

**Foreign Investor Reactions to Risk and Uncertainty in Antitrust:
U.S. Merger Policy Investigations and the Deterrence of Foreign Acquirer Presence**

Joseph A. Clougherty*

Gies College of Business, University of Illinois at Urbana-Champaign
330 Wohlers Hall; 1206 S. 6th St., MC-706; Champaign, IL 61820; USA
Tel: +1 217 333 6129
E-mail: jaclough@illinois.edu

Nan Zhang

Gies College of Business, University of Illinois at Urbana-Champaign
330 Wohlers Hall; 1206 S. 6th St., MC-706; Champaign, IL 61820; USA
Tel: +1 334 740 8279
E-mail: nzhang25@illinois.edu

Abstract

Motivated by the potential for antitrust and competition policies to involve protectionism, we contend that the enforcement of merger policy deters foreign-acquirer participation in local M&A markets. The policy risk and policy uncertainty characteristic of merger-review enforcement disproportionately affects foreign acquirers as compared to domestic acquirers, thereby disadvantaging foreign acquisitions of local firms and deterring future cross-border investment activities. We test our prior by employing sector-level data on U.S. merger-policy investigations and foreign-acquirer presence in U.S. M&A markets over the 2002–2017 period. Our panel-data empirical results indicate that the risk and uncertainty characteristic of U.S. merger policy disproportionately deters the activities of foreign acquirers as compared to domestic acquirers. Finding evidence in support of U.S. merger policy being protectionist in effect suggests that the application of competition and merger policies in other national jurisdictions – where there is less of a strong commitment to antitrust principles – might also be protectionist.

Keywords: Antitrust Policy; Cross-Border Mergers and Acquisitions; Deterrence Effects; Policy Risk and Uncertainty.

* Corresponding author.

INTRODUCTION

Does the enforcement of competition policy – antitrust policy in U.S. parlance – negatively affect inward foreign-investment activities? While the presence of national competition policies in the cross-national environment for global business has been largely attributed to the need to secure the welfare benefits from effective domestic competition (e.g., Buccirossi, Ciari, Duso, Spagnolo, & Vitale, 2013), Graham and Warner observe that “a consistent complaint of international business executives directed toward competition authorities is that major decisions involve somewhat parochial considerations ... [which in turn] ... inhibit international mergers, acquisitions and investments” (1994: 469). Due to the potential presence of both positive and negative mechanisms connecting competition-policy enforcement with inward-FDI activities, Brewer (1993) long ago called for researchers to engage in systematic study of the relationship between competition policy and FDI.

There does exist both theoretical and empirical scholarship in the related fields of international trade, law & economics, and finance economics; yet, Evenett (2003) observes that the empirical literature in these fields has presented mixed findings. For instance, a number of scholars (e.g., Bris, Brisley, & Cabolis, 2008; Bris, Cabolis, & Janowski, 2007; Clarke, 2003; Oliveira, Hochstetler, & Kalil, 2001) have found the enforcement of competition policy to encourage inward-FDI activity. Those who find support for a positive relationship often focus on the premise that well-run competition policy establishes a level playing field for all competitors—where such fairness in treating foreign and domestic firms alike is particularly advantageous for foreign investors who generally suffer from a liability of foreignness (Zaheer, 1995). Yet other scholars have considered the enforcement of competition policy to be best characterized as protectionist in nature (e.g., Aktas, Bodt, & Roll, 2007; Conybeare & Kim, 2010; Deshpande, Svetina, & Zhu, 2016; Dinc & Erel, 2013; Francois & Horn, 2007; Hemphill, 2010; Li, 2007). The prior in this literature stream is that governments prefer domestically-owned entities; hence, authorities conduct competition policy – especially the sub-policy of merger control – in a manner to deter foreign ownership and encourage domestic ownership of local businesses. Foreign firms are accordingly subjected to regulatory requirements that ensure investments support, rather than compete

with, domestic business (Brooks, 2007). While such requirements reflect the interests of national governments in protecting local business (Caporaso & Levine, 1992), the use of competition policies in such a manner would ultimately lead to diminished inward FDI.

The methodological practices generally employed by the pre-existing empirical literature potentially contribute to these mixed empirical findings as such practices can yield biased results. Specifically, the empirical literature exhibits a proclivity to engage in cross-country empirical studies (e.g., Bris et al., 2007; Clarke, 2003) that do not comprehensively take into account potentially confounding factors. Yet establishing causal inferences regarding the relationship between competition policy and inward FDI is fraught with identification challenges in empirical contexts where omitted country-level factors likely correlate with both the implementation of competition policy and the openness of a country toward FDI. For instance, the pro-market tendencies characteristic of the U.S. – observed by Peng, Wang and Jiang (2008) and others – represents a potential omitted construct that will tend to enhance both competition-policy enforcement and inward-FDI activity, thereby adding observations to a naïve cross-country OLS estimation that would bias the coefficient estimates toward a positive relationship (Wooldridge, 2013).

With the above methodological deficiencies in the pre-existing literature in mind, we attempt to bring some definitive empirical evidence to bear in order to establish whether competition-policy enforcement might negatively affect inward-FDI activity levels. We first narrow the focus of study by considering the impact of U.S. merger-policy enforcement on the proclivity of foreign acquirers to participate in the U.S. markets for corporate control. While competition policy involves three elements (merger review, price collusion, and abuse of dominance), merger policy represents the most-important element of a national commitment to antitrust principles (Viscusi, Vernon, & Harrington, 1995) and the most salient element of competition policy concerning foreign investors.¹ Second, we move beyond a cross-country methodological approach by employing sector-level data on U.S. merger-policy investigations and sector-level data on the acquisition activities undertaken by foreign and domestic firms.

The sector-level empirical approach mitigates the concern with respect to omitted country-level factors being responsible for a spurious causal relationship between competition policy and inward FDI.

In addition to the empirical features of our analysis, we ground our conceptual development within the literature focusing on the relevance of political risk and uncertainty in foreign-investment decisions (e.g., Delios & Henisz, 2000, 2003a, 2003b; Kobrin, 1979; Kobrin, Basek, Blank, & La Palombara, 1980). Thus in focusing on the application of U.S. merger policy and how that policy might negatively impact foreign acquirers as compared to domestic acquirers, we consider the ability of merger control to manifest both policy risk and policy uncertainty. By policy risk, we refer to situations where the possibilities and probabilities of policy outcomes are known to market participants in the sense that they can be forecasted; and by policy uncertainty, we refer to situations where the possibilities and probabilities of policy outcomes are not well known to market participants in the sense that it is difficult to forecast the likelihood of future policy states (Bloom, 2014; Knight, 1921; Kobrin, 1979). Moreover, our theoretical priors consider how merger-policy enforcement involves both policy risk and policy uncertainty elements where increases in these factors would lead to foreign acquirers being disproportionately deterred from engaging in acquisitions as compared to domestic acquirers.

After setting our theoretical priors, we empirically test our two hypotheses on sectoral-level data covering 53 U.S. industries over the 2002-2017 period. Our panel-data empirical results indicate that merger-policy investigative activities disproportionately deter foreign-acquirer as compared to domestic-acquirer participation in local M&A markets. Specifically, increases in merger-policy risk and merger-policy uncertainty lead to reduced foreign-acquirer presence in the U.S. markets for corporate control. The empirical evidence suggests then that merger-policy enforcement exhibits protectionist characteristics in the sense that foreign-investment activities are more adversely affected by the application of merger policy as compared to domestic-investment activities. These results yield salient implications for the literature on host-country characteristics and foreign-investment activities.

In order to examine the relationship between merger-policy enforcement and foreign-acquirer presence in local M&A markets, we structure the remainder of this manuscript as follows. We present a

theoretical framework that focuses on the salience of policy risk and policy uncertainty in generating two hypotheses regarding the relationship between the enforcement of merger policy and the participation of foreign acquirers in domestic M&A markets. After setting out our theoretical priors, we describe our sector-level data on U.S. merger control and acquisition activities, formulate our estimation strategy, and present our empirical results. The last section concludes.

HYPOTHESES DEVELOPMENT

A considerable amount of literature has examined the impact of country-level political risk and uncertainty on inward FDI activities—see the literature reviews by Kobrin (1979), Fitzpatrick (1983) and Liesch, Welch, and Buckley (2011). The basis behind this literature is that political risks and uncertainties can “arise from the actions of national governments which interfere with or prevent business transactions” (Weston & Sorge, 1972: 60). Firms generally react to such political hurdles by reducing their willingness to make investments as the option value of delaying investment becomes higher under such risks and uncertainties (Bloom, 2014). While political hurdles and hazards can negatively influence the investment activities of all firms, foreign firms are generally considered to be more sensitive to such shocks. For one, foreign firms might be more-frequently targeted when burdensome laws, regulations and policies are implemented by national governments; e.g., Eden (1994) observes that national policies practiced in a parochial manner represent fundamental threats to multinationals. Furthermore, foreign firms often lack the local information, legitimacy and contacts which might help them properly assess and mitigate the political constraints. As Werner, Brouthers, and Brouthers (1996: 572) underscore, “firms commonly find international business opportunities to be inherently more risky than domestic ones” due to the stark differences in political environments and the inherent legal uncertainties characteristic of foreign-investment endeavors. It is no surprise then that a great deal of empirical literature (e.g., Delios & Henisz, 2000, 2003b; Henisz & Delios, 2001) indicates that uncertainty in the political environment substantially deters foreign-investment activities. Indeed, Kobrin (1979) highlights how the response to political risk

and uncertainty is frequently avoidance, as multinationals simply do not get involved in countries perceived as risky.

While macro-level studies regarding the relationship between political risk and FDI tend to dominate the literature (Vadlamannati, 2012), there have been efforts to follow the prescriptions of Kobrin (1979) to consider the industry-, firm- and project-specific factors relating to political risk and uncertainty. For one, Miller (1993) breaks down the salient host-country environmental uncertainties into six different dimensions—where uncertainties with respect to specific government policies represent the first dimension. Werner et al. (1996) follow in this line of research by considering the national laws which affect foreign firms; and Grosse (1985) and Bonaime, Gulen, and Ion (2018) respectively consider the impact of regulatory policies and uncertainties on FDI and M&A activities. The conduct of national merger policy represents a particular regulatory policy that involves a direct threat to the participation of foreign firms in local M&A markets. Specifically, the presence of a national merger policy can negatively impact foreign acquirers by slowing down the consummation of their cross-border acquisitions via antitrust investigations, curtailing the profitability of these cross-border acquisitions by requiring structural remedies, and by even outright prohibiting these cross-border activities. Thus, merger control is a specific and salient government barrier that foreign acquirers must successfully navigate in order to gain access to local M&A markets (Clougherty, 2005).

A number of scholars (e.g., Brewer, 1993; Hymer, 1970; Spar, 2001) have accordingly posited that the national enforcement of merger policy potentially restrains the level of inward FDI. It is with these concerns in mind that many policy advisors recommend that countries not prioritize competition policy as it could discourage inward FDI via the creation of additional regulatory barriers and uncertainties for foreign investors (Oliveira et al., 2001). Moreover, the conduct of national merger policy lends itself well to analyzing the deterrence effects with respect to acquisition activities in a manner that is consistent with the pre-existing literature on political risk and uncertainty. First, merger policy is conducted at the industry level and exhibits cross-sector variation in antitrust scrutiny (Clougherty & Seldeslachts, 2013); thus, it represents an industry-specific policy context worth analyzing for policy-risk

factors in line with Kobrin's (1979) prescriptions. Second, merger policy involves both policy risk and policy uncertainty—both of which may disproportionately deter foreign acquirers as compared to domestic acquirers. We turn now to a discussion of these concepts and to the formulation of our theoretical priors.

Merger-Policy Risk

The concept of risk goes back to Knight's (1921) fundamental insights where he considered risk to be a known probability distribution over a set of events; for example, flipping a coin involves risk, but with known odds. In moving from the concept of risk to its application in political risk, Kobrin (1979) observes that risk is at play when managers have knowledge regarding the possibility and probability of different political outcomes via either calculations or past-experience statistics. While the relevant information is available with political risk and observers generally agree with respect to the probabilities of different outcomes, foreign investors are often considered to be at a disadvantage as compared to domestic investors due in part to inherent information asymmetries (Gehrig, 1993; Gordon & Bovenberg, 1996; Liesch et al., 2011). As Gehrig (1993: 98) makes clear, "information may have to be interpreted in the light of the legal conventions and business culture of a particular community, which may be difficult for foreigners to assess". Thus, domestic investors are better informed and better able to interpret the relevant probabilities as compared to foreign investors; and as a result, foreign managers tend to overestimate the risks and underestimate the benefits involved with host-country investment activities (Liesch et al., 2011). Simply put, the lack of information, knowledge and experience with respect to the intricacies of host-country activities accentuates the perceptions of risk when considering foreign investments. A great deal of the political-risk literature accordingly focuses on the probabilistic estimates of different policy outcomes and how increased risk leads to decreased foreign-investment activities. With the above as a backdrop, we consider how the policy risk involved with merger control might disproportionately affect foreign investors considering to participate in the local markets for corporate control.

First, the presence of host-country merger policy involves transaction costs that foreign investors must factor when deciding upon whether – and to what extent – to make a cross-border acquisition. Navigating the host-nation’s merger-review process also involves several direct costs – e.g., legal, transaction-filing and advisory-services fees – in order to clear the transaction (Hemphill, 2010). In addition, acquiring firms face internal organizational costs that require in-house legal expertise as well as managerial time and commitment due to the presence of host-nation merger policies. Importantly, the direct costs and transaction costs involved with the merger-review process are particularly salient for foreign acquirers as compared to domestic acquirers. For one, foreign investors will be generally unfamiliar with the institutions, values, norms and networks that are embedded within the host-nation’s antitrust institutional environment (Jorde & Teece, 1990). For example, General Electric exhibited unfamiliarity with European Commission (EC) regulatory procedures in offering concessions to EC officials for the proposed Honeywell acquisition that would have been more appropriate in the U.S. institutional context (Desai, Villalonga, & Veblen, 2005; *The Economist*, 2001). As such, acquiring firms often enter negotiations with antitrust officials in order to come to a negotiated settlement with respect to the conditions and remedial actions necessary for successful resolution of antitrust concerns (Farrell, 2003). Yet as Grosse and Behrman (1992) highlight, multinational firms are at a distinct bargaining disadvantage when the host-country institutions are strong and when the multinational lacks salient information about the institutional environment. As a result, the policy risk involved with greater degrees of merger-policy enforcement will lead to disproportionate deterrence of foreign-acquirer activities as compared to domestic-acquirer activities due to foreign acquirers being more likely to incur costly and inappropriate regulatory efforts that do not ultimately deliver successful antitrust approval.

Second, foreign acquirers will tend to be more risk averse as compared to domestic acquirers when factoring the costs involved with greater degrees of merger-policy risk. As George, Chattopadhyay, Sitkin, and Barden (2006) point out, risky behavior is more likely when managers perceive a sense of mastery or control over a particular domain; thus, higher degrees of merger-policy risk will not be experienced by foreign investors with the same sense of control over the review process as experienced

by domestic investors. In fact, Kobrin (1979) highlights that perceptions of risk are a function of the available information and previous experiences—qualities which are both less-likely to characterize foreign acquirers as compared to domestic acquirers. Liesch et al. (2011: 856) summarize the above well when they state “many firms have been found to be lacking in information and knowledge about, and experience in ... the practicalities of international activity” thereby accentuating perceptions of political risk. As a result, the policy risk involved with greater degrees of merger-policy enforcement will lead to disproportionate deterrence of foreign-acquirer activities as compared to domestic-acquirer activities due to the inherent differences in risk-tolerance exhibited by foreign and domestic investors.

Third, the application of merger policy might disproportionately target the acquisitions undertaken by foreign investors as compared to the acquisitions undertaken by domestic investors. Vadlamannati (2012: 115) outlines how a substantial amount of political risk derives from the fact that governments often “buckle under lobbying pressure from local firms seeking preferential treatment vis-à-vis the foreign firms”. Antitrust agencies are ostensibly independent from political influence; yet, in very few instances are such institutions fully independent of politics. In fact, a number of scholars (e.g., Coate, Higgins, & McChesney, 1990; Faith, Leavens, & Tollison, 1982; Mehta, Srinivasan, & Zhao, 2017; Neven, Papandropoulos, & Seabright, 1998) consider antitrust outcomes to be – at least partially – subject to political pressure. Yet foreign firms suffer from a liability of foreignness when attempting to influence national authorities, as they are simply less capable and legitimate as compared to domestic firms in terms of employing the political-economic mechanisms that yield privileges via corporate political strategy (Boddewyn, 1988; Grosse, 2005; Hymer, 1976 [1960]; Kindleberger, 1969; Zaheer, 1995). Accordingly, antitrust authorities face political pressure to provide some leniency that favors domestic investors (Rodriguez & Menon, 2010). In line with these priors, the Chinese (Horton, 2016; Zhang & Zhang, 2010) and EC antitrust authorities (Aktas et al., 2007; Dinc & Erel, 2013) have been reported to protect indigenous firms by treating domestic acquisitions more leniently than foreign acquisitions. As a result, the policy risk involved with greater degrees of merger-policy enforcement will lead to disproportionate

deterrence of foreign-acquirer as compared to domestic-acquirer activities due to foreign acquirers receiving greater antitrust scrutiny.

Summarizing the above, merger-policy risk likely involves a larger deterrence effect with respect to foreign-acquirer activities as compared to domestic-acquirer activities in local M&A markets due to the presence of three mechanisms. First, merger policy involves costs that acquiring firms must incur while navigating the merger-review process, and foreign investors disproportionately experience these costs due to their inherent liabilities and information asymmetries. Second, foreign investors tend to be more risk averse as compared to domestic investors which in turn generates more-cautious investment behavior. Third, antitrust agencies potentially scrutinize the acquisition activities undertaken by foreign investors more than the acquisition activities undertaken by domestic investors. These three mechanisms negatively impact foreign acquisitions of indigenous firms and deter future foreign investors who refrain from cross-border acquisitions due to the presence of these realities (Dinc & Erel, 2013). Based then on the above reasoning, our first theoretical prior can be formulated as follows:

Hypothesis 1: Increases in merger-policy risk will negatively affect the relative presence of foreign acquirers in local M&A markets.

Merger-Policy Uncertainty

While the concept of uncertainty has been considered to be somewhat amorphous in the extant literature, there is general consensus that it reflects a degree of doubt about possible future states (Bloom, 2014). In conceptualizing uncertainty, Knight (1921) focused on the inability to forecast the likelihood of future events, as agents have no idea as to how to commence engaging in such calculations. For example, flipping a coin and rolling a die come with different – but known – odds (i.e., different risks), yet if an actor was not provided information on whether a die or coin was thrown, then they would have uncertainty with respect to forecasting odds. Penrose (1972: 56) also differentiates the concept of uncertainty from the related concept of risk by holding that risk refers to estimates of possible outcomes, while uncertainty refers to confidence in these estimates. Similarly, Williamson's (1985) uncertainty

invokes situations of ambiguity and sketchiness in combination with the bounded rationality of humans which hinders factoring all possible outcomes. Businesses are accordingly unsure as to all of the possible outcomes and unsure as to the applicable probabilities of these outcomes under uncertainty. Bloom (2014: 165) notes that in such conditions “agents are so uncertain about the future they cannot form a probability distribution. Instead, they have a range of possible outcomes and act as if the worst outcomes will occur, displaying a behavior known as ambiguity aversion”. Kobrin (1979) highlights then how uncertainty is very much subjective in nature due to the manager’s inability to appropriately shape the relevant probability distribution.

In moving from the concept of uncertainty to its application in political uncertainty, it should be underscored that it arises as governments can undertake policies and actions that both aid and hinder business operations. Indeed, a number of scholars have established that a substantial degree of public-policy volatility manifests in the U.S. and in the cross-national environment for business (e.g., Baker, Bloom, & Davis, 2016; Henisz, 2004). While national policies affecting business vary for a number of reasons (e.g., Baker et al. (2016) find experimentation with policies during recessions), investors must factor the uncertainties involved with the potential realization of different policy outcomes. For instance, Bloom (2014) observes that public policies that are unclear and volatile in nature will raise uncertainty on the part of market participants. Moreover, the existence of political uncertainties and instabilities increases the costs of long-term capital investments that lead to growth (Grosse & Trevino, 2005; Henisz, 2000); thus, the willingness of firms to make investments decreases when uncertainty with respect to policy outcomes increases. In essence, businesses are simply unlikely to proceed with substantial investments unless policy uncertainties are reduced to acceptable levels. Liesch et al. (2011: 863) summarize these ideas in the cross-border business context well when stating that “volatile foreign environments, with rapid change and disruption, intrusive government action, tend to be seen as heightening uncertainty and ... in a negative way, discouraging involvement”.

Closer to the context of our analysis, the application of national merger policies can involve substantial sectoral-level policy uncertainty. Indeed, the consummation of both domestic and cross-border

acquisitions requires that transactions successfully pass through a merger-review process. The U.S. established the first pre-notification merger-review process with the Hart-Scott-Rodino (HSR) Act of 1976, and in subsequent years such procedures have proliferated to over 70 antitrust jurisdictions throughout the world (Galloway, 2009; Motta, 2004). While there exists a substantial degree of cross-national heterogeneity with respect to the laws, procedures and applications of merger policy (Clougherty, 2001, 2005), there also exists a substantial degree of volatility in merger-policy application within nations and within sectors. For instance, a great deal of scholarship has considered the causes behind temporal swings in the tenor and scope of U.S. antitrust enforcement (e.g., Moe, 1987; Vachris, 1996; Weingast & Moran, 1983). In addition to time variation, scholars have also found substantial variation across industries in the application of merger policy (Clougherty, Duso, Lee, & Seldeslachts, 2016; Clougherty & Seldeslachts, 2013). This cross-sector variation in the strictness of merger control has been considered to be driven by antitrust-staffing constraints which limit scrutinizing all industries (Kwoka, 1999), the presence of both ‘shutdown’ and ‘safe-haven’ sectors where firms understand horizontal activities will be respectively scrutinized at high and low levels (Deloitte & Touche, 2007), and variability in the ability of domestic-industry participants to lobby for accommodating policies (Mehta et al., 2017).

While the application of merger control exhibits volatility across industries and time which leads to the relevant policy uncertainty, it is important to highlight how policy uncertainty tends to disproportionately affect foreign investors as compared to domestic investors. Gordon and Bovenberg (1996) point out that it is the existence of information asymmetries – where foreign investors exhibit a particular handicap as compared to domestic investors – which explains the fact that foreign investors tend to be robustly deterred by host-nation uncertainties. As they make clear, domestic investors will generally have better access to information and be better able to predict the future government policies which affect firm profitability. In line with these priors, Grosse and Trevino (2005) highlight how an opaque and uncertain regulatory environment represents a substantial cost for foreign firms operating in a host country. Indeed, Kobrin (1979) notes that policy uncertainty is quite likely in cross-border business transactions, as managers are uncertain with respect to the different policy outcomes and the probabilities

associated with these outcomes. For instance, GE’s acquisition of Honeywell was unexpectedly prevented by the enforcement of EC competition policy and not the enforcement of U.S. antitrust policy (The Economist, 2001). Foreign investors face a distortion due to subjective factors that simply cannot be eliminated; thus, foreign investors commonly respond to greater host-country policy uncertainty by avoiding investments like cross-border acquisitions which entail high commitments (Liesch et al., 2011).

Summarizing the above, merger-policy uncertainty likely involves a larger deterrence effect with respect to foreign-acquirer as compared to domestic-acquirer activities in local M&A markets due to the presence of substantial information asymmetries. While uncertainties with respect to the strength and tenor of sector-level merger policy will impact both domestic and foreign acquirers, the acquirers hailing from foreign countries face particular disadvantages with respect to properly assessing these uncertainties regarding the future states of merger policy. Thus, higher degrees of uncertainty regarding the merger-review process will negatively impact foreign acquisitions of indigenous firms and deter future foreign investors who refrain from cross-border acquisitions due to the presence of these uncertainties. Based then on the above reasoning, our second theoretical prior can be formulated as follows:

Hypothesis 2: Increases in merger-policy uncertainty will negatively affect the relative presence of foreign acquirers in local M&A markets.

METHODOLOGY

Dataset and Variable Description

We assembled data covering 53 industrial sectors over the 2002–2017 period where each panel consists of an industrial sector at the three-digit level that conforms to the North American Industry Classification System (NAICS) standard. For instance, “chemical products” represents one distinct panel consisting of 14 annual observations in our estimations. Due to missing values and to the estimations employing lagged structures, our unbalanced panel dataset consists of 563 observations for empirical estimations. In order to build our unbalanced panel data, we matched observations from six separate sources: the ‘SDC Platinum’ dataset from Thomson; the 2002 through 2017 ‘Annual Reports to Congress on HSR Antitrust

Enforcement’ from the U.S. Federal Trade Commission (FTC) and the U.S. Department of Justice (DOJ); the ‘Annual Reports to Congress from the Committee on Foreign Investment in the United States’ from the U.S. Department of the Treasury; the ‘Gross Domestic Product (GDP) by Industry’ dataset from the U.S. Bureau of Economic Analysis (BEA); the ‘Compustat’ database from Wharton Research Data Services; and the 2017 YouGov poll on ‘America’s Friends and Enemies’. The six data sources were respectively compiled and harmonized in order to yield consistent measures for the three principal variables – foreign-acquirer-presence, merger-policy-risk, and merger-policy-uncertainty – required to test our theoretical priors, as well as a full set of control variables. The appendix reports sector-level descriptive statistics for each of the 53 three-digit sectors: the number of observations included in the estimation sample, and means for the three principal variables.²

Thomson’s SDC Platinum database provides transaction-level data that allow differentiating between foreign and domestic acquisitions of U.S. based targets to compile an industry-based measure of foreign-acquirer-presence in the local markets for horizontal M&A activities. The Thomson database is the most reputable source of transaction data and involves extensive coverage of both domestic and cross-border acquisition activities. Furthermore, our sample consists of all those horizontal transactions where the acquiring firm gained full, majority or minority control of the target firm. We focus on horizontal transactions as U.S. antitrust authorities have long considered horizontal transactions to represent the population of anti-competitive transactions, whereas non-horizontal – i.e., vertical and conglomerate – transactions are rarely considered to involve anti-competitive effects (Viscusi et al., 1995).³ Specifically, horizontal transactions are defined as involving four-digit overlap in the product space of the acquiring and target firms; thus, our definition of a horizontal transaction is tighter than the three-digit level observational units. We compiled all of the transaction-level data on acquisition values into an industry-based annual measure for the value of foreign acquisitions of U.S. targets, and an industry-based annual measure for the value of domestic acquisitions of U.S. targets. Foreign-acquirer participation in these local M&A markets was then captured by taking the value of foreign acquisitions and dividing by the value of total acquisitions (both foreign and domestic) in the local acquisition markets. Accordingly, our

dependent variable, *Foreign-Acquirer-Presence*, is a percentage, and represents the degree to which foreign acquirers participate in the U.S. sectoral markets for corporate control.

The “Annual Reports to Congress on HSR Antitrust Enforcement” provide data on the annual number of ‘second-request-investigations’ that the DOJ and FTC undertake in a specific three-digit sector. The HSR merger-review process requires merging firms to report their transactions to U.S. antitrust officials for approval prior to consummating these transactions. While the majority of merger notifications are cleared by authorities within 30 business days, a number of transactions receive a ‘second-request-investigation’ (Kovacic, 2003). These investigations require merging firms to divulge additional information and documents to antitrust authorities and mandate an additional waiting period for the consummation of the transaction. The fact that investigations require the revelation of what might be sensitive information and prolong the time to complete the intended strategy indicates that these investigations represent a substantial source of holdup to managers (Clougherty, 2005). Investigations also represent a prerequisite step for antitrust officials to engage in more serious antitrust measures such as structural divestments and outright preventions. As Deshpande et al. (2016) point out, the presence of an investigation increases the policy risk as to whether and when the transaction can be legally achieved, thereby decreasing the expectation that gains can be reaped, and in turn decreasing stock-market valuations. In fact, Dinc and Erel (2013) provide some evidence that acquiring-firm stock-market losses due to merger-policy intervention are quite substantial.

These sectoral-level data on antitrust investigations form the basis for creating our measures of merger-policy risk and merger-policy uncertainty. First, we follow Kobrin’s (1979) insight with respect to policy risk being characterized by investors having knowledge concerning the probabilities of certain outcomes based on past experiences. Thus, we can employ an antitrust investigation rate – the number of annual second-request-investigations in a sector divided by the number of horizontal transactions in the sector – in order to capture the probability that a horizontal acquisition receives an investigation by U.S. antitrust authorities. This investigation rate conforms to the ‘rates of detection’ measures employed in the deterrence literature following the work of Becker (1968) and Ehrlich (1973). Accordingly, our first main

explanatory variable, *Merger-Policy-Risk*, captures the probabilistic risk of incurring antitrust scrutiny faced by investors interested in participating in the U.S. markets for corporate control.

Second, we follow Penrose's (1972) observation that it is confidence in the assessments of the future which defines uncertainty, as Knight's (1921) uncertainty involves an inability to forecast future states. While forecaster disagreement, mentions of uncertainty, and options markets for stocks have all been employed as measures of uncertainty, Bloom (2014) observes that the volatility of past measures – as captured by a standard deviation – has been the most frequently employed uncertainty measure (e.g., Baillie & DeGennaro, 1990; Bessembinder & Seguin, 1992; French, Schwert, & Stambaugh, 1987). Indeed, greater degrees of dispersion in the previous 'states' for merger policy in an industry indicate that the status of future merger policy is more difficult to forecast and predict. We employ then the standard deviation in the annual number of second-request-investigations in the preceding years as a proxy that reflects the policy uncertainty with respect to the possible future states of merger control in a particular sector. Accordingly, our second main explanatory variable, *Merger-Policy-Uncertainty*, captures the policy uncertainty with respect to the future nature of merger control in a sector faced by investors interested in participating in the U.S. local markets for corporate control.

We also require a series of control variables in order to make stronger causal inferences regarding our hypothesized relationships. We first control for the U.S. enforcement of foreign-investment-review policy, as foreign acquirers will not only need to gain merger-review approval but will also need to navigate the Committee on Foreign Investment in the United States (CFIUS) process (Baltz, 2017). Due to its national-security mission and exemption from 'Freedom of Information Act' requests, CFIUS – unlike the U.S. DOJ & FTC – does not report details on transaction notifications and investigations at the sectoral level, but instead simply reports data that allow calculating an annual pan-industry investigation rate: the number of investigations over the number of transaction notifications. We were, however, able to define which sectors were and were not considered to be of national-security importance; thus, we could apply this economy-side investigation rate to only those sectors scrutinized by CFIUS. Accordingly, our first control variable, *CFIUS-Investigation-Rate*, captures the degree to which CFIUS takes an active

interest in foreign acquisition activities. The expectation is that the application of CFIUS investigations will negatively affect foreign-acquirer presence in the U.S. local markets for corporate control.

A great deal of IB literature (e.g., Delios & Henisz, 2000; Liesch et al., 2011; Rivoli & Salorio, 1996) holds that experience matters in cross-border investment activities. Indeed, our theoretical priors are based on foreign acquirers being characterized by liabilities, deficiencies and information asymmetries as compared to domestic acquirers. That said, given an amount of experience by foreign acquirers in a particular host-country with respect to the merger-review process, these foreign acquirers will become if not native – at least better – in their ability to navigate the merger-review process. We accordingly control for foreign-acquirer experience in the United States by including a measure that captures the percentage of foreign acquirers with a previous U.S. acquisition experience in the five preceding years (hereafter referred to as *Foreign-Acquirer-Experience*). The expectation is that foreign-acquirer experience will positively affect foreign-acquirer presence in the U.S. local markets for corporate control.

The antitrust deterrence literature (e.g., Clougherty & Seldeslachts, 2013; Deloitte & Touche, 2007; Seldeslachts et al., 2009) finds that merger-policy enforcement negatively affects domestic M&A activity, as antitrust also represents an impediment to domestic investors even if such deterrence effects are more substantial for foreign investors. Accordingly – and analogous to the concept of foreign-acquirer-experience – the experience exhibited by the domestic acquirers active in a particular industry might also affect foreign-acquirer presence in a particular industry. Yet the prior here would be that domestic-acquirer-experience negatively affects foreign-acquirer-presence in U.S. sectoral M&A markets, as a higher degree of experienced domestic-investor activity would seemingly crowd out the ability of foreign investors to take part in these local M&A markets. We accordingly control for domestic-acquirer experience by including a measure that captures the percentage of domestic acquirers with a previous U.S. acquisition experience in the five preceding years (hereafter referred to as *Domestic-Acquirer-Experience*). The expectation is that domestic-acquirer experience will negatively affect foreign-acquirer presence in the U.S. local markets for corporate control.

The characteristics of foreign investors might also influence the degree to which foreign acquirers are present in the U.S. sectoral markets for corporate control. First, the degree to which a sector is characterized by foreign investment from nations viewed as ‘unfriendly’ by U.S. residents would suggest that the sector is less important in terms of national security. Furthermore, unfriendly-nation foreign investors involve an increased-demand effect, as this would increase the potential set of foreign investors interested in acquiring U.S. firms. As such, both of these mechanisms would indicate a higher foreign-acquirer presence in sectors experiencing higher degrees of interest by unfriendly-nation investors. We accordingly control for the degree to which unfriendly nations participate in the foreign acquisition activities taking place in a sector (hereafter referred to as *Unfriendly-Acquirer-Participation*). In addition to unfriendly-acquirer participation in U.S. M&A markets, emerging-market firms have increasingly participated in cross-border investment activities over the last twenty years. The participation of these firms in local M&A markets would also seemingly involve an increased-demand effect, as these investors increase the set of foreign investors interested in acquiring U.S. firms. We accordingly control for the degree to which emerging-market firms participate in the foreign acquisition activities taking place in a sector (hereafter referred to as *Emerging-Acquirer-Participation*). The expectation is that both of these controls – emerging-acquirer participation and unfriendly-acquirer participation – positively affect foreign-acquirer presence in the U.S. local markets for corporate control.

A number of scholars (e.g., Grosse & Trevino, 2005; Vadlamannati, 2012) have pointed out that larger markets tend to attract greater foreign-investment activities. While the pre-existing empirical literature often considers market size to be a determinant of cross-border investment activities in country-level FDI analysis, these concepts regarding the importance of scale are transferable to sectoral markets. Accordingly, we also control for the size of an industrial sector by employing U.S. BEA’s data on the economic activity taking place in a sector as captured by the production of new goods and services less intermediate inputs (hereafter referred to as *Industry-Value-Added*). The expectation is that industry-value-added will positively affect foreign-acquirer presence in the U.S. local markets for corporate control.

There are also priors in the literature with respect to foreign investors being particularly interested in U.S. sectors that exhibit high levels of R&D and high degrees of college workers, as foreign investors often seek learning opportunities in these particular sectors (Hitt, Li, & Xu, 2016). We accordingly control for the R&D intensity of a sector by employing a measure of R&D expenditures with respect to the gross output in the industrial sector (hereafter referred to as *Industry-R&D*). Furthermore, we control for the degree to which a sector intensively uses skilled labor by employing a measure of the expenditures on college workers with respect to expenditures on all workers (hereafter referred to as *Industry-Skilled-Labor*). While these two control constructs involve overlapping priors with respect to the motivations of foreign investors, we include three additional controls (profit rate, tax rate and HHI) that do not involve priors from the pre-existing literature with respect to foreign-acquirer presence, though their inclusion strengthens the model specification and allows for stronger causal inferences. First, we control for the degree to which a sector is characterized by profitability by taking the gross operating surplus (i.e., gross output less the cost of intermediate goods, services, and employees) and dividing by the value-added in the sector (hereafter referred to as *Industry-Profit-Rate*). Second, we control for the degree to which a sector is characterized by a high-tax burden by measuring the taxes on production and imports, less subsidies, and then dividing by the value-added in the sector (hereafter referred to as *Industry-Tax-Rate*). Third, we control for the market concentration by employing the Compustat data to calculate the Herfindahl-Hirschman Index (hereafter referred to as *Industry-HHI*).

Table 1 provides information on the descriptions and the data source for all of the variables employed in our regression estimations. Table 2 reports descriptive statistics (means, standard deviations, minimums, and maximums) for all of the variable constructs based on the 563 observations employed in our regression estimations. Furthermore, Table 3 reports a correlation matrix where pairwise-correlation coefficients are reported for all variables. While industry-R&D rightly exhibits a pairwise correlation of 0.54 (slightly over the 0.5 benchmark for multi-collinearity concern) with industry-skilled-labor (skilled labor is essential to R&D in a sector), none of the other pairings between the control constructs – i.e., *CFIUS-Investigation-Rate*, *Foreign-Acquirer-Experience*, *Domestic-Acquirer-Experience*, *Unfriendly-*

Acquirer-Participation, *Emerging-Acquirer-Participation*, *Industry-Value-Added*, *Industry-Profit-Rate*, *Industry-Tax-Rate*, and *Industry-HHI* – manifest a correlation above that benchmark. Furthermore, ancillary VIF and collinearity diagnostics indicate that the variance in the estimators is not substantially affected by the particular correlation between industry-R&D and industry-skilled-labor.

 Tables 1, 2 and 3 go about here

Estimation Strategy

In following through on our theoretical priors, we aim to empirically investigate whether merger-policy risk and uncertainty disproportionately deter the presence of foreign acquirers in the local markets for corporate control. In doing so, we are able to employ panel-data techniques in our empirical testing. While we estimate a few different model specifications to establish robustness, our fullest regression specification takes the following form:

$$\begin{aligned}
 \text{Foreign-Acquirer-Presence}_{it} = & \beta_0 + \beta_1 \text{Merger-Policy-Risk}_{\sum_{k=1}^2 t-k} + \beta_2 \text{Merger-Policy-Uncertainty}_{\sum_{k=1}^5 t-k} \\
 & + \beta_3 X_{it-1} + \alpha_i + w_t + \varepsilon_{it}
 \end{aligned} \tag{1}$$

where the subscripts i and t respectively stand for industry and year, and k allows for convenient expression. Vector X refers to the series of lagged control constructs where lagging mitigates concerns with respect to reverse causality and simultaneity. The term (α_i) refers to industry-specific fixed effects; thus, we control for time-invariant industry-specific heterogeneity. The term (w_t) refers to time-specific fixed effects; thus, we control for yearly shocks and trends that are common across industries.

Furthermore, ε_{it} reflects an idiosyncratic error term. Per common practice with panel data, we will also employ robust standard errors clustered on the industry (Baum, Nichols, & Schaffer, 2011).

The merger-policy-risk construct involves taking the twice-lagged sum of second-request investigations and dividing by the twice-lagged sum of horizontal M&As in a particular industrial sector. Accordingly, we consider whether the investigation rate from the prior two years affects foreign-acquirer presence in the current year. In capturing merger-policy risk in this manner, we follow precedent in the

merger-policy deterrence literature where enforcement actions are considered to involve a two-year window in terms of benchmarking by market participants.⁴ In support of this approach, the FTC considers its enforcement efforts to involve a two-year window in terms of benefits (Davies & Majumdar, 2002). As an aside, our calculation of the parallel CFIUS-investigation-rate is conducted in an identical manner where the lagged two-year investigation rate is employed for this control construct.

The merger-policy-uncertainty construct involves calculating the standard deviation for the annual number of second-request-investigations taking place in the particular industrial sector over the preceding five-year period. Accordingly, we consider whether volatility in the investigation activity from the prior five years affects foreign-acquirer presence in the current year. While the pre-existing empirical literature provided strong priors with respect to the two-year window for benchmarking the probability calculation involved with merger-policy-risk, Bloom (2014) underscores that there are few priors and data with respect to the appropriate time horizon for uncertainty measures. It seemed apparent to us that capturing uncertainty should extend beyond the lagged two years for calculating risk probabilities, but it was an open question as to the length of the appropriate time horizon. While the reported empirical results are based on considering the uncertainty in the various states for sector-level merger policy over the preceding five years, unreported empirical tests based on time horizons of three and four preceding years yield virtually identical empirical results.

The above methodological practices – employing the appropriate fixed effects for our sector-level data and lagging the explanatory constructs – directly address the endogeneity issue, which according to Casson, Della Giusta, and Kambhampati (2010) has plagued the literature on country-level institutions and economic activities. Yet one final econometric issue involves the fact that the dependent variable in the equation – foreign-acquirer-presence – exhibits a degree of left censoring and a slight degree of right censoring. The left censoring involves the clustering of zeros on the left side of the distribution for the dependent construct that customarily demands the appropriateness of a left-side Tobit estimation (Tobin, 1958); thus, we will undertake a one-sided Tobit estimation in order to correct for the obvious left censoring. The additional right censoring involves some clustering of ones on the right side of the

distribution for the dependent construct, and this calls for the appropriateness of a two-sided Tobit estimation (Long, 1997); thus, we will also undertake a two-sided Tobit estimation in order to correct for the presence of both left and right censoring.⁵

With the above econometric issues in mind, all of our regression models involve the appropriate sector-specific and year-specific fixed effects while undertaking a Tobit estimation that corrects for left censoring. Regression model 1 represses the explanatory constructs of principal interest and simply reports the control variables in order to demonstrate the model specification. Regression model 2 independently introduces the merger-policy-risk construct, while regression model 3 independently introduces the merger-policy-uncertainty construct. Regression model 4 reflects the full model specification (eq. 1) where the two-main explanatory constructs, merger-policy-risk and merger-policy-uncertainty, are nested and the appropriate fixed effects are employed in a one-sided Tobit estimation that corrects for left censoring. Finally, regression model 5 is identical to model 4 with the exception that it involves a two-sided Tobit estimation that corrects for both left and right censoring.

Empirical Results

Table 4 reports the empirical results for our five regression models. The pseudo R-squares for the five Tobit estimations (0.350, 0.353, 0.351, 0.354, and 0.329 respectively across the five models) indicate that the regression equation is reasonably-well specified. It is important to highlight that pseudo R-squares tend to be systematically lower than standard R-square values (McFadden, 1979). In addition to the goodness-of-fit statistics, the control variables also generally conform to expectations which also indicates a well-specified regression equation. Before considering the results for the two variables of primary interest in detail, we first discuss the results for the specific control variables in our regression specification. In light of the consistency of the empirical results across the five different model specifications, we take a variable-by-variable approach in discussing the results.

Table 4 goes about here

Evident from all-five model estimations is that CFIUS-investigation-rate, foreign-acquirer-experience, domestic-acquirer-experience, unfriendly-acquirer-participation, emerging-acquirer-participation, industry-value-added, industry-R&D, industry-skilled-labor, industry-profit-rate, industry-tax-rate, and industry-HHI all significantly affect the relative presence of foreign acquirers in the sectoral markets for corporate control.

- First, industries characterized by higher levels of CFIUS investigation activity tend to experience lower foreign-acquirer presence in subsequent years, as the coefficient estimate is statistically significant and negative in all-five model estimations. In terms of economic significance, a one-standard-deviation increase in CFIUS-investigation-rate would lead on average to a 1.2(2.0) percentage point decrease in foreign-acquirer-presence based on the more (less) conservative empirical results in Model 1(4).
- Second, industries characterized by higher levels of foreign-acquirer experience tend to have higher participation rates for foreign acquirers in the local M&A markets, as the coefficient estimate is statistically significant and positive in all-five model estimations. In terms of economic significance, a one-standard-deviation increase in foreign-acquirer-experience would lead on average to a 6.2(7.0) percentage point increase in foreign-acquirer-presence based on the more (less) conservative empirical results in Model 3(5).
- Third, industries characterized by higher levels of domestic-acquirer experience tend to have lower participation rates for foreign acquirers in the local M&A markets, as the coefficient estimate is statistically significant and negative in all-five model estimations. In terms of economic significance, a one-standard-deviation increase in domestic-acquirer-experience would lead on average to a 1.3(1.7) percentage point decrease in foreign-acquirer-presence based on the more (less) conservative empirical results in Model 2(5).
- Fourth, industries characterized by higher levels of unfriendly-acquirer participation tend to have higher participation rates for foreign acquirers in the local M&A markets, as the coefficient estimate

is statistically significant and positive in all-five model estimations. In terms of economic significance, a one-standard-deviation increase in unfriendly-acquirer-participation would lead on average to a 1.7(2.6) percentage point increase in foreign-acquirer-presence based on the more (less) conservative empirical results in Model 1(5).

- Fifth, industries characterized by higher levels of emerging-acquirer participation tend to have higher participation rates for foreign acquirers in the local M&A markets, as the coefficient estimate is statistically significant and positive in all-five model estimations. In terms of economic significance, a one-standard-deviation increase in emerging-acquirer-participation would lead on average to a 0.2(0.4) percentage point increase in foreign-acquirer-presence based on the more (less) conservative empirical results in Model 1(4).
- Sixth, industries characterized by higher levels of value-added tend to experience higher foreign-acquirer presence in subsequent years, as the coefficient estimate is statistically significant and positive in all-five model estimations. In terms of economic significance, a one-standard-deviation increase in industry-value-added would lead on average to a 2.4(4.3) percentage point increase in foreign-acquirer-presence based on the more (less) conservative empirical results in Model 1(4).
- Seventh, industries characterized by higher levels of R&D expenditures tend to experience higher foreign-acquirer presence in subsequent years, as the coefficient estimate is statistically significant and positive in all-five model estimations. In terms of economic significance, a one-standard-deviation increase in industry-R&D would lead on average to a 2.3(3.1) percentage point increase in foreign-acquirer-presence based on the more (less) conservative empirical results in Model 2(3).
- Eighth, industries characterized by higher levels of skilled labor tend to experience lower foreign-acquirer presence in subsequent years, as the coefficient estimate is statistically significant and negative in all-five model estimations. In terms of economic significance, a one-standard-deviation increase in industry-skilled-labor would lead on average to a 11.0(13.0) percentage point decrease in foreign-acquirer-presence based on the more (less) conservative empirical results in Model 1(5).

- Ninth, industries characterized by higher profit rates tend to experience lower foreign-acquirer presence in subsequent years, as the coefficient estimate is statistically significant and negative in all-five model estimations. In terms of economic significance, a one-standard-deviation increase in industry-profit-rate would lead on average to a 5.3(5.7) percentage point decrease in foreign-acquirer-presence based on the more (less) conservative empirical results in Model 2(5).
- Tenth, industries characterized by higher tax burdens tend to experience lower foreign-acquirer presence in subsequent years, as the coefficient estimate is statistically significant and negative in all-five model estimations. In terms of economic significance, a one-standard-deviation increase in industry-tax-rate would lead on average to a 18.3(19.0) percentage point decrease in foreign-acquirer-presence based on the more (less) conservative empirical results in Model 1(4).
- Lastly, the market-concentration construct (industry-HHI) indicates that industries characterized by higher concentration tend to experience higher foreign-acquirer presence in subsequent years after controlling for merger investigations. The coefficient estimate for industry-HHI is statistically significant and negative (positive) in model 1 (models 2-5) which suggests that industry-HHI proxies for the tenor of merger policy when that policy is not controlled for. Indeed, it stands to reason that merger-policy scrutiny will be higher in industries characterized by higher concentration levels (Neven, et al., 1998). In terms of economic significance, a one-standard-deviation increase in industry-HHI would lead on average to a 0.1(1.6) percentage point increase in foreign-acquirer-presence based on the more (less) conservative empirical results in Model 3(5).

We can turn now to discussing the empirical results for the two variables of principal interest; i.e., the impact of merger-policy-risk on foreign-acquirer-presence (H1); and the impact of merger-policy-uncertainty on foreign-acquirer-presence (H2). In support of the first hypothesis, we find the coefficient estimate for the merger-policy-risk variable to be negative and significant at the 0.1 percent level in all-three regression models where this risk-propensity construct is included (Models 2, 4 & 5). As such, increases in the tendency for antitrust authorities to investigate horizontal transactions in a sector tend to

lead to decreased foreign-acquirer participation in these M&A markets in subsequent years. In terms of economic significance, a one-standard-deviation increase in merger-policy-risk would lead on average to a 3.1(3.4) percentage point decrease in foreign-acquirer presence based on the more (less) conservative results in Model 4(2). The empirical evidence indicates then that foreign investors are deterred more so than domestic investors from engaging in future acquisition activities when antitrust authorities increase the probabilities of incurring an investigation. Thus in line with our first hypothesis, it appears that increases in merger-policy risk negatively affect the relative presence of foreign acquirers in local M&A markets.

In support of the second hypothesis, we find the coefficient estimate for the merger-policy-uncertainty variable to be negative and significant at the 0.1 percent level in all-three regression models where this uncertainty construct is included (Models 3, 4 & 5). As such, sectoral-level volatility in the propensity for antitrust authorities to investigate horizontal transactions tends to lead to decreased foreign-acquirer participation in these local M&A markets in subsequent years. In terms of economic significance, a one-standard-deviation increase in merger-policy-uncertainty would lead on average to a 2.9(3.6) percentage point decrease in foreign-acquirer presence based on the more (less) conservative results in Model 5(3). The empirical evidence consequently indicates that foreign investors are deterred more so than domestic investors from engaging in future acquisition activities when antitrust authorities apply merger policy in a volatile manner from year to year. Thus in line with our second hypothesis, it does appear that increases in merger-policy uncertainty negatively affect the relative presence of foreign acquirers in local M&A markets.

We also engaged in a series of robustness tests – available upon request – to further explore the underlying mechanisms behind our theoretical priors and to establish some of the boundary conditions with respect to our empirical results. First, we found that merger-policy risk deters both experienced and inexperienced foreign acquirers, though the impact on experienced foreign acquirers is larger. Furthermore, merger-policy uncertainty principally acts as a deterrent for inexperienced foreign acquirers. These results suggest that experienced foreign investors benchmark the relevant risk probabilities and

behave in a manner akin to the precepts in the deterrence literature (e.g., Becker, 1968; Ehrlich, 1973). Second, merger-policy uncertainty involves relatively equal deterrence with respect to foreign acquirers from both friendly and unfriendly nations. While merger-policy risk substantially deters foreign acquirers from friendly nations, investors from unfriendly nations (i.e., China and Russia) are attracted by higher degrees of merger-policy risk. This result is in line with recent patterns where investors from emerging markets are reported to be willing to take on risks that investors from developed markets are less willing to take on (e.g., Kumar, 2009; Luo & Tung, 2007). Third, we also considered the effects of merger-policy risk and uncertainty both before and after the 2008 financial crisis. There, we found that the policy-risk effect principally derives from the pre-crisis period, while the policy-uncertainty effect principally derives from the post-crisis period—a result in line with the increasing salience of political and economic uncertainty over the last decade (Bloom, 2014).

DISCUSSION AND CONCLUSION

While competition policy has been largely considered a domestic phenomenon driven by the need to secure the welfare benefits of vigorous domestic competition, a number of observers have recognized that antitrust enforcement can generate consequences for foreign firms considering to invest in a particular host country. The relatively-thin empirical literature on this topic presents mixed findings as to whether antitrust enforcement promotes or deters inward FDI activities (Evenett, 2003; Graham & Warner, 1994). Some scholars find evidence in support of a positive relationship between antitrust and inward FDI (e.g., Bris et al., 2007, 2008; Clarke, 2003; Oliveira et al., 2001), as foreign investors value the level-playing-field aspects of antitrust that mitigate liability of foreignness. Yet other scholars find evidence in support of a negative relationship between antitrust and inward FDI (e.g., Aktas et al., 2007; Dinc & Erel, 2013; Evenett, 2002; Li, 2007), as the application of antitrust might tend to be protectionist in nature.

This debate concerning the relationship between antitrust and foreign investment has long roots, though the relevance of this debate has heightened over the last decade (Carletti, Spagnolo, Caiazza, & Giannetti, 2010; Fingleton, 2009), as observers have noted a rise in recent years of antitrust cases

indicating the presence of economic nationalism. Indeed, findings that the Chinese (Horton, 2016; Zhang & Zhang, 2010) and EC antitrust authorities (Aktas et al., 2007; Dinc & Erel, 2013) – jurisdictions that have experienced substantial gains due to globalization – treat domestic acquirers more leniently than foreign acquirers have led to some sobering assessments. In particular, the concern is that the protectionist enforcement of merger policy reflects a growing skepticism with respects to the benefits of an open policy toward foreign investments. As Hemphill notes, protectionist merger policy represents “nothing less than a frontal assault on foreign investment disguised as merger review” (2010: 146). Moreover, the greater concern is that protectionist antitrust enforcement and growing skepticism with respects to the benefits of open policies toward inward FDI will ultimately result in diminished cross-border investments and reduced globalization of commerce. Thus, it is increasingly important in the contemporary global-business context to be able to confidently establish the relationship between antitrust enforcement and foreign-investment activities.

By considering the impact of merger-policy enforcement on foreign-acquirer participation in local M&A markets at the sector level within the U.S. context, we advance the empirical literature on this topic by improving upon the country-level analysis that has been characteristic of previous work. In order to follow through on the above aims, we employ data on merger-policy enforcement and foreign-acquirer presence in 53 U.S. industrial sectors over the 2002–2017 period. The U.S. context represents a hard case to establish a negative relationship between merger-policy enforcement and foreign-acquirer presence due to the government’s strong institutional commitment to antitrust principles (e.g., Viscusi et al., 1995; White, 2009) and to inward-FDI openness (e.g., Baltz, 2017; Golub, 2009; Grosse & Trevino, 1996; Peng et al., 2008). Employing panel-data econometric techniques that control for the appropriate fixed effects, our empirical results indicate that higher levels of merger-policy risk and merger-policy uncertainty disproportionately deter foreign-acquirer participation in the local markets for corporate control. Accordingly, the application and enforcement of U.S. merger policy contributes to de-globalization in the sense that foreign-investor activity generally decreases more so than domestic-investor activity. Moreover, our empirical results suggest that the enforcement of merger policy in other nations – where

there is likely to be less of a commitment to antitrust principles – will also represent a deterrent to foreign-investment activities.

We are mindful, however, that our study involves several limitations that encourage future research on this topic that could extend our understanding of how merger policy affects foreign-investment activities. First, our data on U.S. merger policy does not allow differentiating investigations of foreign acquirers from investigations of domestic acquirers; thus, we are unable to establish whether foreign investors are disproportionately targeted or held to higher standards as compared to domestic investors. Future empirical work that makes such distinctions will be better able to establish whether it is bias in the application of U.S. merger policy or the asymmetric effects of merger policy on foreign investors that ultimately leads to the disproportional deterrence of foreign acquirers in local M&A markets. Second, antitrust investigations represent a substantial holdup for acquiring firms as they involve costs, delays and uncertainty with respect to when and whether transactions can be achieved. However, it would be healthy for future empirical work to complement our evidence on investigation activities with evidence on the application of structural remedies and prohibitions by antitrust authorities. Third, the control of mergers represents the most-important element of a national commitment to competition policy and is the most salient element with respect to foreign-acquirer activities. Nevertheless, obtaining sector-level data on the other two elements of competition policy – i.e., price collusion and abuse of dominance – would allow factoring the full breadth of this policy and its effect on inward-FDI activities as a whole. Fourth, considering the sector-level relationship between U.S. merger-policy investigations and foreign-acquirer presence involves methodological merits due to the U.S. representing a hard case to establish protectionism in antitrust. Yet, extending this study to other national jurisdictions would certainly be advisable, as it would allow a more-complete factoring of how merger policy affects foreign-acquirer activities in the cross-national context. Fifth, it is certainly proper to match up our sector-level data on merger-policy investigations with the sector-level participation of foreign investors in the local markets for corporate control. That said, future empirical work might be able to consider the impact of sector-level enforcement on transaction-level details akin to the studies (e.g., Delios & Henisz, 2003a, 2003b) that

consider firm-level responses to country-level factors. Sixth, we provide evidence that merger-policy enforcement deters foreign-acquirer participation in local M&A markets; however, increases in merger control may also result in enhanced Greenfield activities if such activities substitute for cross-border acquisitions. Future work that considers such substitutive – or potentially complementary – relationships is certainly called for.

Our empirical results yield policy implications with respect to the enforcement of merger policy and the encouragement of inward-FDI activities. Most obviously, our results indicate that it is lax enforcement of merger control which will generally encourage increased foreign-acquirer participation in local M&A markets. Moreover, our finding a negative relationship between merger-policy investigations and foreign-acquirer presence is consistent with U.S. merger policy being protectionist. Protectionist U.S. merger policy certainly contradicts the spirit behind the consumer-welfare criterion that is written and codified into U.S. antitrust law (Kirkwood & Lande, 2008; Neven & Röller, 2005). Yet we should underscore that our empirical results simply indicate that the merger-review process is protectionist *in effect*, as foreign investors – as compared to domestic investors – are disproportionately deterred by higher levels of merger-policy risk and uncertainty. Our empirical testing does not establish whether foreign investors forsake participation in local M&A markets due to their inherent sensitivity to situations where they lack local information, legitimacy and contacts, or due to their being more-frequently targeted as compared to domestic investors. Put simply, the empirical testing cannot shed evidence on whether U.S. merger-policy enforcement is protectionist in intent.

Finally, our study brings some hard evidence to the literature focusing on how the enforcement of competition policies affects foreign-investor activities. While the pre-existing literature based on country-level studies presents mixed empirical findings, our sector-level empirical analysis grounded in the U.S. context yields strong evidence in favor of merger-policy risk and uncertainty negatively affecting foreign acquirers more so than domestic acquirers. By helping to start define the true relationship between competition policies and inward FDI, we respond to calls by a number of scholars for increased attention to antitrust issues when analyzing foreign investments. The main implication of this paper is then simple

but important: the proliferation of merger policy to over seventy nations in the last few decades has likely deterred foreign-acquirer participation in local M&A markets in the cross-national context for global business and thereby partly contributed to de-globalization.

NOTES

¹ While merger policy generally represents the most-substantial hurdle for foreign investors and price-fixing is a behavioral issue that should not bar access to a market, the recent difficulties for U.S. high-tech firms with the European Commission have involved anti-competitive practices and abuse of dominance. Hence, the rise of ‘winner-take-all’ markets, like in high tech, may increase the salience of this particular element of competition policy for foreign investors.

² Stata does not generally drop panels where the dependent and explanatory variables do not exhibit variation across the panel, though these observations do not affect coefficient estimates when undertaking within-estimations. The rationale behind this Stata practice is that the inclusion of these panel observations allows for more precision in estimation.

³ The Trump administration’s recent attempt to block AT&T’s purchase of Time Warner – a vertical merger – has received a great deal of scrutiny in policy circles for this very reason. If actually driven by anti-competitive concerns, this action by the DOJ would signal a substantial shift in the nature of U.S. antitrust policy; though, others consider the ultimate fate of CNN (a subsidiary of Time Warner) to be the real cause behind DOJ scrutiny. See Kang and de la Merced (2017) for more details.

⁴ For empirical studies in the deterrence literature which employ a similar two-year-lag approach, please see Clougherty et al. (2016); Clougherty and Seldeslachts (2013); and Seldeslachts, Clougherty, and Barros (2009).

⁵ The censored nature of our dependent variable mandates employing Tobit estimations in order to consistently estimate the coefficient estimates (Wooldridge, 2002). The panel nature of our data also requires the inclusion of fixed industry-specific and year-specific effects, yet it is commonly understood that the consistency of such coefficients in the context of panel data has not been established. Greene’s (2004) Monte Carlo experiments indicate, however, that logit and probit estimations are far more vulnerable to such biases as compared to Tobit estimations. In unreported empirical testing, we ran first-differencing models (where the dependent construct takes on a normal distribution) to establish the robustness of our reported empirical results.

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Table 1 Variable descriptions and data sources

Variable	Description and Source
Foreign-Acquirer-Presence	Value of foreign-acquirer horizontal acquisitions of U.S. targets as a percentage of the total value of horizontal acquisitions of U.S. targets. <i>Source:</i> Thomson SDC Platinum Database.
Merger-Policy-Risk	Number of second-request-investigations as a percentage of total horizontal M&A transactions. <i>Source:</i> Annual Reports to Congress on Hart-Scott-Rodino Antitrust Enforcement—U.S. FTC & DOJ.
Merger-Policy-Uncertainty	Standard deviation in the number of annual second-request-investigations in the preceding five years. <i>Source:</i> Annual Reports to Congress on Hart-Scott-Rodino Antitrust Enforcement—U.S. FTC & DOJ.
CFIUS-Investigation-Rate	Number of investigations conducted by CFIUS as a percentage of number of notified transactions to CFIUS. <i>Source:</i> Annual Reports to Congress from the Committee on Foreign Investment in the United States—U.S. Treasury Department.
Foreign-Acquirer-Experience	Percentage of foreign acquirers with a previous U.S. acquisition experience in the preceding five years. <i>Source:</i> Thomson SDC Platinum Database.
Domestic-Acquirer-Experience	Percentage of domestic acquirers with a previous U.S. acquisition experience in the preceding five years. <i>Source:</i> Thomson SDC Platinum Database.
Unfriendly-Acquirer-Participation	Number of horizontal acquisitions of U.S. targets by unfriendly-nation acquirers as a percentage of the total number of foreign-acquirer horizontal acquisitions of U.S. targets. <i>Source:</i> Thomson SDC Platinum Database; YouGov Poll Database.
Emerging-Acquirer-Participation	Number of horizontal acquisitions of U.S. targets by emerging-market (i.e., non-OECD) acquirers as a percentage of the total number of foreign-acquirer horizontal acquisitions of U.S. targets. <i>Source:</i> Thomson SDC Platinum Database.
Industry-Value-Added	Gross output less intermediate inputs (\$tn.). <i>Source:</i> GDP by Industry Dataset from U.S. BEA.
Industry-R&D	R&D capital's contribution to gross output as a percent. <i>Source:</i> GDP by Industry Dataset from U.S. BEA.
Industry-Skilled-Labor	College worker's compensation as a percentage of compensation to all workers. <i>Source:</i> GDP by Industry Dataset from U.S. BEA.
Industry-Profit-Rate	Gross operating surplus as a percentage of value added. <i>Source:</i> GDP by Industry Dataset from U.S. BEA.
Industry-Tax-Rate	Net tax on production & imports as a percentage of value added. <i>Source:</i> GDP by Industry Dataset from U.S. BEA.
Industry-HHI	Herfindahl-Hirschman Index calculation with all available net sales data. <i>Source:</i> Compustat Database from Wharton Research Data Services.

Table 2 Descriptive statistics for the estimation sample

	Obs.	Mean	Std. Dev.	Min	Max
Foreign-Acquirer-Presence	563	0.27	0.34	0.00	1.00
Merger-Policy-Risk	563	0.11	0.18	0.00	1.00
Merger-Policy-Uncertainty	563	0.82	0.72	0.00	4.24
CFIUS-Investigation-Rate	563	0.11	0.17	0.00	0.46
Foreign-Acquirer-Experience	563	0.23	0.28	0.00	1.00
Domestic-Acquirer-Experience	563	0.45	0.11	0.00	0.83
Unfriendly-Acquirer-Participation	563	0.02	0.07	0.00	1.00
Emerging-Acquirer-Participation	563	0.10	0.21	0.00	1.00
Industry-Value-Added	563	0.22	0.27	0.01	2.28
Industry-R&D	563	0.07	0.39	0.00	5.40
Industry-Skilled-Labor	563	0.56	0.48	0.03	3.81
Industry-Profit-Rate	563	0.41	0.21	-1.41	0.93
Industry-Tax-Rate	563	0.06	0.06	-0.08	0.25
Industry-HHI	563	0.11	0.10	0.01	1.00

Table 3 Pairwise correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Foreign-Acquirer-Presence	1.00													
(2) Merger-Policy-Risk	0.01	1.00												
(3) Merger-Policy-Uncertainty	0.05	0.18	1.00											
(4) CFIUS-Investigation-Rate	0.14	0.05	0.25	1.00										
(5) Foreign-Acquirer-Experience	0.17	0.01	0.19	0.12	1.00									
(6) Domestic-Acquirer-Experience	-0.09	0.03	0.03	-0.03	0.10	1.00								
(7) Unfriendly-Acquirer-Participation	0.09	0.04	0.01	0.10	0.01	0.02	1.00							
(8) Emerging-Acquirer-Participation	0.02	-0.01	-0.03	-0.01	-0.01	0.04	0.36	1.00						
(9) Industry-Value-Added	-0.03	-0.06	0.22	0.17	0.20	0.04	-0.05	-0.03	1.00					
(10) Industry-R&D	0.03	-0.06	-0.07	-0.08	0.03	-0.13	0.16	0.01	-0.10	1.00				
(11) Industry-Skilled-Labor	-0.13	-0.12	-0.16	-0.21	-0.05	-0.07	0.004	-0.06	-0.02	0.54	1.00			
(12) Industry-Profit-Rate	-0.03	0.09	0.04	0.28	-0.01	-0.02	-0.02	-0.01	0.11	-0.07	-0.14	1.00		
(13) Industry-Tax-Rate	-0.10	0.01	0.15	0.08	0.07	0.10	-0.01	0.004	0.19	-0.12	-0.19	0.10	1.00	
(14) Industry-HHI	-0.06	0.09	-0.26	-0.21	-0.19	-0.07	-0.07	-0.09	-0.30	0.003	0.24	-0.05	-0.16	1.00

Table 4 Tobit estimation results

	Dependent variable: Foreign-Acquirer-Presence									
	Model 1		Model 2		Model 3		Model 4		Model 5	
Merger-Policy-Risk $\sum_{k=1}^2 t-k$			-0.19	<i>(0.00)</i>			-0.17	<i>(0.00)</i>	-0.18	<i>(0.00)</i>
			<i>(0.01)</i>				<i>(0.01)</i>		<i>(0.01)</i>	
Merger-Policy-Uncertainty $\sum_{k=1}^5 t-k$					-0.05	<i>(0.00)</i>	-0.04	<i>(0.00)</i>	-0.04	<i>(0.00)</i>
					<i>(0.001)</i>		<i>(0.001)</i>		<i>(0.001)</i>	
CFIUS-Investigation-Rate $\sum_{k=1}^2 t-k$	-0.07	<i>(0.00)</i>	-0.09	<i>(0.00)</i>	-0.11	<i>(0.00)</i>	-0.12	<i>(0.00)</i>	-0.10	<i>(0.00)</i>
	<i>(0.01)</i>		<i>(0.01)</i>		<i>(0.01)</i>		<i>(0.01)</i>		<i>(0.02)</i>	
Foreign-Acquirer-Experience $t-1$	0.23	<i>(0.00)</i>	0.23	<i>(0.00)</i>	0.22	<i>(0.00)</i>	0.23	<i>(0.00)</i>	0.25	<i>(0.00)</i>
	<i>(0.002)</i>		<i>(0.003)</i>		<i>(0.002)</i>		<i>(0.003)</i>		<i>(0.003)</i>	
Domestic-Acquirer-Experience $t-1$	-0.14	<i>(0.00)</i>	-0.12	<i>(0.00)</i>	-0.15	<i>(0.00)</i>	-0.13	<i>(0.00)</i>	-0.15	<i>(0.00)</i>
	<i>(0.003)</i>		<i>(0.003)</i>		<i>(0.003)</i>		<i>(0.003)</i>		<i>(0.003)</i>	
Unfriendly-Acquirer-Participation $t-1$	0.24	<i>(0.00)</i>	0.26	<i>(0.00)</i>	0.24	<i>(0.00)</i>	0.26	<i>(0.00)</i>	0.37	<i>(0.00)</i>
	<i>(0.02)</i>		<i>(0.02)</i>		<i>(0.02)</i>		<i>(0.02)</i>		<i>(0.02)</i>	
Emerging-Acquirer-Participation $t-1$	0.01	<i>(0.07)</i>	0.02	<i>(0.01)</i>	0.01	<i>(0.40)</i>	0.02	<i>(0.06)</i>	0.01	<i>(0.26)</i>
	<i>(0.01)</i>		<i>(0.01)</i>		<i>(0.01)</i>		<i>(0.01)</i>		<i>(0.01)</i>	
Industry-Value-Added $t-1$	0.09	<i>(0.00)</i>	0.13	<i>(0.00)</i>	0.14	<i>(0.00)</i>	0.16	<i>(0.00)</i>	0.14	<i>(0.00)</i>
	<i>(0.003)</i>		<i>(0.003)</i>		<i>(0.004)</i>		<i>(0.004)</i>		<i>(0.004)</i>	
Industry-R&D $t-1$	0.07	<i>(0.00)</i>	0.06	<i>(0.00)</i>	0.08	<i>(0.00)</i>	0.07	<i>(0.00)</i>	0.06	<i>(0.00)</i>
	<i>(0.002)</i>		<i>(0.002)</i>		<i>(0.002)</i>		<i>(0.002)</i>		<i>(0.002)</i>	
Industry-Skilled-Labor $t-1$	-0.23	<i>(0.00)</i>	-0.23	<i>(0.00)</i>	-0.23	<i>(0.00)</i>	-0.23	<i>(0.00)</i>	-0.27	<i>(0.00)</i>
	<i>(0.002)</i>		<i>(0.002)</i>		<i>(0.002)</i>		<i>(0.002)</i>		<i>(0.002)</i>	
Industry-Profit-Rate $t-1$	-0.26	<i>(0.00)</i>	-0.25	<i>(0.00)</i>	-0.26	<i>(0.00)</i>	-0.25	<i>(0.00)</i>	-0.27	<i>(0.00)</i>
	<i>(0.003)</i>		<i>(0.003)</i>		<i>(0.003)</i>		<i>(0.003)</i>		<i>(0.003)</i>	
Industry-Tax-Rate $t-1$	-3.05	<i>(0.00)</i>	-3.10	<i>(0.00)</i>	-3.13	<i>(0.00)</i>	-3.16	<i>(0.00)</i>	-3.11	<i>(0.00)</i>
	<i>(0.01)</i>		<i>(0.01)</i>		<i>(0.01)</i>		<i>(0.01)</i>		<i>(0.01)</i>	
Industry-HHI $t-1$	-0.03	<i>(0.00)</i>	0.02	<i>(0.00)</i>	0.01	<i>(0.00)</i>	0.05	<i>(0.00)</i>	0.16	<i>(0.00)</i>
	<i>(0.005)</i>		<i>(0.01)</i>		<i>(0.005)</i>		<i>(0.01)</i>		<i>(0.01)</i>	
Constant	-2.00	<i>(0.00)</i>	-2.01	<i>(0.00)</i>	-2.01	<i>(0.00)</i>	-2.01	<i>(0.00)</i>	-2.07	<i>(0.00)</i>
	<i>(0.001)</i>		<i>(0.001)</i>		<i>(0.001)</i>		<i>(0.001)</i>		<i>(0.002)</i>	
Tobit censoring	Left-sided		Left-sided		Left-sided		Left-sided		Two-sided	
Pseudo R-squared	0.350		0.353		0.351		0.354		0.329	

Robust standard errors clustered at the industry level are below the coefficient estimates and in parentheses; *p* values are to the right in parentheses and italicized. All of the estimations involve 563 observations, as well as industry-specific and year-specific fixed effects.

APPENDIX

Number of observations and means for the three primary variables for the 53 Sectors

Sector Name	Obs.	Mean		
		Foreign-Acquirer-Presence	Merger-Policy-Risk	Merger-Policy-Uncertainty
Farms	8	0	0	0
Oil and gas extraction	14	0.16	0.02	0.31
Mining, except oil and gas	14	0.41	0.20	0.83
Support activities for mining	13	0.35	0.15	1.00
Utilities	14	0.30	0.04	1.07
Construction	8	0.27	0.01	0.22
Food and beverage and tobacco products	14	0.47	0.10	1.15
Textile mills and textile product mills	5	0.40	0	0
Apparel and leather and allied products	6	0.17	0	0
Wood products	12	0.59	0.08	0.26
Paper products	11	0.14	0.10	0.78
Printing and related support activities	4	0.25	0.02	0.36
Petroleum and coal products	11	0.04	0.20	0.43
Chemical products	14	0.43	0.17	2.38
Plastics and rubber products	6	0.20	0.07	0.78
Nonmetallic mineral products	13	0.53	0.32	0.83
Primary metals	9	0.67	0.17	0.62
Fabricated metal products	12	0.49	0.06	0.75
Machinery	11	0.44	0.10	1.06
Computer and electronic products	14	0.37	0.09	1.10
Electrical equipment, appliances, and components	10	0.57	0.07	0.51
Transportation equipment manufacturing	13	0.43	0.08	0.98
Furniture and related products	4	0.37	0	0.22
Miscellaneous manufacturing	14	0.26	0.06	0.92
Wholesale trade	12	0.30	0.07	2.83
Air transportation	10	0.06	0.33	0.77
Water transportation	7	0.62	0.40	0.61
Truck transportation	10	0.15	0.26	0.31
Pipeline transportation	14	0.08	0.10	0.69

Other transportation and support activities	7	0.59	0.20	0.26
Publishing industries, except internet (includes software)	14	0.24	0.09	1.29
Motion picture and sound recording industries	12	0.24	0.24	0.66
Broadcasting and telecommunications	10	0.23	0.13	2.37
Data processing, internet publishing, and other information services	14	0.11	0.15	1.22
Federal Reserve banks, credit intermediation, and related activities	12	0	0.02	0.42
Securities, commodity contracts, and investments	14	0.26	0.04	1.16
Insurance carriers and related activities	13	0.25	0.04	0.75
Funds, trusts, and other financial vehicles	6	0.001	0	0
Real estate	9	0.24	0.11	0.15
Rental and leasing services and lessors of intangible assets	13	0.35	0.07	0.65
Professional, scientific, and technical services	14	0.36	0.06	1.53
Administrative and support services	14	0.39	0.05	0.55
Waste management and remediation services	9	0.20	0.30	0.86
Educational services	8	0.18	0.01	0.22
Ambulatory health care services	13	0.18	0.18	1.19
Hospitals	13	0.02	0.07	1.25
Nursing and residential care facilities	10	0	0	0
Social assistance	4	0.43	0	0
Performing arts, spectator sports, museums, and related activities	6	0.17	0.13	0.15
Amusements, gambling, and recreation industries	9	0.18	0.07	0.60
Accommodation	13	0.06	0.10	0.29
Food services and drinking places	9	0.13	0	0
Other services, except government	10	0.19	0.3	0.64
Total	563	0.27	0.11	0.82