

## CORPORATE RISK MANAGEMENT AND VALUE CREATION

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### **Abstract**

*This paper explores relationship between risk management activity and company's value. The main purpose of this paper is to get a deeper insight into the research problem, as well as to reach better comprehension of a relationship between risk management and value creation at the corporate level. The paper is aiming to (1) explain the clash between theory and practice by presenting benefits of risk management; (2) present results of empirical research on corporate risk management rationales in large non-financial Croatian companies; (3) explore how risk management can influence company's value and its drivers.*

*The literature survey has shown that risk management can enhance company's value by decreasing costs related to financial difficulties, agency cost of debt, taxes, and costs of external financing. The evidence based on the multivariate empirical relations between the decision to hedge in Croatian non-financial companies and financial distress costs, agency costs, costly external financing, and taxes supports tested hypotheses related to the investment expenditures to assets ratio and total debt to assets ratio. Therefore, it can be concluded that companies that are more leveraged and have more investment opportunities have more incentives to manage corporate risk. By using Risk adjusted value approach, paper has shown that efficient risk management can influence company value drivers and positively affect overall enterprise value.*

**Key words:** Hedging, Risk management decision, Croatian companies, Value drivers, Value creation

JEL Classification: G320, G390

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### **1. INTRODUCTION**

For a long time, corporate risk management was considered to be irrelevant to the value of the firm and the arguments in favour of the irrelevance were based on the Capital Asset Pricing Model (Sharpe, 1964; Lintner, 1965) and the Modigliani-Miller theorem (Modigliani and Miller, 1958). The arguments for the corporate risk management relevance and its influence on the company's value are revealed in this paper. The paper aims to present the extensive survey of literature based on theoretical rationales for risk management at the company's level as well as the empirical evidence, which supports the implications of the theory. By using unique Risk adjusted value approach, which combines risk management with corporate evaluation, paper will explore corporate value determinants and explain how risk management activities can affect these drivers in order to enhance the value.

### **2. THEORISING THE FRAMEWORK**

The capital asset pricing model (CAPM) commonly used to assess the risk-adjusted return on a particular stock, separates risk into two components: (1) systematic risk, which captures the variation in a stock's return ascribable to market-wide forces and (2) business, or unsystematic, risk, which reflects the variation in a stock's return ascribable to firm-specific forces. According to the CAPM, since investors can diversify away business risk by holding well diversified portfolio, they only worry about the market risk of a stock, which is measured by beta coefficient. Thus, under the assumptions of the CAPM, corporate managers should not be concerned with reducing

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their firm-specific business risk since it should have no effect on the market value of company's stocks. There is no reason for the corporation to hedge on behalf of the investor. Or, put somewhat differently, hedging transactions at the corporate level sometimes lose money and sometimes make money, but on average they break even. The conclusion is that companies cannot systematically make money by managing risk. Unlike individual risk management, corporate risk management does not hurt, but it also does not help (Froot, Scharfstein and Stein, 1994). From this perspective, expected net present value of business risk management on the efficient capital market should be zero. Hence, a decision of financial manager to insure or hedge future company's cash flows would be just "a neutral mutations" which do not influence the company's value, while in the worst case, a decision to manage risk would be an irrational behaviour because it has caused certain costs which lower the shareholders wealth (Shapiro and Titman, 1998). It could be concluded that business risk management is unnecessary from the perspective of the CAPM.

Miller and Modigliani's "MM" proposition supports these findings (Modigliani and Miller, 1958). According to the classic Modigliani and Miller paradigm, risk management is irrelevant to the firm and, under perfect market conditions, the corporate capital structure decision is irrelevant. The key insight of Franco Modigliani and Merton Miller is that value is created on the left-hand side of the balance sheet when companies make good investments that ultimately increase operating cash flows. How companies finance those investments on the right-hand side of a balance sheet - whether through debt, equity, or retained earnings - is completely irrelevant (Froot, Scharfstein and Stein, 1994). In the "frictionless" MM framework, management can not increase a firm's value by changing either capital structure or hedging policy. These are purely financial transactions that do not affect the value of a company's operating assets. Investors can adjust their own holdings of debt and equity to create whatever capital structure they desire; and they can also do their own hedging against corporate risks. The stockholders of the airline, for example, can diversify their holdings into oil companies, hedging themselves against the risk of oil price increases (Culp, 1994). The conditions underlying MM propositions also imply that decisions to hedge corporate exposures to interest rates, exchange rates and commodity prices are equally irrelevant - because stockholders already protect themselves against such risks by holding well-diversified portfolios. Indeed, once the transaction costs associated with hedging instruments are factored in, a Modigliani-Miller disciple would argue against risk management at all.

The MM propositions were intended to hold only under a restrictive set of conditions, the most important of which are that there are no bankruptcy or financial distress costs, no taxes or transactions costs, that corporate investment decisions are not influenced by financing choices, including decisions to hedge various price risks, that reliable information about the company's prospects is freely available to all investors and managers alike, and that individuals and firms have equal access to all security markets, including the ability to issue identical securities on the same terms (Culp, 1994). It should be noted that, thirty years after the MM propositions were created; even Merton Miller (Miller, 1988) has written that the view that capital structure is literally irrelevant to corporate finance is far from what Modigliani and Miller ever actually have said about the real-world applications of their theoretical propositions.

In the real world, financial managers and treasurers give a great deal of thought to matters of capital structure and securities design. And the risk management at the company's level is widespread and growing. Bartram (2000) suggested that managing corporate risk lies in the heart of a competitive strategy. Moreover, experts argue the management of corporate risk is central to organisational evolution, a determinant of which organisations survive and grow and of which decline and die. The positive import of the MM framework, and its main message to corporate practitioners, is presented by several theories suggesting that risk management is a value-increasing strategy for the firm. Modern financial theory defines the value of a firm as the sum of the expected discounted cash flows that grow continuously in the future (Miloš Sprčić and Orešković, 2012). Thus, a reduction in corporate risk may affect the market value of a firm through either expected cash flows or through the weighted average cost of capital that presents the discount rate in the model.

$$V_c = \frac{CF_0 \times (1 + g)}{WACC - g}$$

$V_c$  = present value of the company

$CF_0$  = company cash flow

$WACC$  = weighted average cost of company's capital (discount rate)

$g$  = expected growth rate

By managing corporate risks, firms can decrease cash flow volatility, what leads to a lower variance of firm value. This means that not only a firm value is moving less, but that the probability of occurring low values is smaller than without hedging (Miloš Sprčić, Tekavčić and Šević (2008)). Research in the 1980s and 1990s has extended the knowledge on risk management by examining the unique characteristics of large, widely held corporations. Based on work by Mayers and Smith (1982) in the area of the corporate demand for insurance, scholars such as Stulz (1984), Smith and Stulz (1985) and Shapiro and Titman (1998) have examined why large, well-diversified firms actively engage in hedging activities. The authors demonstrated several theories of hedging which overcome the irrelevancy arguments of modern portfolio and corporate finance theory. Positive theories of risk management, as a lever for shareholder value creation, argue that firm value is a concave objective function because of capital market imperfections.

The first theory suggests that, by reducing the volatility of cash flows, firms can decrease costs of financial distress (Mayers and Smith, 1982; Myers, 1984; Stulz, 1985; Smith and Stulz, 1985; Shapiro and Titman, 1998). In the MM world, financial distress is assumed to be costless. Hence, altering the probability of financial distress does not affect firm value. If financial distress is costly, firms have incentives to reduce its probability, and hedging is one method by which a firm can reduce the volatility of its earnings. By reducing the variance of a firm's cash flows or accounting profits, hedging decreases the probability, and thus the expected costs, of financial distress. Additionally, Smith and Stulz (1985) have argued that, while the reduction of financial distress costs increases firm value, it augments shareholder value even further by simultaneously raising the firm's potential to carry debt. Corporate risk management lowers the cost of financial distress, which leads to a higher optimal debt ratio and the tax shields of the additional debt capital further increases the value of the firm. This theory has been empirically proven by, among others, Campbell and Kracaw, 1987; Bessembinder 1991; Dolde, 1995; Mian, 1996 and Haushalter 2000.

The second hedging rationale suggests that, by reducing the volatility of cash flows, firms can decrease agency costs (see Jensen and Meckling, 1976). According to Dobson and Soenen (1993) there are three sound reasons based on agency costs why management should hedge corporate risk. First, hedging reduces uncertainty by smoothing the cash flow stream thereby lowering the firm's cost of debt. Since the agency cost is borne by management, assuming informational asymmetry between management and bondholders, hedging will increase the value of the firm. Therefore, management will rationally choose to hedge. Second, given the existence of debt financing, cash flow smoothing through risk hedging will tend to reduce the risk-shifting as well as the underinvestment problems. Finally, hedging reduces the probability of financial distress and thereby increases duration of contractual relations between stakeholders. By fostering corporate reputation, hedging contributes directly to the amelioration of the moral-hazard agency problem. Results of MacMinn and Han (1990), Bessembinder (1991), Nance, Smith and Smithson (1993), Minton and Schrand (1999) and Haushalter, Randall and Lie (2002) supports this hedging rationale.

Third hedging theory argues that cash flow volatility reduction can improve the probability of having sufficient internal funds for planned investments eliminating the need either to cut profitable projects or bear the transaction costs of obtaining expensive external funding. The main hypothesis is that, if access to external financing (debt and/or equity) is costly, firms with investment projects requiring funding will hedge their cash flows to avoid a shortfall in their funds and

costly visit to the capital markets. An interesting empirical insight based on this rationale is that firms which have substantial growth opportunities and face high costs when raising funds under financial distress will have an incentive to manage corporate risks in comparison to the average firm. This rationale has been explored by numerous scholars, among others by Smith and Stulz (1985), Stulz (1990), Hoshi, Kashyap and Scharfstein (1991), Froot, Scharfstein and Stein (1993), Getzy, Minton and Schrand (1997), Gay and Nam (1998), Minton and Schrand (1999), Haushalter (2000), Allayannis and Ofek (2001) and Haushalter, Randall and Lie (2002), Miloš Sprčić and Šević (2012),.

### 3. CORPORATE RISK MANAGEMENT RATIONALES IN CROATIAN COMPANIES

#### 3.1 Methodology and Data Collection

In order to test analysed determinants of corporate risk management decisions, empirical research was conducted on the largest Croatian non-financial companies. Companies needed to meet two out of three conditions required by the Croatian Accounting Law<sup>2</sup> related to large companies to be included in the sample.<sup>3</sup> A list of the largest 400 Croatian companies<sup>4</sup> has been used and 157 companies that have met the required criteria were selected in the sample. Financial firms were excluded from the sample because most of them are also market makers, hence their motivation in using derivatives may be different from the motivations of non-financial firms. Data were collected from two sources: from annual reports and notes to the financial statements and through the survey. Managers of 49 companies answered to the questionnaire creating a response rate of 31 per cent, what is considered as satisfactory for statistical generalisation (e.g. the response rate of the 1998 Wharton survey of derivate usage, as reported in Bodnar et.al. (1998) was 21 per cent). However, it is important to mention that the inability to compare the survey results to the data of non-responding companies should be treated as a limitation of this research.

Survey data were analysed by using multivariate analysis. Binominal logistic regression was estimated to distinguish between the possible explanations for the decision to hedge corporate risk. Binomial (or binary) logistic regression has been selected because it is a form of regression that is used when the dependent variable is a dichotomy (limited, discrete and not continuous) and the independents are of any type. Besides the fact that the dependent variable in this research is discrete and not continuous, logistic regression has been chosen because it enables the researcher to overcome many of the restrictive assumptions of OLS regression. E.g. Unlike OLS regression, logistic regression does not assume linearity of relationship between the independent variables and the dependent, does not require normally distributed variables, does not assume homoscedasticity, normally distributed error terms are not assumed, does not require that the independents be interval or unbounded, and in general has less stringent requirements.

Based on the arguments that arise from the presented literature survey, several hypotheses have been proposed in this paper. We argue that hedging can increase the value of the firm by reducing the costs associated with financial distress, the agency costs of debt, expected taxes and capital market imperfections. These premises are known as the shareholder maximisation hypothesis and are tested in the following assumptions. The argument of reducing the costs of financial distress implies that the benefits of hedging should be greater the larger the fraction of fixed claims in the firm's capital structure (Myers, 1984; Stulz, 1984; Smith and Stulz, 1985; Campbell and Kracaw, 1987; Bessembinder, 1991; Dobson and Soenen, 1993; Dolde, 1995; Shapiro and Titman, 1998; Mian, 1996; Haushalter 2000). The agency cost of debt argument implies that the benefits of hedging should be greater the higher the firm's leverage and asymmetric information problem (Mayers and Smith, 1982; 1987; MacMinn and Han, 1990;

<sup>2</sup> In Croatian: Zakon o računovodstvu, *Narodne novine* 146/05

<sup>3</sup> Criteria related to large Croatian companies: a value of total assets higher than 108 million kuna, (2) income in the last 12 months higher than 216 million kuna, and/or (3) annual number of employees higher than 250.

<sup>4</sup> The list has been published by the special edition of *Privredni vjesnik*

Bessembinder, 1991; Dobson and Soenen, 1993; Minton and Schrand, 1999; Haushalter et. al., 2002). The argument of costly external financing implies that the benefits of hedging should be greater the more growth options are in the firm's investment opportunity set (Froot, et. al., 1993; Getzy et. al., 1997; Gay and Nam, 1998; Minton and Schrand, 1999; Allayannis and Ofek, 2001; Haushalter et. al., 2002). The tax hypothesis suggests that the benefits of hedging should be greater the greater is the value of the firm's tax loss carry-forwards, investment tax credits and other provisions of the tax code (Froot et. al., 1993; Nance et. al., 1993; Mian, 1996) Therefore, a positive relation between decision to hedge and a company's leverage, asymmetric information problem, investment (growth) opportunities and expected taxes has been predicted.

### 3.2 Research Hypotheses and Research Variables

A dependent variable has been designed in the form of a binary (dichotomous) measure and was coded as "1" for those firms that hedge corporate risks and "0" for those firms that do not hedge corporate risks. In the group of companies named "hedgers" we included not only companies that use derivatives instruments as an instrument of corporate risk management, but also companies that use other types of hedging strategies like operational hedging, natural hedging, diversification of business etc.

To examine the hypothesis regarding the reduction of the financial distress cost, the firm's leverage have been employed. Leverage was used as a proxy for the impact of fixed claims on the decision to hedge. Numerous previous studies have used long-term debt to the book value of assets (Tufano, 1996; Nance et. al., 1993; Mian, 1996; Geczy et. al., 1997; Allayannis and Ofek, 2001) as a measure for company indebtedness. We took into consideration specific characteristics of Croatian companies and have modified this variable by including short-term debt into the analysis. In this way, we measured company's leverage by its total indebtedness, not only long-term one. The reason behind this way of thinking lies in the fact that listed Croatian companies very often use short-term debt and prolong it to the medium-term debt. E.g. Companies use commercial papers issued in several tranches, revolving short-term bank loans and/or trade credits given by suppliers which, due to the long-term contract with them, becomes constant source of financing. To conclude, we tested both long-term debt to the book value of assets and total debt to the book value of assets. The coefficients on both variables were predicted to be positive to the decision to hedge corporate risks.

The percentage of firm's stocks owned by institutional investors was a proxy for the asymmetric information and agency problem. DeMarzo and Duffie (1995), Tufano (1996) and Geczy et. al. (1997) have predicted that a greater share of institutional investors' ownership is positively related to the availability of information, and thus negatively related to the probability of hedging as it is proven that firms with greater informational asymmetry benefit greatly from risk management activity. The coefficient on this variable was predicted to be negative.

Investment (growth) opportunities were measured as the ratio of investment expenditures to the book value of assets (Haushalter, 2000; Froot et. al., 1993; DeMarzo and Duffie, 1991; Geczy et. al., 1997; Smith and Stulz, 1985). The coefficients on this variable was predicted to be positive. To examine the tax hypothesis, we have used total value of the tax loss carry-forwards plus tax loss carry-backs (Smith and Stulz, 1985; Geczy et. al., 1997; Tufano, 1996). The coefficient on this variable was predicted to be positive.

### 3.3 Research Results

Binominal logistic regression was estimated to distinguish among the possible explanations for the decision to hedge. In the logistic model we have tested whether the decision to hedge or not is a function of the four factors – the financial distress costs, agency costs, investment opportunities and taxes.

$$\text{Hedge} = f(\text{FC}, \text{AC}, \text{IO}, \text{T}) \quad (1)$$

where:

- *Hedge* - binary variable which takes on a value of 1 if the firm hedges and 0 if the firm does not hedge
- *FC* - firm's probability of financial distress or bankruptcy
- *AC* - agency costs of debt facing the firm
- *IO* - investment opportunities
- *T* - tax provisions

Table 1 reports multivariate analysis results relating the decision to hedge to the determinants of hedging for the analysed Croatian companies. The predetermined independent variables include total debt to the book value of assets as a proxy for financial costs, debt rating as a proxy for agency cost of debt, investment expenditures to assets as a proxy for costly external financing, total value of tax loss carry-forwards and tax loss carry-backs as a proxy for tax incentives. We excluded long-term debt to the book value of assets as a measure of leverage as it has not shown statistically significant in the model.

The multivariate regression model for the Croatian companies has revealed that the corporate decision to hedge is related to the company's leverage and investment opportunities and not related to taxes and informational asymmetry and the agency cost of debt.

In corporate hedging research, the relationship between hedging and leverage is of a particular interest since theoretical considerations suggest that both affect expected costs of financial distress and agency costs - greater leverage exacerbates those costs, but greater hedging ameliorates them, suggesting a positive linkage. Therefore, our research results confirm this theoretical relation in practice of Croatian companies and show a statistically significant positive relation between the decision to hedge and total debt to the book value of assets.

The investment expenditures to assets ratio, which controls for company's investment (growth) opportunities, tests our prediction that hedgers are more likely to have larger investment opportunities. The main hypothesis is that, if access to external financing (debt and/or equity) is costly, firms with investment projects requiring funding will hedge their cash flows to avoid a shortfall in their funds, which could precipitate a costly visit to the capital markets. The results of our logistic model support this prediction and show a statistically significant positive relation between the decision to hedge and investment expenditures to assets ratio.

Table 1: Multivariate results

Number of selected cases: 49			
Number rejected because of missing data: 1			
Number of cases included in the analysis: 48			
Independent variables:			
FINCOST	Total debt to the book value of assets		
AGCOST	Percentage of institutional investors		
CEF	Investment expenditures to assets ratio		
TAX	Total value of tax loss carry-forward and carry backs		
Estimation terminated at iteration number 9 because			
Log Likelihood decreased by less than .01 percent.			
-2 Log Likelihood	18.572		
Goodness of Fit	14.936		
Cox & Snell - R <sup>2</sup>	.428		
Nagelkerke - R <sup>2</sup>	.683		
	Chi-Square	df	Significance
Model	24.575	6	.0010
Block	24.575	6	.0010
Step	24.575	6	.0010

———— Hosmer and Lemeshow Goodness-of-Fit Test ————

Chi-Square df Significance

Goodness-of-fit test 3.4025 8 .7838

———— Variables in the Equation ————

Variable	B	S.E.	Wald	df	Sig
FINCOST	<b>85.670</b>	<b>39.033</b>	<b>48.172</b>	1	<b>.0382</b>
AGCOST	1.1796	1.5441	.8701	1	.2832
CEF	<b>373.821</b>	<b>227.182</b>	<b>44.575</b>	1	<b>.0348</b>
TAX	-3,31E-04	4,31E-02	.0105	1	.9184
Constant	-2.3670	1.2890	1.7434	1	.4296

No outliers found.

#### 4. RISK ADJUSTED VALUE

In this section, corporate value will be disassembled to its key factors in order to present an analysis of how corporate risk management can influence these value drivers. Company's value is a function of four fundamental variables (Damodaran; 2008):

- Cash flows from existing investments;
- Expected growth rate that determines the value of the future cash flows;
- Return on capital from new investment;
- Weighted average cost of capital.

Analysis of the impact of risk and risk management to enterprise value will begin by analysing activities that management should take if they want to increase the value of the company. Corporate value can be increased by one, or a combination of the following activities: by increasing expected cash flows; by increasing the rate of return on existing assets; by increasing the rate of return on new investments; by increasing the expected growth rate of the company while assuming that the return on invested capital is higher than the weighted average cost of capital; by reducing the weighted average cost of capital. Above activities are creators of enterprise value; however they are also means of destroying value if their interrelationships are not properly managed. Therefore, it is important to analyse the risks that affect the formation of these determinants and to take those actions that will minimize the negative impact of risk, and leave room for positive changes in the corporate value at the same time.

The expected rate of growth as well as the rate of return on invested capital (relative to the overall cost of capital) to a large extent determines the value of the expected free cash flow, and consequently the overall value of the company. The logic is sharp-cut - a company that achieves a higher rate of return on capital invested in the business is worth more than companies whose rate of return on invested capital is lower. Analogously, the company that achieves higher growth rates will be worth more than a company that is growing more slowly, regardless to the same rate of return on invested capital (Copeland, Koller and Murrin; 2000).

Increased value of the expected cash flows is associated with the achievement of higher yields on the capital invested in existing assets. If the existing property is more efficiently managed, it generates a higher value of the cash flows. In the short term, the company may increase the growth rate and return on invested capital through better management of existing assets. Enhancement of the rate of return on existing investments is achieved through an increase in operating profit as well as through higher turnover of invested capital and its reinvestment in the company's business. Risk hedging activities can contribute to the rate of return enhancement on several ways. For example concluding forward contracts with key suppliers can reduce the cost of

raw materials and ancillary services. Forward contracts with customers can provide stabilisation of revenues and market share. Additionally, thoughtful risk taking activities like entering a new market will provide new market opportunities, deals with new customers and increase in sales volume, etc.

However, it should be noted that the long-term growth is associated with new profitable investments that increase the expected cash flows of the company. It is important to evaluate the risk-profit characteristics of new investments in order to objectify the expected cash flows of the project. The expected rate of growth of the company is determined as the earnings retention rate multiplied by the expected rate of return on invested capital, which is computed as the ratio of net operating profit after tax to the total operating capital invested.

$$g = R_{OIC} \times z$$

$z$  = earnings retention rate

$R_{OIC}$  = expected rate of return on invested capital

$$R_{OIC} = \frac{NOPAT}{\text{Operating capital}}$$

In other words, the expected growth rate is a function of retained earnings and rate of return on invested capital. The expected growth rate can be increased by increasing the share of retained earnings in relation to the part of earnings paid to the owners, which is justified from the owner's point of view only if the return on invested capital is higher in comparison to the cost of capital. The expected growth rate also increases by increasing the rate of return on invested capital, which will be achieved through more efficient investments, what would lead to the increase in expected operating profit.

It should be emphasised that the management of corporate risks increases the corporate value through effective co-ordination of financial and investment decisions. Cash flows' volatility reduction increases the probability of having sufficient internal funds to finance planned investment opportunities. This reduces the need for withdrawal of profitable projects and solves the underinvestment problem. Profitable investments increase the return on invested capital and expected growth rate. In addition, risk management reduces the transaction costs related to the expensive capital raised on capital markets, which also increases the value of the company.

Last analysed variable that can affect the value of a company is the total cost of capital. According to absolute valuation models, cost of capital decrease will increase the value of the company. The cost of capital is the discount rate in the valuation model that reflects the current risk level of the enterprise, the risk of its future investment and the capital structure risk. The cost of capital is an indicator of the business and financial risk of the company. Consequently, it can be concluded that, by reducing or adequately managing different types of corporate risk, it is possible to reduce the cost of capital and thus increase the value of the company. Companies that actively manage risks and reduce the likelihood of insolvency and financial difficulties will be rewarded by its investors through a lower required return on capital. By efficiently managing risks, the company gets a better credit rating as it becomes less risky investments, which helps reduce the cost of debt, and consequently, reduce the total cost of capital. Enterprise value is further increased by increasing its credit capacity. Managing corporate risk reduces the probability of bankruptcy, which leads to the optimal mix of debt and equity formed at a higher level of indebtedness. Taking advantage of the increased credit capacity increases the present value of the tax shelter, what increases the overall value of the company.

## 5. CONCLUSION

For a long time it was believed that corporate risk management is irrelevant to the value of the firm and the arguments in favour of the irrelevance were based on the Capital Asset Pricing Model and the Modigliani-Miller theorem. However, it is apparent that managers are constantly engaged in hedging activities that are directed at the reduction of unsystematic risk. As an explanation for

this clash between theory and practice, imperfections in the capital market are used to argue for the relevance of corporate risk management function. If corporate hedging decisions are capable of increasing firm values, they can do so by reducing the volatility of cash flows. Reduced volatility of cash flows results in decreased costs of financial distress. Additionally, it reduces the costs associated with information “asymmetries” by signalling management's view of the company's prospects to investors, it reduces agency problems, including distortions of management's incentives to undertake all value-adding investments. In addition, reducing cash flow volatility can improve the probability of having sufficient internal funds for planned investments eliminating the need either to cut profitable projects or bear the transaction costs of obtaining external funding.

We tested these relations on the sample of large Croatian non-financial companies. The evidence based on the multivariate empirical relations between the decision to hedge in analysed companies and financial distress costs, agency costs, costly external financing, and taxes supports tested hypotheses related to the investment expenditures-to-assets ratio and total debt to assets ratio. Therefore, it can be concluded that Croatian companies that are more leveraged and have more investment opportunities have more incentives to manage corporate risk. Additionally, in the last section of this paper, by using Risk adjusted value approach, we have shown that efficient risk management can influence company value drivers and positively affect overall enterprise value.

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