



The Assessment of Hedge Effectiveness

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ABSTRACT

Earnings volatility can be a significant source of concern for a company, putting pressure on its capital base and share price. Prudent management of the company's exposure to different risks typically involves hedging solutions. Hedging is important for corporate risk management, involving reducing the exposure of the company to specific risks. The aim of this paper is to examine the basic requirements for assessing the hedge effectiveness, this being a vital stage in applying hedge accounting, that gives the possibility to assess if the companies match the timing of the gains and losses of hedged items and their hedging derivatives. The article identifies some difficulties encountered by companies and choices that they must make in assessing hedge effectiveness.

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1. Introduction

The starting point for risk management and hedging lies in understanding a company's exposure to different risks. The exposure to a particular risk reflects how that risk affects performance. For example, the company's exposure to currency risk will generally be through its foreign currency revenues, costs, capital expenditure, debt and/or assets. These exposures determine how foreign exchange volatility influences corporate performance in terms of cash flow, net income, balance sheet, debt covenants and the value of the firm. Volatility in interest rates, foreign exchange rates and other prices has created a demand for instruments that could help borrowers, lenders, financial institutions, manufacturers and other industrial companies reduce their risks, that if not properly managed could threaten the survival of their companies. This volatility, combined with increased internalisation, competition, global deregulation, technology, sophisticated analysis techniques and tax and regulatory changes, has promoted an explosion of innovative financial instruments that may be used as hedging instruments. Understanding the corporation's exposure to different risks, and how this feeds through to performance, may lead to an appropriate risk management strategy and create value [1]. Hedging is helpful in designing risk management strategies and has been one of the most considered topics in finance for the last decades. Moreover, it is one of the main topics addressed in the published documentations regarding the IFRS and IAS standards, as it is an overall consensus that derivatives accounting rules under IAS 39 represent a major challenge.

Prior studies discuss and the complexity of effectiveness qualification criteria and the compliance with the IAS 39 and / or SFAS 133 requirements for measuring hedge effectiveness. Coughlan (2004) addresses the subject of corporate risk management in the context of IAS 39, identifying the issues and challenges for risk management presented by the standard and setting out practical guidance regarding the formulation of risk management policy and the implementation of sound hedging strategies [1]. Lopes (2006) describes the key questions of accounting for derivatives raised by IAS 39 (particularly regarding electricity futures), like as the conditions for exemption from IAS 39 the key questions of accounting for derivatives raised by IAS 39 [2].

Other studies raise various problems regarding the hedge effectiveness testing rules ([3]; [4]). IAS 39 and SFAS 133 require companies to perform numerical effectiveness tests on their derivative hedges and some authors raise awareness of the issues connected with hedge effectiveness testing. Finnerty and Grant (2002, 2006) present the most common methodologies for testing hedge effectiveness and analyze them. They recommend against using the dollar-offset method, which is more sensitive to small changes ([5]; [6]). Wallace (2003) also reviews the general IAS 39 effectiveness testing rules, and discusses how to achieve hedge accounting for the common corporate hedges [7]. Bodurtha (2005) points out the inconsistency of prospective and retrospective interest rate risk hedge effectiveness tests, as a divergence between SFAS 133 and IAS 39 [8]. Several research studies propose consistent hedge effectiveness measurement methodologies for hedge accounting under SFAS 133 and IAS 39 [9], or develop alternative measures of hedge effectiveness [10], or describe a toolkit to overcome the complexities of implementing the appropriate effectiveness tests [11]. Recent studies [12; 13] take a closer look to the IASB project to replace IAS 39 in order to simplify hedge accounting, analyzing the most significant benefits that are likely to be realised. Potentially, financial reporting will reflect more accurately how an entity manages its risk and the extent to which hedging practices mitigate those risks, as a result of these proposals.

The aim of this paper is to examine the basic requirements for assessing the hedge effectiveness, pointing out the complexity of the current hedge accounting model based on *IAS 39 Financial Instruments: Recognition and*

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Measurement. The article is focused on several issues regarding the effectiveness qualification criteria: the relationship between the objectives of the risk management strategy and the hedge accounting purposes; the rules applied in the mechanics of hedge accounting effectiveness testing; the assessment methods. In section 2, the article reviews the basics for hedge accounting, hedging being the process of using a financial instrument to mitigate all or some of the risk of a hedged item. This needs a special accounting whose principles give the possibility to match the timing of the gains and losses of hedged items and their hedging derivatives. In order to determine if hedge accounting treatment may be applied it is necessary to assess the hedge effectiveness. Effectiveness depends on the specific hedging objectives which are reflected in the specific performance metric being used and in the designated risk being hedge [11]. Thus, in Section 3, the concept of hedging effectiveness and the requirements for assessing the hedging instrument's effectiveness are presented. We note that the hedge is highly effective if it substantially offsets the change in the fair value or the cash flow of the hedged item. Section 4 emphasize the steps that must be followed for testing the hedging effectiveness and reviews the most common methods for numerical assessment. Finally, the article examines the proposals to reduce the complexity of hedge accounting (along with simplifying the hedge effectiveness testing), coming both from IASB and FASB through the exposure drafts issued in 2010.

2. Hedge Accounting

Generally, hedging is a tool for transferring price, foreign exchange or interest rate risk from those wishing to avoid it to those willing to assume it. Specifically, hedging is the act of taking a position in a hedging instrument, especially derivatives such as futures, forward, options or swap market, opposite to an actual position that is exposed to risk. Thus, results a decreasing of the risk of loss from adverse price or rate fluctuations that may occur in owning or owing items over a period. Also, hedging may limit the gain from favourable changes. Among the items hedged are:

- owned assets including financial instruments or commodities;
- existing liabilities such as foreign currency-denominated borrowings;
- contractual commitments to buy or sell items such as commodities or financial instruments;
- anticipated, but not contractually committed transactions such as purchases or sales or the issuance or refinancing of debt.

The need for some special accounting for hedges arises in part because of the historical cost, transaction-based accounting system. Under this system, the effects of price or interest rate changes on many existing assets and liabilities are not recognized in income until realized in a later transaction. Hedge accounting changes the timing of recognition of gains and losses on either the hedged item or the hedging instrument so that both are recognised in profit or loss in the same accounting period in order to record the economic substance of the combination of the hedged item and instrument. It is a method of reflecting a commercially hedged position in the accounts, so that the revaluation of the derivative does not pass through the income statement until the transaction concerned occurs [2]. Thus, hedge accounting can mitigate volatility when there are balanced positions – so that only real exposures give rise to income volatility. Hedge accounting is an exception to the usual accounting principles for financial instruments. We note that it is not mandatory under IFRS, companies are applying it if they wish to. *IAS 39 Financial Instruments: Recognition and Measurement* requires hedge relationships to meet certain criteria in order to qualify for hedge accounting. The specific conditions are:

- a) the hedging relationship and the entity's risk management objective and strategy for undertaking the hedge must be formally designated and documented from the inception of the hedge. IAS 39 requires that hedge documentation includes the identification of the hedging instrument, the hedged item or transaction, the nature of the risk being hedged and how the entity will assess the hedging instrument's effectiveness;
- b) the hedge must be expected to be effective in achieving offsetting changes in fair value or cash flows attributable to the hedged risk and this effectiveness can be reliably measured;
- c) the effectiveness of the hedge must be assessed regularly throughout its life.

Charnes, Berkman and Koch emphasize that it can be critical for businesses that use derivatives for risk management to qualify for hedge accounting treatment. Failure to qualify can have considerable tax consequences [10]. Furthermore, without hedge accounting the mismatch in the timing of income recognition may induce income volatility that does not accurately reflect the underlying economics of the hedging relation. This income volatility can have a substantial impact on other managerial decisions and contractual obligations faced by the firm, and might influence the choice of the hedging instrument, or even the decision to hedge at all.

3. Hedge Effectiveness

Hedge effectiveness reflects the degree to which changes in the performance of an underlying risk exposure, i.e. underlying hedged item, in respect of a designated risk are offset by changes in the performance of a designated hedging instrument. Some authors illustrate a major difference between the concepts of "*economic hedge*" and "*accounting hedge*", emphasizing that the starting point for any risk management decision should be whether the proposed hedge is economically sensible. That is: "does the hedge reduce risk in economic terms at an acceptable cost?" (1), or, in other words: is the hedge effective or not.

Hedge effectiveness from an economic perspective is usually measured in terms of the amount of risk reduction achieved through the hedging relationship, with direct reference to a particular risk metric such as volatility or value-at-risk. For the effectiveness result to make any sense, the risk metric used must be a statistical measure, as risk essentially reflects the uncertainty of different outcomes. The economic effectiveness test involves comparing the risk associated with the underlying hedged item against the risk of the portfolio formed by the combination of the underlying and the hedging instrument. For a hedging relationship to be "effective" in economic terms, the risk of the

portfolio must be considerably lower than the risk of the underlying. The actual degree of economic effectiveness achieved by a hedge will depend on the risk characteristics of the underlying and both the hedging instrument, as well as the correlation between them. In fact, for any given underlying and hedging instrument the level of hedge effectiveness can be maximised by carefully selecting the so called “hedge ratio”, as the amount of the hedging instrument that is used to hedge one unit of the underlying.

In principle, accounting effectiveness should be evaluated in exactly the same way as economic effectiveness. Practically, there is a controversial situation. Many entities manage their risks, but find that they are unable to fully reflect this fact in their financial statements because of the rule-based nature of the existing hedge accounting requirements. Moreover, analysts and other users find information relating to a company’s risk management strategy to be valuable, but this information may not be clearly reflected in the financial statements because of a mismatch between the application of hedge accounting and the company’s risk management objectives [12]. The reasons why accounting effectiveness is not always the same as economic effectiveness are related to several characteristics of the accounting regulations:

- only certain types of hedge relationships are allowed to be designated as hedges;
- the arbitrary choice of thresholds for hedges to be considered “highly” effective;
- the fact that accounting effectiveness must always be measured in terms of “fair value”.

The conclusion is that the risk management strategy is not necessarily linked to the objectives of hedge accounting. Although the risk management objective has to be included within the hedge documentation, because of a too rule-based effectiveness assessment, the entity’s actual risk management strategy may be different from that which is documented for accounting purposes. Consequently, the documented risk management objective is usually a generic description and interpreted to mean the hedge accounting objective (commonly, the avoidance of profit or loss volatility), rather than the economic strategy that led to hedging for risk management purposes [13].

The concept of hedge effectiveness is one that is crucial in determining whether hedge accounting treatment may be applied or not. The main objective of hedge effectiveness assessment is to ensure that hedging instruments are appropriate and play a valid role in reducing risk. A prospective assessment of hedge effectiveness must be performed. This may appear straight-forward and merely an administrative matter [4], but the consequences of making mistakes at the assessment stage are significant as hedge accounting may be denied and the volatility of the mark-to-market valuation of the hedging instrument will consequently impact the income statement. The hedge documentation is necessary to identify clearly the hedged item and hedging instrument and to document how the hedge complies with the company’s risk management policy and objectives. The hedged risk and the hedge effectiveness method that will be applied are decided up front.

a. The Hedged Item and the Hedged Risk. In order to minimise ineffectiveness, it may be better to identify the portion of the hedged instrument that has been designated as the hedged item. Furthermore, the hedged risk must be clearly defined in detail; for example, “interest rate risk” may be hedged but the reference to which curve must be mentioned.

b. The types of hedging relationship. When the objective is to cover the risk of changes in the fair value of: (i) a recognised asset or liability, or (ii) an unrecognised firm commitment, or (iii) an identified portion of such an asset, liability or firm commitment, that is attributable to a particular risk and could affect profit or loss, this hedge is a fair value hedge under IAS 39.

When the objective is to hedge the exposure to variability in cash flows that is attributable to: (i) a particular risk associated with a recognised asset or liability (such as all or some future interest payments on variable rate debt), or (ii) a highly probable forecast transaction, that could affect the income statement, this hedge is a cash flow hedge according to IAS 39. When the objective is the hedging of the foreign currency risk on a net investment in a foreign operation, this hedge is a net investment hedge under IAS 39.

c. Assessing the hedging instrument’s effectiveness. For the types of hedges presented above, effectiveness has two distinct but related meanings, revealed by Capozzoli (2001). These correspond to the following questions: “Is the hedge effective? Does it qualify for hedge accounting?” and “What is the exact amount of hedge ineffectiveness?” [3].

Answering the first question means providing an assessment of why it is expected the hedge to be effective. This numerical basis must be fixed in advance and becomes a hurdle that the hedge must clear in order to receive any special accounting treatment at all. In addition, it is required that this question be addressed at the initiation of the hedge and on an ongoing basis. For example, US GAAP (*SFAS 133 Accounting for Derivative Instruments and Hedging Activities*) requires that hedge effectiveness be assessed whenever financial statements or earnings are reported and at least once a quarter. In advance of a quarter, the reporting entity must assess the hedge effectiveness for the coming quarter. At the end of a quarter, it must also assess the hedge effectiveness for the past quarter. IFRS (IAS 39) requires that hedges be assessed for effectiveness on an ongoing basis, at a minimum, at the time the entity prepares its annual or interim financial reports.

For the second question, the change in value of the hedged item due to the risk being hedged must be measured. For fair value hedges, this determines the amount of change in the hedged item’s value that is accelerated and included in current income to offset changes in the derivative’s value. For cash flow hedges, this will determine the amount of the change in fair value of the derivative that can be offset and thus not affect current income. IAS 39 requires two kinds of effectiveness tests:

- A prospective effectiveness test – a forward-looking test to ensure that the hedging relationship is expected to be highly effective. At the inception of the hedge and in subsequent periods, the hedge is expected to be highly effective in future periods. The effectiveness assessment must be predetermined. It is not within either the requirements, or indeed the “spirit” of the standard to select the effectiveness measurement method at the reporting date, nor is it acceptable to find later the method that “works” [4]. It is sensible

therefore to perform some scenario analysis ahead of designating the hedge in order to determine the most appropriate and effective way of measuring hedge effectiveness for the particular relationship.

- A retrospective effectiveness test – a quantitative backward looking test. When the firm prepares its interim or annual financial statements, a test of whether a hedging relationship has actually been effective throughout the reporting period. The quantitative test uses a range of 80 to 125 per cent for the “highly effective” criterion.

There is a clear distinction between a forward-looking approach to measure expected effectiveness as opposed to a backward-looking approach to measure realized effectiveness. We express the opinion that the key here is that a consistent method should be applied for similar instrument types.

4. The Assessment of Hedge Effectiveness

A hedge is effective only when the change in the fair value of the derivative substantially offsets the change in the fair value of the hedged item or cash flows attributable to the risk being hedged. In order to meet the objective of effectiveness, both of the following conditions has to be met:

(a) the hedge passes the prospective test. That is, at the inception of the hedge and in subsequent periods, the hedge is expected to be effective. This expectation can be demonstrated in various ways: a comparison of past changes in the fair value or cash flows of the hedged item that are attributable to the hedged risk, with past changes in the fair value or cash flows of the hedging instrument, or by demonstrating a high statistical correlation between the fair value or cash flows of the hedged item and those of the hedging instrument. In this test, IAS 39 does not require a hedge ratio one to one. In order to improve hedge effectiveness, the amount of the hedging instrument may be greater or less than that of the hedged position;

(b) the actual results of the hedge are within a range of 80%–125%; for example: if actual results are such that the loss on the hedging instrument is €120 and the gain on the cash instrument is €100, offset can be measured by $120/100$, which is 120%, or by $100/120$, which is 83%. In this example, assuming the hedge meets the condition in a), the entity would conclude that the hedge has been effective. Defining this range is a matter of subjective judgment [6].

While it appears straightforward in theory, evaluating hedge effectiveness under the derivatives accounting standards, SFAS 133 and IAS 39, is quite difficult, as the implementation guidance provided by the standards is limited, and even accountants admit that the practical development and interpretation of appropriate hedge effectiveness assessment is far from clear-cut [11]. Furthermore, it seems that minor aspects in the design of the tests can have a significant impact on hedge effectiveness results. Corporations must therefore design their hedge effectiveness assessments carefully to ensure that the economic reality of the hedging relationship is aligned as closely as possible with the accounting requirements.

In order to qualify for hedge accounting, and thereby avoid unwanted earnings volatility, a derivative must be formally designated as a hedge at inception and the effectiveness of the hedging relationship must be regularly evaluated and verified with a numerical effectiveness test. Generally, any hedging application follows a few steps [11].

(1) *Definition and documentation of hedging objectives.* This includes first defining the underlying hedged item and then the designated risk to be hedged. We note that a clear specification of the designated risk is particularly important.

(2) *Definition of the hedging instrument and the hedge ratio.* The hedge ratio determines how many units of the hedging instrument are used to hedge one unit of the underlying. Ideally, one should select the optimal hedge ratio, corresponding to the maximal reduction in risk.

(3) *Selecting the methodology for evaluating hedge effectiveness.* This is in many ways the most important and challenging step, since an inappropriate choice of methodology can lead to spurious and misleading hedge effectiveness results.

(4) *Implementing the methodology,* which means actually evaluating the effectiveness, as defined by the methodology selected in the previous step. This step is conceptually very simple, but it is typically extremely time-consuming to perform. It involves first using historical data to generate scenarios for prospective and/or retrospective testing, then evaluating the changes in fair value in each scenario, and finally actually performing the test.

(5) *The interpretation of the results.* The effectiveness results need to be interpreted in the context of the hedging objectives set out in the first step. This interpretation is usually facilitated by defining “effectiveness thresholds”, which provide an easy translation of the numerical results into a “pass” or “fail” signal. The linkage between effectiveness thresholds and the true level of effectiveness of a given hedge is highly dependent on the effectiveness methodology, in particular, how much historical data is used, and what type of method is being performed.

The specific method of how one is going to assess the effectiveness of a hedge must be detailed up front in the formal documentation. There are a number of potential methods for measuring hedge effectiveness, not all of which will be appropriate to each type of hedge, and hence it is necessary to give some consideration to which method will be applied as this could prove crucial when the assessment is performed. The most common methods used are:

- *Critical terms comparison.* This method consists of comparing the critical terms (for example, notional or principal amounts, term, pricing, timing, and currency) of the hedging instrument with those of the hedged item. If all the principal terms match exactly, the hedge is expected to be effective.
- *The dollar-offset method.* This method consists of comparing the change in fair value of the hedging instrument with the change in fair value of the hedged item. This ratio, typically calculated as a percentage, should be within a range of 80-125% or 80-120%. Otherwise, the hedge is not effective, and it should be discontinued. In practice, many use the 80-125% range. This test can be performed either on a cumulative

basis (with the comparison performed from the inception of the hedge), or on a period-by-period basis (with comparison performed from the last assessment date), both being acceptable. The cumulative period is recommended since the dollar-offset ratio over a longer period should be more stable than the ratio over a shorter period and thus less likely to fall outside of the range [7]. There is a risk, particularly in complex interest rate hedging, that small changes in interest rates will cause small changes in the dollar-offset's numerator and denominator that will result in large numbers wildly outside the 80-125% range, even though the small changes are immaterial by themselves.

Finnerty and Grant emphasise that anyone choosing this method should be aware that researchers question its reliability because of its excessive sensitivity to small changes in the value of the hedged item or the derivative [6].

- *Regression analysis.* This is the most common statistical method [7]. Briefly, it allows regressing on price levels, rather than changes in prices, since one could have highly correlated prices but not highly correlated price changes. This method consists of measuring the strength of the statistical relationship between the hedged item and the hedging instrument. According to Lopes, regression analysis is a means of expressing how one variable (the dependent) varies with changes in another variable (the independent) [2]. In the context of hedging effectiveness, the dependent variable reflects the change in the value of the hedging instrument and the independent variable the change in the value of the hedged item. Then, critical tests determine the effectiveness of the hedge [7].
- *Value-at-risk like approach.* This is an alternative to regression analysis that calculates the reduction in the volatility after the hedge compared to the volatility of the hedged item alone. As with regression analysis, this statistic is calculated over an historic period using historic rates, consistent with how both changes are defined in the hedge documentation, which is generally going to be on a full market value basis. If this was greater than some agreed-upon parameter, say 80% (in other words, the volatility of the position has been reduced by the hedge by 80%), then the hedge relationship would pass this test.

IAS 39 does not specify a single method for assessing hedge effectiveness prospectively and retrospectively. The IASB accepts that the method an entity adopts depends on its risk management strategy. SFAS 133 requires the consistent application of a defined method both at inception and on an on-going basis for measuring expected effectiveness and for measuring the ineffective part of the hedge. IAS 39 states that the method an enterprise adopts for assessing hedge effectiveness will depend on its risk management strategy. The key concept is consistency with respect to the entity's risk management strategy [9]. Any change of measurement method will need to be justified and the trade-to-hedge relationship will need to be designated anew. Moreover, an entity should assess effectiveness for similar hedges in a similar manner; use of different methods for similar hedges should be justified.

In the past few years, IASB had concerns over the use of percentage based effectiveness assessment techniques and whether they may provide results that give the appearance of a highly effective hedging relationship when in fact a statistical effectiveness assessment may identify the relationship as not being highly effective. Therefore, some of the discussions at IASB meetings in 2010 have concerned the removal of the 80-125% effectiveness threshold and replacing with a more principles-based approach. Four alternatives have been proposed for effectiveness assessments: a quantitative threshold, a qualitative threshold, rely solely on an entity's risk management policy, or a combination of qualitative thresholds with minimum requirements tied to risk management or supplementary tests. As a result, in the *Exposure Draft: Hedge Accounting*, issued by IASB in December 2010, it is emphasized that an objective-based assessment would enhance the link between hedge accounting and an entity's risk management activities. The proposed hedge effectiveness requirements are that a hedging relationship:

- (a) meets the objective of the hedge effectiveness assessment (i.e. to ensure that the hedging relationship will produce an unbiased result and minimise expected hedge ineffectiveness); and
- (b) is expected to achieve other than accidental offsetting.

Another proposal of IASB in order to simplify the requirements in the new standard *IFRS 9 Financial Instruments* concerns the assessment of hedge effectiveness to be prospective (removing the retrospective effectiveness test requirement) and driven by the risk management strategy. Although the exposure draft requires that any retrospective ineffectiveness is reported in the profit or loss, there is no obligation to pass a retrospective effectiveness test at the end of a reporting period. We conclude that the hedge effectiveness assessment is required in order to achieve hedge accounting in subsequent periods and that the measurement of ineffectiveness refers only to the calculation of the "non-offsetting" amounts in accounting for hedge relationships in order to determine the amount to be recorded in profit or loss. The most important differences between IAS 39 and the proposals under the exposure draft, concerning the assessment of hedge effectiveness are summarised in the table below:

Table 1. Differences between IAS 39 and the exposure draft concerning the effectiveness assessment

IAS 39	The exposure draft
<ul style="list-style-type: none"> • Requirements to perform prospective and retrospective testing • 80-125% effectiveness threshold for a hedge to remain highly effective • Changes to hedge relationship would result in mandatory de-designation 	<ul style="list-style-type: none"> • Only prospective testing is required • No effectiveness threshold • Changes to hedge relationship may result in rebalancing of the hedge ratio rather than de-designation

In May 2010, FASB issued the *Exposure Draft: Accounting for Financial Instruments and Revisions to the Accounting for Derivative Instruments and Hedge Accounting*, which proposed some major changes:

- lowering the current “highly effective” threshold for qualifying for hedge accounting to “reasonably effective”;
- replacing the current requirement for quantitative-based assessments of hedge effectiveness with qualitative-based assessments for many hedging relationships;
- reducing the required frequency of hedge effectiveness assessments after inception of a hedge from quarterly (at a minimum) to only when a change in circumstances suggests that a hedging relationship may no longer be reasonably effective.

5. Conclusions

We express the opinion that designing appropriate hedge effectiveness assessment is a challenge. The requirement to reassess and report hedge effectiveness is sometimes seen as a very complex and costly task. Coughlan argues that putting hedge effectiveness assessment into practice is not straightforward for several reasons. First, the accounting standards provide considerable flexibility in how hedge effectiveness tests are designed and implemented. While this leeway is essential to align the test with the company's risk management strategy, the lack of explicit implementation guidance provides insufficient direction for all but the most sophisticated corporations. Secondly, the high level of complexity attached to the standards, together with considerable uncertainties concerning implementation and interpretation, have made it difficult to identify hedge effectiveness methodologies that are consistent with the accounting standards and yet still sensible in economic terms. Third, it is easy to end up with inappropriate effectiveness tests by overlooking small, but significant, elements in the assessment methodology [1].

Finally, we emphasise that, according to a survey made by Schraeder and Walterscheidt [14] in 2009 in Germany, of the three financial risks examined - currency, interest and commodity price risks - the currency risk assumes on average the greatest importance for the interviewed companies. 62% of companies attribute to this risk considerable or extreme importance. Interest risks are considered on average to be the second most important financial risks to which companies are exposed and commodity price fluctuation is considered the risk of least importance, but the assessment also showed that these results are dependent on the type of companies' activities. Barely two thirds of all interviewed companies apply hedge accounting in accordance with IAS 39 to disclose their financial economic hedging activities. However, clear differences were observed in relation to company size. The survey illustrates that whilst almost all large corporations (94.7%) apply hedge accounting to some of their securing activities, this proportion is reduced to just over one third (34.2%) in the case of smaller companies. The most important influencing factors for the decision, concerning the use of hedge accounting, are the expected effectiveness of the securing methods, as well as the volatility of results which would be anticipated without the use of hedge accounting [14].

In the real market environment, a hedge relationship is dynamically changing, as volatilities may change independent of each other, making adjustments necessary. Thus, a dynamic hedge optimization targets to optimally modify the contribution of hedging instruments and hedged items and to adjust this effectively according to their offsetting capabilities, in order to keep the hedge relationship stable. The conclusion is that in order to ensure the effectiveness of hedging strategy, the following are necessary: an optimal selection of the most effective hedging instruments that are offsetting the risk exposure of the hedged items is necessary, and an optimal selection of the hedged items that can be hedged by the available hedging instruments.

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