

DEAL ADVISORY, VALUATION

Cost of Capital Study 2015

Value enhancement in the interplay of risks and returns

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Note: This study is an empirical investigation with the aim of analyzing management practices. Information provided and explanations offered by the study do not offer a complete picture for deriving financial forecasts or costs of capital nor for proper actions or interpretation of the requirements for impairment tests, other accounting-related questions or business valuations.

PREFACE

This tenth edition of our Cost of Capital Study also marks a milestone for us that we could not have attained without your participation.

The sustained high number of participants and the positive feedback from the previous years has proven to us that our Cost of Capital Study has come to serve as a fixed component in practical valuations as well as welcome food for thought for the further development of valuation methods.

We would like to take this opportunity to express our gratitude to you for the participation in our study as well as the numerous interesting discussions!

Dear readers,

It is our pleasure to present you with the results of the tenth Cost of Capital Study.

In our "Anniversary Edition" we analyze company decisions in view of the continuing dynamics in the development of the economic environment and the high level of market volatility. The resulting financial effects of decisions have to be transparently reflected in the company's accounting.

Nowadays, business decisions are increasingly based on valuation calculations. The core of any valuation is the correct derivation of the cash flow as well as the corresponding determination of the cost of capital. We therefore link into the required value orientation of business decisions and focus this year's content on the methods and opportunities that have been further developed for the quantitative assessment of the cash flow as well as for the resultant considerations of quantitative recording of the corresponding risks as compensating components in the cost of capital.

Consequently, we compiled this year's Cost of Capital Study under the motto of "Value enhancement in the interplay of risks and returns". In addition, we present our Corporate Economic Decision Assessment – a KPMG method in response to the current challenges of the market. Based on this motto, this year's Cost of Capital Study focuses on the following subjects:

- Consideration of performance and risk drivers
- Stress testing in times of high volatility
- Quantification of operative risks
- Effects of the low-interest phase
- Paradigm shift in the determination of the market risk premium
- Value enhancement as a decision-making metric

Along with the continued development of the study, we have also modernized the presentation of the results. This is apparent not only in the new layout, but also in the individual, interactive opportunities for analyses from the study on our website.

We hope that this year's Cost of Capital Study also meets your expectations and serves as interesting reading. We would gladly discuss the results with you in the framework of a personal appointment and are, of course, available for any questions and comments you may wish to offer.

With best regards,

Dr. Marc Castedello

Partner, Deal Advisory, Valuation KPMG AG Wirtschaftsprüfungsgesellschaft **Stefan Schöniger** Partner, Deal Advisory, Valuation KPMG AG Wirtschaftsprüfungsgesellschaft



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(PMG





- Initial querying of the transaction behavior and intentions of companies
- First extensive industry analyses

крмg

 Detailed analyses for every industry



KPING

- Study layout in tablet-friendly landscape format
- Possibility of individual analysis and data query with an Internet platform

- Focus on developments in volatile markets
- Impact of the continued difficult market environment on the practice of valuation, in particular on the cost of capital
- Focus on managing uncertainty
- Impact of volatility on financial forecasts
- Interaction of the risk-free rate and market risk premium
- Other risk premiums
- Sustainable growth rate

- Consideration of risk in the derivation of cash flows
- Risk equivalence in determining the cost of capital
- Small cap premium
- Debt beta: Sharing of risk between financiers

- Corporate Economic Decision Assessment
- Consideration of performance and risk drivers
- Stress testing in times of high volatility
- Quantification of operative risks
- Figure Figure 1 Effects of the low-interest phase
- Paradigm shift in the determination of the market risk premium
- Value enhancement as a decision-making metric

SUMMARY OF FINDINGS

Derivation of the Cash Flow

Planning uncertainty

The *continuing volatility* and the *uncertain future prospects* remain *significant challenges* for planners and assessors.

Sustainable growth

In general, the *sustainable growth* expectations of the study's participants remain *unchanged*.

Cost of Capital

WACC

The average weighted cost of capital after corporate taxes and prior to growth discount (WACC, Weighted Average Cost of Capital) decreased from 7.8 percent in the previous year to 7.1 percent.

The *highest* WACCs were to be observed in the media & telecommunications sector with *8.0 percent* and automotive with *7.9 percent*, the *lowest* in the health care industry with *5.7 percent*.

Risk-free rate The risk-free rate reached an *historical low* of **1.8 percent**.

Market risk premium

The increased market risk premium of **6.3 percent in Germany** and **6.4 percent in Austria** can only partially compensate for the decrease in the risk-free rate.

Beta factors

Especially in the field of energy & natural resources, the participants estimated *a higher operative risk compared to the previous year*.

By contrast, in the chemicals & pharmaceuticals and automotive sectors the participants foresee *a lower operative risk*.

Cost of debt

The average cost of debt is now only **3.4 percent**.

This means that the cost of taking on *debt has never been as low* for the participating companies.

Impairment Test

Impairment

The number of companies that recognized an *impairment* on goodwill or assets remained at *the level* of the previous year.

Values and Value Enhancement

Investment decision

Investment decisions were made based both on *strategy* as well as *value-oriented objectives*.

Capital market communication

The major portion of companies *did not* use the derived *corporate values* and their change over time in the *Capital market communication*.

Managing

The **continued value enhancement** of the own company is a very *important tool for decision-making and management*.





STUDY PARTICIPANTS

This year 148 companies from Germany, Austria and Switzerland participated in the study (2013/2014: 130). Of these, 102 were from Germany, 17 from Austria and 29 from Switzerland.

With 73 percent, the participation of the DAX-30 companies in the study remained unchanged and at a high level. In addition, 34 percent of the MDAX companies participated in our study this year (previous year: 32 percent).

SURVEY PERIOD

The survey of the companies occurred between March and July 2015. The reporting dates of the consolidated financial statements included in the study were between 30 June 2014 and 31 March 2015.

INDUSTRY ANALYSES

Analogous to the procedure in the previous years, it was possible for a company to assign itself to more than one industry. For industries with a response from at least five participants, we performed separate analyses.

In the industry-specific analyses, we concentrated on the material cost of capital parameters. In section 6 of the study, we show you the development of these essential parameters over time. In addition, our industry specialists provide insights into current developments, trends and an outlook of the developments expected for the individual industries.

INDIVIDUAL ANALYSES

Furthermore, we would like to mention our Cost of Capital website:

At www.kpmg.de/cost-of-capital you will find userfriendly presentations of both the cost of capital parameters from our current study as well as the results of our cost of capital studies from previous years. Beyond that, beginning this year we provide you with an individual and interactive data analysis on our website. Using your own search criteria, you can generate the data that is relevant for you and therefore better understand the values and developments of the cost of capital parameters that are relevant for you.

CORPORATE ECONOMIC DECISION ASSESSMENT (CEDA) – A KPMG METHOD IN RESPONSE TO THE CURRENT MARKET CHALLENGES

In the last two cost of capital studies, our focus was already on the future market challenges and their reproduction in companies' financial forecasts. To that end, we asked, amongst other things, to what extent companies were prepared for the future demands being placed on their financial forecasts and provided advice regarding approaches and methods developed internally.

The intense dynamics in almost every market – independent of the industry – connected with the ever more frequent, temporary market distortions and the increasing occurrence of disruptive effects that could threaten entire business models represent a primary cause for the continued increasing challenges. Nowadays, companies are being confronted more than ever with the task of spotting future trends and reacting properly to them. This development is also reflected in the KPMG's current CEO Outlook (www.kpmg.de/ globalceooutlook2015). Bad decisions in this context may endanger the long-term existence of even major players. The number of materially important corporate decisions is not only increasing significantly, the time required for preparation and implementation of the decision is decreasing significantly.

As a possible response to the growing complexity of the corporate environment, we have recommended the implementation of established planning methods and systems for solutions that are able to structure and completely capture a company's value drivers and extend them with multivalent strategic planning scenarios. Many companies have recognized the need for expanding their strategic planning systems and intend to invest in this important management area. Both last year's as well as this year's Cost of Capital Study show, however, that the implementation processes required for this are still in the early stages. This induced us to further develop the dynamic and integrated planning approaches that we regularly apply for the plausibility testing and analysis of value-added financial forecasting. With the Corporate Economic Decision Assessment (CEDA), we have designed a value-oriented and simulation-based decision-making method that enables companies to identify their relevant value drivers, compare and uniformly assess possible courses of action as well as to make and document their corporate decisions consistently, taking into consideration the accompanying changes in performance and risk. (Figure 1, page 11)

The focus here is on the (added) value for the company resulting from the decision. This (added) value can, however, only be properly determined if the cash flow and the cost of capital used for the derivation of value are equivalent to one another for the specific decision. This is especially true for both the corresponding risks contained in the cash flow as well as in the cost of capital.



Dr. Marc Castedello Partner, KPMG in Germany

"KPMG's decision-oriented CEDA puts a 'price tag' on every corporate decision and by doing so consistently and practically considers not only the performance changes associated with the decision, but also the company's changes in risk."

In the issues we focused on in the previous years, we pointed out that a more pragmatic approach to compiling and considering risk is preferred in the practice of valuation. Based on the frequently purely qualitative assumption that the risk profile of a peer group is comparable with the valuation object, the beta factor of the peer group is transferred to the valuation object as the measure of the company-specific risk. This holds the danger of the valuations becoming less correct, the less the peer group companies are comparable to the object being assessed and with one another. Increasingly, we find that in the current dynamic market environment, the trend is to obtain competitive advantages by strategically changing the company so as to "distinguish" itself - specifically with regard to the own peer group. Examples of this are attempts at integration or the orientation toward markets that previously were outside the core areas of the company. Both of these are regularly directed at the change of the previous company performance, flanked by a change in the corresponding risk profile of the company. If, however, a "benchmark" is missing in the future, the "valuation means comparison" will become more difficult in the long-term and approaches and methods will have to be developed that go beyond the risk assessment that is based purely on the peer group.

It is precisely here that the CEDA connects and closes the increasing gap between the partially "assumed" and the actually sought risk equivalence "to be determined". For one, CEDA determines the valuationrelevant cash flow of a decision to be assessed on the basis of simulation-based dynamic and integrated planning models. On the other hand, CEDA simultaneously compiles the risks inherent in the cash flow and quantifies them in a uniform manner. Cash flow and the cost of capital become equivalent and are derived on the basis of a uniform dataset from the company's individual performance and risk drivers.

Various courses of action can therefore be standardized and assessed using a consistent approach and compared with one another in a performance/risk matrix. (Figure 2, page 13)

Based on this, it is possible in a second step with CEDA to just as transparently and distinctly consider additional risk components in the derivation of specific decisive costs of capital as well as individual disruptive and extreme scenarios. Extreme scenarios – by nature the probability of them occurring is very low – must regularly be considered in the decision-making process. Companies should, however, decide to what extent they wish to be prepared when a highly improbable event should occur. To that end, the impacts of such scenarios are to be assessed in isolation and additionally included in the decision.

CEDA therefore starts at precisely that spot where, due to the increasing complexity of the corporate environment, previous approaches and methods could only fulfill to a limited degree the requirements of the increasing demands for strategic financial forecasting and the necessary quantification of the inherent risks. CEDA then goes on to extend these approaches without abandoning the previous methods. On the basis of a conceptually closed approach, CEDA consistently considers the value-relevant performance and risk drivers of a decision within the decision-making calculations. The definitive added value that is generated in this manner is in the transparency and comparison of the alternatives through the actually expected change in value.



Risk profiles



2 **DERIVATION OF CASH FLOWS**

COMPLETE CONSIDERATION OF RELEVANT PERFORMANCE AND RISK DRIVERS IN DYNAMIC FINANCIAL FORECASTS

As a result of the high number of conceivable corporate scenarios, it can be assumed that the expected value sought for assessment purposes cannot properly be derived on the simple basis of single-value estimates. It reflects much more frequently a probable scenario, but not an expected value. (Figure 3)

Beyond that, the risks associated with a business model cannot be compiled by means of a singlevalue financial forecast. While a single-value financial forecast may in principle reflect the expected value sought, without knowledge of the distribution of the expected cash flow, it is not possible to make a statement about the inherent risks involved.

Along with the necessary, purely technical basis of an integrated planning model that must be in the position to simulate the widest range of parameters, the company's value drivers have to be compiled as completely and transparently as possible. Here we recommend that all the relevant value drivers be compiled at the various driver levels by means of detailed individual analyses. These include, amongst others, the dependencies of the specific business model on the overall markets just as it does the assessment of the business models to the capital markets. The industry-specific diversification effects or direct influences of the own business model by direct competitors should be investigated. The direct benchmarking with a peer group can provide valuable insights into relevant value drivers for the company. In addition, attention should be given to extraordinary external effects and disruptive scenarios. The cash flows are impacted depending on the specific business model to varying degrees by drivers that are usually located between macroeconomic overall market parameters (for instance, GDP development) and microeconomic influence factors (amongst others, specific corporate cost structures). (Figure 4)



The operationalization of the relevant performance and risk drivers, i.e. the assessment of their actual influence on the cash flow associated with the decision, is made by means of analyses that reproduce a relevance order of the individual drivers. The possible courses of action to be assessed can be reproduced in a performance/risk matrix taking into consideration the risk profile of the cash flow, allowing the assessment of which change of performance is associated with what change in risk (page 13). In a final step, it is then possible to properly discount the cash flow with the risk-equivalent cost of capital for the determination of the sum of the value associated with the specific decision. (page 54)

A dedicated corporate analysis in the framework of obtaining the cash flow completes the analysis of the relevant performance and risk drivers and in particular indicates to what extent the own business model is susceptible to extreme scenarios and disruptive effects. The information on the range and distributions of relevant value drivers obtained in the framework of the individual analyses form the basis for the conversion of simple single-value financial forecasts to multi-value, simulation-oriented planning instruments.

Dr. Andreas Tschöpel Partner, KPMG in Germany

Partner, KPIVIG IN Germany

"The performance and risk drivers that influence the cash flow must be reflected systematically, completely and unambiguously in the financial forecasts as well as in the costs of capital."

In view of this, the transparent aggregation of the conceivable scenarios serves to determine the expected value of the cash flow. Simultaneously, the breadth and course of the distribution function (volatility) of the cash flow provide additional, quantifiable information on the risk inherent to the cash flow. Subsequently, the consistent assessment of various courses of action is possible as a consequence of the resultant change in performance expected, taking into consideration the associated change in risk. Bad decisions based on a purely performance-oriented perspective can be avoided and risks considered transparently in the decision-making process.

The transparent distinction between performance and risk effects provided by CEDA makes it possible to make a final, purely value-oriented decision.

2.1 PREPARATION OF THE FINANCIAL FORECASTS

The financial forecast is of primary importance in the course of corporate valuations – regardless of the reason – due to the fact that it must completely reproduce the expected development of the operating performance and risk drivers. To properly compile this, systematically integrated and flexible planning models are required. These also form the basis for multi-value, strategic planning scenarios and simulations.

The degree of detail in the financial forecasts of this year's study participants increased significantly again. Of those surveyed, 61 percent reported their financial forecasts were based on a completely integrated forecast (previous year: 41 percent). This means that the valuation-relevant cash flow in the majority of the surveyed companies results from the interaction of the expected values in the individual planning components (balance sheet, profit and loss statement and cash flow statement).

The percentage of the participants in which an integrated planning of additional selected balance sheet items or a complete balance sheet was applied also increased compared to the previous year (2014/2015: 23 percent; 2013/2014: 21 percent). Therefore, in our opinion, about 84 percent of the companies base the derivation of the cash flow on an appropriate planning system. In addition, the findings confirm our expectations of a trend toward the extension of the controlling systems within companies. (Figure 5, page 17) It is especially remarkable that companies from the financial services use a completely integrated planning relatively seldom (24 percent). It is typical for the banking and insurance industry that they generally compile a budgeted profit and loss statement (budget P&L) on the basis of their existing and sales-budgeted new business. Instead of a forecasted balance sheet, it is common that only the supervisory board relevant items such as volume of loans and securities, capital investments, insurance-technical provisions and equity are listed so as to ascertain the budgeted maintenance of capital and solvability ratios. The selection of the planning period remains a matter of some incongruity. A longer planning period means – in particular in view of the observable, very dynamic market particularities – a greater planning uncertainty, if the planning period is not accompanied by additional scenario and simulation analyses.

A (very) short planning period, on the other hand, results in investment and product life cycles as well as long-term industry developments not being properly reproduced in the planning. This, in turn, leads to erroneous findings in the valuations and may then result in bad decisions.



The regulations of the IAS 36.33 (b) are also to be observed in the case of impairment tests – at least with the application of the value in use concept – whereby the financial forecasts should in principle not exceed a period of five years, unless a longer planning period – for instance on the basis of production and investment cycles – can be justified.

The majority of the companies surveyed continue to apply a planning period of three to five years, whereby there has been a slight shift to shorter planning periods compared to the previous year. Especially in the fields of consumer markets (24 percent), technology (20 percent) and media & telecommunications (14 percent), the participating companies reported that only a budget year was planned. This development may, in our opinion, be justified in that companies are reacting to the increasing volatility of the business models by shortening the planning period due to the fact that without the appropriate planning instruments for the simulation of future trends as well as a lack of appropriate scenario analyses, the planning insecurities increase the longer the planning period. This reaction does, on the one hand, accomplish that the quality of the planning for the near future is improved, but on the other hand, it contains the increasing danger that mid-term trends are included in the financial forecasts. at too late a date. (Figure 6, page 18)

Planning that exceeds the detailed planning period (strategic planning) is, at 38 percent of the study participants, experiencing a regressive trend (previous year: 42 percent). Strategic planning was especially performed more frequently by companies in the energy & natural resources (56 percent), technology (56 percent) as well as transport & leisure (64 percent) industries. This can be due to the fact that the sustainability of volatilities as well as dynamic changes of the former business models is already widely accepted in these industries. Nevertheless, the KPMG study "Survival of the Smartest" (https://www.kpmg.com/DE/de/ Documents/survival-of-the-smartest-2014-kpmg-en.pdf) shows that in the end every industry will be affected by the trend of an ever-increasing change of pace for existing business models. In addition, it should be noted that the so-called strategic planning frequently displays a significantly higher level of aggregation than integrated and flexible planning systems.

The goal must therefore be to consistently include future trends in integrated and dynamic financial forecasts, to reduce the associated planning uncertainties and to properly consider the resulting performance and risk effects in the valuation calculations.

Dr. Klaus Mittermair Partner, KPMG in Austria

"To the extent that the valuation object has still not reached state of equilibrium after the detailed planning stage, a general planning phase should be supplemented. For the terminal value phase, an estimate of the long-term level of returns for the company being valued can be performed, taking the convergence processes into account. This requires an exhaustive analysis with the strategic direction and positioning of the company as well as the convergence processes."

STRESS TESTING IN TIMES OF HIGHER VOLATILITY AND DISRUPTION

The consistent analysis of the impact of exogenous effects and disruptive events plays a major role in the course of corporate decision-making and the strategic financial forecasting on which they are based.

Robust strategies despite increased volatility

In increasingly globalized markets, exogenous factors such as currency exchange rates or political tension result in significant consequences for local economies - in ever greater dimensions and ever shorter intervals. Changes occur in the market conditions at a significantly more dynamic rate. Subsequently, companies are confronted with previously inconceivable, extreme conditions in increasingly shorter intervals. Almost every industry knows the so-called "black swans". Slowly or very suddenly, they threaten established and, to date, successful business models. Breeding black swans has even become a business model that has become extremely attractive for investors. If successful, the investment may pay off in multitudes of the original sum - which in turn accelerates the spiral of innovation and disruption even further. The consequence is that the half-life of successful, established business models may be rapidly reduced.



How should business leaders react?

In view of these extreme dynamics, companies are increasingly confronted with the task of subjecting their existing business models to stress tests that in particular measure the robustness toward previously inconceivable and disruptive exogenous influences. In practice, the assumptions made in the strategies with regard to the exogenous future and, especially, the interdependencies between these assumptions, are frequently subjected to plausibility testing on only a very rudimentary basis, if at all. In most cases the company does not possess the necessary tools. From the so-called set of premises there are often only a small number of factors - and these only singular – that vary, for instance, an oil price of 200, 100 or 50 US dollars, which basically represents a best case, worst case and realistic case. This means that not only are inconceivable developments ignored or neglected in the plausibility process as being too improbable, but the conceivable alternatives and, especially, the existing correlations between the individual exogenous influences, are frequently not included completely or unreliably or poorly. The corporate practice applied to date is, in our opinion, no longer suitable for reacting to the increasingly dynamic and erratic corporate environment.

How do successful companies act in a volatile environment?

Companies that are successful in a volatile environment are, along with their ability to most thoroughly include and process future environmental scenarios, also prepared for the greatest number of differing, even extreme manifestations of the future. They are in the position to test their strategic considerations in a near real "wind tunnel" prior to implementation and therefore test them against stress from hurricanes. They know the impact of the "inconceivable" or "improbable" and simulate the corporate performance of their strategies in a number of exogenous, extreme scenarios. This requires, as noted in section 2, additional flexibility and agility in the strategic corporate planning. The million-dollar guestion after the compiling of the future environmental scenarios is therefore: "What if?" Especially important in connection with extreme exogenous effects and disruptive events are which variations of such an extreme future are consistent within themselves, what combination of external influences is even reasonable and how does the company behave with the intended strategy in any one of these extreme weather conditions? Companies that have these responses available in addition to the proper measurement of their performance and risk profile will be successful in the long term because they are better prepared for an unexpected hurricane.

In general, one can base assumptions on not more than four to five different, extreme future scenarios. The corporate performance with the selected or intended strategy is to be simulated for each of these material scenarios. To compile extreme effects and disruptive events, we recommend setting up an appropriate scenario/strategy matrix that makes the risks and opportunities equally transparent. (Figure 7)



- Very successful, measured on the risk profile (EBIT, FCF)
- Successful, measured on the risk profile (EBIT, FCF)
- Not successful, measured on the risk profile (EBIT, FCF)

Beyond that, the decision-makers should always be aware of which exogenous influences have had a significant impact on the own business model to date and which extreme manifestations are basically conceivable. To compile extreme and disruptive future scenarios is to simulate what happens when these driving, exogenous influences are, for instance, no longer present, change or reverse themselves. The goal is to grasp the improbable and neutralize assumptions such as "that never happened before" or "that is completely out of the question". Only through this process can decision-makers recognize from which direction black swans might attack the own business model, i.e. what are the openings for disruptors. From this dissection of the own business model, special knowledge will come to light about how new business models might look that could complement or secure the former business model or that could even penetrate the competition's business models.

What is the added value?

The supplementation of the value-oriented, simulation-based strategic corporate planning for any possible weather conditions by additional approaches and analyses for detecting and utilizing disruptive exogenous extreme situations supports corporate leaders in deciding which strategy will be successful even under extreme exogenous scenarios. Within the framework of this two-stage decision-making process with CEDA, the orientation on performance (what is the most promising strategy) and risk (what is the most robust strategy) and therefore on the associated economic value added remains consistently in place, even with the assessment of extreme scenarios. The company is consequently prepared for any weather conditions, even the most improbable which, in case they do occur, leave the greatest mark. Companies that today have the relevant tools and approaches available and along with a satisfactory testing track also possess a

wind tunnel to simulate extreme situations – and can run it properly – will recognize unique opportunities and disruptive risks at an earlier date, make investments more successfully and with greater accuracy, minimize strategic risks and deliver reliable results. Subsequently, they will be somewhat more independent of a fluctuating and partially erratic environment. Not only will the capital markets respect such companies, but decisionmakers and supervisory boards are then in a position to more consciously and certainly apply or approve strategies and the associated investment funding.



"To be successful in the long term it is important not only to be able to predict the weather, but also to be adequately attired and to carry a survival kit for 'emergencies'."

2.2 GROWTH EXPECTATIONS

The assumptions with regard to the expected growth in sales as well as the achievable results, such as EBITDA or EBIT, are primary parameters in compiling a financial forecast.

From the general economic perspective, the achievable results are also influenced by the future overall macroeconomic development. The current economic forecasts for the upcoming years for Germany, Austria and Switzerland assume a primarily stable, positive growth. (Figure 8)

At an average of 4.9 percent, the basic growth expectations for sales are below that of the two previous years. (2013/2014: 6.1 percent; 2012/2013: 5.5 percent). (Figure 9)

The participating companies do, however, assume that the EBIT will, at 10.9 percent, increase disproportionally to sales. While the average value determined is significantly below the value of the previous year (12.2 percent), it well exceeds the expected growth in sales. The companies therefore continue to see the opportunity to increase their profitability. (Figure 10)

Economic forecast of real growth of the gross domestic product Total (in percent)

8

Source: KPMG analyses on the basis of data from The Economist Intelligence Unit Limited, 31 August 2015





2.3 DETERMINATION OF EXPECTED VALUES

Of the possible responses for the determination of expected values for the valuation-relevant cash flow, at 83 percent, the single-value estimate in accordance with the financial forecast continues to be the most popular amongst the participants (previous year: 86 percent). (Figure 11)

For the first time this year, there were participants that applied more complex systems for the derivation of the valuation relevant cash flow. As explained in our special subjects, planning takes on a greater importance in times of increased uncertainty and volatility. In view of this, it appears to be unavoidable for companies to apply financial forecasting as a steering instrument and consistently expand their quality and flexibility. In particular scenario-based, multi-value financial forecasts make it possible to systematically record the performance and risk drivers and to reproduce them sufficiently.

2.4 DETERMINATION OF THE SUSTAINABLE YEAR

An important value driver in determining the value of a corporation remains the amount of the cash flow in the terminal value. In principle, the company should have reached the so-called "steady state" as the starting point for determining the terminal value.

The vast majority of the companies (92 percent) based their determination of the terminal value on the last projected year – if necessary under consideration of top-down adjustments. (Figure 12)

It is precisely the sustainable result that should be derived on the basis of different scenarios and considering the long-term performance so as to determine requisite expected values for valuation purposes. Simulation-based methods such as Monte-Carlo simulations are available to that end.







QUANTIFICATION OF THE OPERATIVE RISKS IN THE COST OF CAPITAL

The proper recording of the operative risk in the cost of capital is of primary importance for the valuation of companies. The future cash flows are uncertain and therefore have to be included in the valuation calculation with their expected value. At the same time, the operative risk of the cash flow equivalent must be reflected in the cost of capital, which makes its quantification a basic necessity.

To consider the risk contained in the cash flow in the cost of capital, the practice of valuation applies a market risk premium based on the Capital Asset Pricing Model (CAPM). The market risk premium is weighted with the company-specific beta factor. As a rule, the beta factor is determined on the basis of the peer group. To what extent the peer group applied actually carries the operative risk sought for the assessing decision cannot be definitively judged due to the lack of uniform and operational approaches to risk quantification. In the result, the required "generated risk equivalence" is frequently replaced by an "assumed risk equivalence". If there is no congruence, erroneous valuations may result from an insufficient consideration of the risk. The peer group based approaches generally applied to date can only partially document the operative risk of the valuation object, if

- Companies are increasingly less comparable to one another on the basis of purely qualitative distinctive features,
- Business models increasingly penetrate different industries at the same time,
- High volatilities in the capital markets increasingly hamper the derivation of stable empirical data.

CEDA supplements the previous established methods and quantifies the operative risks associated with a business model. The basis for this is formed by integrated planning models that are in the position to process scenarios and simulation analyses. (Figure 13) The influence of value drivers on the volatility of the cash flow and therefore on an important part of the operative risk of a company can both be isolated – by means of so-called tornado diagrams – as well as illustrated in complete combination in the form of a distribution function of the cash flow from which the risk profile can be read. (Figure 13 and Figure 14, page 26)

In the framework of this transparent approach it is possible, under consideration of a number of conceivable scenarios, to not only determine the expected value of the cash flow for the individual years, but also to quantify a very material part of the operative risk – reflected in the future fluctuations of the cash flow.



A decision about the various alternative actions, for instance, the acquisition of the transaction object 1 or 2, cannot therefore be made simply by considering the individual performance, but rather by also considering the risk that accompanies the specific performance. In this way, it is possible to assess whether an action has a higher or lower performance and how its related risk position is. In addition, direct comparisons to other alternative actions are possible. These comparisons are visualized by means of a performance/risk matrix. (Figure 15) Beyond that, the interdependencies of the capital market that may occur can be compiled – depending on the alternative course of action – between the overall market and the company. The company's valuationrelevant risk, under consideration of its risk profile as well as its external interactions with the capital market, can be derived in the result and correctly compiled in the cash flow and the equivalent in the corresponding cost of capital.

This provides extended possibilities to base corporate decisions on additional, robust quantitative analyses. Possible valuation errors based on purely qualitative statements can be avoided.

Dr. Andreas Tschöpel Partner, KPMG in Germany

"The performance and risk-based CEDA approach developed by KPMG makes the compiling of company-specific risks transparent in the result. It extends the existing valuation methods and demonstrates possible solutions for valuations in a world that is becoming increasingly less comparable."





3.1 WACC OVERVIEW

The downward trend of the weighted average cost of capital (WACC) that has been observed since 2009/2010 continued again within the last year. (Figure 16) The primary cause of this development is the decrease of the risk-free rate and the associated decrease in the costs of equity and debt.

When considering the average WACC applied by all the surveyed companies as well as the WACC of the indi-

vidual sectors, it should be noted that the data stems from companies from different countries, partially from different currencies and from varying points of time.

The decrease of the overall average is also reflected in the developments of the individual sectors. The greatest decreases of 1.9 and 1.4 percentage points are to be found in the health care and financial services industries, respectively. In the chemicals & pharmaceuticals industry, the average WACC was 1.2 percentage points below the value of the previous year. The technology and energy & natural resources industries each registered a decrease in the average cost of capital of 1.1 percentage points. Only in the media & telecommunications industry was there a slight increase. (Figure 17)



This year's survey once again demonstrated that the companies frequently use different costs of capital for different valuation purposes.

While with about 63 percent, a majority of the study participants perform at least one comparison between impairment test and M&A transactions/investment decisions, only 45 percent of the companies reconcile the cost of capital in the framework of valuations for fiscal purposes with those for the impairment test. (Figures 18 and 19) This result is to be viewed critically in that the cost of capital for the individual valuation purposes should at least be based on consistent concepts and there should only be event-driven deviations in the parameters in isolated cases – if at all.

3.2 RISK-FREE RATE

After an increase of the risk-free rate was observed for the first time last year, the continuing downward trend of the average risk-free rate that began in 2008/2009 has continued this year. Analogous to the development of the returns for bonds from Germany, Austria and Switzerland, the risk-free rate used by the study participants in the study period also dropped dramatically to an historical low of 1.8 percent. (Figure 20, page 29)

In appraising the average risk-free rate applied by all the surveyed companies, it must also be considered that the company data here stems from different currency zones (euro versus Swiss franks) and from different reporting dates.

While the companies from Germany and Austria applied a risk-free rate that decreased by 0.8 percentage points to 1.9 percent, the risk-free rate in Switzerland was 1.4 percent and therefore 0.5 percentage points below the previous year. As a result of the strong drop of the average risk-free rate applied in Germany and Austria, the difference in returns between the two currency zones continued to decrease. (Figures 21 and 22, page 29)





Yield curve

22

European Central Bank versus Swiss Nationalbank (in percent)

Sources: KPMG analyses on the basis of data from the European Central Bank and Swiss Nationalbank



- EUR risk-free rate on the basis of the ECB yield curve (AAA sample, three-month average)
- *EUR risk-free rate as per the annual Cost of Capital Study*

CHF risk-free rate on the basis of the Swiss Nationalbank yield curve (three-month average)

CHF risk-free rate as per the annual Cost of Capital Study

When analyzing the risk-free rates applied, the different maturities of the government bonds/yield curves used also have to be considered. In view of the, generally, existing premises of the going concern and the resultant infinite timeframe of a corporate valuation, the longest-term interest rate is preferred to guarantee the term equivalence and therefore the application of long-term yield curves.

This principle was adhered to by 37 percent of all the study participants in the observation period (previous year: 36 percent). Consequently, they apply government bonds or yield curves with a term of 30 years or more to determine the risk-free rate. In Germany and Austria, this procedure was applied with an above-average frequency (43 percent). In the Swiss companies, the derivation continues to be based on government bonds/yield curves with a maximum term of ten years (70 percent). (Figures 23 and 24)

To illustrate the effects that result from applying tenyear or thirty-year bonds, in the following chart we have compared the average difference in returns of government bonds from Germany and Switzerland. (Figure 25)



25 **10-year versus 30-year bonds** Germany versus Switzerland (in percent)

Germany versus Switzenanu (in percent)

Sources: KPMG analyses on the basis of data from the European Central Bank and Swiss Nationalbankbank



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EFFECTS OF THE LOW-INTEREST PHASE IN THE FRAMEWORK OF CORPORATE DECISION-MAKING PROCESSES

The development of the return on German bonds, which is reflected in the historically low risk-free rate, has a material impact on the appraisal of every investment, transaction or financing decision in a company. Within the valuation calculations applied for the decision-making, the capitalization interest rate and therefore, the risk-free rate, are of material importance. Simply assuming the current interest rate without consideration of the impact on the other parameters of the capitalization interest rate and the cash flow leads to distortions of the valuation results and therefore the basis of the decision-making.

Transactions

The basis for determining a purchase price is generally based on a valuation of the transaction object. The valuation requires a forecast of the transaction object's cash flow and the required return on the investment as expressed by the cost of capital. In the past few years, extensive empirical studies have shown that despite the reduction in the risk-free rate there has not been a corresponding decrease of the expected returns for higher risk investments. The market risk premium - as the difference between generally expected returns and the risk-free rate – should have subsequently increased, which would reflect the increased riskaversion observed in the practice of valuations during this period. Only since 2015 – when the risk-free rates again dropped significantly - have there been signs from both the capital markets as well as in the initial

announcements of some companies that expected returns have been reduced.

While the companies' expectations remain, for the most part, unchanged, this development is being expressed in increasing stock prices and a tendency to higher purchase prices. In addition, there is the high level of liquidity available in the financial markets and for transactions.

With the simple assumption of the low risk-free rate without the corresponding adjustment of the expected cash flow and/or risk premiums, there is the danger that in the framework of the transaction the corporate valuations are too high and, consequently, a too high transaction price is paid.

Karen Ferdinand Partner, KPMG in Germany

"In particular the buyer should consider which adjustments are to be performed on the risk premiums or the planned profits, so that the transaction price paid does not exceed the fundamental corporate value. The adjustment requirements can be made transparent by means of suitable methods such as scenario and simulation techniques and therefore included in the decision-making process."

Purchase price allocation and impairment test

The transaction is followed by the recognition of the company acquired in the consolidated balance sheet of the acquiring company. Within the framework of a purchase price allocation, all the tangible and intangible assets and debt are applied at fair value; the residual volume of the purchase price represents the goodwill. The issue of "proper planning" and "adequate costs of capital" continue in this subsequent phase of the transaction. An overpayment resulting from an overvaluation will encumber the group's earnings with write-offs in the coming years.

This risk always exists if the actual events remain below ambitious expectations or the returns on alternative investment opportunities and, therefore, the costs of capital continue to increase. In particular with listed companies, the write-off of goodwill or other assets takes on a public aspect when financial statements or annual reports are published.

Pension provisions

The height of pension provisions (as with all long-term provisions) is currently being impacted to a high degree by the interest rate. As a result of the low risk-free rate, the value of the liability item, which is based on the discounting of future obligations, is increasing. This then would, amongst other things, decrease the balance sheet equity ratio – if other conditions remained unchanged; the equity ratio in turn is applied by financial analysts to assess the company or affects the conditions for obtaining credit.

Corporate planning and steering

Primary issues for decision-makers in the framework of strategic planning and steering of companies are:

- What are my company's relevant areas and products that will also fulfill my expectations for earnings in the future?
- What risks are associated with these expected returns? How are these priced?

When applying benchmark and target returns, the question must be raised as to whether these were properly determined considering the current capital market situation in general and the low risk-free rate in particular. In addition, uncertainties in the expected profit contributions should be made transparent by means of scenarios and simulations and reproduced correspondingly through risk premiums in the costs of capital and, therefore, in the target returns.

Refinancing opportunities/risks

The current low-interest environment has dramatically improved the opportunities and costs of refinancing for companies. Companies should take advantage of this window of opportunity, in particular for the reorganization of existing financing structures.

The "cheap money" does, however, carry the risk that the company may make investments especially in view of the favorable conditions for debt, without properly appraising the inherent risks of the investment decision. For instance, the risks of any subsequent financing that must be concluded at future (more expensive) conditions. The supposedly positive investments may then prove themselves to be unprofitable at a later point in time.

Inheritance and gifts

In determining the inheritance and gift tax, at the moment the so-called simplified fiscal discounted earnings method is frequently being applied. Unlike with the normal discounted cash flow method, this method does not hark back to expected profit volumes, but rather to data from the past and the relevant capitalization interest rate is not derived from parameters observable in the market, but rather it is stipulated once a year by the German Federal Ministry of Finance.

In 2015, the capitalization interest rate was 5.49 percent. The leading capitalization factor for 2015 was therefore 18.21. In 2014, it was still at 14.10. That corresponds to an increase of about 30 percent, which leads to a correspondingly higher gift or inheritance tax value of the business assets. (Figure 26) In view of this, in the framework of any gift or inheritance, it should be examined if a more favorable fiscal situation cannot be achieved by conducting a fundamental corporate valuation as per the principles of IDW S 1 – also permitted as an alternative to the simplified income method. Counterproductive is that in a valuation as per IDW S 1, the consideration of the future expected profits is generally above the profits achieved in the past. Overall, the value obtained with the simplified income method for the year 2015 is, however, on average about 20 percent above the corporate value as per IDW S 1.



3.3 MARKET RISK PREMIUM

The market risk premium describes returns demanded by an investor above the risk-free rate for holding a market portfolio containing risky securities. It should be noted that the market risk premium is not a parameter that is directly observable in the capital market, but rather – in accordance with the Capital Asset Pricing Model CAPM that is predominant in practice – only represents the difference between the empirically observable parameters market return and risk-free rate.

While the market risk premiums of the participating companies remained relatively constant in the first years of the study, an increase has been observed since 2011/2012. (Figures 27 and 28)

The significant increase, especially in 2012/2013, was due to the crisis-related, elevated risk aversion, which is reflected in the recommendation of the Technical Committee for Business Valuation and Economics (Fachausschuss für Unternehmensbewertung – FAUB) of the Institute of Public Auditors in Germany (Institut der Wirtschaftsprüfer – IDW). The renewed increase in the current year is due to the significant drop in the risk-free rate, which many of the participating companies compensated, at least partially, with an increased market risk premium.

The average market risk premium applied by the German study participants of 6.3 percent was in the middle of the range recommended by the FAUB. The recommendation of a market risk premium (before personal taxes) of between 5.5 percent and 7.0 percent was issued in the framework of the "Comments of the FAUB regarding the consideration of the financial market crisis for the determination of the discount rate in the valuation of companies" concluded on 19 September 2012.

Due to the fact that the market risk premium is not an industry-dependent parameter, the market risk premiums range once again across industries in a narrow spectrum of between 6.0 and 6.5 percent. Only in the financial services industry was it, at 5.6 percent, significantly below this range. (Figure 29, page 34)

The analysis of the individual companies shows that about 77 percent of the German study participants applied a market risk premium between 6.0 and 7.0 percent. (Figure 30, page 34)





Consumer Markets			6	.2		
Energy & Natural Resources			6	.1		
Financial Services	<u>5.6</u> 6.0					
Health Care						
Industrial Manufacturing	6.1					
Media & Telecommunications	6.3 6.5					
Technology						
Transport & Leisure	6.0					
Total	6.1					
	0	2	4	6	8	

6.4

6.2

10





PARADIGM SHIFT IN THE DETERMINATION OF THE MARKET RISK PREMIUM

An extremely volatile capital market environment, linked with two fundamental critical situations, has resulted in the market risk premium being more controversially discussed than hardly any other cost of capital parameter. The discussion centers around both the height of the market risk premium as well as the style and manner of its determination.

All too frequently it has been forgotten in this discussion that the market risk premium is not a directly observable parameter, but rather - in accordance with the capital assets pricing model CAPM predominant in practice - only represents the difference between the empirically observed parameters market return and risk-free rate. As a model, the CAPM breaks the empirically observable market return down into its components. It is precisely therefore not a model for formulating a return from the combination of a risk-free rate and a freely chosen market risk premium, a return that has nothing more in common with the returns found on the capital markets. Consequently, it is therefore necessary to place the focus of the analysis on the market return in general. The question is therefore not, what is the "right" market risk premium, but rather what is the "right" market return. When the "right" risk-free rate is then deducted, the result is the "right" market risk premium.

In the cost of capital studies of the last three years, we showed how a robust determination of the market risk premium – based on the assumption of, for the most part, stable (real) return expectations – can also succeed in times of financial and debt crisis. The basis for this, as well as for the vast majority of other studies on the market risk premium, was analyses of historical returns that indicate for the most part constant risk premiums over time.

Alongside that, models for determining implicit returns have established themselves for some time in research and more recently in the practice. They allow a future-oriented determination of returns on the basis of current capital market information. Here, risk premiums are taken into consideration that can change over time. The core is the familiar valuation equation:

Corporate value = Cash flow/Cost of capital

is converted into

Costs of capital = Cash flow/Corporate value.

For the prognosis of the cash flow, analysts' estimates are applied that are, with the increasing capital market transparency, available in an ever greater scope for an increasing number of companies and therefore allow the standardized application of models for the determination of implicit returns on a broad basis. The observable stock prices serve as the basis for corporate value. In this way, it is possible to derive implicit returns both for individual companies as well as for entire indices and, therefore, implicit costs of capital for specific markets. (Figure 31, page 35) Both the use of historical returns as well as implicit returns each display strengths and weaknesses, which explains why both methods are subject to justifiable criticism.

An approach that was superior to these two methods could not, however, be identified to date. It is precisely that, in our opinion, that makes it necessary to not only focus on one, but rather to apply both methods for the determination of the market risk premium in the practice of valuation, so as to benefit from the individual advantages. These advantages in the historical returns are in the reliable estimate of a stable corridor of returns. In the implicit returns there is an advantage in the possibility of the reporting date estimate and the stipulation of short-term changes of the expected returns over time. An additional advantage of the increasing importance of implicit and therefore future-oriented returns is that the cost of capital parameters risk-free rate and market risk premium are not determined independently of one another, but rather in a manner that is increasingly coherently with each other. The risk-free rate has already



been determined for years based on the reporting date and future-oriented on the basis of current returns and interest yield data.

The combination of historical and implicit returns described makes it possible to estimate future-oriented returns and their change over time and to effectively exclude influences from any cooling or overheating phases of the capital markets on the returns by simultaneous observation of long-term historical yield corridors.

How is the development of implicit returns displayed? Following the crisis-related increase of the expected returns in the years 2011 and 2012, a normalization in the direction of the long-term average of nominal circa 9 percent per year (or real circa 7 percent per year) occurred. This level then demonstrated itself to be quite stable throughout all of 2014. With the beginning of 2015, however, a noticeable decrease in returns began – both nominal and real. Only the latest turbulences in the capital markets of China and the uncertainty with regard to the interest policy of the Federal Reserve Bank resulted in a return to an increase in yield. (Figure 32, page 36)

The assumption applied to date that primarily stable expected returns was to be critically questioned so that on the basis of the considerations described at the beginning of 2015, for the most part, a constant market risk premium of 6.75 percent with a risk-free rate tending downward and decreasing market returns was appropriate. As a result of the implicit returns of the DAX since the end of 2013, an eye must be kept on the recent trend of falling returns. Should this be the case, the impacts on the financial forecasts and the determination of the sustainable earnings for the purposes of corporate valuations will have to be critically reviewed.

Ingo Bertram

Senior Manager, KPMG in Germany

"The extension of the spectrum of analysis for the determination of the market risk premium by implicit returns directs the focus once again more clearly to empirical observable parameters and expands the foundation of the estimate. This then also relativizes discussion from the past about the individual influences in the previous estimates."



____ Implicit returns/Market risk premium

3.4 BETA FACTOR

The beta factor is another important element in the determination of the costs of equity. It expresses to what degree the company-specific risk is comparable with that of the market portfolio.

The difficulty in determining the future beta factor results from two aspects. On the one hand, in practice beta factors are generally determined on the basis of historical returns from which the future-oriented beta factor is derived for valuation purposes. On the other hand, there are various hurdles in the compiling of historical beta factors – for example, that cash generating units (CGUs), as units to be valuated in the framework of the impairment test, are in principle not listed companies.

Consequently, no beta factors are directly perceivable. In practice, comparable listed companies (peer group) are regularly used that (should) serve as the best possible reproduction of the CGU's operative risk. (Figure 33, page 37)

With the selection of suitable peer group companies, there is the possibility to consider the risk profile of the CGU to be assessed in a standardized manner. Furthermore, by forming averages, the influence of the incidental fluctuations of individual stock returns is reduced. In addition, it must be kept in mind that the derivation of the beta factor from the peer group is implicitly foreseen for determining the fair value less costs of disposal and the value in use, so as to take into account the necessary market perspective.
If the individual CGUs are subjected to different operative risks, an individual peer group should be determined for every CGU so the differing risk profiles of the individual CGUs can be adequately reproduced. As in the previous year, however, less than half of the study participants perform a differentiation of the peer group for the individual CGUs (2014/2015: 43 percent). The application of beta factors from the group/company compiling the balance sheet is only then appropriate if the operative risk of the CGU coincides with the group and the stock price is not subject to major fluctuations that are not connected to the company's risk profile. To document the operative risks of individual CGUs, it is also possible to apply performance and risk-oriented approaches; this allows a distinct, transparent risk quantification on the basis of the CGU's individual business model. (see page 10).

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1.0

Unlevered beta factors

0.86

2010/

2011

0.85

2011/

2012

In determining the cost of capital, the systematic operative risk is reproduced by means of the unlevered beta factor. The average unlevered beta factor applied remained almost unchanged at 0.85 (previous year: 0.83). (Figure 34)

Within the industries, the greatest increase was to be observed in the energy & natural resources industry. Driven by German companies, the unlevered beta fac-

0.89

2012/

2013

0.85

2014/

2015

0.83

2013/

2014



0.90 0.8 0.89 0.80 0.6 0.4 0.2 0 2006/ 2007/ 2008/ 2009/ 2007 2008 2009 2010

Total

Source: KPMG

Average unlevered beta factors

0.97

Value in use

Fair value less costs of disposal

tor increased by 0.13. This development is primarily due to the continuing uncertainties and the difficult market conditions.

By contrast, in the automotive and chemicals & pharmaceuticals industries, a clear decrease could be observed. For these industries, a decrease to 1.08 (previous year: 1.16) and 0.82 (previous year: 0.93) was seen. (Figure 35)

Levered beta factor

The levered beta factor serves as a metric for the systematic risk under consideration of the capital structure risk from debt.

The effects from the slightly increased unlevered beta factor, the decreasing cost of debt and the increased debt ratio of the companies surveyed – compared to the previous year – resulted in a moderate increase of the levered beta factor to 1.03. (Figure 36)

As a result of the definition of the beta factor as a relative measure of risk, the average of all levered beta factors of the market must be 1.00. As Figure 36 shows, the values attained have for years ranged closely around this theoretically correct value. From this it can be concluded that the calculations performed were appropriate and sufficiently represent the general market. This demonstrates that at least in the average of the impairment test there are no systematic errors in the estimation of the beta factor and therefore the systematic risk.

35 Average unlevered beta factors by industry Source: KPMG





The highest levered beta factors were used by companies in the automotive (1.27) and industrial manufacturing (1.21) industries, the lowest values were observed in the health care industry. (Figure 37)

3.5 COST OF EQUITY

With the Capital Asset Pricing Model, the levered cost of equity results from the risk-free rate, market risk premium and the levered beta factor. (Figure 38)

The average levered cost of equity decreased again to 8.4 percent. This decrease results from the changes of the individual parameters described above. The decreasing effect of the lower risk-free rate on the cost of equity was only partially compensated by the increased market risk premium and the increased systematic risk in the form of the levered beta factor.

There are clearly differing developments in the average cost of equity applied in the individual industries. For instance clear decreases can be seen in the chemicals & pharmaceuticals, energy & natural resources, financial services and health care industries, while in other industries the development has been more constant. (Figure 40, page 40)

Average levered beta factors by industry

1.27

Source: KPMG

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Average levered cost of equity

Source: KPMG



When considering the average cost of equity applied by all the surveyed companies as well as the cost of equity of the individual sectors, it should be noted

that the data stems from companies from different countries, partially from different currencies and from varying points of time. (Figures 38 to 40)

2013/2014



3.6 OTHER RISK PREMIUMS

9.8

10

As in the previous years other risk premiums do not play a role for the majority of the study participants. This year 54.1 percent of the participating companies did not apply any other risk premiums to determine the cost of capital (previous year: 63.1 percent). (Figure 41, page 41)

The country risk premiums continue to represent the premium most often applied, due to the fact that local market risk premiums frequently cannot be empirically measured to a satisfactory degree. A total of 25.0 percent of the companies applied a country risk premium (previous year: 26.9 percent). The small size company premium also continued to lose importance. Only 7.4 percent of the study participants applied such a premium (previous year: 10.8 percent).

The use of premiums is, however, marked by very distinct regional differences. Small size company premiums are applied much more frequently in Switzerland, even if significantly fewer Swiss companies considered the premium in 2014/2015 (2014/2015: 24.1 percent: previous year: 34.4 percent). Overall, 48.3 percent of the Swiss companies (previous year: 50.0 percent) completely avoided the use of an additional risk premium. (Figure 43, page 42)





Johannes Post

Partner, KPMG in Switzerland

"Compared to Germany and Austria it is noticeable that in Switzerland much more frequently risk factors are considered in the valuation with cost of capital premiums – or even by means of, in this study, unexamined discounts to the value of equity for missing fungibility or controls. This form of risk assessment is used and expected in, for instance, fairness opinions or expert opinion for courts. This is certainly attributable to the fact that the predominant international valuation practice in Switzerland compensates missing expected values for the cash flows with additional risk premiums in the cost of capital. It would certainly be wrong to conclude that the Swiss companies are consistently valuated lower. Corporate acquisitions and impairments would otherwise be more frequent. Much more it is a matter of considering the interactions of all the valuation assumptions. Growth of cash flow and the basis of the cost of capital are only two elements of the composition."





3.7 COST OF DEBT AND DEBT RATIO

Cost of Debt

Along with the cost of equity, the cost of debt represents the second determinant for the derivation of the weighted cost of capital.

In the practice of determining both the cost of debt – as well as the capital structure of the group or CGU – the approaches presented in Figure 45 (page 43) are primarily used.

However, only the derivation of the capital structure and the cost of debt from a peer group – analogous to the approach with the beta factor – fulfills the market perspective as required by IFRS.

As in the previous year, the majority of the surveyed companies also fulfilled this IFRS requirement. In particular in the calculation of the fair value less costs of disposal, the vast majority of the study participants apply peer group parameters. (Figure 45, page 43)

The average cost of debt dropped – analogous to the development of the risk-free rate – significantly once again and is now 3.4 percent compared to 4.6 percent in the previous year. (Figure 46, page 43)

The clearest change in the cost of debt was reported by the German study participants. The average cost of debt here decreased by 1.4 percentage points to 3.5 percent (previous year: 4.9 percent).

The average cost of debt reported by Swiss study participants dropped from 4.1 percent to 3.0 percent. The decrease was significantly more modest in Austria. Here, the average cost of capital was 3.4 percent and, therefore, only marginally below that of the previous year of 3.6 percent.

In the development of the cost of debt, it is especially noticeable that the decrease of 0.6 percentage points in the German and Swiss companies was greater than in the corresponding risk-free rate. By contrast, the risk-free rate of the Austrian participants fell by 0.6 percentage points more than that of the cost of debt. It is therefore to be assumed that the risk premium required by lenders in Germany and Switzerland decreased, while Austrian companies had to provide a higher risk premium in the framework of borrowing.



Value in use Fair value less costs of disposal

When considering the average cost of debt for all the surveyed companies and the individual industries, it should be noted that the data stems from companies from different countries, partially from different currencies and from varying points of time.

Debt Ratio

To determine the WACC requires a weighting of the cost of equity with the equity ratio (at market values) and the cost of debt with the debt ratio (at market values). The debt ratio¹ is calculated from the ratio of market value of the debt to the market value of the entire capital.

The average debt ratio increased compared to the previous year. It increased to 28.6 percent (previous year 26.2 percent) and, therefore, is at about the level of the average for the last four years. (Figure 48)

The (absolute) change was most noticeable in the study participants from Austria and Switzerland. Here, the average debt ratio increased clearly to 36.7 percent (previous year: 30.7 percent) and 27.2 percent (previous year 22.5 percent), respectively. The increase to 27.5 percent in Germany (previous year: 26.6 percent) is much

1 This value was not explicitly queried in the study. It was therefore determined using the equity ratio data.

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Average cost of debt by industry (in percent)

Source: KPMG





Source: KPMG



more moderate. These changes are not necessarily attributable to the increased uptake of debt. As a result of the perspective, there are additional effects such as the development of the market value of the equity that need to be considered. The highest debt ratios were to be found in the energy & natural resources, industrial manufacturing and technology industries, the lowest in the health care industry. (Figure 49)

3.8 SUSTAINABLE GROWTH RATE

The percentage of participants applying sales and earnings growth rates from the past or detailed planning to determine the sustainable growth rate remained almost unchanged at 39 percent. This method may disguise conceptual weaknesses with regard to the equivalence between the cash flow and growth rates applied, due to the fact that it is only correct if the cash flow actually used for the valuation is reduced by corresponding profit retentions. Due to the fact that the growth rates derived from cash flow and earnings growth rates are, however, frequently within the range of the company's historical inflation rate, in practice they generally match the normally established distributable cash flow from the earnings. The equivalence therefore appears to exist, despite the conceptual weaknesses. (Figure 50)

General growth and inflation rates are applied by 36 percent of the participants for measuring the sustainable growth rate (previous year: 43 percent). The most preferred company-specific inflation rate, from the concept perspective, was used by 9 percent of the participating companies (previous year: 0 percent). Due to the fact that only company-specific rates of change can properly reflect the individual sales and procurement markets as well as any potential increase in efficiency, they are preferred in the measurement of the sustainable growth rate to general (consumer-oriented) inflation rates.



The average sustainable growth rate of the surveyed companies this year was 1.4 percent (Figure 51, page 45). It is to be noted that the aggregate effect stems from opposing developments in the individual countries. While the average growth rate of the Austrian participants is about the same level as the previous year (previous year: 1.2 percent), there was an increase in the surveyed companies from Germany. Here, the average sustainable growth rate was 1.4 percent (previous year: 1.2 percent). In the Swiss companies, a significant decrease of the sustainable growth rate applied to 1.4 percent was observed (previous year: 1.8 percent). (Figure 52)

3.9 COST OF CAPITAL OUTSIDE EUROPE

With increasing internationality, the requirements for the risk-adequate determination of the costs of capital increase for all valuations – and especially with the impairment test. Because the cost of capital parameters presented in the sections 3.1 to 3.8 – with the exception of the risk premiums – all relate exclusively to Europe, this section presents the results of the survey for other regions. Only those cost of capital parameters are presented where differences between the regions are to an unusual degree. As expected, the average weighted cost of capital – after corporate taxes, but prior to growth discount – differed significantly between the regions. In Asia an increase in the average cost of capital was observed. Here, the average WACC increased to 9.1 percent (previous year: 8.8 percent). In Europe and North America, by contrast, a slight decrease was observed (Figure 53). The increase of the weighted cost of capital in Asia is in particular attributable to the increased cost of equity (2014/2015: 10.8 percent; previous year: 9.8 percent). In addition, in this region there was also an increase to 5.3 percent (previous year: 5.0 percent) in the average cost of debt. (Figure 54 and Figure 55, page 47)



The decrease of the average cost of capital to 7.5 percent in North America (previous year: 7.8 percent) is attributable to the reduced cost of equity and debt. In addition, the debt ratio decreased slightly. (Figure 56)











4.1 TRIGGER AND RESULTS

A total of 59 percent of the participating companies recognized an impairment on goodwill or assets. Therefore, the percentage of companies that recognized an impairment in the consolidated financial statements shown in the study is about at the same level as in previous years. (Figure 57)

As in the previous year, an impairment was recognized most frequently on individual assets (2014/2015: 33 percent; previous year: 24 percent). The percentage of companies that recognized both an asset impairment as well as an impairment on goodwill decreased slightly to 19 percent (previous year: 21 percent). Only 7 percent of the companies recognized an impairment only on goodwill (previous year: 12 percent). (Figure 58)





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With an asset impairment, the average write-down was 100 million euros (previous year: 173 million euros). For goodwill, the average impairment was 89 million euros (previous year: 100 million euros). This development is partially attributable to the write-offs performed in the previous years and partially due to improved earning perspectives.

The impairments were once again generally initiated by so-called triggering events (2014/2015: 53 percent; previous year: 57 percent). (Figure 59)

Extraordinary write-offs were most frequently the result of changes in the estimate of the future development (lower long-term expectations). With 59 percent, this cause for write-offs became, however, less important than in the previous year (previous year: 68 percent). Instead, a decrease in orders and decline in price became more frequent triggering events. They



increased compared to the previous year by 3 percentage points and 6 percentage points, respectively. (Figure 60, page 49)

4.2 DETERMINATION OF THE RECOVERABLE AMOUNT

The recoverable amount is calculated as per IAS 36.6 and IAS 36.18 as the higher of the two following sums: Fair value less costs of disposal and value in use.

A total of 58 percent of the participating companies determined only a value in use (previous year: 67 percent). Only a fair value less costs of disposal was determined by 20 percent of the companies (previous year: 16 percent). The percentage of companies that determined both values increased to 22 percent (previous year: 17 percent). (Figure 61)

As in the previous years, regional differences were again observed. Similar to the previous year, the participating Swiss companies applied the value in use method significantly more frequently. The Austrian study participants, by contrast, applied this method less seldom this year.

At 86 percent, the number of companies increased that based their determination of the recoverable amount on a uniform financial forecast for both value methods (previous year: 74 percent). This is to be regarded critically, in particular in view of the different regulations for considering restructuring measures and expansion investments in the financial forecasts.





100



2013/2014 2014/2015



In determining the fair value less costs of disposal, about 13 percent of the surveyed companies used both the capital-value oriented DCF method as well as the market-oriented method (previous year: 6 percent). Nevertheless, as in the previous year, the DCF method serves as the most important valuation method, at 74 percent, as a result of a lack of comparable market data for the CGUs (previous year: 81 percent). (Figure 62)

4.3 PLAUSIBILITY

Due to the fact that the fair value less costs of disposal concept is a matter of the exit price and, therefore, primarily a matter of the estimate by the potential purchasers, the IFRS, especially for this concept, foresees a plausibility test of the main parameters with the expected values of the market participants. To assure the risk equivalence of the cost of capital, we recommend also performing a comparison with the market expectations with the calculation of the value in use. This allows for divergences between the market and management expectations to be scrutinized and, if necessary, for adjustments to be made in the cost of capital.

The percentage of companies that performed a plausibility test of the valuation results increased dramatically compared to the previous year: 72 percent of all the listed companies performed such a plausibility test this year (previous year: 57 percent). Especially multiples were used significantly more often for the plausibility testing of the derived values this year compared to last year. (Figure 63) The market capitalization should serve as the basis for testing the determined values for listed companies. If the DCF method is used for valuating the CGUs, it is recommended that a comparison of the total of the values of all the CGUs be compared with the market capitalization of the group.

With the transfer it may be necessary to consider a control premium due to the fact that the market capitalization does not generally reproduce the control or a relevant influence. Furthermore, the valuation perspective and the information available to the capital market may play a role in a comparison of the values determined with the value in use method with a market capitalization. For the plausibility testing, branch and analyst reports or multiples should also be used along with the market capitalization.

As in the past, almost all the participating DAX-30 companies performed a plausibility test of the values determined (2014/2015: 97 percent). Hereby, they primarily used the group's market capitalization (37 per-

cent). Multiples were, with 26 percent, as well as analysts' price targets and sum-of-the-parts valuations from analysts, with 28 percent, frequently applied.

With about 32 percent of the listed companies that compared the determined fair value less costs of disposal with the market capitalization, the value was more than ten percent below the value determined (previous year: 55 percent). With value in use this percentage was at 40 percent (previous year: 31 percent). (Figures 64 and 65)



- Yes
 - Yes, with the market capitalization of the group
 - Yes, with multiples
 - Yes, with analysts' target prices or analysts' sum-of-the-parts valuations
 - Yes, on the basis of other factors

DETERMINATION OF VALUE AND THE ENHANCEMENT OF VALUE

VALUE ENHANCEMENT AS A DECISION-MAKING TOOL

The focus of business actions should always be on the economic value added to the company associated with a decision. All the future expectations for the development of an option are concentrated in value. Especially with regard to uncertain expectations, decisions should be made on the basis of all the relevant information available. As a result of the frequently high complexity of economic issues, the decision-making process should be accompanied by a high transparency of the fundamentals for decision-making. After all, only those decision-makers who can clearly see the relevant changes in performance and risks also possess the transparency about the value associated with the decision.

In this section we would like to demonstrate opportunities that result within the continuing strategic development process of companies. The increasing complexity and dynamics of the markets is causing an increase in the pace of reactions and adaptation of companies. To react quickly and correctly, it is necessary to be able to rely on the methods applied, the methods that should support the decision-makers "gut feeling".

These methods should be continuously applicable and scalable, demonstrate a high degree of standardization, be clearly communicable and measureable over a long period so as to guarantee comparability over time. The focus should already be on the relevant performance and risk drivers in the strategic selection process of alternative actions (Figure 66, page 54): Both in the analysis of the current company and its components as well as in the validation of the future options. The qualitative selection of the relevant drivers already begins in this phase.

In the subsequent analysis phase, it is necessary to quantify frequently only qualitative elements of the preceding strategic selection process using dynamic and integrated planning models and to transform the relevant performance and risk drivers and conceivable scenarios in ranges and expectations. Based on the simulation and scenario calculations, the assessment of the alternative actions is made based on their performance and risk metrics as well as on the quantification of the individual performance, risk and diversification contributions.

If the change of performance and risk associated with the option is known, the value effect associated with the potential decision can be consistently calculated in the subsequent decision-making phase in that the different performance and the specific risk can be considered for every option. By selecting the best option(s), the composition of an ideal corporate portfolio can be obtained on the basis of optimal performance/risk relations as well as the maximization of the corporate value. If the strategy, analysis and optimization phase are consistently connected with one another, the decisionmaking processes can be communicated transparently and completely, both internally and externally. The result is a standardized decision-making process that assesses all the options in the same manner on the basis of their economic value added to the company.

The orientation toward a value enhancement of the company required in the past by the "shareholder value" concept – which has become a bit long in the tooth – can be transparently attributed to the performance and risk drivers that can be directly influenced by the company and those that might not be influenceable but for which the company must be prepared.

Dr. Andreas Tschöpel Partner, KPMG in Germany

"The operationable and subsequently increased focus on a company's performance and risk development from CEDA closes the gap between the frequently qualitatively characterized, strongly aggregated, strategic orientation of a company and the required orientation toward a quantifiable value enhancement in terms of the stakeholders."



Here, a primary distinction must be made between the actual value-increasing or value-eliminating operative issues and other value-changing issues. The change of company value between two points in time does not say anything about the actual increase or loss. More relevant is whether the change that has occurred corresponds to the expected change. It will always orient itself on whether the company has earned its cost of capital. For the isolation of increases/losses in value at different points in time, certain companies values are to be modified, for instance, by purely financing-related value-changing issues. The thus isolated operative value delta can then be clearly broken down into its performance and risk components or into influencable and non-influencable components.

Approaches such as CEDA not only build a bridge between strategy and value orientation, but on the basis of the known corporate valuation methods also include even annually repeating valuations, such as for the purposes of an impairment test, consistently into the decision-making process – which in the end can also result in corresponding advantages in efficiency. This year we expanded the Cost of Capital Study questionnaire for the first time with questions on the criteria of investment decisions, monitoring the enhancement in value and the role of the cost of capital and corporate values in the capital market communication.

5.1 CRITERIA FOR INVESTMENT DECISIONS

In the current, volatile market environment marked by a multitude of uncertainties, the correct assessment of investment decisions represents a serious challenge. In addition, there is the danger that as a result of inexpensive and readily available financing, the risks of an investment may be underestimated or not sufficiently considered.

To be able to make sustainable, successful decisions, it is therefore necessary to perform the most comprehensive analysis of the investment object possible, applying previously stipulated decision-making criteria. In practice, investment decisions are made on the basis of strategically qualitative (for instance, regional coverage) and quantitative (for instance, sales or margin) objectives. Beyond that, companies make investment decisions on the basis of value-oriented objectives, such as the economic value added (EVA) or the return on capital employed (ROCE), that also attempt to take the investors' return requirements into account.

The majority of this year's study participants (59 percent) reported making their investment decisions equally on the basis of strategic and value-oriented objectives. In 31 percent of the surveyed companies, quantitative or qualitative strategic objectives serve as the primary decision criterion. (Figure 67)



Criteria in investment decisions

Total (in percent)

Care should be taken in the consideration of expected economic value added in the framework of valuations of investment alternatives, whereby the above-mentioned approaches should be considered. Particular attention should be given to the fact that more static models such EVA and ROCE generally compile only partial information about a company's performance and risk orientation. We therefore recommend approaches, which, based on multi-value financial forecasts and analyses of simulations and scenarios, consistently collect performance and risk orientation and consider these in the valuation calculations. Value and risk drivers of an investment project can then be presented transparently at an early date and considered appropriately in the decision-making process (page 10).

5.2 MONITORING THE ENHANCEMENT IN VALUE

After an investment decision is taken and the investment made, it is necessary to continually monitor the enhancement in the value in the specific business. To that end, solid performance and risk drivers should be observed to make the developments transparent and to show their effects on the entire company. In this manner, undesirable developments can be detected early and countermeasures taken. In addition, the knowledge gained can be transferred to future projects and investments and, therefore, improve the basis for decision-making. The result of our survey shows that this aspect is of great importance to the surveyed companies. Analogous to the criteria in the investment decision, 59 percent of the companies consider the monitoring of the enhancement in the value to be very important and use this instrument especially for decision-making and steering purposes. Only for 26 percent of the surveyed companies does monitoring of the enhancement in value play a less important or no role. The majority of these companies can be attributed to those companies that apply primarily strategic objectives in investment decisions. In the final analysis, however, even such strategic objectives must result in a change in value. (Figure 68)



5.3 THE ROLE OF THE COST OF CAPITAL IN THE CAPITAL MARKET COMMUNICATION

For the vast majority of the study participants, the cost of capital and (the enhancement in) corporate value(s) does not play a role in the capital market communication. For instance, the values determined in the framework of the impairment test are used exclusively for accounting purposes and with the associated reporting. A small percentage of the surveyed companies (10 percent), however, use the cost of capital determined in the framework of the impairment test as an internal benchmark and steering parameter and also discuss them with investors and analysts on a regular basis. In this manner, these companies increase their transparency for their investors and, with the regular discussion of the parameters, obtain insights into the divergences between management and market perspectives. This is, on the one hand, necessary to fulfill the partial market perspective required by IFRS and, on the other hand, contributes to including investor expectations in the observations right from the start.

Of the study participants, 11 percent reported using cost of capital from value-oriented steering concepts (e.g. EVA) in the framework of capital market communication. (Figure 69)

Communication and use of the cost of capital

Total (in percent)

Source: KPMG



- Cost of capital and corporate values play a major role in the capital market communication. They are internal benchmarks and steering parameters and are regularly discussed with investors and analysts.
- We use cost of capital and corporate values from steering concepts such as EVA for capital market communication.
- Cost of capital and corporate values do not play a role in the capital market communication. These are used exclusively for accounting purposes and the associated reporting.
- Other



In this year's study, we once again examined the values compiled according to the individual industries. For the real estate industry it was, as in the past years, not possible to perform a separate analysis due to the small number of participants. As a consequence of particularities of the financial services industry, we have selected an adjusted form of presentation so as to better emphasize the material specifics of the industry.

As in the previous years, the industrial manufacturing industry was the sector with the greatest number of participants (37 companies; previous year: 32 companies). This sector combines all the companies acting in the various industrial areas as well as companies that primarily manufacture industrial semi-finished products. The largest growth compared to the previous year was in the study participants from the energy & natural resources and transport & leisure industries. Here, 16 companies participated this year after 10 in the previous year and 11 companies after 6 in the previous year, respectively. (Figure 70)

In the following we present an overview over time of the most important figures for the individual industries. By way of introduction, our industry specialists provide insights into the current trends in their sectors and an outlook for the expected developments.

Should you be interested in more detailed information on the specific sectors we would be pleased to provide it to you individually. Furthermore, our industry specialists are readily available for any questions or comments you may have. More detailed information on the sectors can be found on our Cost of Capital website: www.kpmg.de/cost-of-capital

Please note that to the extent that the following analyses contain data for the periods 2012/2013 and 2013/2014, the data relates only to those years. Therefore, it cannot be excluded that the following values are based on data from different companies and a different number of companies, therefore restricting the comparability to some degree.

70 Study participants by industry



Cost of Capital Study 2013/2014
Cost of Capital Study 2014/2015

6.1 AUTOMOTIVE

Olaf Thein Partner, KPMG in Germany

"We see that – analogous to the previous year – in an environment of an historically low risk-free rate, the cost of capital in the automotive sector remains relatively constant over time. Consequently, the long-term return expectations in the automotive industry have not changed. The converse argument is that the risk premiums have increased. This increase does not result only from global trends such as new drive technologies or the even stronger shift of the growth markets in the direction of Asia. More important is the penetration of the megatrend digitalization even further into the automotive industry. Automobile manufacturers as well as suppliers must therefore ask themselves if they are sufficiently prepared for these changes and if the new customer demands can be addressed with the business models of today. Industry upstarts such as Tesla, Apple and Google are streaming into the automobile market and offering innovations demonstrating what is technically and digitally possible, while simultaneously testing what their future core competence and market position might be. It will remain interesting to see whether and how these industry convergences are also reflected in the cost of capital in the long-term."



Automotive

Total versus Automotive



Average debt ratio applied Total versus Automotive



6.2 CHEMICALS & PHARMACEUTICALS

Christian Klingbeil

Partner, KPMG in Germany

"The material demand for chemical products is no longer from Europe, but rather from the emerging markets and especially from Asia. The international shift of the demand structures is resulting in a redeployment of investments in production sites and participations in emerging markets. This development will continue in the coming years and present chemical companies with a number of challenges. Along with the dependency of the cyclical development of primary end-customer industries, the increasing specificity of customer demands, greater competitiveness from Asia, the economical access to raw materials, shorter product lifecycles as well as the increasing regulation and the associated costs represent strategic obstacles for the companies, especially in Europe.

The global pharmaceuticals sector is also facing major challenges. The high percentage of patent expiries, and the subsequent increase in competition from generic products, is resulting in a constantly growing pressure on prices and for innovation. In addition, government initiatives for the regulation of costs in the health care industry are placing increased pressure on margins. Pharmaceutical companies are reacting to these conditions with a strategic focus on indications that are important for them. The stringent orientation of their portfolios is an important driver for the continuing high number of corporate mergers."

75 Average sales growth

Source: KPMG



Average unlevered beta factor applied

77

Total versus Chemicals & Pharmaceuticals



Chemicals & Pharmaceuticals



10

Average WACC applied

Total versus Chemicals & Pharmaceuticals (in percent)

Source: KPMG



Chemicals & Pharmaceuticals

78 Average debt ratio applied

Total versus Chemicals & Pharmaceuticals (in percent)

Source: KPMG

40



Total versus Chemicals & Pharmaceuticals (in percent)

6.3 CONSUMER MARKETS

Stephan Fetsch Partner, KPMG in Germany

Karen Ferdinand Partner, KPMG in Germany

"Omnichannel, mobile Internet and big data & analytics will be the primary technology topics for the retail industry in the coming years. Digitalization in particular will change the retail industry in the long run. It leads to more transparency – the customer is well informed and in some cases knows the product better than the sales personnel. It increases the dynamics – trends and product innovations change in ever-shorter intervals. Beyond that it leads to more individualization – the desire for personalized products and services forces producers to take leave of old ways of thinking. All this leads to more data points that have to be collated and analyzed, more sources of information and more sophisticated technologies.

According to KPMG's consumer study, customers expect omnichannel services such as returns or pick-ups of goods ordered in the Internet in stores, the real-time availability of stocks as well as the option of ordering online from brick and mortar stores. To the same extent that customers are redefining communication, living and shopping, retail companies will have to adapt their production, sales and entire business models. The industry is already intensively studying cloud and mobile-payment solutions. Technologies such as augmented reality or interactive shop windows can raise shopping to the level of an event."

Average sales growth Total versus Consumer Markets (in percent)

Source: KPMG

10







80 Average WACC applied

Total versus Consumer Markets (in percent)

Source: KPMG

10



82 Average debt ratio applied

Total versus Consumer Markets

(in percent)

Source: KPMG

40



6.4 ENERGY & NATURAL RESOURCES

Michael Salcher

with KPMG Inte

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"The energy industry, with the major portion of energy producers and suppliers, is still and more than ever in an industry-changing phase. The energy mix and the dependencies on raw materials will change dramatically. Following the exit from nuclear energy, the debate now rages about phasing out fossil fuels. At the same time, the struggle goes on for investments in renewable energies and the necessary storage infrastructure. The situation is currently characterized by volatile procurement and sales markets, political conditions and necessary strategy discussions. The definitive question is how the adaptation to various energy environments can work: Investments in new business models and strategies, dismantling and capacities, in a digital structure across all the added-value stages will put pressure on earnings and therefore impact on the performance and risk profile of the companies. The listed companies in the industry are lowering growth expectations. That is in line with the pressure on earnings with simultaneously increasing risk. But even though the sector continues to find itself in a period of radical change and will be marked by the challenges mentioned - electricity, gas and heat will always be needed."

Average sales growth

Total versus Energy & Natural Resources (in percent) Source: KPMG



Average unlevered beta factor applied

85

Total versus Energy & Natural Resources



84

10

Average WACC applied Total versus Energy & Natural Resources (in percent)

Source: KPMG



Energy & Natural Resources

86 Average debt ratio applied

Total versus Energy & Natural Resources (in percent)

Source: KPMG



6.5 FINANCIAL SERVICES

Timo Schuck Partner, KPMG in Germany

"The financial services sector is characterized by the continuing low-interest environment, the ongoing high regulatory pressure and the search for viable business models. This is especially true for banks and insurance companies. To obtain a sustainable level of return that is above the cost of capital remains the most urgent challenge for all financial service companies. The mid-term expected turnabout in interest rates and the ongoing optimization of cost structures and product sales approaches occurring at many market participants could bring about a stabilization. The number of market participants will continue its decreasing trend as a consequence of mergers or run-off solutions, whereby the number and importance of FinTechs will also decrease in Germanv."



6.6 HEALTH CARE

Christian Klingbeil

Partner, KPMG in Germany

"The health care market is torn between expansion and growing price and cost pressure. Expansion opportunities are driven by population growth and increasing access to health care in the emerging economies. The technical advances in the fields of diagnosis and therapy are contributing to this as well. These contrast with the general regulatory conditions for health care systems with a focus on cost controls and savings. The companies acting in the health care markets are experiencing the current market conditions to a differing degree, depending on their strategic positioning and value-added chain. The wholesalers of pharmaceutical products, for instance, are affected strongly by the country-specific contraception regulations, possible improvements in margins result frequently from internal increases in efficiency or acquisitions and the accompanying purchasing synergies. The medical technology companies, on the other hand, are frequently able to realize attractive margins on the basis of innovative technological solutions and product specializations on an international basis. Hospitals, rehab facilities or service providers are, however, generally local operations and very dependent on the structures of the relevant health care authorities and corresponding cost pressure, which is resulting in an increasing concentration."

91 Average sales growth Total versus Health Care (in percent) Source: KPMG 10 8 6 4 2 0 4 5.5 5.7 6.1 5.2 4.9

6.0

0 2012/2013 2013/2014 2014/2015 Total Health Care

93 Average unlevered beta factor applied Total versus Health Care





94 Average debt ratio applied Total versus Health Care



Source: KPMG

40



6.7 INDUSTRIAL MANUFACTURING

Dr. Jakob Schröder Partner, KPMG in Germany

"German and other European manufacturing companies that depend strongly on exporting have concentrated more strongly on markets outside of Europe as a result of the weak growth in the Eurozone - especially regions coupled with the US dollar. In addition, there has been the 'new normal' of reduced economic growth in China. As a consequence of the constantly increasing competition in these markets as well, the requirements with regard to cost-efficient production and administration structures and innovative capability continue to grow. Process innovations, such as the long way to a highly flexible (up to lot size 1) and digitally controlled production and logistics or the development and implementation of additive production processes, are just as important as constantly adapting products to the dynamics of customer needs and sales markets. Furthermore, many new business models and partnerships are needed to maintain or increase the competitiveness. The current combination of low interest rates, the weak euro and low raw material costs is contributing to the financing of innovation expenditures and to profitable growth."

Q5 Average sales growth

Total versus Industrial Manufacturing (in percent) Source: KPMG









96 Average WACC applied

Total versus Industrial Manufacturing (in percent)

Source: KPMG

10



Industrial Manufacturing

98 Average debt ratio applied

Total versus Industrial Manufacturing

(in percent)

Source: KPMG

40



6.8 MEDIA & TELECOMMUNICATIONS

 Prof. Dr. Vera-Carina Elter
 Stefan Schöniger

 Partner,
 Partner,

 KPMG in Germany
 KPMG in Germany

"The media & telecommunications industry, as is the case for almost every industry, continues to be in the throes of a fundamental change, driven by the digitalization in every area of life. This is also reflected in a continuing consolidation and restructuring. The majority of the acquisitions in the digital business in the last year occurred in the media sector. This illustrates the development that the majority of the traditional media companies are buying into the digital business with numerous acquisitions so as to drive the transformation to multi-medial media groups.

The transformation process is also continuing in the telecommunications industry. The customers of these companies expect services to be available reliably and everywhere while simultaneously enjoying the free use of freemium offers. Technologically, this development places great demands on the network infrastructure. The conversion to all-IP networks and bandwidth is determining the investment behavior. The telecommunications companies are facing the challenge of attaining the appropriate returns on these investments by realizing premium business models."

99 Average sales growth

10

8 6 4 5.5 5.2 6.1 5.0 4.9 4.9 2 0 2012/2013 2013/2014 2014/2015 • Total • Media & Telecommunications

101 Average unlevered beta factor applied

Total versus Media & Telecommunications



100

10

102

40

Average WACC applied Total versus Media & Telecommunications (in percent)

Source: KPMG



Media & Telecommunications

Average debt ratio applied Total versus Media & Telecommunications (in percent) Source: KPMG

30 20 20 10 2012/2013 2013/2014 2014/2015 Total Media & Telecommunications

Total versus Media & Telecommunications (in percent) Source: KPMG

6.9 TECHNOLOGY

Dr. Gunner Langer Director, KPMG in Germany

"Digitalization, virtualization and networking also represent the primary growth opportunities of the future for technology companies. The innovations of the technology companies will serve as the motor for a number of new business models in other sectors. The challenges for innovative capacity will increase in complexity; the use of market opportunities from cloud computing, big data and industry 4.0 demand solutions for data protection and IT security. Because the timing of a launch will remain decisive for the adoption of a technology, both for the consumer as well as corporate customers of the technology companies, the availability of technological competences for the positioning as technology leader will be the primary driver for acquisitions or joint ventures in the future. At the same time, it requires that technology companies evaluate opportunities through targeted investments in the start-up environment."

Average sales growth 103 Total versus Technology (in percent) Source: KPMG 10 9.1 8 7.8 6 6.1 5.5 5.1 4 4.9 2 0 2012/2013 2013/2014 2014/2015 Total Technology

105 Average unlevered beta factor applied Total versus Technology

Source: KPMG 1.00 50 0.96 0.94 0.80 0.89 0.90 0.85 0.83 0.60 0.40 0.20 0 2012/2013 2013/2014 2014/2015 Total Technology

104 Average WACC applied Total versus Technology (in percent)

Source: KPMG

10



Technology

106

Average debt ratio applied Total versus Technology

(in percent)

Source: KPMG



6.10 TRANSPORT & LEISURE

Dr. Andreas Tschöpel

Partner, KPMG in Germany

"High volatilities in the oil price, existing over-capacities and continuing global economic uncertainties continue to result in corporate structures in the transport sector having to constantly adapt, so as to be able to react flexibly to challenges of the future. Subsequently, consolidations remain high and are being driven by expansions in new regional markets and businesses as well as the vertical specialization of transport companies in certain customer industries. The increase of private investment in the transportation infrastructure operations will remain an additional important driver in the transport sector. As a result of the lack of financial flexibility in government budgets – both in emerging markets as well as in mature markets - for the financing of infrastructure investments, more and more private investors are taking to the stage in search of stable sources of income. The increasing digitalization of the transport industry and the strong influence of the growing e-commerce business are also leading to expectations of further targeted acquisitions of specialized IT and e-commerce companies."

Average sales growth Total versus Transport & Leisure (in percent) Source: KPMG 10 8 6 6.1 5.5 4 4.9 4.4



Average unlevered beta factor applied 109

Total versus Transport & Leisure

Source: KPMG





10

Total versus Transport & Leisure (in percent) Source: KPMG



Transport & Leisure

110

40

Average debt ratio applied Total versus Transport & Leisure (in percent) Source: KPMG



LIST OF ABBREVIATIONS

CAPM	Capital Asset Pricing Model	IT	Information Technology
CEDA	Corporate Economic Decision Assessment	KFS BW 1	"Fachgutachten des Fachsenats für Betriebswirtschaft und Organisation der Kammer der Wirtschaftstreuhänder zur Unternehmensbewertung (Österreich)": Expert opinion of the professional committee for business and organization of the Chamber of Auditors for Corporate Valuations (Austria)
CGU	Cash Generating Unit		
DAX	Main German Stock Index		
DCF	Discounted Cash Flow		
EBIT	Earnings Before Interest and Taxes	M&A	Merger & Acquisitions
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization	MDAX	German (Mid-Cap) Stock Index
EVA	Economic Value Added	ROCE	Return on Capital Employed
FAUB	"Fachausschuss für Unternehmensbewertung und Betriebswirtschaft": Technical Comittee for Business Valuation and Economics of the IDW	US-GAAP	United States Generally Accepted Accounting Principles
		WACC	Weighted Average Cost of Capital
FCF	Free Cash Flow		
GDP	Gross Domestic Product		
IAS	International Accounting Standards		
IDW	"Institut der Wirtschaftsprüfer in Deutschland e.V.": Institute of Public Auditors in Germany, Incorporated Association		
IDW S 1	"Grundsätze zur Durchführung von Unternehmensbewertungen des Instituts der Wirtschaftsprüfer in Deutschland e.V.": Principles for the Performance of Business Valuations from the IDW		
IFRS	International Financial Reporting Standards		
IP	Internet protocol		

Internet protocol



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