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and Acquisition Activity
- A Quantitative Literature Survey - ”**

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The Effect of Target-Country Institutions on Cross-Border Merger and Acquisition Activity - A Quantitative Literature Survey -

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Abstract

In this paper, we synthesize and compare 2,961 estimates extracted from 90 papers of the effect of target-country institutions on cross-border merger and acquisition (CBMA) intensity and premia. The synthesis results show statistically significant effects of institutional quality, cultural similarity, corruption control and political stability and effectiveness on CBMA activity, although the economic significance of these effects is modest. Study characteristics such as the choice of target and acquiring countries, estimation techniques and sample selection strongly influence the effect estimates. Moreover, we examine the literature for the possible influence of publication-selection bias on the estimated effects and conclude that the presence of such bias calls into question whether the literature reports true effects of institutions on CBMA activity. The results presented in our quantitative literature review suggest further research efforts to identify the true effect size.

Keywords: cross-border merger and acquisition, institutions, foreign entry mode, meta-synthesis, meta-regression analysis, publication selection bias

JEL classifications: F21; F23; F65; G34; L21; M16

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1. Introduction

Cross-border mergers and acquisitions (CBMAs) have accounted for the bulk of FDI flows over the post-WWII period (UNCTAD, 2020). Initially, CBMAs occurred among firms in developed market economies, but, over time, CBMA activity evolved to include target firms in, and acquiring firms from, emerging economies and countries with a greater variety of national cultures, legal systems and institutions (Hitt and Pisano, 2004). The growing volume of CBMA activity and the greater diversity of the countries involved has given rise to a large body of literature on the institutional determinants of CBMAs and on how acquiring- and target-country characteristics influence multinational firms' decisions on how to enter foreign markets. The topic has attracted scholars from finance and other disciplines who have used a wide range of theories about CBMAs and empirical strategies for investigating the drivers of CBMA and of ways of entering foreign markets more broadly. For example, Reddy (2014) identifies 17 separate theories of foreign investors' entry mode choices that have been employed in studies of CBMAs. Unfortunately, the empirical literature does not provide a consensus on whether these theories about role host-country institutions on CBMA activity have an important or a minor impact. For example, Xie et al. (2017) survey 250 studies and conclude that host-country characteristics have an important effect on CBMA activity while Hitt and Pisano (2004) suggest a more nuanced evaluation of the role of various factors is warranted.

An additional complication for empirical work on this topic is that researchers generally consider two separate, though related, measures of CBMA activity, CBMA intensity and the CBMA premium.¹ CBMA intensity means the number or value of CBMAs that occur in a target country, often normalized by factors such as country size, the number of firms in the target country, etc. The CBMA premium measures whether the acquiring firm overpays or underpays for a target firm in a CBMA relative to its "true" business value. Often, how the market value of the acquiring firm changes because of the acquisition measures the premium. Because intensity and the premium are both seen as related to target-country institutions, although not necessarily in the same way, we undertake a meta-analysis of studies of both CBMA intensity and premia. We analyze 2,961 effect estimates, 1,755 of the effect of target-country characteristics on CBMA intensity and 1,226 estimates of the effects of target-country

¹ Some researchers use other outcome measures for CBMAs such as acquisition performance (Zhu et al. 2020) or acquisition completion and abandonment (Dikova et al., 2010). To keep the scope of our analysis manageable, we do not address these and related measures.

characteristics on the CBMA premium. These estimates are drawn from 90 published studies of CBMAs.

In Section 2 we briefly describe the state of the literature on this topic and the clarifying role that meta-analysis can play in evaluating the state of knowledge. In Section 3, we describe our procedure for selecting studies for meta-analysis, our choice of key institutional characteristics, and the distribution of the effects of institutions on CBMAs found in the literature we survey. The main conclusion is that, while studies report statistically significant effects of institutions on CBMA activity, the practical significance of these effects is modest at best. In Section 4 we undertake a meta-synthesis of the collected effect estimates, and, in Section 5, we examine how study characteristics such as choice of explanatory variables, estimation techniques and sample selection influence the distribution of effect estimates. For both intensity and premium studies, the choice of acquiring countries and target countries is a major source of differences in effect estimates. However, intensity and, especially, premium studies suffer from idiosyncratic study-specific variability that reduces the precision of the aggregated estimates. In Section 6, we estimate the possible effects of publication-selection bias on the estimated effects, and we conclude that such bias calls into question the belief that the literature reports many true large effects of institutions on CBMA activity. Section 7 concludes by discussing some of the reasons for the evident gap between theory, which predicts strong effects of institutions on CBMAs, and the empirical literature, which largely fails to find them.²

2. Background

Researchers have sought to systematize and evaluate the conclusions that the literature on CBMAs provides through narrative surveys of the available research. Surveys by scholars in the field of finance tend to focus on the relationship between target-country institutions and the CBMA premium. For example, Mulherin *et al.* (2017) and Faff *et al.* (2019) survey papers whose focus is the determinants of the premium. Both surveys conclude that CBMA gains for acquirers are due to the better functioning of the legal system in the target country, which leads to higher levels of investor protection, stronger shareholder rights and higher quality accounting data in the target country, while greater cultural and physical distance between the

² As similar meta-studies to this work by the authors, see Anwar *et al.* (2021), Brada *et al.* (2021), Iwasaki and Ma (2021), Ma and Iwasaki (2021), Anwar *et al.* (2022), Anwar and Iwasaki (2022), Iwasaki (2022), Iwasaki *et al.* (2022), Kočenda and Iwasaki (2022), and Ono and Iwasaki (2022).

acquiring and target countries, especially in terms of differences in language, preference for individualism and levels of interpersonal trust tend to reduce the gains for the acquiring firm. A key theoretical underpinning of many studies of the premium is the legal origins theory of LaPorta *et al.* (1998, 2000, 2002), which stresses the importance of legal protection for minority shareholders. Such protection fosters the development of efficient and robust financial institutions. Legal origins theory argues that common law systems provide higher levels of such protection than is available in countries that utilize other legal systems, and thus reliance on common law promotes CBMAs.

Studies of CBMA intensity are rooted in theories of the multinational firm such as the Uppsala model (Johansen and Vahlene, 1977), Dunning's (1980) theory of locational advantage, the transaction costs theory of Williamson (1996), etc. Many of the studies of entry mode and CBMA intensity make use of some form of the concept of cultural distance, meaning differences in acquiring- and target-country cultural characteristics such as those proposed by Hofstede (1980), although researchers have also extended this concept to include linguistic, social, religious, political, and other differences as well. Culture plays an important role in shaping informal and formal institutions and in determining how well they function (Tabellini, 2008, 2010; Alessina and Giuliano, 2015; Jakab, 2020). Literature surveys by Hopkins (1999), Chen and Findlay (2003), Shimizu *et al.* (2004), and Reddy (2014) all support the conclusion that cultural distance and, consequently, differences in institutions play an important role in CBMA activity.³ Xie *et al.* (2017) in their survey identify nine broad target-country characteristics that influence CBMA activity: (1) geography, (2) target-country culture and cultural distance between the target and acquiring countries, (3) institutional quality, (4) political efficiency and corruption control, (5) macroeconomic performance, (6) financial market efficiency, (7) regulation, (8) taxes, and (9) accounting standards. Aside from geography and macroeconomic performance, all of these relate in some way to the institutions that characterize the target country.

As we show below, some studies support the relevance of some of these target-country characteristics for CBMAs, but there are also studies that find that these characteristics have no influence on CBMAs. Drawing conclusions from this literature is complicated by the many measures of institutional quality used and by the wide range of specifications, estimation techniques, sample construction and measures of acquisition activity found in the studies. Thus,

³ This conclusion is supported by meta-analyses such as Zhao *et al.* (2004), Tihanyi *et al.* (2005), Morschett *et al.* (2010), Klier *et al.* (2017) and Beugelsdijk *et al.* (2018).

if conclusions about the institutional drivers of CBMAs differ from study to study, it is imperative to understand if and how these differences in study characteristics drive differences in study results.

Although traditional literature surveys provide valuable insights about the strengths and weaknesses of specific articles surveyed, they are not able to quantify and systematically analyze all the results thrown up by the literature. Therefore, in this paper, we undertake a meta-analysis of the literature based on clear criteria for sample selection and on accepted meta-analytical methods to uncover the relationships between study characteristics and the results reported. Because we choose the meta-analytic approach, we explain the process of meta-analysis and how it differs from more traditional literature reviews. The first step in meta-analysis is to select estimates of the effect of institutions on CBMA activity by means of a systematic search of the literature to find as many relevant studies as possible.⁴ This stands in contrast to traditional, or, so-called, narrative, literature reviews. Clearly summarizing and evaluating all 90 papers that provide estimates of the effect of institutions on CBMAs could make for an unwieldy and uninformative narrative literature review. Consequently, the typical narrative literature review focuses on a curated set of papers that, in the expert opinion of the author of the review article, exemplify the “best” or “most important” of the available literature. Selecting the “best” may create biases in favor of seminal articles, of articles published in prestigious journals and of articles written by highly regarded members of the profession. As these three categories involve considerable overlap, there is a danger of reporting “conventional wisdom” at the expense of more innovative, controversial, or less visible works. An additional advantage of meta-analysis is that it enables us to combine disparate measures of CBMA outcomes by use of the partial correlation coefficient (PCC) which allows us to compare effect sizes when CBMA activity is measured in different ways, and it allows us to identify study characteristics that lead to heterogeneity in study results.

⁴ Some critics of meta-analysis argue that failing to omit “low-quality” studies from the meta-analysis is a shortcoming of the methodology. However, there is a consensus among meta-analysts that a quality-based winnowing of studies is not desirable. For example, Stanley (2001) writes: “Meta-analysis begins with a resolute emphasis on including all studies....” (p. 134) because “(a)fter all, one function of the meta-regression analysis is to obtain estimates of how such research choices influence the results. Differences in quality, data or methods do not provide a valid justification for omitting studies. Rather, such differences provide the underlying rationale for doing a meta-regression analysis in the first place.” (p. 135). For more on journal quality and biases in published results, see the discussion in Footnote 13.

3. Procedure for Literature Selection and Overview of Studies Selected for Meta-Analysis

Our primary source for journal articles containing estimates of the effects of host-country institutions on CBMAs was the EconLit web site. For more recent articles that may not as yet be reported on EconLit, we searched the websites of major academic publishers such as the Oxford University Press Website, Science Direct, Springer Link, Taylor and Francis Online, and Wiley Online as well as websites of journals affiliated with major professional associations in finance, management and international business to find estimates of the effects of target-country characteristics on CBMA intensity and premia. We used the key words “cross-border M&A” or “cross-border acquisition” or “cross-border merger”. The literature search was completed in June 2020. The EconLit search yielded 784 separate works and the websites of the journal publishers yielded 52 more recently published works. We examined the contents of each of the identified 836 articles and found that a total of 90 provided estimates suitable for meta-analysis.⁵ These articles were published in finance, economics, international business, and management journals between 2004 and 2020; data on CBMA activity used to produce the estimates covered periods between 1981 and 2017.⁶ We obtained 2,961 separate estimates of the effect of institutional characteristics of target countries on CBMA intensity or premium.⁷ **Table 1** summarizes the estimates collected. There are more studies of CBMA intensity than there are of the CBMA premium, but each category has over 1,000 estimates. Based on the studies collected, we identified six explanatory variables related to target-country institutions that were used by enough studies to permit the use of meta-analytical methods. These are:

- Legal protection, which includes enforcement of contracts and property rights, the functioning of the courts and law enforcement agencies and the protection afforded to shareholders against entrenched managers and directors.

⁵ We did not to use working papers in our study, in part because some of the results reported therein may have appeared later in journal articles and because finding available working papers would be difficult.

⁶ The bibliographic information on the papers analyzed is reported in Supplements 1 and 2.

⁷ The selection and coding of the studies followed the guidelines of Havránek *et al.* (2020). Estimates are defined as different from each other if there are differences in the dependent variable, in the explanatory variables, in the time or countries covered by the sample, in the specification of the regression equation, or in the estimation methodology.

- Institutional quality, which covers the free exercise of individual rights and the extent to which there is respect for formal and informal institutions that delimit the acceptable behavior of government and business decision makers.
- Corruption control, which restricts private and public predation, the use of government power for private gain or the ability of private individuals to usurp the government's powers for their own benefit (i.e., state capture).
- Political stability and effectiveness, which considers the government's ability to formulate and implement economic policies and regulations, to staff an effective public service and to provide necessary infrastructure and other services. More broadly, it may also include the absence of civil conflict and political instability.
- Cultural similarity, which influences both the formal and informal institutions that exist in a country as well as how citizens accept and act according to institutional norms. Thus, if the target-country's culture is similar to that of the acquiring country, there should be greater similarities in people's behavior and in formal and informal institutions as well as in the public's compliance with these institutions.
- Past or current colonial or commonwealth relationship, because such an intimate relationship is thought to create greater institutional and behavioral similarities between acquiring and target countries as well as better information about the target-country in the acquiring country than would be expected based solely on cultural or legal similarities.

The first four of these indicators are similar in name and concept to those used in the World Bank's Worldwide Governance Indicators, which compile similarly named indicators for over 200 countries starting from 1996.⁸ We note that not all the studies in our sample use the World Bank indicators, and researchers have used other proxies for these categories. Moreover, because these indicators are highly correlated across countries, not all of them can be used simultaneously.⁹ Cultural similarity between the acquiring and target country often relies on Hofstede's (1980) measures, but, as with the other variables, alternative measures of cultural similarity have also been used.

As **Table 1** shows, intensity studies use the political stability, cultural similarity, and colony/commonwealth variables more frequently than do the premium studies. The implicit assumption behind this choice of variables is that managers in acquiring countries are more comfortable with, or feel more knowledgeable about, acquiring and operating affiliates in

⁸ See <https://info.worldbank.org/governance/wgi/Home/Documents> and Kaufmann et al. (2010).

⁹ Some indicators may be conceptually superior to others, as Slangen and van Tulder (2009) suggest.

countries that are culturally similar or about which they believe they know more, thus impacting CBMA intensity. Premium studies, on the other hand, emphasize the legal protection variable relatively more frequently, reflecting the influence of legal origins theory on the finance field, and they make much less use of other target-country characteristics. The size of the premium is determined by the capital market, and market reaction to a CBMA is more likely to reflect the business prospects of the acquisition and its cost rather than the comfort of the acquiring firm's managers with making the acquisition. Nevertheless, all variables are included in a sufficient number of studies of both the premium and the intensity of CBMAs to permit the use of meta-analytic methods.

To make the effects reported by the studies comparable to each other, we transformed the reported effect estimates to partial correlation coefficients (PCCs). The PCC is a unitless measure of the association of a dependent variable and the independent variable in question when other variables are held constant. The unitlessness of the PCC allows for the direct comparison of the effect of a wide variety of variables with different definitions and units. This property is quite beneficial for the present study. Let K be the number of estimates and t_k and df_k the t -value and the degrees of freedom of the k -th estimate, r_k . The PCC of the k -th estimate is:

$$r_k = \frac{t_k}{\sqrt{t_k^2 + df_k}}, \quad k = 1, 2, \dots, K \quad (1)$$

and the standard error, SE_k , of r_k as:

$$SE_k = \sqrt{(1 - r_k^2) / df_k} \quad (2)$$

Figure 1 shows the kernel densities of the PCCs for intensity and premium studies separately for each explanatory variable and also separately for intensity and for premium studies. Panels a and b of **Figure 1** show the kernels for all variables. Clearly evident is that the studies using the colony/commonwealth explanatory variable are tightly bunched around a small positive value for intensity studies and around zero for premium studies. To show more clearly the distribution of results for the other explanatory variables, we report in Panels c and d the kernels for explanatory variables other than colony/commonwealth. In these panels it is easier to see that the kernels for intensity studies peak around 0.0 with fat tails, evidence of kurtosis. The PCCs for the premium are skewed to the right and peak between 0.0 and 0.1 indicating that, overall, the studies analyzed show that the explanatory variables have a positive effect on the CBMA premium.

Table 2 reports descriptive statistics and statistical test results for the PCCs, and it confirms, based on the Shapiro–Wilk normality test, the presence of skewness and kurtosis. The effect of each of the explanatory variables is generally significantly different from that of the other explanatory variables according to the ANOVA and Kruskal-Wallis rank-sum tests. Consistent with received theory, the *t*-tests of the means of the effect estimates are significant and positive except in the case of the colony/commonwealth variable for premium studies, meaning that better institutions appear to increase CBMA intensity and the CBMA premium. Finally, **Table 2** confirms the non-normal distribution of the estimates.

Beyond the statistical significance of the effects of institutions on CBMA intensity and premia lies the more important question of whether there is an economically meaningful or non-trivial relationship between the institutional characteristics of the target country and CBMA activity. Whether an effect that is of relevance to policymakers and the executives of MNCs exists is not obvious because, as Cohen (1962) noted, effect sizes of statistical studies are likely to be discipline specific. Cohen compiled reported effect sizes published in the *Journal of Abnormal and Social Psychology* and concluded that that effect sizes of 0.2 should be viewed as small, of 0.5 as medium and those above 0.8 as large. Cohen’s *caveat* regarding the applicability of his effect size categories to other disciplines is borne out by the work of Doucouliagos (2011), who surveyed some 22,000 estimated effect sizes reported in published empirical studies in economics and business. The 25th percentile for PCCs reported in the studies he surveyed is 0.070, the 50th is 0.173 and the 75th is 0.327. PCCs less than the 25th percentile value are considered as reporting “very small” effects. However, there were considerable differences in effect sizes for different subfields. For example, for studies in industrial economics, a topic that is related to the subject of this meta-analysis, the respective values are 0.031, 0.106 and 0.205. To provide additional context, we average Doucouliagos’ estimates of effect sizes in three other types of studies related to corporate behavior and to political stability: board composition and performance, CEO pay and performance and politics and taxes. The respective percentile values are 0.034, 0.074 and 0.131.

Based on the distribution of effect sizes drawn from all studies surveyed by Doucouliagos, none of the effects reported in the studies included in our meta-analysis can be considered as other than “very small”, suggesting that target country institutions have little practical impact on CBMA intensity or premia. However, if we consider the effect sizes reported in studies described above that are more closely related to CBMA activity, we can conclude that institutional quality has a “small” effect on CBMA intensity, and that cultural similarity has an effect that falls in the “moderate” range. For the CBMA premium, cultural

similarity has a “small” effect while corruption control and, especially, political stability and effectiveness have effects that can be classified as “moderate”. These results conform with received theory. Cultural distance is likely to be more important for decisions regarding market entry since cultural similarity should reduce the difficulties of managing foreign affiliates. Premia, on the other hand, depend more on corruption control and political stability and effectiveness, including the government’s ability to regulate the capital market in a way that protects minority shareholders and foreign acquirers from entrenched owners and managers. Effective government regulation of financial markets is likely to reduce the need to displace entrenched majority owners and managers by paying excessively high prices for acquisitions, and the absence of corruption could make acquisitions more profitable. This is consistent with the so-called legal origins theory that emphasizes well-functioning capital markets as offering foreign acquirers a fair price for target-country firms.

Although **Figure 1** and **Table 1** are informative for grasping the overall picture of the CBMA intensity and premia studies, simple aggregation of the reported estimates may be misleading. Therefore, we synthesize and compare the effect estimates using advanced meta-analytic techniques and guidelines in the following sections.

4. Meta-Synthesis

The results of the meta-synthesis of the collected estimates are reported in **Table 3**. We first report the traditional meta-synthesis effect estimates obtained by estimating the meta-fixed-effect (FE) and the meta-random-effects (RE) models of the PCCs. The former is the mean of the estimated effects from all the relevant studies weighted by the inverse of the variance of each estimate. The FE estimates are appropriate only if the study effect estimates are homogeneous. Otherwise, the RE estimates are used. These incorporate weights that account for the sampling variation resulting from an underlying population of differing effect sizes as well as the study-level sampling errors. The estimated PCCs and their significance are reported in Columns 2 and 3 of **Table 3**. The Cochran Q -test results reported in Column 4 as well as the I^2 and H^2 heterogeneity measures (Higgins and Thompson, 2002) show that homogeneity is rejected in most cases, making the RE estimates more appropriate.

In addition to these traditional meta-analytical approaches to estimating the effect size, we also report the unrestricted weighted least squares averages (UWA) proposed by Stanley and Doucouliagos (2017) because they are less subject to the influence of excessive heterogeneity than are the fixed-effect estimates and less subject to publication-selection bias

than are random effects. Stanley *et al.* (2017) also recommend computing a UWA of only those estimates whose statistical power exceeds a threshold of 0.8, which gives the weighted average of the adequately powered estimates (WAAP). The WAAP estimates are more robust against publication selection bias than are the random-effects estimates, making WAAP superior to the other weighted averages (Ioannidis *et al.*, 2017). In **Table 3**, we indicate our preferred estimate of the PCCs in bold face, and, if a WAAP estimate is available, it is our preferred estimate. Where a WAAP estimate is not available, we select the FE or the RE estimate as our preferred estimate based on the homogeneity test and measures. In the case of intensity studies, with the exception of the variables corruption control and political stability and effectiveness, there are sufficient adequately powered estimates to enable us to choose the WAAP estimates. The synthesized effect for institutional quality decreases sharply and the effect of cultural similarity also decreases relative to the unweighted estimates reported in **Table 2** to the extent that the effect size of this variable now borders between “small” and “moderate”. These declines in the synthesized effect sizes suggest the presence of publication-selection bias in the effects reported. In the case of the premium studies, the synthesized effect sizes for both corruption control and political stability and efficiency increase slightly and remain in the moderate range.

Noteworthy in **Table 3** is the small proportion of intensity studies that are adequately powered. The situation is even worse for premium studies, where only two estimates out of 1,226 are adequately powered, both for the institutional quality variable. The lack of adequately powered estimates may be caused by a combination of the small effects of institutions on the premium and the small sample sizes used in premium studies. Because underpowered estimates tend to find effects where no true effects exist (Button *et al.*, 2013), the available literature may overstate the likelihood of true effects of institutions on the CBMA premium, and researchers should address this by expanding sample sizes in future studies.¹⁰

Figure 2 presents a visual comparison of the estimated effects of the institutional variables on CBMA intensity and premia. The figure makes clear that intensity studies produce larger estimates of the effect of broader measures of acquiring-target country institutional characteristics such as cultural similarity while premium studies produce larger coefficients for narrower measures of target-country institutions such as political stability. Nevertheless, the estimated effects are small in absolute terms, even if statistically significant.

¹⁰ An advantage of meta-analysis is that it combines underpowered estimates and increases the statistical power of the combined estimates. Nevertheless, the wide absence of adequately powered estimates in the literature should be of concern.

5. Meta-Regression Analysis

5.1. Characteristics of intensity and premium studies of CBMAs

In this section we address two questions. The first is whether studies of CBMA intensity and of the CBMA premium are comparable in terms of the data and modelling strategies used. The second question is whether, within either studies of intensity or of the premium, differences in data or methodology can lead to estimates of effects not evident when all studies are considered together. We select 35 study characteristics that have the potential to systematically affect the estimates of effect sizes provided by the literature. These study characteristics and their summary statistics are listed in **Table 4**, and they can be grouped into nine categories.

The first category consists of the institutional characteristics used to describe the target country. We take the variable legal protection as the baseline and, below, test whether effect estimates using other characterizations of institutions lead to systematically different results. Intensity and premium studies differ from each other because the former include the variables political stability and effectiveness and former colony/commonwealth more frequently than do the latter. The second category refers to the nature of the data used by studies, and no major differences between premium and intensity studies are evident in the nature and time coverage of samples used.

The third and fourth categories reveal the biggest differences both within and between studies of intensity and the premium. Category three groups studies by the type of acquiring country used in the study and category four by the target country covered by the study. The baseline for each category is studies that use samples with worldwide coverage. For intensity, there are many more studies that use a single country or groups of countries that are close to each other in terms of geography or economic development. Premium studies cast a narrower geographic net, and nearly one fourth of the premium studies have European countries as the acquiring or target country or as both acquirers and targets. This may be related to the fact that premium studies generally rely on the evolution of share prices of acquiring firms, and these may more reliably identified in well-developed European capital markets than in the thin markets of developing countries.

Category five breaks out studies that examine CBMAs involving financial companies because the financial sector is seen as more affected by government regulations and thus as something of a franchise sector that is more sensitive to the institutional characteristics of the target country.

Category six applies only to studies of CBMA intensity. The default is the number of CBMA decisions, a binary variable that gives a value of 1 if a firm or firms in an acquiring country acquired a firm or firms in the target country and is 0 otherwise. Alternative measures are the total number of CBMA cases, the monetary value of CBMA transactions, the CBMA completion ratio, which is the proportion of completed CBMAs in all CBMA cases including unsuccessful ones, and the CBMA cross-border ratio, which denotes the share of CBMAs in all MAs that take place in target country. Category seven represents the ways in which the CBMA premium is measured and thus it applies only to premium studies. The default category is studies that use the acquirer's cumulative abnormal return (CAR) as the dependent variable and the other category is studies that measure the premium in another way.¹¹

Category eight categorizes the specification of the model used to estimate the effects of institutions. The default is the aggregate model, which does not specify an acquiring country for each cross-border CBMA but rather uses some aggregate measure (number or value) of CBMAs in the target country. Another specification used in the literature is the gravity model, the use of which stems from the cultural distance literature.¹² Dyadic models involve estimations of CBMAs between pairs of countries and "other models" capture studies that do not fit into the preceding categories. There are no striking differences between intensity and premium studies in their use of these specifications. In addition, we also distinguish studies that use time, industry or location fixed effects as part of the specification. Category nine covers the estimation method used. The default is estimators other than OLS, which include various panel estimation techniques as well as methods that account for reverse causality and other potential sources of bias in parameter estimates.

Intensity studies differ from premium studies in that intensity studies tend to use political stability as an explanatory variable more frequently than do premium studies. However, the main difference between the two types of studies is in the choice of countries used in the analysis. Intensity studies use a wide range of countries as acquirers and targets while premium studies tend to focus on European countries as targets and as acquirers. Overall, there are more similarities than differences in the data, methodologies and estimation methods employed by the two types of study, which justifies our treating them both in the same paper.

5.2. Sources of heterogeneity in CBMA studies

¹¹ Abnormal returns are generally measured by event study methods.

¹² We classify any specification that uses the distance between countries and their size as a gravity specification. Some such studies also use factors that explicitly reference some aspects of cultural distance by means of variables such as same language, religion, etc.

The within-category differences in studies of intensity and the premium may be an important source of the differences in reported effect sizes. To better understand the effects of study characteristics on the estimates of effect sizes, we estimate a meta-regression model:

$$r_k = \beta_0 + \sum_{n=1}^N \beta_n x_{kn} + e_k, \quad k = 1, \dots, K \quad (3)$$

where x_{kn} is the n -th meta-independent variable that captures a characteristic of the k -th PCC (r_k) and explains its systematic variation from other PCCs in the sample; β_n denotes the meta-regression coefficient to be estimated; N is the number of meta-independent variables; and e_k is the meta-regression disturbance term. We accept a coefficient β_n as statistically meaningful on the basis of five different ways of estimating Equation 3. These are (1) the cluster-robust ordinary least squares (OLS), which clusters the collected estimates by study and computes robust standard errors; (2) weighted least squares weighed by the inverse of the standard error ($1/SE$) as a measure of estimate precision; (3) weighted by the degrees of freedom ($d.f.$) to account for sample-size differences among the studies; (4) weighted by the inverse of the number of estimates in each study to avoid the domination of the results by studies with large numbers of estimates (Havránek and Sokolová, 2020); and (5) the cluster-robust fixed-effects/random-effects panel estimator (Stanley and Doucouliagos, 2012). We report either a random-effects model or a fixed-effects model, according to the Hausman test of model specification. We accept β_n as significantly different from zero if at least three of the estimates of β_n obtained by the five estimation methods are statistically significant and of the same sign.

Equation 3 parameter estimates for CBMA intensity are reported in **Table 5**. For those categories where there is a default explanatory variable, which is given in parentheses, the reported coefficients for the other variables in that category show the difference between the default variable's estimated effect and those of the other variables in that category. Those meta-independent variables that meet our criteria for statistically significant differences between their estimates and those of the baseline variable are shown in bold face. Of the 33 meta-independent variables, 14 have statistically significant estimates by our criterion. Thus, the design of CBMA intensity studies clearly has an influence on study conclusions. The key question is whether the coefficients of these meta-independent variables are large enough to overturn the conclusions reached about effect sizes presented in **Tables 2** and **3**. As shown in **Table 5**, in the category of institutions, studies that use corruption control and political stability produce estimates that are significantly smaller than those obtained for the base category, legal protection. On the other hand, estimates of studies using cultural similarity have significantly

higher estimated effects than does legal protection, which is consistent with the results reported in **Tables 2** and **3** and reflects the importance of cultural similarity in CBMA studies.

Table 5 also shows that the biggest influence on differences in the estimates of effect sizes is the choice of acquiring and target countries. Relative to studies that use a worldwide sample of acquiring countries, using only developed country acquirers leads to significantly higher effect estimates. More striking is that studies that use only European acquirers leads to effect estimates that are much smaller than the estimate for samples of world-wide acquirers. Indeed, the negative effect is so large that for any plausible estimate of the worldwide effect, studies using European acquirers report negative effects that would easily fall into the moderate but negative effect range. A similar situation applies in the case of target countries. The coefficients for European targets and for South American target countries fall well below the estimates obtained for world-wide targets. The lower effect estimates for samples using European countries as acquirers or targets may be due to the existence of the European Union (EU), which makes it easy for firms in one EU member country to establish themselves in any other EU country. Thus, the need for CBMAs as a way of entering other EU member countries' markets from another EU country is lessened, and, hence, the intensity of CBMAs in Europe should be lower than for other regions. Lower CBMA activity in South America suggests that institutions in South America are less effective in attracting CBMA than they are in other developing countries for reasons not captured by the explanatory variables used in most studies.

Finally, in the category of equation type, the specification of the model, including accounting for industry fixed effects, for estimating effect sizes leads to different results. There are only a few studies in the "other model" category, but aggregate, gravity and dyadic models are frequently used. Replications of studies using the same CBMA sample but with different specifications could help explain this heterogeneity and represents a potentially valuable avenue for research.

Table 6 reports the results for Equation 3 estimations for the CBMA premium. There are only four meta-independent variables whose coefficients are significantly different from zero. Cultural similarity and the colony/commonwealth variables are both negative, so the premium appears to be smaller in the cases where either cultural similarity or colony are used instead of legal protection as the explanatory variable. This suggests that the geographic distribution of CBMAs, that is, CBMA intensity, may be driven by managers' preferences for seemingly safe acquisitions in countries where they feel comfortable with the local culture more than by calculations of the profitability of the acquisition.

The dispersion of effects estimates in studies of the CBMA premium is not well explained by researchers' choices of models, data or estimation methods. Not only are there few significant meta-independent variables, but the R-squared values of the regressions for the premium are much lower than those for intensity. This means that differences in study conditions explain much more of the observed heterogeneity of study results for CBMA intensity than they do for studies of the CBMA premium. Thus, the heterogeneity in the results of premium studies is due to idiosyncratic study-specific factors unrelated to the explanatory variables that we have used in our meta-synthesis and gaining a better understanding of the causes of heterogeneity in premium studies should be a task for future research.

To deal with model uncertainty in meta-regression analysis and to test whether the study categories we have used in our meta-regression analysis are appropriate, we use Bayesian model averaging (BMA) to identify robust moderators. Robust moderators are those that have a posterior inclusion probability (PIP) of 0.80 or more (Hoeting *et al.*, 1999; Brada *et al.*, 2021). The results of the BMA exercise are reported in Appendix Table A1. Using the results of the BMA, we re-estimated Eq. 3 using only those moderators whose PIP exceeded 0.80. The results are reported in **Table 7**. The meta-regression models with selected moderators in Panel (a) of the table show a similar picture as that reported for intensity studies in **Table 5**. That is to say, the variables that are statistically significant in **Table 5** are also statistically significant in **Table 7**, and they are similar in magnitude. The main sources of heterogeneity remain the choices of acquiring and target countries for intensity studies. In the case of premium studies, reported in Panel (b) of **Table 7**, only three variables prove significant: colony/commonwealth, US acquirer and target Europe. These results are consistent with those reported in **Table 6** in that few meta-independent variables provide any significant explanation of the heterogeneity of premium estimates. This better ability of the moderators to explain the heterogeneity of intensity is also evident from a comparison of the R-squared for the intensity studies, which is much higher than that of the premium studies.

6. Publication Bias

Because we use only published studies of CBMAs in this meta-analysis, there is a risk that our sample overrepresents studies that report significant relationships between target country institutions and CBMAs because referees and journal editors may prefer to accept articles for publication that report statistically significant effects over those that do not. Alternatively, publication-selection bias may be due to the so-called “file drawer problem” (Stanley and

Doucouliaagos, 2012), which results from researchers not submitting for publication studies that find few or no statistically significant or strong effects. Therefore, in this section we examine this possibility to determine whether publication-selection bias affects our results.

We first show possible publication-selection bias by means of funnel plots of the reported PCCs. A funnel plot shows the PCCs of individual studies on the horizontal axis and $1/SE$, a measure of the precision of the study's estimate, on the vertical axis. Statistical theory suggests that the dispersion of effect sizes is inversely related to the estimates' precision, and the plot should take the shape of an inverted funnel. In the absence of publication-selection bias, the distribution of effect sizes of the analyzed studies should be symmetrical around the true effect. If the funnel plot is skewed to either side of the true effect, publication bias is suspected.

Figure 3 shows funnel plots of PCCs for intensity studies. Apart from the colony/commonwealth variable, the PCCs all display the expected funnel shape. **Figure 4** presents the funnel plots for premium studies, and the estimated effects for corruption control, political stability and colony/commonwealth do not display a funnel shape. Moreover, comparing the vertical axes of **Figures 3** and **4**, it is evident that the precision of the estimates of effect sizes in intensity studies is much greater than it is for premium studies, further underscoring our concerns about the statistical strength of the latter. Casual observation also suggests that outlier estimates tend to be more frequent to the right of the mean effect, suggesting the possibility of publication-selection bias in favor of studies that find large and positive effects of institutions on CBMAs.

We further explore the possibility of a bias toward studies that find a positive effect by examining the symmetry of the funnels reported in **Figures 3** and **4**, and we report these results in **Table 8**. To test for funnel symmetry, we perform a z test of the null hypothesis that the ratio of the estimates greater than and less than zero is 50:50. The implicit assumption is that there is no true effect of the explanatory variables on CBMAs and that any effect evident in the synthesized estimates reported in **Table 3** would be due entirely to publication-selection bias, which biases the estimates in favor of a positive effect. We also test the null hypothesis that the ratio of estimates above and below the selected synthesized effect values reported in **Table 3** is 50:50. The assumption is that the synthesized effect is a true effect, and that the funnel distribution around the true estimate is not subject to publication-selection bias.

For intensity studies, if we assume the effect of the institutional variables is zero, we reject the hypothesis that the ratio of studies with positive and negative results is 50:05 except for the political stability variable. If we use the synthesized effect size as the standard, then

three of the six variables, legal protection, institutional quality and cultural similarity, continue to show a significantly greater number of studies with a larger effect than the synthesized effect size. For the premium studies, if we assume a zero true effect, all variables show evidence of a potential bias in favor of studies that find a positive effect. With respect to the distribution of estimates around the selected synthesized value, two variables, political stability and cultural similarity, suggest a potential bias against studies that find a smaller effect than the synthesized effect, and only the colony/commonwealth variable continues to show publication-selection bias in favor of studies that find a larger effect.

Given this evidence of the possibility of publication-selection bias, we use the so-called FAT-PET-PEESE procedure of Stanley and Doucouliagos (2012) to test for its existence and impact on estimated effects. For the funnel asymmetry test (FAT), we estimate Equation 4:

$$t_k = \beta_0 + \beta_1(1/SE_k) + \epsilon_k \quad (4)$$

for each of the six institutional measures, where ϵ_k is the error term. If the intercept term β_0 is not zero, the distribution of the effect sizes is asymmetric, suggesting the possibility of publication bias. However, the existence of publication-selection bias does not rule out the possibility that there exists a true effect despite this bias. Thus, we test the hypothesis that β_1 in Equation 4 is zero. If the hypothesis $\beta_1 = 0$ is rejected, then β_1 is an estimate of the true effect after adjusting for publication selection bias, which is the so-called PET test. In addition, the bias-adjusted true effect can also be estimated by Equation 5

$$t_k = \gamma_0 SE_k + \gamma_1(1/SE_k) + \epsilon_k \quad (5)$$

which is known as the precision-effect estimate with standard error (PEESE) test. If the null hypothesis that $\gamma_0 = 0$ is rejected, this is evidence of a non-zero true effect in the literature and γ_1 is the estimate of that effect.

Results for these tests are summarized in **Table 9** for intensity studies in Panel a and for premium studies in Panel b. To provide robustness for our hypothesis tests we estimated the parameters of Equations 4 and 5 using three different techniques, unrestricted WLS, cluster-robust unrestricted WLS and random-effects panel models.¹³ In cases where we reject either or both of the hypotheses $\beta_1 = 0$ or $\gamma_1 = 0$ we report their estimates in the last column.

Turning first to intensity studies, based on the FAT test for the absence of publication-selection bias, the hypothesis $\beta_0 = 0$ is rejected for all studies except those using the variables of legal protection and political stability and effectiveness. Thus, there is the likelihood of

¹³ In the FAT-PET tests, the model was estimated using cluster-robust RE panel GLS, while PEESE estimation was performed with the RE panel ML estimator.

publication-selection bias. In the case of studies using the variable corruption control, we can reject the possibility that there is a non-zero true effect after adjusting for publication selection bias on the basis of both the PET and PEESE tests. For all other variables, we are not able to reject the hypothesis that a true effect exists despite the presence of publication selection bias, and we report the bias-adjusted effect sizes in the last column. Comparing the estimated publication-selection bias estimates reported in the rightmost column of **Table 9** with the results reported in **Tables 2** and **3**, the effect of publications selection bias on the true estimated effect is small except in the case of cultural similarity, where the magnitude of publication-selection bias is bigger relative to the estimate of the effect size. All studies except those using corruption control yield non-zero effect estimates when we adjust for publication-selection bias.

In the case of premium studies, the FAT test does not reject the hypothesis $\beta_0 = 0$ for any of the institutional characteristics. Based on the PET test, only in the case of corruption control can we reject the hypothesis that there is no true effect of this variable on CBMAs once we adjust for publication-selection bias. Using the PEESE method, we confirm that corruption control has a true effect once we adjust for publication-selection bias. Interestingly, the bias-adjusted effect estimates of corruption control are larger than the effect values reported in **Table 3**, to the extent that corruption control effects are in the moderate range once publication bias is taken onto account.¹⁴

¹⁴ There is also a possibility, suggested by a referee, that journal quality may also introduce a bias in published results, with journals perceived as being of lower quality willing to publish results that would not appear statistically strong to editors of more highly ranked journals. To address this question, we reestimated **Tables 5** and **6** including as an explanatory variable journal quality. For journal quality we used the ranking provided by IDEAS in 2018 of 2159 (broadly considered) economics and finance journals. Using cluster analysis, these journals were grouped into 20 clusters of similarly ranked journals. Journals were ranked by scores that ranged from 20 to 1 with the highest ranked journals receiving 20 points while the journals in the lowest ranked cluster received a score of 1. If a journal was not included in the IDEAS data base, then, based on the Thomson Reuters Impact Factor and other journal rankings, we identified IDEAS-ranked journals with Impact Factor scores similar to the non-IDEAS listed journals. The journals not listed in IDEAS were then given the same score as their Thompson-Reuters Impact Factor peers. In the estimates for CBMA intensity, journal quality was not significant in any of the specification reported in **Table 5**. For the premium, journal quality was significant at the 10% level in only 2 of the 5 regressions. BMA analysis yielded PIPs of less than 0.50 for journal quality in both CBMA intensity and premium studies. Thus, the journal quality cannot be regarded as a robust moderator. These estimations are available from the authors.

7. Discussion and Conclusions

Our meta-analysis covers 22,000 estimates from 90 studies of the effects of target-country institutions on CBMA activity. We examine the effects of these variables on CBMA intensity and CBMA premia separately. In the case of CBMA intensity, we find that broader measures of institutions such as political stability, cultural similarity and colony or commonwealth status have some explanatory power. We hypothesize that these broader factors make managers of acquiring firms more confident in their ability to operate successfully in the target countries. CBMA premia, on the other hand, are affected by more microeconomic institutional characteristics, most notably legal protection in the target countries. This is consistent with so-called legal origins theory.

Overall, compared to effect sizes found in other meta-analyses of finance and economic research, the PCCs of the institutional variables are small, meaning that the literature does not find important or practically significant effects for most of the institutional explanatory variables. In the case of intensity studies, institutional quality and cultural similarity have the strongest effects on CBMA activity, a finding that is consistent with theories that stress cultural similarity as an important determinant of how firms choose to enter foreign markets. In the case of CBMA premia, cultural similarity, corruption control and political stability and effectiveness have the largest effects. The importance of the latter two variables is consistent with legal origins theory, though their effect sizes are more modest than the widespread acceptance of this theory would suggest. The belief that the empirical literature supports either the theories regarding the importance of cultural distance for CBMAs or of the centrality of legal origins theory for CBMAs and especially for the CBMA premium should be treated with some caution because many of the studies, especially in the case of premia, lack statistical power. The upshot of this is that expanding sample size to increase statistical power should be an avenue for future research.

Models vary widely in the choice of dependent and explanatory variables, the data used, and estimation methods. While a number of these characteristics do explain some of the heterogeneity of the results, the nature of the home and target countries is by far the most important source of differences in study findings. This suggests that both theory and empirics should address this issue more intensively, and studies that focus on a small and geographically proximate countries should be treated with caution. Although it is useful to establish that the selection of countries in a study influences the effect sizes obtained, this finding also shows that studies of CBMAs omit variables that have a large effect on the estimates of the role that

target-country institutions have on CBMAs. This is because the category “country” or “countries” is not, in and of itself, a driver of CBMA activity. If a country descriptor such as “target countries are EU members” has an important effect on the measured effect of institutions on CBMA activity, then it follows that the countries in this category must share some common but unobserved economic, social, or institutional similarities that are not captured by the studies that we analyze.

Finally, in addition to the relatively small effects found for the reviewed studies, a further complication is that there is evidence of publication-selection bias, generally in favor of studies that find significant effects of institutions. This bias to some extent weakens the already fragile findings regarding the effect of institutions on CBMA activity, but this bias is not sufficient to overturn our conclusions.

The meta-analysis in this paper poses a fundamental question for the study of CBMA activity. Given the large theoretical literature that supports the relevance of target-country institutions for CBMA activity, it is both surprising and disappointing that these theories are not strongly supported by the available empirical literature. Thus, it is worth considering whether the theories are wrong, in the sense that the effects of variables deemed important by the theories turn out to have little or no effect on behavior, or whether the empirical work to date has shortcomings that prevent us from uncovering these effects. Clearly, a critical evaluation of the theories of CBMA activity is beyond the scope of this paper. Nevertheless, the meta-analysis presented here offers some clues as to why the empirical literature may fail to support theory more strongly.

A final source of heterogeneity in effect estimates arises from the use of indices of institutional characteristics of countries. For example, the World Bank governance indicators that play a large role in the studies surveyed are based on surveys and expert opinion and then aggregated in various ways. This may mean that such indices reflect the ideological or cultural biases of the survey respondents or of those constructing the indices.¹⁵ Even if indices are free of cultural or ideological bias, coding and constructing such indices for a large number of countries is difficult and prone to often large differences in index values due to the

¹⁵ This issue of survey respondent or index compiler bias has been widely discussed with respect to rival indices of so-called economic freedom compiled by the Fraser Institute and by the Heritage Foundation. Ram (2014) compares these two indices and reports that “(n)umerous cases of huge differences between country ranks for the two sets of ratings are noted. A simple illustration shows that inferences based on one set of ratings can be very different from those suggested by the other set.” Also see Sachs (2005).

methodology used to compile them (Spamann, 2010). Thus, scholars should use as many as possible available indices of institutional quality as a robustness check for their results.

Although this meta-analysis of the effects of target-country institutions does not find strong support for those theories that stress the importance of institutions for CBMA activity, it would be incorrect to conclude that the empirical literature refutes these theories. Our findings do suggest the need for a critical reconsideration of theories regarding the role of institutions in CBMAs, but it is also clear that the empirical evidence needs to be strengthened to address the weaknesses that have been revealed by our meta-analysis.

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Supplement 2.

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Table 1. Overview of collected estimates

Study type	Number of works	Estimation period covered	Number of collected estimates (K)	Breakdown of collected estimates by variable type						Average number of estimates per study	Median number of estimates per study
				Legal protection	Institutional quality	Corruption control	Political stability and effectiveness	Cultural similarity	Colony/commonwealth history		
All studies	90	1981-2017	2961	1305	262	152	341	804	97	32.9	18
CMBA intensity studies	54	1981-2015	1735	634	145	86	280	507	83	32.1	17
CBMA premium studies	46	1985-2017	1226	671	117	66	61	297	14	26.7	17

Note: Ten works conducted both CBMA intensity and premium studies. Supplements 1 and 2 provide the list of studies subject to meta-analysis and their bibliography, respectively.

Table 2. Descriptive statistics of the partial correlation coefficients, *t*-test and Shapiro–Wilk normality test of collected estimates and univariate comparative analysis between variable types

(a) CBMA intensity studies

Variable type	<i>K</i>	Mean ^a	Median ^b	S.D.	Max.	Min.	Kurtosis	Skewness	<i>t</i> test ^c	Shapiro-Wilk normality test (<i>z</i>) ^d
Legal protection	634	0.024	0.024	0.107	0.469	-0.562	10.251	-0.602	5.598 ***	10.390 †††
Institutional quality	145	0.035	0.016	0.088	0.456	-0.252	9.690	1.632	4.774 ***	6.713 †††
Corruption control	86	0.020	0.013	0.109	0.313	-0.493	9.227	-0.801	1.715 *	5.234 †††
Political stability and effectiveness	280	0.015	0.001	0.114	0.506	-0.466	6.901	1.028	2.183 **	7.028 †††
Cultural similarity	507	0.061	0.051	0.106	0.678	-0.339	6.949	0.914	13.045 ***	8.050 †††
Colony/commonwealth history	83	0.027	0.029	0.017	0.074	-0.007	3.521	-0.048	14.898 **	2.508 †††

(a) CBMA premium studies

Variable type	<i>K</i>	Mean ^e	Median ^f	S.D.	Max.	Min.	Kurtosis	Skewness	<i>t</i> test ^c	Shapiro-Wilk normality test (<i>z</i>) ^d
Legal protection	671	0.023	0.020	0.110	0.574	-0.516	7.994	0.120	5.279 ***	8.767 †††
Institutional quality	117	0.032	0.047	0.125	0.276	-0.390	3.289	-0.405	2.769 ***	1.401 †
Corruption control	66	0.049	0.025	0.131	0.810	-0.183	18.743	2.987	3.041 ***	5.848 †††
Political stability and effectiveness	61	0.064	0.014	0.194	0.916	-0.185	12.573	2.968	2.589 ***	6.451 †††
Cultural similarity	297	0.034	0.017	0.117	0.703	-0.368	8.698	1.094	5.091 ***	7.008 †††
Colony/commonwealth history	14	-0.002	0.001	0.011	0.012	-0.029	4.638	-1.680	-0.678	2.886 †††

Notes: Dash denotes that statistic is not available.

^a ANOVA: $F=10.55, p=0.000$; Bartlett's test: $\chi^2=234.16, p=0.000$

^b Kruskal-Wallis rank-sum test: $\chi^2=98.18, p=0.000$

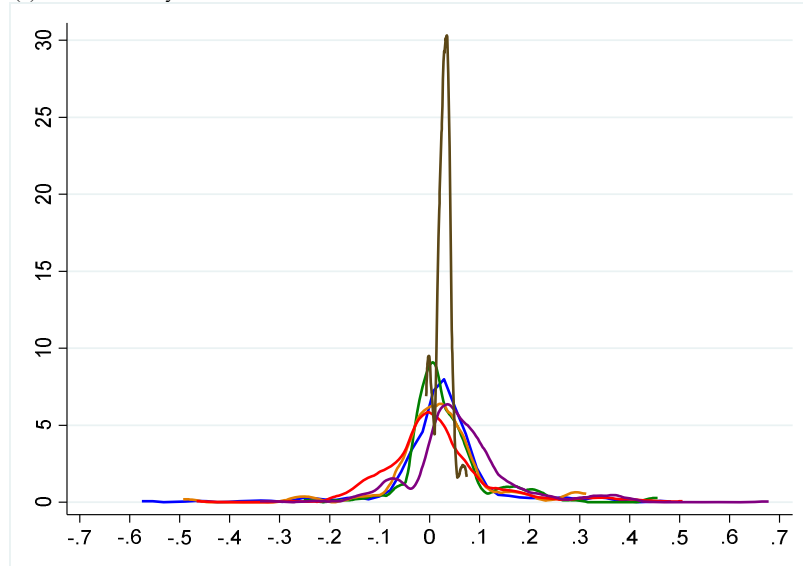
^c ***, **, and * denote that null hypothesis that mean is zero is rejected at the 1%, 5%, and 10% levels, respectively.

^d †††, ††, and † denote that null hypothesis of normal distribution is rejected at the 1%, 5%, and 10% levels, respectively.

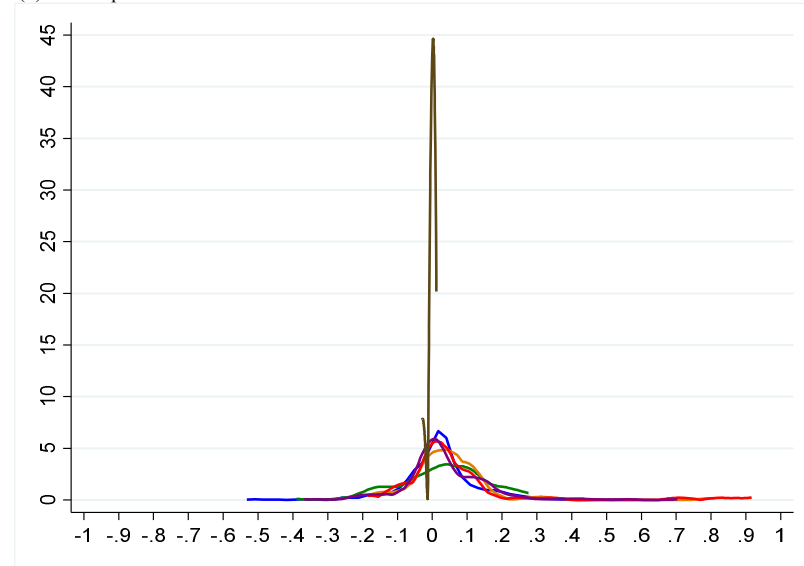
^e ANOVA: $F=2.17, p=0.055$; Bartlett's test: $\chi^2=97.63, p=0.000$

^f Kruskal-Wallis rank-sum test: $\chi^2=8.596, p=0.126$

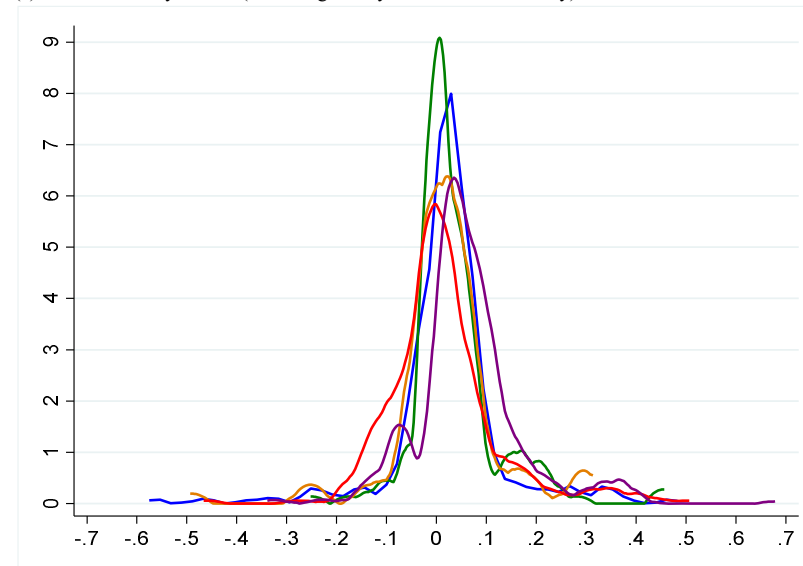
(a) CBMA intensity studies



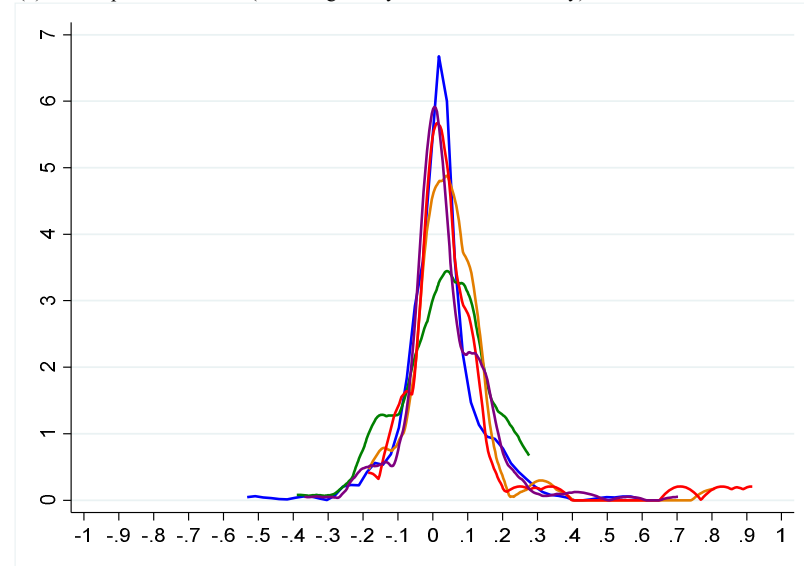
(b) CBMA premium studies



(c) CBMA intensity studies (excluding colony/commonwealth history)



(d) CBMA premium studies (excluding colony/commonwealth history)



— Legal protection — Institutional quality — Corruption control — Political stability and effectiveness — Cultural similarity — Colony/commonwealth history

Figure 1. Kernel density estimation of collected estimates by study type

Note: Vertical axis is Kernel density. Horizontal axis is partial correlation coefficient of collected estimates. See Table 2 for the descriptive statistics of collected estimates.

Table 3. Synthesis of collected estimates

(a) CBMA intensity studies

Legal variable type	Number of estimates (K)	(a) Traditional synthesis		(b) Heterogeneity test and measures			(c) Unrestricted weighted least squares average (UWA)				
		Fixed-effect model (z value) ^a	Random-effects model (z value) ^a	Cochran Q test of homogeneity (p value) ^b	I ² statistic ^c	H ² statistic ^d	UWA of all estimates (t value) ^{a,c}	Number of the adequately powered estimates ^f	WAAP (weighted average of the adequately powered estimates) (t value) ^a	Median S.E. of estimates (MSE)	Median statistical power (MSP)
Legal protection	634	0.017 ^{***} (43.22)	0.025 ^{***} (10.44)	7555.8 ^{***} (0.000)	96.65	29.82	0.017 ^{***} (12.72)	116	0.014 ^{***} (6.29)	0.017	0.176
Institutional quality	145	-0.010 ^{***} (-13.75)	0.022 ^{***} (4.35)	1511.8 ^{***} (0.000)	97.46	39.29	-0.010 (-4.24)	3	0.001 (0.60)	0.015	0.096
Corruption control	86	0.003 [*] (1.81)	0.018 ^{**} (2.15)	560.1 ^{***} (0.000)	95.82	23.94	0.003 (0.72)	0	- (-)	0.035	0.030
Political stability and effectiveness	280	0.009 ^{***} (11.23)	0.010 (1.60)	2275.2 ^{***} (0.000)	97.68	43.03	0.009 ^{***} (0.01)	0	- (-)	0.035	0.043
Cultural similarity	507	0.040 ^{***} (88.64)	0.055 ^{***} (15.06)	12405.0 ^{***} (0.000)	98.25	57.2	0.041 ^{***} (18.10)	153	0.042 ^{***} (11.83)	0.018	0.619
Colony/commonwealth history	83	0.025 ^{***} (35.81)	0.026 ^{***} (14.58)	478.3 ^{***} (0.000)	83.10	5.92	0.025 ^{***} (14.48)	68	0.024 ^{***} (12.94)	0.006	0.984

(b) CBMA premium studies

Legal variable type	Number of estimates (K)	(a) Traditional synthesis		(b) Heterogeneity test and measures			(c) Unrestricted weighted least squares average (UWA)				
		Fixed-effect model (z value) ^a	Random-effects model (z value) ^a	Cochran Q test of homogeneity (p value) ^b	I ² statistic ^c	H ² statistic ^d	UWA of all estimates (t value) ^{a,c}	Number of the adequately powered estimates ^f	WAAP (weighted average of the adequately powered estimates) (t value) ^a	Median S.E. of estimates (MSE)	Median statistical power (MSP)
Legal protection	671	0.015 ^{***} (12.03)	0.022 ^{***} (6.70)	2471.8 ^{***} (0.000)	79.90	4.97	0.015 ^{***} (6.17)	0	- (-)	0.045	0.053
Institutional quality	117	0.042 ^{***} (15.28)	0.035 ^{***} (3.56)	586.7 ^{***} (0.000)	90.60	10.64	0.042 (6.73)	2	0.021 [*] (6.97)	0.065	0.094
Corruption control	66	0.061 ^{***} (11.00)	0.053 ^{***} (3.35)	400.6 ^{***} (0.000)	86.96	7.67	0.061 ^{***} (4.39)	0	- (-)	0.050	0.228
Political stability and effectiveness	61	0.028 ^{***} (9.00)	0.067 ^{***} (2.67)	1488.6 ^{***} (0.000)	98.29	58.4	0.027 [*] (1.79)	0	- (-)	0.033	0.129
Cultural similarity	297	0.013 ^{***} (7.43)	0.029 ^{***} (5.15)	1260.8 ^{***} (0.000)	88.91	9.01	0.013 ^{***} (3.56)	0	- (-)	0.041	0.049
Colony/commonwealth history	14	-0.002 (-0.59)	-0.002 (-0.59)	11.9 (0.538)	0.03	1.00	-0.002 (-0.64)	0	- (-)	0.012	0.036

Notes: Selected synthesized values are emphasized in bold. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Dash denotes that statistic is not available. See Table 2 for the descriptive statistics of collected estimates.

^a Null hypothesis: The synthesized effect size is zero.

^b Null hypothesis: Effect sizes are homogeneous.

^c Ranges between 0 and 100% with larger scores indicating heterogeneity.

^d Takes zero in the case of homogeneity

^e Synthesis method advocated by Stanley and Doucouliagos (2015) and Stanley et al. (2017).

^f Denotes number of estimates with statistical power of 0.80 or more which is computed referring to the UWA of all collected estimates.

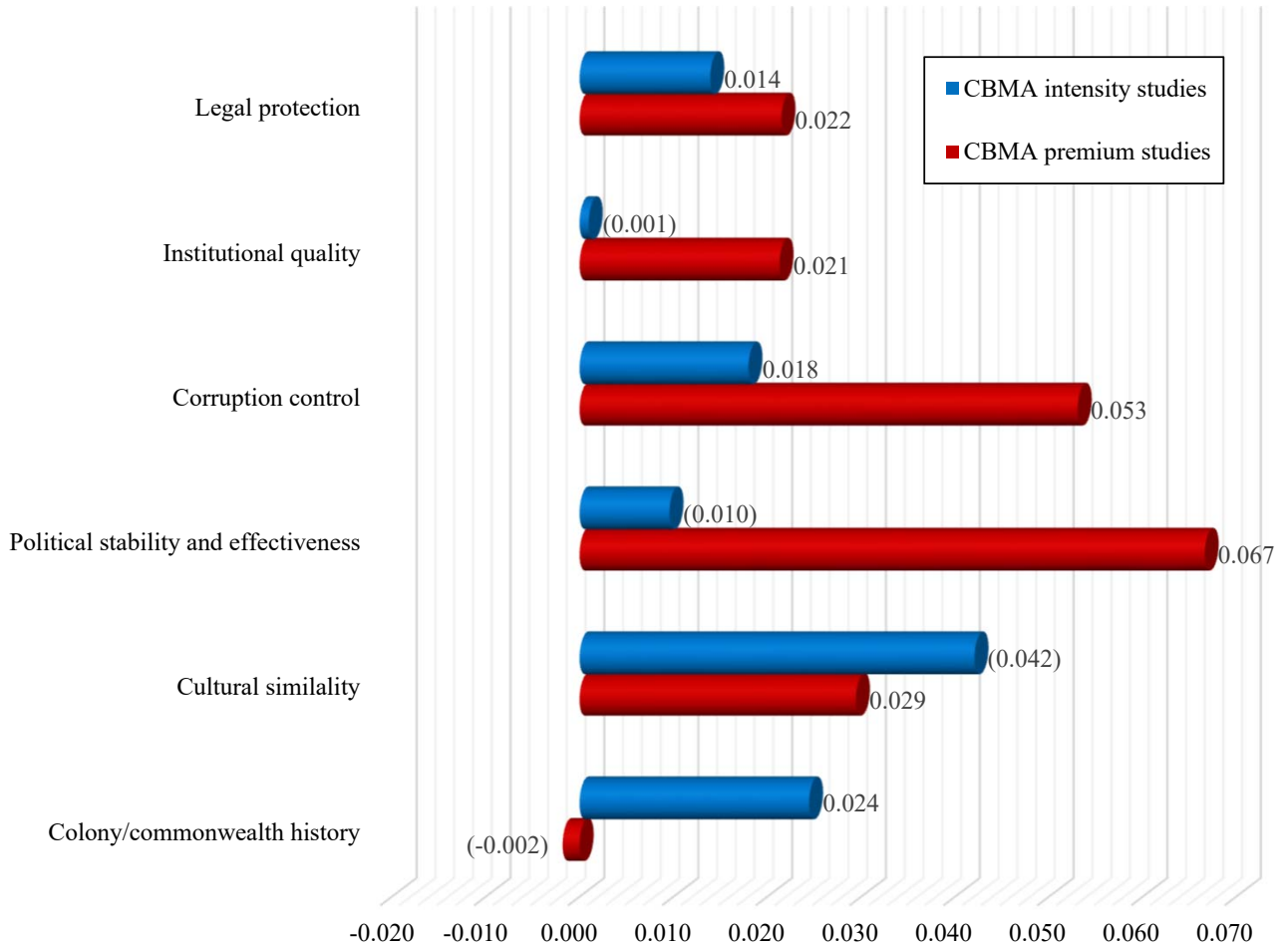


Figure 2. Illustrated comparison of synthesis results

Notes: This figure illustrates the selected synthesized values reported in Table 3. Synthesized values in parentheses are not statistically significantly different from zero. See Table 2 for the descriptive statistics of collected estimates.

Table 4. Name, definition, and descriptive statistics of meta-independent variables

Variable name	Definition	Descriptive statistics					
		CBMA intensity studies			CBMA premium studies		
		Mean	Median	S.D.	Mean	Median	S.D.
Institutional quality	1 = if variable type is institutional quality, 0 = otherwise	0.084	0	0.277	0.095	0	0.294
Corruption control	1 = if variable type is corruptin control , 0 = otherwise	0.050	0	0.217	0.054	0	0.226
Political stability and effectiveness	1 = if variable type is polity stability and effectiveness, 0 = otherwise	0.161	0	0.368	0.050	0	0.218
Cultural simality	1 = if variable type is cultural simality, 0 = otherwise	0.298	0	0.458	0.242	0	0.429
Colony/commonwealth history	1 = if variable type is colony and commonwealth history, 0 = otherwise	0.048	0	0.213	0.011	0	0.106
Panel data	1 = if panel data is employed for empirical analysis, 0 = otherwise	0.404	0	0.491	0.491	0	0.500
Average year of estimation	Average year of estimation period	2001.998	2002	4.073	2002.000	2000.5	4.639
Length of estimation	Number of years in estimation period	15.572	16	6.832	14.471	14	5.918
Advanced acquiring country	1= if acquiring countries are advanced countries, 0 = otherwise	0.079	0	0.270	0.006	0	0.075
Developing acquiring country	1= if acquiring countries are developing countries, 0 = otherwise	0.199	0	0.400	0.011	0	0.106
Acquirer US	1= if acquiring country is the United States, 0 = otherwise	0.033	0	0.180	0.074	0	0.262
Acquirer Canada	1= if acquiring country is Canada, 0 = otherwise	-	-	-	0.007	0	0.081
Acquirer UK	1= if acquiring country is the United Kingdom, 0 = otherwise	0.009	0	0.093	0.015	0	0.124
Acquirer Europe	1= if acquiring countries are European countries, 0 = otherwise	0.008	0	0.089	0.241	0	0.428
Acquirer Japan	1= if acquiring country is Japan, 0 = otherwise	0.009	0	0.096	-	-	-
Acquirer China	1= if acquiring country is China, 0 = otherwise	0.037	0	0.189	0.150	0	0.357
Advanced target country	1= if traget countries are advanced countries, 0 = otherwise	0.078	0	0.269	0.025	0	0.157
Developing target country	1= if target countries are developing countries, 0 = otherwise	0.065	0	0.246	0.029	0	0.169
Target UK	1= if target country is the United Kingdom, 0 = otherwise	-	-	-	0.013	0	0.114
Target Europe	1= if target countries are European countries, 0 = otherwise	0.005	0	0.072	0.204	0	0.403
Target Asia	1= if target countries are Asian countries, 0 = otherwise	0.016	0	0.124	-	-	-
Target Africa	1= if target countries are African countries, 0 = otherwise	0.035	0	0.184	-	-	-
Target South America	1= if target countries are South American countries, 0 = otherwise	0.005	0	0.072	-	-	-
Financial companies	1= if target company limited to financial companies, 1 = otherwise	0.020	0	0.141	0.028	0	0.164
M&A cases	1=if number of M&A cases is used as the dependent variable	0.518	1	0.500	-	-	-
M&A monetary volume	1=if M&A volume in monetary terms is used as the dependent variable	0.266	0	0.442	-	-	-
M&A completion ratio	1=if M&A completion ratio is used as the dependent variable	0.073	0	0.261	-	-	-
M&A cross-border ratio	1=if M&A cross-border ratio is used as the dependent variable	0.048	0	0.213	-	-	-
Other M&A premium	1=if M&A premium other than CAR is used as the dependent variable	-	-	-	0.405	0	0.491
Gravity model	1 = if gravity model is used for estimation, 0 = otherwise	0.233	0	0.423	0.144	0	0.352
Dyadic model	1 = if dyadic model is used for estimation, 0 = otherwise	0.559	1	0.497	0.535	1	0.499
Other models	1 = if a model other than aggregate/gravity/dyadic models is used for estimation, 0 = otherwise	0.003	0	0.059	0.070	0	0.255
OLS	1 = if OLS estimator is used for estimation, 0 = otherwise	0.187	0	0.390	0.738	1	0.440
Location fixed-effects	1 = if estimation simultaneously controls for location fixed-effects, 0 = otherwise	0.541	1	0.498	0.400	0	0.490
Time fixed-effects	1 = if estimation simultaneously controls for time fixed-effects, 0 = otherwise	0.591	1	0.492	0.704	1	0.457
Industry fixed-effects	1 = if estimation simultaneously controls for industry fixed-effects, 0 = otherwise	0.124	0	0.330	0.529	1	0.499
SE	Standard error of patial correlation coefficient	0.030	0.018	0.031	0.052	0.042	0.029

Note: Dash denotes that data is not available.

Table 5. Meta-regression analysis of literature heterogeneity in CBMA intensity studies: Estimation with all moderators

Estimator (Analytical weight in brackets)	Cluster-robust OLS	Cluster-robust WLS [1/SE]	Cluster-robust WLS [df.]	Cluster-robust WLS [1/EST]	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default)/Model	[1]	[2]	[3]	[4]	[5] ^a
Variable type (Legal protection)					
Institutional quality	-0.0083 (0.012)	-0.0146 (0.010)	-0.0173 (0.013)	-0.0278 (0.040)	0.0189 * (0.010)
Corruption control	-0.0336 ** (0.016)	-0.0190 ** (0.009)	-0.0162 (0.010)	-0.0074 (0.022)	-0.0408 *** (0.015)
Political stability and effectiveness	-0.0350 *** (0.013)	-0.0208 *** (0.007)	-0.0122 ** (0.005)	-0.0421 * (0.021)	-0.0258 * (0.014)
Cultural similarity	0.0357 *** (0.009)	0.0310 *** (0.007)	0.0295 *** (0.007)	0.0378 *** (0.014)	0.0451 *** (0.011)
Colony/commonwealth history	0.0107 (0.010)	0.0086 (0.008)	0.0094 (0.008)	-0.0014 (0.018)	0.0086 (0.011)
Data type (cross section data)					
Panel data	-0.0237 * (0.013)	-0.0207 ** (0.010)	-0.0162 (0.012)	-0.0118 (0.015)	-0.1119 ** (0.045)
Estimation period					
Average year of estimation	-0.0013 (0.001)	-0.0025 ** (0.001)	-0.0032 *** (0.001)	-0.0012 (0.002)	-0.0009 ** (0.000)
Length of estimation	-0.0017 ** (0.001)	-0.0012 ** (0.001)	-0.0006 (0.001)	-0.0010 (0.002)	-0.0009 (0.001)
Acquiring country (world wide)					
Advanced acquiring country	0.0037 (0.018)	0.0012 (0.009)	-0.0082 (0.007)	0.0149 (0.020)	-0.0920 *** (0.026)
Developing acquiring country	0.0287 (0.018)	0.0360 *** (0.010)	0.0383 *** (0.013)	0.0495 ** (0.022)	-0.1124 *** (0.032)
Acquirer US	0.0353 (0.022)	0.0201 (0.022)	-0.0028 (0.022)	0.0654 *** (0.023)	-0.0058 (0.034)
Acquirer UK	-0.0321 (0.033)	-0.0456 * (0.023)	-0.0655 *** (0.024)	-0.0192 (0.047)	- (-)
Acquirer Europe	-0.2837 *** (0.028)	-0.2602 *** (0.020)	-0.2524 *** (0.020)	-0.2555 *** (0.043)	- (-)
Acquirer Japan	0.0467 (0.102)	-0.0090 (0.066)	-0.0389 (0.035)	0.1051 (0.121)	- (-)
Acquirer China	-0.0379 (0.038)	-0.0301 (0.025)	-0.0282 (0.020)	-0.0106 (0.037)	-0.0573 (0.059)
Target country (world wide)					
Advanced target country	-0.0358 ** (0.015)	-0.0251 * (0.013)	-0.0132 (0.014)	-0.0324 (0.023)	0.0889 *** (0.028)
Developing target country	0.0126 (0.019)	0.0108 (0.011)	0.0162 (0.011)	0.0047 (0.021)	0.1114 *** (0.024)
Target Europe	-0.1302 *** (0.030)	-0.1355 *** (0.019)	-0.1388 *** (0.011)	-0.1436 *** (0.036)	0.0277 (0.062)
Target Asia	-0.0102 (0.099)	0.0532 (0.064)	0.0900 *** (0.031)	-0.0710 (0.115)	0.1011 (0.062)
Target Africa	-0.0178 (0.031)	-0.0485 ** (0.021)	-0.0676 *** (0.016)	0.0233 (0.051)	0.2563 *** (0.062)
Target South America	-0.1478 *** (0.019)	-0.1673 *** (0.013)	-0.1812 *** (0.014)	-0.1489 *** (0.028)	0.0307 (0.062)
Target company (all companies)					
Financial companies	0.0084 (0.011)	-0.0057 (0.014)	-0.0118 (0.019)	0.0072 (0.018)	0.0132 *** (0.001)
M&A variable type (M&A decision)					
M&A cases	0.0055 (0.015)	0.0028 (0.008)	0.0064 (0.007)	0.0016 (0.033)	-0.0207 (0.020)
M&A monetary volume	-0.0036 (0.019)	-0.0043 (0.010)	-0.0015 (0.007)	-0.0166 (0.041)	-0.0353 * (0.020)
M&A completion ratio	0.0128 (0.036)	-0.0239 ** (0.012)	-0.0312 *** (0.009)	-0.0191 (0.036)	0.2284 (0.174)
M&A cross-border ratio	-0.1561 *** (0.039)	-0.0584 *** (0.021)	-0.0257 * (0.014)	-0.1348 *** (0.050)	-0.2204 (0.150)
Equation type (aggregate model)					
Gravity model	-0.0351 * (0.018)	-0.0336 ** (0.013)	-0.0206 ** (0.009)	-0.0561 ** (0.026)	- (-)
Dyadic model	-0.0430 ** (0.021)	-0.0422 *** (0.013)	-0.0327 *** (0.009)	-0.0470 (0.029)	-0.0425 (0.047)
Other models	0.3226 *** (0.046)	0.3137 *** (0.030)	0.3288 *** (0.030)	0.2823 *** (0.049)	- (-)
Estimator (estimators other than OLS)					
OLS	0.0388 (0.025)	0.0093 (0.015)	-0.0152 ** (0.008)	0.0078 (0.029)	0.1122 * (0.062)
Selection of control variable					
Location fixed-effects	-0.0195 (0.014)	-0.0089 (0.007)	-0.0068 (0.006)	-0.0130 (0.018)	0.0269 (0.101)
Time fixed-effects	0.0332 ** (0.015)	0.0121 (0.012)	-0.0012 (0.011)	0.0296 (0.021)	0.1079 * (0.054)
Industry fixed-effects	-0.0253 (0.015)	-0.0298 *** (0.010)	-0.0246 *** (0.007)	-0.0454 ** (0.021)	-0.0878 * (0.050)
SE	0.1802 (0.187)	0.2021 (0.228)	0.5994 (0.367)	-0.0733 (0.292)	-0.7243 (0.782)
Intercept	2.7011 (2.715)	5.1853 ** (2.302)	6.5571 *** (2.441)	2.5674 (4.457)	1.8519 ** (0.782)
K	1735	1735	1735	1735	1735
R ²	0.233	0.268	0.351	0.266	0.014

Notes: Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Dash denotes that estimate is not available. See Table 4 for the definition and descriptive statistics of meta-independent variables.

^a Breusch-Pagan test: $\chi^2=11.18, p=0.0004$; Hausman test: $\chi^2=91.61, p=0.0000$

Table 6. Meta-regression analysis of literature heterogeneity in CBMA premium studies: Estimation with all moderators

Estimator (Analytical weight in brackets)	Cluster-robust OLS	Cluster-robust WLS [1/SE]	Cluster-robust WLS [d.f.]	Cluster-robust WLS [1/EST]	Cluster-robust random-effects panel GLS
Meta-independent variable (Default)/Model	[1]	[2]	[3]	[4]	[5] ^a
Variable type (Legal protection)					
Institutional quality	-0.0366 (0.044)	-0.0081 (0.034)	0.0102 (0.024)	-0.0923 ** (0.044)	-0.0078 (0.043)
Corruption control	0.0122 (0.022)	0.0284 (0.022)	0.0380 * (0.022)	-0.0133 (0.028)	0.0256 (0.025)
Political stability and effectiveness	0.0016 (0.037)	0.0019 (0.027)	-0.0034 (0.011)	-0.0098 (0.032)	0.0457 (0.042)
Cultural similarity	-0.0369 ** (0.018)	-0.0295 ** (0.014)	-0.0145 (0.011)	-0.0588 ** (0.023)	-0.0015 (0.015)
Colony/commonwealth history	-0.1031 *** (0.023)	-0.0643 *** (0.018)	-0.0287 ** (0.013)	-0.1318 *** (0.029)	-0.0069 (0.018)
Data type (cross section data)					
Panel data	-0.0178 (0.018)	-0.0256 (0.015)	-0.0313 *** (0.012)	-0.0364 * (0.019)	-0.0207 (0.019)
Estimation period					
Average year of estimation	0.0039 (0.004)	0.0027 (0.003)	0.0023 (0.003)	0.0044 (0.004)	-0.0006 (0.004)
Length of estimation	0.0011 (0.001)	0.0013 (0.001)	0.0023 ** (0.001)	0.0016 (0.002)	0.0011 (0.002)
Acquiring country (world wide)					
Advanced acquiring country	-0.0361 (0.032)	-0.0592 ** (0.028)	-0.0712 *** (0.017)	-0.0452 (0.070)	-0.0052 (0.033)
Developing acquiring country	-0.0801 (0.049)	-0.0521 (0.035)	-0.0378 (0.023)	-0.0573 (0.043)	-0.0391 (0.030)
Acquirer US	-0.0947 *** (0.026)	-0.0679 ** (0.026)	-0.0464 ** (0.023)	-0.0359 (0.026)	-0.0424 (0.027)
Acquirer Canada	-0.0480 (0.035)	-0.0689 * (0.038)	-0.0554 * (0.028)	-0.0125 (0.032)	0.0001 (0.058)
Acquirer UK	-0.0853 ** (0.042)	-0.0483 (0.032)	-0.0202 (0.020)	-0.0750 * (0.041)	-0.0748 (0.068)
Acquirer Europe	0.0431 (0.057)	0.0183 (0.071)	-0.0176 (0.072)	0.1276 ** (0.054)	0.0619 (0.047)
Acquirer China	0.0205 (0.059)	0.0140 (0.068)	-0.0226 (0.057)	0.1164 * (0.060)	0.1006 (0.075)
Target country (world wide)					
Advanced target country	-0.0338 (0.041)	-0.0013 (0.021)	0.0152 (0.014)	-0.0842 (0.069)	-0.0729 (0.053)
Developing target country	-0.0166 (0.028)	-0.0046 (0.023)	-0.0017 (0.017)	-0.0337 (0.023)	-0.0382 * (0.023)
Target UK	-0.0180 (0.054)	-0.0137 (0.067)	-0.0241 (0.072)	-0.0127 (0.060)	0.0429 (0.046)
Target Europe	-0.1291 ** (0.054)	-0.1075 (0.070)	-0.0439 (0.076)	-0.1490 ** (0.057)	-0.0748 (0.050)
Target company (all companies)					
Financial companies	-0.0561 (0.057)	-0.0597 (0.076)	-0.0757 (0.084)	-0.0224 (0.060)	-0.0132 (0.058)
M&A variable type (CAR)					
Other M&A premium	-0.0060 (0.017)	-0.0109 (0.014)	-0.0109 (0.010)	0.0072 (0.020)	0.0352 (0.035)
Equation type (aggregate model)					
Gravity model	0.0673 ** (0.031)	0.0698 ** (0.029)	0.0500 * (0.025)	0.0699 ** (0.027)	0.0329 (0.032)
Dyadic model	0.0195 (0.030)	0.0057 (0.026)	-0.0069 (0.015)	0.0582 *** (0.019)	0.0330 (0.024)
Other models	0.0390 (0.054)	0.0705 (0.059)	0.0478 (0.042)	0.0080 (0.049)	0.0255 (0.059)
Estimator (estimators other than OLS)					
OLS	0.0157 (0.022)	0.0081 (0.021)	-0.0004 (0.012)	0.0338 (0.021)	-0.0001 (0.016)
Selection of control variable					
Location fixed-effects	0.0203 (0.020)	-0.0029 (0.015)	-0.0159 (0.010)	0.0368 ** (0.018)	0.0124 (0.020)
Time fixed-effects	-0.0415 * (0.022)	-0.0136 (0.022)	0.0078 (0.013)	-0.0240 (0.023)	-0.0259 (0.018)
Industry fixed-effects	-0.0351 (0.031)	-0.0194 (0.027)	-0.0043 (0.017)	-0.0290 (0.021)	-0.0151 (0.029)
SE	-0.0524 (0.479)	0.2209 (0.478)	0.6957 ** (0.338)	-0.8449 * (0.460)	-0.1384 (0.713)
Intercept	-7.6934 (8.189)	-5.2769 (6.668)	-4.6169 (5.436)	-8.6934 (7.192)	1.1949 (8.983)
K	1226	1226	1226	1226	1226
R ²	0.151	0.136	0.140	0.258	0.079

Notes: Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Dash denotes that estimate is not available. See Table 4 for the definition and descriptive statistics of meta-independent variables.

^a Breusch-Pagan test: $\chi^2=20.42, p=0.0000$; Hausman test: $\chi^2=29.50, p=0.4913$

Table 7. Meta-regression analysis of literature heterogeneity: Model with selected moderators for robustness check

(a) CBMA intensity studies

Estimator (Analytical weight in brackets)	Cluster-robust OLS	Cluster-robust WLS [1/SE]	Cluster-robust WLS [d.f.]	Cluster-robust WLS [1/EST]	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default)/Model	[1]	[2]	[3]	[4]	[5] ^a
Variable type (Legal protection)					
Institutional quality	-0.0016 (0.011)	-0.0177 ** (0.009)	-0.0262 *** (0.009)	-0.0416 (0.044)	0.0208 * (0.011)
Corruption control	-0.0282 * (0.015)	-0.0182 * (0.010)	-0.0179 * (0.010)	-0.0068 (0.023)	-0.0412 *** (0.015)
Political stability and effectiveness	-0.0358 *** (0.013)	-0.0235 *** (0.008)	-0.0144 *** (0.004)	-0.0449 * (0.024)	-0.0263 * (0.014)
Cultural similarity	0.0322 *** (0.009)	0.0264 *** (0.008)	0.0245 *** (0.009)	0.0326 ** (0.016)	0.0446 *** (0.011)
Colony/commonwealth history	0.0049 (0.009)	0.0072 (0.006)	0.0081 (0.006)	-0.0038 (0.016)	0.0083 (0.011)
Selected moderators					
Panel data	-0.0216 ** (0.010)	-0.0158 * (0.009)	-0.0073 (0.011)	-0.0155 (0.017)	-0.0736 * (0.040)
Length of estimation	-0.0017 *** (0.001)	-0.0011 * (0.001)	-0.0004 (0.001)	-0.0009 (0.001)	-0.0003 (0.001)
Developing acquiring country	0.0283 ** (0.014)	0.0271 ** (0.011)	0.0211 * (0.012)	0.0332 (0.023)	-0.0339 (0.039)
Acquirer Europe	-0.2794 *** (0.012)	-0.2628 *** (0.014)	-0.2516 *** (0.014)	-0.2547 *** (0.026)	- (-)
Target South America	-0.1515 *** (0.013)	-0.1644 *** (0.011)	-0.1775 *** (0.011)	-0.1542 *** (0.022)	-0.0706 *** (0.012)
M&A cross-border ratio	-0.1610 *** (0.032)	-0.0757 *** (0.026)	-0.0497 ** (0.023)	-0.1384 *** (0.032)	-0.3155 (0.199)
Other models	0.2108 *** (0.013)	0.2034 *** (0.012)	0.1961 *** (0.013)	0.1887 *** (0.023)	- (-)
OLS	0.0227 (0.019)	0.0042 (0.013)	-0.0139 (0.010)	-0.0017 (0.027)	0.0969 * (0.050)
Time fixed-effects	0.0330 ** (0.013)	0.0164 (0.013)	-0.0002 (0.012)	0.0105 (0.021)	0.0829 * (0.043)
<i>SE</i>	0.57136 *** (0.1236)	0.51858 ** (0.1995)	0.63995 * (0.3290)	0.28593 (0.2846)	-0.09434 (0.7246)
Intercept	0.03097 * (0.0156)	0.03039 ** (0.0149)	0.02638 (0.0207)	0.04017 (0.0290)	0.01799 (0.0610)
<i>K</i>	1735	1735	1735	1735	1735
<i>R</i> ²	0.203	0.206	0.254	0.203	0.084

(b) CBMA premium studies

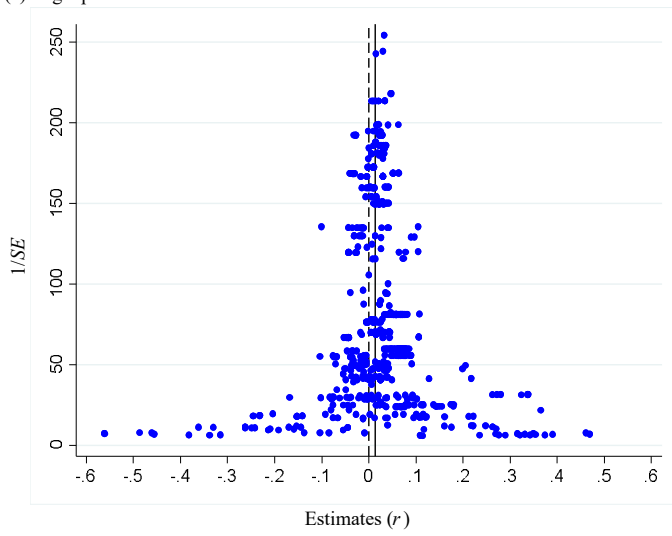
Estimator (Analytical weight in brackets)	Cluster-robust OLS	Cluster-robust WLS [1/SE]	Cluster-robust WLS [d.f.]	Cluster-robust WLS [1/EST]	Cluster-robust random-effects panel GLS
Meta-independent variable (Default)/Model	[6]	[7]	[8]	[9]	[10] ^b
Variable type (Legal protection)					
Institutional quality	0.0028 (0.027)	0.0172 (0.026)	0.0260 (0.024)	-0.0230 (0.032)	-0.0015 (0.042)
Corruption control	0.0263 (0.026)	0.0335 (0.024)	0.0311 (0.020)	0.0186 (0.040)	0.0318 (0.026)
Political stability and effectiveness	0.0288 (0.046)	0.0194 (0.033)	-0.0030 (0.011)	0.0375 (0.043)	0.0514 (0.042)
Cultural similarity	-0.0151 (0.015)	-0.0150 (0.011)	-0.0113 (0.008)	-0.0071 (0.029)	0.0046 (0.014)
Colony/commonwealth history	-0.0619 *** (0.020)	-0.0402 *** (0.014)	-0.0222 *** (0.008)	-0.0288 (0.027)	0.0036 (0.018)
Selected moderators					
Acquirer US	-0.0890 *** (0.033)	-0.0620 ** (0.026)	-0.0363 ** (0.018)	-0.0432 (0.037)	-0.0437 ** (0.020)
Target Europe	-0.0786 *** (0.023)	-0.0553 ** (0.023)	-0.0311 * (0.018)	-0.0350 (0.040)	-0.0933 *** (0.029)
Gravity model	0.0536 ** (0.022)	0.0349 * (0.018)	0.0181 (0.015)	0.0092 (0.028)	0.0257 (0.035)
Industry fixed-effects	-0.0437 *** (0.016)	-0.0305 ** (0.015)	-0.0147 (0.010)	-0.0091 (0.024)	-0.0148 (0.023)
<i>SE</i>	0.22243 (0.2283)	0.44491 * (0.2648)	0.56446 ** (0.2781)	0.08890 (0.3409)	0.05930 (0.5392)
Intercept	0.05732 *** (0.0214)	0.03311 ** (0.0160)	0.01387 (0.0100)	0.02599 (0.0271)	0.02871 (0.0408)
<i>K</i>	1226	1226	1226	1226	1226
<i>R</i> ²	0.084	0.064	0.067	0.023	0.036

Notes: Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Dash denotes that estimate is not available. Selected moderators denote the meta-independent variables with having a PIP of 0.80 or more in the Bayesian model averaging estimation reported in Appendix Table A1. See Table 4 for the definition and descriptive statistics of meta-independent variables.

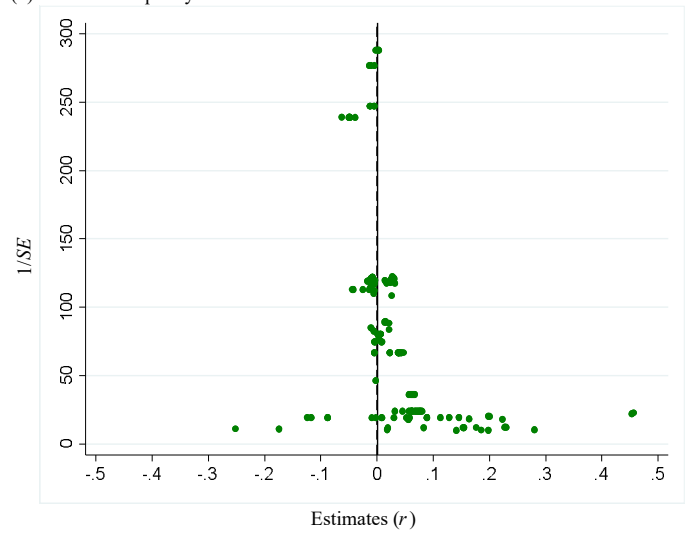
^a Breusch-Pagan test: $\chi^2=36.07$, $p=0.0000$; Hausman test: $\chi^2=54.20$, $p=0.0000$

^b Breusch-Pagan test: $\chi^2=98.98$, $p=0.0000$; Hausman test: $\chi^2=3.99$, $p=0.9123$

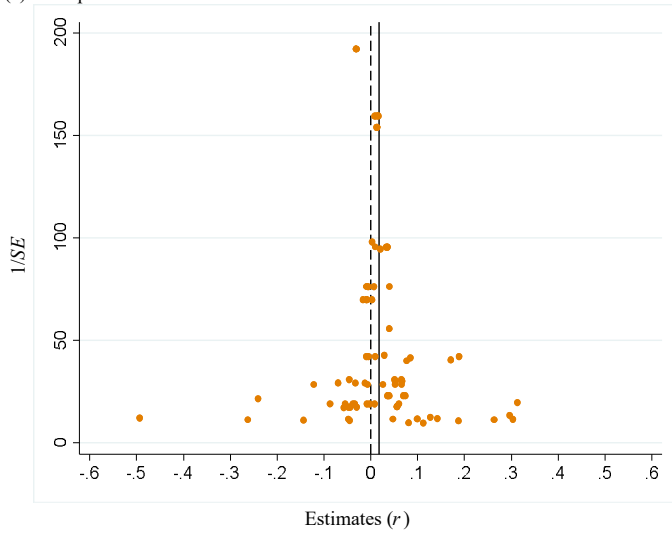
(a) Legal protection



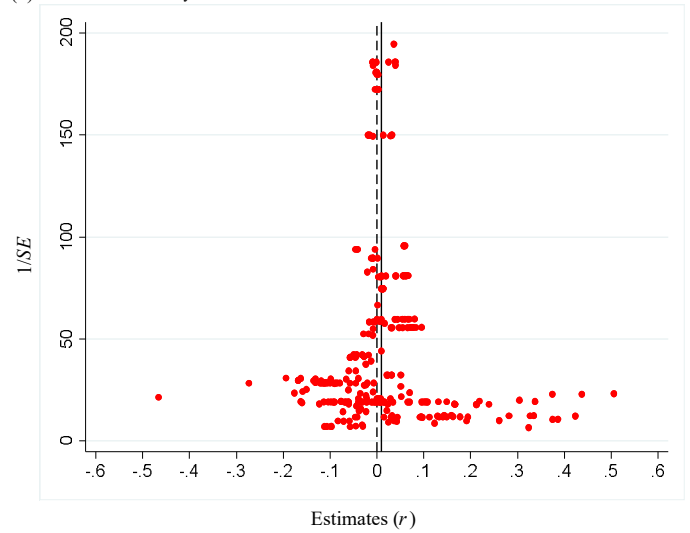
(b) Institutional quality



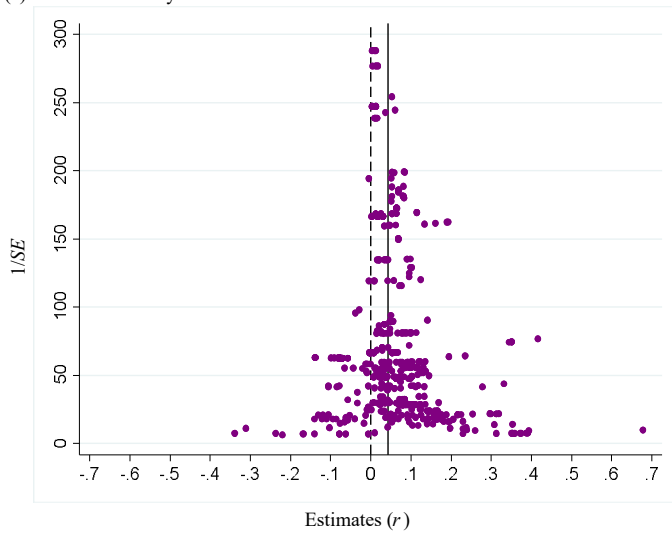
(c) Corruption control



(d) Political Stability



(e) Cultural similarity



(f) Colony/commonwealth history

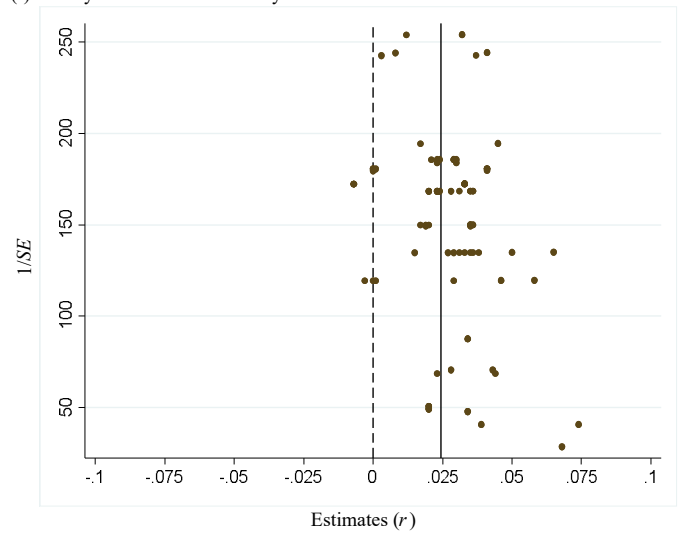
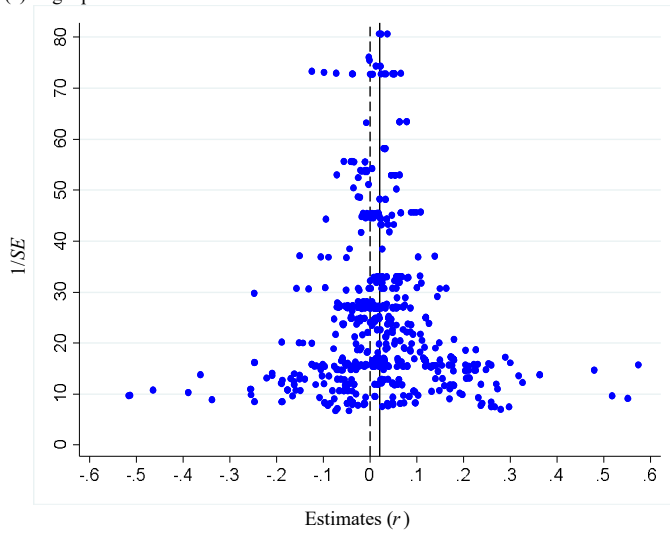


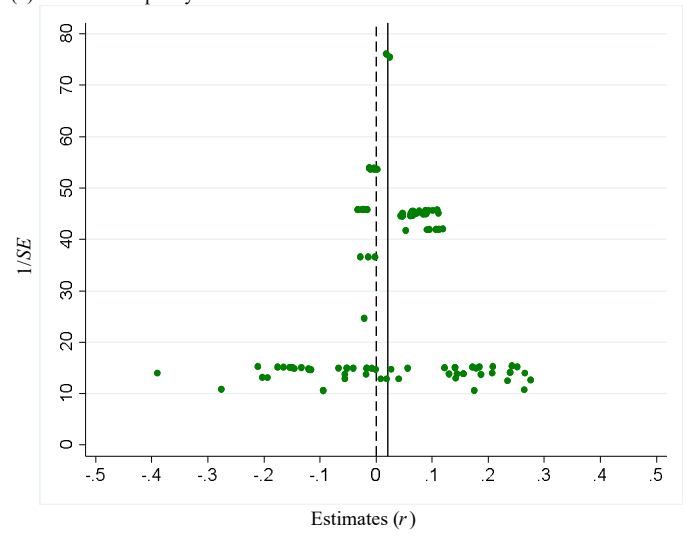
Figure 3. Funnel plot of partial correlation coefficients by variable type: CBMA intensity studies

Note: In each panel, the solid line indicates the selected synthesized value reported in Table 3. See Table 2 for the descriptive statistics of collected estimates.

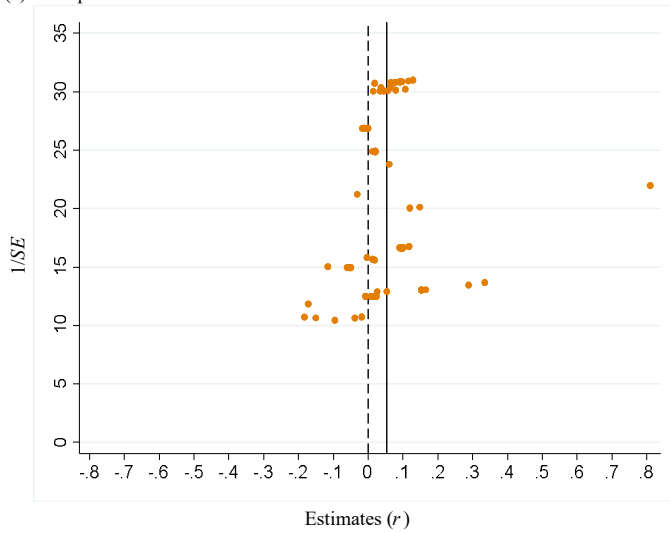
(a) Legal protection



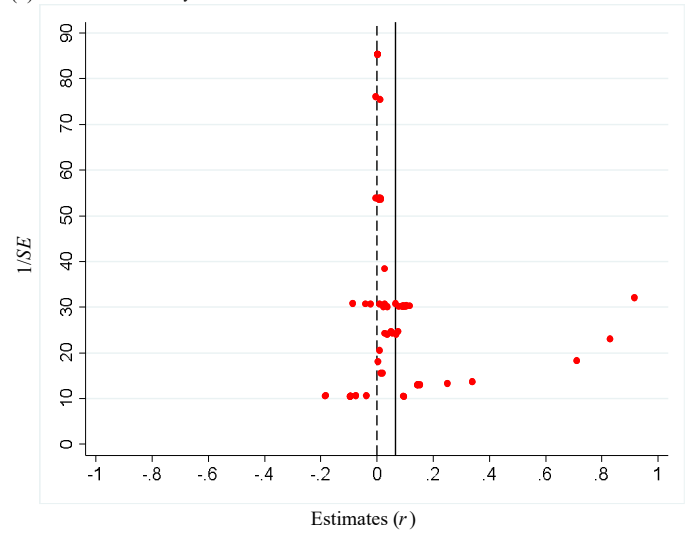
(b) Institutional quality



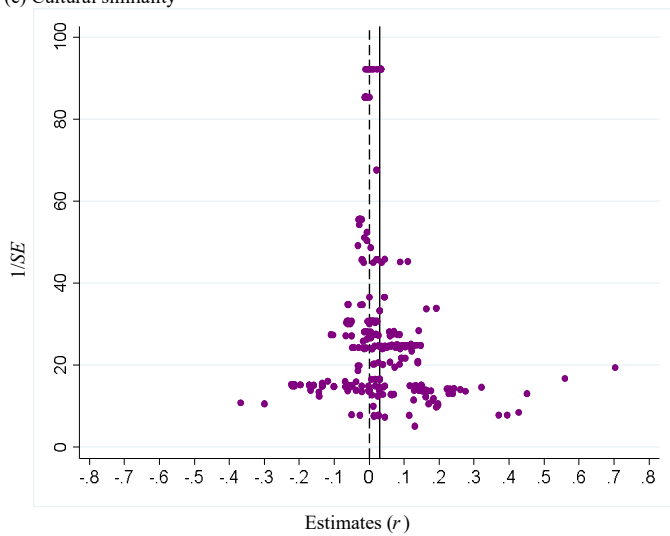
(c) Corruption control



(d) Political Stability



(e) Cultural similarity



(f) Colony/commonwealth history

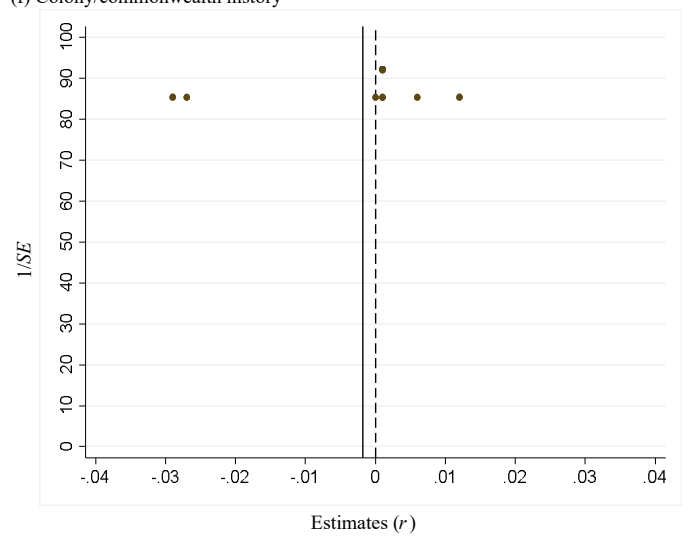


Figure 4. Funnel plot of partial correlation coefficients by variable type: CBMA premium studies

Note: In each panel, the solid line indicates the selected synthesized value reported in Table 3. See Table 2 for the descriptive statistics of collected estimates.

Table 8. Univariate test of publication selection bias

(a) CBMA intensity studies

Variable type	Number of estimates (K)	Under the assumption that the true effect size is zero			Under the assumption that the true effect size is the selected synthesized value (τ) ^a		
		Number of estimates		Goodness-of-fit z test (p value) ^b	Number of estimates		Goodness-of-fit z test (p value) ^c
		$PCC_k < 0$	$PCC_k > 0$		$PCC_k < \tau$	$PCC_k > \tau$	
Legal protection	634	195	439	9.6905 *** (0.000)	250	384	5.3218 *** (0.000)
Institutional quality	145	55	90	2.9066 *** (0.004)	55	90	2.9066 *** (0.004)
Corruption control	86	33	53	2.1567 ** (0.031)	46	40	-0.6470 (0.518)
Polity stability and effectiveness	280	132	148	0.9562 (0.339)	162	118	-2.6295 *** (0.009)
Cultural similarity	507	93	414	14.2561 *** (0.000)	231	276	1.9985 ** (0.046)
Colony/commonwealth history	83	5	78	8.0128 *** (0.000)	35	48	1.4269 (0.154)

(b) CBMA premium studies

Variable type	Number of estimates (K)	Under the assumption that the true effect size is zero			Under the assumption that the true effect size is the selected synthesized value (τ) ^a		
		Number of estimates		Goodness-of-fit z test (p value) ^b	Number of estimates		Goodness-of-fit z test (p value) ^c
		$PCC_k < 0$	$PCC_k > 0$		$PCC_k < \tau$	$PCC_k > \tau$	
Legal protection	671	235	436	7.7595 *** (0.000)	352	319	-1.2740 (0.203)
Institutional quality	117	48	69	1.9415 * (0.052)	52	65	1.2019 (0.229)
Corruption control	66	19	47	3.4466 *** (0.001)	37	29	-0.9847 (0.325)
Political stability and effectiveness	61	14	47	4.2252 *** (0.000)	41	20	-2.6888 *** (0.007)
Cultural similarity	297	108	189	4.7001 *** (0.000)	171	126	-2.6112 *** (0.009)
Colony/commonwealth history	14	2	12	2.6726 ** (0.008)	2	12	2.6726 ** (0.008)

Notes: See Table 2 for the descriptive statistics of collected estimates.

^a Reported in Table 3.

^b Null hypothesis: The ratio of the positive versus negative values is 50:50.

^c Null hypothesis: The ratio of estimates below τ versus those over τ is 50:50.

*** and ** denote statistical significance at the 1% and 5% levels, respectively.

Table 9. Summary of publication selection bias test

(a) CBMA intensity studies

Institutional variable	Number of estimates (K)	Test results ^a		
		Funnel asymmetry test (FAT) ($H_0: \beta_0=0$)	Precision-effect test (PET) ($H_0: \beta_1=0$)	Precision-effect estimate with standard error (PEESE) ($H_0: \gamma_1=0$) ^b
Legal protection	634	Not rejected	Rejected	Rejected (0.0168/0.0171)
Institutional quality	145	Rejected	Rejected	Rejected (0.0121)
Corruption control	86	Rejected	Not rejected	Not rejected
Political stability and effectiveness	280	Not rejected	Rejected	Rejected (0.0081/0.0120)
Cultural similarity	507	Rejected	Rejected	Rejected (0.0312/0.0394)
Colony/commonwealth history	83	Rejected	Rejected	Rejected (0.0232)

(a) CBMA premium studies

Institutional variable	Number of estimates (K)	Test results ^a		
		Funnel asymmetry test (FAT) ($H_0: \beta_0=0$)	Precision-effect test (PET) ($H_0: \beta_1=0$)	Precision-effect estimate with standard error (PEESE) ($H_0: \beta_1=0$) ^b
Legal protection	671	Not rejected	Not rejected	Rejected (0.0122)
Institutional quality	117	Not rejected	Not rejected	Not rejected
Corruption control	66	Not rejected	Rejected	Rejected (0.0771/0.0923)
Political stability and effectiveness	61	Not rejected	Not rejected	Not rejected
Cultural similarity	297	Not rejected	Not rejected	Not rejected
Colony/commonwealth history	14	Not rejected	Not rejected	Not rejected

^a The null hypothesis is rejected when two or three models show a statistically significant estimate. Otherwise not rejected.^b Figures in parentheses are PSB-adjusted estimates. If two estimates are reported, the left and right figures denote the minimum and maximum estimate, respectively.

Appendix Table A1. Bayesian model averaging analysis of model uncertainty

(a) CBMA intensity studies

Moderator	Coef.	S.E.	<i>t</i> value	PIP
Focus regressors				
Institutional quality	-0.00645	0.00942	-0.68	1.00
Corruption control	-0.03223	0.01143	-2.82	1.00
Polity stability and effectiveness	-0.03781	0.00725	-5.21	1.00
Cultural similarity	0.03237	0.00595	5.44	1.00
Colony/commonwealth history	0.00548	0.01132	0.48	1.00
<i>SE</i>	0.45442	0.15144	3.00	1.00
Auxiliary regressors				
Panel data	-0.01871	0.01030	-1.82	0.83
Average year of estimation	-0.00009	0.00045	-0.21	0.07
Length of estimation	-0.00160	0.00049	-3.27	0.98
Advanced acquiring country	0.00007	0.00346	0.02	0.04
Developing acquiring country	0.03275	0.01202	2.73	0.94
Acquirer US	0.01861	0.02366	0.79	0.44
Acquirer UK	-0.00473	0.01701	-0.28	0.10
Acquirer Europe	-0.27373	0.04206	-6.51	1.00
Acquirer Japan	0.00037	0.00488	0.08	0.03
Acquirer China	-0.00075	0.00443	-0.17	0.05
Advanced target country	-0.01977	0.01519	-1.30	0.70
Developing target country	0.00061	0.00367	0.17	0.05
Target Europe	-0.05964	0.08016	-0.74	0.41
Target Asia	0.00021	0.00345	0.06	0.03
Target Africa	-0.00007	0.00390	-0.02	0.03
Target South America	-0.14727	0.03394	-4.34	1.00
Financial companies	0.00037	0.00377	0.10	0.03
M&A cases	0.00012	0.00134	0.09	0.04
M&A monetary volume	-0.00014	0.00143	-0.10	0.03
M&A completion ratio	0.00039	0.00281	0.14	0.04
M&A cross-border ratio	-0.15564	0.01288	-12.08	1.00
Gravity model	-0.00935	0.01502	-0.62	0.33
Dyadic model	-0.01798	0.01412	-1.27	0.75
Other models	0.24625	0.11583	2.13	0.94
OLS	0.02914	0.00866	3.37	0.98
Location fixed-effects	-0.00393	0.00760	-0.52	0.25
Time fixed-effects	0.03224	0.00749	4.30	1.00
Industry fixed-effects	-0.01076	0.01380	-0.78	0.44
<i>K</i>		1735		
Model space		268,435,456		

(Continued)

(b) CBMA premium studies

Moderator	Coef.	S.E.	<i>t</i> value	PIP
Focus regressors				
Institutional quality	-0.02628	0.01398	-1.88	1.00
Corruption control	0.02007	0.01563	1.28	1.00
Polity stability and effectiveness	0.01587	0.01685	0.94	1.00
Cultural similarity	-0.02923	0.00995	-2.94	1.00
Colony/commonwealth history	-0.07849	0.03337	-2.35	1.00
<i>SE</i>	-0.09004	0.17033	-0.53	1.00
Auxiliary regressors				
Panel data	-0.00881	0.01225	-0.72	0.40
Average year of estimation	0.00361	0.00254	1.42	0.75
Length of estimation	0.00039	0.00085	0.46	0.22
Advanced acquiring country	-0.00166	0.01221	-0.14	0.04
Developing acquiring country	-0.01820	0.03598	-0.51	0.25
Acquirer US	-0.07471	0.01881	-3.97	1.00
Acquirer Canada	-0.01735	0.04068	-0.43	0.19
Acquirer UK	-0.03838	0.04619	-0.83	0.48
Acquirer Europe	0.00056	0.00598	0.09	0.04
Acquirer China	0.02829	0.02603	1.09	0.62
Advanced target country	-0.01885	0.02872	-0.66	0.35
Developing target country	-0.00068	0.00655	-0.10	0.04
Target UK	0.00049	0.00685	0.07	0.03
Target Europe	-0.08883	0.01742	-5.10	1.00
Financial companies	-0.00393	0.01621	-0.24	0.09
Other M&A premium	-0.00096	0.00451	-0.21	0.07
Gravity model	0.07429	0.02609	2.85	0.96
Dyadic model	0.00199	0.00867	0.23	0.09
Other models	0.01054	0.02276	0.46	0.24
OLS	0.00071	0.00402	0.18	0.06
Location fixed-effects	0.00117	0.00541	0.22	0.08
Time fixed-effects	-0.00768	0.01540	-0.50	0.25
Industry fixed-effects	-0.05347	0.01493	-3.58	0.97
<i>K</i>		1226		
Model space		8,388,608		

Notes: S.E. and PIP denote standard errors and posterior inclusion probability, respectively. See Table 4 for the definition and descriptive statistics of independent variables. The variables of institutional quality, corruption control, polity stability and effectiveness, cultural similarity, and colony/commonwealth history and standard errors of partial correlation coefficient are included in estimation as focus regressors. Therefore, the PIP of these key variables is 1.00.

Supplement 1 . List of studies subject to meta-analysis:

Author(s) (publication year)	Study type		Estimation period		Variable type						Number of collected estimates (K)
	CBMA intensity study	CBMA premium study	From	To	Legal protection	Institutional quality	Corruption control	Polity stability and effectiveness	Cultural similarity	Colony/commonwealth history	
Buch and DeLong (2004)	✓		1985	2001	✓				✓		12
Rossi and Volpin (2004)	✓	✓	1990	2002	✓				✓		41
Weitzel and Berns (2006)		✓	1996	2003	✓		✓	✓	✓		52
Bris and Cabolis (2008)		✓	1989	2002	✓						31
Francis et al. (2008)		✓	1990	2003	✓			✓			7
Graham et al. (2008)	✓		1992	2003	✓		✓				15
Hagendorff et al. (2008)		✓	1996	2004	✓						4
Martynova and Renneboog (2008)		✓	1993	2001	✓		✓		✓		144
Chakraborti et al. (2009)		✓	1991	2004	✓				✓		32
Coerdacier et al. (2009)	✓		1985	2004		✓			✓		24
Huizinga and Voget (2009)	✓		1985	2004	✓			✓	✓		19
Ongena et al. (2009)		✓	1998	2002	✓				✓		22
Pablo (2009)	✓		1998	2004	✓			✓			6
Choi et al. (2010)		✓	1995	2002	✓						8
Dikova et al. (2010)	✓		1981	2001					✓		10
Ferreira et al. (2010)	✓		2000	2005	✓	✓					24
Hyun and Kim (2010)	✓		1989	2005	✓				✓		60
John et al. (2010)		✓	1985	2005	✓						24
Malhotra et al. (2010)	✓		1990	2006			✓		✓		18
Owen and Yawson (2010)	✓		2000	2006	✓	✓					6
Feito-Ruiz and Menendez-Requejo (2011)	✓	✓	2002	2006	✓						16
Hur et al. (2011)	✓		1997	2006	✓	✓	✓	✓			120
Jory and Ngo (2011)		✓	1989	2008	✓	✓	✓	✓			18
Malhotra et al. (2011)	✓		1990	2006				✓	✓		60
Vasilaki (2011)		✓	2001	2004					✓		4
Zhang et al. (2011)	✓		1982	2009		✓					5
Agbloyor et al. (2012)	✓		1993	2008		✓					2
Barbopoulos et al. (2012)		✓	1986	2005	✓						15
Buckley et al. (2012)	✓		2000	2007					✓		8
De Beule and Duanmu (2012)	✓		2000	2008	✓		✓	✓			24
Erel et al. (2012)	✓		1990	2007	✓	✓			✓		55
Huizinga et al. (2012)		✓	1985	2004	✓						3
Cosset and Meknassi (2013)	✓	✓	1990	2008	✓						14
Dikova and Sahib (2013)		✓	2009	2010					✓		4
Dutta et al.(2013)		✓	1993	2002	✓				✓		8
Nagano (2013)	✓		1999	2009	✓						16
Francis et al. (2014a)		✓	1990	2003	✓		✓	✓			18
Francis et al. (2014b)	✓	✓	1993	2010			✓				15
Zhu et al. (2014)	✓	✓	1990	2007	✓		✓				60
Ahern et al. (2015)	✓	✓	1985	2008	✓				✓		78
Deng and Yang (2015)	✓		1996	2012				✓	✓		64
Yang (2015)		✓	2000	2012		✓			✓		6
Bany-Ariffin et al. (2016)		✓	2000	2007	✓				✓		4
Barattieri et al. (2016)	✓		2003	2009	✓				✓	✓	74
Bertrand et al. (2016)		✓	1990	2008					✓		15
Bucklet et al. (2016)	✓		1985	2011	✓			✓	✓		16
Dikova et al. (2016)	✓		2007	2013			✓	✓	✓		12
Francis et al. (2016)	✓		1998	2004	✓				✓		44
Herger and McCorriston (2016)	✓		1995	2010	✓		✓		✓		40
Kedia and Reddy (2016)		✓	2007	2012					✓		4
Lim and Lee (2016)	✓		1985	2008	✓						6
Lim et al. (2016)	✓	✓	1990	2009	✓	✓		✓	✓		116
Ouyang and Zhu (2016)	✓	✓	1990	2011	✓						16
Popli et al. (2016)	✓		2001	2010		✓			✓		14
Tunyi and Ntim (2016)	✓		1996	2012	✓		✓	✓			6
Wu et al. (2016)		✓	2002	2012	✓	✓	✓	✓			32
Zhou et al. (2016)	✓		1995	2010	✓			✓	✓		36

(Continued)

Author(s) (publication year)	Study type		Estimation period		Variable type						Number of collected estimates (K)
	CBMA intensity study	CBMA premium study	From	To	Legal protection	Institutional quality	Corruption control	Polity stability and effectiveness	Cultural similarity	Colony/commonwealth history	
Alimov and Officer (2017)	✓		1985	2012	✓		✓				41
Anwar and Mughal (2017)	✓		1990	2014	✓		✓	✓	✓	✓	52
Bremer et al. (2017)		✓	2000	2009					✓		4
Buckley et al. (2017)	✓		2000	2007					✓		12
Chari and Shaikh (2017)	✓		2006	2010		✓			✓		12
Ekkayokkaya et al. (2017)	✓		1993	2015	✓		✓				6
Galavotti et al. (2017)	✓		2007	2013				✓			6
Huang et al. (2017)		✓	1995	2004		✓			✓		14
Li et al. (2017)		✓	1990	2009					✓	✓	18
Lim and Lee (2017)	✓		1985	2008	✓						6
Renneboog et al. (2017)		✓	2000	2013	✓						89
Yang and Deng (2017)	✓		1996	2012				✓	✓		13
Dowling and Vanwallegghem (2018)	✓		2002	2014	✓			✓	✓		192
He and Zhang (2018)	✓		1996	2012		✓					4
Lee (2018)		✓	1990	2012				✓			12
Li et al (2018)	✓		1990	2010	✓						37
Mateev and Andonov (2018)		✓	2003	2010	✓						80
Mescall and Klassen (2018)		✓	2000	2012	✓				✓		24
Yan (2018)	✓		1985	2015	✓				✓	✓	98
Zhou and Lan (2018)		✓	2002	2012	✓						9
Ahmad and Lambert (2019)	✓	✓	1992	2010	✓	✓		✓			48
Boateng et al. (2019)		✓	1998	2012					✓		21
Campi et al. (2019)	✓		1995	2010	✓			✓	✓	✓	128
Cao et al. (2019a)		✓	1995	2007	✓						24
Cao et al. (2019b)	✓		2001	2013	✓	✓		✓	✓		82
Dikova et al. (2019)	✓		2007	2013			✓	✓	✓		12
Maung et al. (2019)		✓	1990	2017	✓	✓					71
Schweizer et al. (2019)		✓	2007	2016	✓				✓		12
Bazel-Shoham et al. (2020)	✓		1998	2014					✓		32
Drobotz and Momtaz (2020)	✓	✓	2001	2011	✓				✓		48
Li, Arikani et al. (2020)		✓	1988	2011				✓	✓	✓	21
Li, Wang et al. (2020)		✓	2002	2016	✓	✓			✓		110
Maung et al. (2020)		✓	2007	2017	✓						16

Note: Supplement 2 provides bibliography of the listed research works.