

Influential Article Review - An Analytical Approach to Understanding Corporate Hedging

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This paper examines corporate management. We present insights from a highly influential paper. Here are the highlights from this paper: This paper employs meta-analysis to aggregate and systematically analyze the mixed empirical evidence on the determinants of corporate hedging reported in 132 previously published studies covering data from more than 73,000 firms. Among the fourteen proxy variables analyzed by multivariate meta-analysis, three variables emerge as reliable explanatory factors for corporate hedging decisions supporting the bankruptcy and financial distress hypothesis: dividend yield (positive sign), liquidity (negative sign), and firm size (positive sign). Moreover, for tax-loss carry forwards (positive sign) and research and development (positive sign), our findings indicate a weak impact on corporate hedging behavior reflecting tax reasons, the coordination between financing and investment, and agency conflicts between shareholders and debtholders. Regarding the asymmetric information and agency conflicts of equity hypothesis, we find no explanatory power. The further analysis of heterogeneity via meta-regression reveals several factors that determine the mixed empirical evidence reported in previous studies. First, the results indicate that studies analyzing firms from North America report, on average, a lower impact of leverage on the corporate hedging decision. Moreover, studies examining more recent data samples tend to find a weaker relation between tangible assets and hedging, R&D and hedging, respectively. Overall, our results encourage scientific research to put more emphasis on finer-grained examinations of hedging variations and to discover rationales of corporate hedging extending classical financial theories. For our overseas readers, we then present the insights from this paper in Spanish, French, Portuguese, and German.

Keywords: Corporate hedging, Corporate risk management, Derivatives, Meta-analysis

SUMMARY

- In this section, we first compare our main results with the ten leading primary studies included in our sample. These studies are Allayannis and Weston , Campello et al. , Choi et al. , Donohoe , Géczy et al. , Jin and Jorion , Nance et al. , Pérez-González and Yun , Pincus and Rajgopal , Tufano , which can be seen as representatives of the empirical literature in this field of research. The studies cover firm data for the time from 1993 to 2015. Furthermore, we compare the results with the existing reviews by Aretz and Bartram and Arnold et al... For dividend yield, our finding of a

positive effect is also confirmed by two of five primary studies as well as by Arnold et al... For leverage, five of ten primary studies and the two reviews state a significantly positive effect. In this case, our estimates contradict with most studies. These deviations might be driven by a notable endogeneity between capital structure and the decision to hedge, as corporate hedging might also be the starting point of the capital structure decision. For both theories, existing studies partially proclaim strong evidence, which is not confirmed by our multivariate results. Deviations of our results exist in terms of institutional investors and R&D expenses. In both cases, four studies confirm a significantly positive association with the hedging dummy variable, which might be specifically driven by spurious effects in the correlational data we collected as effect sizes.

- A further aspect that becomes apparent from Table 7 is that the choice of the investigated hedging determinants differs across primary studies. This might drive the deviating results through misspecification bias. Kirkham et al. find out in their simulation study that the multivariate approach as applied in this paper is a method to lower the effect of the publication bias and misspecification bias on the aggregated effect sizes.

HIGHLY INFLUENTIAL ARTICLE

We used the following article as a basis of our evaluation:

Geyer-Klingeborg, J., Hang, M., Rathgeber, A. W., Stöckl, S., & Walter, M. (2017). What do we really know about corporate hedging? A meta-analytical study. *Business Research*, 11(1), 1–31.

This is the link to the publisher's website:

<https://link.springer.com/article/10.1007/s40685-017-0052-0>

INTRODUCTION

The motivation for non-financial firms to engage in corporate hedging is one of the most intensively discussed topics in corporate finance research. Neoclassical finance theory claims that under the conditions of a perfect capital market, hedging on the firm level does not create additional value, since shareholders can perfectly hedge their position (Modigliani and Miller 1958). However, more recent financial theory suggests that when financial markets are not frictionless, there are several ways through which corporate hedging can increase firm value in the sense of the maximization of shareholder value (Bessembinder 1991; DeMarzo and Duffie 1991; Froot et al. 1993; Smith and Stulz 1985). In this manner, hundreds of primary studies have empirically investigated the theoretical explanations for corporate hedging. However, despite or perhaps exactly because of the vast amount of studies, the empirical literature presents rather mixed evidence for the drivers of corporate hedging (Aretz and Bartram 2010; Bartram et al. 2009; Fauver and Naranjo 2010; Judge 2007).

Two previous studies present quantitative summaries of the existing empirical findings for the hedging determinants (Aretz et al. 2007; Arnold et al. 2014). Aretz and Bartram (2010) conduct a broad literature review and apply vote counting to compare the number of statistically significant and insignificant results from the univariate/multivariate analysis sections reported in 31 primary studies. Their findings show weak evidence for the coordination of financing and investment policy hypothesis as well as the tax hypothesis. Although these results exhibit a detailed summary of the distribution and the extent of disagreement within the outcomes of prior research, vote counting approaches have been strongly criticized as 'fatally flawed' (Borenstein et al. 2009: 252; Stanley and Doucouliagos 2012: 2). This assessment arises from the fact that vote counts collapse the observed estimates into a few categories based on their statistical significance, do not present an economic magnitude for the aggregated effects, and ignore differences of sample sizes and precision of the findings reported in the primary studies (see, among others, Borenstein et al. 2009; Hedges and Olkin 1985; Stanley and Doucouliagos 2012).

To overcome the shortcomings of vote counting, Arnold et al. (2014) calculate weighted averages for a set of 15 different hedging determinants across a sample of 37 primary studies. Contradicting Aretz and Bartram (2010), their main result is that financial distress costs induce firms to hedge. In addition, they find weak evidence that the underinvestment problem and the dependence on costly external financing influence corporate hedging behavior. However, their univariate meta-analysis approach bears an essential caveat, since the computation of mean values across primary studies does not account for interactions between the examined proxy variables. Riley (2009) shows that ignoring these dependencies in a meta-analysis can lead to a heavily biased estimation of the aggregated results. Furthermore, independent testing of correlated effects increases the chance of finding spuriously significant results (Bender et al. 2008). Beyond the threat of biased estimates caused by the assumption of uncorrelated proxy variables, none of the mentioned reviews explores the sources of heterogeneity among the primary studies' results. Hence, explanations for the mixed empirical evidence are still missing. Table 1 illustrates the contribution of this study to the existing literature and especially the two previous reviews on the determinants of corporate hedging.

First, the field of corporate hedging is characterized by its multivariate interrelations. For example, in the case of existing corporate taxes, a combination of several influencing factors determines firm value creation through corporate hedging, such as volatility of pre-tax income, convexity of the tax function, and the amount of tax payments. For this reason, we employ the first multivariate meta-analysis in corporate finance research. This approach simultaneously integrates reported results for the fourteen most frequently analyzed hedging determinants based on manually collected data from a sample of 132 primary studies. The data availability from a sufficiently large number of studies allows to apply this multivariate approach, which requires reported estimates for the bivariate relations among all proxy variables. The number of articles included in this study is about three times larger than the samples analyzed by Aretz and Bartram (2010) or Arnold et al. (2014). In this way, we aim to comply with the requirement of any meta-analysis to examine the population of studies available in order to avoid systematic biases due to misspecification and publication selection while incorporating the multidimensional nature of empirical research findings (Stanley and Doucouliagos 2012). Moreover, this comprehensive data set increases the number of observations from different data sources and time periods, which reduces the impact of sampling errors within individual primary studies. In a second type of analysis, we employ meta-regression to explain the heterogeneity among the reported effect estimates by exploring the impact of regional differences, study quality, and observation period on the reported results. Finally, we consider the presence of a potential data mining bias, publication selection bias, and misspecification bias. These aspects have not been investigated in the other reviews on corporate hedging so far.

In summary, our multivariate estimates of the aggregated primary studies' results provide evidence for the bankruptcy and financial distress hypothesis. In this respect, we obtain statistically significant results (at least at a significance level of 5%) for the following proxy variables: dividend yield (positive sign), liquidity (negative sign), and firm size (positive sign). In addition, we find weak explanatory power for the tax-loss carry forward variable and the research and development (R&D) proxy (each at a significance level of 10%). This indicates weak support for the corporate tax hypothesis and agency costs of debt argument. Furthermore, we cannot find consistent evidence for the hypothesis that hedging alleviates asymmetric information and agency conflicts between managers and shareholders. Overall, these results differ from Aretz and Bartram (2010) and Arnold et al. (2014), since the former also find evidence for the asymmetric information hypothesis and both reviews identify some support for hedging to be driven by the motivation of firms to avoid agency conflicts of debt. The further analyses reveal that our main findings are robust against data mining bias and publication selection bias. Solely the results for interest coverage ratio, capital expenditure, and R&D seem to be slightly distorted towards reporting stronger and statistically significant results. Moreover, the impact of financial distress costs measured by the corporate leverage ratio are found to be less pronounced for US firms. Finally, the relation between tangible assets and corporate hedging, as well as R&D expenses and hedging decreases over time.

The remainder of the paper is structured as follows. Section 2 provides an overview of the four basic hypotheses of firm value creation by corporate hedging. Section 3 serves as a short introduction to the methodology of multivariate meta-analysis. Section 4 presents the search for literature, the data preparation,

and descriptive statistics. Section 5 reports our empirical findings, which are discussed in the subsequent Sect. 6. Section 7 concludes.

CONCLUSION

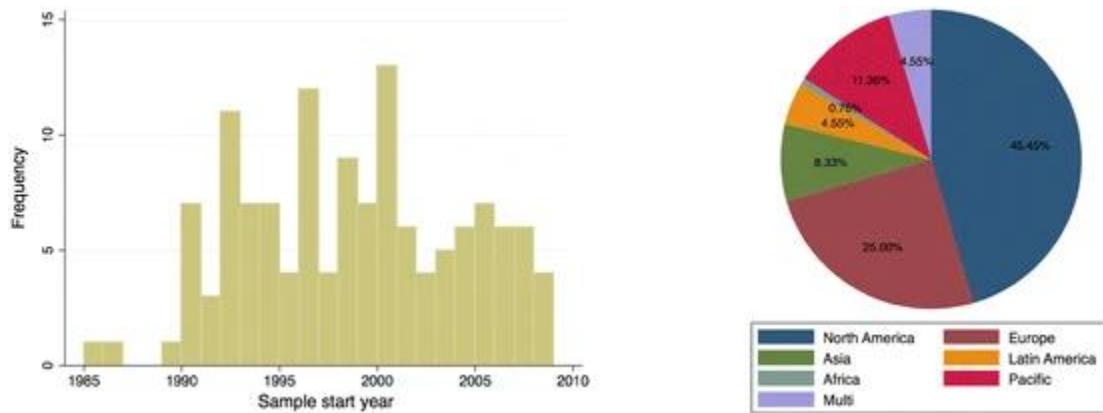
This paper provides new evidence on the determinants of corporate hedging by taking a meta-level look at the following hedging hypotheses: corporate tax, bankruptcy and financial distress costs, asymmetric information and agency conflicts of equity, coordination of financing and investment policy and agency conflicts of debt. The results of the multivariate meta-analysis indicate that hedging firms are larger companies with lower levels of financial liquidity and higher dividend payouts than non-hedging firms. In comparison to existing reviews by Aretz and Bartram (2010) and Arnold et al. (2014), we can conclude that univariate meta-analysis tends to overestimate results, since this approach neglects the dependencies among the proxy variables and does not allow to investigate the heterogeneity among the effect estimates. For this reason, the results of our multivariate meta-analysis do not confirm their results, for example, regarding the impact of leverage ratio, institutional investors, and profitability on corporate hedging decisions. In addition to the multivariate meta-analysis, we also conduct a meta-regression analysis to explore the heterogeneity between the estimates reported in primary studies. Here, we find that studies analyzing firms from North America report, on average, a lower impact of leverage on the corporate hedging decision. Moreover, studies examining more recent data samples tend to find a weaker relation between tangible assets and hedging, R&D and hedging, respectively.

Despite its power to model interrelations between multiple effect sizes, there are several issues to be critically considered when conducting a (multivariate) meta-analysis and interpreting its results. Limiting factors, which are incorporated only in a few primary studies, comprise the ‘endogeneity and identification problems’ as well as ‘empirical modeling of structural relations’ as emphasized by Aretz and Bartram (2010). This means that the causality of the variables is not unique. For example, many determinants of leverage also influence hedging strategies and vice versa. A promising methodology to address the problem of endogeneity in a meta-analysis using secondary data is the meta-analytic structural equation modeling (MASEM) approach presented by Cheung and Chan (2005). If a combined correlation matrix (similar to the GLS estimator presented in this paper) can be generated, this pooled correlation matrix could then be used as input for a structural equation model. Furthermore, it should be considered that possible nonlinearities in the dependency structure are not captured by our multidimensional model. Incorporating such specific effects, however, requires a deep understanding of the dependencies as well as moving away from the modeling as it is performed in most existing primary studies. These aspects open perspectives for future research.

Finally, our results suggest that classical financial theories do not seem to fully explain the first order concerns of corporate hedging in practice. For this reason, we encourage academics to widen their empirical work towards the analysis of more recent theoretical developments of classical financial theory as, for example, the influence of the time horizon on the hedging motivation of financially distressed firms (Kürsten and Linde 2011), hedging because of good corporate governance (Lel 2012), as well as behavioristic theories like, for example, the managerial overconfidence hypothesis (Adam et al. 2015).

APPENDIX

FIGURE 1
DISTRIBUTION OF SAMPLE OBSERVATIONS OVER TIME AND OVER WORLD REGIONS



The plot in the left column shows the distribution of the sample start year of each study included in the sample. The pie graph in the right column depicts the distribution of the countries covered by the primary studies. ‘Multi’ refers to studies examining more than one country.

TABLE 1
SUMMARY OF EXISTING QUANTITATIVE REVIEWS

	This study	Aretz and Bartram (2010)	Arnold et al. (2014)
Data			
No. of studies	132	29	37
No. of observations	700 ^a	200/267 ^b	211
Literature search process is reported	Yes	No	Yes
Inclusion criteria are reported	Yes	No	Yes
Publication date of sample studies	1993–2015	1983–2009	1993–2011
Inclusion of unpublished studies	Yes	Yes	Yes
Methodology			
Aim of the review	Calculation of mean effect sizes considering the interdependencies among the proxy variables; Analysis of heterogeneity	Overview of reported sign and statistical significance	Calculation of mean effect sizes

Applied method	Multivariate meta-analysis following Becker (1992); meta-regression for analysis of heterogeneity following Stanley and Doucouliagos (2012)	Vote counting	Univariate meta-analysis following Hedges and Olkin (1985)
Effect sizes	Zero-order correlations between proxies and hedging variable	Dummy variables for significant results from univariate and multivariate analyses reported in primary studies	Standardized mean differences calculated from the univariate analyses reported in primary studies
Analyzing and explaining differences in study characteristics (heterogeneity)	Yes	Only separate results for FX and IR hedgers	No
Accounting for publication selection bias	Yes	No	Only graphical analysis
Accounting for data mining bias	Yes	No	No

This table provides an overview of the existing review articles in the corporate hedging literature and compares these reviews with the study at hand.

^aThis number includes only the observations for the correlations between the proxy variables and the binary hedging variable. For a better comparison of the studies, the correlations measuring the interrelations among the proxies are not considered.

^bThe number on the left-hand side refers to the observations from univariate primary studies' results and the number of the right-hand side refers to multivariate results.

TABLE 2
SUMMARY OF PROXY VARIABLES FOR THE DETERMINANTS OF CORPORATE HEDGING

Variable	Hyp. sign	Description
Corporate taxes (H1)		
Tax-loss carry forwards	+	Dummy variable that takes a value of '1' if the firm has tax-loss carry forwards available and '0' otherwise
Bankruptcy and financial distress costs (H2)		
Dividend yield	?	Dividend per share (scaled)
Interest coverage ratio	–	(Logarithm of) Earnings before interest and taxes ÷ interest expenses

Leverage ratio	+	Book value of long-term or total debt (scaled)
Liquidity	–	Current assets or cash and cash equivalents (scaled)
Profitability	–	(Logarithm of) Sales or return on assets or EBIT (scaled)
Firm size	+	(Logarithm of) Book value of total assets or market value of the firm
Tangible assets	–	Tangible assets (scaled)
Asymmetric information and agency conflicts of equity (H3)		
Institutional investors	–	Percentage or number of shares held by institutional investors
Option ownership	?	(Logarithm of) Number, percentage or market value of options held by managers or directors
Share ownership	+	(Logarithm of) Number, percentage, or market value of shares held by managers or directors
Coordination of financing and investment policy and agency conflicts of debt (H4)		
Capex	+	Capital expenditures (scaled)
R&D expenses	+	Research and development expenses (scaled)
Tobin's Q	+	(Logarithm of) Market value of firm ÷ book value of total assets

This table sums up the proxy variables reviewed in the paper at hand, including their hypothetical sign for the impact on the corporate hedging decision, as well as the corresponding variable definition. The hypothesized sign describes the theoretical relationship between the proxy and the incentive for corporate hedging. Our variable definitions arise from an aggregation of the variables in the reviewed studies and are similar to those of Aretz and Bartram (2010). The descriptions are generalizations of the study-specific variable definitions.

TABLE 3
SAMPLE DESCRIPTION

Criteria	Statistic
No. of firms investigated in the primary studies	
Minimum	17
Maximum	7,319
Mean	556
Standard deviation	1,155
Total number of firms	73,387
Proportion of hedging firms (non-hedging firms)	52.50% (47.50%)
Publication type and study quality	

Published studies (unpublished studies)	70.45% (29.55%)
VHB-JOURQUAL 3 ranking A+, A, or B (ranking C or not ranked)	31.82% (68.18%)
SJR ranking above 1.0 (SJR ranking equal to or below 1.0)	36.36% (63.64%)

This table presents descriptive statistics regarding the number of firms examined in the primary studies and the publication characteristics.

TABLE 4
STATISTICAL RESULTS FROM MULTIVARIATE META-ANALYSIS

Proxy variable	Hyp. sign	No. of firms	<i>b</i>	SE(<i>b</i>)	<i>p</i> -value
Corporate taxes (H1)					
Tax-loss carry forwards	+	12,529	0.0711	0.0427	0.0956*
Bankruptcy and financial distress costs (H2)					
Dividend yield	?	17,038	0.0741	0.0319	0.0202**
Interest coverage ratio	–	16,187	–0.0127	0.0404	0.7530
Leverage ratio	+	51,866	0.0302	0.0269	0.2607
Liquidity	–	33,767	–0.0893	0.0350	0.0108**
Profitability	–	33,308	0.0751	0.0604	0.2135
Firm size	+	52,667	0.2148	0.0574	0.0002***
Tangible assets	–	11,938	0.0715	0.0611	0.2425
Asymmetric information and agency conflicts of equity (H3)					
Institutional investors	–	18,040	0.0869	0.0559	0.1203
Option ownership	?	13,026	–0.0279	0.0442	0.5275
Share ownership	+	13,643	–0.0421	0.0335	0.2091
Coordination of financing and investment policy and agency conflicts of debt (H4)					
Capex	+	25,482	–0.0263	0.0262	0.3169
R&D expenses	+	28,770	0.0910	0.0472	0.0541*
Tobin's Q	+	38,937	0.0433	0.0327	0.1856

This table shows the results for the proxy variables used to test the corporate hedging hypotheses in a multivariate meta-analysis. Names of the proxy variables are listed in the first column, and the second column shows the specific hypothesized sign; the third column shows the number of firm observations summed up from the primary studies testing the respective proxy variable. Next, the results from multivariate meta-analysis are presented. Using the

standardized regression slopes b from the multivariate linear model and their standard deviations $SE(b)$ for each proxy variable, we calculate the z-statistic and the corresponding p-value to test the null hypotheses of $b_i=0$. *, ** and *** indicate the rejection of the null hypotheses at the 10, 5, and 1% probability levels.

TABLE 5
RESULTS OF THE ROBUSTNESS TEST FOR DATA MINING BIAS

Proxy variable	Number of different variable operationalizations in the primary studies ^a	Hyp. sign	Multivariate results		Multivariate results based on adjusted 5% significance levels	
			Emp. sign	p-value	Adjusted 5% significance levels $\alpha(PF) = 0.05^b$	p-value
Corporate taxes (H1)						
Tax-loss carry forwards	1 definition in 18 studies	+	+	0.0956*	0.0500	0.0956
Bankruptcy and financial distress costs (H2)						
Dividend yield	7 definitions in 41 studies	?	+	0.0202**	0.0217	0.0202**
Interest coverage ratio	5 definitions in 30 studies	-	-	0.7530	0.0361	0.7530
Leverage ratio	9 definitions in 108 studies	+	+	0.2607	0.0401	0.2607
Liquidity	6 definitions in 72 studies	-	-	0.0108**	0.0500	0.0108**
Profitability	8 definitions in 68 studies	-	+	0.2135	0.0387	0.2135
Firm size	7 definitions in 115 studies	+	+	0.0002***	0.0500	0.0002**
Tangible assets	3 definitions in 11 studies	-	+	0.2425	0.0302	0.2425
Asymmetric information and agency conflicts of equity (H3)						
Institutional investors	5 definitions in 22 studies	-	+	0.1203	0.0242	0.1203
Option ownership	7 definitions in 19 studies	?	-	0.5275	0.0087	0.5275
Share ownership	6 definitions in 44 studies	+	-	0.2091	0.0352	0.2091

Coordination of financing and investment policy and agency conflicts of debt (H4)						
Capex	5 definitions in 35 studies	+	-	0.3169	0.0420	0.3169
R&D expenses	3 definitions in 37 studies	+	+	0.0541*	0.0500	0.0541
Tobin's Q	3 definitions in 79 studies	+	+	0.1856	0.0500	0.1856

This table shows the results of the data mining test. The second column contains the number of different variable operationalizations that we aggregated in our proxy variable definitions. The following column includes their hypothetical sign for the impact on the corporate hedging decision. Beside, the results (empirical signs and p-values) revealed from multivariate meta-analysis are presented, followed by the results using adjusted p-values to test the presence of data mining bias.

TABLE 6
RESULTS OF THE ROBUSTNESS TEST FOR SYSTEMATIC DIFFERENCES IN THE HETEROGENEITY OF EFFECT SIZES

Hypothesis	Taxes (H1)		Bankruptcy and financial distress costs (H2)					
Dep. variable/ effect size	Tax-loss carry-forwards	Dividend yield	Interest coverage ratio	Leverage ratio	Liquidity	Profitability	Firm size	Tangible assets
Hyp. sign	+	?	-	+	-	-	+	-
This study	+	+	-	+	-	+	+	+
Intercept	0.0120 (0.08)	0.2117 (1.64)	-0.1355 (-0.91)	0.2319** (2.57)	-0.1147 (-0.78)	0.1593 (1.04)	0.3181* (1.86)	0.6392 *** (2.60)
ν	1.0863 (1.06)	-1.1137 (-1.37)	1.8619** (2.01)	-0.4779 (-0.92)	-0.5823 (-0.95)	0.3538 (0.49)	-0.1855 (-0.26)	2.4189 (1.64)
Citations	0.0056 (0.15)	0.0082 (0.22)	-0.0224 (-0.51)	-0.0052 (-0.19)	0.0194 (0.46)	0.0386 (0.91)	0.0074 (0.17)	-0.0300 (-0.57)
North America	-0.0505 (-0.71)	-0.0917 (-1.04)	0.0194 (0.24)	-0.1375** (-2.33)	0.0639 (0.42)	-0.1522 (-0.74)	-0.0886 (-0.43)	-0.0844 (-0.41)
Mean year	0.0002 (0.03)	0.0041 (0.44)	0.0014 (0.13)	-0.0096 (-1.57)	-0.0002 (-0.01)	-0.0010 (-0.12)	0.0008 (0.07)	-0.0679*** (-3.74)
Observations	18	41	30	108	72	68	115	11
Hypothesis	Asymmetric information and agency conflicts of equity (H3)			Coordination of financing and investment policy and agency conflicts of debt (H4)				
Dep. variable/ effect size	Institutional investors	Option ownership	Share ownership	Capex	R&D expenses	Tobin's Q		
Hyp. sign	-	?	+	+	+	+		
This study	+	-	-	-	+	+		
Intercept	0.3565* (1.94)	-0.0415 (-0.35)	-0.0907 (-0.79)	0.1022 (1.14)	-0.0517 (-0.54)	0.0288 (0.32)		
ν	-1.1190 (-1.19)	0.7877* (1.70)	0.9188 (1.36)	-1.1952** (-2.26)	1.7484** (1.97)	0.0077 (0.01)		
Citations	-0.0543 (-1.22)	0.0427* (1.70)	0.0340 (0.90)	-0.0153 (-0.63)	0.0171 (0.70)	0.0101 (0.37)		
North America	0.0369 (0.29)	-0.0313 (-0.38)	-0.0839 (-1.07)	0.0271 (0.53)	0.0775 (1.36)	0.0407 (0.74)		
Mean year	-0.0167 (-1.09)	-0.0086 (-0.87)	-0.0118 (-1.39)	-0.0036 (-0.71)	-0.0112** (-2.02)	-0.0039 (-0.68)		
Observations	22	19	44	35	37	80		

This table presents the results of the meta-regression analysis. This approach allows the inspection of systematic variation in the effect sizes. As dependent variable, we use the z-transformed effect sizes measuring the direct influences of each proxy variable on the hedging dummy variable. As independent variables, we use explanatory variables representing study quality, observation period, regional effects, and publication bias. In this regard, the number of citations is calculated as the logarithm of [(Google Scholar citations)/(age of the study) + 1]. The number of citations was collected on January 13, 2017. The number of citations is preferred, as it considers study-specific quality characteristics and it is available for each study, including unpublished works. As a remarkable part of literature examines hedging data from US firms, we include a dummy variable that indicates whether a study uses US data (=1 for US studies, 0 otherwise). To consider potential temporal variation due to regulatory changes or the development of financial markets, the mean observation year of a sample is integrated in the analysis. Finally, we investigate the existence of a potential publication selection bias in the reported results. As commonly included in meta-regression analysis research, our model contains the standard deviation of the effect size (ν) as explanatory variable. The estimated regression model in general terms corresponds to

$$z_{ij} = \beta_0 + \beta_1 \nu_{ij} + \beta_2 \text{Citations}_i + \beta_3 \text{NorthAmerica}_i + \beta_4 \text{Meanyear}_{ij} + \varepsilon_{ij}, \varepsilon_{ij} \sim N(0; \nu_{2ij}).$$

We estimate this model by a multilevel mixed-effects regression with country and time level effects. This estimation procedure controls for data dependencies between firm observations from the same country and the same decade. The table shows the regression coefficients, with the corresponding t-statistics reported in brackets below.

*, ** and *** indicate the rejection of the null hypothesis at the 10, 5, and 1% probability levels.

TABLE 7
COMPARISON OF RESULTS

Proxy variable	Hyp. sign	This study	Allayannis and Weston (2001)	Campello et al. (2011)	Choi et al. (2015)	Donohoe (2015)	Géczy et al. (1997)	Jin and Jorion (2006)	Nance et al. (1993)	Pérez-González and Yun (2013)	Pincus and Rajgopal (2002)	Tufano (1996)	Aretz and Bartram (2010)	Arnold et al. (2014)
Corporate taxes (H1)														
Tax-loss carry forwards	+	0				0					0		0	0
Bankruptcy and financial distress costs (H2)														
Dividend yield	?	+			+		0		+	0	0		0	+
Interest coverage ratio	-	0					0		0				0	0
Leverage ratio	+	0		+	+	0	0		0	0	+	0	+	+
Liquidity	-	-					0		0		-	0	-	-
Profitability	-	0			+	0				0			0	+
Firm size	+	+		+	+	0	+	+	+	+	+	0	+	+
Tangible assets	-	0		0									-	
Asymmetric information and agency conflicts of equity (H3)														
Institutional investors	-	0				0	+				+		+	+
Option ownership	?	0					+				0	0	0	0
Share ownership	+	0					0				0	0	0	0
Coordination of financing and investment policy and agency conflicts of debt (H4)														
Capex	+	0		+		0	-			0			0	
R&D expenses	+	0			+	0	+		+				+	0
Tobin's Q	+	0	+	0		0	+			0	0		0	0

This table compares the results of this study with the most influential studies published in journals, which are classified as A+ in the VHB-JOURQUAL3. For these studies, we integrated the reported information as considered in the multivariate meta-analysis. Hence, we refer to reported information on mean difference tests or correlation matrices. Additionally, we also contrast our findings with the results from the two existing literature reviews by Aretz and Bartram (2010) and Arnold et al. (2014). Beside the hypothesized signs, significant results at the 5% level are displayed by '+' or '-' for positive and negative relations, zero otherwise.

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TRANSLATED VERSION: SPANISH

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

VERSION TRADUCIDA: ESPAÑOL

A continuación se muestra una traducción aproximada de las ideas presentadas anteriormente. Esto se hizo para dar una comprensión general de las ideas presentadas en el documento. Por favor, disculpe cualquier error gramatical y no responsabilite a los autores originales de estos errores.

INTRODUCCIÓN

La motivación para que las empresas no financieras se involucren en la cobertura corporativa es uno de los temas más discutidos en la investigación de finanzas corporativas. La teoría de las finanzas neoclásica afirma que, en las condiciones de un mercado de capitales perfecto, la cobertura a nivel de las empresas no crea valor adicional, ya que los accionistas pueden cubrir perfectamente su posición (Modigliani y Miller 1958). Sin embargo, la teoría financiera más reciente sugiere que cuando los mercados financieros no tienen fricción, hay varias maneras en que la cobertura corporativa puede aumentar el valor de las empresas en el sentido de la maximización del valor de los accionistas (Bessembinder 1991; demarzo y Duffie 1991; 1993; Smith y Stulz 1985). De esta manera, cientos de estudios primarios han investigado empíricamente las explicaciones teóricas para la cobertura corporativa. Sin embargo, a pesar o tal vez exactamente debido a la gran cantidad de estudios, la literatura empírica presenta evidencia bastante mixta para los impulsores de la cobertura corporativa (Aretz y Bartram 2010; 2009; Fauver y Naranjo 2010; Juez 2007).

Dos estudios anteriores presentan resúmenes cuantitativos de los hallazgos empíricos existentes para los determinantes de cobertura (Aretz et al. 2007; 2014). Aretz y Bartram (2010) llevan a cabo una amplia revisión de la literatura y aplican el escrutinio de votos para comparar el número de resultados estadísticamente significativos e insignificantes de las secciones de análisis univariado/multivariado reportados en 31 estudios primarios. Sus hallazgos muestran pruebas débiles para la coordinación de la hipótesis de la política de financiación e inversión, así como la hipótesis fiscal. Aunque estos resultados presentan un resumen detallado de la distribución y el grado de desacuerdo dentro de los resultados de investigaciones previas, los enfoques de escrutinio de votos han sido fuertemente criticados como "fatalmente defectuosos" (Borenstein et al. 2009: 252; Stanley y Doucouliagos 2012: 2). Esta evaluación surge del hecho de que los recuentos de votos colapsan las estimaciones observadas en unas pocas categorías basadas en su importancia estadística, no presentan una magnitud económica para los efectos agregados e ignoran las diferencias de tamaños de muestra y la precisión de los hallazgos reportados en los estudios primarios (véanse, entre otros, Borenstein et al. 2009; Hedges y Olkin 1985; Stanley y Doucouliagos 2012).

Para superar las deficiencias del escrutinio de votos, Arnold et al. (2014) calculan promedios ponderados para un conjunto de 15 determinantes de cobertura diferentes en una muestra de 37 estudios primarios. Contradiendo Aretz y Bartram (2010), su principal resultado es que los costos de angustia financiera inducen a las empresas a cubrirse. Además, encuentran pruebas débiles de que el problema de la infrainversión y la dependencia de costosos financiamiento externo influyen en el comportamiento de cobertura corporativa. Sin embargo, su enfoque de metaanálisis univariado tiene una advertencia esencial,

ya que el cálculo de los valores medios en los estudios primarios no tiene en cuenta las interacciones entre las variables de proxy examinadas. Riley (2009) muestra que ignorar estas dependencias en un metaanálisis puede conducir a una estimación muy sesgada de los resultados agregados. Además, las pruebas independientes de efectos correlacionados aumentan la posibilidad de encontrar resultados espuriosmente significativos (Bender et al. 2008). Más allá de la amenaza de estimaciones sesgadas causadas por la suposición de variables proxy no correlacionadas, ninguna de las revisiones mencionadas explora las fuentes de heterogeneidad entre los resultados de los estudios primarios. Por lo tanto, todavía faltan explicaciones para la evidencia empírica mixta. El Cuadro 1 ilustra la contribución de este estudio a la literatura existente y especialmente las dos revisiones anteriores sobre los determinantes de la cobertura corporativa.

En primer lugar, el campo de la cobertura corporativa se caracteriza por sus interrelaciones multivariadas. Por ejemplo, en el caso de los impuestos corporativos existentes, una combinación de varios factores de influencia determina la creación de valor en firme mediante cobertura corporativa, como la volatilidad de los ingresos antes de impuestos, la convexidad de la función fiscal y el importe de los pagos de impuestos. Por esta razón, empleamos el primer metanálisis multivariado en investigación de finanzas corporativas. Este enfoque integra simultáneamente los resultados reportados para los catorce determinantes de cobertura analizados con mayor frecuencia sobre la base de datos recogidos manualmente de una muestra de 132 estudios primarios. La disponibilidad de datos de un número suficientemente grande de estudios permite aplicar este enfoque multivariante, que requiere estimaciones notificadas para las relaciones bivariadas entre todas las variables proxy. El número de artículos incluidos en este estudio es aproximadamente tres veces mayor que las muestras analizadas por Aretz y Bartram (2010) o Arnold et al. (2014). De esta manera, pretendemos cumplir con el requisito de cualquier metanálisis para examinar la población de estudios disponibles con el fin de evitar sesgos sistemáticos debido a la especificación errónea y selección de publicaciones, al tiempo que incorporamos la naturaleza multidimensional de los hallazgos de investigación empírica (Stanley y Doucouliagos 2012). Además, este conjunto de datos completo aumenta el número de observaciones de diferentes fuentes de datos y períodos de tiempo, lo que reduce el impacto de los errores de muestreo en estudios primarios individuales. En un segundo tipo de análisis, empleamos meta-regresión para explicar la heterogeneidad entre las estimaciones de efectos reportados mediante la exploración del impacto de las diferencias regionales, la calidad del estudio y el período de observación en los resultados reportados. Por último, consideramos la presencia de un posible sesgo de minería de datos, sesgo de selección de publicaciones y sesgo de especificación errónea. Estos aspectos no han sido investigados en las otras revisiones sobre cobertura corporativa hasta ahora.

En resumen, nuestras estimaciones multivariadas de los resultados agregados de los estudios primarios proporcionan evidencia para la hipótesis de bancarrota y dificultades financieras. En este sentido, obtenemos resultados estadísticamente significativos (al menos en un nivel de significancia del 5%) para las siguientes variables proxy: rendimiento del dividendo (signo positivo), liquidez (signo negativo) y tamaño de la empresa (signo positivo). Además, encontramos un poder explicativo débil para la variable de arrastre de pérdidas fiscales y el proxy de investigación y desarrollo (I+D) (cada uno con un nivel de significancia del 10%). Esto indica un apoyo débil a la hipótesis del impuesto de sociedades y a los costos de agencia del argumento de la deuda. Además, no podemos encontrar pruebas coherentes de la hipótesis de que la cobertura alivia la información asimétrica y los conflictos de agencia entre los gerentes y los accionistas. En general, estos resultados difieren de Aretz y Bartram (2010) y Arnold et al. (2014), ya que el primero también encuentra evidencia de la hipótesis de información asimétrica y ambas revisiones identifican cierto apoyo para que la cobertura sea impulsada por la motivación de las empresas para evitar conflictos de deuda de agencia. Los análisis adicionales revelan que nuestros principales hallazgos son sólidos contra el sesgo de minería de datos y el sesgo de selección de publicaciones. Sólo los resultados de la relación de cobertura de intereses, los gastos de capital y la I+D parecen estar ligeramente distorsionados para reportar resultados más fuertes y estadísticamente significativos. Además, se constata que el impacto de los costos de dificultades financieras medidos por el coeficiente de apalancamiento corporativo es menos pronunciado para las empresas estadounidenses. Por último, la relación entre los activos tangibles y la cobertura corporativa, así como los gastos de I+D y la cobertura disminuye con el tiempo.

El resto del documento se estructura de la siguiente manera. La Sección 2 ofrece una visión general de las cuatro hipótesis básicas de creación de valor firme por cobertura corporativa. La Sección 3 sirve como una breve introducción a la metodología del metanálisis multivariante. La Sección 4 presenta la búsqueda de literatura, la preparación de datos y estadísticas descriptivas. La Sección 5 informa de nuestros hallazgos empíricos, que se discuten en la sección subsiguiente. 6. La sección 7 concluye.

CONCLUSIÓN

Este documento proporciona nuevas pruebas sobre los determinantes de la cobertura corporativa mediante una mirada metanivel a las siguientes hipótesis de cobertura: impuestos corporativos, costos de quiebra y dificultades financieras, información asimétrica y conflictos de agencias de capital, coordinación de la política de financiamiento y inversión y conflictos de deuda de agencias. Los resultados del metanálisis multivariante indican que las empresas de cobertura son empresas más grandes con menor nivel de liquidez financiera y mayores pagos de dividendos que las empresas que no son de cobertura. En comparación con las revisiones existentes de Aretz y Bartram (2010) y Arnold et al. (2014), podemos concluir que el metaanálisis univariado tiende a sobreestimar resultados, ya que este enfoque descuida las dependencias entre las variables proxy y no permite investigar la heterogeneidad entre las estimaciones de efecto. Por esta razón, los resultados de nuestro metanálisis multivariado no confirman sus resultados, por ejemplo, con respecto al impacto del ratio de apalancamiento, los inversores institucionales y la rentabilidad en las decisiones de cobertura corporativa. Además del metanálisis multivariado, también realizamos un análisis de metarregresión para explorar la heterogeneidad entre las estimaciones notificadas en estudios primarios. Aquí, encontramos que los estudios que analizan las empresas de América del Norte informan, en promedio, un menor impacto del apalancamiento en la decisión de cobertura corporativa. Además, los estudios que examinan muestras de datos más recientes tienden a encontrar una relación más débil entre los activos tangibles y la cobertura, la I+D y la cobertura, respectivamente.

A pesar de su poder para modelar interrelaciones entre múltiples tamaños de efectos, hay varios problemas a tener en cuenta críticamente al realizar un metaanálisis (multivariado) e interpretar sus resultados. Los factores limitantes, que se incorporan sólo en pocos estudios primarios, comprenden los «problemas de endogeneidad e identificación», así como el "modelado empírico de las relaciones estructurales", como subrayan Aretz y Bartram (2010). Esto significa que la causalidad de las variables no es única. Por ejemplo, muchos determinantes del apalancamiento también influyen en las estrategias de cobertura y viceversa. Una metodología prometedora para abordar el problema de la endogeneidad en un metaanálisis utilizando datos secundarios es el enfoque de modelado de ecuaciones estructurales metaanálisis (MASEM) presentado por Cheung y Chan (2005). Si se puede generar una matriz de correlación combinada (similar al estimador GLS presentado en este documento), esta matriz de correlación agrupada podría utilizarse como entrada para un modelo de ecuación estructural. Además, debe tenerse en cuenta que nuestro modelo multidimensional no captura posibles no linealidades en la estructura de dependencias. La incorporación de estos efectos específicos, sin embargo, requiere una comprensión profunda de las dependencias, así como alejarse del modelado, ya que se realiza en la mayoría de los estudios primarios existentes. Estos aspectos abren perspectivas para futuras investigaciones.

Por último, nuestros resultados sugieren que las teorías financieras clásicas no parecen explicar completamente las preocupaciones de primer orden de la cobertura corporativa en la práctica. Por esta razón, animamos a los académicos a ampliar su trabajo empírico hacia el análisis de los desarrollos teóricos más recientes de la teoría financiera clásica como, por ejemplo, la influencia del horizonte temporal en la motivación de cobertura de las empresas con dificultades financieras (K-rsten y Linde 2011), la cobertura como consecuencia del buen gobierno corporativo (Lel 2012), así como las teorías conductistas como, por ejemplo, , la hipótesis de sobreconfianza gerencial (Adam et al. 2015).

TRANSLATED VERSION: FRENCH

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

VERSION TRADUITE: FRANÇAIS

Voici une traduction approximative des idées présentées ci-dessus. Cela a été fait pour donner une compréhension générale des idées présentées dans le document. Veuillez excuser toutes les erreurs grammaticales et ne pas tenir les auteurs originaux responsables de ces erreurs.

INTRODUCTION

La motivation des entreprises non financières à s'engager dans la couverture des entreprises est l'un des sujets les plus discutés dans la recherche sur le financement des entreprises. La théorie de la finance néoclassique affirme que, dans les conditions d'un marché des capitaux parfait, la couverture au niveau des entreprises ne crée pas de valeur supplémentaire, puisque les actionnaires peuvent parfaitement couvrir leur position (Modigliani et Miller, 1958). Toutefois, des théories financières plus récentes suggèrent que lorsque les marchés financiers ne sont pas sans friction, il existe plusieurs façons d'accroître la valeur des entreprises dans le sens de la maximisation de la valeur pour les actionnaires (Bessembinder, 1991; demarzo et Duffie, 1991; Froot et coll. 1993; Smith et Stulz, 1985). De cette façon, des centaines d'études primaires ont étudié empiriquement les explications théoriques de la couverture des entreprises. Cependant, malgré ou peut-être exactement en raison de la grande quantité d'études, la littérature empirique présente des preuves assez mitigées pour les moteurs de la couverture d'entreprise (Aretz et Bartram 2010; Bartram et coll. 2009; Fauver et Naranjo 2010; juge 2007).

Deux études antérieures présentent des résumés quantitatifs des résultats empiriques existants pour les déterminants de la couverture (Aretz et al., 2007; Arnold et coll. 2014). Aretz et Bartram (2010) effectuent un vaste examen de la littérature et appliquent le dépouillement des votes pour comparer le nombre de résultats statistiquement significatifs et insignifiants des sections d'analyse univariées/multivariées rapportées dans 31 études primaires. Leurs résultats montrent des preuves faibles de la coordination de l'hypothèse de la politique de financement et d'investissement ainsi que de l'hypothèse fiscale. Bien que ces résultats présentent un résumé détaillé de la répartition et de l'ampleur des désaccords dans les résultats de la recherche antérieure, les approches de dépouillement des votes ont été vivement critiquées comme étant « fatalement erronées » (Borenstein et al., 2009 : 252; Stanley et Doucouliagos 2012: 2). Cette évaluation découle du fait que les nombres de voix réduisent les estimations observées en quelques catégories en fonction de leur importance statistique, ne présentent pas d'ampleur économique pour les effets agrégés et ignorent les différences de taille des échantillons et la précision des résultats rapportés dans les études primaires (voir, entre autres, Borenstein et al., 2009; Haies et Olkin, 1985; Stanley et Doucouliagos 2012).

Pour combler les lacunes du dépouillement des votes, Arnold et coll. (2014) calculent des moyennes pondérées pour un ensemble de 15 déterminants de couverture différents dans un échantillon de 37 études primaires. Contredisant Aretz et Bartram (2010), leur principal résultat est que les coûts de détresse financière incitent les entreprises à se couvrir. En outre, ils trouvent des preuves faibles que le problème du sous-investissement et la dépendance à l'égard d'un financement externe coûteux influencent le comportement de couverture des entreprises. Toutefois, leur approche univariée de méta-analyse comporte une mise en garde essentielle, puisque le calcul des valeurs moyennes dans les études primaires ne tient pas compte des interactions entre les variables de procuration examinées. Riley (2009) montre que l'ignorance de ces dépendances dans une méta-analyse peut conduire à une estimation fortement biaisée des résultats agrégés. De plus, des tests indépendants sur les effets corrélés augmentent les chances de trouver des résultats faussement significatifs (Bender et coll., 2008). Au-delà de la menace d'estimations biaisées causée par l'hypothèse de variables de procuration non corrélées, aucun des examens mentionnés n'explore les sources d'hétérogénéité parmi les résultats des études primaires. Par conséquent, les explications des

preuves empiriques mixtes sont toujours manquantes. Le tableau 1 illustre la contribution de cette étude à la documentation existante et, en particulier, aux deux examens antérieurs sur les déterminants de la couverture des entreprises.

Premièrement, le domaine de la couverture d'entreprise se caractérise par ses interrelations multivariées. Par exemple, dans le cas de l'impôt sur les sociétés existant, une combinaison de plusieurs facteurs influençant détermine la création de valeur des entreprises par le biais de la couverture des sociétés, comme la volatilité du revenu avant impôt, la convexité de la fonction fiscale et le montant des paiements d'impôt. Pour cette raison, nous utilisons la première méta-analyse multivariée dans la recherche en finance d'entreprise. Cette approche intègre simultanément les résultats déclarés pour les quatorze déterminants de couverture les plus fréquemment analysés sur la base de données recueillies manuellement à partir d'un échantillon de 132 études primaires. La disponibilité des données d'un nombre suffisamment élevé d'études permet d'appliquer cette approche multivariée, qui nécessite des estimations rapportées pour les relations bivariées entre toutes les variables proxy. Le nombre d'articles inclus dans cette étude est environ trois fois plus élevé que les échantillons analysés par Aretz et Bartram (2010) ou Arnold et coll. (2014). De cette façon, nous visons à nous conformer à l'exigence de toute méta-analyse d'examiner la population d'études disponibles afin d'éviter les biais systématiques dus à la misspecification et à la sélection des publications tout en intégrant la nature multidimensionnelle des résultats de la recherche empirique (Stanley et Doucouliagos 2012). En outre, cet ensemble de données complet augmente le nombre d'observations provenant de différentes sources de données et périodes de temps, ce qui réduit l'impact des erreurs d'échantillonnage au sein des études primaires individuelles. Dans un deuxième type d'analyse, nous utilisons la méta-régression pour expliquer l'hétérogénéité parmi les estimations d'effet rapportées en explorant l'impact des différences régionales, de la qualité de l'étude et de la période d'observation sur les résultats rapportés. Enfin, nous examinons la présence d'un biais potentiel en exploration de données, de biais de sélection des publications et de biais de manque de spécification. Ces aspects n'ont pas fait l'objet d'une enquête dans les autres examens sur la couverture des entreprises jusqu'à présent.

En résumé, nos estimations multivariées des résultats des études primaires agrégées fournissent des preuves de l'hypothèse de la faillite et de la détresse financière. À cet égard, nous obtenons des résultats statistiquement significatifs (au moins à un niveau d'importance de 5 %) pour les variables de procuration suivantes : rendement du dividende (signe positif), liquidité (signe négatif) et taille de l'entreprise (signe positif). En outre, nous constatons un faible pouvoir explicatif pour la variable de report des pertes fiscales et le proxy de recherche et développement (R&D) (chacun à un niveau d'importance de 10 %). Cela indique un faible soutien à l'hypothèse de l'impôt sur les sociétés et aux coûts de la dette. En outre, nous ne pouvons pas trouver de preuves cohérentes de l'hypothèse selon laquelle la couverture atténue l'information asymétrique et les conflits entre les gestionnaires et les actionnaires. Dans l'ensemble, ces résultats diffèrent d'Aretz et Bartram (2010) et Arnold et coll. (2014), puisque le premier trouve également des preuves de l'hypothèse de l'information asymétrique et les deux examens identifient un certain soutien pour la couverture à conduire par la motivation des entreprises à éviter les conflits d'actifs de l'agence de la dette. Les analyses supplémentaires révèlent que nos principales conclusions sont solides contre les biais d'exploration de données et le biais de sélection des publications. Les résultats uniquement du ratio de couverture des intérêts, des dépenses en immobilisations et de la R-D semblent légèrement faussés en ce qui concerne la publication de résultats plus solides et statistiquement significatifs. En outre, l'impact des coûts de détresse financière mesurés par le ratio de levier des entreprises est moins prononcé pour les entreprises américaines. Enfin, la relation entre les actifs corporels et la couverture des entreprises, ainsi que les frais de R&D et de couverture diminue au fil du temps.

Le reste du papier est structuré comme suit. La section 2 donne un aperçu des quatre hypothèses fondamentales de création de valeur ferme par couverture d'entreprise. La section 3 sert de brève introduction à la méthodologie de la méta-analyse multivariée. La section 4 présente la recherche de la littérature, la préparation des données et des statistiques descriptives. La section 5 rend compte de nos conclusions empiriques, qui sont discutées dans la secte subséquente. 6. La section 7 se termine.

CONCLUSION

Ce document fournit de nouvelles preuves sur les déterminants de la couverture des entreprises en examinant les hypothèses de couverture suivantes : l'impôt sur les sociétés, les coûts de faillite et de détresse financière, l'information asymétrique et les conflits d'équité des organismes, la coordination des politiques de financement et d'investissement et les conflits de dette des organismes. Les résultats de la méta-analyse multivariée indiquent que les sociétés de couverture sont de plus grandes sociétés ayant un niveau de liquidité financière inférieur et des dividendes plus élevés que les sociétés non de couverture. Par rapport aux examens existants effectués par Aretz et Bartram (2010) et Arnold et coll. (2014), nous pouvons conclure que la méta-analyse univariée tend à surestimer les résultats, puisque cette approche néglige les dépendances entre les variables de procuration et ne permet pas d'étudier l'hétérogénéité entre les estimations d'effet. Pour cette raison, les résultats de notre méta-analyse multivariée ne confirment pas leurs résultats, par exemple, en ce qui concerne l'impact du ratio de levier, des investisseurs institutionnels et de la rentabilité sur les décisions de couverture des entreprises. En plus de la méta-analyse multivariée, nous effectuons également une analyse de méta-régression pour explorer l'hétérogénéité entre les estimations rapportées dans les études primaires. Ici, nous constatons que les études analysant les entreprises de l'Amérique du Nord rapportent, en moyenne, un impact moindre de l'effet de levier sur la décision de couverture des entreprises. En outre, les études examinant des échantillons de données plus récents ont tendance à établir une relation plus faible entre les actifs corporels et la couverture, la R&D et la couverture respectivement.

Malgré son pouvoir de modéliser les relations entre plusieurs tailles d'effets, il y a plusieurs questions à prendre en considération lors de la réalisation d'une méta-analyse (multivariée) et de l'interprétation de ses résultats. Les facteurs limitatifs, qui ne sont incorporés que dans quelques études primaires, comprennent les « problèmes d'endogenité et d'identification » ainsi que la « modélisation empirique des relations structurelles », comme l'ont souligné Aretz et Bartram (2010). Cela signifie que la causalité des variables n'est pas unique. Par exemple, de nombreux déterminants de l'effet de levier influencent également les stratégies de couverture et vice versa. Une méthodologie prometteuse pour aborder le problème de l'endogenité dans une méta-analyse utilisant des données secondaires est l'approche méta-analytique de modélisation des équations structurelles (MASEM) présentée par Cheung et Chan (2005). Si une matrice de corrélation combinée (similaire à l'estimateur GLS présentée dans cet article) peut être générée, cette matrice de corrélation mise en commun pourrait alors être utilisée comme entrée pour un modèle d'équation structurelle. En outre, il convient de considérer que les non-linéarités possibles dans la structure de dépendance ne sont pas capturées par notre modèle multidimensionnel. L'intégration de tels effets spécifiques, cependant, exige une compréhension profonde des dépendances ainsi que de s'éloigner de la modélisation comme il est effectué dans la majorité des études primaires existantes. Ces aspects ouvrent des perspectives pour la recherche future.

Enfin, nos résultats suggèrent que les théories financières classiques ne semblent pas expliquer pleinement les préoccupations de premier ordre de la couverture des entreprises dans la pratique. Pour cette raison, nous encourageons les universitaires à élargir leurs travaux empiriques vers l'analyse des développements théoriques plus récents de la théorie financière classique comme, par exemple, l'influence de l'horizon temporel sur la motivation de couverture des entreprises en difficulté financière (Kürsten et Linde 2011), la couverture à la suite d'une bonne gouvernance d'entreprise (Lel 2012), ainsi que des théories comportementalistes comme, par exemple, l'hypothèse de l'excès de confiance en gestion (Adam et coll., 2015).

TRANSLATED VERSION: GERMAN

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ÜBERSETZTE VERSION: DEUTSCH

Hier ist eine ungefähre Übersetzung der oben vorgestellten Ideen. Dies wurde getan, um ein allgemeines Verständnis der in dem Dokument vorgestellten Ideen zu vermitteln. Bitte entschuldigen Sie alle grammatikalischen Fehler und machen Sie die ursprünglichen Autoren nicht für diese Fehler verantwortlich.

EINLEITUNG

Die Motivation von nicht-finanziellen Unternehmen, sich an Unternehmensabsicherungen zu beteiligen, ist eines der am intensivsten diskutierten Themen in der Corporate Finance Research. Die neoklassische Finanztheorie behauptet, dass unter den Bedingungen eines perfekten Kapitalmarktes die Absicherung auf Unternehmensebene keinen Mehrwert schafft, da die Aktionäre ihre Position perfekt absichern können (Modigliani und Miller 1958). Neuere Finanztheorien deuten jedoch darauf hin, dass, wenn Finanzmärkte nicht reibungslos sind, es mehrere Möglichkeiten gibt, wie Unternehmensabsicherungen den Unternehmenswert im Sinne der Maximierung des Shareholder Value steigern können (Bessembinder 1991; demarzo und Duffie 1991; Froot et al. 1993; Smith und Stulz 1985). Auf diese Weise haben Hunderte von Primärstudien empirisch die theoretischen Erklärungen für Unternehmensabsicherungen untersucht. Trotz oder vielleicht gerade wegen der Vielzahl an Studien präsentiert die empirische Literatur jedoch eher gemischte Belege für die Treiber der Unternehmensabsicherung (Aretz und Bartram 2010; Bartram et al. 2009; Fauver und Naranjo 2010; Richter 2007).

Zwei frühere Studien enthalten quantitative Zusammenfassungen der bestehenden empirischen Erkenntnisse für die Sicherheitsdeterminanten (Aretz et al. 2007; Arnold et al. 2014). Aretz und Bartram (2010) führen eine breit angelegte Literaturrecherche durch und wenden die Stimmenauszählung an, um die Anzahl der statistisch signifikanten und unbedeutenden Ergebnisse aus den in 31 Primärstudien berichteten Univariaten/Multivariaten-Analyseabschnitten zu vergleichen. Ihre Ergebnisse zeigen schwache Belege für die Koordinierung der Finanzierungs- und Investitionspolitikhypothese sowie die Steuerhypothese. Obwohl diese Ergebnisse eine detaillierte Zusammenfassung der Verteilung und des Ausmaßes der Meinungsverschiedenheiten innerhalb der Ergebnisse früherer Forschungen aufweisen, wurden die Ansätze zur Stimmenauszählung als "fatal fehlerhaft" kritisiert (Borenstein et al. 2009: 252; Stanley und Doucouliagos 2012: 2). Diese Einschätzung ergibt sich aus der Tatsache, dass die Stimmenauszählung die beobachteten Schätzungen auf der Grundlage ihrer statistischen Signifikanz in einige Kategorien einschließt, keine wirtschaftliche Größe für die aggregierten Effekte darlegt und Unterschiede in der Stichprobengröße und Genauigkeit der in den Primärstudien berichteten Ergebnisse ignoriert (siehe u. A. Borenstein et al. 2009; Hedges und Olkin 1985; Stanley und Doucouliagos 2012).

Um die Unzulänglichkeiten der Stimmenauszählung zu überwinden, berechnen Arnold et al. (2014) gewichtete Durchschnittswerte für einen Satz von 15 verschiedenen Hedging-Determinanten in einer Stichprobe von 37 Primärstudien. Im Gegensatz zu Aretz und Bartram (2010) ist ihr Hauptergebnis, dass finanzielle Notkosten unternehmen dazu bringen, sich abzusichern. Darüber hinaus finden sie schwache Belege dafür, dass das Problem der Unterinvestition und die Abhängigkeit von kostspieliger externer Finanzierung das Absicherungsverhalten von Unternehmen beeinflussen. Ihr univariater Metaanalyseansatz weist jedoch eine wesentliche Einschränkung auf, da die Berechnung der Mittelwerte in Primärstudien die Wechselwirkungen zwischen den untersuchten Proxyvariablen nicht berücksichtigt. Riley (2009) zeigt, dass das Ignorieren dieser Abhängigkeiten in einer Metaanalyse zu einer stark verzerrten Schätzung der aggregierten Ergebnisse führen kann. Darüber hinaus erhöht die unabhängige Prüfung korrelierter Effekte die Wahrscheinlichkeit, spaltig signifikante Ergebnisse zu finden (Bender et al. 2008).

Abgesehen von der Bedrohung durch voreingenommene Schätzungen, die durch die Annahme nicht korrelierter Proxyvariablen verursacht werden, untersucht keine der genannten Bewertungen die Quellen der Heterogenität unter den Ergebnissen der Primärstudien. Daher fehlen noch Erklärungen für die gemischten empirischen Beweise. Tabelle 1 veranschaulicht den Beitrag dieser Studie zur bestehenden Literatur und insbesondere zu den beiden vorangegangenen Überprüfungen der Determinanten der Unternehmensabsicherung.

Erstens ist der Bereich der Unternehmensabsicherung durch seine multivariaten Zusammenhänge gekennzeichnet. Bei bestehenden Unternehmenssteuern bestimmt beispielsweise eine Kombination mehrerer Einflussfaktoren die Unternehmenswertschöpfung durch Unternehmensabsicherung, wie z. B. Die Volatilität des Vorsteuereinkommens, die Konvexität der Steuerfunktion und die Höhe der Steuerzahlungen. Aus diesem Grund setzen wir die erste multivariate Metaanalyse in der Corporate Finance Research ein. Dieser Ansatz integriert gleichzeitig die gemeldeten Ergebnisse für die vierzehn am häufigsten analysierten Hedging-Determinanten auf der Grundlage manuell gesammelter Daten aus einer Stichprobe von 132 Primärstudien. Die Datenverfügbarkeit aus einer ausreichend großen Anzahl von Studien ermöglicht die Anwendung dieses multivariaten Ansatzes, der gemeldete Schätzungen für die bivariaten Beziehungen zwischen allen Proxyvariablen erfordert. Die Anzahl der in dieser Studie enthaltenen Artikel ist etwa dreimal so hoch wie die von Aretz und Bartram (2010) oder Arnold et al. (2014) analysierten Proben. Auf diese Weise wollen wir die Anforderung einer Metaanalyse erfüllen, um die Population der verfügbaren Studien zu untersuchen, um systematische Verzerrungen aufgrund von Fehlspezifikationen und Veröffentlichungsauswahlen zu vermeiden und gleichzeitig den multidimensionalen Charakter empirischer Forschungsergebnisse einzubeziehen (Stanley und Doucouliagos 2012). Darüber hinaus erhöht dieser umfassende Datensatz die Anzahl der Beobachtungen aus verschiedenen Datenquellen und Zeiträumen, wodurch die Auswirkungen von Stichprobenfehlern in einzelnen Primärstudien verringert werden. In einer zweiten Art von Analyse verwenden wir Meta-Regression, um die Heterogenität zwischen den gemeldeten Effektschätzungen zu erklären, indem wir die Auswirkungen regionaler Unterschiede, studienqualität und Beobachtungszeitraum auf die gemeldeten Ergebnisse untersuchen. Schließlich betrachten wir das Vorhandensein einer potenziellen Data Mining-Bias, Publikationsauswahl-Bias und Falschspezifikationsverzerrung. Diese Aspekte wurden in den anderen Überprüfungen der Unternehmensabsicherung bisher nicht untersucht.

Zusammenfassend lässt sich sagen, dass unsere multivariaten Schätzungen der Ergebnisse der aggregierten Primärstudien Beweise für die Konkurs- und Finanznothypothese liefern. In dieser Hinsicht erzielen wir statistisch signifikante Ergebnisse (zumindest bei einem Signifikanzniveau von 5%) für die folgenden Proxyvariablen: Dividendenrendite (positives Vorzeichen), Liquidität (negatives Vorzeichen) und Firmengröße (positives Vorzeichen). Darüber hinaus finden wir eine schwache Erklärungskraft für die Steuerverlust-Forward-Variablen und den Forschungs- und Entwicklungs-Proxy (jeweils auf einem Signifikanzniveau von 10 %). Dies deutet auf eine schwache Unterstützung für die Körperschaftsteuerhypothese und die Agenturkosten des Schuldenstreits hin. Darüber hinaus können wir keine schlüssigen Beweise für die Hypothese finden, dass Absicherung asymmetrische Informationen und Agenturkonflikte zwischen Managern und Aktionären lindert. Insgesamt unterscheiden sich diese Ergebnisse von Aretz und Bartram (2010) und Arnold et al. (2014), da erstere auch Beweise für die asymmetrische Informationshypothese finden und beide Überprüfungen einige Unterstützung für Absicherungen erkennen, die von der Motivation der Unternehmen getrieben werden, agenturen-Schuldenkonflikte zu vermeiden. Die weiteren Analysen zeigen, dass unsere wichtigsten Ergebnisse robust gegen Data Mining-Bias und Publikationsauswahl-Bias sind. Lediglich die Ergebnisse für die Zinsdeckungsquote, die Investitionsausgaben und die F&E scheinen leicht verzerrt zu sein, um stärkere und statistisch signifikante Ergebnisse zu melden. Darüber hinaus sind die Auswirkungen der finanziellen Notkosten, gemessen an der Leverage Ratio der Unternehmen, für US-Unternehmen weniger ausgeprägt. Schließlich nimmt das Verhältnis zwischen Sachanlagen und Unternehmensabsicherung sowie F&E-Aufwendungen und Absicherungen im Laufe der Zeit ab.

Der Rest des Papiers ist wie folgt aufgebaut. Abschnitt 2 gibt einen Überblick über die vier grundlegenden Hypothesen der Unternehmenswertschöpfung durch Unternehmensabsicherung. Abschnitt

3 dient als kurze Einführung in die Methodik der multivariaten Metaanalyse. Abschnitt 4 stellt die Suche nach Literatur, die Datenvorbereitung und beschreibende Statistiken vor. Abschnitt 5 berichtet über unsere empirischen Befunde, die in der nachfolgenden Sekte diskutiert werden. 6. Abschnitt 7 schließt.

SCHLUSSFOLGERUNG

Dieses Papier liefert neue Belege für die Determinanten der Unternehmensabsicherung, indem es einen Blick auf die folgenden Absicherungshypothesen auf Metaebene nimmt: Körperschaftsteuer, Konkurs- und Finanznotkosten, asymmetrische Informationen und agenturische Konflikte der Eigenkapital, Koordinierung der Finanzierungs- und Investitionspolitik und Agenturkonflikte. Die Ergebnisse der multivariaten Metaanalyse deuten darauf hin, dass Sicherungsfirmen größere Unternehmen mit geringerer finanzieller Liquidität und höheren Dividendenausschüttungen sind als Nicht-Hedging-Unternehmen. Im Vergleich zu bestehenden Bewertungen von Aretz und Bartram (2010) und Arnold et al. (2014) können wir schlussfolgern, dass univariate Meta-Analysen dazu neigen, Die Ergebnisse zu überschätzen, da dieser Ansatz die Abhängigkeiten zwischen den Proxyvariablen vernachlässigt und es nicht erlaubt, die Heterogenität unter den Effektschätzungen zu untersuchen. Aus diesem Grund bestätigen die Ergebnisse unserer multivariaten Metaanalyse ihre Ergebnisse nicht, beispielsweise in Bezug auf die Auswirkungen der Leverage Ratio, institutionelle Investoren und Rentabilität auf Unternehmensabsicherungsentscheidungen. Neben der multivariaten Metaanalyse führen wir auch eine Metaregressionsanalyse durch, um die Heterogenität zwischen den in Primärstudien berichteten Schätzungen zu untersuchen. Hier stellen wir fest, dass Studien, die Unternehmen aus Nordamerika analysieren, im Durchschnitt einen geringeren Einfluss der Hebelwirkung auf die Entscheidung zur Unternehmensabsicherung melden. Darüber hinaus finden Studien, die neuere Datenstichproben untersuchen, tendenziell einen schwächeren Zusammenhang zwischen Sachanlagen und Absicherung, F&E bzw. Absicherung.

Trotz seiner Fähigkeit, Interrelationen zwischen mehreren Effektgrößen zu modellieren, gibt es mehrere Fragen, die kritisch betrachtet werden müssen, wenn eine (multivariate) Metaanalyse durchgeführt und ihre Ergebnisse interpretiert werden. Zu den einschränkenden Faktoren, die nur in wenigen Primärstudien berücksichtigt werden, gehören die "Endogenitäts- und Identifikationsprobleme" sowie die "empirische Modellierung struktureller Beziehungen", wie Aretz und Bartram (2010) betonen. Dies bedeutet, dass die Kausalität der Variablen nicht eindeutig ist. Zum Beispiel beeinflussen viele Determinanten der Hebelwirkung auch Hedging-Strategien und umgekehrt. Eine vielversprechende Methode zur Lösung des Problems der Endogenität in einer Metaanalyse mit Sekundärdaten ist der von Cheung und Chan (2005) vorgestellte Ansatz zur metaanalytischen Strukturgleichungsmodellierung (MASEM). Wenn eine kombinierte Korrelationsmatrix (ähnlich dem in diesem Papier vorgestellten GLS-Schätzer) generiert werden kann, könnte diese gepoolte Korrelationsmatrix als Eingabe für ein strukturelles Gleichungsmodell verwendet werden. Darüber hinaus sollte berücksichtigt werden, dass mögliche Nichtlinearitäten in der Abhängigkeitsstruktur nicht von unserem multidimensionalen Modell erfasst werden. Die Einbeziehung solcher spezifischen Effekte erfordert jedoch ein tiefes Verständnis der Abhängigkeiten sowie die Abkehr von der Modellierung, wie sie in den meisten bestehenden Primärstudien durchgeführt wird. Diese Aspekte eröffnen Perspektiven für die zukünftige Forschung.

Schließlich deuten unsere Ergebnisse darauf hin, dass klassische Finanztheorien die Bedenken der Unternehmensabsicherung in der Praxis nicht vollständig zu erklären scheinen. Aus diesem Grund ermutigen wir Wissenschaftler, ihre empirische Arbeit zur Analyse neuerer theoretischer Entwicklungen der klassischen Finanztheorie zu erweitern, wie zum Beispiel den Einfluss des Zeithorizonts auf die Absicherungsmotivation finanziell angeschlagener Unternehmen (Kürsten und Linde 2011), Absicherung als Folge guter Corporate Governance (Lel 2012) sowie verhaltenstheoretische Theorien wie z.B. , die Hypothese des Managements über das Vertrauen (Adam et al. 2015).

TRANSLATED VERSION: PORTUGUESE

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

VERSÃO TRADUZIDA: PORTUGUÊS

Aqui está uma tradução aproximada das ideias acima apresentadas. Isto foi feito para dar uma compreensão geral das ideias apresentadas no documento. Por favor, desculpe todos os erros gramaticais e não responsabilize os autores originais responsáveis por estes erros.

INTRODUÇÃO

A motivação para as empresas não financeiras se envolverem na cobertura corporativa é um dos temas mais discutidos na investigação financeira das empresas. A teoria das finanças neoclássicas alega que, nas condições de um mercado de capitais perfeito, a cobertura a nível firme não cria valor adicional, uma vez que os acionistas podem cobrir perfeitamente a sua posição (Modigliani e Miller 1958). No entanto, a teoria financeira mais recente sugere que, quando os mercados financeiros não são sem atritos, existem várias formas através das quais a cobertura das empresas pode aumentar o valor firme no sentido da maximização do valor dos acionistas (Bessembinder 1991; demarzo e Duffie 1991; Froot et al. 1993; Smith e Stulz 1985). Desta forma, centenas de estudos primários investigaram empiricamente as explicações teóricas para cobertura corporativa. No entanto, apesar ou talvez exatamente devido à grande quantidade de estudos, a literatura empírica apresenta provas bastante mistas para os condutores de coberturas corporativas (Aretz e Bartram 2010; Bartram et al. 2009; Fauver e Naranjo 2010; Juiz 2007).

Dois estudos anteriores apresentam resumos quantitativos das conclusões empíricas existentes para os determinantes da cobertura (Aretz et al. 2007; Arnold et al. 2014). Aretz e Bartram (2010) realizam uma ampla revisão da literatura e aplicam a contagem de votos para comparar o número de resultados estatisticamente significativos e insignificantes das secções de análise univariado/multivariado relatadas em 31 estudos primários. As suas conclusões mostram provas fracas da coordenação da hipótese da política de financiamento e de investimento, bem como da hipótese fiscal. Embora estes resultados exibam um resumo pormenorizado da distribuição e da extensão do desacordo nos resultados da investigação prévia, as abordagens de contagem de votos têm sido fortemente criticadas como "fatalmente imperfeitas" (Borenstein et al. 2009: 252; Stanley e Doucouliagos 2012: 2). Esta avaliação decorre do facto de as contagens de voto colapsarem as estimativas observadas em algumas categorias com base no seu significado estatístico, não apresentarem uma magnitude económica para os efeitos agregados e ignorarem as diferenças de dimensão da amostra e a precisão dos resultados relatados nos estudos primários (ver, entre outros, Borenstein et al. 2009; Sebes e Olkin 1985; Stanley e Doucouliagos 2012).

Para superar as deficiências da contagem de votos, Arnold et al. (2014) calculam as médias ponderadas para um conjunto de 15 determinantes de cobertura diferentes através de uma amostra de 37 estudos primários. Contradizendo a Aretz e a Bartram (2010), o seu principal resultado é que os custos de angústia financeira induzem as empresas a cobrir. Além disso, encontram provas fracas de que o problema do subinvestimento e a dependência de financiamento externo dispendioso influenciam o comportamento das empresas. No entanto, a sua abordagem meta-análise univariada tem uma ressalva essencial, uma vez que a computação dos valores médios em estudos primários não explica as interações entre as variáveis de procura examinadas. Riley (2009) mostra que ignorar estas dependências numa meta-análise pode levar a uma estimativa fortemente tendenciosa dos resultados agregados. Além disso, os testes independentes de efeitos correlacionados aumentam a possibilidade de encontrar resultados espúrios e significativos (Bender et al. 2008). Para além da ameaça de estimativas tendenciosas causadas pela assunção de variáveis de procura não correlacionadas, nenhuma das revisões mencionadas explora as fontes de heterogeneidade entre os resultados dos estudos primários. Por isso, ainda faltam explicações para as provas empíricas mistas. O quadro 1 ilustra o contributo deste estudo para a literatura existente e, em especial, as duas revisões anteriores sobre os determinantes da cobertura corporativa.

Em primeiro lugar, o campo da cobertura corporativa caracteriza-se pelas suas interrelações multivariadas. Por exemplo, no caso dos impostos sobre as sociedades existentes, uma combinação de vários fatores influenciadores determina a criação de valor firme através da cobertura das empresas, tais como a volatilidade do rendimento antes de impostos, a convexidade da função fiscal e o montante dos pagamentos de impostos. Por esta razão, empregamos a primeira meta-análise multivariada na investigação de finanças corporativas. Esta abordagem integra simultaneamente os resultados reportados para os catorze determinantes de cobertura mais frequentemente analisados com base em dados recolhidos manualmente a partir de uma amostra de 132 estudos primários. A disponibilidade de dados de um número suficientemente grande de estudos permite aplicar esta abordagem multivariada, que requer estimativas reportadas para as relações bivariadas entre todas as variáveis de procuração. O número de artigos incluídos neste estudo é cerca de três vezes maior do que as amostras analisadas por Aretz e Bartram (2010) ou Arnold et al. (2014). Desta forma, pretendemos cumprir a exigência de qualquer meta-análise para examinar a população de estudos disponíveis, a fim de evitar enviesamentos sistemáticos devido à falta de especificação e seleção de publicações, incorporando ao mesmo tempo a natureza multidimensional dos resultados da investigação empírica (Stanley e Doucouliagos 2012). Além disso, este conjunto de dados abrangente aumenta o número de observações de diferentes fontes de dados e períodos de tempo, o que reduz o impacto dos erros de amostragem nos estudos primários individuais. Num segundo tipo de análise, empregamos a metagressão para explicar a heterogeneidade entre as estimativas de efeito reportados, explorando o impacto das diferenças regionais, a qualidade do estudo e o período de observação nos resultados reportados. Finalmente, consideramos a presença de um potencial enviesamento de mineração de dados, viés de seleção de publicações e viés de misspecificação. Estes aspetos não foram até agora investigados nas outras análises sobre coberturas empresariais.

Em resumo, as nossas estimativas multivariáveis dos resultados dos estudos primários agregados fornecem provas da hipótese de falência e de angústia financeira. A este respeito, obtemos resultados estatisticamente significativos (pelo menos a um nível de importância de 5%) para as seguintes variáveis proxy: rendimento de dividendos (sinal positivo), liquidez (sinal negativo) e tamanho firme (sinal positivo). Além disso, encontramos fraco poder explicativo para a perda de impostos transportar para a frente variável e o proxy de pesquisa e desenvolvimento (I&D) (cada um a um nível de 10%). Isto indica um fraco apoio à hipótese do imposto sobre as sociedades e aos custos das agências de argumentação da dívida. Além disso, não podemos encontrar provas consistentes para a hipótese de que a cobertura alivia a informação assimétrica e os conflitos de agências entre gestores e acionistas. Globalmente, estes resultados diferem de Aretz e Bartram (2010) e Arnold et al. (2014), uma vez que os primeiros também encontram evidências para a hipótese de informação assimétrica e ambas as revisões identificam algum apoio para a cobertura ser impulsionado pela motivação das empresas para evitar conflitos de agências de dívida. As análises adicionais revelam que as nossas principais conclusões são robustas contra o enviesamento da mineração de dados e o enviesamento da seleção de publicações. Apenas os resultados do rácio de cobertura de juros, das despesas de capital e da I&D parecem estar ligeiramente distorcidos para a notificação de resultados mais fortes e estatisticamente significativos. Além disso, o impacto dos custos de socorro financeiro medidos pelo rácio de alavancagem das empresas é menos pronunciado para as empresas norte-americanas. Finalmente, a relação entre ativos tangíveis e cobertura corporativa, bem como despesas de I&D e cobertura diminui ao longo do tempo.

O restante do papel é estruturado da seguinte forma. A secção 2 fornece uma visão geral das quatro hipóteses básicas de criação de valor firme por cobertura corporativa. A secção 3 serve como uma breve introdução à metodologia de meta-análise multivariada. A secção 4 apresenta a procura de literatura, a preparação de dados e estatísticas descritivas. A Secção 5 relata as nossas descobertas empíricas, que são discutidas na seita subsequente. 6. A secção 7 termina.

CONCLUSÃO

Este documento fornece novos elementos de prova sobre os determinantes da cobertura das empresas, analisando as seguintes hipóteses de cobertura: impostos sobre as sociedades, falências e custos de angústia financeira, informação assimétrica e conflitos de capitais próprios, coordenação da política de financiamento e investimento e conflitos de dívida das agências. Os resultados da meta-análise multivariada indicam que as empresas de cobertura são empresas maiores com um nível mais baixo de liquidez financeira e pagamentos de dividendos mais elevados do que as empresas que não se encontram em cobertura. Em comparação com as avaliações existentes de Aretz e Bartram (2010) e Arnold et al. (2014), podemos concluir que a meta-análise univariada tende a sobrestimar os resultados, uma vez que esta abordagem negligencia as dependências entre as variáveis de procuração e não permite investigar a heterogeneidade entre as estimativas do efeito. Por esta razão, os resultados da nossa meta-análise multivariada não confirmam os seus resultados, por exemplo, no que diz respeito ao impacto do rácio de alavancagem, dos investidores institucionais e da rentabilidade das decisões de cobertura das empresas. Além da meta-análise multivariada, também realizamos uma análise de metagressão para explorar a heterogeneidade entre as estimativas relatadas em estudos primários. Aqui, constatamos que estudos que analisam empresas da América do Norte reportam, em média, um menor impacto de alavancagem na decisão de cobertura corporativa. Além disso, estudos que examinam amostras de dados mais recentes tendem a encontrar uma relação mais fraca entre ativos tangíveis e cobertura, I&D e cobertura, respectivamente.

Apesar do seu poder de modelar interrelações entre tamanhos múltiplos de efeitos, existem várias questões a considerar criticamente na realização de uma meta-análise (multivariado) e na interpretação dos seus resultados. Os fatores limitantes, que são incorporados apenas em poucos estudos primários, compreendem os "problemas de endogene e identificação", bem como a "modelação empírica das relações estruturais", como sublinham Aretz e Bartram (2010). Isto significa que a causalidade das variáveis não é única. Por exemplo, muitos determinantes de alavancagem também influenciam estratégias de cobertura e vice-versa. Uma metodologia promissora para resolver o problema da endogeneidade numa meta-análise utilizando dados secundários é a abordagem de modelação de equação estrutural meta-analítica (MASEM) apresentada por Cheung e Chan (2005). Se uma matriz de correlação combinada (semelhante ao estimador GLS apresentado neste papel) puder ser gerada, esta matriz de correlação combinada poderia então ser usada como entrada para um modelo de equação estrutural. Além disso, deve considerar-se que as possíveis não-linearidades na estrutura de dependência não são capturadas pelo nosso modelo multidimensional. No entanto, a incorporação de tais efeitos específicos requer uma compreensão profunda das dependências, bem como afastar-se da modelação tal como é realizada na maioria dos estudos primários existentes. Estes aspetos abrem perspectivas para a investigação futura.

Finalmente, os nossos resultados sugerem que as teorias financeiras clássicas não parecem explicar plenamente as preocupações de primeira ordem da cobertura das empresas na prática. Por esta razão, encorajamos os académicos a alargarem o seu trabalho empírico para a análise de desenvolvimentos teóricos mais recentes da teoria financeira clássica como, por exemplo, a influência do horizonte temporal na motivação de cobertura de empresas financeiramente angustiadas (Kürsten e Linde 2011), cobertura como consequência de uma boa governação corporativa (Lel 2012), bem como teorias comportamentais como, por exemplo, a hipótese de excesso de confiança de gestão (Adam et al. 2015).