Organization Science

Publication details, including instructions for authors and subscription information:
http://pubsonline.informs.org

How Inductive and Deductive Generalization Shape the Guilt-by-Association Phenomenon Among Firms: Theory and Evidence

Ivana Naumovska, Edward J. Zajac

To cite this article:
Ivana Naumovska, Edward J. Zajac (2022) How Inductive and Deductive Generalization Shape the Guilt-by-Association Phenomenon Among Firms: Theory and Evidence. Organization Science 33(1):373-392. https://doi.org/10.1287/orsc.2021.1440

http://pubsonline.informs.org/journal/orsc

ORGANIZATION SCIENCE
Vol. 33, No. 1, January–February 2022, pp. 373–392
ISSN 1047-7039 (print), ISSN 1526-5455 (online)

How Inductive and Deductive Generalization Shape the Guilt-by-Association Phenomenon Among Firms: Theory and Evidence

Ivana Naumovska,[a] Edward J. Zajac[b]

[a] Entrepreneurship and Family Enterprise Department, INSEAD, Singapore, 138676 Singapore; [b] Management and Organizations Department, Kellogg Business School, Northwestern University, Evanston, Illinois 60208

Contact: ivana.naumovska@insead.edu, https://orcid.org/0000-0001-8565-3649 (IN); e-zajac@kellogg.northwestern.edu (EJZ)

Received: March 9, 2019
Revised: December 19, 2019; May 28, 2020
Accepted: September 10, 2020
Published Online in Articles in Advance: May 4, 2021

https://doi.org/10.1287/orsc.2021.1440

Abstract. This study advances and tests the notion that the phenomenon of guilt by association— whereby innocent organizations are penalized due to their similarity to offending organizations— is shaped by two distinct forms of generalization. We analyze how and why evaluators' interpretative process following instances of corporate misconduct will likely include not only inductive generalization (rooted in similarity judgments and prototype-based categorization) but also deductive generalizing (rooted in evaluators' theories and causal-based categorization). We highlight the role and relevance of this neglected distinction by extending guilt-by-association predictions to include two unique predictions based on deductive generalization. First, we posit a recipient effect: if an innocent organization falls under a negative stereotype that causally links the innocent firm with corporate misconduct, then that innocent firm will suffer a greater negative spillover effect, irrespective of its similarity to the offending firm. Second, we also posit a transmission effect: if the offending firm falls under the same negative stereotype, then the negative spillover effect to other similar firms will be lessened. We also analyze how media discourse can foster negative stereotypes, and thus amplify these two effects. We find support for our hypotheses in analyses of stock market reactions to corporate misconduct for all U.S. and international firms using reverse mergers to gain publicly traded status in the United States. We discuss the implications of our theoretical perspective and empirical findings for research on corporate misconduct, guilt by association, and stock market prejudice.

Keywords: corporate misconduct • guilt by association • generalization • stigma • organizational categories • reverse mergers • Chinese firms • stock market

Introduction

An important finding in organizational research is that specific instances of corporate misconduct generate negative evaluations affecting not only the offending organization, but also innocent organizations that resemble the offender (Barnett and King 2008, Jonsson et al. 2009, Paruchuri and Misangyi 2015). Although this phenomenon is often labeled "guilt by association," the word "association" refers not to firms associating with each other, but rather third-party evaluators engaging in the socio-cognitive process of associating firms based on shared category membership, and then generalizing misconduct from the offending firm to innocent firms. While this process of association is rarely made explicit, it is typically conceptualized in terms of categories and operationalized in terms of organizational similarity (such as common industry membership). Categories as judgment devices provide a cognitive lens that enables generalized evaluations of organizations on the basis of Their similarity (Porac et al. 1989, Durand and Paolella 2013, Vergne and Wry 2014).

Scholars have examined guilt by association in the context of innocent firms experiencing negative stock market valuations due to their shared industry membership with a firm accused of financial misconduct (Gleason et al. 2008, Goldman et al. 2012, Paruchuri and Misangyi 2015, Naumovska and Lavie 2021). Here, investors are thought to mete out the guilt-by-association effect based on their belief that a specific instance of misconduct indicates that industry peers may have engaged in similar misconduct. Again, though the specific generalization process that shapes such spillovers is rarely made explicit in these empirical studies,

theorists have sought to explain spillovers by suggesting a sensemaking process whereby evaluators "simplify their analyses by using mental classifications of organizational forms" (Yu et al. 2008, pp. 453–454), where similar organizational forms are typically equated with industry categories.

Although prior research suggests that evaluators may project a single firm's misconduct onto an entire category of innocent firms of the same organizational form as the offending firm, there remains considerable ambiguity as to the presumed mechanism(s) underlying this projection. We seek to address this issue by advancing and testing a more nuanced perspective on the generalization process(es) underlying the guilt-by-association phenomenon. To this end, we theorize how the strength and direction of negative spillovers will be shaped by a combination of inductive and deductive generalization processes, and we also connect these two fundamental types of generalization to prototype-based and causal-based categorization processes (Durand and Paolella 2013). We suggest a parallel between inductive generalization and categorization based on prototypes or "family resemblances" (Rosch and Mervis 1975). Prototype-based categorization represents an inductive form of generalizing that, in the context of corporate misconduct and guilt by association, starts with observing the specific offender (the prototype) and then projecting a generalized negative judgment to innocent organizations that resemble the offender. An example of inductive generalization and prototype-based categorization is found in the study by Jonsson et al. (2009) on misconduct by a Swedish insurance firm, where those industry peers sharing more features/properties with the accused firm (the prototype) also experienced more severe negative spillovers, even though the properties were not causally related to the misconduct.

Our theoretical framework extends beyond such inductive generalization to include the possibility of deductive generalization. More specifically, we suggest that evaluators hold theories about causal relations between properties that can affect the direction of negative spillovers beyond what is assumed by inductive generalization and prototype-based categorization. Whereas inductive generalization starts with a blank slate about the causal factors of a specific instance of corporate misconduct and moves to a generalization based on similarity, deductive generalization starts with a pre-existing theory about what drives misconduct and applies that theory in the process of generalization (e.g., applying a stereotype that sees firms with certain properties as more likely to commit misconduct). Note that we are emphasizing evaluators' pre-existing theories, not theories formed from evidence regarding the misconduct in question. This alternative deductive view of generalization also has a parallel in the categorization literature—namely, causal-based categorization, whereby evaluators hold a (potentially inaccurate) theory that causally links an object's observable property (e.g., race) to an unobservable property (e.g., criminal behavior) (Murphy and Medin 1985, Rehder 2003a, b).

In this study, we analyze the extent to which the guilt-by-association phenomenon is shaped by evaluators engaging in causal-based categorization and deductive generalization. Our framework for analysis draws from social-psychological research on stereotyping, which considers how evaluators begin with a general reference about a social category (e.g., race or nationality) and use causal reasoning to make generalizations about unobservable properties of members of that category (Macrae et al. 1995, Bodenhausen and Macrae 1998). In particular, we advance two unique predictions based on deductive generalization, which we label a *recipient effect* and a *transmission effect*. The former predicts that when an innocent firm falls under a negative stereotype that causally links it with corporate misconduct, that innocent firm will suffer greater guilt by association, irrespective of its categorical similarity to the offending firm. The latter predicts that when the offending firm falls under such a negative causal stereotype, the guilt by association to categorically similar innocent firms will be lessened, given evaluators' tendency to ascribe greater blame to the offender's stereotype-congruent identity than to other properties that would activate similarity judgments.

Our research design follows past studies on categorization and guilt by association that theorized interpretative processes and inferred their existence from observed empirical effects (e.g., Jonsson et al. 2009, Durand and Vergne 2015). Specifically, we tested for the coexistence of inductive and deductive generalization using a rich data set on firms that had used reverse mergers (RMs) to attain publicly traded status in U.S. financial markets from 2001 to 2016. In an RM, a private company merges with a publicly traded empty shell, thus achieving publicly traded status quickly and inexpensively (Feldman 2009, Naumovska et al. 2021). From 2001 to 2016, a variety of domestic (i.e., U.S.) and international firms pursued RMs, including firms from China that carried significant negative stereotypes. The data set includes all instances where an RM firm was accused of accounting irregularities by U.S. financial market regulators, along with the subsequent stock market valuations of accused and innocent RM firms.[1]

Thus, our study examines guilt by association following corporate misconduct, where financial markets engage in inductive generalization and prototype-based categorization using a specific instance of RM misconduct to generalize to innocent RM

firms sharing properties with the offending firm (e.g., the same RM form, same industry, and same country of origin). We examine how financial markets engage in deductive generalization, and how causal-based categorization—rooted in a negative stereotype of Chinese firms—may further shape the magnitude and direction of negative spillovers. We also analyze how these stereotypes could be fostered by the media and thus amplify the deductive generalization effect. We also conduct a number of supplementary analyses to examine the robustness of our findings and their interpretation. Finally, we discuss the implications of our theoretical perspective and findings for research on corporate misconduct, guilt by association, stigma, and prejudice in financial markets.

Theory

Guilt by Association and Inductive vs. Deductive Generalization

Prior research provides strong evidence of reputational penalties following an accusation of corporate misconduct. It is unsurprising that offending firms experience negative reactions such as financial market devaluation (King and Soule 2007, Karpoff et al. 2008, Sharkey 2014) and withdrawal by transaction partners (Jensen 2006, Sullivan et al. 2007). It is more surprising that such penalties have been shown to spill over to innocent firms judged to be of the same form as the offending firm, typically conceptualized and operationalized in terms of firms in the same industry (Jonsson et al. 2009, Yue et al. 2013, Durand and Vergne 2015, Naumovska and Lavie 2021). An explanation for this effect rests on the notion that evaluators, in seeking to make sense of the organizational environment, rely on similarities and use prototype-based categorization (Durand and Paolella 2013, Hsu and Elsbach 2013). This is in line with research in cognitive psychology: "members of a category come to be viewed as prototypical of the category as a whole in proportion to the extent that they bear a family resemblance to (have attributes which overlap those of) other members of the category" (Rosch and Mervis 1975, p. 575). At the core of this approach lies the idea that a higher degree of similarity between a base (the offending firm) and a target (the innocent firm) would lead to greater generalization from the base to the target (i.e., greater guilt by association transmitted from the accused firm and received by the innocent firm).

Although one cannot deny the relevance of similarity judgments in categorization and generalization, the invocation of categories in guilt-by-association studies has tended to presume such judgments (e.g., same industry) as the sole interpretative process in the enactment of a category (e.g., Paruchuri and Misangyi 2015). This is unsurprising, given the familiarity and seeming objectivity of the prototype-based doxa used to define and delineate firms into industries and subindustries (e.g., strategic groups based on product niches). However, we suggest there is a need to more closely examine the implicit assumption underlying prototype-based categorization, that evaluators come to the process of categorization and generalization with an essentially blank slate (i.e., with no or weak prior theories about the causal factors between certain properties) (Smith et al. 1993). We propose that evaluators often have pre-existing theories about the causal relations between properties, and such theories trigger a deductive generalization process that may diverge from similarity-based judgments. Our emphasis on the importance of deductive generalization processes corresponds to Durand and Paolella's (2013) suggestion for organizational scholarship to consider well-established findings in cognitive psychology showing that evaluators' theories and causal explanations shape categorization processes (e.g., Ahn 1999, Rehder and Hastie 2001, Rehder 2003a, b).

As alluded earlier, we build on cognitive psychology to suggest that causal-based categorization does not presume evaluators come with a blank slate. Rather, a better understanding of evaluators' categorization judgments requires consideration of their prior knowledge and theories about causal links between properties/features. A commonly used example in cognitive psychology is that people have a causal understanding that birds have wings and that birds fly, and the causal association between these two properties of birds implies that—besides many other properties that could characterize birds (e.g., beaks)—birds fly because they have wings. As a result, birds with smaller wings, such as penguins, are less likely to be classified as members of the "bird" category than birds such as robins, which have more developed wings. In this way, category membership is defined by evaluators' causal reasoning (Rehder 2003a, b). We suggest that such causal reasoning (whether accurate or inaccurate) gives rise to a generalization process that is deductive in nature.

Returning to the discussion of organizations, consider the use of industry and country of origin as bases for categorizing firms. If we take the example of Porac et al. (1989) of the knitwear industry, the subordinate category "Scottish knitwear firms" is invoked to imply a greater level of similarity than the superordinate industry category "all knitwear firms." This suggests a prototype-based categorization process. Imagine the generalization process that would likely occur if evaluators were told, "Italian knitwear firm Y has property X," and were then asked, "Is there a difference in the likelihood of other Italian knitwear firms having X, relative to Scottish knitwear firms having X?" If the evaluators did not know anything

about property X and how it is related to Scottish or Italian firms, they would inductively generalize the blank property X more to other Italian firms than to Scottish firms. Similarly, if one group of evaluators was told, "Italian knitwear firm Y has property X," and another group of evaluators was told, "Scottish knitwear firm Z has property X," and then both were asked, "What is the likelihood that all other knitwear firms have property X?" the two groups would be expected to be equally likely to generalize property X to the broader category of knitwear firms, given the lack of any prior theories about the distribution of property X across Italian, Scottish, or other knitwear firms.

Note that we are not disputing these predictions that are well established in cognitive psychology and organizational research. Rather, we are highlighting the assumed process of generalization that underlies these predictions: evaluators engage in inductive generalization from a specific offending firm to innocent firms that resemble the offending firm, and the more similar an innocent firm (target) is to an offending one (base), the greater the guilt by association the innocent firm will suffer. Such a prediction is in line with findings in cognitive psychology that evaluators' tendency to generalize a blank property (e.g., property X, for which evaluators have no or weak prior theories and which is not part of their causal reasoning process) increases as a function of the similarity between the base and the target (Sloman 1993, Heit 2000, Rehder 2006).

Next, we introduce the notion of deductive generalization. Consider if the organizational property X is not a blank property but refers to the property of "has engaged in misconduct." Consider further if evaluators have a pre-existing theory linking that property with a firm's country of origin (e.g., evaluators think that since Scots are "known" to be exceedingly frugal, Scottish knitwear firms are more likely to cut corners everywhere they can). In this situation, the evaluators' generalization process following an Italian knitwear firm being accused of misconduct will not follow the same inductive generalization path discussed earlier. Evaluators holding a pre-existing theory about the Scots would be more likely to rely on causal-based categorization and the corresponding deductive generalization. They would therefore infer that if an Italian knitwear firm engaged in misconduct, then a Scottish knitwear firm is even more likely to have also engaged in misconduct.[2]

Note the predictive contrast between inductive and deductive generalizations. In the case of inductive generalization, evaluators rely on similarity (e.g., a stronger generalization from one Italian firm to another Italian firm), given the blank slate regarding the property in question. In the case of deductive generalization, evaluators fall back on a pre-existing theory that connects the firm's country of origin to the property "has engaged in misconduct" (e.g., a stronger generalization from an Italian firm to a Scottish firm). Moreover, in the deductive generalization situation, if the instance of misconduct involved a Scottish (rather than an Italian) firm, the presence of the theory would weaken the generalization across all knitwear firms based on industry similarity, since greater weight would be given to the theory-congruent identity of the knitwear firm (i.e., Scottish). In other words, the misconduct would be attributed more to the firm's "Scottish-ness," than to its "knitwear-ness." Thus, considering the process of deductive generalization offers quite different predictions than the process of inductive generalization.

Which generalization process accounts for the guilt by association resulting from corporate misconduct? As discussed earlier, if evaluators do not have prior theories about a property (i.e., the property is blank), they will rely on similarity judgments and inductive generalization. If, instead, evaluators hold deterministic causal beliefs about a property, this would draw attention away from similarity information, and evaluators will rely on causal reasoning and deductive generalization. However, given that most properties have both blank and nonblank elements, and most causal relationships are not deterministic, generalizations are best accounted for by a model that captures both prototype-based and causal-based categorizations (Kemp et al. 2007). We suggest that such a model would best account for generalizations of corporate misconduct, since evaluators have incomplete theories about the causal factors of corporate misconduct, and the causal relationships are not deterministic (Zahra et al. 2005). In other words, given that corporate misconduct is both a blank and a nonblank property, the guilt-by-association phenomenon would be best captured by the inductive and deductive generalization pathways taken together.

Although past work has established the inductive generalization pathway, the neglected deductive generalization pathway merits attention, since evaluators' theories (whether accurate or inaccurate) provide a lens through which evaluators make generalizations about objects' unobserved properties (Rehder 2003a, b). As we discuss later, these causal explanations can stem from evaluators' lay theories, such as stereotypes. This use of the term "theory" is in line with Murphy and Medin (1985), and it refers to any of a host of causal explanations or cognitive shortcuts—rather than a complete, organized, scientific account—that can give rise to causal-based reasoning. By considering evaluators' theories, one can analyze how

the process of deductive generalization could strengthen or weaken the guilt by association from an offending firm to an innocent firm.

Stereotypes and Deductive Generalization

Causal knowledge "imposes structure on our beliefs about categories and supports projections that enable people to go beyond the information given" (Rehder and Hastie 2001, p. 323). Such knowledge need not refer to rarefied expertise; rather, it may refer to the common (and naïve) way an evaluator relies on social stereotypes as general category knowledge. Stereotypes take the form of (naïve) theories that interrelate or link properties (Keil 1989), and represent social knowledge that provides a guiding framework for generalizations about the unobservable or unobserved properties of members of a category (Fiske 1998, Wittenbrink et al. 1998, Ridgeway 2011). As such, stereotypes fuel a process of generalization that rests on the human mind's confirmatory nature and causal reasoning (Anderson and Bower 1980, Gavetti 2012). Although stereotypes can be positive or negative (Czopp et al. 2015), they are often viewed in terms of their contribution to social inequalities (Fiske 1998).

In the following section, we discuss how stereotypes affect the strength of guilt by association following an instance of corporate misconduct. We suggest that pre-existing stereotypes linking misconduct to firms' properties will make some innocent firms stronger or weaker recipients of guilt by association, and some offending firms stronger or weaker transmitters of guilt by association.

Context and Hypotheses

We situate and formalize our hypotheses in the context of domestic and international firms sharing the category of having achieved publicly traded status in the United States by way of a reverse merger (RM). This popular route of going public by merging with an empty shell represents a salient category of firms that list on U.S. stock markets (Naumovska et al. 2021). Traditionally, a private firm seeking to go public would engage in an initial public offering (IPO), whereby an underwriter helps the firm to promote and sell its shares to investors. In contrast, the RM process involves the private company merging with a shell company that is already publicly listed, with the formerly private company taking control of the public company through a majority shareholder stake. This process allows the private company to avoid what some view as a cumbersome and expensive IPO process.

RMs in the United States date back to the 1970s and were used sporadically all the way through the 1990s but became increasingly popular in the 2000s. Although domestic U.S. firms comprised the majority of RMs, a large number of foreign firms used RMs to become listed in the United States, with Chinese firms being the largest foreign group of RMs. With this rise of RMs, lingering concerns about these firms' accounting practices became particularly salient. Indeed, the rapid growth of RMs in the 2000s led to an increase in the number of accounting scandals, as RM firms' accounting and disclosure practices were subjected to an increasing volume of enforcement actions and litigations by the U.S. Securities and Exchange Commission (SEC). Moreover, the Public Company Accounting Oversight Board (PCAOB) issued an alert in mid-2010, voicing concerns about the quality of audits of RM firms, and in mid-2011, the SEC issued a warning about investing in firms that went public via an RM. As we discuss in more detail later in describing our data set, a total of 491 RM firms were accused of misconduct in the period from 2006 to 2016.

Although the majority (282) of these 491 RMs were conducted by U.S. firms (with the remainder split between 126 Chinese and 83 other international firms), it is noteworthy that concerns regarding RM misconduct appeared almost exclusively directed at Chinese RM firms. Anecdotally, the strongly negative sentiment against Chinese RM firms was reflected in U.S. media articles with headlines such as, "Beware this Chinese Export" (Alpert and Norton 2010), "China to Wall St.: The Side-Door Shuffle" (Barboza and Ahmed 2011), and "Threats, Lies and Chinese Stocks" (Alpert 2012). Equally explicit was a claim that "American investors these days assume any Chinese company that lists domestically through a reverse merger is a fraud" (Hu and Fei 2012). We also examined this issue in greater depth by content analyzing the business media articles during this period. We found that of the 133 articles in U.S. business media devoted to discussing the RM practice, the vast majority (115 or 86%) made an explicit negative reference to Chinese RM firms, leaving only 18 (14%) that focused on the RM practice without portraying Chinese RM firms as having poor business practices. The notion that Chinese RM firms faced a negative stereotype was further supported by academic research on RMs, which concluded that "contrary to media and regulators' concerns [. . .] Chinese reverse mergers exhibit *higher* financial reporting quality than U.S. and other foreign reverse merger firms" (Pollard 2016, p. 307) (emphasis added).[3] In the following, we consider more specifically how the guilt-by-association phenomenon is shaped by both inductive generalization and deductive generalization.

Inductive and Deductive Generalization

The context of RMs and the singling out of Chinese firms provides an excellent setting to address our predictions about the role of inductive and deductive generalization processes underlying the guilt-by-association

phenomenon. Indeed, corporate misconduct is both a blank and nonblank property, and the guilt-by-association phenomenon is best captured by considering both inductive and deductive generalizations. Thus, in the context of RMs, we expect negative spillovers to result from investors using a combination of inductive generalization (starting from the observation of an offending RM and spilling over to innocent RM firms that are more similar to the offending RM firm) and deductive generalization (starting from a general theory or negative stereotype about the poor quality of Chinese firms and generalizing to innocent Chinese RM firms, irrespective of who the offending RM firms are or the innocent firms' similarity to the offending firm).

In line with the prototype doxa and the corresponding inductive generalization, the more similarities there are between the offending and the innocent firm, the stronger the guilt-by-association effect on the innocent firm (Jonsson et al. 2009, Greve et al. 2010, Durand and Vergne 2015). In our context, the corporate category (RM) and the firms' country of origin appeared as dually relevant aspects of the regulative and media discourse. This suggests that innocent firms of the same corporate category (RM) would experience negative spillovers. With respect to finer-grained similarity driving inductive generalization, we expected that innocent RM firms that share other properties with the offending RM firm (in addition to the corporate category of RM) would be judged even more harshly. Scholars have documented that innocent firms in the same industry as an offending firm suffer more negative spillovers (Paruchuri and Misangyi 2015), a finding in line with inductive generalization that should also hold in the case of RMs. Thus, the baseline effects that prior research and inductive generalization suggest would be as follows: When an RM firm is accused of misconduct, (1) innocent RM firms will suffer negative spillovers, and (2) innocent RM firms that share more properties with the accused RM firm (e.g., being in the same industry, having the same country of origin), will suffer greater negative spillovers.

Deductive Generalization and Recipient Effect

Next, we focus our theorizing on introducing novel hypotheses based on how the negative spillover effect could be shaped by causal-based reasoning and deductive generalizations, rather than prototype-based judgments and inductive generalization. First, we consider how the negative spillover effect can depend on the innocent firms' characteristics. As discussed earlier, a causal-based explanation involves generalizations along a causal property structure, whereby negative spillovers are a function of the extent to which investors consider a property they associate with corporate misconduct to be present in an innocent firm. The expectation about the relationship between an observable property and the unobservable property "has engaged in misconduct" could stem from (naïve) theories such as stereotypes (Murphy and Medin 1985). Thus, the penalties experienced by innocent RM firms would be particularly severe when investors see those innocent firms as fitting a pre-existing stereotype that links their properties and category membership to misconduct. More specifically, the negative spillover associated with instances of RM misconduct would be shaped by deductive generalization, where China as a country of origin evokes causal reasoning that Chinese RM firms are more likely to have engaged in misconduct (e.g., Alpert and Norton 2010, Alpert 2012).

In terms of the specific mechanism by which stereotypes shape judgments, social-psychological research has shown that when multiple attributions are possible, a highly salient stereotyped property can dominate social cognition (Hamilton et al. 1990, Macrae et al. 1995). The heightened salience (i.e., cognitive accessibility) of a negative stereotype implies that attention will be directed toward firms that fall under the stereotype (Macrae et al. 1995, Kang and Chasteen 2009). In the RM context, deductive generalization is fueled by theories that China is a source of misconduct, with societal discourse suggesting that Chinese firms imported toxic practices to the United States and that the fraudulent behavior among RMs is caused by Chinese firms (Vlastelica and Bases 2011, Pollard 2016). Given this negative stereotype associated with China as a country of origin, we suggest a recipient effect, whereby the spread of guilt by association to innocent RM firms following a specific instance of RM misconduct would hit innocent Chinese RM firms harder than innocent non-Chinese RM firms—even when the accused RM firm is not Chinese. In other words, deductive generalization would result in a disproportionately large penalty for innocent Chinese RMs firms, making them suffer greater penalties as recipients of negative spillovers, even when the offending firm is not Chinese, and regardless of the country of origin of the offending firm.

Hypothesis 1. *When an RM firm is accused of misconduct, innocent Chinese (non-Chinese) RM firms will receive greater (lesser) negative spillovers.*

Deductive Generalization and Transmission Effect

Next, we consider how the negative spillover effect can also depend on the offending firm's properties. Organizations, like individuals, derive multiple social categorizations from their multiple properties (e.g., industry, country of origin) (Vergne and Wry 2014). An important aspect of this multidimensionality is the

complexity it creates for evaluators' sensemaking and behavioral attribution when a firm is accused of misconduct. To navigate this complexity, evaluators tend to focus on a single, salient criterion for categorization that fits their theories/stereotypes and dominates their cognition. If cues for other potential properties and categories are noticed, they are likely to be circumscribed and inhibited (Macrae et al. 1995, Bodenhausen and Macrae 1998). For example, Macrae et al. (1995) showed that when a target's ethnicity was salient and confirmed a stereotype, the target's gender was more likely to be ignored.

That is, when evaluators consider a specific instance of corporate misconduct, they may attribute it to different salient properties of the firm—such as its RM form, its industry, or its country of origin—to a different extent. When the offending RM firm is Chinese, evaluators' causal reasoning would lead them to see the offense as attributable to the firm's "Chineseness" more than its "RM-ness," weakening the typical inductive generalization by which other RM firms would suffer guilt by association. It is this causal attribution stemming from the China-related stereotype that shapes the transmission effect. In other words, if the offending RM firm is Chinese, the heightened salience of a negative stereotype (i.e., China as a country of origin) relative to the salience of corporate form (RM) would result in weaker guilt by association of other innocent RM firms. Thus, we propose,—as a specific prediction stemming from the deductive generalization component underlying the guilt-by-association phenomenon— that offending RM firms in a negatively stereotyped category (i.e., Chinese) would be weaker transmitters of negative spillovers to the category of innocent RM firms.

Hypothesis 2. *When the accused RM firm is Chinese (non-Chinese), the negative spillovers transmitted to all other innocent RM firms will be attenuated (amplified).*

The Role of the Media in Fueling Deductive Generalization

Thus far, the framework for considering how deductive generalization shapes the guilt-by-association phenomenon generated two novel hypotheses that suggest an interesting asymmetry of spillover effects: When an innocent RM falls under a negative stereotype, it would be particularly hard hit as a recipient of negative spillovers (Hypothesis 1), and when an offending RM falls under that negative stereotype, the transmission of negative spillover to innocent RM firms would be weaker (Hypothesis 2). Given our emphasis on the likely relevance of deductive generalization to negative spillovers, we next consider how the causal reasoning related to stereotypes may itself be subject to change. Specifically, we focus on how evolving media discourse could strengthen or weaken negative stereotypes (Gorham 2006). In the context of corporate misconduct, past research has established that the media can play an important role in shaping opinions about the event and its resulting consequences (Palmer 2012, Zavyalova et al. 2012, Clemente and Gabbioneta 2017), even when the media coverage is biased (Clemente et al. 2016). We posit that the media can affect the degree of negative stock market spillovers experienced by innocent firms. Such an expectation is in line with research showing that the media and investors take information cues from each other, leading to the spread of consensus between these two communities (Pollock et al. 2008).

Earlier, in suggesting the existence of a negative stereotype facing Chinese RM firms, we provided descriptive data showing the general tendency of U.S. business media coverage of RMs to link Chinese origin with poor business practices, and we contrasted that with later academic research concluding that this negative association was unfounded. In this section, we expand the use of U.S. media discourse to consider how changes in the level of negative discourse about Chinese firms (and China more generally) can affect the spillover effects we predicted in our two earlier hypotheses. With regard to the recipient effect posited in Hypothesis 1, we now add the prediction that any heightening of general anti-China discourse in the media will increase the salience of negative stereotypes about China and thus amplify the already strong negative spillovers that innocent Chinese RM firms receive. With regard to the transmission effect posited in Hypothesis 2, we predict that an increase in anti-Chinese media discourse will further weaken the transmission of negative spillovers to innocent RM firms by intensifying evaluators' tendency to place even greater blame on the offender's Chinese-ness rather than its RM-ness. In other words, we predict that changes in the degree of negative China-related media discourse will act to moderate the relationships hypothesized earlier (Hypothesis 1 and Hypothesis 2) by affecting the salience of Chinese-ness (and the accompanying deductive generalization) associated with the recipient and transmission effects. Hence, we hypothesize the following.

Hypothesis 3. *When an RM firm is accused of misconduct, greater (lesser) negative media coverage of China and Chinese businesses will further amplify (attenuate) the already stronger negative spillovers received by innocent Chinese RM firms (our Hypothesis 1).*

Hypothesis 4. *When a Chinese RM firm is accused of misconduct, greater (lesser) negative media coverage of China and Chinese businesses will further attenuate (amplify) the already weaker negative spillovers transmitted to innocent RM firms (our Hypothesis 2).*

Methods

Data

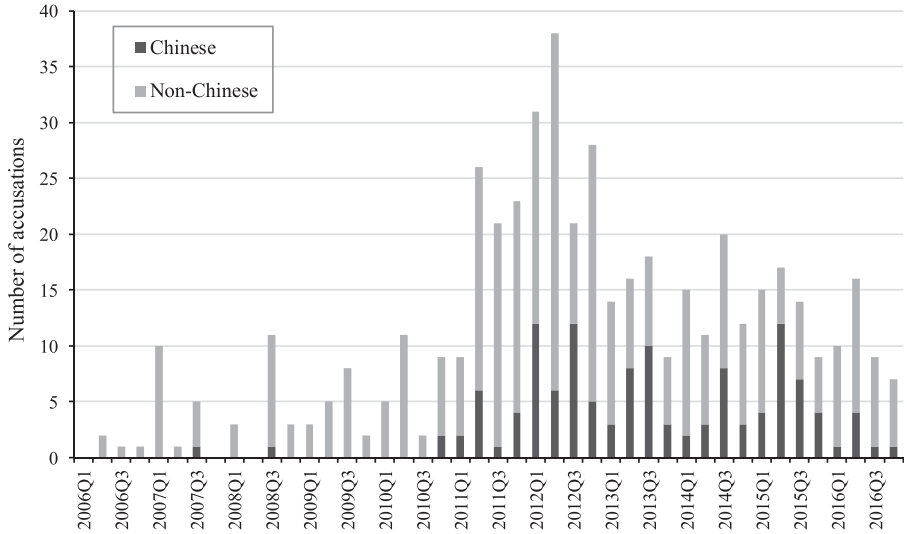
We gathered data on the population of all RMs in the United States from 2001 to 2016. The total number of RMs was 2,306, of which 1,454 were conducted by U.S. firms, 473 by Chinese firms, and 379 by firms from other countries. We created this database using data from Deal Flow Media, by checking for additional RMs using the Securities Data Company (SDC) database on RMs, and by identifying RM announcements in Factiva. We identified RMs in which the target firm was private and the public firm was a shell company (i.e., had no operating activity before the announcement of the merger). We manually examined SEC filings, particularly annual (10-K) and quarterly report (10-Q) and 8-K forms announcing the acquisition. This enabled us to distinguish RMs from standard mergers or acquisitions.

We used the SEC Edgar website to identify all RM firms formally accused of misconduct in the period from 2006 (after the SEC imposed new RM-related regulations) to 2016, and to establish the specific dates of the accusations. We identified 491 firms that faced at least one SEC enforcement action. Of these identified firms, 282 were from the United States, 126 were from China, and 83 were from other countries. Figure 1 shows the distribution of accusations for Chinese and non-Chinese RM firms in the period 2006–2016, on a quarterly basis.

To estimate how a specific accusation against an RM firm triggered a negative spillover to innocent RM firms, we focused on dates with only one accusation of an RM firm, with the aim of isolating the country-of-origin effect of the offending firm. Dates that had multiple accusations of RM firms could not be part of the event study analysis, since multiple events would confound stock market reactions (De Jong and Naumovska 2016, MacKinlay 1997). To examine how the event of an RM firm accusation affected other innocent RM firms' stock market reactions, we gathered share price data from DataStream, since other sources in financial markets research, such as the Center for Research in Security Prices (CRSP) database, did not provide full coverage of firms traded over the counter (OTC). We also used DataStream to collect other firm-level information (market value, earnings, total assets, total debt, exchange listing, and industry). Data on firms auditors came from Audit Analytics and manual retrieval from SEC filings in Edgar. Abnormal stock market return data was available for 1,762 RM firms. For 296 firms there was additional missing data (e.g., earnings, total assets, total debt). In the final data set, we assessed the market reactions of 1,466 RMs corresponding to 147 RM firms' accusation events. Thus, our unit of analysis is the combination of an innocent RM firm and an event of a peer RM firm being accused of misconduct, resulting in 111,264 records of innocent RM firms' stock market reactions.

To collect data on U.S. media coverage of China and Chinese businesses in the period from 2006 to 2016, we used Factiva with the search terms "China" and "Chinese" in the title of the article in the following media sources: *Forbes*, *Newsweek*, *The New York Times*, *The Wall Street Journal*, and *The Washington Post* (Fiss et al. 2012). We collected 8,079 articles.

Figure 1. Distribution of Accusations, for Chinese and Non-Chinese RM Firms, in the Period 2006–2016 on a Quarterly Basis



Finally, we gathered additional data to better describe our empirical context and to conduct supplementary analyses. Specifically, we collected data on the media coverage of RMs using Factiva: Major News and Business Publications: U.S. (excluding press-release wires) from 2006 to 2016. We identified a total of 753 articles that contained any of the terms "reverse merger," "reverse mergers," "reverse acquisition," "reverse acquisitions," "reverse takeover," and "reverse takeovers." Three independent coders and one of the authors read all the articles to ensure that the article had RMs as the main theme, as opposed to simply announcing or mentioning an RM, and coded it for whether the article made reference to allegedly poor accounting practices by Chinese RM firms. This resulted in 133 articles that discussed the RM practice. Finally, we used the SDC database to augment our RM data with data on the Chinese IPOs that took place on U.S. stock exchanges in the period 2001–2016. Using DataStream, we were able to collect stock price data for 183 of these, resulting in a total of 20,714 records of Chinese IPO firms' stock market reactions when an RM was accused of misconduct.

Dependent Variable and Method

Our dependent variable was calculated using the event study method, through which we captured the stock market valuations of the innocent firms surrounding the event day when an RM firm was accused of misconduct by an SEC enforcement action (MacKinlay 1997, De Jong and Naumovska 2016). This allowed us to measure the spillover of the accusation event by examining the stock market responses for the innocent firms. Note that any prior publicly available information (including information on the institutional characteristics of a firm's country of origin) would already be incorporated into a firm's existing stock price, allowing us to properly attribute any change we observed around the day of an RM firm accusation to this new piece of information.

More specifically, we calculated a three-day *cumulative abnormal return* (CAR) starting the day prior to the announcement. The three-day CAR is the sum over the three-day window of the abnormal daily returns (AR_{jt}) of an innocent firm. The day preceding the announcement of the accusation event was included because of possible leakage of information, whereas the day after the announcement was included because some announcements occurred after stock market trading had closed for the day (MacKinlay 1997). We calculated the daily abnormal returns using the market-adjusted model $AR_{it} = R_{it} - R_{mt}$, where R_{it} is the return for firm i on day t, and R_{mt} is the return of the Nasdaq Composite index. We assume a market beta of one for all of the firms, because a lack of historical share price for recently conducted RMs does not allow for any meaningful calculation of betas. This approach reflects the standard methodology used in the IPO and RM literature (e.g., Loughran and Ritter 1995, De Jong and Naumovska 2016).

To test Hypotheses 1–4, we conducted ordinary least squares (OLS) regression analysis using the three-day CAR of the innocent firms as our dependent variable. To examine the extent to which the stock market returns of innocent RM firms related to the announcements of misconduct by a specific RM firm, we estimated the model $CAR_{ij} = \alpha_{ij} + \beta_1 Z_{ij} + \beta_2 X_{ij} + \varepsilon_{ij.}$, where CAR_{ij} is the cumulative abnormal return for the innocent firm i in the three days surrounding the accusation event of a peer RM firm j, Z_{ij} is the vector of control variables, X_{ij} is the vector of independent variables, and ε_{ij} is the error term. Standard errors are robust and based on clustering innocent firm observations.

Independent Variables

To test Hypothesis 1, which posited that innocent Chinese RM firms would be stronger recipients of negative spillovers independent of the offending firm's country of origin, we included a dummy variable to capture when China was the innocent firm's country of origin (*Chinese innocent*). To test Hypothesis 2, which posited that spillovers from Chinese offending RM firms to all innocent RM firms would be weaker, we included a dummy variable to capture when China was the offending firm's country of origin (*Chinese accused*).

To test our two moderating hypotheses (Hypotheses 3 and 4) on how media discourse may amplify the effects posited in Hypotheses 1 and 2, we created a measure of the *China-related media tenor*. Specifically, we used the Linguistic Inquiry Word Count (LIWC) software and its dictionary to determine the positive and negative emotional tone of media articles on China. We identified an article as positive if the ratio of positive affective content to total affective content was above 0.60, and as negative if the ratio of negative affective content to total affective content was above 0.60 (Pfarrer et al. 2010, Love et al. 2017). For each accusation event, we then counted the total number of positive and negative China-related articles published one day prior to the accusation event, and used the Janis-Fadner coefficient of imbalance to construct the tenor measure (Janis and Fadner 1943). This coefficient equals: $\frac{P^2-P\times N}{T}$ if $P > N$, 0 if $P = N$, and $\frac{P\times N-N^2}{T}$ if $P < N$, where P is the number of positive articles, N is the number of negative articles, and T is the total number of articles. The measure ranges from −1, indicating all media coverage is negative, to +1, indicating all media coverage is positive. We interacted this media tenor variable with the variable denoting innocent Chinese RM firms (as a test of Hypothesis 3)

and the variable indicating accusations of Chinese RM firms (as a test of Hypothesis 4).

Controls

Our OLS analyses also incorporated a number of control variables to capture factors that could affect the innocent firm's CAR. These included characteristics of the accusation event, the innocent RM firm, and dyad-level measures capturing various aspects of similarity between the innocent and offending RM firms. Our analyses also included the accused RM firm's CAR in the three-day window around the accusation event date (*Accused RM CAR*). This allowed us to control for the severity of the misconduct, which could affect the negative spillovers experienced by the innocent firms (Goldman et al. 2012).

We also included control variables for organizational characteristics of both the innocent and offending firms, since these characteristics could affect investors' familiarity with and attention to these firms, influencing the negative spillovers. Specifically, we controlled for the innocent and offending firms' size and public tenure, given that larger and older offending firms may attract more attention, whereas larger and older innocent firms are likely to be associated with lower information asymmetry about their accounting practices (Paruchuri and Misangyi 2015). Size was measured as the logarithm of the firm's market capitalization in the week prior to the accusation (*Innocent RM size*, *Accused RM size*). Public tenure of the innocent and offending firm was measured by taking the difference between the accusation date and the date an RM firm went public, measured in days and scaled by 100 (*Innocent RM public tenure*, *Accused RM public tenure*). We also controlled for the stock exchange listing of the innocent and offending firms by identifying listings on the New York Stock Exchange (NYSE) or NASDAQ (*Innocent RM NYSE/NASDAQ*, *Accused RM NYSE/NASDAQ*), since the weaker listing requirements for the firms listed on the OTC might shape ex ante expectations of misconduct and thus affect the spillovers when misconduct was revealed (Baker and Edelman 1992).

With RM accusations based on the disclosure and accounting practices of the firms, we also thought it prudent to control for auditor reputation, given that reputable auditors may bring confidence in a firm's financial accounts (Lennox 1999). This in turn could shape the spillovers transmitted by the accused peer, and the spillovers received by the innocent firm, with offending firms with top auditors triggering more negative spillovers, and innocent firms with top auditors likely receiving less negative spillovers. We captured whether the RM firms' financial accounts were audited by one of the top four largest and most reputable auditors: PricewaterhouseCoopers, Deloitte & Touche, Ernst & Young, or KPMG (*Innocent RM top auditor*, *Accused RM top auditor*). We also included controls for the offending and innocent firms' financial performance, given that it may influence market reactions to accusations of misconduct as proxies for firms' viability (Shepherd 1999, Kang 2008). Financial performance was measured as return on assets (ROA) (*Innocent RM ROA*, *Accused RM ROA*). In addition, we followed Goldman et al. (2012) and controlled for the firms' leverage, measured as the logarithm of total firm debt (*Innocent RM debt*, *Accused RM debt*). The accounting measures were lagged by one year to avoid potential confounding effects stemming from information about the accusation that could affect the financial results of the offending and innocent firms. We also controlled for whether an innocent RM firm had faced past accusations (*Innocent firm accused in past*), since investors may react differently to such firms, having already incorporated expectations about future misconduct into the market price.

Given prior evidence supporting the inductive generalization perspective, that is, that firms resembling an accused firm will suffer greater negative spillovers (e.g., Durand and Vergne 2015), we also controlled for various aspects of similarity between the innocent and offending RM firms. First, we measured whether the offending and innocent firms were members of the same industry (Paruchuri and Misangyi 2015), operationalized at the level of the two-digit SIC code (*Same industry*). We also included dummy variables that captured whether the offending and innocent RM firms were listed on the same stock exchange (*Same exchange listing*) or had the same auditor (*Same auditor*), given that both factors can facilitate judgments about similarity and negative spillovers. We also controlled for whether the innocent and offending RM firms shared the same country of origin (*Same country*). These controls, which capture inductive generalization, were necessary to ensure a robust test of our deductive generalization hypotheses regarding how the Chinese origin of both innocent and offending RM firms would amplify negative spillovers beyond any similarity effect. Finally, we controlled for the number of days between the focal accusation event and the last prior one (*Days between last and focal event*) given that the accusation rate within a category may affect the negative spillovers. Remaining temporal unobserved heterogeneity is accounted for by using the market model in the calculation of the CARs and using year dummies.

Results

Descriptive Statistics of the Abnormal Returns of Innocent RM Firms

Table 1 presents the cumulative abnormal returns (CARs) of innocent RM firms surrounding the three-day

Table 1. T-Tests of the CARs of Innocent RM Firms When Another RM Firm Is Accused of Misconduct

Panel A: CARs categorized on the basis of the country of origin of the innocent RMs firms

	All innocent	Chinese innocent	Other innocent
Number	111,264	23,707	87,557
Mean	−0.175	−0.272	−0.149
t-test	−9.232	−7.111	−6.841
Difference *t*-test		2.656	

Panel B: CARs categorized on the basis of the country of origin of the accused RMs firms

	Chinese accused	Other accused
Number	27,261	84,003
Mean	−0.026	−0.224
t-test	−0.672	−10,273
Difference *t*-test	−4,478	

Note. The *t*-tests are two-sided.

window when it was announced that the RM firm faced an enforcement action by the SEC. Panel A shows the average return for all 111,264 CARs, which supports our baseline prediction regarding inductive generalization and guilt by association. The results show that instances of RM firm misconduct led to innocent RM firms experiencing, on average, a significant negative abnormal return of −0.175%. Table 1 shows that innocent Chinese RM firms experienced a significantly greater devaluation (−0.272%) relative to their non-Chinese RM firm counterparts (−0.149%), as evidenced by the t-test (p = 0.008), suggesting preliminary support for Hypothesis 1 (tested formally in Table 3). Panel B of Table 1, which splits the CARs based on the offending firm's country of origin, reveals that when the offending firm was Chinese, the negative spillover to innocent RM firms was only −0.026%, and −0.224% when the offending firm was non-Chinese. This statistically significant difference (t = 0.000) suggests preliminary support for Hypothesis 2 (tested formally in Table 3). Moreover, Table 2, which provides the descriptive statistics and correlation matrix of the variables, shows a significant negative correlation between *Innocent RM CAR* and *Chinese innocent*, and a significant positive correlation between *Innocent RM CAR* and *Chinese accused*.

Regression Analyses Explaining the Abnormal Returns of Innocent RM Firms

Table 3 shows the OLS analyses for testing Hypotheses 1–4. The maximum variance inflation factor (VIF) index in the reported models reaches a value of 2.10, suggesting no problems of multicollinearity (Kleinbaum et al. 1998). Model 1 shows the baseline model with the control variables. The results show that the more positive (i.e., less negative) the stock market reaction of the offending RM firm, the more positive (i.e., less negative) the spillover experienced by innocent RM firms, suggesting a comovement in stock prices between offending and innocent firms. Innocent RM

Table 2. Correlation Matrix and Descriptive Statistics

Variables	Mean	S.D.	1	2	3	4
1. *Innocent RM CAR*	−0.175	6.336				
2. *Accused RM CAR*	−0.588	3.425	0.057			
3. *Innocent RM size*	2.030	1.756	−0.022	0.004		
4. *Accused RM size*	1.257	1.559	0.013	−0.064	0.009	
5. *Innocent RM public tenure*	18.093	10.149	0.019	0.029	−0.147	−0.078
6. *Accused RM public tenure*	20.789	9.501	0.004	0.097	−0.012	−0.391
7. *Innocent RM NYSE/NASDAQ*	0.129	0.335	0.006	−0.002	0.268	0.005
8. *Accused RM NYSE/NASDAQ*	0.135	0.342	−0.002	0.060	−0.009	−0.071
9. *Innocent RM top auditor*	0.029	0.169	0.008	0.006	0.218	−0.008
10. *Accused RM top auditor*	0.022	0.148	−0.005	−0.065	−0.008	−0.040
11. *Innocent RM ROA*	−20.488	231.614	0.000	−0.003	0.047	0.003
12. *Accused RM ROA*	−19.805	126.850	−0.007	−0.047	−0.001	0.064
13. *Innocent RM debt*	6.359	3.666	0.002	0.003	−0.031	−0.002
14. *Accused RM debt*	6.454	3.764	−0.001	0.063	0.006	0.087
15. *Innocent firm accused in past*	0.039	0.194	0.006	0.000	−0.076	−0.008
16. *Same industry*	0.063	0.243	−0.007	0.000	−0.003	−0.007
17. *Same exchange listing*	0.699	0.459	−0.008	−0.059	−0.188	0.049
18. *Same auditor*	0.008	0.087	0.004	−0.002	0.001	0.009
19. *Same country*	0.431	0.495	−0.006	−0.003	−0.010	−0.049
20. *Days between last and focal event*	16.608	21.160	−0.024	−0.066	0.012	0.104
21. *Chinese innocent*	0.213	0.409	−0.008	−0.008	0.088	0.013
22. *Chinese accused*	0.245	0.430	0.013	0.078	−0.002	0.125
23. *China-related media tenor*	0.483	0.544	−0.008	0.056	−0.009	−0.109

Table 2. (Continued)

Variables	5	6	7	8	9	10	11	12	13	14
6. *Accused RM public tenure*	0.122									
7. *Innocent RM NYSE/NASDAQ*	0.152	−0.012								
8. *Accused RM NYSE/NASDAQ*	−0.002	0.169	0.002							
9. *Innocent RM top auditor*	0.120	0.009	0.132	0.000						
10. *Accused RM top auditor*	−0.024	0.058	0.003	0.184	−0.004					
11. *Innocent RM ROA*	0.020	−0.002	0.033	0.002	0.015	0.002				
12. *Accused RM ROA*	−0.046	0.165	0.006	0.057	−0.007	0.023	0.000			
13. *Innocent RM debt*	0.110	0.001	0.129	0.003	0.048	0.001	0.052	−0.001		
14. *Accused RM debt*	0.002	0.176	0.000	0.141	0.004	0.098	−0.001	0.130	0.001	
15. *Innocent firm accused in past*	0.123	0.014	−0.001	0.002	−0.012	−0.003	0.013	0.000	−0.027	−0.002
16. *Same industry*	−0.006	−0.029	−0.002	0.020	−0.002	−0.012	0.009	−0.026	−0.021	−0.038
17. *Same exchange listing*	−0.122	−0.133	−0.494	−0.512	−0.110	−0.092	−0.026	−0.045	−0.058	−0.056
18. *Same auditor*	−0.003	−0.010	0.001	0.004	−0.008	−0.005	−0.008	0.000	0.001	−0.001
19. *Same country*	−0.015	−0.036	−0.024	−0.098	0.005	0.024	0.002	−0.068	0.000	−0.038
20. *Days between last and focal event*	−0.091	−0.185	0.016	0.068	−0.005	0.143	0.006	0.026	−0.008	0.032
21. *Chinese innocent*	0.015	−0.019	0.258	0.002	−0.042	0.007	0.040	0.012	0.176	−0.004
22. *Chinese accused*	0.066	0.134	−0.008	0.222	0.003	0.006	−0.001	0.087	−0.001	0.358
23. *China-related media tenor*	0.023	0.041	0.000	0.016	0.000	0.082	0.003	0.077	−0.001	−0.079

Variables	15	16	17	18	19	20	21	22
16. *Same industry*	0.002							
17. *Same exchange listing*	0.009	−0.014						
18. *Same auditor*	0.001	0.008	0.007					
19. *Same country*	−0.003	0.020	0.101	0.016				
20. *Days between last and focal event*	−0.020	0.012	−0.019	−0.008	−0.027			
21. *Chinese innocent*	−0.028	−0.005	−0.151	0.008	−0.211	0.005		
22. *Chinese accused*	0.007	−0.033	−0.170	−0.001	−0.244	−0.033	−0.009	
23. *China-related media tenor*	0.003	0.030	−0.003	−0.008	−0.093	−0.016	−0.001	0.033

Note. Correlations above 0.006 are significant at 0.05 level.

firms that had one of the four top auditors, and longer public tenure, suffered less negative spillovers due to reduced information asymmetry, and more trustworthy accounting practices. Larger innocent RM firms experienced more negative spillovers, likely because of higher liquidity and greater attention paid to larger firms. In terms of the size of the offending RM firms, when the firm was larger, the negative spillovers were weaker, possibly due to the increased attention paid to the offender relative to the innocent firms. With respect to the similarity measures, the results are consistent with the traditional view that evaluators rely on prototype-based categorization and inductive generalization. When the innocent and the offending firm shared an industry, a country of origin, or a stock exchange, the spillovers to the innocent firms were more negative. Finally, the longer the time difference between two accusation events, the more negative the spillovers experienced by innocent firms.

Having discussed the empirical findings based on our control variables in Model 1, we next discuss our specific hypothesized effects, which appear in Models 2–6. Model 2 shows the significant effect of the dummy variable for innocent Chinese firms, providing support for Hypothesis 1, which predicted that innocent RM firms of Chinese origin would suffer more negative spillovers (relative to non-Chinese RM firms), independent of the offending RM firm's country of origin. Indeed, Chinese RM firms suffered more negative market reactions by 0.124% points (b = −0.124, p = 0.011). In Model 3, the significant effect of the dummy variable capturing whether the offending RM firm was Chinese provides support for Hypothesis 2, which predicted that innocent RM firms would suffer less negative spillovers when the offending RM firm was Chinese. That is, when the offending RM firm was Chinese, innocent RM firms experienced market reactions that were 0.136% points (b = 0.136, p = 0.007) less negative, compared with when the accused RM was non-Chinese.

Hypothesis 3 is tested in Model 4, which includes an interaction term of the measure of media tenor, with the dummy variable indicating the innocent Chinese RM firms. Media tenor captures the relative proportion of positive to negative media articles; the lower the value of media tenor, the greater the

Table 3. OLS Analyses of the CARs of Innocent RM Firms When Another RM Firm Is Accused of Misconduct

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Accused RM CAR	0.085***	0.085***	0.084***	0.085***	0.082***	0.082***		0.078***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)		(0.006)
Innocent RM size	−0.098***	−0.097***	−0.098***	−0.097***	−0.098***	−0.096***	−0.103***	−0.328***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.023)
Accused RM size	0.117***	0.116***	0.113***	0.112***	0.115***	0.115***		0.106***
	(0.014)	(0.014)	(0.015)	(0.015)	(0.015)	(0.015)		(0.014)
Innocent RM public tenure	0.004†	0.004†	0.004†	0.004†	0.004†	0.004†	0.004†	−0.086***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.020)
Accused RM public tenure	−0.002	−0.002	−0.002	−0.002	−0.000	−0.000		−0.000
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)		(0.003)
Innocent RM NYSE/NASDAQ	0.106	0.138*	0.116†	0.143*	0.116†	0.147*	0.119	
	(0.070)	(0.070)	(0.070)	(0.070)	(0.070)	(0.070)	(0.074)	
Accused RM NYSE/NASDAQ	−0.054	−0.059	−0.072	−0.060	−0.076	−0.081		−0.095
	(0.070)	(0.070)	(0.071)	(0.070)	(0.071)	(0.070)		(0.077)
Innocent RM top auditor	0.388***	0.362***	0.389***	0.362***	0.389***	0.364***	0.376**	0.372
	(0.105)	(0.105)	(0.105)	(0.105)	(0.105)	(0.105)	(0.115)	(0.245)
Accused RM top auditor	−0.153	−0.150	−0.143	−0.103	−0.119	−0.116		−0.127
	(0.133)	(0.133)	(0.132)	(0.133)	(0.134)	(0.134)		(0.138)
Innocent RM ROA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Accused RM ROA	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000		−0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.000)
Innocent RM debt	−0.003	−0.001	−0.003	−0.001	−0.003	−0.001	−0.001	0.001
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.012)
Accused RM debt	0.007	0.007	0.003	0.006	0.003	0.003		0.004
	(0.005)	(0.005)	(0.006)	(0.005)	(0.006)	(0.006)		(0.006)
Innocent firm accused in past	0.124	0.119	0.125	0.119	0.124	0.119	0.122	−0.078
	(0.105)	(0.104)	(0.105)	(0.105)	(0.105)	(0.104)	(0.097)	(0.197)
Same industry	−0.137†	−0.136†	−0.131†	−0.131†	−0.134†	−0.133†	0.032	−0.111
	(0.079)	(0.079)	(0.079)	(0.079)	(0.079)	(0.079)	(0.079)	(0.081)
Same exchange listing	−0.148*	−0.152*	−0.133*	−0.146*	−0.132*	−0.137*	−0.186**	−0.187**
	(0.062)	(0.061)	(0.062)	(0.062)	(0.062)	(0.062)	(0.066)	(0.071)
Same auditor	0.221	0.228	0.219	0.229	0.225	0.234	0.204	0.219
	(0.224)	(0.224)	(0.224)	(0.224)	(0.224)	(0.224)	(0.216)	(0.220)
Same country	−0.076*	−0.098*	−0.055	−0.113**	−0.060	−0.088*	−0.041	−0.127**
	(0.038)	(0.039)	(0.038)	(0.039)	(0.038)	(0.039)	(0.045)	(0.045)
Days between last and focal event	−0.012***	−0.012***	−0.012***	−0.012***	−0.011***	−0.011***		−0.011***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)		(0.001)
Chinese innocent		−0.124*		−0.212***		−0.201**	−0.197**	
		(0.049)		(0.062)		(0.062)	(0.065)	
Chinese accused			0.136**		0.326***	0.317***		0.327***
			(0.050)		(0.064)	(0.064)		(0.067)
China-related media tenor				−0.135***	0.005	−0.033		−0.024
				(0.040)	(0.042)	(0.046)		(0.048)
Chinese innocent × *China-related media tenor*				0.175*		0.166*	0.186*	0.174*
				(0.078)		(0.079)	(0.084)	(0.085)
Chinese accused × *China-related media tenor*					−0.413***	−0.410***		−0.445***
					(0.090)	(0.090)		(0.089)
Intercept	3.303***	3.308***	3.351***	3.491***	3.083***	3.119***	0.108	3.507***
	(0.477)	(0.477)	(0.477)	(0.481)	(0.490)	(0.491)	(0.085)	(0.525)
Number	111,264	111,264	111,264	111,264	111,264	111,264	111,264	111,264
R^2	0.009	0.009	0.009	0.009	0.009	0.009	0.042	0.025
F test	30.334	29.906	29.917	29.327	30.629	29.362	9.449	36.181

Notes. Year dummies included. Standard errors based on clustered firm observations in parenthesis. Model 7 includes event fixed effects. Model 8 includes firm fixed effects.

†$p < 0.10$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

proportion of negative articles. Hypothesis 3 predicted that a negative media tenor related to China would intensify the negative stereotyping of Chinese firms and thus further intensify the negative spillover hypothesized in Hypothesis 1. Consistent with Hypothesis 3, we found that less negative coverage of China and Chinese businesses (i.e., a higher value of media tenor) was associated with significantly less negative spillover for innocent RM firms of Chinese origin (b = 0.175, $p = 0.026$).

To test Hypothesis 4 in Model 5, we interacted the media variable with the dummy variable indicating whether the offending RM firm was Chinese. Again, the result supports our prediction, suggesting that lower anti-Chinese media coverage decreased the salience of the offending RM firm's Chinese origin (while increasing the salience of its RM-ness), further strengthening the negative spillover effect from accused Chinese RM firms to all other RM firms (b = −0.413, $p = 0.000$).

We plotted the interaction results of Hypotheses 3 and 4 and their predicted values using Stata's *marginsplot* command (with the 95% confidence interval). For Hypothesis 3, Figure 2(a) shows that the more negative the China-related media tenor, the more negative were the spillovers to innocent Chinese RM firms. Moreover, as the media tenor becomes positive and approaches a value of 1, the CARs experienced by innocent Chinese RM firms approach the CARs experienced by non-Chinese RM firms. For Hypothesis 4, Figure 2(b) shows that the more negative the media tenor, the less negative were the spillovers triggered by the accusations against Chinese RM firms. The negative spillovers triggered by offending Chinese RM firms become similar to those triggered by non-Chinese RM firms when the China-related media tenor became more positive and closer to the maximum value of 1. Taken together, these results provide strong support for our arguments and hypotheses regarding the relevance of deductive generalization in the guilt-by-association phenomenon, as well as the role of media discourse in intensifying these effects.

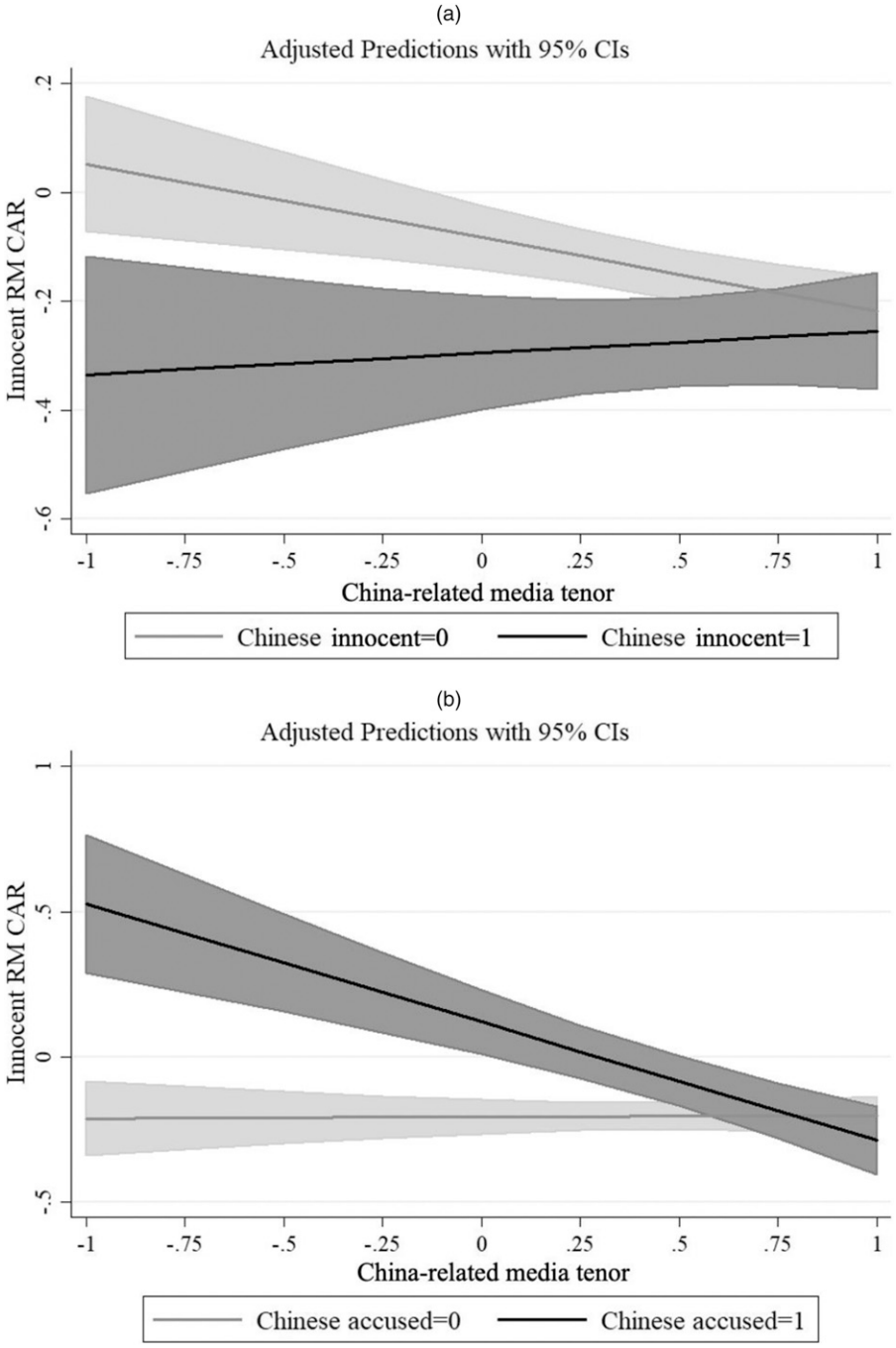
Supplementary Analyses and Robustness Tests

To build further confidence in the findings regarding evaluators' use of deductive generalization, we conducted a number of robustness checks and supplementary analyses. To address possible unobserved heterogeneity, we employed fixed effects analyses, with Model 7 showing a fixed effect for each accusation event, and Model 8 showing a fixed effect for each innocent firm. Model 7 shows that Chinese RM firms suffered more negative spillovers after an accusation event, irrespective of the offending firm's country of origin (supporting Hypothesis 1), and that increased anti-Chinese media coverage amplified this relationship (supporting Hypothesis 3). Model 8 shows that when the offending RM firm was Chinese, there was reduced negative spillover to innocent RM firms (supporting Hypothesis 2), and increased anti-Chinese media coverage amplified this relationship (supporting Hypothesis 4).

We also extended our analysis to consider the possibility that the negative stereotyping of Chinese firms might also affect other dissimilar (i.e., non-RM) Chinese firms when an RM firm was accused of misconduct. Analyzing the three-day CAR associated with 204 RM accusation events, as experienced by the 183 Chinese firms that had used the IPO route in the period 2006–2016 (totaling 20,714 IPO firm-RM accusation event observations), we found that that the stereotype of Chinese firms led to negative spillovers to non-RM Chinese firms, with negative CAR of −0.456% ($p = 0.000$). This was true whether the accused RM firm was Chinese or non-Chinese, and suggests that the accusation of an RM firm (from any country) generated negative spillovers that even affected dissimilar Chinese firms (i.e., those that chose the IPO, rather than the RM pathway to publicly traded status). The strong evidence of deductive generalization underlying the guilt-by-association phenomenon can perhaps best be described as investors finding the firms "guilty of being Chinese."

Moreover, our findings were robust to alternative measures of key variables. With respect to our dependent variable, we found that the conclusions were unaffected by alternative CAR windows, that is, two-day or four-day event window. To address the thin trading of RMs (Maynes and Rumsey 1993), we also used an alternative measure of CARs on a trade-to-trade basis and found consistent results, as we did when considering an alternative definition of an innocent firm as one that had never been accused of misconduct in the period 2006–2016. With respect to our independent variables, and specifically the media discourse variable, we counted the total number of articles covering Chinese RMs that were published up to seven days prior to the accusation event date, and that had a negative tone (i.e., portrayed Chinese RM firms in a negative light). We used both manual coding and the LIWC text analysis program to determine the degree of negative tone, and these convergent methods provided additional support to

Figure 2. Marginal Effects of China-Related Media Tenor on the CARs of Innocent RM Firms, Considering the Chinese Origin of the Accused and Innocent RM Firms: (a) Hypothesis 3, (b) Hypothesis 4



Hypotheses 3 and 4. Moreover, examining the media coverage of RMs, we found that the U.S. media discussed RMs in ways that express prejudice, with Chinese RMs disproportionally portrayed as wrongdoers and described in terms of their nationality rather than business characteristics. Finally, we also found no difference in terms of spillovers between innocent U.S. RM firms and other foreign (non-Chinese) firms. This finding is consistent with the interpretation that Chinese RM firms emerged as a group perceived to be of worst quality, and most responsible for and susceptible to misconduct, despite evidence to the contrary (Givoly et al. 2014, Lee et al. 2015, Ljunqvist and Qian 2016, Pollard 2016, Siegel and Wang 2013). These results show that Chinese stereotyping was driving the spillovers, rather than the more general home bias in capital markets that can negatively affect foreign firms (French and Poterba 1991).

Discussion and Conclusions

We began our study by suggesting that the understanding of the guilt-by-association phenomenon would benefit from greater attention to the potential heterogeneity of the mechanisms underlying this effect. We therefore proposed and tested an original theoretical framework that identified and distinguished between two forms of generalization shaping guilt by association: inductive and deductive generalization. Prior research in organization theory has implicitly emphasized the former, showing how instances of corporate misconduct lead to negative spillovers to innocent firms in the same category as the offending firm on the basis of prototype-based categorization (e.g., Jonsson et al. 2009, Durand and Vergne 2015, Paruchuri and Misangyi 2015). Our consideration of deductive generalization, which relates to causal-based categorization (Rehder and Hastie 2001; Rehder 2003a, b; Rehder 2009; Durand and Paolella 2013), allowed us to suggest new hypotheses regarding the strength and direction of negative spillovers.

We found strong support for our theoretical framework emphasizing the relevance of both inductive and deductive generalization in the spread of guilt by association across firms that used reverse mergers (RMs) to gain publicly traded status in U.S. financial markets. Consistent with an inductive generalization perspective, we found that a specific instance of a misconduct accusation against an RM firm created more negative spillovers to other innocent RM firms based on prototype-based categorization (e.g., similarity in having used an RM, same country of origin, and same industry). Notably, we also found evidence consistent with the predictions stemming from our deductive generalization perspective, in which evaluators' pre-existing theories shape negative spillovers.

Specifically, we found that innocent Chinese RM firms, who faced an observably negative stereotype based on their country of origin, experienced more severe negative spillovers—even when the accused RM firm was not Chinese, and regardless of the country of the accused RM firm's origin. Moreover, this recipient effect became stronger when accompanied with more negative U.S. media portrayal of China, fueling the pre-existing negative stereotype. The results also supported our hypothesized transmission effect, which focuses on how properties of the accused firm affect innocent firms' negative spillovers. Specifically, when the accused RM firm was Chinese, the negative spillover to other innocent RM firms was weaker than when the accused RM firm was non-Chinese, and this effect was also more pronounced when accompanied by more anti-China media discourse. Although we cannot claim to have directly observed investors' interpretive processes, our findings suggest that the strength and direction of negative spillovers are due in part to investors engaging in deductive generalization, and that this effect is further exacerbated when media discourse fuels negative stereotypes.

We also conducted supplementary analyses and found that the negative spillovers due to specific instances of RM misconduct affected not only the valuations of innocent Chinese RM firms, but also of those Chinese firms that had gone public using the more traditional IPO route. This adds further evidence that deductively generalized judgments were at work, with investors seemingly fixated on firms' Chinese-ness over their RM-ness. Although financial markets and their participants have been shown to be susceptible to cognitive biases (e.g., Hirshleifer and Subrahmanyam 1998, Rao et al. 2001) and/or social construction processes relating to institutional forces (e.g., Zajac and Westphal 2004, Yan et al. 2019), we believe our study is the first to address the possibility that financial markets are also subject to social biases, such as ethnic/national prejudice. The strong and consistent empirical support for our hypotheses provides systematic evidence of discrimination in U.S. financial markets, suggesting that individuals aggregated into financial markets (similar to individuals those aggregated into labor markets) are not exempt from social biases, despite the large economic inefficiency caused by acting on prejudice.

Interestingly, the results of testing our two different predictions regarding deductive generalization (i.e., the recipient effect and the transmission effect) offer insights into both who loses and who gains when prejudice is at work. Specifically, our first finding is consistent with the notion of a stereotype penalty, whereby any incident of RM misconduct negatively affects innocent Chinese RM firms to a greater extent than innocent non-Chinese RM firms, even if the offending firm is non-Chinese. Our second result, which examines what happens when the offending RM firm is in fact Chinese, shows that the negative spillovers to other RM firms based on inductive generalization is reduced, due to the fact that evaluators' negativity is directed more to the offending firm's Chinese-ness than to its RM-ness. In other words, the mere presence of Chinese RM firms draws negative judgment in their direction, reducing the negative spillover that innocent non-Chinese RM would otherwise experience.

If deductive generalization based on a negative stereotype results in injurious consequences to innocent entities, what additional consequences might be expected? In the context of RM firms, there is evidence of both exit and voice. With respect to the former, "Chinese companies listed on American stock exchanges are increasingly heading for the exits" in

response to the severity of U.S. financial markets' negative stereotyping (Gough 2012). With respect to the latter, some Chinese firms took legal steps to address the undeserved penalties they faced. For example, CleanTech Innovations, Inc., filed a suit against NASDAQ for racism and discrimination, alleging racial profiling against CleanTech and other China-based companies. CleanTech won the case and was relisted. We hope that our study spurs future research addressing the possibility of stereotyping, prejudice, and discrimination, with particular attention to the organization as the unit of analysis, given the potentially large social and economic costs generated by the exercise of social biases in market situations.

In terms of the literature on guilt by association resulting from instances of corporate misconduct, our study also highlights the benefits of moving away from simply presuming inductive generalization as generating negative spillovers. For example, if one advances a guilt-by-association hypothesis invoking only prototype-based categorization (e.g., common membership in industry X), this leaves unaddressed the possibility of additional casual-based categorization (e.g., a belief that firms in industry X are more likely to engage in fraud due to the norms or high level of competitive intensity in that industry). In this example, one cannot adjudicate between deductive and inductive generalization. This highlights the importance of considering evaluators' causal reasoning, which would then allow, as shown in our study, for the elaboration of alternative negative spillover predictions based on deductive generalization.

One can extend our discussion of the relevance of inductive and deductive generalization by studying the potential heterogeneity of evaluators' theories, expertise, and behaviors (Proffitt et al. 2000, Shafto and Coley 2003, Rottman et al. 2012). For example, Shafto and Coley (2003) found that novices categorized fish by similarity in their appearances (i.e., prototype-based categorization) whereas expert fisherman categorized fish according to causal relations regarding their ecological properties (i.e., causal-based categorization). Relatedly, Naumovska and Lavie (2021), in a recent study of valuations of firms whose industry peers were accused of misconduct, found that less sophisticated investors decreased their shareholdings in nonaccused firms (consistent with guilt by association), whereas more sophisticated investors increased their shareholdings in nonaccused firms (anticipating a competitive gain from the accusation against a rival). Although our study focused on aggregate market responses to corporate misconduct, future research could examine how investors rely differently on inductive and deductive generalization as a function of their expertise, theories, and demographic characteristics (see Yenkey 2018). Future research could also extend our analysis by considering the possible relevance of goal-based categorization, whereby investors would generalize based on the goals they pursue (Paolella and Durand 2016, Arjaliès and Durand 2019).

Consistent with the literature on guilt by association resulting from instances of corporate misconduct, we focused on announcements of negative events and the corresponding negative spillovers (Jonsson et al. 2009, Paruchuri and Misangyi 2015, Greve et al. 2016). However, our theoretical framework on processes of inductive and deductive generalization could also be applied to spillovers stemming from positive events (e.g., Fosfuri and Giarratana 2009). Similarly, whereas our examination of deductive generalization emphasized a clear negative stereotyping, one could also assess positive stereotypes and their consequences (Czopp et al. 2015). Future research could compare positive versus negative events as they relate to spillovers to organizations, linking insights from stereotyping with insights from the organizational literature on status (Washington and Zajac 2005, Sharkey 2014).

Our theoretical framework on inductive and deductive generalization can also be used to extend research on stigma (Devers et al. 2009, Hudson and Okhuysen 2009, Barlow et al. 2018). For example, one could use Hudson's (2008) distinction of event stigma and core stigma (i.e., the latter referring to an organization's core attributes) to note that our study focused on the generalization of event stigma from an offending firm to innocent firms, and that one could also examine generalization associated with core stigma. If event and core stigma fall under the same causal reasoning structure (i.e., a belief that firms with a certain core stigma are more likely to engage in a specific stigmatizing act), core stigma may behave like a negative stereotype, with deductive generalizing leading firms with a core stigma to experience larger negative spillovers when a peer experiences a stigmatizing event. Considering how stigma relates to deductive and indicative generalization processes could also shed light on stigma by association that results from structural relationships based on individual and organizational ties (Kang 2008, Pontikes et al. 2010, McDonnell and Werner 2016). Indeed, recent findings show that the demographic characteristics of individuals associated with corporate misconduct shape the reputational penalties they face (Naumovska et al. 2020), suggesting that evaluators' theories about the causes of the corporate misconduct might also shape the stigmatization of specific individuals associated with it.

In conclusion, we hope that our study motivates greater attention to the fact that the association in the guilt-by-association phenomenon should be understood

as a complex socio-cognitive process by which evaluators reach generalizations and categorizations regarding firms. In contrast to the traditional emphasis on industry as the primary category for spillover effects (e.g., Jonsson et al. 2009, Durand and Vergne 2015), we show how a corporate form (RM) and a country of origin (China) can represent salient categories that imply alternative generalization processes. Although we recognize the potential "infinite dimensionality" (Cattani et al. 2017, p. 67) involved in categorizing firms, our study shows how attending to evaluators' likely interpretative processes can help in both identifying relevant properties and determining whether the property in question is likely to involve an inductive or deductive generalization process. More generally, we hope that our focus on these two fundamentally different forms of generalizing opens avenues for future research with attention to firms and their third-party evaluators, given the potentially large social and economic consequences that stem from the interpretive processes of inductive and deductive generalization.

Acknowledgments

The authors thank the editor, Giovanni Gavetti, and three anonymous reviewers for their valuable feedback and guidance throughout the review process.

Endnotes

[1] We use the terms "accused" and "offending" as shorthand for a firm accused by regulators of misconduct on a given date, and "innocent" as shorthand for a firm not accused by regulators of misconduct on that given date. Our use of these terms is not meant to pass judgment on actual behavior or reflect the final determination of an investigation.

[2] Such predications are in line with longstanding empirical evidence in cognitive science. For example, Heit and Rubinstein (1994) found that for a typical blank property, such as "has a liver with two chambers," evaluators make stronger generalizations from chickens to hawks than from tigers to hawks, because chickens and hawks are from the same category "birds" and are perceived as more similar to each other. However, Heit and Rubinstein (1994) also found that the generalization of the nonblank property "prefers to feed at night" was weaker from chickens to hawks than from tigers to hawks—the opposite of the result for the blank property "has a liver with two chambers," Besides the evident biological differences between tigers and hawks, people were influenced by their causal knowledge that hawks and tigers are known as predators, whereas chickens are thought of as relative pacifists.

[3] See also Lee et al. (2015) who show that RMs outperform other RMs in terms of survival rate, ability to move up in exchange tiers, and increases in market liquidity. Moreover, Siegel and Wang (2013) show that Chinese RMs do not exhibit worse governance outcomes compared to other RMs, and Givoly et al. (2014) find that Chinese RMs have comparable earnings quality to all other RMs.

References

Ahn WK (1999) Effect of causal structure on category construction. *Memory Cognition* 27(6):1008–1023.

Alpert B (2012) Threats, lies and Chinese stocks. *Barron's* (January 28), https://www.barrons.com/articles/SB50001424052748703512004577182970380129522?tesla=y.

Alpert B, Norton L (2010) Beware this Chinese export. *Barron's* (August 28), https://www.barrons.com/articles/SB50001424052970204304404575449812943183940.

Anderson JR, Bower GH (1980) *Human Associative Memory: A Brief Edition* (Lawrence Erlbaum Associates, Hillsdale, NJ).

Arjaliès DL, Durand R (2019) Product categories as judgment devices: The moral awakening of the investment industry. *Organ. Sci.* 30(5):885–911.

Baker HK, Edelman RB (1992) AMEX-to-NYSE transfers, market microstructure, and shareholder wealth. *Financial Management* 21(4):60–72.

Barboza D, Ahmed A (2011) China to Wall Street: The side-door shuffle. *New York Times* (July 23), https://www.nytimes.com/2011/07/24/business/global/reverse-mergers-give-chinese-firms-a-side-door-to-wall-st.html.

Barlow MA, Verhaal JC, Hoskins JD (2018) Guilty by association: Product-level category stigma and audience expectations in the US craft beer industry. *J. Management* 44(7):2934–2960.

Barnett ML, King AA (2008) Good fences make good neighbors: A longitudinal analysis of an industry self-regulatory institution. *Acad. Management J.* 51(6):1150–1170.

Bodenhausen GV, Macrae CN (1998) Stereotype activation and inhibition. Wyer Jr RS, ed. *Stereotype Activation and Inhibition: Advances in Social Cognition* (Erlbaum, Hillsdale, NJ), 1–52.

Cattani G, Porac JF, Thomas H (2017) Categories and competition. *Strategic Management J.* 38(1):64–92.

Clemente M, Gabbioneta C (2017) How does the media frame corporate scandals? The case of German newspapers and the Volkswagen diesel scandal. *J. Management Inquiry* 26(3):287–302.

Clemente M, Durand R, Porac J (2016) Organizational wrongdoing and media bias. Palmer D, Smith-Crowe K, Greenwood R, eds. *Organizational Wrongdoing: Key Perspectives and New Directions* (Cambridge University Press, Cambridge, UK), 435–473.

Czopp AM, Kay AC, Cheryan S (2015) Positive stereotypes are pervasive and powerful. *Perspect. Psych. Sci.* 10(4):451–463.

De Jong A, Naumovska I (2016) A note on event studies in finance and management research. *Rev. Finance* 20(4):1659–1672.

Devers C, Dewett T, Mishina Y, Belsito C (2009) A general theory of organizational stigma. *Organ. Sci.* 20(1):154–171.

Durand R, Paolella L (2013) Category stretching: Reorienting research on categories in strategy, entrepreneurship, and organization theory. *J. Management Stud.* 50(6):1100–1123.

Durand R, Vergne JP (2015) Asset divestment as a response to media attacks in stigmatized industries. *Strategic Management J.* 36(8):1205–1223.

Feldman DN (2009) *Reverse Mergers and Other Alternatives to Traditional IPOs*, 2nd ed. (Bloomberg Press, New York).

Fiske ST (1998) Stereotyping, prejudice, and discrimination. Gilbert DT, Fiske ST, Lindzey G, eds. *The Handbook of Social Psychology*, 4th ed., Vol. 2 (McGraw-Hill, Boston), 357–411.

Fiss PC, Kennedy MT, Davis GF (2012) How golden parachutes unfolded: Diffusion and variation of a controversial practice. *Organ. Sci.* 23(4):1077–1099.

Fosfuri A, Giarratana MS (2009) Masters of war: Rivals' product innovation and new advertising in mature product markets. *Management Sci.* 55(2):181–191.

French KR, Poterba JM (1991) Investor diversification and international equity markets. NBER Working Paper No. 3609, National Bureau of Economic Research, Cambridge, MA.

Gavetti G (2012) Perspective—Toward a behavioral theory of strategy. *Organ. Sci.* 23(1):267–285.

Givoly D, Hayn C, Lourie B (2014) Importing accounting quality? The case of foreign reverse mergers. The Case of Foreign

Reverse Mergers. Working paper, Pennsylvania State University, Philadelphia.
Gleason CA, Jenkins NT, Johnson WB (2008) The contagion effects of accounting restatements. *Accounting Rev.* 83(1):83–110.
Goldman E, Peyer U, Stefanescu I (2012) Financial misrepresentation and its impact on rivals. *Financial Management* 41(4):915–945.
Gorham B (2006) News media's relationship with stereotyping: The linguistic intergroup bias in response to crime news. *J. Comm.* 56(2):289–308.
Gough N (2012) Chinese companies head for the exit. *New York Times* (December 20), https://dealbook.nytimes.com/2012/12/20/chinese-companies-head-for-the-exit/.
Greve HR, Kim JY, Teh D (2016) Ripples of fear: The diffusion of a bank panic. *Amer. Sociol. Rev.* 81(2):396–420.
Greve HR, Palmer D, Pozner JE (2010) Organizations gone wild: The causes, processes, and consequences of organizational misconduct. *Acad. Management Ann.* 4(1):53–107.
Hamilton DL, Sherman SJ, Ruvolo C (1990) Stereotype-based expectancies: Effects on information processing and social behavior. *J. Soc. Issues* 46(2):35–60.
Heit E (2000) Properties of inductive reasoning. *Psychonomic Bull. Rev.* 7(4):569–592.
Heit E, Rubinstein J (1994) Similarity and property effects in inductive reasoning. *J. Experiment. Psych. Learn. Memory Cognition* 20(2):411–422.
Hirshleifer DK, Subrahmanyam A (1998) Investor psychology and security market under-and overreactions. *J. Finance* 53(6):1839–1885.
Hsu G, Elsbach KD (2013) Explaining variation in organizational identity categorization. *Organ. Sci.* 24(4):996–1013.
Hu S, Fei Z (2012) SEC probes hit a wall in uncooperative China. *MarketWatch* (June 11), https://www.marketwatch.com/story/sec-probes-hit-a-wall-in-uncooperative-china-2012-06-11.
Hudson BA (2008) Against all odds: A consideration of core-stigmatized organizations. *Acad. Management Rev.* 33(1):252–266.
Hudson BA, Okhuysen GA (2009) Not with a ten-foot pole: Core stigma, stigma transfer, and improbable persistence of men's bathhouses. *Organ. Sci.* 20(1):134–153.
Janis IL, Fadner RH (1943) A coefficient of imbalance for content analysis. *Psychometrika* 8(2):105–119.
Jensen M (2006) Should we stay or should we go? Accountability, status anxiety, and client defections. *Admin. Sci. Quart.* 51(1):97–128.
Jonsson S, Greve H, Fujiwara-Greve T (2009) Undeserved loss: The spread of legitimacy loss to innocent organizations in response to reported corporate deviance. *Admin. Sci. Quart.* 54(2):195–228.
Kang E (2008) Director interlocks and spillover effects of reputational penalties from financial reporting fraud. *Acad. Management J.* 51(3):537–555.
Kang S, Chasteen A (2009) Beyond the double-jeopardy hypothesis: Assessing emotion on the faces of multiply-categorizable targets of prejudice. *J. Experiment. Soc. Psych.* 45(6):1281–1285.
Karpoff J, Lee D, Martin G (2008) The cost to firms of cooking the books. *J. Financial Quant. Anal.* 43(3):581–611.
Keil F (1989) *Concepts, Kinds and Cognitive Development* (MIT Press, Cambridge, MA).
Kemp C, Goodman ND, Tenenbaum JB (2007) Learning causal schemata. McNamara DS, Trafton G, eds. *Proc. 29th Annual Conf. Cognitive Sci. Soc.* (Cognitive Science Society, Austin, TX), 389–394.
King B, Soule S (2007) Social movements as extra-institutional entrepreneurs: The effect of protests on stock price returns. *Admin. Sci. Quart.* 52(3):413–442.
Kleinbaum DG, Kupper LL, Muller KE (1998) *Applied Regression Analysis and Other Multivariable Methods* (PWS-Kent Publishing, Boston).
Lee C, Li K, Zhang R (2015) Shell games: The long-term performance of Chinese reverse-merger firms *Accounting Rev.* 90(4):1547–1589.
Lennox CS (1999) Audit quality and auditor size: An evaluation of reputation and deep pockets hypotheses. *J. Bus. Finance Accounting* 26(7–8):779–805.
Loughran T, Ritter J (1995) The new issues puzzle. *J. Finance* 50(1):23–51.
Love EG, Lim J, Bednar MK (2017) The face of the firm: The influence of CEOs on corporate reputation. *Acad. Management J.* 60(4):1462–1481.
Ljungqvist A, Qian W (2016) How constraining are limits to arbitrage?. *Rev. Financial Stud.* 29(8):1975–2028.
MacKinlay AC (1997) Event studies in economics and finance. *J. Econom. Literature* 35(1):13–39.
Macrae C, Bodenhausen G, Milne A (1995) The dissection of selection in person perception: Inhibitory processes in social stereotyping. *J. Personality Soc. Psych.* 69(3):397–407.
Maynes E, Rumsey J (1993) Conducting event studies with thinly traded stocks. *J. Banking Finance* 17(1):145–157.
McDonnell MH, Werner T (2016) Blacklisted businesses: Social activists' challenges and the disruption of corporate political activity. *Admin. Sci. Quart.* 61(4):584–620.
Murphy GL, Medin DL (1985) The role of theories in conceptual coherence. *Psych. Rev.* 92(3):289–316.
Naumovska I, Lavie D (2021) When an industry peer is accused of financial misconduct: Stigma vs. competition effects on non-accused firm. Working paper, INSEAD, Singapore.
Naumovska I, Wernicke G, Zajac EJ (2020) Last to come and last to go? On the complex role of gender and ethnicity in the reputational penalties for directors linked to corporate fraud. *Acad. Management J.* 63(3):881–902.
Naumovska I, Zajac EJ, Lee PM (2021) Strength and weakness in numbers? Unpacking the role of prevalence in the diffusion of reverse mergers. *Acad. Management J.* Forthcoming.
Palmer D (2012) *Normal Organizational Wrongdoing: A Critical Analysis of Theories of Misconduct in and by Organizations* (Oxford University Press, Oxford, UK).
Paolella L, Durand R (2016) Category spanning, evaluation, and performance: Revised theory and test on the corporate law market. *Acad. Management J.* 59(1):330–351.
Paruchuri S, Misangyi VF (2015) Investor perceptions of financial misconduct: The heterogeneous contamination of bystander firms. *Acad. Management J.* 58(1):169–194.
Pfarrer MD, Pollock TG, Rindova VP (2010) A tale of two assets: The effects of firm reputation and celebrity on earnings surprises and investors' reactions. *Acad. Management J.* 53(5):1131–1152.
Pollard T (2016) Sneaking in the back door? An evaluation of reverse mergers and IPOs. *Rev. Quant. Finance Accounting* 47(2):305–341.
Pollock T, Rindova V, Maggitti P (2008) Market watch: Information and availability cascades among the media and investors in the U.S. IPO market. *Acad. Management J.* 51(2):335–358.
Pontikes E, Negro G, Rao H (2010) Stained red: A study of stigma by association to blacklisted artists during the "red scare" in Hollywood, 1945 to 1960. *Amer. Sociol. Rev.* 75(3):456–478.
Porac J, Thomas H, Baden-Fuller C (1989) Competitive groups as cognitive communities: The case of Scottish knitwear manufacturers. *J. Management Stud.* 26(4):397–416.
Proffitt JB, Coley JD, Medin DL (2000) Expertise and category-based induction. *J. Experiment. Psych. Learn. Memory Cognition* 26(4):811–828.
Rao H, Greve HR, Davis GF (2001) Fool's gold: Social proof in the initiation and abandonment of coverage by Wall Street analysts. *Admin. Sci. Quart.* 46(3):502–526.
Rehder B (2003a) A causal-model theory of conceptual representation and categorization. *J. Experiment. Psych. Learn. Memory Cognition* 29(6):1141–1159.
Rehder B (2003b) Categorization as causal reasoning. *Cognitive Sci.* 27(5):709–748.

Rehder B (2006) When similarity and causality compete in category-based property generalization. *Memory Cognition* 34(1):3–16.

Rehder B (2009) Causal-based property generalization. *Cognitive Sci.* 33(3):301–344.

Rehder B, Hastie R (2001) Causal knowledge and categories: The effects of causal beliefs on categorization, induction, and similarity. *J. Experiment. Psych. General* 130(3):323–360.

Ridgeway CL (2011) *Framed by Gender: How Gender Inequality Persists in the Modern World* (Oxford University Press, Oxford, UK).

Rosch E, Mervis CB (1975) Family resemblances: Studies in the internal structure of categories. *Cognitive Psych.* 7(4):573–605.

Rottman BM, Gentner D, Goldwater MB (2012) Causal systems categories: Differences in novice and expert categorization of causal phenomena. *Cognitive Sci.* 36(5):919–932.

Shafto P, Coley JD (2003) Development of categorization and reasoning in the natural world: Novices to experts, naïve similarity to ecological knowledge. *J. Experiment. Psych. Learn. Memory Cognition* 29(4):641–649.

Sharkey AJ (2014) Categories and organizational status: The role of industry status in the response to organizational deviance. *Amer. J. Sociol.* 119(5):1380–1433.

Shepherd DA (1999) Venture capitalists' assessment of new venture survival. *Management Sci.* 45(5):621–632.

Siegel JI, Wang Y (2013) Cross-border reverse mergers: Causes and consequences. Working paper, Harvard Business School, Cambridge, MA.

Sloman SA (1993) Feature-based induction. *Cognitive Psych.* 25(2): 231–280.

Smith EE, Shafir E, Osherson D (1993) Similarity, plausibility, and judgments of probability. *Cognition* 49(1–2):67–96.

Sullivan B, Haunschild P, Page K (2007) Organizations non gratae? The impact of unethical corporate acts on interorganizational networks. *Organ. Sci.* 18(1):55–70.

Vergne JP, Wry T (2014) Categorizing categorization research: Review, integration, and future directions. *J. Management Stud.* 51(1):56–94.

Vlastelica R, Bases D (2011) Chinese stock scams are the latest US import. *Reuters* (May 11), https://www.reuters.com/article/us-china-shortsellers/special-report-chinese-stock-scams-are-the-latest-u-s-import-idUSTRE74A71F20110511.

Washington M, Zajac EJ (2005) Status evolution and competition: Theory and evidence. *Acad. Management J.* 48(2):282–296.

Wittenbrink B, Hilton JL, Gist PL (1998) In search of similarity: Stereotypes as naive theories in social categorization. *Soc. Cognition* 16(1):31–55.

Yan S, Ferraro F, Almandoz J (2019) The rise of socially responsible investment funds: The paradoxical role of the financial logic. *Admin. Sci. Quart.* 64(2):466–501.

Yenkey CB (2018) Fraud and market participation: Social relations as a moderator of organizational misconduct. *Admin. Sci. Quart.* 63(1):43–84.

Yu T, Sengul M, Lester R (2008) Misery loves company: The spread of negative impacts resulting from an organizational crisis. *Acad. Management Rev.* 33(2):452–472.

Yue LQ, Rao H, Ingram P (2013) Information spillovers from protests against corporations: A tale of Walmart and Target. *Admin. Sci. Quart.* 58(4):669–701.

Zahra SA, Priem RL, Rasheed AA (2005) The antecedents and consequences of top management fraud. *J. Management* 31(6): 803–828.

Zajac EJ, Westphal JD (2004) The social construction of market value: Institutionalization and learning perspectives on stock market reactions. *Amer. Sociol. Rev.* 69(3):433–457.

Zavyalova A, Pfarrer MD, Reger RK, Shapiro DL (2012) Managing the message: The effects of firm actions and industry spillovers on media coverage following wrongdoing. *Acad. Management J.* 55(5):1079–1101.

Ivana Naumovska is an assistant professor at INSEAD. Her research examines the consequences of corporate fraud and the diffusion of practices, with a focus on financial markets. She received her PhD in management and finance from Erasmus University.

Edward J. Zajac is the James F. Beré Professor of Management and Organizations at Kellogg School of Management, Northwestern University. His research, which has been published widely in major academic journals, emphasizes the integration of economic and behavioral perspectives on corporate governance, strategic alliances, and organizational adaptation and change.