2010). *Withdrawn* is an indicator variable taking the value of one if the bid is withdrawn, and zero if completed. In line with all the previous equations, we include *Target only from honor state*, *Bidder only from honor state*, and *Target and bidder from honor state*. We also include the interaction of each of the previous three indicator variables with *Withdrawn*. Finally, κ is the error term.

$$\begin{aligned} Duration_i = {} & \delta + \eta_1 Target\ only\ from\ honor\ state_i + \eta_2 Bidder\ only\ from\ honor\ state_i \\ & + \eta_3 Target\ and\ bidder\ from\ honor\ state_i + \eta_4 Withdrawn_i \\ & + \eta_5 (Target\ only\ from\ honor\ state_i \text{ x } Withdrawn_i) \\ & + \eta_6 (Bidder\ only\ from\ honor\ state_i \text{ x } Withdrawn_i) \\ & + \eta_7 (Target\ and\ bidder\ from\ honor\ state_i \text{ x } Withdrawn_i) + \theta X_i + \kappa_i \end{aligned} \tag{5}$$

Hypothesis 4 is supported if η_5 and η_7 are negative and significant and the latter is larger in absolute value than the former. In turn, Hypothesis 5 is supported if η_1 and η_3 are significant and positive, with the latter being greater than the former. The reader should note that we report the marginal effects rather than the regression coefficients for all the probit regressions.

As bid duration contains observations up to seven standard deviations from the mean, we winsorize the data at the 1st and 99th percentiles to make sure our results are not driven by outliers. After winsorization, the average bid duration for the hostile bids is 99 days for withdrawn bids and 189 days for completed bids.

Finally, as an alternative to the above tests of the validity of Hypotheses 4 and 5, we perform a survival analysis by estimating a Cox proportional-hazard model. The specification is as per Eq. 6. This model helps estimate the survival time of a bid based on whether the target, the bidder, or both are from an honor state.[14] Note that bid survival is defined as the bid still being in process, whereas a bid that has already been completed or withdrawn would be akin to a bid not having

[14]The model assumes that the hazard associated with the probability of bid survival rests on the duration of the bid (as well as any other relevant factor). The key advantage of using survival analysis is that it allows for the probability of bid survival (i.e. the duration of the bid) to vary over time (Baumöhl, Iwasaki, and Kočenda, 2019).

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survived until day t.

$$
\begin{aligned}
h(t) = h_0(t)\, exp\, [&\beta_1\, Target\ only\ from\ honor\ state_i + \beta_2\, Bidder\ only\ from\ honor\ state_i \\
&+ \beta_3\, Target\ and\ bidder\ from\ honor\ state_i \\
&+ \beta_4\, (Target\ only\ from\ honor\ state_i \text{ x } Withdrawn_i) \\
&+ \beta_5\, (Bidder\ only\ from\ honor\ state_i \text{ x } Withdrawn_i) \\
&+ \beta_6\, (Target\ and\ bidder\ from\ honor\ state_i \text{ x } Withdrawn_i) \\
&+ \beta_7\, Withdrawn_i + \beta_8\, X_i]
\end{aligned}
\tag{6}
$$

where $h(t)$ is the expected hazard at time t, with the hazard being equivalent to the bid being completed or withdrawn, and $h_0(t)$ is the baseline hazard. The exponentiated coefficient β_i corresponds to the hazard ratio for each explanatory variable i. A hazard ratio of more than one suggests that there is greater risk, i.e. the deal has a *shorter* time of survival, whereas a hazard ratio of less than one indicates that there is less risk, i.e. the deal takes *longer* to survive.

A β_4 and a β_6 of more than one, with the latter being greater than the former, would suggest that deals for targets from honor states take less time to be withdrawn, especially if the bidder is also from an honor state, providing support for Hypothesis 4. In turn, a β_1 and a β_3 of less than one, with the latter being smaller than the former, would then suggest that hostile bids for targets from honor states take longer to complete, especially if the bidder is also from an honor state, providing support for Hypothesis 5.

Throughout the regression analysis, we present heteroskedasticity robust standard errors clustered by target state. For targets where there are several bids for a given target (i.e. there are alternative bidders), Thomson ONE Banker reports each bid separately. To ensure such multiple concurrent bids for the same target do not have an impact on the results, we also run the analysis (not tabulated) clustering the standard errors by both target firms and the same sequence (or chain) of bids. The results remain qualitatively the same.

Insert Fig. 1 about here.

3.2.2. Control Variables

The regressions we estimate control for a number of firm- and deal-specific variables. The detailed definitions of all the variables can be found in Appendix A. In detail, we control for merger waves and industry fixed effects for both the targets and bidders. Including indicator variables for the various merger waves adjusts for the clustering of hostile takeovers during the earlier part of our period of study, i.e. during the late 1980s and early 1990s (the so called 4$^{\text{th}}$ merger wave). As the theory of the market for corporate control predicts that a badly-performing firm is more likely to become the target of a hostile bid (Manne, 1965), we control for firm performance via the return on equity (ROE). We also use Tobin's q as firms with low valuations are more likely to become

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the target of a hostile takeover bid (Morck, Shleifer, and Vishny, 1988). Tobin's q is defined as the ratio of the sum of the market value of the firm's equity and the book value of its debt to the sum of the book values of equity and debt. In addition, there are greater efficiency gains to be obtained from taking over targets with a lower Tobin's q (Servaes, 1991). Hence, we expect the deal duration to be longer if the target's Tobin's q is low as the bidder is expected to persist for longer. Both ROE and Tobin's q are measured in year t.

Further, we control for the premium offered by the bidder (measured by the offer price minus the target's closing stock price four weeks prior to the bid announcement, divided by the latter price, and multiplied by 100). We use the stock price four weeks prior to the announcement date to reduce the potential impact of a pre-bid stock price run-up that could be caused by informed insider trading and/or rumors in the media (Meulbroek, 1992; Jarrell and Poulsen, 1989; Schwert, 1996). The target management is expected to be less resistant to a bid offering a high premium. We winsorize ROE, the deal premium, Tobin's q, and firm size at the 1^{st} and 99^{th} percentiles to make sure the results are not driven by outliers.

Other controls include the size of the target firm (measured by the logarithm of the target firm's total assets), the size of the target firm relative to the size of the bidding firm (measured as the target firm's total assets divided by the bidding firm's total assets), whether the deal is cash-only (an indicator variable taking the value of one for a cash only transaction, and zero otherwise), whether there exists more than one bidder for the target (an indicator variable taking the value of one if there is more than one bidder, and zero otherwise),[15] and an indicator variable stating whether the CEO´s birthplace is in a different state from the state where the firm is headquartered. We expect the acquisition of larger firms and stock-funded transactions to be more complex. For example, the acquisition of a larger firm increases the magnitude and complexity of the financing required for the transaction. Hence, firm size is likely to increase the deal duration and the deal's probability of failure.

Furthermore, we include three proxies for managerial entrenchment. According to the managerial entrenchment hypothesis, greater resistance to a bid is the result of the desire of the target firm's management for continued employment and private benefits of control (Baron, 1983; Schwert, 2000; Bates and Becher, 2017). A commonly used proxy for managerial entrenchment is firm-level takeover defenses, which have been found to negatively influence the likelihood of success for a hostile bid (Bebchuk, Coates, and Subramanian, 2002; Bebchuk, Cohen, and Ferrell, 2009). This first proxy is in the form of a count variable ranging from zero to five. It is incremented by one for the presence of each of five firm-level anti-takeover provisions (see Appendix A for details). Although the most widely used proxy for managerial entrenchment in the literature is the Bebchuk et al. (2009) E-index, we were not able to construct this index as the ISS Governance data, which is needed to construct the measure, only covers the S&P 1500 firms, and it is only available from 1990 onwards. Note that the use of takeover provisions by a firm could be endogenous, i.e. firms from

[15] We also experimented with an alternative but related indicator variable, i.e. an indicator variable stating whether the bidder in a chain of bids for the same target firm is the first bidder or not. However, the inclusion of this alternative indicator variable did not change the results materially.

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honor states might be more likely to adopt (more) takeover provisions. However, when regressing the number of takeover provisions on Scots-Irish population density (not tabulated) we found no support for this argument. Therefore, we decided to include this important control variable in the regressions. The second proxy is an indicator variable set to one if the target is incorporated in the State of Delaware, and zero otherwise. We control for whether the firm is incorporated in the State of Delaware because of the high levels of takeover protection available to firms incorporated in this state (Daines, 2001; Bebchuk and Cohen, 2003). For the hostile bids, 50 percent of the target firms are incorporated in Delaware. The third and final proxy for managerial entrenchment is the level of takeover protection provided by the state law. Time-variant data on takeover laws for each state is obtained from Cain, McKeon, and Solomon (2017) and we count the number of takeover laws in place in the target state in the year when the target received the bid.

Finally, we control for the characteristics of the target firm's state, i.e. religiosity and collectivism. This is to ensure that our measure of honor culture does not confound the propensity for self-defense with other social and cultural dimensions. There were also board-level variables, which we intended to add to the list of control variables, but for which we could not find suitable data. This is mainly because a great proportion of hostile takeovers pre-date 1992 whereas the data provided by ISS and ExecuComp only start in that year.

Table 1 presents the summary statistics for the variables used in this study. Table 2 reports the correlations between the variables. Both tables focus on the sub-sample of hostile bids. Importantly, Table 2 does not document any strong correlations between the target or bidder state-level Scots-Irish population density on the one side and firm and deal characteristics on the other side. Importantly, Scots-Irish population density in the target's state is related neither to the deal premium nor to Tobin's q. This dispels any concerns that Scots-Irish population density may be correlated with firm or deal characteristics.

Insert Table 1 about here.

Insert Table 2 about here.

4. Empirical Analysis

4.1. Likelihood of Making an Unsolicited Bid and Resisting Such a Bid

Our analysis starts with estimating a probit regression, based on Eq. 1, explaining the likelihood that a bidder from an honor state makes an unsolicited bid.[16] The regression is run using the entire sample, i.e. the hostile and friendly takeover bids. The results are reported in column (1) of Table

[16]Using a logit instead of a probit regressions yields qualitatively similar results for all the regressions in this table.

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3. Column (1) (as well as the remaining columns of the table) reports the marginal effects of the probit regression in question (calculated at the mean).

In column (1), the marginal effect for *Target and bidder from honor state* is negative and significant at the 10 percent level, suggesting that if both the target and bidder are from an honor culture the probability that the deal is unsolicited decreases by roughly 1.4 percentage points. This result is also economically significant. Given that the percentage of unsolicited bids in the sample is 8.6 percent (= 588 / 6833), a 1.4-percentage increase in the likelihood of a bid being unsolicited corresponds to a 16.3 percent (= 1.4 / 8.6) increase in this likelihood if both the target and bidder are from an honor culture. This provides support for Hypothesis 1 that bidders from honor places are less likely to make unsolicited bids for targets from the same culture.

The results for testing the validity of Hypothesis 2 are presented in columns (2) and (3) in Table 3. The validity of this hypothesis is tested via a two-step Heckman model, with the first-step regression being similar to the probit regression from column (1) except for the inclusion of one instrument, i.e. *Unsolicited in bidder industry* and an additional control variable, i.e. *Same industry*. The coefficient on the instrument, i.e. the proportion of unsolicited bids in the bidder's industry, is positive and highly significant (at the 1% level). More importantly, similar to the regression in column (1), we find a significant and positive effect of *Target and bidder from honor state* on the likelihood of the bid being unsolicited. The second-step regression in column (3) provides further evidence in support of Hypothesis 2.[17] Indeed, the coefficient on *Target and bidder from honor state* is negative and significant at the 5 percent level, suggesting that an unsolicited bid made by a bidder from an honor culture for a target from the same culture reduces the likelihood of the unsolicited bid turning hostile. This result has also economic significance as unsolicited bids involving both a bidder and target from an honor culture are 15.6 percentage points less likely to turn hostile.

Interestingly, in column (3) the coefficient on Wave 4, i.e. the merger wave from 1980 to 1990, which includes 17 percent of the hostile bids, is highly significant and positive as expected. Finally, the coefficient on the Inverse Mills ratio is not significantly different from zero, suggesting that selection bias is not a major issue.[18]

Insert Table 3 about here.

4.2. Probability of Deal Completion for a Hostile Bid

Are target firms from honor states more successful in fending off hostile takeover bids than target firms from other states? To test the validity of this hypothesis, i.e. Hypothesis 3, we use

[17] Given that we have only 424 observations but 22 control variables, we reran the regression by including only the three key independent variables, the bidder and target industry fixed effects, and the indicator varriables for the merger waves. The results did not change materially.

[18] One might argue that a firm's takeover provisions might have a moderating effect on the likelihood of the target firm from an honor culture resisting an unsolicited bid. Yet, when interacting the firm's takeover provisions with the three culture indicator variables in column 3 (the results are not tabulated), we find no support for this argument as the coefficients on all three interaction terms are insignificant.

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the specification in Eq. 4, and run a probit regression estimating the likelihood of bid completion given that the target and the bidder are located in an honor state (column (1) of Table 4). We use the same controls as in our previous regressions.[19] The coefficient on *Target only from honor state* is negative and significant at the 10 percent level, indicating a lower probability of deal completion if only the target is based in a state with an honor culture. Further, the coefficient on *Target and bidder from honor state* is also negative and significant. Importantly, it is larger in absolute value and more significant, i.e. it is significant at the 5 percent level. Taken together, the results from column (1) of Table 4 suggest that, while the fact that only the target is from an honor culture reduces the likelihood of the bid succeeding, this likelihood is even lower if the bidder is also from an honor culture. In terms of the economic significance, if only the target is from an honor culture, this translates into a reduction of 4.1 percentage points in the probability of deal completion. In comparison, the equivalent reduction in this probability if both the target and the bidder are from an honor culture is greater at 5 percentage points. This provides strong support for Hypothesis 3.

Finally, we extend this analysis by running a Heckman two-step model. In the first step, we predict the probability of a deal being hostile and obtain the Inverse Mills ratio. In the second step, we run a probit model similar to the one in column (1), including the Inverse Mills ratio as a control variable. This regression analysis helps deal with possible selection bias resulting from the deal being hostile. The first-step and second-step regressions are reported in column (2) and (3), respectively, of Table 4. In the first-step regression, we use the percentage of hostile bids in the bidder industry as an instrument. In column (2), the coefficient on our instrument *Hostile in bidder industry* is positive and significant, confirming the validity of the instrument. Yet, the coefficient on *Same industry* is not significant, rejecting the view that a bid by a firm from the same industry as the target's industry is less likely to be resisted, lending further support for the validity on our instrument. In column (3), the coefficient on the Inverse Mills ratio is not significant, indicating that selection bias is not severe. More importantly, the marginal effects for *Target only from honor state* and *Target and bidder from honor state* are still negative and significant. Again, the latter is larger in absolute value than the former. All in all, the regression in column (3) confirms the results from column (1), thereby providing further support for Hypothesis 3.

Insert Table 4 about here.

4.3. The Duration of Hostile Takeover Bids

As per Hypotheses 4 and 5, we expect the deal duration to be different for withdrawn and completed hostile takeover bids when taking honor culture into account. Target firms from states

[19] Wave 7 is excluded from columns (1) and (3) as it causes a perfect fit and does not allow the regressions to run. Finally, because CEO birthplace is only available for the sub-sample of hostile bids, it is excluded from column (2).

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with an honor culture are expected to be quicker in forcing the bidder, especially a bidder from an honor culture, to withdraw its hostile bid (Hypothesis 4). If the bidder persists and is able to complete the bid then the bid duration is expected to be longer (Hypothesis 5).

The first three columns in Table 5 report the coefficients of OLS regressions based on Eq. 5. These regressions vary only in terms of the number of control variables they include. While the coefficient on the interaction term *Target only from honor state* x *Withdrawn* is not significant, the coefficient on the interaction term *Target and bidder from honor state* x *Withdrawn* is negative and highly significant (i.e. at the 1% level). Further, in all three regressions, the coefficients on *Target only from honor state* and *Target and bidder from honor state* are positive and significant at the 5 percent and 1 percent level, respectively. As expected, the latter coefficient is much larger in magnitude. All in all, these results provide strong support for Hypothesis 5.

Moreover, given that firms may not randomly choose to resist a deal, we run a Heckman two-step model to make sure selection bias does not drive the observed patterns. We proceed by first running a probit regression estimating the likelihood that the deal is hostile (not tabulated). As predictors, we use all the variables used in column (3), an indicator variable denoting whether the target and bidder are from the same state, and an instrumental variable based on the percentage of hostile bids in the bidder industry. We then use the Inverse Mills ratio obtained from this regression in a regression with a similar specification as in column (3). The results from the second-step Heckman regression are reported in column (4).[20] The results in column (4) provide further support for both Hypotheses 4 and 5 as they are in line with those from the previous three columns.

Finally, column (5) reports the hazard ratios from the Cox survival analysis. As expected, the hazard ratio for *Target and bidder from honor state* is less than one whereas the hazard ratio for *Target and bidder from honor state* x *Withdrawn* is greater than one. Importantly, both are statistically significant at the 1 percent level. These results provide further support for Hypotheses 4 and 5.

Insert Table 5 about here.

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5. Identification and Alternative Explanations

The culture of honor thesis, which is central to this paper, posits that the emergence and persistence of this culture in the United States is the result of the migration of the Scots-Irish to the country in the 18$^{\text{th}}$ century. One of the key characteristics of honor culture is the importance of self-defense when one's reputation is at stake. Takeover resistance would then be the result of this greater propensity for self-defense. In this section, we use a direct measure of the propensity for self-defense as our main measure of honor culture. This approach is beneficial in two ways: First, this direct measure is less prone to measurement error. Second, using this measure enables us to

[20]The results are similar if we base our selection model on the probability of the bid being unsolicited rather than on the probability of the bid being resisted.

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instrumentalize it by using Scots-Irish population density as its instrument. In turn, Scots-Irish population density does not act as our measure of honor culture as it is replaced by this direct measure of self-defense.

In addition, we test the validity of three alternative explanations to the culture of honor thesis. First, a hostile takeover bid might be seen as an act of "Northern Aggression". Accordingly, the patterns we observe might be the result of the U.S. Civil War and the conflict between the North and the South, rather than being the effect of honor culture. Second, honor culture may be a proxy for another construct, i.e. the political ideology that prevails in the state where the target is headquartered. Indeed, the Southern states, where honor culture prevails, also tend to be red or Republican states. Third, honor culture might be a proxy for other facets of culture, such as religiosity and collectivism. Below, we control for such confounding effects. Finally, our results may be driven by the bidder having made unsolicited takeover attempts in the past. Put differently, target firms may be more likely to resist bids made by bidders with a history of past unsolicited bids. Indeed, such bidders may be perceived to be aggressive *a priori*. Finally, we conduct six different robustness tests.

5.1. Identification

Here, we use a direct measure of the propensity for self-defense and instrumentalize this measure using the exogenous variation in Scots-Irish population density to capture the part of the propensity for self-defense that is related to honor culture (arrow 2 in Figure 2). Our attitudinal measure of self-defense is based on state-level survey data from Blumenthal et al. (1992). This survey, which was conducted in 1969, consists of 1374 structured interviews of males across the United States aged 16 through 64. It attempts to capture the attitude of American men toward violence. The interview questions cover a wide range of issues, such as violence perpetrated by the government, individuals, and gangs. The following three questions on the justification for violence as an act of self-defense are particularly relevant to our study:

Question 1: A man has the right to kill another man as an act of self-defense.

Question 2: A man has the right to kill a person to defend his family.

Question 3: A man has the right to kill a person to defend his house.

Insert Fig. 2 about here.

The answer to each question is based on a Likert scale ranging from one (i.e. "disagree a great deal") to four (i.e. "agree a great deal"). As the primary focus of our study is on honor culture associated with Scots-Irish population density, we base ourselves on the 1070 responses from white males[21]. Using the above three questions, we construct a composite index by calculating the

[21] On average, there are 28 such respondents per state.

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arithmetic average of the scores for each of the three questions. The index, which we refer to as the self-defense index, has a composite reliability or Cronbach alpha of 0.75. The index ranges from one to four, similar to the Likert scale for the three questions used to construct the index.

We expect a positive association between Scots-Irish population density and the self-defense index. Figure 3 visualizes the actual relationship between these two variables. As expected, the figure shows a strong positive correlation between the two variables ($\rho = 0.55$). In what follows, we use instrumental variable regressions. This approach helps further confirm whether the observed pattern is the result of a greater culturally-driven propensity for self-defense or whether it is merely spurious.

Insert Fig. 3 about here.

The first two columns of Table 6 report the IV regressions. In the first-stage regression, Scots-Irish population density is used to predict the self-defense index. Given that the survey we use to construct the self-defense index does not cover all the states, there is a reduction in the number of states included in the regression analysis from 48 to 34. The second-stage regression is similar to Eq. 5, but the independent variable in this regression is based on the instrumentalized self-defense index (instrumentalized by Scots-Irish population density). Using this instrumentalized self-defense index, we construct the following three indicator variables. *Target only from state justifying violence for self-defense*, an indicator variable that takes the value of one if the firm is located in a state where the value of the instrumentalized self-defense index is above the sample mean, and zero otherwise. The other two indicator variables are *Bidder only from state justifying violence for self-defense* and *Target and bidder from state justifying violence for self-defense*. The strongly significant F-statistic from the first-stage regression (F-statistic = 18.807) confirms the validity of the instrument. Hence, the validity of the relevance assumption as a necessary step in implementing the IV approach is confirmed: States with high Scots-Irish population density tend to agree more strongly with the use of violence for purposes of self-defense.

The instrumental variable must meet the exclusion restriction. We argue that Scots-Irish population density affects bid duration only through its effect on the attitude of people in the state toward self-defense. However, there could be other channels through which Scots-Irish population density could be related to bid duration. Put differently, the instrument could be correlated with other unobserved state-level and context-specific factors (e.g. concentration of certain industries within specific states), which determine the duration of the bid, and are omitted or not properly accounted for in the empirical specifications.

To confirm that state-level omitted variables do not affect the results and that the exclusion restriction is met, we run a falsification test by comparing the deal duration for the completed and withdrawn bids across hostile and friendly takeover bids. The rationale for this falsification test is that state-level omitted variables should affect the duration of*all* bids, independent of whether they

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are friendly or hostile bids, in the *same* way. For example, if the longer duration of completed bids in honor states is due to the concentration of specific industries in those states, this implies that a longer duration should be observed for *both* friendly and hostile completed bids. In other words, if it is more complex to complete a bid in a specific industry, this should be the case for both friendly and hostile bids. This prediction contrasts with the prediction of the honor culture hypothesis, according to which there is a difference in the duration between friendly bids and hostile bids. Put differently, the honor culture hypothesis states that the difference in bid duration is due to the target's attitude toward the bid rather than state-specific factors. Therefore, by comparing the bid duration of friendly bids with that of hostile bids, we can mitigate concerns about possible omitted variable bias.

Figure 4 plots the duration of both withdrawn bids and completed bids against the sum of Scots-Irish population density for the target and bidder states for friendly and hostile bids. As expected, the duration of the completed hostile bids is significantly different from that of friendly bids.[22] This difference presents evidence against a major potential omitted variable bias, providing support that the exclusion restriction is met.

Insert Fig. 4 about here.

In the second column of Table 6, the coefficients on *Target only from state justifying violence for self-defense* and *Target and bidder from state justifying violence for self-defense* are positive and significant at the 1 percent level, with the latter being larger as expected. This provides further support for Hypothesis 5. The coefficient on the interaction of each of the two individual aforementioned variables with *Withdrawn* is negative and significant at the 1 and 5 percent level, respectively, providing additional support for Hypothesis 4. Put together, the results confirm that it takes longer to complete a hostile bid in a state where the use of violence for the purpose of self-defense is justifiable. This pattern is similar to the one observed in the first three columns of Table 5. To sum up, the results from our IV regressions lend further support to the culture of honor thesis.

As an alternative to the above survey data from Blumenthal et al. (1992)), which date back to 1969, we use more recent data on estimated gun ownership per state from the RAND Corporation ((Schell, Peterson, Vegetabile, Scherling, Smart, and Morral, 2020). While this data is available for a range of years, we use the data for 1985, the year preceding the first year of our study period. The justification for using gun ownership is based on Parker, Horowitz, Igielnik, Oliphant, and Brown (2017). They report that 15 percent of adults who own or owned a gun have used that gun

[22] For the friendly completed takeover bids, there is a slight, positive association between bid duration and Scots-Irish population density. To make sure this trend is not caused by omitted variables and is negligible when controlling for the observable factors, we run a similar regression to that in column (3) in Table 5, using the sub-sample of friendly, completed and withdrawn takeover bids. We find that the coefficient for *Target and bidder from honor state* is insignificant. This suggests that there is no significant difference in the duration between the bids whose target and bidder are from honor states and those that are not from honor states.

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or threatened to use that gun to defend themselves, their family, or property (p.9). In addition, 38 percent of gun owners have a loaded gun close to reach when at home (p.9). Hence, there is a positive correlation between gun ownership and the propensity for (violent) self-defense.

The results of this alternative IV regression setup are reported in Appendix C. The table replicates the first- and second-stage IV regressions, i.e. the first two columns, from Table 6. We find that Scots-Irish population density strongly predicts gun ownership (column (1)). In turn, the second-stage regression (column (2)) confirms our previous results from the use of the self-defense index, hence providing further support for Hypotheses 4 and 5.

5.2. Alternative Explanations

As argued above, a takeover bid by a Northern bidder might be perceived as an act of Northern aggression by a Southern target. This perceived aggression might therefore be a plausible alternative explanation or thesis for our results. This alternative thesis implies that targets from states with greater Scots-Irish population density, i.e. states mostly in the South of the United States, should be more resistant to bidders from the North. This would suggest correlation between Scots-Irish population density and takeover resistance rather than causation of the latter by the former (see the dotted line, i.e. line 4, in Figure 2). The true driver of takeover resistance would then be the perceived hostility between Southern and Northern states stemming from the U.S. Civil War.

To rule out this alternative explanation, we conduct the following three tests. First, we control for the location of the bidder's headquarters using an indicator variable stating whether the bidder is headquartered in a Northern state. Including this indicator variable in the regressions does not change the results materially.[23] Second, as only 25 of the 424 hostile takeover bids are made by a bidder from a Northern state targeting a firm from one of the Confederate States[24], we are not able to conduct a multivariate analysis. However, a simple t-test between this sub-sample and the sub-sample, which includes deals from non-Northern bidders for a target from a Confederate State, does not detect any significant difference in the number of days until the bid was withdrawn. Furthermore, contrary to the Northern aggression explanation the test reveals a longer duration until bid completion for the sub-sample of non-Northern bidders (significant at the 10% level). Finally, honor-related hostility is more likely to arise between a target and bidder that are known to each other. For example, Black (1990) regards honor-based conflicts to be more common among parties that have sustained mutual access to each other. The culture of honor thesis therefore predicts that targets from honor places are more resistant to hostile bids made by bidders that are known to them, i.e. those that are geographically close to them. Hence, in contrast to the Northern aggression thesis, which relates takeover resistance to a distant bidder from a Northern state, greater resistance should be observed in cases where both the target and the bidder are geographically close to each other (i.e. they are located in the same state or neighboring states) *and* are from an honor culture. Accordingly, our final test is a falsification test, which examines

[23]The results are not tabulated for the sake of brevity but are available upon request.

[24]These are Alabama, Arkansas, North and South Carolina, Florida, Georgia, Louisiana, Mississippi, Tennessee, Texas, and Virginia.

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whether it takes a longer time to complete a hostile bid (or a shorter time for such a bid to be withdrawn) if the target and bidder are located close to each other.

The results are presented in columns (3) to (6) of Table 6. The four regressions are based on Eq. 5. While the regressions in columns (3) and (4) do not include any of the control variables, the regressions in columns (5) and (6) include all such variables. The regressions are run on the sub-sample of hostile bids where the target and bidder are located in the same state or neighboring states (columns (4) and (6)) and the sub-sample of the remaining bids without geographic closeness between the target and the bidder (columns (3) and (5)). The coefficient on *Target only from honor state* is larger and more significant in the sub-sample of bids where the target and bidder are close to each other (i.e. columns (4) and (6)). Finally, while the coefficients on the interaction of *Target only from honor state* with *Withdrawn* are not significant in any of the columns, the coefficients on the interaction of *Target and bidder from honor state* with *Withdrawn* are significant (at the 5% level or better) if the target and bidder are close to each other (columns (4) and (6)). To sum up, we find that a bid for a target from an honor state takes longer to complete if the bidder is from the same state or a neighboring honor state. The results from this falsification test reject the Northern aggression thesis while upholding the honor culture thesis.

Insert Table 6 about here.

In addition to considering hostile takeovers as acts of Northern aggression, we test the following four other alternative explanations: 1) the political orientation of the target state, 2) the religiosity in the target state, 3) the presence of a collectivist culture in the target state, and 4) the perceived level of hostility of the bidder. The political orientation explanation focuses on the fact that states with high Scots-Irish population density are mostly red or Republican states (e.g. North Carolina, South Carolina, Tennessee, and Alabama). Hence, honor culture could just be a proxy for the political orientation of the target state rather than being the actual driver of the observed patterns. We obtain state-level returns for elections to the U.S. presidency for the period of 1986-2016 from the MIT Election Data and Science Lab (2017). Using this data, we construct an indicator variable, which identifies whether the state was a red state in the year when the bid was announced (red and blue states are identified based on how they voted in the presidential election preceding the year when the bid was announced) . Including this indicator variable in the regressions does not change the key results materially.[25]

Moreover, what we refer to as the effect of honor culture on the self-defense behavior of the target firm could simply be the result of other facets of the target's belief system or culture. Cultural facets such as religiosity or collectivism could be highly correlated with the presence of an honor culture in a state and therefore honor culture could simply be a proxy for these facets. To account for such potential confounding effects, we construct and add two distinct state-level measures of

[25]These results are not tabulated, but are available upon request.

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religiosity and a state-level measure of collectivism to the regressions. Specifically, the two measures of religiosity are based on the 2014 Pew's Religious Landscape Study [26] and the religiosity index of Hilary and Hui (2009).[27] Next, we use the collectivism index from Vandello and Cohen (1999) as a measure of collectivism. The main results stand when we add the indexes of religiosity and collectivism to the regressions, lending further support for the culture of honor thesis.

Finally, the number of past unsolicited takeover attempts made by a given bidder could create the perception of bidder hostility in the eyes of the target. As such, the bidder's number of previous unsolicited takeover attempts could be a crucial omitted variable driving our results. However, further analysis rejects this argument. First, we find that most unsolicited bids, i.e. 527 out of the 588 unsolicited bids, are made by bidders with no previous unsolicited takeover attempts. Second, the results of the regression in column (3) of Table 3 (i.e. the regression explaining the probability of an unsolicited bid turning hostile) remain robust to the inclusion of the number of past unsolicited bids made by the bidder.

5.3. Robustness Tests

We conduct a total of six robustness tests, which are not tabulated.[28] First, we control for the internationalization of the target. It could be the case that targets with a greater degree of internationalization are less likely to be affected by honor culture than targets with a more local character. Similar to extant research (see e.g.; Blonigen and Wooster, 2003; Chahine, Saade, and Goergen, 2018), we measure internationalization by the ratio of foreign sales to total sales. The data required to compute this ratio is obtained from Datastream. When controlling for the internalization of the target firms in the regression analysis, we can confirm our key results.

Second, we control for whether the bidder and/or target are part of the Fortune 500 list as the true driver of hostility could be membership of the Fortune 500 list. Indeed, bidders that are part of this prestigious list may be perceived to be more powerful and therefore more aggressive. In turn, targets that are part of this list may prefer to remain independent and may therefore be more likely to adopt a hostile attitude toward a bid. However, including these two indicator variables does not change our results materially.

Third, similar to research in social psychology we measure honor culture by a regional indicator variable (that takes the value of one for the Southern states, and zero otherwise) and use this measure to replace the measures based on Scots-Irish population density. Specifically, we replace the three indicator variables for honor culture by three equivalent regional indicator variables. Our main findings hold.

Fourth, given that the three states of South Carolina, North Carolina, and Tennessee have

[26] See https://www.pewforum.org/religious-landscape-study/. The measure represents the percentage of adults who are "highly religious". The values of the variable range from 33 percent to 77 percent.

[27] This index is defined as the number of religious adherents in the county to the total population in the county as reported by the US Census Bureau. The state-level version of this measure is presented in Table 1 in Hilary and Hui (2009). In the regressions reported in Table 5, we use the state-level religiosity measure of Hilary and Hui (2009), but the results remain qualitatively the same if we use Pew's religiosity index (these results are not tabulated).

[28] The results are available upon request.

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the highest population density of Scots-Irish, it could be that the observed patterns are mainly driven by these three states. Excluding the bids for targets from these states from our sample and rerunning the regressions based on the remaining bids does not affect the main results.

Fifth, as stated above the likelihood of the bidder and target being from the same industry (i.e. the same Thomson Reuters macro-level industry) might vary across honor culture states and other states. Therefore, the effect we associate with honor culture might simply be explained by the bidder and target being from the same industry. In our regressions, we already control for both the target and bidder industries as well as for both firms being from the same industry. The results are also robust to the use of alternative industry classifications (i.e. the use of the two-digit SIC codes and the Thomson Reuters mid-level industry classification).

Finally, targets that are family controlled may be more likely to resist a takeover bid as the family, given the socio-emotional attachment it has to its firm (Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson, and Moyano-Fuentes, 2007; Gómez-Mejía, Cruz, Berrone, and Castro, 2011), may prefer to maintain control over its firm rather than transfer the control to the bidder. Further, it could be the case that family firms are more likely to be located in states with an honor culture. Honor culture could then be a proxy for family control rather than being the true driver of resistance to takeover bids. However, as we only identify 12 target firms in our sample with at least 20 percent of the equity owned by a family or group of families, family ownership is unlikely to drive our results.

To sum up, the above identification strategy, tests for the validity of alternative explanations, and robustness tests corroborate our key result that honor culture drives resistance to unsolicited takeover bids.

6. Discussion and Conclusion

This study provides empirical support for the importance of informal institutions in general and culture in particular for the market for corporate control. It adopts an institution-based view of takeover resistance. It argues that certain institutional factors, which explain how cultural legitimacy is attained, influence contests for corporate control. Unlike previous research that investigates takeover resistance through the lens of regulatory provisions and managerial (dis)incentives, such as private benefits of control, this study sheds light on how culture shapes takeover resistance.

More specifically, this study investigates the effect of honor culture on the target firm's resistance to corporate control contests. Consistent with the strong norms of politeness in honor culture, we find that bidding and target firms from an honor culture are less likely to initiate conflict with one another. This is reflected in a lower likelihood of bidders from an honor culture making an unsolicited bid for a target from the same culture as well as a lower likelihood of unsolicited bids turning hostile. Further, in line with the emphasis of honor culture on self-defense we find evidence that targets from an honor culture are more defensive once the bid has become hostile, especially when the bidder is from the same culture. These results are supported when using patterns in the settlement of Scots-Irish in the United States as well as an attitudinal index of self-defense. The results also stand up to a battery of robustness tests and alternative explanations.

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The findings from this study have major implications for research and policy. Importantly, this study suggests that culture may act as a factor that creates frictions in the market for corporate control. Even though a firm located in an honor state might fail to meet shareholder expectations in terms of financial performance, a bidder might find it difficult to take control of this firm via a takeover bid. At worst, culture in this context may restrain the ability of the takeover mechanism to discipline poorly performing management. Our research sets the stage for further exploration of a framework that best describes the implications of this culturally-driven behavior for the design of a more effective corporate governance system, i.e. a system ensuring a more efficient allocation of corporate resources.

The choice of honor culture as an explanatory variable for resistance to a bid by targets in the market for corporate control is novel. Further research should study the effect of honor culture on other important corporate decisions. More specifically, it would be interesting to investigate the impact of honor culture on business negotiations, intra-organizational conflict management, and stakeholder (e.g. supplier) relationship management, to name just a few. In relation to corporate governance, it would also be interesting to explore the potential variation in conflict handling within and across the target and bidder boardrooms.

Finally, honor culture is not a phenomenon limited to the United States. Indeed, the prevalence of an honor culture has been documented throughout the world (Johnson and Lipsett-Rivera, 1998; Peristany, 1965; Brown, 2016). Corroborating the effect of honor culture on takeover resistance using data from other regions of the world will help understand the interaction between cultural constraints, corporate governance practices, and firms' strategic decisions.

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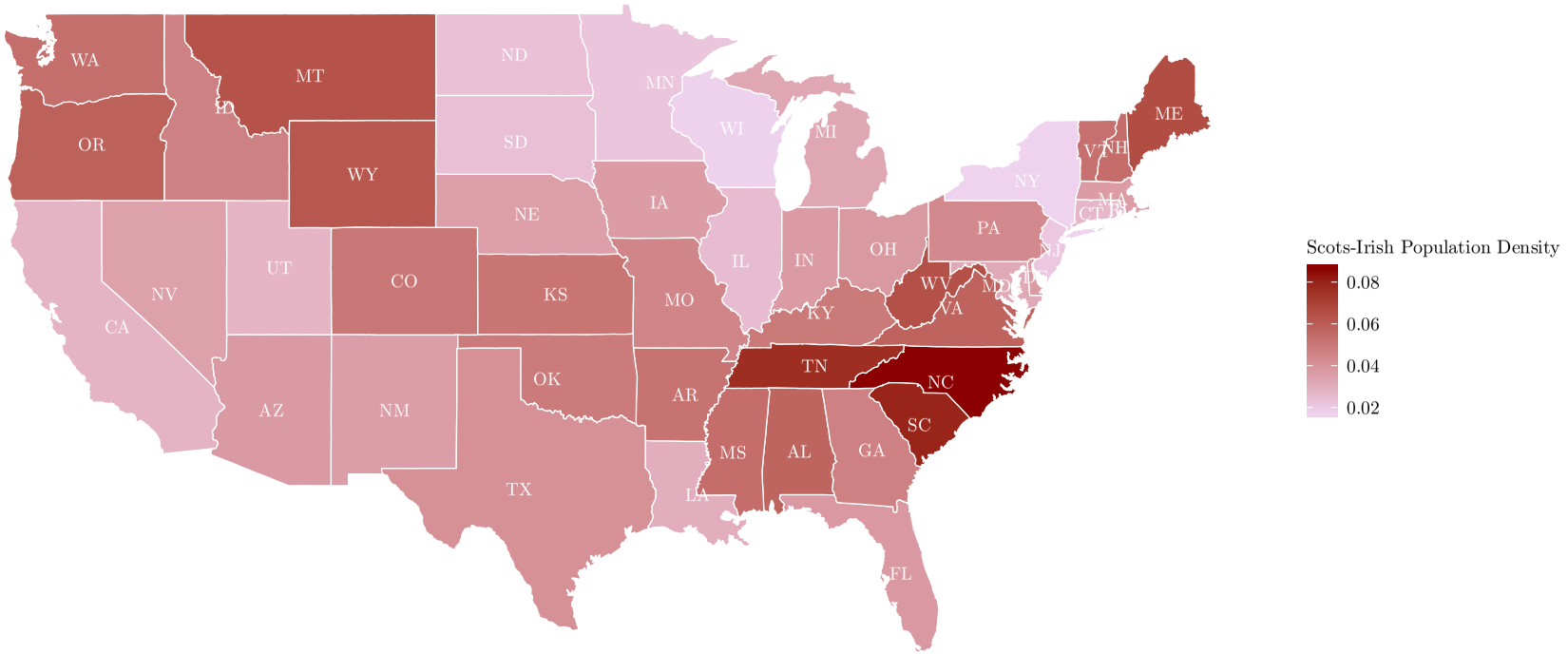
Figure 1: Scots-Irish population density in U.S. states based on the 2000 Census



This figure reports Scots-Irish population density for each U.S. state based on the 2000 Census. Scots-Irish population density in each state is expressed as the proportion of the population who reported one of their ancestries as Scots-Irish. Darker colors correspond to higher Scots-Irish population densities.

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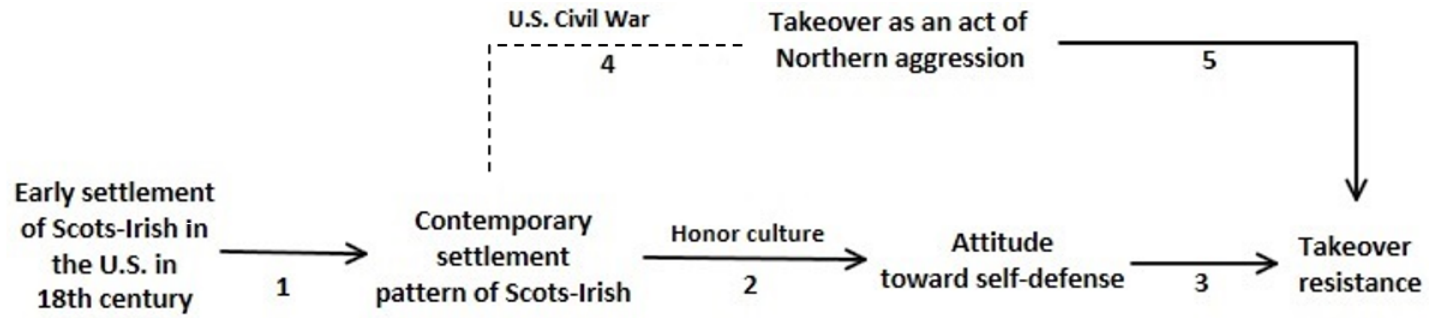
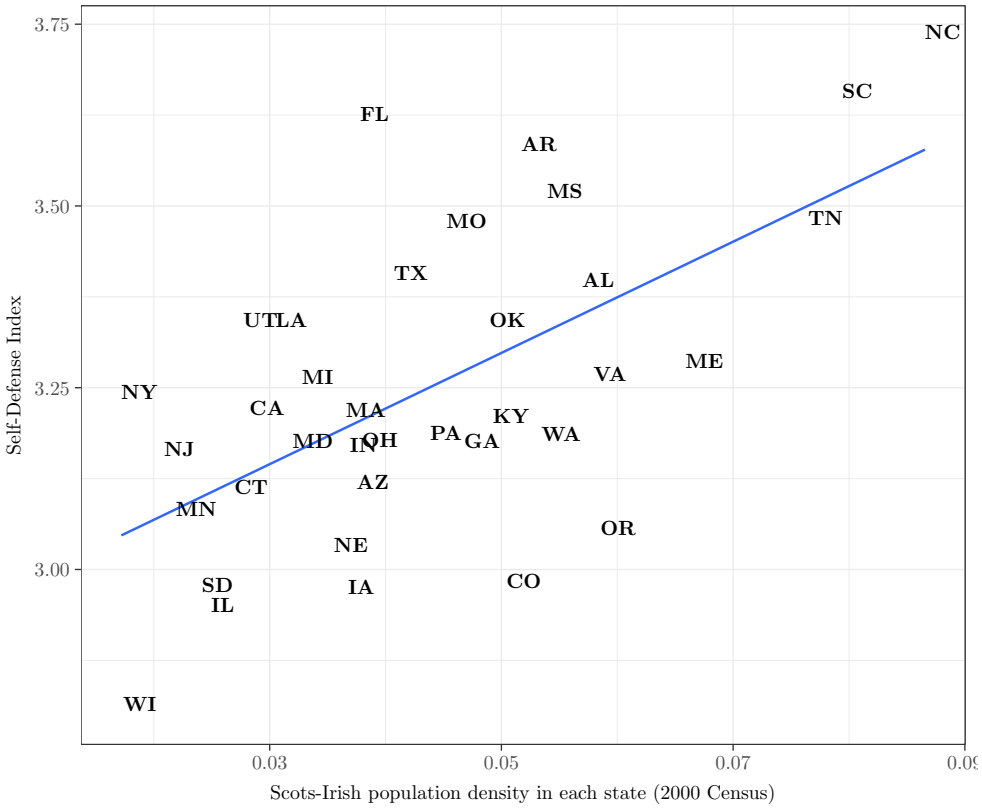
Figure 2: Culture of honor vs. Northern aggression thesis



This figure illustrates the two competing theses on how the settlement pattern of Scots-Irish may be related to takeover bid resistance. The two competing theses are the culture of honor thesis and the "Northern Aggression" thesis. The dotted line suggests mere correlation while the arrowed lines suggest causation (in the direction of the arrow).

Figure 3: The association between Scots-Irish population density and the self-defense index.



This figure visualizes the association between Scots-Irish population density in each target state and the self-defense index. This index is the arithmetic average of the average scores for the following three questions from the Blumenthal et al. (1992) survey. Does a man have the right to kill another man as an act of self-defense? Does a man have the right to kill a person to defend his family? Does a man have the right to kill a person to defend his house? The answer to each question is based on a Likert scale ranging from one (i.e. "disagree a great deal") to four (i.e. "agree a great deal").

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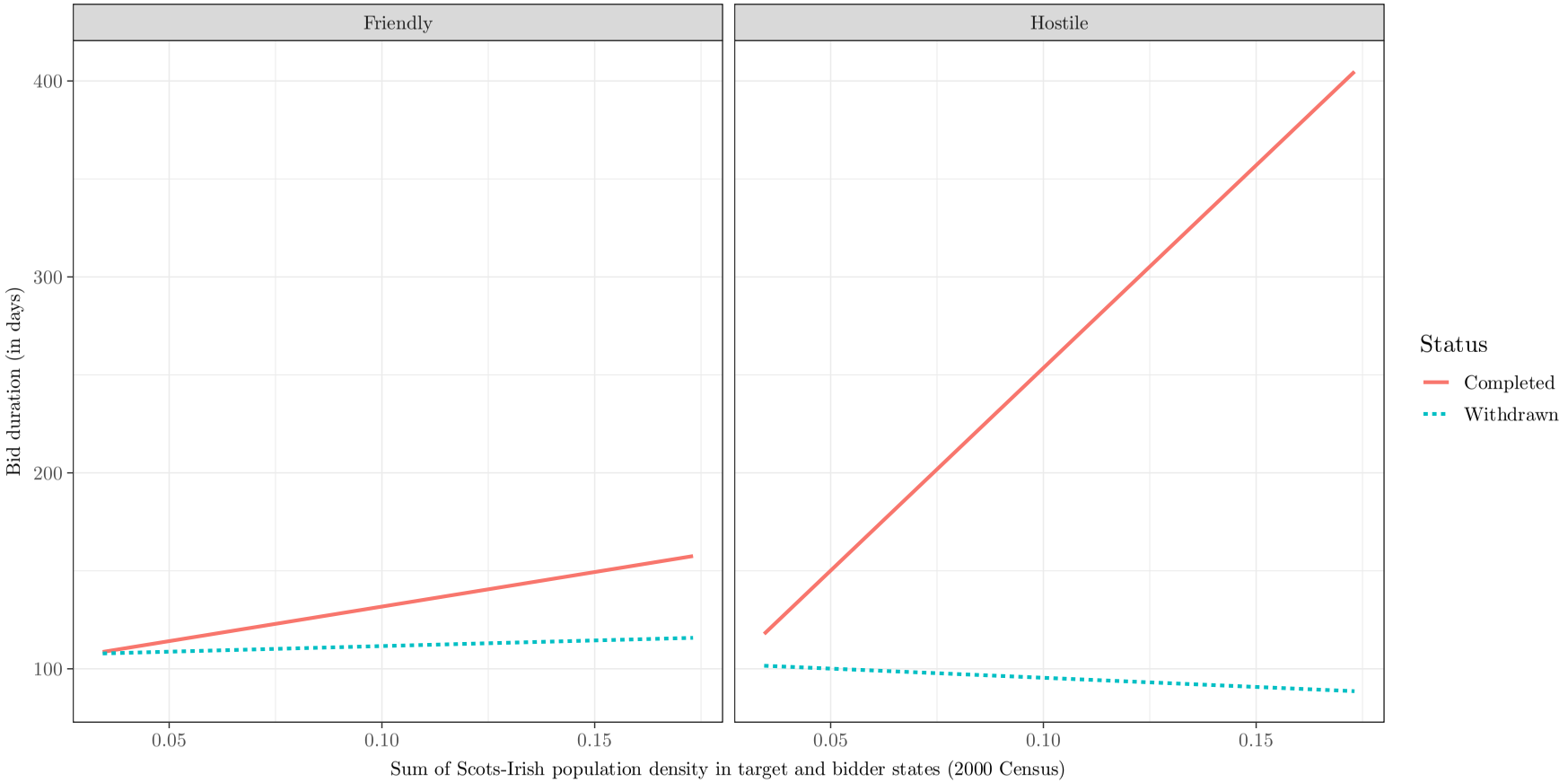
Figure 4: The association between bid duration and Scots-Irish population density for hostile and friendly takeovers based on bid status (completed vs withdrawn).



This figure plots the duration of withdrawn and completed bids against the sum of Scots-Irish population density for the target and bidder states for friendly and hostile bids.

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Table 1: Descriptive statistics for the sub-sample of hostile takeovers.

	Whole sample			Target, bidder or both not from honor states			Both target and bidder from honor states				
Variable name	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Mean difference	T-statistic
Duration.Completed	189.149	151.500	116.318	173.954	137	108.934	298.889	303	114.468	124.935**	3.087
Duration.Withdrawn	98.491	72	90.091	101.601	72	91.095	78.447	61	81.392	-23.154*	−1.785
Withdrawn	0.825	1	0.380	0.823	1	0.382	0.839	1	0.371	0.016	0.298
ScotsDensity2000	3.574	3.390	1.492	3.293	2.827	1.286	5.423	5.043	1.438	2.130***	10.465
aScotsDensity2000	3.309	3.124	1.372	3.029	2.827	1.151	5.145	4.677	1.301	2.116***	11.508
AllDefence	3.209	3.210	0.171	3.197	3.210	0.159	3.290	3.259	0.223	0.094***	2.976
Unsolicited	0.811	1	0.392	0.812	1	0.391	0.804	1	0.401	-0.009	−0.156
fsize	5.916	5.953	1.632	5.901	5.900	1.639	6.018	6.193	1.594	0.117	0.511
roecal	0.004	0.052	0.176	0.002	0.051	0.180	0.017	0.057	0.153	0.015	0.688
tobinq	1.329	1.156	0.651	1.313	1.152	0.616	1.437	1.197	0.849	0.124	1.050
pred	0.309	0	0.608	0.304	0	0.609	0.339	0	0.611	0.035	0.399
StateHostileIndex	2.158	3	1.232	2.174	3	1.241	2.054	3	1.182	-0.120	−0.705
Delaware	0.502	1	0.501	0.489	0	0.501	0.589	1	0.496	0.100	1.405
CashOnly	0.587	1	0.493	0.590	1	0.493	0.571	1	0.499	-0.018	−0.255
DealPremium	47.318	42	34.495	48.372	44	34.943	40.393	36	30.785	-7.979*	−1.774
Alternative.Bidder	0.342	0	0.475	0.353	0	0.479	0.268	0	0.447	-0.085	−1.320
relativesize	0.338	0.083	0.504	0.330	0.072	0.496	0.392	0.175	0.557	0.062	0.788
CEO.Birthplace	0.064	0	0.244	0.071	0	0.257	0.018	0	0.134	-0.053**	−2.366
Religiosity	50.732	53.800	8.481	51.319	54.290	8.261	46.873	48.335	8.961	-4.446***	−3.494
Collectivism	52.330	53	7.526	52.758	53	6.956	49.518	52.500	10.177	-3.240**	−2.302
Acquiror.From.North	0.370	0	0.483	0.408	0	0.492	0.125	0	0.334	-0.283***	−5.493

This table reports the mean, median, and standard deviation for the sub-sample of hostile takeovers and for the two sub-samples of hostile takeovers where Scots-Irish population density in the target's state is below and above the median, respectively. The last two columns report the difference in means for the latter two sub-samples and the t-statistic for that difference, respectively. Appendix A provides the definitions of all the variables. *, **, and *** indicate the significance of the coefficient estimate at the 10%, 5%, and 1% level, respectively.

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Table 2: Correlation table for the sub-sample of hostile bids.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1.Duration (completed deals)	1																							
2.Duration (withdrawn deals)	1	1																						
3.Withdrawn	1	1	1																					
4.Scots-Irish population density (target state)	**0.37**	0.03	0.01	1																				
5.Scots-Irish population density (bidder state)	**0.42**	-0.05	0.01	**0.31**	1																			
6.Target from honor state	0.12	**0.12**	0.00	**0.51**	**-0.18**	1																		
7.Bidder from honor state	0.04	-0.05	0.03	**-0.22**	**0.46**	**-0.19**	1																	
8. Target and bidder from honor state	**0.35**	-0.09	0.01	**0.48**	**0.52**	**-0.18**	**-0.16**	1																
9.Self-defense index	0.11	0.05	0.05	**0.49**	**0.15**	**0.27**	**-0.09**	**0.18**	1															
10.Unsolicited	-0.03	-0.06	**0.16**	0.01	**0.11**	-0.08	0.06	-0.01	-0.06	1														
11.Firm size	0.17	0.08	-0.05	0.02	0.03	0.02	0.02	0.02	0.00	**0.09**	1													
12.Return on enquity	-0.07	0.06	**-0.12**	0.04	0.00	0.04	-0.05	0.03	0.01	-0.06	**0.16**	1												
13.Tobin's q	0.05	-0.08	-0.07	0.03	0.01	0.01	0.00	0.06	0.04	0.00	0.05	**0.14**	1											
14.Firm's takeover provisions	0.10	0.07	**-0.13**	-0.02	0.04	0.02	0.04	0.02	-0.04	-0.01	**0.13**	**0.11**	0.04	1										
15.State takeover protection	-0.13	0.06	0.08	-0.06	-0.01	-0.05	0.00	-0.03	0.03	0.07	0.08	0.03	**0.10**	-0.05	1									
16.Delaware incorporated	-0.18	-0.01	0.04	-0.03	0.02	**-0.08**	0.01	0.07	0.07	-0.07	0.03	0.01	**0.14**	-0.01	**0.51**	1								
17.Cash-only deal	**-0.29**	0.04	**-0.08**	-0.06	**-0.09**	-0.05	-0.04	-0.01	-0.07	**-0.09**	-0.03	0.02	**-0.09**	**0.13**	0.05	0.08	1							
18.Deal premium	-0.11	0.02	**-0.23**	-0.03	0.03	0.01	**0.08**	-0.08	0.01	**-0.08**	-0.02	-0.03	**-0.19**	**0.15**	-0.06	-0.03	**0.14**	1						
19.Alternative bidder	-0.10	0.00	0.02	-0.05	**-0.09**	-0.06	-0.06	-0.06	0.00	-0.02	0.02	-0.04	-0.01	0.03	-0.04	0.00	0.01	**0.09**	1					
20.Relative size	**-0.19**	-0.07	**-0.09**	-0.03	0.02	-0.04	-0.01	0.04	-0.05	-0.01	0.06	**0.10**	0.03	**0.10**	0.07	0.04	**-0.08**	0.05	0.00	1				
21.CEO birthplace	**-0.25**	0.07	-0.01	0.02	-0.08	0.06	0.00	-0.07	0.01	0.03	**0.10**	0.01	-0.03	0.03	0.07	**0.09**	0.04	-0.06	-0.07	0.06	1			
22.Religiosity	-0.17	0.06	-0.04	**-0.44**	**-0.16**	**-0.13**	0.02	**-0.18**	-0.06	-0.04	0.02	0.01	**0.08**	0.06	**0.12**	**0.11**	**0.10**	-0.02	0.06	0.02	-0.04	1		
23.Collectivism	**-0.20**	0.02	0.01	**-0.14**	0.02	-0.01	**0.10**	**-0.15**	**0.37**	0.03	0.01	-0.05	-0.01	-0.04	0.05	**0.10**	0.05	-0.04	-0.08	-0.02	-0.02	0.08	1	
24.Bidder from the North	**-0.37**	0.05	-0.01	**-0.11**	**-0.52**	0.03	**-0.17**	**-0.20**	0.03	**-0.12**	0.00	0.00	0.01	**-0.10**	0.04	0.02	0.05	-0.01	0.01	-0.07	0.02	**0.21**	-0.01	1

This table reports the Pearson correlation coefficients for the sub-sample of hostile bids. Numbers in bold indicate correlation coefficients that are statistically significant at the 10% level or better. Appendix A provides the definitions of all the variables.

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Table 3: Probit models estimating the likelihood of a takeover bid being unsolicited or an unsolicited bid turning hostile.

Sample	Entire sample	Entire sample	Unsolicited bids only
Dependent variable	Unsolicited	Unsolicited	Hostile
Model	Probit	First-step Heckman	Second-step Heckman
	(1)	(2)	(3)
Target only from honor state	-0.012	-0.011	-0.074
	(0.008)	(0.007)	(0.071)
Bidder only from honor state	0.004	0.001	-0.052
	(0.008)	(0.008)	(0.072)
Target and bidder from honor state	-0.014*	-0.015**	-0.156**
	(0.007)	(0.007)	(0.073)
Firm size	0.009***	0.008***	0.064***
	(0.002)	(0.002)	(0.018)
Return on equity	0.018	0.020	0.237**
	(0.012)	(0.012)	(0.120)
Tobin's q	-0.020***	-0.019***	-0.081
	(0.005)	(0.004)	(0.050)
Firm's takeover provisions	0.033***	0.034***	0.115*
	(0.008)	(0.008)	(0.061)
State takeover protection	0.002	0.002	-0.015
	(0.002)	(0.002)	(0.023)
Delaware incorporated	0.001	0.000	0.007
	(0.007)	(0.006)	(0.057)
Cash-only deal	0.026***	0.023***	-0.115**
	(0.007)	(0.007)	(0.055)
Deal premium	0.000	0.000	-0.001
	(0.000)	(0.000)	(0.001)
Alternative bidder	0.230***	0.224***	-0.226*
	(0.019)	(0.018)	(0.129)
Relative size	0.027***	0.026***	-0.011
	(0.008)	(0.007)	(0.054)
Religiosity	-0.001	-0.001	0.002
	(0.000)	(0.000)	(0.003)
Collectivism	-0.000	-0.000	-0.005
	(0.000)	(0.000)	(0.003)
Wave 4	-0.026***	-0.029***	0.265***
	(0.008)	(0.007)	(0.067)
Wave 5	-0.041***	-0.040***	0.048
	(0.007)	(0.007)	(0.078)
Wave 6	-0.035***	-0.033***	-0.076
	(0.006)	(0.006)	(0.092)
Wave 7	-0.030***	-0.028***	-0.207**
	(0.007)	(0.007)	(0.096)
Unsolicited in bidder industry		0.761***	
		(0.107)	
Same industry		-0.002	
		(0.006)	
Inverse Mills ratio			-0.041
			(0.145)
Target and bidder industry dummies	Yes	Yes	Yes
Observations	6833	6833	588
Log Likelihood	-1677.035	-1646.989	-325.871
AIC	3440.071	3383.978	737.742

This table presents the marginal effects of the probit regressions explaining the likelihood of deals being unsolicited (columns (1) and (2)) and the probit regression explaining the likelihood of an unsolicited deal becoming hostile (column (3)). Columns (1) and (2) are the first- and second-step Heckman regressions. The marginal effects are evaluated at the means. Appendix A provides the definitions of all the variables. Heteroskedasticity robust and state-clustered standard errors are reported in parentheses. *, ** and *** indicate the significance of the estimates at the 10%, 5%, and 1% level, respectively.

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Table 4: Probit regressions estimating the likelihood of hostile takeover bid completion compared to bid withdrawal.

Model	Probit	Heckman first-step	Heckman second-step
	(1)	(2)	(2)
Target only from honor state	−0.041*	0.001	−0.037*
	(0.022)	(0.003)	(0.022)
Bidder only from honor state	−0.039*	−0.002	−0.041**
	(0.022)	(0.003)	(0.020)
Target and bidder from honor state	−0.050**	−0.004*	−0.053***
	(0.023)	(0.002)	(0.020)
Duration	0.001***	−0.000	0.001***
	(0.000)	(0.000)	(0.000)
Unsolicited bid	−0.084	0.494***	0.072
	(0.051)	(0.028)	(0.052)
Firm size	0.005	0.003***	0.012
	(0.008)	(0.001)	(0.010)
Return on equity	0.226**	0.013**	0.240**
	(0.104)	(0.006)	(0.105)
Tobin's q	0.042***	−0.004**	0.027*
	(0.015)	(0.002)	(0.017)
Firm's takeover provisions	−0.007	0.007***	0.001
	(0.020)	(0.002)	(0.019)
State takeover protection	−0.027*	−0.001	−0.026*
	(0.014)	(0.001)	(0.014)
Delaware incorporated	0.010	0.003	0.013
	(0.033)	(0.002)	(0.031)
Cash-only deal	0.043*	0.002	0.049*
	(0.026)	(0.002)	(0.026)
Deal premium	0.001***	0.000	0.001***
	(0.000)	(0.000)	(0.000)
Alternative bidder	−0.031	0.000	−0.031
	(0.024)	(0.003)	(0.024)
Relative size	0.028	0.004*	0.035
	(0.025)	(0.002)	(0.025)
CEO birthplace	−0.004		−0.006
	(0.055)		(0.052)
Religiosity	0.000	0.000	0.000
	(0.002)	(0.000)	(0.001)
Collectivism	0.000	−0.000*	−0.000
	(0.002)	(0.000)	(0.002)
Wave 4	0.060	0.044***	0.142
	(0.055)	(0.012)	(0.097)
Wave 5	0.110	0.004	0.136*
	(0.069)	(0.003)	(0.079)
Wave 6	0.042	−0.005**	0.034
	(0.081)	(0.003)	(0.076)
Wave 7		−0.009***	
		(0.002)	
Hostile in bidder industry		0.150***	
		(0.037)	
Same industry		−0.001	
		(0.003)	
Inverse Mills ratio			0.099
			(0.067)
Target and bidder industry dummies	Yes	Yes	
Num. obs.	424	6833	424
Log Likelihood	−122.813	−689.150	−122.119
AIC	333.626	1472.301	334.239

This table presents the results for estimating the likelihood of bid completion. Column (1) reports the marginal effects of a probit regression estimating the likelihood of bid completion. Column (2) reports the marginal effects of the first-step Heckman regression estimating the likelihood of the bid being hostile. Column (3) reports the marginal effects of the second-step regression estimating the likelihood of the bid being completed. The dependent variable in the first and the third columns is an indicator variable taking the value of one if the bid is completed, and zero if it is withdrawn. The dependent variable in the second column is an indicator variable taking the value of one if the bid is hostile, and zero if it is friendly. The marginal effects are evaluated at the means. Appendix A provides the definitions of all the variables. Heteroskedasticity robust and state-clustered standard errors are reported in parentheses. *, ** and *** indicate the significance of the estimates at the 10%, 5%, and 1% level, respectively.

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Table 5: Regressions estimating the duration of hostile takeover bids.

	OLS			Heckman second-step	Cox hazard model
	(1)	(2)	(3)	(4)	(5)
Target only from honor state	73.860**	68.486**	64.681**	63.275**	0.758
	(29.839)	(29.468)	(29.732)	(30.070)	(0.354)
Bidder only from honor state	58.367	44.497	42.946	41.645	0.773
	(39.426)	(39.952)	(38.813)	(39.462)	(0.401)
Target and bidder from honor state	155.366***	158.672***	158.480***	153.965***	0.255***
	(39.996)	(40.847)	(39.925)	(40.804)	(0.444)
Target from honor state X Withdrawn	−50.384	−48.678	−47.972	−48.530	1.100
	(33.270)	(32.894)	(33.356)	(33.562)	(0.382)
Bidder from honor state X Withdrawn	−70.892*	−56.994	−57.102	−56.284	1.714
	(41.879)	(42.031)	(41.188)	(41.750)	(0.433)
Target and bidder from honor state X Withdrawn	−172.052***	−175.948***	−177.042***	−175.343***	4.984***
	(42.516)	(43.426)	(43.474)	(43.485)	(0.475)
Withdrawn	−54.700***	−52.482***	−54.230***	−31.671	1.770***
	(17.103)	(17.533)	(17.704)	(32.207)	(0.193)
Firm size		4.313	4.696	6.662*	0.929**
		(2.918)	(3.023)	(4.004)	(0.037)
Return on equity		45.865*	46.939*	52.658**	0.527**
		(24.149)	(24.984)	(25.957)	(0.319)
Tobin's q		−13.244*	−14.506**	−16.549**	1.288***
		(7.094)	(7.187)	(7.706)	(0.091)
Firm's takeover provisions		16.924*	18.712**	24.251**	0.788**
		(9.038)	(9.014)	(11.592)	(0.098)
State takeover protection		−1.537	1.065	0.604	0.975
		(4.456)	(5.559)	(5.566)	(0.053)
Delaware incorporated			−10.643	−9.716	1.147
			(12.331)	(12.421)	(0.133)
Cash-only deal			−10.279	−9.969	1.059
			(10.157)	(10.143)	(0.115)
Deal premium			−0.019	−0.016	1.000
			(0.155)	(0.155)	(0.002)
Alternative bidder			−3.413	−3.182	1.099
			(10.773)	(10.807)	(0.111)
Relative size			−16.625*	−16.786*	1.252*
			(9.159)	(9.170)	(0.118)
CEO birthplace			0.008	0.870	1.005
			(20.726)	(20.600)	(0.226)
Religiosity			0.148	0.127	0.997
			(0.636)	(0.637)	(0.006)
Collectivism			−0.503	−0.494	1.005
			(0.663)	(0.660)	(0.007)
Intercept	171.314***	159.638***	192.323***	140.850*	
	(26.134)	(35.302)	(60.872)	(85.224)	
Inverse Mills ratio				17.202	
				(22.057)	
Target and bidder industry dummies	Yes	Yes	Yes	Yes	Yes
Merger wave dummies	Yes	Yes	Yes	Yes	Yes
Observations	424	424	424	424	424
R^2	0.231	0.255	0.266	0.267	0.222
Log Likelihood					−2,091.701
F Statistic	3.545***	3.461***	2.965***	2.911***	
Wald Test					186.210***

This table reports the coefficient estimates of regressions estimating the duration of hostile takeover bids measured by the number of days between the announced date and the end date of the deal as well as the results from the bid survival analysis for the same sub-sample of hostile deals. The first three columns are OLS regressions, which only vary in terms of the control variables included. Column (4) presents the results of the second-step regression of a two-step Heckman selection model where the first-step regression estimates the likelihood of the takeover bid being hostile. Column (5) reports the hazard ratios of a Cox proportional-hazard regression estimating the survival time of the bid (i.e. the bid has neither been withdrawn nor been completed). Appendix A provides the definitions of all the variables. Heteroskedasticity robust and state-clustered standard errors are reported in parentheses. *, ** and *** indicate the significance of the estimates at the 10%, 5%, and 1% level, respectively.

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Table 6: Instrumental variable and OLS regressions testing the culture of honor hypothesis using the sub-sample of hostile bids.

Dependent variable:	Self-defense index	Bid duration				
	IV (first stage)	IV (second stage)	OLS	OLS	OLS	OLS
			Target and bidder are from same or neighboring states?			
			No	Yes	No	Yes
	(1)	(2)	(3)	(4)	(5)	(6)
Scots-Irish population density	0.078***					
	(0.016)					
Target only from state justifying violence for self-defense		80.355***				
		(30.340)				
Bidder only from state justifying violence for self-defense		84.075**				
		(40.724)				
Target and bidder from state justifying violence for self-defense		135.845***				
		(41.530)				
Target only from state justifying violence for self-defense X Withdrawn		−71.874**				
		(34.232)				
Bidder only from state justifying violence for self-defense X Withdrawn		−107.298**				
		(42.637)				
Target and bidder from state justifying violence for self-defense X Withdrawn		−157.849***				
		(44.249)				
Target only from honor state			63.045	87.619**	61.518*	112.086*
			(39.559)	(44.161)	(34.210)	(57.097)
Bidder only from honor state			78.045	−8.714	66.360	22.751
			(53.658)	(40.103)	(55.197)	(69.783)
Target and bidder from honor state			105.545	160.952***	137.216*	169.523***
			(78.971)	(44.853)	(80.653)	(56.893)
Target only from honor state X Withdrawn			−42.306	−62.254	−46.257	−88.043
			(42.984)	(50.299)	(38.679)	(63.093)
Bidder only from honor state X Withdrawn			−94.614*	22.017	−86.350	−40.817
			(55.424)	(47.854)	(58.440)	(75.181)
Target and bidder from honor state X Withdrawn			−137.485*	−168.832***	−174.494**	−165.530**
			(80.952)	(49.711)	(84.523)	(63.328)
Withdrawn		−37.744*	−48.955**	−61.683**	−48.069**	−23.688
		(19.639)	(21.306)	(28.741)	(18.553)	(37.829)
Intercept	2.919***	154.982***	148.455***	160.381***	218.588***	126.923
	(0.072)	(40.151)	(19.203)	(26.648)	(77.327)	(106.493)
Controls	No	Yes	No	No	Yes	Yes
Merger wave dummies	No	Yes	No	No	Yes	Yes
Industry dummies	No	Yes	No	No	Yes	Yes
Observations	34	399	260	164	260	164
R^2	0.370	0.269	0.153	0.207	0.317	0.449
F Statistic	18.807***	3.035***	6.493***	5.823***	2.146***	2.140***
Cragg-Donald weak instrument statistic	127.473***					

This table reports the results of instrumental variable (IV) and OLS regressions run on the sub-sample of hostile bids providing further tests for the culture of honor hypothesis. Columns (1) and (2) present the first- and second-stage IV regression, respectively. The dependent variable in column (1) is the self-defense index and in all the remaining columns it is bid duration. Scots-Irish population density in column (1) is based on the 2000 U.S. Census. Columns (3) to (6) present the OLS regressions explaining the duration of the takeover bid measured by the number of days between the bid announcement date and the end date (i.e. the completion date for successful bids and the withdrawal date for unsuccessful bids). The regressions in columns (3) and (5) are based on the sub-sample of bids where the target and bidder are not from the same or neighboring states. Regressions in columns (4) and (6) are run on the sub-sample of bids where the target and bidder are from the same state or neighboring states. Columns (5) and (6) are similar to columns (3) and (4), respectively, with the only difference being the controls used in the two former columns. Heteroskedasticity robust state-clustered standard errors are reported in parentheses.

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Appendix A. Definitions of the Variables

Dependent Variables

- **Unsolicited**: An indicator variable taking the value of one if the bidder makes an offer for the target without prior negotiations with the target management, and zero otherwise (in Thomson ONE Banker: One if the variable *Unsolicited* equals one and zero otherwise).
- **Hostile**: An indicator variable taking the value of one if the deal is resisted by the management of target firm, and zero otherwise (in Thomson ONE Banker: one if *deal attitude* equals "hostile", and zero otherwise).
- **Deal duration**: Number of calendar days between the deal announcement date and the end date (in Thomson ONE Banker: *date effective* for completed deals and *date withdrawn* for withdrawn deals).
- **Withdrawn**: An indicator variable taking the value of one if the deal is withdrawn, and zero if completed (in Thomson ONE Banker: one if *deal status* equals "withdrawn", and zero otherwise).

Independent Variables

- **Scots-Irish population density**: Calculated as the number of individuals who reported their first, second or further ancestries as Scots-Irish as a percentage of the total number of people who reported ancestry in that state. A similar specification is used to calculate Scots-Irish population density at the city and county level (data from the 1790 and 2000 US censuses).
- **Target only from honor state**: An indicator variable taking the value of one, if the Scots-Irish population density in the target's state is above the median Scots-Irish population density for all states whereas the Scots-Irish population density in the bidder's state is below the median Scots-Irish population density for all states, and zero otherwise.
- **Bidder only from honor state**: An indicator variable taking the value of one, if the Scots-Irish population density in the bidder's state is above the median Scots-Irish population density for all states whereas the Scots-Irish population density in the target's state is below the median Scots-Irish population density for all states, and zero otherwise.
- **Target and bidder from honor state**: An indicator variable taking the value of one, if both the Scots-Irish population density in the bidder's state and the target's state is above the median Scots-Irish population density for all states, and zero otherwise.
- **Self-defense index**: A composite measure taking a value between one (disagree a great deal) to four (agree a great deal). The measure is constructed by calculating the arithmetic average for the average score for the three following questions: 1) a man has the right to kill another man in case of self defense; 2) a man has the right to kill a person to defend his family; and 3) a man has the right to kill a person to defend his house (data from Blumenthal et al. (1992)). The answer to each question is based on a Likert scale ranging from one (i.e. "disagree a great deal") to four (i.e. "agree a great deal").
- **Gun ownership**: The estimated proportion of adult, noninstitutionalized residents for the year 1985 in a state who live in a household with a firearm (data from Schell et al. (2020); https://www.rand.org/pubs/tools/TL354.html).

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Control Variables

- **Tobin's q**: Market value of equity plus book value of debt divided by the book value of assets (in Thomson ONE Banker:
  (*target market value four weeks prior to announcement* + *target total assets*
  − (*target book value per share* ∗ *shares outstanding*)) / *target total assets* ;
  in Compustat: ((*at* + *mequity*) - *ceq*) / *at*).
- **Firm size**: Logarithm of target firm's total assets (in Thomson ONE Banker: *log*(*target total assets*); in Compustat: *log*(*at*)).

- **ROE**: Return on equity measured as net income divided by the market value of total equity (in Thomson ONE Banker:
  net income last twelve months / target market value four weeks prior to announcement; in Compustat: *ni* / (*prcc_f* * *csho*)).
- **Deal premium**: It is measured as the difference between the offer price and the target stock price four weeks prior to announcement multiplied by 100 divided by the target stock price four weeks prior to announcement (in Thomson ONE Banker: *offer price to target stock price premium four weeks prior to announcement*).
- **Alternative bidder**: An indicator variable taking the value of one if there is more than one bidder making a bid for the target, and zero otherwise (source: Thomson ONE Banker).
- **Relative size**: The target firm's total assets divided by the bidding firm's total assets. Missing values were replaced by zero (source: Thomson ONE Banker).
- **Anti-takeover provisions**: A composite index taking a value between zero and five, incremented by one for each of the following pre-bid anti-takeover provisions including 1) poison pills, 2) back-end poison pills, 3) voting plan poison pills, 4) asset lockups, 5) stock lockup (in Thomson ONE Banker: *poison pill* + *back end defense* + *voting plan defense* + *stock lockup* + *asset lockup*).
- **State takeover index**: A composite index taking a value between zero and five, incremented by one for each one of takeover laws adopted by the state where the target is incorporated. For a full list of takeover laws, see Table 1 in Cain et al. (2017), which is also the source for the data.
- **Delaware**: An indicator variable taking the value of one if the target is incorporated in Delaware, and zero otherwise (in Thomson ONE Banker: one if *target state of incorporation* equals "Delaware", and zero otherwise).
- **Bidder from North**: An indicator variable taking the value of one if the bidder is headquartered in one of the Northern states, and zero otherwise (this variable is constructed using the headquarter information provided in *bidder state* in Thomson ONE Banker).
- **Cash only**: An indicator variable taking the value of one for transactions in which the only consideration offered is cash, and zero otherwise (in Thomson ONE Banker: one if *consideration structure* equals "casho", and zero otherwise).
- **Religiosity**: The number of religious adherents in the state to the total population in the state as reported by the US Census Bureau. The measure is taken from Table 1 in Hilary and Hui (2009).
- **Collectivism**: The collectivism index developed by Vandello and Cohen (1999). The measure is taken from Table 1 in Vandello and Cohen (1999) on the state rankings as per the collectivism index.
- **CEO birthplace**: An indicator variable taking the value of one if CEO was born in an honor state but the firm is not headquartered in an honor state, and zero otherwise. An honor state is defined as a state where Scots-Irish population density is above the median Scots-Irish population density. The variable also takes a value of zero if no information on CEO birthplace was found (source: Bernile, Bhagwat, and Rau (2017), and hand-collected data from various newspaper archives, including Factiva).
- **Unsolicited**: As defined above under *Dependent Variables*.
- **Unsolicited in bidder industry**: The proportion of unsolicited bids in the bidder's industry (the variable is constructed using *Unsolicited* in Thomson ONE Banker).
- **Hostile in bidder industry**: The proportion of bids in the bidder's industry which were resisted by the target firms (the variable is constructed using *Attitude* in Thomson ONE Banker).
- **Same industry**: An indicator variable taking the value of one if target and bidding firms belong to

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the same industry, and zero otherwise. The industry classification is the Thomson Reuters proprietary macro-level industry classification.

- **Target and bidder are from same or neighboring states**: An indicator variable taking the value of one if the target and the bidder are headquartered in the same or neighbouring states, and zero otherwise. The variable is constructed using the headquarter information in Thomson ONE Banker.
- **Industry**: Thomson Reuters proprietary macro-level industry classification, which is based on the SIC codes, NAICS codes, and the overall company business description, for both the target and the bidder (in Thomson ONE Banker: *target macro industry*).
- **Merger waves**: Indicator variables, which take the value of one if the merger date falls between the period of the specific wave, and zero otherwise. Merger wave 4 covers the period between 1980 and 1990, wave 5 the period between 1993 and 2000, wave 6 the period between 2001 and 2008, and wave 7 the period after 2010 (see Ching (2019) for details.)

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Appendix B. The Number of Deals in Each State

Table B: Number of takeover bids in each state.

Panel A

	Target state	Percent Scots-Irish density	Total number of deals	Proportion unsolicited	Proportion hostile	Proportion unsolicited and hostile	Proportion hostile withdrawn
1	Alabama	5.70	47	0.06	0.06	0.04	0.33
2	Arizona	3.75	82	0.16	0.10	0.09	1.00
3	Arkansas	5.17	20	0.10	0.10	0.10	1.00
4	California	2.83	1211	0.08	0.05	0.04	0.85
5	Colorado	5.04	169	0.09	0.07	0.05	0.83
6	Connecticut	2.69	174	0.12	0.11	0.10	0.68
7	Delaware	3.72	13	0.15	0.15	0.15	1.00
8	Florida	3.78	314	0.05	0.03	0.02	0.89
9	Georgia	4.68	199	0.08	0.06	0.04	0.82
10	Idaho	4.67	12	0.00	0.00	0.00	-
11	Illinois	2.50	309	0.10	0.09	0.08	0.79
12	Indiana	3.69	131	0.08	0.08	0.06	0.90
13	Iowa	3.68	46	0.17	0.09	0.09	0.50
14	Kansas	5.12	35	0.06	0.06	0.06	1.00
15	Kentucky	4.93	56	0.04	0.05	0.04	1.00
16	Louisiana	3.05	43	0.09	0.07	0.07	1.00
17	Maine	6.59	11	0.00	0.00	0.00	-
18	Maryland	3.20	137	0.11	0.04	0.04	0.67
19	Massachusetts	3.66	366	0.09	0.07	0.06	0.84
20	Michigan	3.28	110	0.10	0.12	0.08	0.92
21	Minnesota	2.19	184	0.08	0.03	0.03	0.83
22	Mississippi	5.40	23	0.09	0.04	0.04	1.00
23	Missouri	4.53	101	0.07	0.08	0.03	1.00
24	Montana	6.35	11	0.00	0.00	0.00	-
25	Nebraska	3.55	29	0.03	0.03	0.00	0.00
26	Nevada	3.50	45	0.18	0.02	0.02	0.00
27	New Hampshire	5.41	38	0.08	0.08	0.05	1.00
28	New Jersey	2.09	277	0.09	0.06	0.05	0.72
29	New Mexico	3.62	13	0.08	0.08	0.08	0.00
30	New York	1.72	513	0.12	0.09	0.07	0.85
31	North Carolina	8.66	157	0.08	0.06	0.05	0.90
32	North Dakota	2.36	4	0.00	0.00	0.00	-
33	Ohio	3.80	238	0.10	0.08	0.08	0.85
34	Oklahoma	4.90	53	0.11	0.08	0.06	0.50
35	Oregon	5.86	81	0.12	0.11	0.10	0.78
36	Pennsylvania	4.38	337	0.06	0.04	0.03	0.93
37	Rhode Island	2.63	19	0.16	0.05	0.05	1.00
38	South Carolina	7.94	57	0.05	0.04	0.04	1.00
39	South Dakota	2.42	4	0.00	0.00	0.00	-
40	Tennessee	7.65	110	0.08	0.05	0.05	0.80
41	Texas	4.07	543	0.07	0.05	0.04	0.80
42	Utah	2.77	52	0.06	0.06	0.04	0.67
43	Vermont	5.25	19	0.05	0.00	0.00	-
44	Virginia	5.79	203	0.10	0.05	0.05	0.73
45	Washington	5.34	111	0.06	0.05	0.04	0.80
46	West Virginia	6.47	23	0.09	0.04	0.04	1.00
47	Wisconsin	1.74	99	0.08	0.08	0.07	1.00
48	Wyoming	6.23	4	0.00	0.00	0.00	-
	Whole sample	3.70	6833	0.09	0.06	0.05	0.83

Panel B

	Friendly	Hostile	Total
Solicited	6165	80	6245
Unsolicited	244	344	588
Total	6409	424	6833

Panel A reports the percentage of Scots-Irish population in each state (calculated based on data from the 2000 U.S. Census), number of takeover deals, percentage of deals classified as unsolicited, hostile, unsolicited as well as hostile, and the percentage of hostile takeover deals which were withdrawn. Panel B reports the number of solicited and unsolicited hostile and friendly takeovers.

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Appendix C. Identification test using the gun ownership data

Table C: Identification Test Using Gun Ownership Instead of Self-defense Index

Dependent variable	Gun ownership	Bid duration
	IV (first stage)	IV (second stage)
	(1)	(2)
Scots-Irish population density	0.049***	
	(0.012)	
Target only from state with above-median gun ownership		77.140**
		(29.870)
Bidder only from state with above-median gun ownership		76.666**
		(36.866)
Target and bidder from state with above-median gun ownership		134.429***
		(40.613)
Target only from state with above-median gun ownership x Withdrawn		−65.755**
		(33.251)
Bidder only from state with above-median gun ownership x Withdrawn		−93.902**
		(39.079)
Target and bidder from with above-median gun ownership x Withdrawn		−153.024***
		(43.268)
Withdrawn		−43.041**
		(18.860)
Intercept	0.269***	165.229***
	(0.058)	(38.573)
Controls	No	Yes
Merger wave dummies	No	Yes
Industry dummies	No	Yes
Observations	41	424
R^2	0.342	0.261
F Statistic	20.262***	3.123***
Cragg-Donald weak instrument statistic	127.473***	

This table reports the results of instrumental variable (IV) regressions run on the sub-sample of hostile bids, providing a further test for the validity of the culture of honor thesis. Columns (1) and (2) present the first- and second-stage IV regression, respectively. The dependent variable is gun ownership and the bid duration in column (1) and (2), respectively. Gun ownership is the proportion of adult, noninstitutionalized residents for 1985 in each state who live in a household with a firearm. Scots-Irish population density in column (1) is based on the 2000 U.S. Census. The duration of the takeover bid is the number of days between the bid announcement date and the end date (i.e. the completion date for successful bids and the withdrawal date for unsuccessful bids). Heteroskedasticity robust state-clustered standard errors are reported in parentheses.

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