



Cost of Capital Study 2017

**Diverging markets –
converging business models**



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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

Dear readers,

It is our pleasure to present you with the results of the twelfth edition of our Cost of Capital Study. With 205 companies (compared to 196 companies in the previous year) – 26 of which are DAX-30 corporations – more companies than ever before participated in the study. We would like to express our heartfelt gratitude to all those companies who took part. The large number of participants demonstrates that the study has become a fixed component in your practical valuation work. We therefore hope that this year, once again, the study and the key topics will be of particular interest to you.

In the current issue, we examine the challenges of increasing macroeconomic uncertainties and microeconomic changes resulting from disruptive business models both with regard to the future performance of companies (financial forecast) as well as on their future risk profile (cost of capital).

Consequently, we chose the motto “Diverging markets – converging business models” for this year’s Cost of Capital Study. Based on this motto, we focus on the following subjects:

- Macroeconomic uncertainties – part of financial forecasts
- Microeconomic change – predictability of disruptive business models
- Cost of capital – the challenges of low interest rates, populism, and new technologies (guest commentary by Stefan Hofrichter, Allianz Global Investors GmbH)
- Cost of capital – comparative measures in a world that increasingly defies comparison
- New valuation methods in disruptive times?

Due to the fact that the financial impacts of decisions also have to be objectively reflected in accounting, the collection of empirical information continues to be oriented on the Impairment Test of the International Financial Reporting Standards (IFRS), because it – and the valuation associated with it – is obligatory for every IFRS user. Our analyses do not, however, consist only of the compiling of forecasted cash flows and cost of capital parameters, but also of the relevance of company values and their development in the decision-making and the capital market communication.

For the first time, we have also included analyses for family-owned businesses and non-family-owned businesses. Supplementary to the current study, we would like to direct you to the interactive opportunities for analysis of the data on our website at www.kpmg.de/cost-of-capital. There you can compile the parameters relevant for your company and/or industry and therefore perform your own, tailor-made assessment.

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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Editions of the Cost of Capital Study by KPMG



Innovations in the study

- Comparison of the target and actual implementation of the Impairment Test as per IFRS (IAS 36) and US-GAAP (SFAS 142) in German corporations
- Initial participation of corporations from Switzerland and Austria in addition to Germany
- Initial participation of corporations from Great Britain and the Netherlands
- Initial participation of corporations from Spain
- Analysis of industry-specific particularities
- Initial querying of the prognosis of future economic development

Highlighted subjects of the study

- The effects of the financial market crisis on the balance sheet and valuation practice
- Focus on prognoses in a difficult market environment
- 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

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- Initial querying of the transaction behavior and intentions of companies

- Focus on managing uncertainty

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- First extensive industry analyses

- Impact of volatility on financial forecasts
- Interaction of risk-free rate and market risk premium
- Other risk premiums
- Sustainable growth rate

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- Detailed analyses for every industry

- 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

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

- Corporate Economic Decision Assessment
- Consideration of performance and risk drivers
- Stress testing in times of higher 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

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- Significant expansion in the number of participating companies
- Expansion of the Internet-based opportunities for analysis

- New methods for value measurement?!
- Big data and business analytics tools
- Risk transparency and risk management
- Value-based management systems 2.0

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- Assessment by family and non-family-owned businesses
- Provision of extensive industry analyses with the online assessment tool
- Detailed analyses of the sectors consumer markets, chemicals & pharmaceuticals, financial services and media & telecommunications

- Macroeconomic uncertainties – part of financial forecasts
- Microeconomic change – predictability of disruptive business models
- Cost of capital – the challenges of low interest rates, populism, and new technologies
- Cost of capital – comparative measures in a world that increasingly defies comparison
- New valuation methods in disruptive times?

Summary of Findings

Derivation of the Cash Flow

Planning uncertainty

As a result of **macroeconomic uncertainties** and **microeconomic change** from disruptive business models, there is a **significant degree of uncertainty** in the future prognoses.

To date, **economic risks** (macroeconomic risks) or **customer risks** (microeconomic risks) have in particular been given **consideration** in financial **forecasts**.

Growth expectations

Regarding **sales** and **EBIT**, study participants from most of the industries are predicting more **optimistic developments** than in the previous year. By contrast, the **sustainable growth rate decreased slightly** compared to the previous year.

Cost of Capital

WACC

The average weighted cost of capital (WACC) was, after the horizontal development in the last two years, at **6.9 percent**, slightly **below the level of the previous years**.

The **highest WACC** was applied in the **technology** sector with **8.6 percent**. The **lowest WACC** was observed in the **real estate** sector with **4.4 percent**.

Risk-free rate

The average **risk-free rate** applied continued to decline and decreased from 1.5 percent to **0.9 percent**. It attained, for the first time since the Cost of Capital Study has been published, a **level of less than one percent in all the participating countries**.

Market risk premium

In contrast to the decreasing risk-free rate, the market risk premium increased slightly to **6.6 percent** in **Germany** and **Austria** and **5.9 percent** in **Switzerland**.

Beta factors

Just as in the previous year, the **highest** unlevered beta factors were applied by the **automotive** and **technology** sectors; the **lowest** value for this survey period was in the **transport & leisure** sector.

Compared with the previous year, the unlevered beta factors observed in the individual industries remained for the most part unchanged. The **largest increase** was observed in **technology**, a decrease was observed only in **automotive** and **transport & leisure**.

Cost of debt

The average cost of debt applied also **decreased less** than the risk-free rate and is now **3.1 percent**.

Impairment Test

Impairment

The percentage of companies that recognized an **impairment** on assets or goodwill is, at 56 percent, around the **level of the previous year**. However, the average amount of an impairment on assets almost doubled to 198 million euros. This increase is in particular attributable to **especially** high impairments in the sector **energy & natural resources**.

Values and Value Enhancement

Investment decision

Investment decisions continued to be made by the majority of participants based on both **strategic** as well as **value-oriented objectives**.

Monitoring

The **major portion** of participants continued to consider a **value-based monitoring** of the investment decision as **important** and observed in particular the **change in performance** more than **the risk (cost of capital)**.

Capital market communication

The **cost of capital** was, as in the previous years, **less relevant** in the **capital market communication** and was primarily used only for purposes of accounting and reporting.

1 Introduction



Study participants

The total number of companies participating from Germany, Austria and Switzerland in this year's Cost of Capital Study was 205 (previous year: 196 companies). Of the participating companies, 153 companies were in Germany, 18 in Austria and 34 in Switzerland. (Figure 01)

Compared to the previous year, the number of DAX-30 companies participating increased again to 26 companies, which corresponds to a ratio of 87 percent (previous year: 77 percent). In addition, 44 percent of the MDAX companies participated in the study (previous year: 46 percent). (Figure 02)

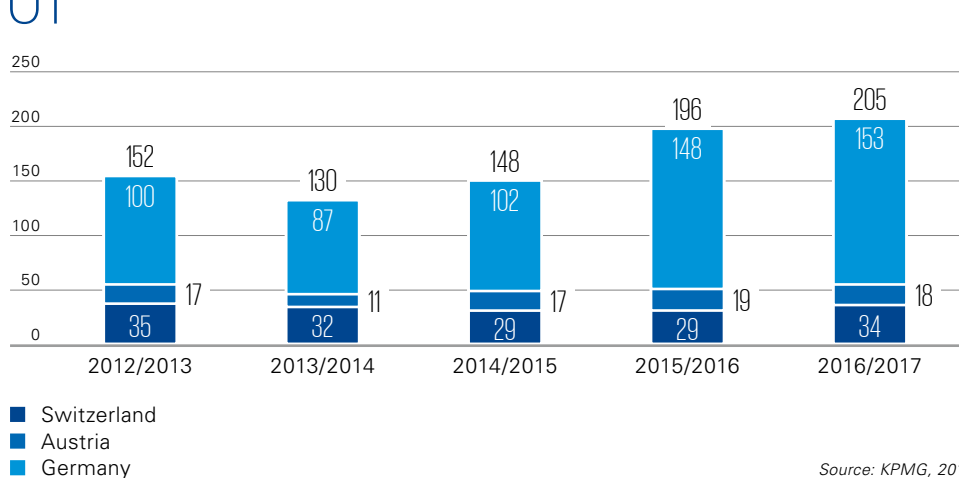
Survey period

The survey of the companies occurred between March and July 2017. The reporting dates of the consolidated financial statements included in the study were between 31 March 2016 and 31 March 2017.

Note

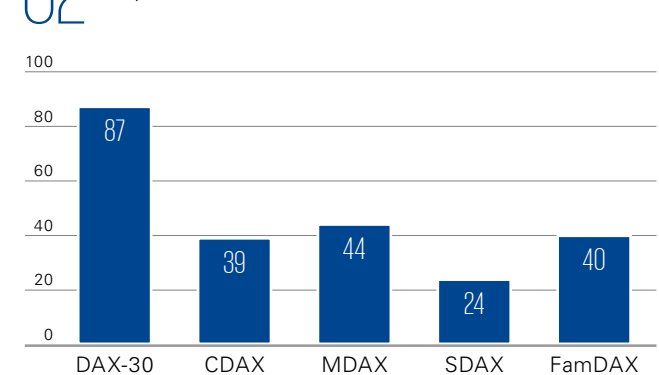
When considering the following analyses, it should be noted that the company data presented here stems from companies from different countries, partially from different currencies and from varying points of time.

01 Study participants by region



Source: KPMG, 2017

02 Participation rates in Germany



Source: KPMG, 2017

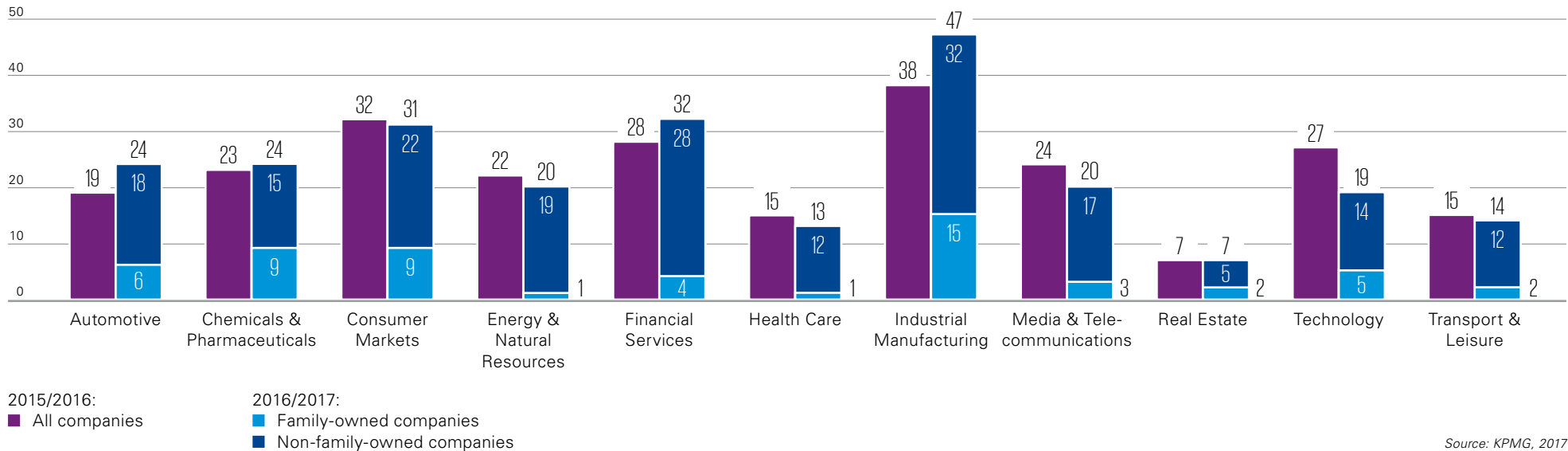
Analyses

As in the previous years, the participating companies were requested to assign themselves to industries in accordance with their business activities. The study therefore contains overviews of all the material financial forecast and cost of capital parameters according to industries.

Family-owned company analyses

For the first time, the study also includes analyses for family-owned and non-family-owned businesses. On the basis of their own classification, 46 family-owned and 159 non-family-owned businesses took part in the study. (Figure 03)

03 Study participants by industry Total (multiple choices possible)



Source: KPMG, 2017

Online industry analyses

This year, for the first time, we are presenting all the industry-specific figures for the cost of capital parameters on our website.

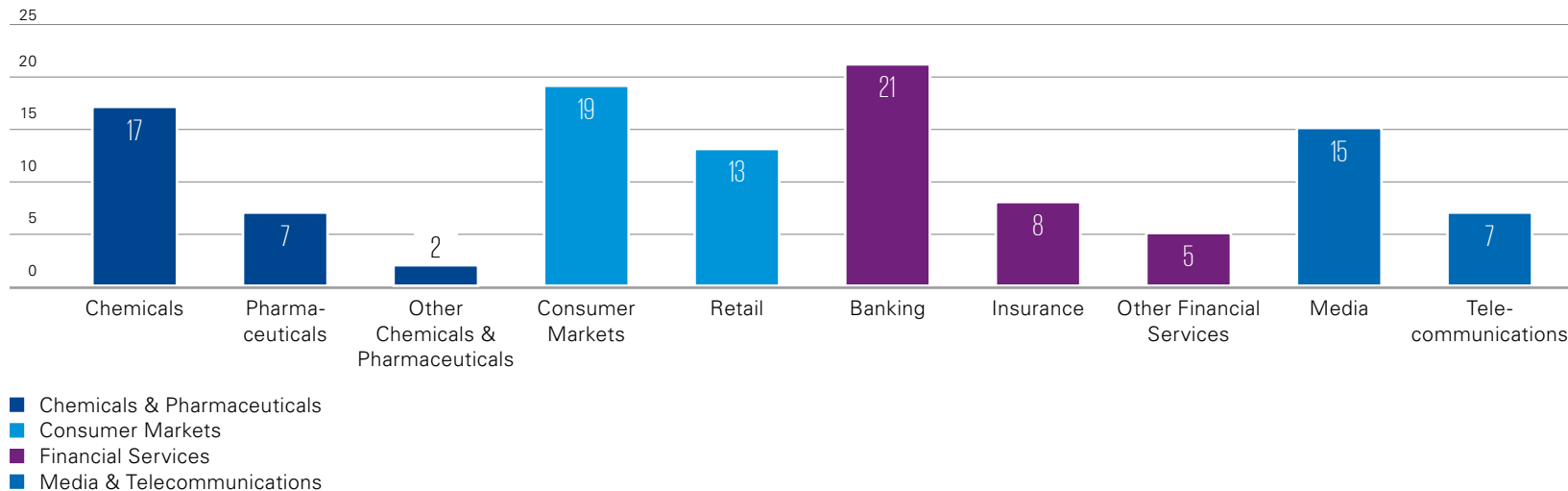
At www.kpmg.de/kapitalkostenstudie-tableau (only available in German) you will find the financial forecast and the cost of capital parameters from the current study as well as the results of the Cost of Capital Studies from the previous years in a clear, self-explanatory presentation.

In addition, we provide you there with an individual and interactive data analysis of the study results. Using your own search criteria, you can generate the data relevant for you and therefore better grasp the values and developments of the cost of capital parameters essential to you.

Sub-sector analysis

To further increase the degree of detail in the industry analyses, we have, for the first time, performed analyses for sub-sectors of **consumer markets, chemicals & pharmaceuticals, financial services** as well as **media & telecommunications**. For instance, we have broken down the **financial service** sector into **banking** and **insurance** as well as **other financial services**. (Figure 04)

04 Study participants by sub-sectors Total (multiple choices possible)



Source: KPMG, 2017

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Derivation of the Cash Flows



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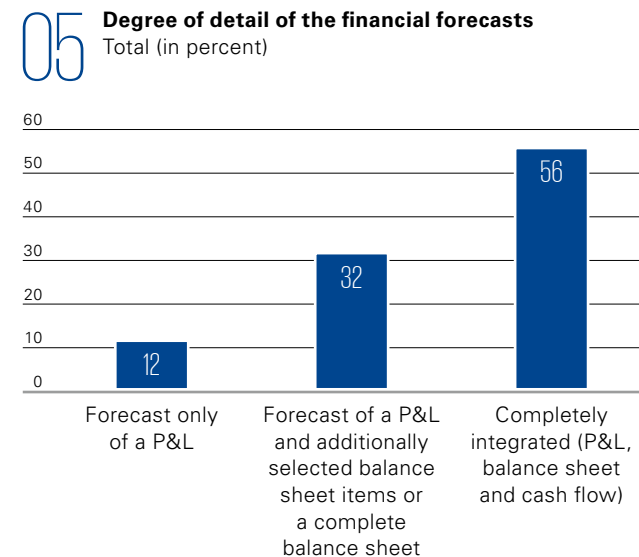


2.1 Preparation of the Financial Forecasts

Financial profits cannot be predicted with certainty due to the uncertain future and must therefore be reflected with their expected values. Entrepreneurial engagement is always associated with risks and opportunities. Integrated and sufficiently detailed financial models are of primary importance for the systematic derivation of future expected values in the framework of business valuations – regardless of the reason. These models must be in a position to properly reflect the specific material drivers of performance and risk.

The ranges and distributions of the performance and risk drivers to be derived in the framework of the individual analyses form the basis for the transition of single-valued financial forecasts to multi-valued and simulation-based planning instruments.

Following on the heels of a contrasting development in the previous year's survey, the increasing trend amongst the participants toward performing a completely integrated planning continued once again (2014/2015: 61 percent; 2015/2016: 48 percent). By contrast, the percentage of participants that performed the planning of a profit and loss statement (P&L) as well as a planning of selected balance sheet items decreased slightly (2016/2017: 32 percent; 2015/2016: 36 percent). With what now totaled 88 percent of the surveyed study participants, the number of companies which, in our opinion, applied an appropriate planning structure for the derivation of the cash flow reached a record level. (Figure 05)



Source: KPMG, 2017

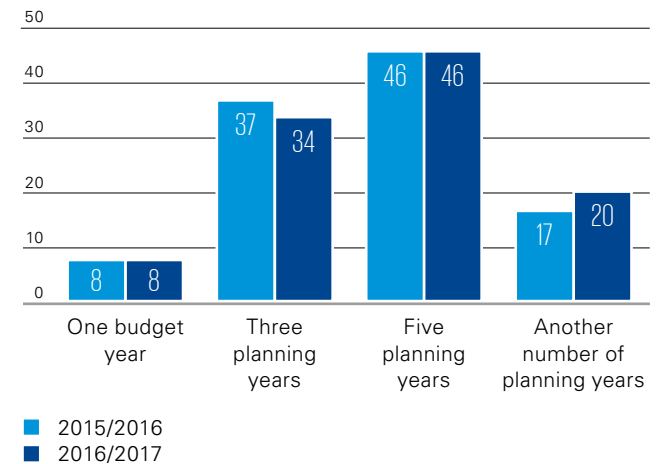
It is once again apparent that in the **financial services** sector, with a percentage of 26, relatively few companies perform a completely integrated financial forecast. This is attributable to the industry-specific business model of banks and insurance companies. To be able to fulfill the regulatory requirements for maintaining equity and solvability ratios in financial forecasts, items relevant for the equity capital required, such as the volumes of loans and securities, capital investments, insurance-technical provisions and equity, are planned and reflected. In addition, liquidity and funding forecasts are regularly compiled so that overall the material items for the business activities are compiled in an integrated planning system.

The choice of the planning period remains a matter of some incongruity: A longer planning period means – in particular in view of the observable dynamic market particularities – a greater planning uncertainty, if the planning period is not accompanied by additional scenario and simulation analyses. A (too) short planning period, on the other hand, results in investment and product life cycles as well as long-term industry developments not being properly reflected in the financial forecast. This results in incorrect valuations and subsequently in bad decisions.

The regulations of the International Accounting Standard (IAS) 36.33 (b) are also to be observed in the case of impairment tests with longer planning periods – with the application of the value-in-use concept. In such cases, the financial forecasts should in principle not exceed a period of five years, unless the company can prove that it is able to estimate the future cash flows over a longer period with sufficient accuracy.

The majority of the companies surveyed continue to apply a planning period of five (46 percent) or three (34 percent) years, whereby there was a slight shift toward shorter planning periods compared to the previous year. The average of the planning years for the companies that selected a different number of planning years was about six years (previous year: eight years). (Figure 06)

06 Planning horizon – yearly comparison
Total (in percent, multiple choices possible)



Source: KPMG, 2017

Almost two-thirds of the participating companies (59 percent) considered sensitivity analyses in the framework of their planning. The majority of these participants (36 percent) examined both cash flow (including its parameters) as well as the cost of capital (including sustainable growth rate). Another 16 percent subjected exclusively the cash flow and 7 percent only the cost of capital to corresponding analyses. Here, possible parameters for the sensitivity analysis of the cash flow consisted of sales, earnings before interest, taxes, depreciation and amortization (EBITDA) or earnings before interest and taxes (EBIT), amongst others. (Figure 07)

Companies in the **financial services** sector consider sensitivities in cash flow and the cost of capital significantly more frequently. Furthermore, sensitivities to the cost of capital also impact on the cash flow, for instance with the expected long-term return on capital investments. In particular for life insurance companies, the precise analysis of effects from the development of the level of the interest rate is generally a primary component of the planning process.

On average, family-owned businesses choose a shorter planning period and take sensitivities into consideration less often (50 percent) than do non-family-owned businesses (61 percent).

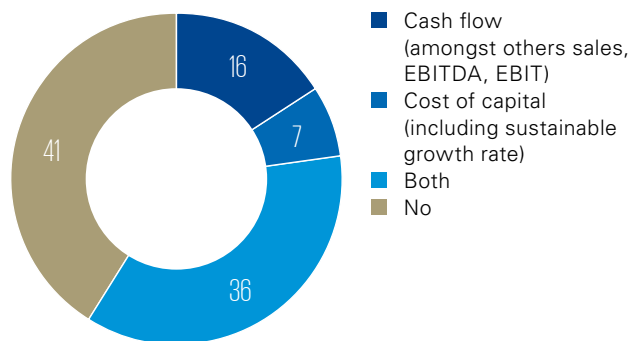
“Family-owned businesses need the same transparency for the future development of the company or the business segments. For that reason, the extent of planning, the planning period and the planning structure should have the same quality as that of non-family-owned companies.”

Dr. Vera-Carina Elter

Partner, Managing Partner for Family-Owned Businesses, KPMG in Germany

07 Consideration of sensitivities

Total (in percent)



Source: KPMG, 2017

Macroeconomic Uncertainties – Part of Financial Forecasts

There has been a noticeable increase in political risks for the global economy since the latest financial and debt crisis. Last year alone, fears of a slowing of China's economic performance, the coup attempt in Turkey as well as the low price of oil sparked uncertainties in financial markets. In addition, the results of elections in the United States and Great Britain increased the volatility on the stock markets.

Even if the stock markets recovered quickly from the British decision, the consequences for the economy remain unforeseeable. More than a year after the elections, it is to be expected that Great Britain will leave the EU in the spring of 2019. The initial round of talks has already stalled and indicates there will be years of uncertainty. Companies do not, however, have the opportunity to wait for the results of EU talks. They have to prepare now for any eventualities. Financial institutions have already begun their preparations for transferring their employees and business segments to other EU member states. In addition to that, the EU is currently confronted with the challenges arising from the refugee crisis, the disagreements with Poland and Hungary and the growing influence of populists in a number of European states – including Germany after the federal elections.

At the same time, the policies of President Donald Trump, since his inauguration at the beginning of 2017, have caused political and economic insecurity from the direction of the USA. Trump's isolationist policy could have grave consequences for the global economy. Companies are especially concerned that both with the withdrawal of the US from the climate

protection agreement as well as changes in tariffs and taxes being discussed in the US, unfair competition and greater uncertainties may arise. Companies working internationally are also watching the developments in the Middle East, in Venezuela and North Korea with increasing concern, for these countries also bear major political risks for the global economy. For companies with business activities in Latin America, the situation in Venezuela is especially risky, because if the conflict increases it could set off the largest wave of refugees in recent Latin American history. A mass exodus of millions of people could destabilize the region and result in unforeseeable economic consequences for the region and beyond.

Our world is changing more quickly and more surprisingly than previously was the case; developments are more complex and more difficult to interpret. The assessment of the impact of the continuously diverging macroeconomic environment represents a major challenge for many companies. A term has been coined for this environment, VUCA: volatility, uncertainty, complexity and ambiguity. The acronym VUCA accurately describes the changes in the basic conditions of our world in which organizations and people have to reorient themselves. Strategically, groundbreaking decisions come more frequently in a world of converging markets and diverging business models. Bad or delayed decisions can endanger even major market players. Political events therefore cause increasing uncertainty and have a growing impact on the economic development of companies. Especially the interplay and interaction of these events, as a result of the increasing globalization, make it more difficult

to perform corporate planning that sufficiently considers all the eventualities.

At the same time, investors are demanding that companies provide a high degree of transparency, better documentation and capital market communication for the decision-making in the company. Companies are therefore faced with the challenge of identifying and appraising risks and opportunities from the macroeconomic environment at an early stage so as to make future-oriented decisions on the basis of this and then to communicate these to the shareholders. The traditional approaches of corporate steering and valuation were subject to relatively stable expectations and scenario analyses in fairly narrow bandwidths in which only a few macro as well as microeconomic parameters varied independently from one another. These approaches can only reflect the increasing complexity in today's economic environment to a limited degree.

Companies then only have a valid basis for decisions if their planning models not only include their basic economic and competitive conditions, but also take into consideration the macroeconomic interdependencies. Single-valued planning models can, however, only summarize the costs and sales. Risks, by contrast, cannot in general be summarized; they must be compiled by means of simulation-based planning methods and include macroeconomic and geopolitical big data. Only in this way is it possible to incorporate the economic environment and potential risks in the valuation of various strategic options as well, so that potential risks are identified and classified according to their relevance.

“Previous, single-valued planning and steering models are not appropriate for the current economic environment. Because the dynamics of the economy and especially the macroeconomic uncertainties will continue to increase, companies’ planning, steering and valuation methods have to be further developed. Otherwise companies are in danger of not making strategic decisions optimally or even recognizing existential threats too late.”

Karen Ferdinand
Partner, KPMG in Germany

In view of these circumstances, KPMG developed CEDA (Corporate Economic Decision Assessment), a simulation-based planning and steering method that supports companies in adequately considering all the company-specific and macroeconomic drivers relevant for decision-making in their financial forecasts. Risks and opportunities and their concrete influences on the development of the corporate results are compiled consistently and provide the necessary transparency for quick decision-making. Consequently, corporate planning once again becomes a strategic steering element that fulfills the current demands.

2.2 Growth Expectations

The expected development of sales as well as future achievable results, such as EBITDA or EBIT, are fundamental premises in compiling a financial forecast.

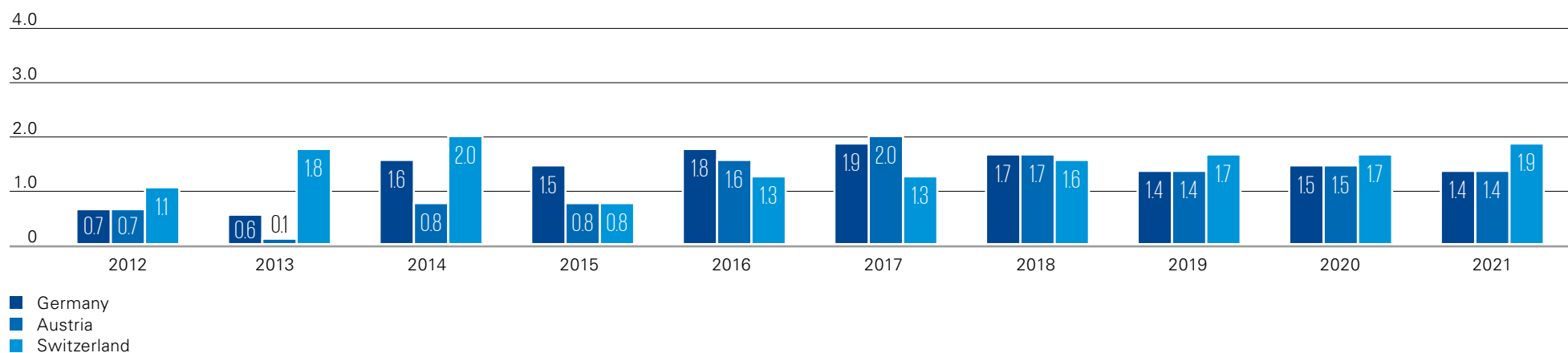
From the general economic perspective, the predicted results are also influenced by the future general macroeconomic development. If at the beginning of the decade, with the financial and

economic crisis of 2009, primarily economic issues were at the forefront, commencing with the subsequent 2012 sovereign debt crisis in Europe, politically charged issues began to have a direct influence on corporate developments. Amongst others, through the impact of Brexit, the new American protectionism or the destabilizing developments in Turkey, the economic forecasts for Germany and Austria currently assume there will be a slight decline in growth rates. In Switzerland, by contrast, an increase in the growth trend is expected. (Figure 08)

As a result of these and other increasingly unforeseeable macroeconomic developments, the planning of future results is becoming ever more difficult.

Following upon the downward trend of the previous years (2013/2014: 6.1 percent; 2014/2015: 4.9 percent; 2015/2016: 4.8 percent), the study participants assume, along with the economic forecasts, that there will be a slight increase in the average sales growth.

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



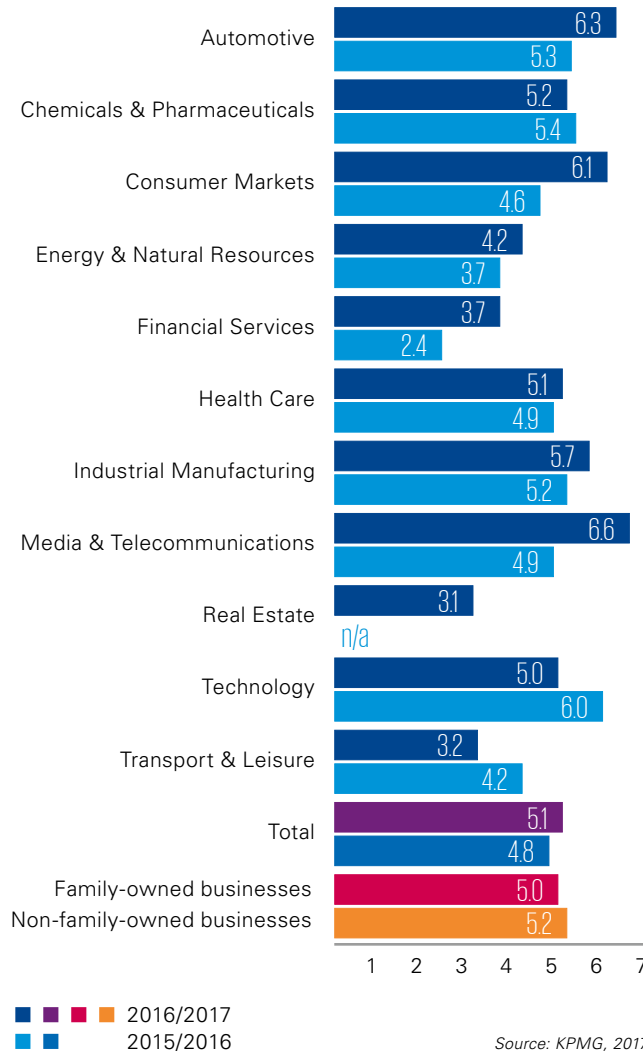
Source: KPMG analyses on the basis of data from The Economist Intelligence Unit Limited, 11 August 2017

While the **media & telecommunications** sector expects, with 6.6 percent and an increase of 1.7 percentage points, the highest sales growth compared to the previous year, companies in the **transport & leisure** sector assume a decrease in future growth and apply an annual growth rate of only 3.2 percent (previous year: 4.2 percent).

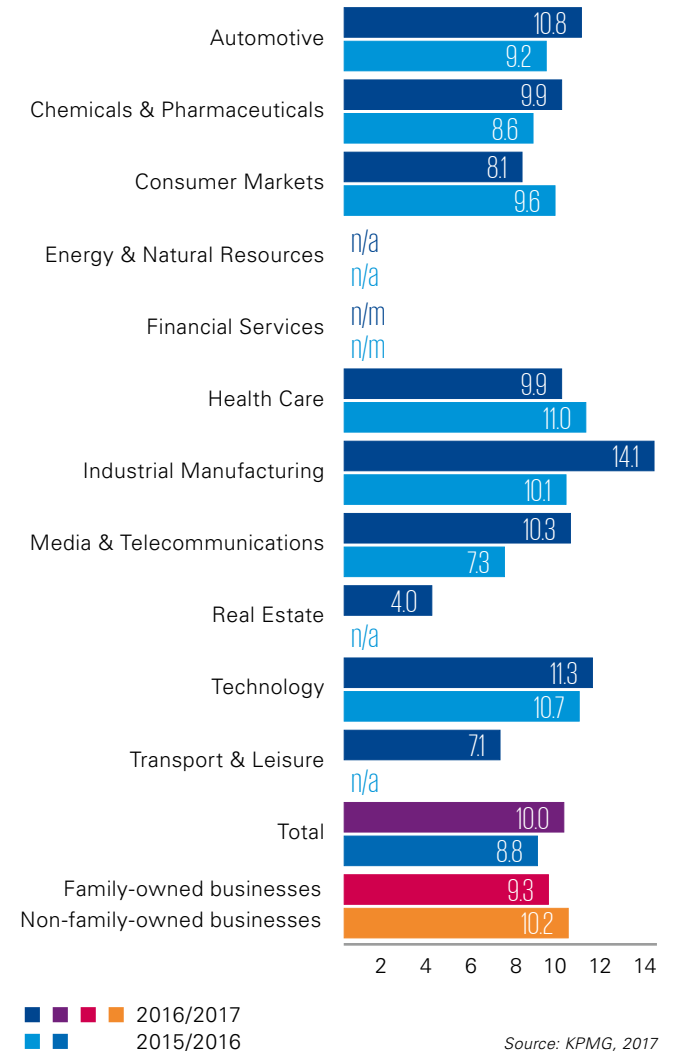
The study participants' EBIT growth forecasts were, at 10.0 percent, not only clearly above the value of the previous year (8.8 percent), but also well above the expected sales growth. (Figure 09 and 10)

For non-family-owned businesses, the overall forecasted growth of the EBIT was, at 10.2 percent, significantly above the expectations of family-owned businesses (9.3 percent).

09 Forecasted sales growth by industry
(in percent)



10 Forecasted growth of EBIT by industry
(in percent)



2.3 Determination of Expected Values

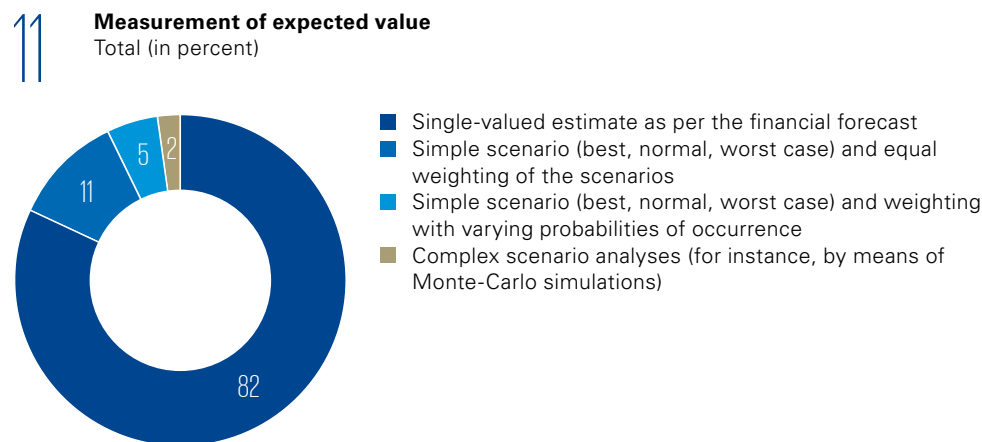
In the past, with a relatively stable economy and long years of corporate history, single-valued estimates were generally sufficient and reasonable for the derivation of future cash flows. Along with the increasingly unpredictable macroeconomic developments, the disruptive character of digitalization makes completely new business models possible that not only occupy the niches that existed, but also have the potential to replace established business models.

“The ‘start-up character’ is no longer simply an attribute of new, innovative companies. Nowadays we can expect numerous established companies and business models to change permanently, which will turn them into ‘start-ups’ as well.”

Dr. Andreas Tschöpel
Partner, KPMG in Germany

As a result of the high number of possible corporate scenarios for the future, it is to be assumed that the expected value sought for valuation purposes can no longer be simply determined on the basis of only single-valued planning estimates. It is much more frequently the case that ranges and distributions of relevant value drivers obtained in the framework of individual analyses form the basis for the transition from single-valued financial forecasts to multi-valued and simulation-based planning instruments. With the aid of these instruments, possible scenarios can be so transparently compressed that a determination of the expected value of the cash flow becomes possible.

With an almost unchanged proportion of 82 percent (previous year: 81 percent), however, the vast majority of the companies once again determined the expected values of the valuation relevant cash flow on the basis of a single-valued estimate in accordance with the financial forecast. This increases the danger of erroneous estimates in a world of increasing uncertainty. A total of 16 percent of the participants performed a simple scenario analysis, thereof 11 percent with an equal weighting of the individual scenarios and 5 percent with a weighting in accordance with the specific probability of the scenarios. Only about 2 percent considered more complex scenario analyses in deriving expected value. (Figure 11)



Source: KPMG, 2017

Companies in the **financial services** sector apply scenario analyses instead of single-valued estimates much more frequently for the determination of expected values. Due to the fact that insurance companies and banking institutions already regularly report on the effects of adverse interest, currency and economic scenarios, scenario considerations are to be observed much more frequently. Here, both cross-company changes as well as industry-specific conditions are examined, for instance, a general economic slump with impacts on the rate of insolvencies and costs of risk for banking institutions or technical developments in the automobile industry and their effects on loss ratios and insurance premiums.

The adjusted approach for the determination of expected values of cash flow in the **financial services** sector on the basis of scenario analyses is exemplary for the necessary reaction of this industry to the significant regulatory and market changes and the resulting risks and opportunities.

“Because the future macro- and microeconomic conditions for almost all of the industries will be subjected to major changes, the implementation of planning models that can properly simulate the relevant drivers of the business models and in particular their variable attributes, is recommendable across every industry. In this connection, big data is resulting in an availability of additional analytic possibilities and operative data that is significantly greater than was previously possible.”

Dr. Marc Castedello
Partner, KPMG in Germany

2.4 Consideration of Risks

Future cash flows are uncertain and must be reflected with their expected value. For that reason, all the opportunities and risks associated with the business model must be completely considered when compiling the financial forecast and deriving the cash flow. These risks may be macro- or microeconomic in nature.

In view of this, we asked companies this year for the first time to what extent macro- and microeconomic risks were considered in their strategic planning and therefore in the derivation of the cash flow.

On the macroeconomic level, with 75 percent, the majority of the companies reported that they included economic risks in their planning and in the derivation of relevant parameters. In addition, regulatory and legal conditions (62 percent), currency risks (60 percent) as well as political risks such as protectionism (45 percent) were a component of the financial forecasts. (Figure 12, page 22)

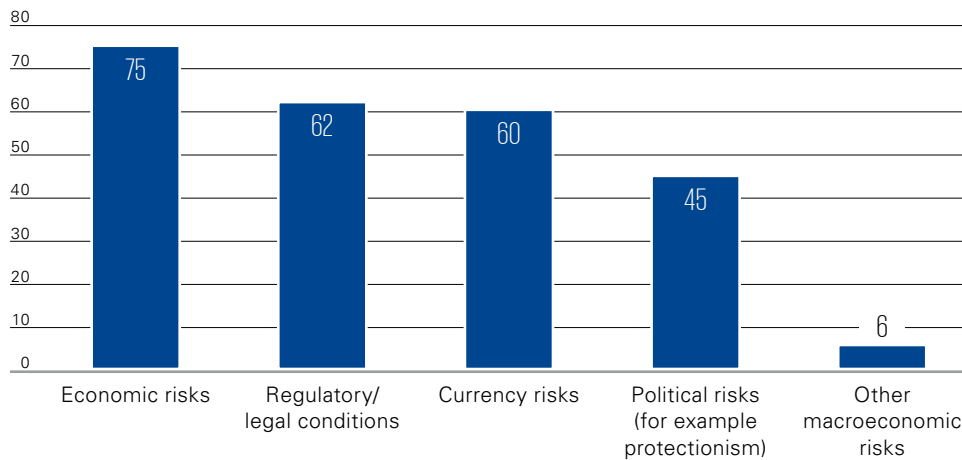
It was striking that especially the financial forecasts in the **financial services** sector were impacted by macroeconomic risks. Generally in this industry interest, currency and economic scenarios are established as guidelines for volumes and earnings forecasts at the highest level. Maintaining regulatory requirements in the planning period is a basic secondary condition. Digitalization and competition from companies from the financial technology sector (FinTech companies) are, however, gaining ground in the financial forecasts of the industry.

Microeconomically, customer-side market and sales risks were, with 80 percent, the most frequently considered type of risk considered in the financial forecast. Furthermore, 61 percent of the companies considered risks from technological change and developments in digitalization as well as 57 percent potentially greater competition from the entry of new market participants. (Figure 13)

Family-owned businesses demonstrated a clear difference in that along with customer-side risks they especially saw new competitors as microeconomic risks (72 percent), while non-family-owned businesses considered these effects much less frequently in the financial forecast (53 percent).

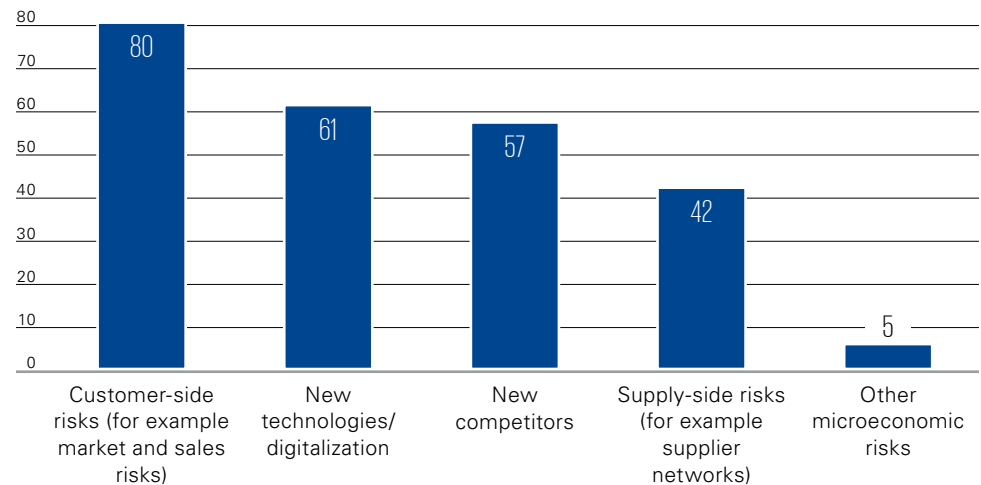
In general, it was observed that macro- and micro-economic risks were reflected in the financial forecast. Unforeseeable developments such as the American tendency to protectionism, Brexit and disruptive effects from digitalization constantly create new challenges at the corporate management level that make planning the future corporate development increasingly more complex and demand flexible planning instruments.

12 Consideration of risks in the financial forecast – macroeconomic risks
Total (in percent, multiple choices possible)



Source: KPMG, 2017

13 Consideration of risks in the financial forecast – microeconomic risks
Total (in percent, multiple choices possible)



Source: KPMG, 2017

Microeconomic Change – Predictability of Disruptive Business Models

No company is able to ignore the rapid changes currently taking place in the business world or that are also probably to be expected in the future. For established business models – such as the production of automobiles or the trade in consumer goods – digitalization offers significant advantages. At the same time, such business models are disruptively threatened by completely new models because competitors (industry outsiders) are no longer only trying to break into an existing niche, but also have the potential to establish new business models that either completely replace the existing ones or force them into dependencies. The transformation and convergence of entire industries – practically unimaginable ten years ago – appears to be possible everywhere today. Companies from the “old economy” have to face these new realities and also change dynamically. The “start-up character” is no longer just an attribute of new, innovative companies. It is rather to be expected that the majority of companies will become “start-ups” with respect to new business models. Associated with this are in principle all the particularities connected with the cash flow prognosis of new business models and the decision-based valuation of innovative companies.

The value of an innovative business model is also – as with the valuation of any investment – determined by two questions: How much risk am I willing to take on? And what performance may/must I expect in return? Planning methods for innovative business models must therefore be in the position to compile the material operative value drivers of

the business model, to transform them into financial parameters and to determine performance and risks equally well so as to form a suitable basis for the subsequent determination of value.

In the practice of valuating start-ups, “alternative” methods can frequently be observed that are far from the established planning and valuation approaches. Their application is regularly justified with start-up specific uncertainties as well as the existing limitations of the established methods. There is, however, some question as to whether “alternative” assessment methods are actually needed.

Our reply is a resounding “No”. After a more detailed review of these “alternative” methods it quickly becomes clear that they – consciously or unconsciously – accept great vagueness so as to reduce the doubtlessly significantly greater complexity of assessing new and relatively non-comparable business models. Some methods, for instance, attempt to compensate for a lack of information regarding the business model of start-ups by referencing purely operative indicators (such as traffic on the website, click rates, likes).

Multiplier-based methods on the basis of purely financial indicators (for example, sales multipliers) try to avoid the start-up-specific problem of negative earnings in the initial loss phase. Results frequently demonstrate, however, that it is not the established method of corporate planning itself, but rather their inadequate design in the case of innovative busi-

ness models that is the reason for applying “alternative” methods.

Furthermore, the argument of the need for reducing complexity should be viewed critically; it may only be accepted to the extent that it does not materially impact on the result of the valuation. Simplifying “alternative methods” may in no way replace established approaches to planning and valuation. The forecast of future returns (such as the basis for a discounted cash flow method) therefore plays just as important a role in the corporate planning of start-ups as in the valuation of established business models.

Established companies enjoy the advantage over start-ups in the assessment of innovative business models in that they are generally familiar with classical planning methods. They need only to consistently integrate the changing conditions, business models and operative drivers in the existing instruments so as to avoid the disadvantages of simplifying “alternative methods”. The frequently mentioned challenge that at the beginning there is a lack of information for the forecast of cash flow is, in most cases, rapidly relativized if an initial focus on the “real” drivers is performed by means of a more intensive examination of the operative business model. Any valuation should build on the operative business model and not simply on the resulting financial indicators. That was frequently ignored in the past when planning established business models or it was justified with the assumption that established companies are reflected in long-term

stable figures. The forecast of cash flows for start-ups results, due to a lack of corporate history, in an intense examination of the operative business model. This then comes round full circle to the “alternative” methods, for they frequently orient themselves on the observable operative drivers, for lack of a positive corporate performance. The established methods for predicting cash flow, however, transport the operative business model into a – comprehensible and increasingly successively complex – financial model.

With big data and the increasing availability of operative indicators, it is not only possible to obtain a direct connection between the development of the operative drivers of a business model and its financial performance. More importantly, it is also possible to consistently compile the value-relevant risks of a start-up. Due to the fact that a purely financial performance orientation with start-ups provides only limited information as a result of initial losses, the assessment of the risk development is particularly important. It is precisely innovative business models that are subject to significant changes in the operative risk at the beginning of their lifecycle – which contributes significantly to the company value development, especially in the early periods. It can therefore be shown that the high probability of failure in young companies, especially in the early lifecycle phases, decreases dramatically and the expected returns required decrease with declining risks. Only when the risks in the cash flow forecast are correctly compiled and measured, is it possible to appropriately reflect these risks in their comparative measures – the cost of capital (see Cost of Cap-

ital – Comparative Measures in a World that Increasingly Defies Comparison, page 45).

With CEDA (Corporate Economic Decision Assessment), KPMG possesses a value-oriented decision-making and steering method for the valuation of start-ups and innovative business models that transparently fulfills the special requirements and expectations for start-up forecasts.

“Comprehensive cash flow forecasts are not uniformly applied in the start-up environment. The unavoidable focus on the operative drivers does, however, provide – in contrast to the frequently applied valuation practice – ideal conditions for the consistent application of established planning procedures.”

Dr. Marc Castedello
Partner, KPMG in Germany

2.5 Determination of the Sustainable Year

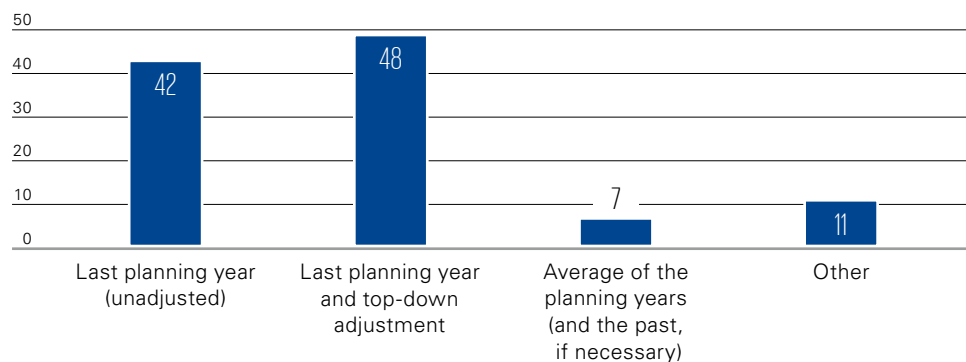
The determination of the terminal value is of material importance in establishing the value of the company. Prerequisite to and the starting point for deriving the terminal value is that the company has reached the “steady state”.

“In view of the significant relevance of the value of the terminal value as well as the necessity of expected values, the determination of the sustainable year should be performed on the basis of scenarios. Simulation-based methods such as the Monte-Carlo simulations are available to that end.”

Stefan Schöniger
Partner, KPMG in Germany

As in the previous years, the majority of the study participants determined the terminal value on the basis of the last detailed budget year with the possible consideration of top-down adjustments. With 48 percent (previous year: 40 percent), significantly more companies performed an adjustment of the forecasting results for determining the terminal value. Only 7 percent (previous year: 11 percent) of the participating companies applied an average of the planning years (and the past, if necessary) to determine the terminal value. (Figure 14)

14 **Determination of the terminal value**
Total (in percent, multiple choices possible)



Source: KPMG, 2017

3 Determination of the Cost of Capital Parameters



3.1 WACC Overview

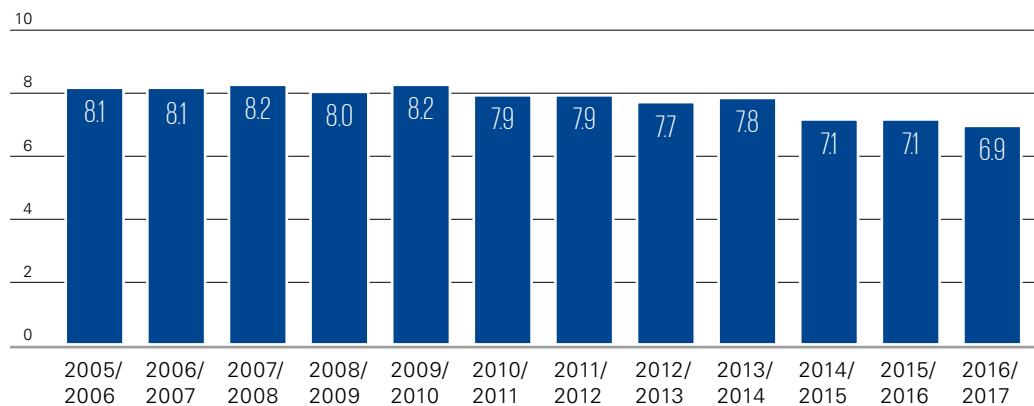
Determining the WACC requires a weighting of the cost of equity with the equity ratio (at market values) and the cost of debt with the debt ratio (at market values).

Following an almost constant value of 7.1 percent in the last two years, the average WACC applied declined this year and reached, with 6.9 percent, the lowest value since the first publication of the Cost of Capital Study. The downward trend of the last few years continued and was essentially driven by a dramatically declining risk-free rate, which

could not be completely compensated with the corresponding increase of the market risk premiums. (Figure 15)

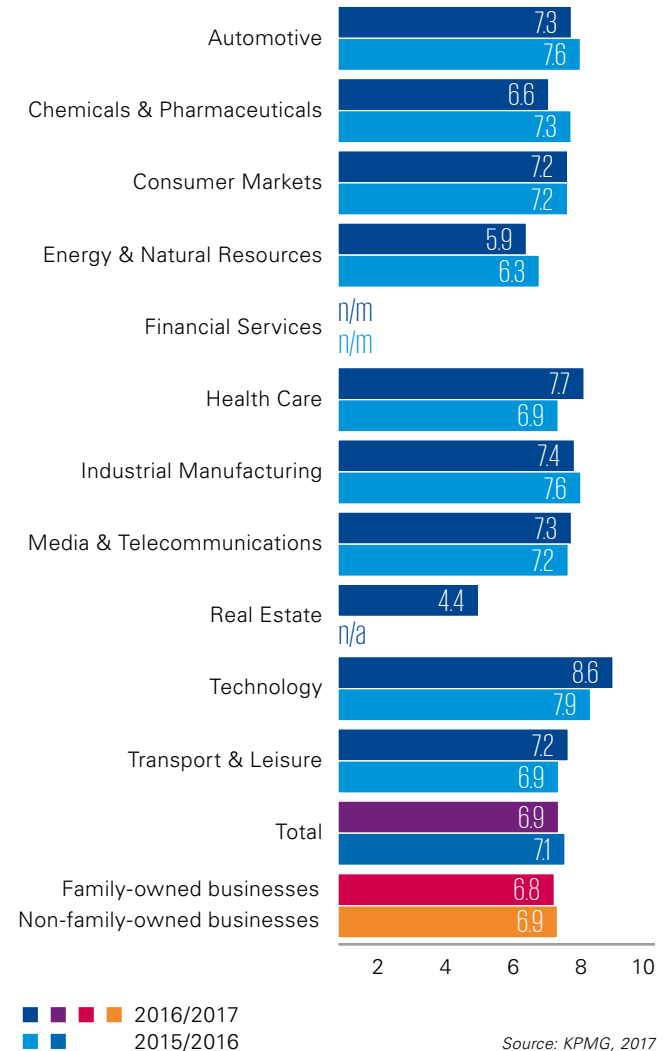
The decrease in the WACC was not, however, found to be uniform across all the industries. While the average WACC applied decreased slightly overall, it increased, by contrast, in nearly half of the industries. The strongest increases, with 0.8 and 0.7 percentage points, were found in the sectors **health care** and **technology** to 7.7 percent and 8.6 percent, respectively. The strongest decline in WACC, with 0.7 percentage points, was in the **chemicals & pharmaceuticals** sector to 6.6 percent. (Figure 16)

15 WACC (after corporate taxes)
Total (in percent)



Source: KPMG, 2017

16 WACC (after corporate taxes) by industry
(in percent)



Source: KPMG, 2017

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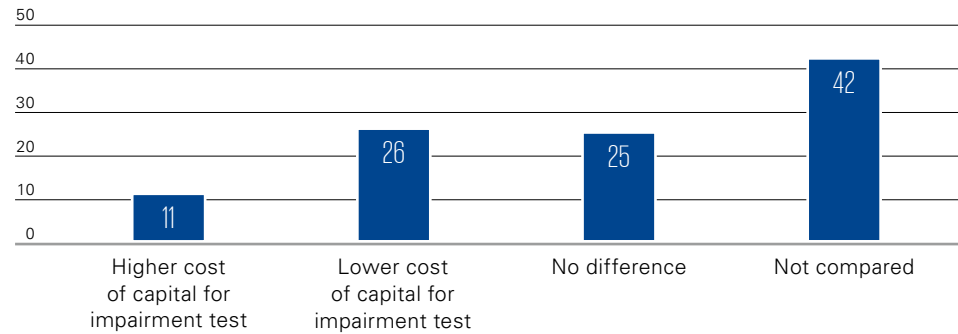
There were particularly differences within the industries themselves, especially in the sectors **consumer markets** and **media & telecommunications**. More precisely, the WACC in the sub-sectors **consumer markets** and **retail** was applied at 7.6 percent and 6.4 percent, respectively, in the sub-sectors **media** and **telecommunications** at 7.8 percent and 5.7 percent, respectively.

With regard to the WACC applied, there were no significant differences between family-owned and non-family-owned businesses.

Study results in the past have demonstrated that the study participants applied various costs of capital for differing types of valuations. In principle, the cost of capital derived should at least be based on consistent concepts. Nevertheless, only 58 percent performed a reconciliation between the impairment test and M&A transactions/investment decisions (previous year: 62 percent). A reconciliation with the cost of capital for fiscal valuations was only performed by 34 percent of the companies (previous year: 40 percent). (Figure 17 and 18)

17 Deviation of the cost of capital in M&A transactions and investment decisions

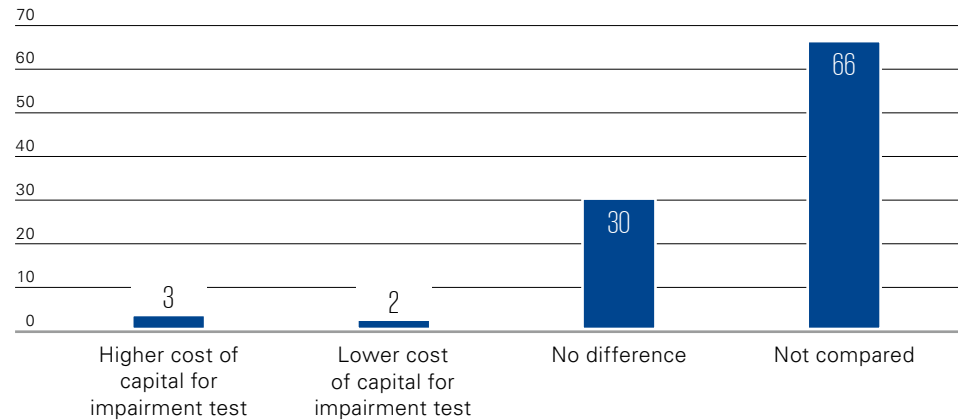
Total (in percent, multiple choices possible)



Source: KPMG, 2017

18 Deviation of cost of capital for fiscal valuations

Total (in percent, multiple choices possible)



Source: KPMG, 2017

GUEST COMMENTARY

Cost of Capital – The Challenges of Low Interest Rates, Populism, and New Technologies

“Market prices are usually wrong. Generally, we just don’t know the extent of the erroneous valuation; in some cases we don’t even know whether it is plus or minus.” This quote from an unknown investor reflects the difficulty in determining the fair value of companies, especially in times of low interest, increasing political uncertainty and rapid technological change.

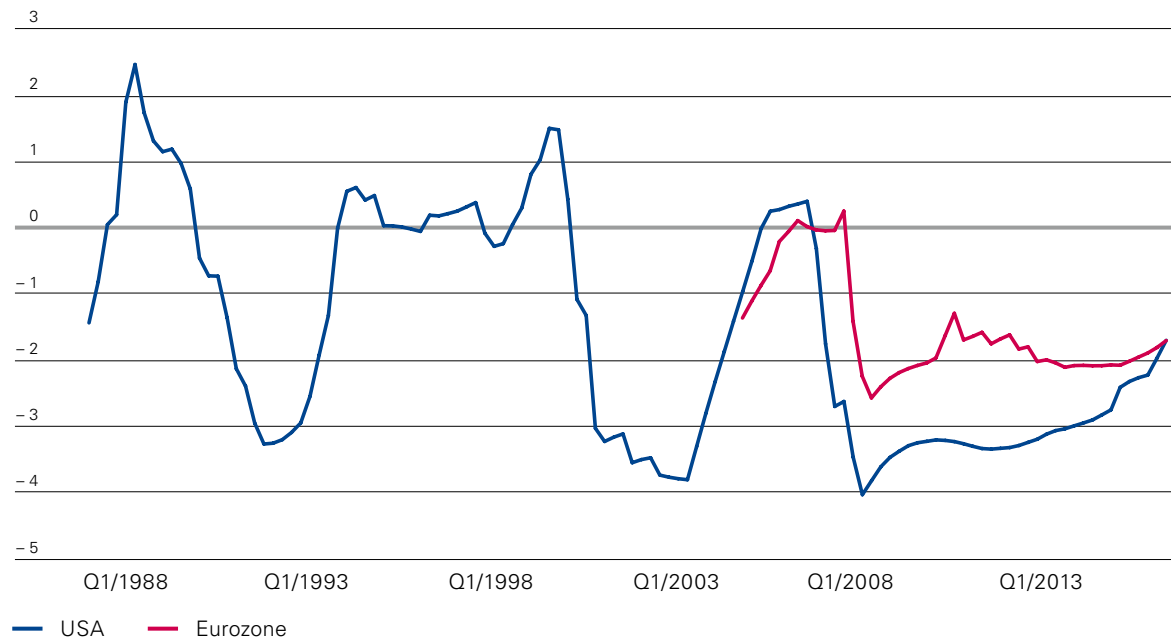
In the current interest environment, traditional discounting methods reach their limits: The calculated fair value for stocks (markets) is too high if the application of the current low market interest for a risk-free investment is not accompanied by correspondingly low expectations for future cash flows. This is absolutely necessary due to the fact that a low-interest environment is, amongst other things, the flip-side of the low-growth environment coin. But even then there are difficulties in valuations; if the monetary policy of the central banks is too expansive, i.e. the interest for a risk-free investment is too low, investors’ appetite for risk and stock prices overshoot the long-term fair value, for instance as seen in the cycle-adjusted average price-earnings multiples with simultaneously low volatility. From our perspective, this is currently the case, especially in the USA, while European stocks continue to show a reasonable valuation compared to the long-term history. Just the same, the difference between stock returns and the risk-free rate appears to be outstandingly high not only for US stocks, but for European stocks as well. This does not necessarily mean, in our opinion, that investors

demand a higher risk premium. It is much more a sign of an interest level that is distortedly low. As empirical analyses have demonstrated, the connec-

tion between stock market and bond market returns is unstable, especially in low-interest periods.

19

Central bank interest rates relative to “neutral” level¹



¹ Difference calculated as the difference between Fed Funds Target Rate or Repo Rate of the European Central Bank and the individually adjusted trend growth

Quelle: Allianz GI, Datastream

Figure 19 on the previous page illustrates the difference between the individual central bank interest rates for the USA and the Eurozone, Fed Funds Target Rate (USA) or Repo Rate (Eurozone), and individually adjusted trend growth. Empirically, the central bank interest rate is on average slightly below the trend growth, in accordance with the results of the neoclassical growth theory. The trend growth is estimated on the basis of long-term average growth rates.

With regard to the coming quarters, the above-mentioned valuation problem will wane; in view of the improving economic conditions, we expect a normalization of the monetary policy on both sides of the Atlantic. Consequently, the interest for risk-free investments will once again slowly increase.

The undeniable increase in political uncertainty, above all, the attraction to populist parties around the world makes the valuations of stocks (markets) more difficult, also because their economic implications are so often very difficult to appraise. In our opinion, the risk of deglobalization, i.e. the potential increase in trade and immigration barriers, deserves the greatest attention. Deglobalization inhibits growth because it has a negative impact on the international division of labor and therefore on the growth of productivity. To that extent, the valuation effect would be negative. A decline in international trade would also increase inflation. On the one hand, due to the lower growth in productivity the gap between aggregate supply and demand closes more quickly and, on the other hand, directly, due to increased prices in the form of tariffs. The impact on the discount rate is therefore ex ante ambiguous.

The real interest rate would decline, the inflation premium would, however, climb.

In the end, it is not clear what the impact of the increasing rate of technological innovations is on the valuation of equity. The “creative power of disruption” results in winners and losers among individual securities. Because these are difficult to identify in a quickly changing environment, one could argue that a higher risk premium would be justified. Should the currently indicated fourth industrial revolution result in aggregate gains in productivity, it would have a positive impact on discounting models at the total market level by means of an increase of the expected cash flows. The effect on the discount rate (higher real interest, lower inflation premium) would be ex ante unclear. Currently, and for some surprisingly, there is to date, however, no sign of a structural increase in the aggregate productivity growth.

“In view of the current challenges – low interest rates, political uncertainties, technological change – comparisons with historical valuation multiples maintain their role as important valuation anchors, at least for being able to correctly estimate whether erroneous estimates are plus or minus.”

Stefan Hofrichter

Managing Director, Head of Global Economics & Strategy,
Allianz Global Investors GmbH

3.2 Risk-free Rate

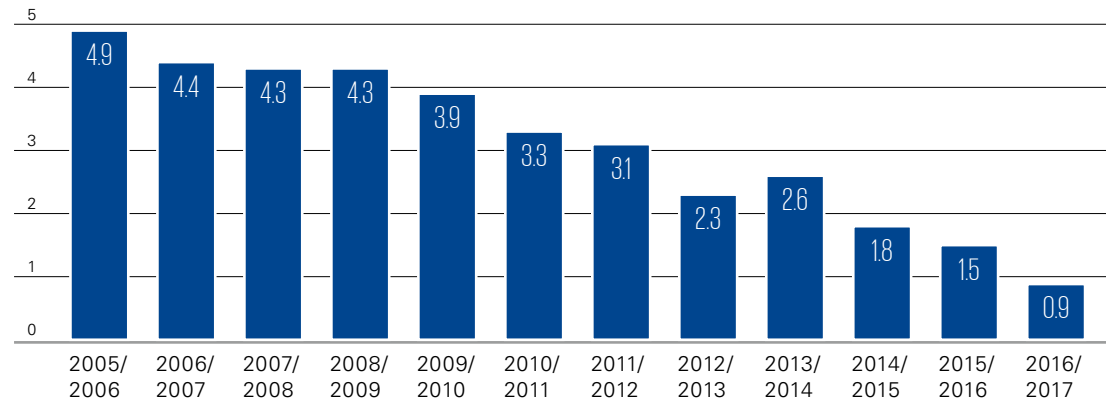
The downward trend of the average long-term risk-free rate continued this year. The average risk-free rate applied by the study participants in Germany, Austria and Switzerland decreased to what is now 0.9 percent and therefore reached, for the first time since the Cost of Capital Study has been published, a level below one percent (2015/2016: 1.5 percent). (Figure 20)

Yield curves in the Eurozone as well as in Switzerland continued to decline and the level of interest rates in Europe declined for the fourth year to a new historical low level. There was, however, at the time the study was being written, a slight increase of the long-term interest rates.

Driven by the declining yield curves, the risk-free rate applied by companies in Germany and Austria decreased by 0.6 percentage points to 0.9 percent. In Switzerland, the decrease was 0.5 percentage points to only 0.8 percent.

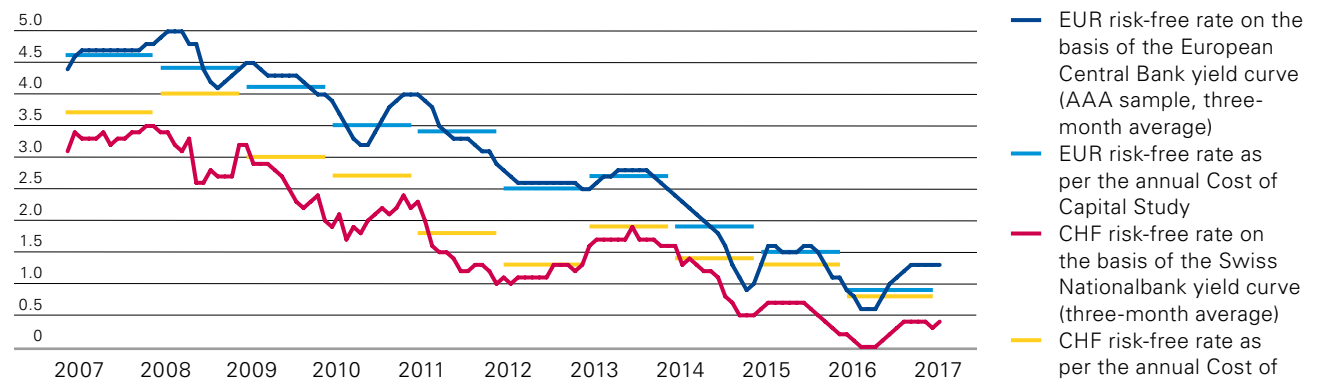
As a result of the sharp decline of the average risk-free rate applied in Germany and Austria, the interest rate difference between the two currencies decreased further and is now 0.1 percent (previous year: 0.2 percent). (Figure 21; Figure 22, page 32)

20 Average risk-free rate applied
Total (in percent)



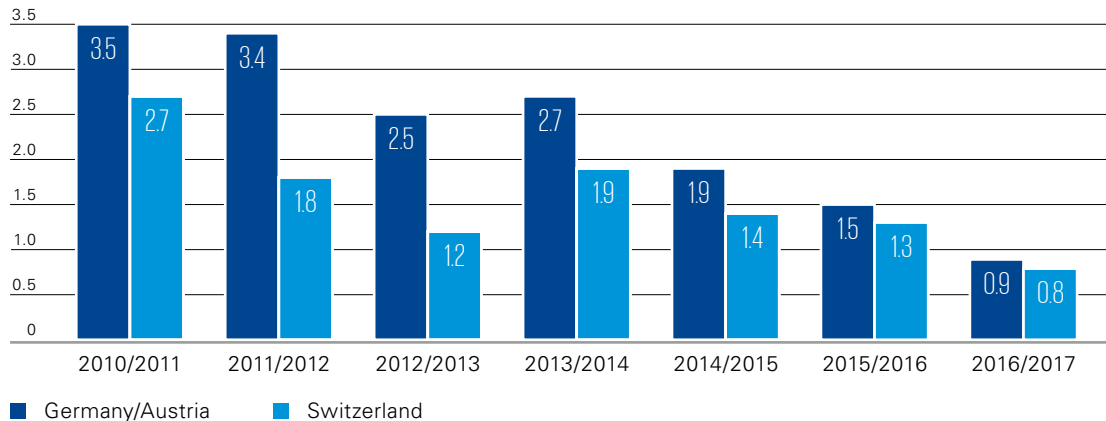
Source: KPMG, 2017

21 Yield curve
European Central Bank versus Swiss Nationalbank (in percent)



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

22 Average risk-free rate applied Germany/Austria versus Switzerland (in percent)



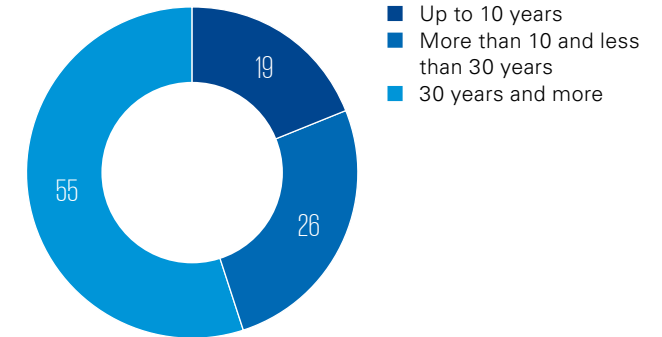
Source: KPMG, 2017

When analyzing the risk-free rates applied, especially 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 business valuations, a 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 just about half of all the study participants (48 percent) in the observa-

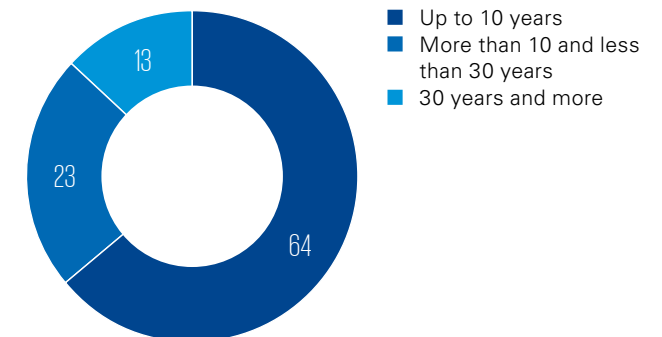
tion period (previous year: 45 percent) and applied to determine the risk-free rate of government bonds and yield curves with a term of 30 years or more. In Germany and Austria, this procedure was applied most frequently with a ratio of 55 percent. In Switzerland, by contrast, the participating companies continue to apply government bonds/yield curves with a maximum term of ten years. With a value of 59 percent in the previous year, the portion of Swiss companies using this method increased this year to 64 percent. (Figure 23 and 24)

23 Determination of risk-free rate in Germany and Austria Total (in percent)



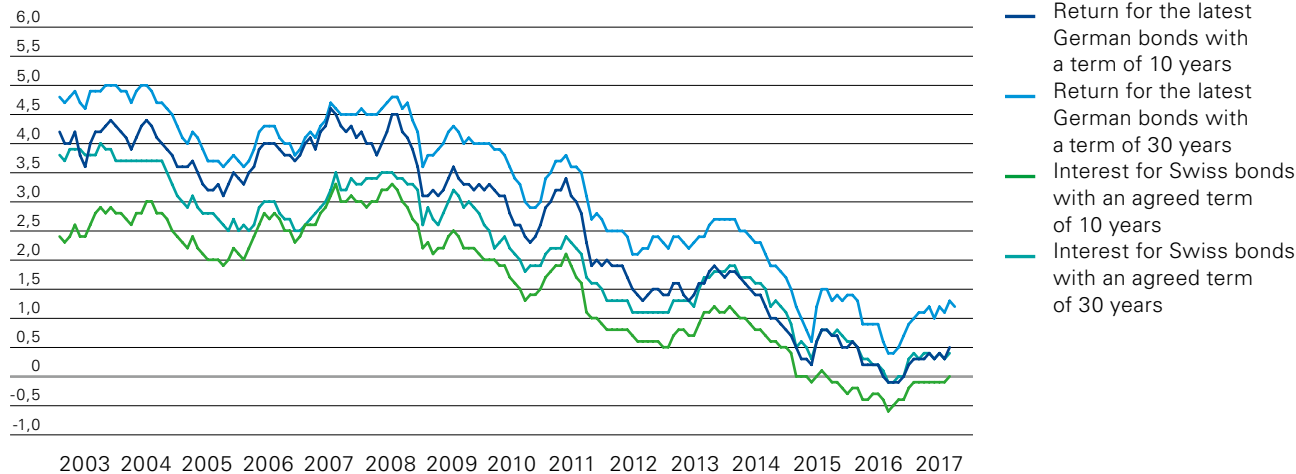
Source: KPMG, 2017

24 Determination of risk-free rate in Switzerland Total (in percent)



Source: KPMG, 2017

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



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

Figure 25 shows the average difference in returns for bonds from Germany and Switzerland, which result due to the use of ten-year bonds compared to thirty-year bonds.

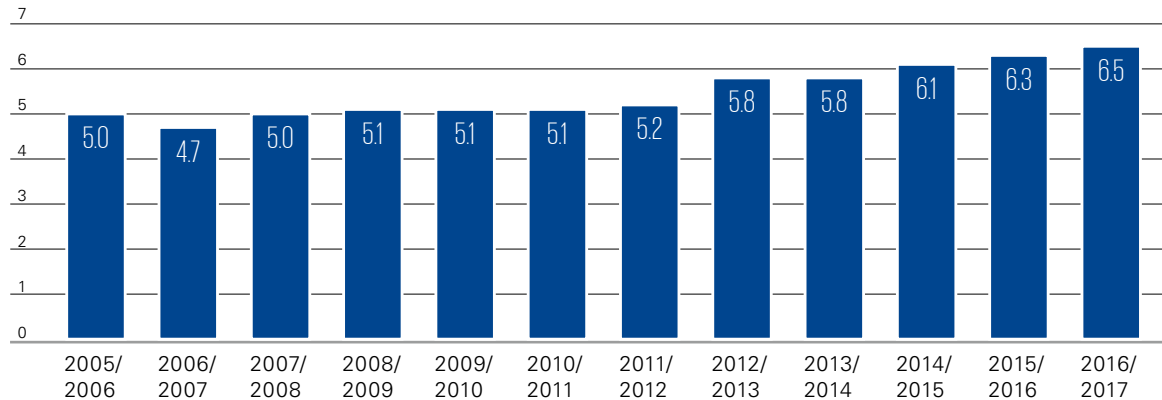
3.3 Market Risk Premium

In principle, the determination of the market risk premium requires the pricing of the capital market participants. It is to be assumed that investors see an additional risk in the financial investment in companies compared to risk-free investments. The market risk premium describes returns demanded by an investor above the risk-free rate for holding a market portfolio containing risky securities. It is a component of the investor's total return which is explained with the aid of capital market pricing models (CAPM, Capital Asset Pricing Model).

The capital-market-oriented market risk premium is calculated by the difference in returns between investments in a representative market portfolio – consisting of risky securities (stocks) – and risk-free investments and can be based on both historical as well as future-oriented data. The market risk premium is therefore not a parameter that can be directly observed in the capital market.

Historically, the average market risk premium of the company fluctuated in a relatively stable corridor of 5.0 to 5.2 percent until 2011/2012. As a result of the economic and financial crisis of that time as well as the sovereign debt crisis of 2012 and the associated increase in risk aversion, the risk premiums required after 2012/2013 increased.

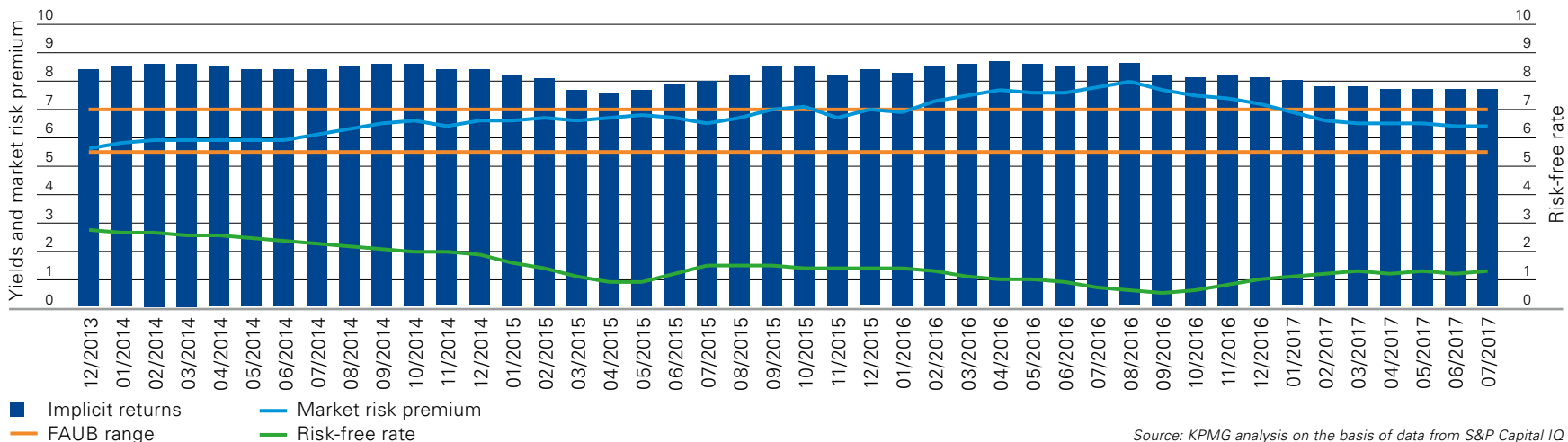
26 Average market risk premium Total (in percent)



Source: KPMG, 2017

In this connection, the Technical Committee for Business Valuation and Economics (FAUB, Fachausschuss für Unternehmensbewertung) of the Institute of Public Auditors in Germany (IDW, Institut der Wirtschaftsprüfer) published 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" on 19 September 2012. In the framework of this publication, the committee recommended applying a market risk premium before personal taxes of between 5.5 percent and 7.0 percent. Based on the range recommended by the FAUB, own analyses for the determination of the market risk premium should always be performed.

27 Change in expected returns in Germany (in percent)



Source: KPMG analysis on the basis of data from S&P Capital IQ

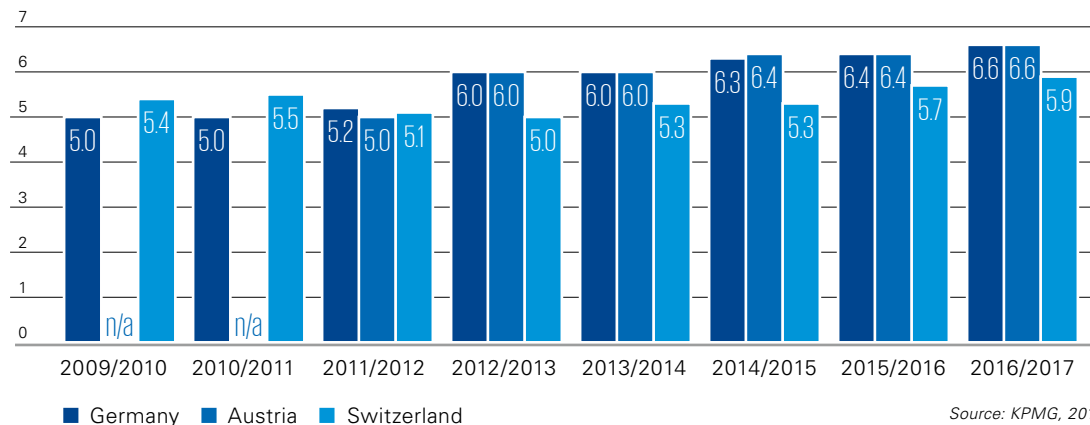
In view of this, the participants, assuming the relevant overall returns, considered once again a subsequent increase of the market risk premium by 0.2 percentage points, resulting in an average applied market risk premium of 6.5 percent that would at least partially compensate the decrease in the risk-free rate. (Figure 26, page 34)

This development also coincides with the implicit returns observed for listed corporations in Germany. While the level of interest in Europe has persisted at a historically low level for six years now, the market risk premium as the difference between stock returns and the risk-free rate remains at a high level above long-term historical averages. (Figure 27, page 34)

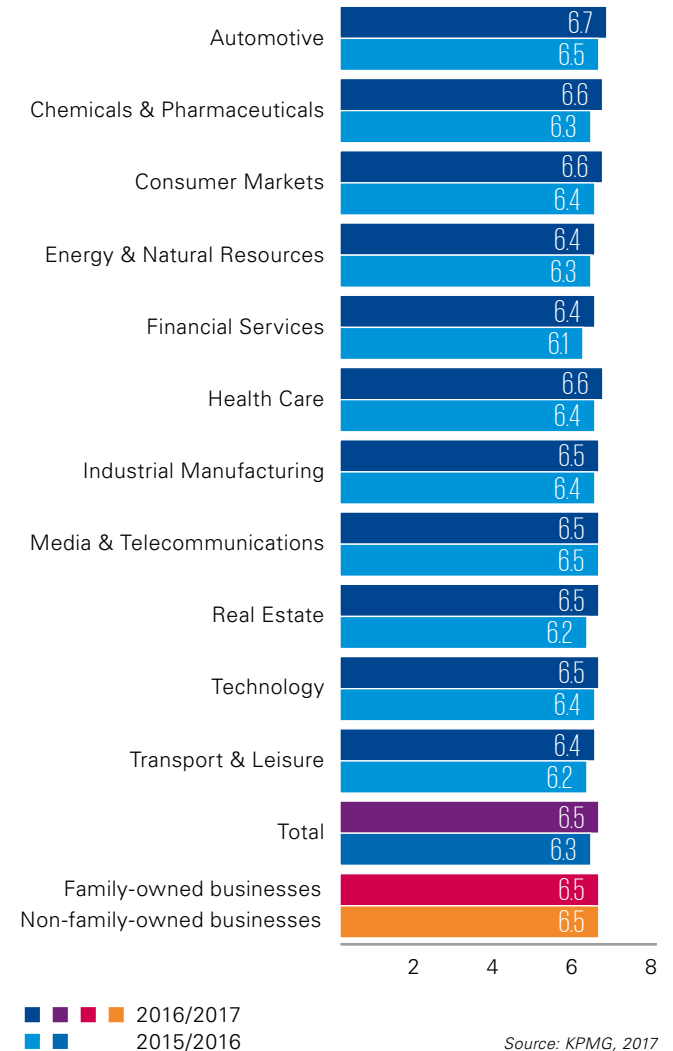
“Implicit market risk premiums represent an appropriate method for specifying ranges that are derived from historical analyses of the market risk premium. They are an essential element for fulfilling the postulate of forward-looking parameters in the determination of all cost of capital parameters.”

Stefan Schöniger
Partner, KPMG in Germany

28 Average market risk premium
Germany versus Austria versus Switzerland (in percent)



29 Average market risk premium by industry
(in percent)



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The increase of the average market risk premium applied could be observed equally in all three countries. It increased in each case by 0.2 percentage points and was in Germany and Austria 6.6 percent (previous year: 6.4 percent), in Switzerland 5.9 percent (previous year: 5.7 percent). (Figure 28, page 35)

Because of the definition of the market risk premium as an industry-independent parameter, there should not be any recognizable material differences between the individual industries. Accordingly, the market risk premiums applied by the study participants were in a narrow range of 6.4 to 6.7 percent,

whereby **automotive** was the highest, the sectors **financial services, energy & natural resources** as well as **transport & leisure**, starting from a lower level, formed the lower end of the spectrum. (Figure 29, page 35)

Overall, this year 82 percent of the German study participants reported that they applied a market risk premium of 6.01 to 7.00 percent, whereby the majority of these companies applied a market risk premium between 6.75 and 7.00 percent. (Figure 30)

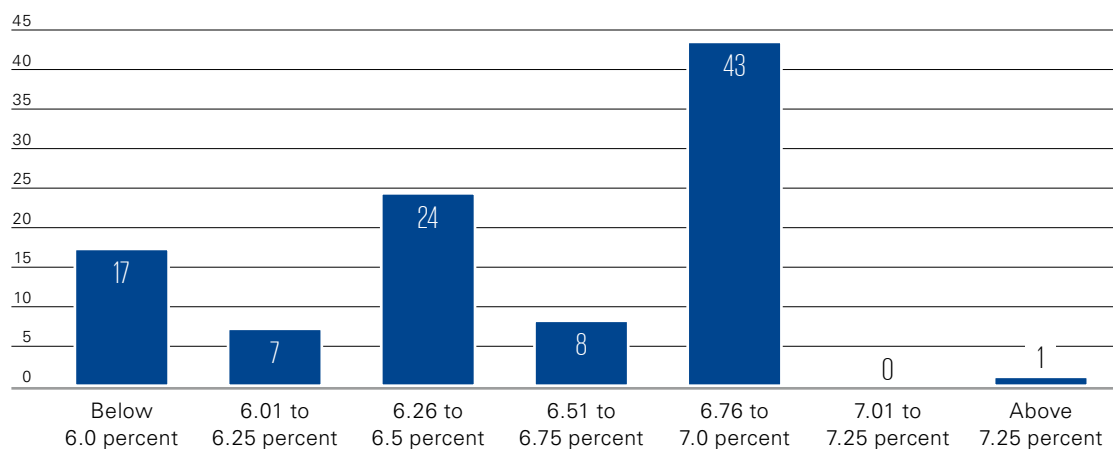
3.4 Beta Factor

The beta factor is another important element in the determination of the costs of equity. In accordance with the CAPM, it is formed – along with the risk-free rate – by the risk premium to be considered from the general market risk premium and the company-specific beta factor.

The beta factor expresses how much an individual title fluctuates in relation to a comparable market portfolio. It therefore represents the valuation-relevant company-specific risk in relation to the general market risk.

The difficulty in determining the future beta factor can be attributed to the following aspects: 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. Furthermore, there are various hurdles in the compiling of historical beta factors – for example, that cash generating units (CGUs), as units to be valued in the framework of the impairment test, are in principle not listed companies. Consequently, no beta factors can be directly determined for the CGU from the capital market. For that reason, in practice a group of comparable, listed companies – a so-called peer group – is used, together with its capital market data on the valuation date, to determine the company-specific risk of the CGU as best as possible.

30 Distribution of the market risk premiums of German companies (in percent)



Source: KPMG, 2017

If the individual CGUs are subjected to different operative risks, a separate peer group should be applied for every CGU so as to adequately reflect the differing risk profile of the individual CGUs.

The derivation of the beta factor from a peer group is implicitly required for the determination of the fair value less costs of disposal and the value in use, so as to take into account the necessary market perspective.

Overall, the percentage of the study participants that applied a peer group to derive a risk-adequate beta factor was at 93 percent (fair value less costs of disposal) and 86 percent (value in use) and ranged with slight variations on the level of the previous year (93 and 83 percent).

In addition to using a peer group, alternative approaches can be considered that are suitable for simulating the operative risk of CGUs directly from market and company data (Please refer to the key topics from the current and last year's study). Such methods are being applied increasingly in valuation practice.

The application of beta factors from the group/company compiling the balance sheet is only then appropriate for the impairment test of the CGU if the operative risk of the CGU coincides with the operative risk of the group. For listed companies, the price of the shares of the company should not be subject to any significant fluctuations that are not associated with the company's risk profile. According to the study results this year, the beta factor of the company compiling the balance sheet was, with 12 percent (value in use) and 4 percent (fair value less costs of disposal), about the same as that of participating companies in the previous year.

Industry beta factors still were applied rarely. Overall, this approach formed the basis for 2 percent for the derivation of the value in use and 3 percent for fair value less costs of disposal (previous year: 4 and 3 percent). (Figure 31)

Unlevered beta factors

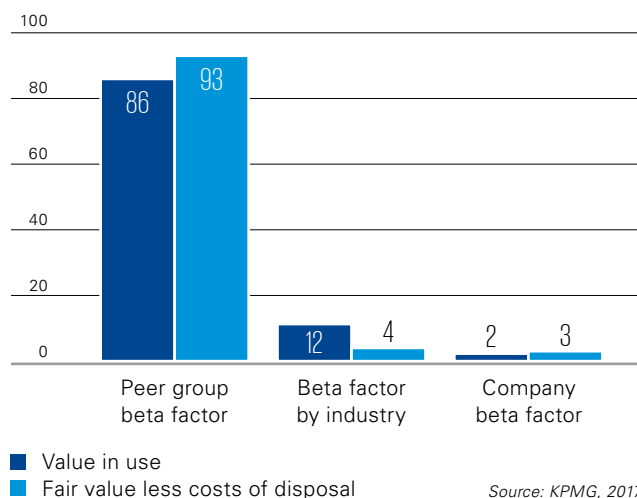
The unlevered beta factor reflects the operative risk in determining the cost of capital. Compared to the previous year, the unlevered beta factor increased slightly to 0.86 (2015/2016: 0.85). (Figure 33, page 38)

While a moderate increase was seen in most industries, the unlevered beta factor applied in the **technology** sector increased by 0.07 to 1.03 and was therefore the highest value applied in the industry comparison. The reason for this could be in the special challenges of the companies caused by digitalization.

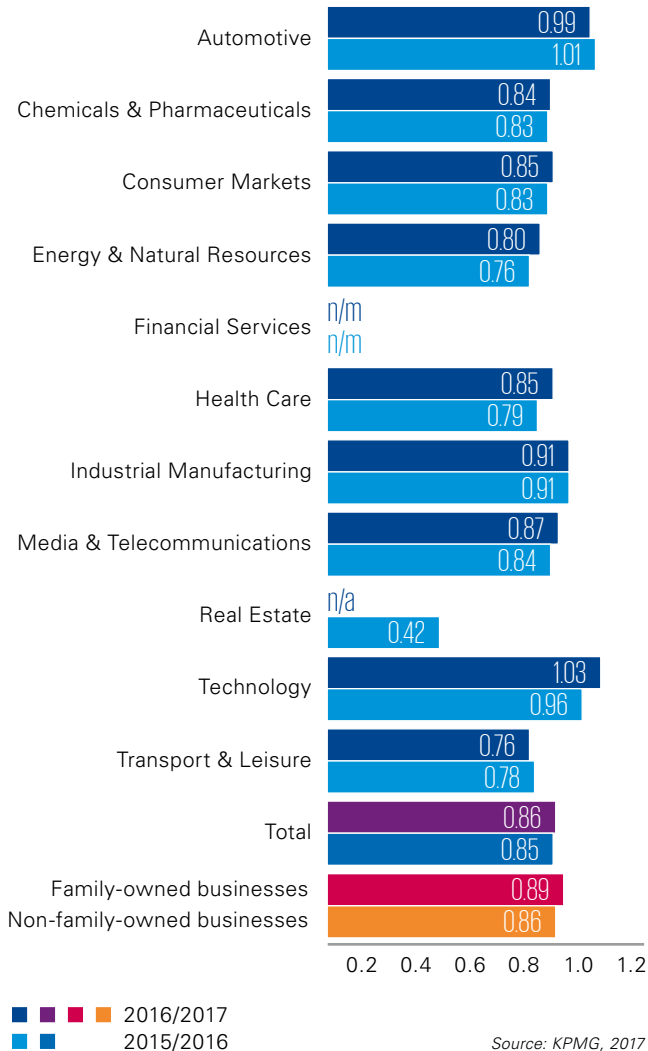
By contrast, in **automotive** and **transport & leisure**, there was a decline in the unlevered beta factors by 0.02 to 0.99 and 0.76, respectively. (Figure 32, page 38)

A differentiation was to be seen within the industries, especially in the **media & telecommunications** sector. While the entire sector showed an unlevered beta factor of 0.87, in the sub-sectors **media** and **telecommunications** values averaged 0.94 and 0.67, respectively.

31 **Basis of the beta factor**
Total (in percent)



32 Average unlevered beta factors by industry



Source: KPMG, 2017

“The higher unlevered beta factor in family-owned businesses is in particular attributable to the deviating industry mix in family-owned and non-family-owned businesses. An above-average number of participating family-owned businesses are active in the automotive and industrial manufacturing sector.”

Dr. Vera-Carina Elter

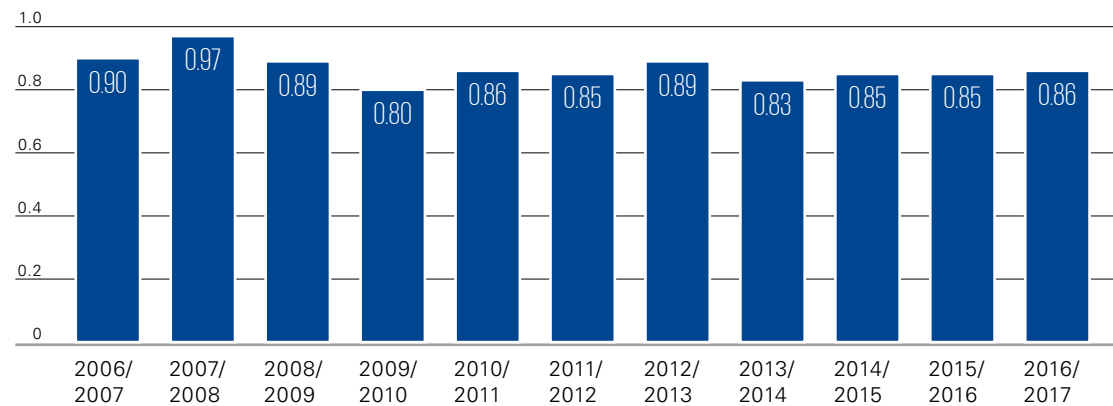
Partner, Managing Partner for Family-Owned Businesses, KPMG in Germany

Levered beta factors

The levered beta factor serves as a metric for the equity provider’s systematic risk under consideration of the capital structure risk from debt. This year the participants applied a levered beta factor of 1.03 (previous year: 0.99). With a slightly reduced debt ratio, the increase is attributable to the higher unlevered beta factor as well as the decrease in the cost of debt. (Figure 34, page 39)

Due to the fact that the beta factor is a relative measure of risk, the average of all the market levered beta factors should have a value of 1.00. As in the previous years, the data collected clearly ranges around this theoretically correct value. The empirical data of this study therefore sufficiently

33 Average unlevered beta factors Total



Source: KPMG, 2017

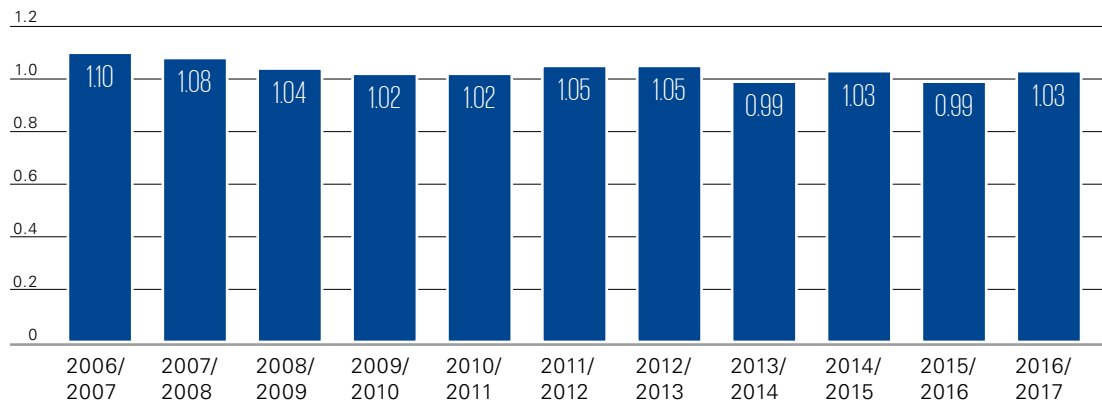
represent the whole market. This demonstrates that at least in the average of the impairment test, there are no systematic errors in the estimation of the beta factor and therefore the systematic risk.

Within the industries there was, for the most part, an increase of the levered beta factor. The largest growth, with a climb of 0.19 to 1.31, was in the **technology** sector, which now has the highest levered beta factor. The lowest value this year was 0.88 in **health care**. (Figure 35)

Within the **financial services** sector, the sub-sector **banking** showed an increase in the levered beta factor of 1.02 compared to 1.09 for the previous year. In the sub-sector **insurance**, there was even an increase from 1.03 to 1.13. The lower levered beta factor of 1.07 in the **financial services** industry resulted from companies in the sub-sector **other financial services**, which applied lower values.

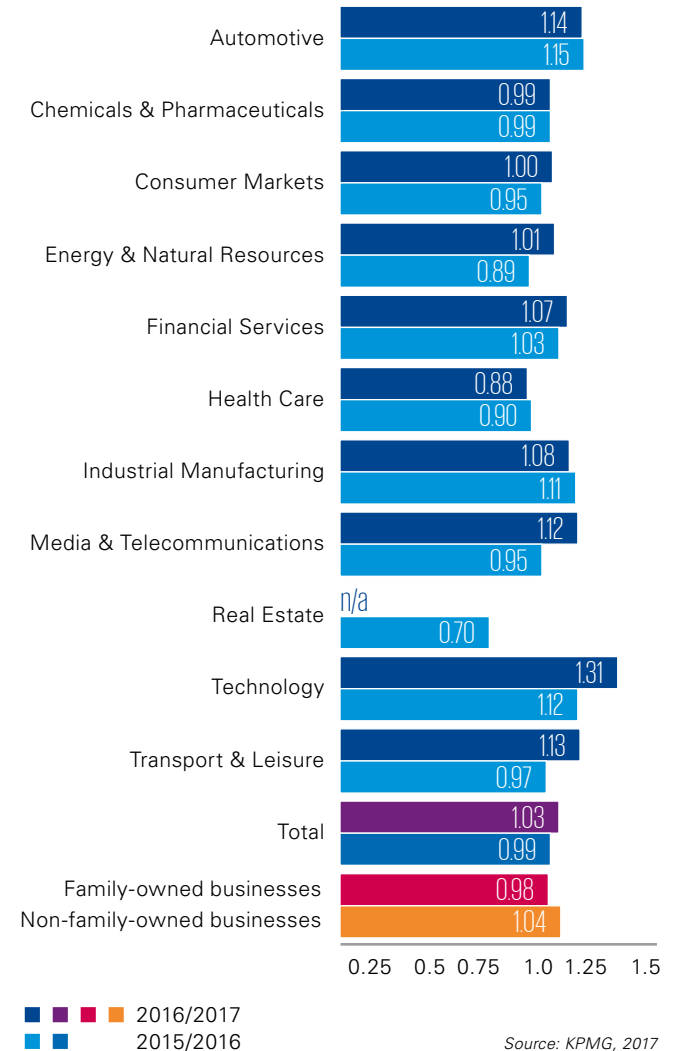
While the unlevered beta factor applied by family-owned businesses was above that used by non-family-owned businesses, the opposite was true for the levered beta factor. The reason for this was in particular the much lower amount of debt used by family-owned businesses (see page 49).

34 Average levered beta factors Total



Source: KPMG, 2017

35 Average levered beta factors by industry



Source: KPMG, 2017

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3.5 Cost of Equity

In accordance with the CAPM, the levered cost of equity results from the risk-free rate, the market risk premium and the levered beta factor.

The average levered cost of equity of the participating companies sank again compared to the previous year and is at an historical low of 8.0 percent (previous year: 8.2 percent). This decline resulted from the changes in the individual parameters described in the previous pages. The continued decrease in the risk-free rate was only partially compensated for

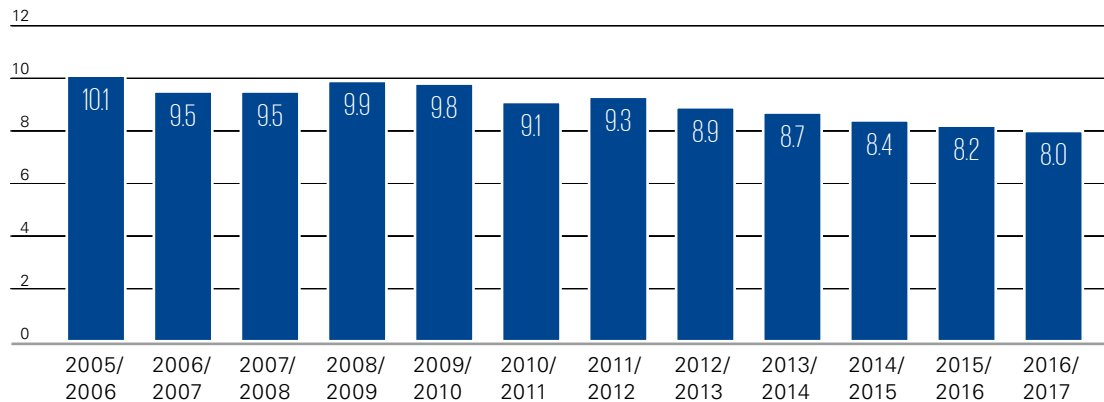
by the increase of the market risk premium and the levered beta factor, so that in the end cost-of-equity decreasing effects resulted. (Figure 36)

The industry-specific cost of equity showed a heterogeneous development. There was a clear downward trend to be seen in the sectors **transport & leisure, technology, media & telecommunications** as well as the **financial services** sectors. In **energy & natural resources** and **health care**, by contrast, there was an increase in the cost of equity. Only in the **consumer markets** sector did the cost of equity remain constant. (Figure 37, page 41)

“The to date dominant valuation practice of historically derived risks is especially prominent in the applied cost of equity by industries. In particular, those industries in which the greatest changes can be expected in their business models currently apply the lowest cost of equity. This demonstrates that risks should not be historically derived, but rather derived prospectively on the basis of financial forecasts.”

Dr. Marc Castedello
Partner, KPMG in Germany

36 Average levered cost of equity
Total (in percent)

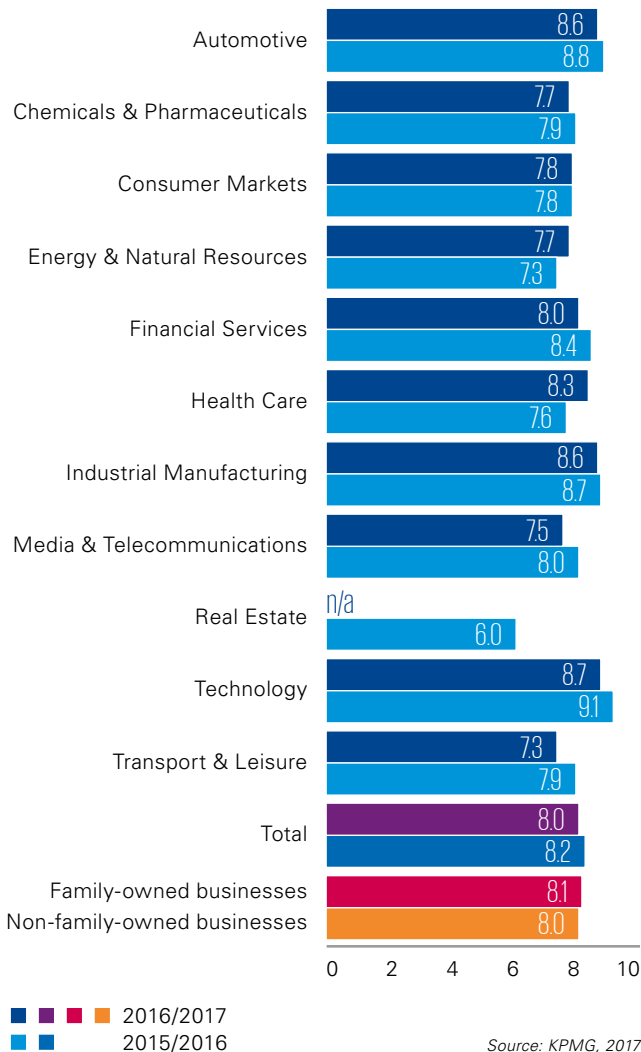


Source: KPMG, 2017

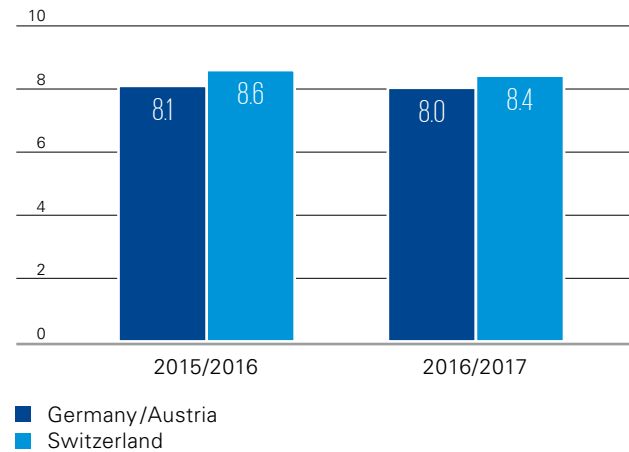
No significant difference could be seen in the cost of equity applied by family-owned businesses and non-family-owned businesses. In the end, this is also due to the fact that both groups of businesses for the most part determine the cost of capital on the basis of comparable listed companies.

The average levered cost of equity applied by companies in Germany as well as Austria and Switzerland was, with 8.0 percent and 8.4 percent, also slightly below the level of the previous year. (Figure 38, page 41)

37 Average levered cost of equity by industry (in percent)



38 Average levered cost of equity Germany/Austria versus Switzerland (in percent)



3.6 Other Risk Premiums

With 59 percent in this year’s study, significantly more companies reported applying other risk premiums in determining the cost of capital than in the previous year (52 percent).

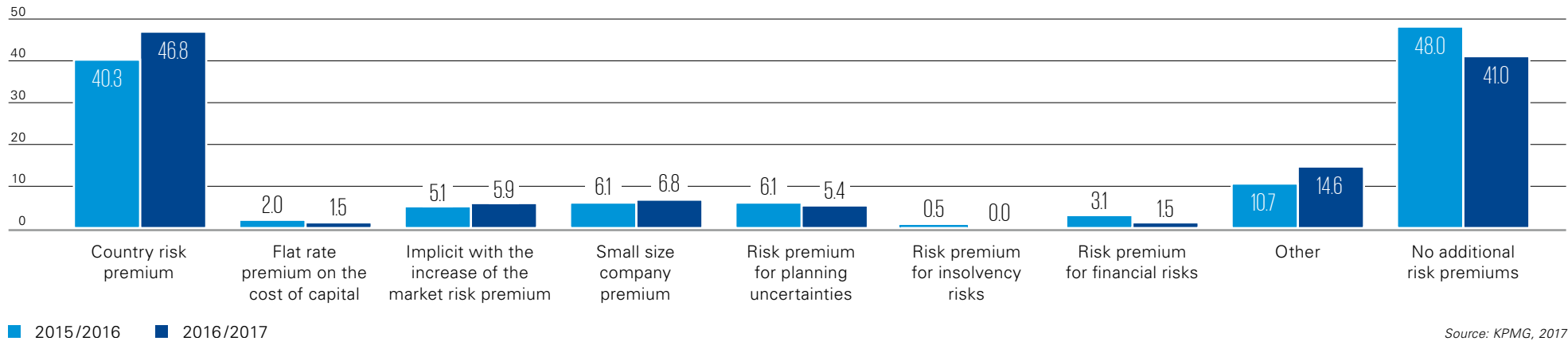
The number of participants which applied a country risk premium grew by 6.5 percentage points to 46.8 percent. The country risk premium once again represents the most frequently considered risk premium. The reason for the more frequent use could be, on the one hand, that globalization and the activities of companies worldwide continue to increase and, on the other hand, the impression has been gained that there are political risks in more and more countries.

The small size company premium, with 6.8 percent (previous year: 6.1 percent) this year, gained slightly in importance, but played a minor role – similar to premiums for planning uncertainties and financial risks – in the overall picture of possible risk premiums. (Figure 39, page 42)

However, there continue to be wide-ranging deviations in the application at the country level and therefore in the associated relevance of individual risk premiums.

39 Other risk premiums 2015/2016 versus 2016/2017

Total (in percent, multiple choices possible)



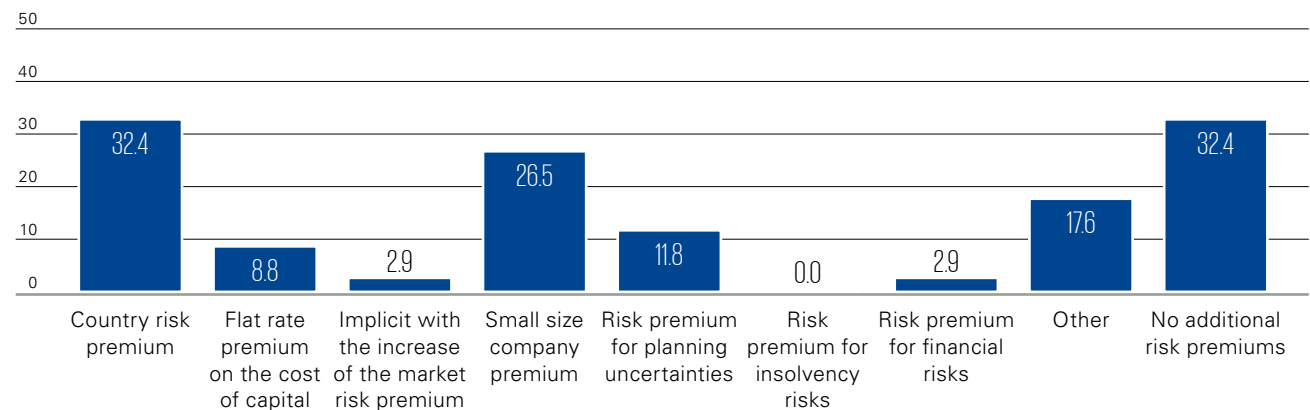
Source: KPMG, 2017

“In Switzerland, following the international valuation practice, other risk premiums are widespread. With a comparison of the Swiss cost of capital to those of Germany and Austria, these risk premiums should also be considered.”

Johannes Post
Partner, KPMG in Switzerland

40 Other risk premiums 2016/2017

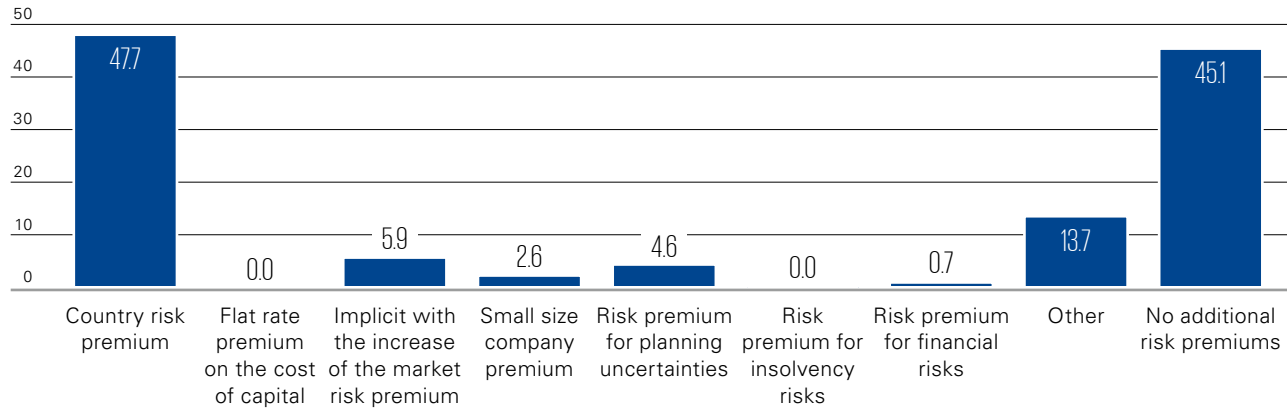
Switzerland (in percent, multiple choices possible)



Source: KPMG, 2017

41 Other risk premiums 2016/2017

Germany (in percent, multiple choices possible)



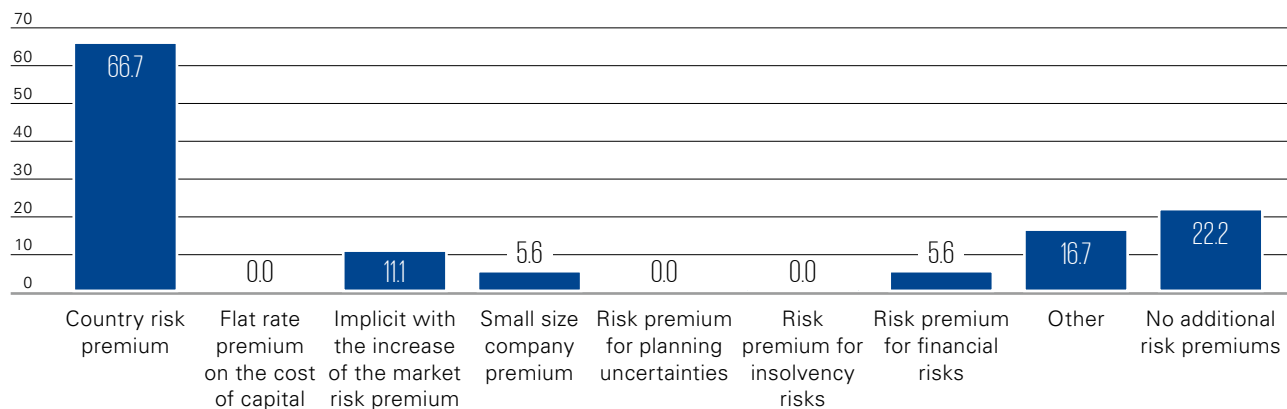
Source: KPMG, 2017

In Germany, 45.1 percent of the participants did not apply any other risk premiums in terms of the CAPM in the framework of determining their cost of capital (previous year: 52 percent).

While companies in Germany and Austria, with 2.6 percent and 5.6 percent, respectively, only rarely considered a small size company premium, the percentage in Switzerland, at 26.5 percent, was ten times that of Germany (previous year: 24.1 percent). Companies from Austria, with 66.7 percent, applied the country risk premiums most frequently (previous year: 68.4 percent). (Figure 40, page 42, as well as figures 41 and 42)

42 Other risk premiums 2016/2017

Austria (in percent, multiple choices possible)



Source: KPMG, 2017

3.7 Consideration of Risk in the Cost of Capital

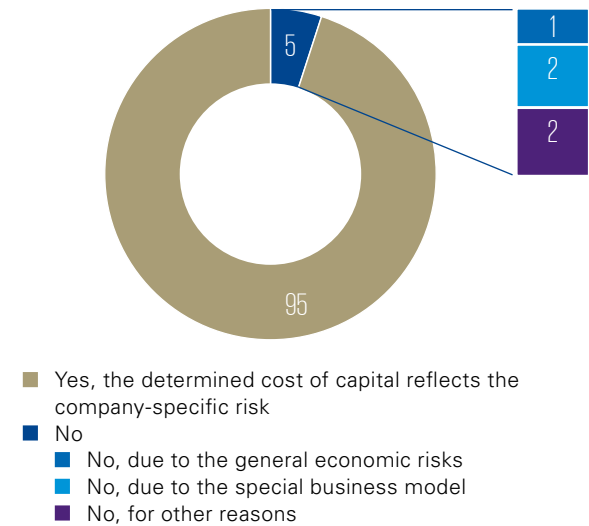
As presented in the previous chapters, the proper derivation of the operative risk in the cost of capital is of major importance in the valuation of companies. The future cash flows are uncertain and must therefore be considered with their expected value. At the same time, the operative risk of the cash flow is reflected in the cost of capital. It attempts by means of established methods on the basis of comparable peer groups to take the operative risks into "general" consideration in the valuation. The operative business models within the individual industries are, however, extremely different; not least of all digitalization is allowing for completely new business models and is leading to completely new risk profiles for the affected companies.

The question of whether the determined cost of capital sufficiently reflects the company-specific risk was, however, answered positively by 95 percent of the companies participating in this year's Cost of Capital Study. Of the remaining 5 percent, 1 percent explained the inadequately calculated cost of capital as being due to general economic risks that could not be completely reflected. Another 2 percent referred to their specific business model. The remaining 2 percent indicated other reasons for the incomplete reflection of risk in the cost of capital parameters. (Figure 43)

“Even if 95 percent of the participating companies reported that the cost of capital sufficiently reflected the company-specific risks, the question remains whether, in view of the macroeconomic uncertainties and the ever-faster paced change of business models, that will continue to be so in the future.”

Dr. Klaus Mittermair
Partner, KPMG in Austria

43 Company-specific risks in the costs of capital
Total (in percent, multiple choices possible)



Source: KPMG, 2017

Cost of Capital – Comparative Measures in a World that Increasingly Defies Comparison

“Valuating means comparing.”² This basic principle of (business) valuations holds true especially in the current business environment that is characterized by a high degree of dynamics and volatility as well as a strong trend towards disruption. To transfer the (known) price of a company to another company with an unknown price, both the companies must be subject to comparable risks (risk equivalence principle). The risk equivalence principle is one of the primary, if not the primary, principles of valuation and is generally accepted in both theory and practice. To properly implement it requires that the operative risks of companies and business models be comparable to one another. For the valuation of established business models, it is generally the case that capital market data of a peer group are applied in the practice of valuation. The selection of the peer group is performed on the basis of qualitative characteristics (for instance, industry, region, sales and customer base) and is frequently the subject of controversial discussion due to the fact that to date a uniform approach for quantifying operative corporate risks has been lacking.

The peer group approach can generally be considered as suitable for the assessment of established business models. Regardless of that, the left side of Figure 44 on page 46 shows that vagueness may result in the framework of methods used to date. It is therefore common in the course of cash flow forecasts to perform a plausibility check of the

expected corporate performance using benchmark data of the peer group and to position the company within the range of the peer group by means of company-specific characteristics. Such a positioning within a peer-group range has not, however, to date succeeded with the corresponding company risks due to a lack of practical methods. In this regard a simple average or very simplified weightings frequently rule the day, which holds the danger of the risks for the valuation-relevant cash flow not being equivalent to the risks implicitly considered in the cost of capital. If methods are lacking for consistently combining cash flow and cost of capital with one another, it is also possible that the resulting violations of the risk equivalence principle may not be quantified. For established business models and companies, these dangers in the valuation practice are taken into account by the parallel application of differing valuation methods (present-value- and multiplier-oriented methods) that are based on long-term empirical values.

It is generally not possible to fall back on empirical values in the assessment of innovative new business models and start-ups. Even established companies have to critically review the valuation methods they have used to date. The dynamics of change and the growing disruptive effects – for instance through digitalization effects – with increasingly converging markets, reduces the comparability of companies. Against this backdrop, peer-group approaches become questionable. In addition to that, there is the problem that the capital market data applied to date appears only to be of limited

value as a starting point for future expectations when one considers the fundamental crises in the recent past, political events as well as economic changes (digitalization and industry 4.0).

Consequently, new, practical approaches are required that reflect the company-specific risk of a valuation object in its cost of capital. With CEDA (Corporate Economic Decision Assessment), KPMG has developed a practicable approach that takes the operative risk of a company to be assessed into consideration equally with regard to the cash flow and the cost of capital (see Figure 44, page 46, right side).

The determination and plausibility of the future cash flow are then performed as in the past on the basis of the company-specific financial forecasts and taking into consideration the specific market and competitive situation. Because these are a matter of future-based data, the valuation-relevant drivers included in the assessment are generally not single-valued parameters. By considering expectable ranges in combination with the business model to be valued, the expected value of cash flows required for valuation purposes can be determined and, for instance, tested for plausibility with peer group benchmarks. Even this frequently represents a further development of former methods that were only characterized by the assumption that the financial forecasts reflect previous expected values and sought to adjust the obviously ambitious financial forecasts with the blanket approach of so-called alpha factors as a premium to the cost of capital.

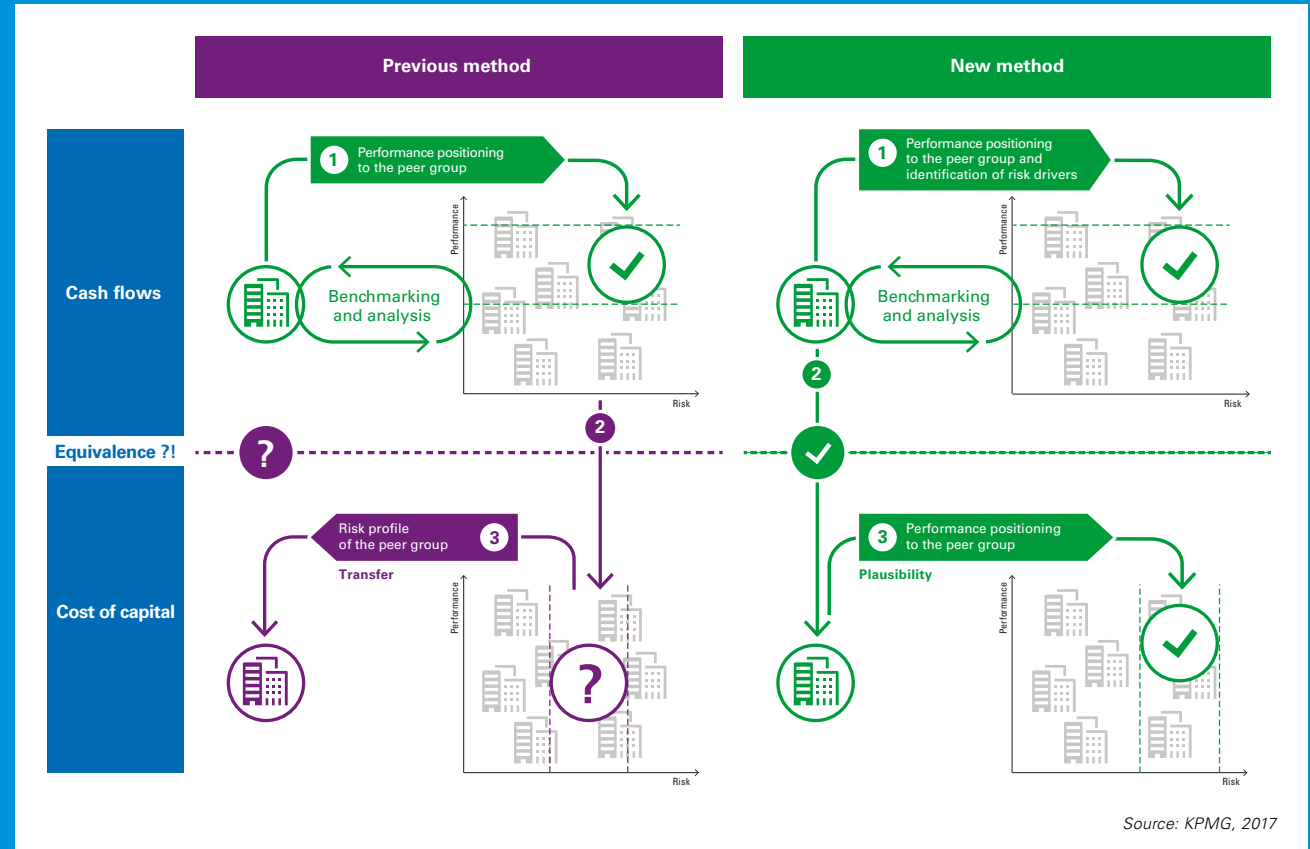
² A. Moxter, Grundsätze ordnungsmäßiger Unternehmensbewertung, 2nd Edition, Wiesbaden 1983, p. 123

The same information about the future operative drivers of the business model are then applied to directly determine the cost of capital. Here, the expected ranges of fluctuation of the financial forecasts play a role, as do the relationship of these fluctuations to those of the capital market. Within a company, however, the risk-diversifying effects, for example, between business segments or regions, must be explicitly considered. The result is directly determined company-specific costs of capital that are then – analogously to the procedure for cash flows – tested for plausibility using market and comparative data and can be classified in the comparative range of a peer group.

“The valuation by means of CEDA consistently follows the risk equivalence principle and allows for the actual quantification and comparability of operative company risks. It resolves the growing problem that company valuation is becoming ever more difficult in practice in a world that increasingly defies comparison. If the valuer loses the direct comparative measures, then they must rely on more advanced approaches and methods.”

Dr. Andreas Tschöpel
Partner, KPMG in Germany

44 New methods for determining the risk equivalence



3.8 Cost of Debt and Debt Ratio

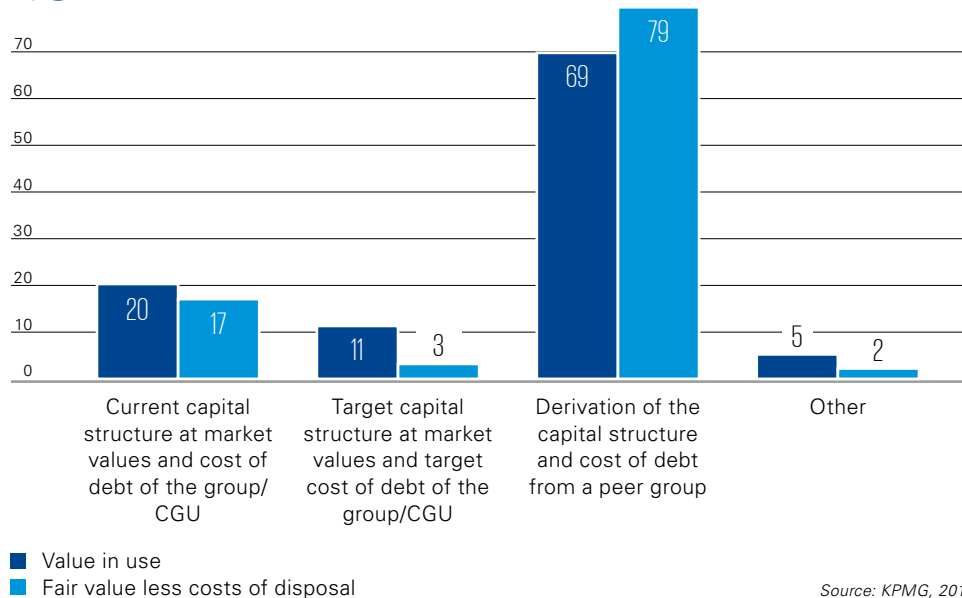
Cost of debt

Along with the cost of equity, the cost of debt represents the second important parameter for the derivation of the weighted average cost of capital (WACC).

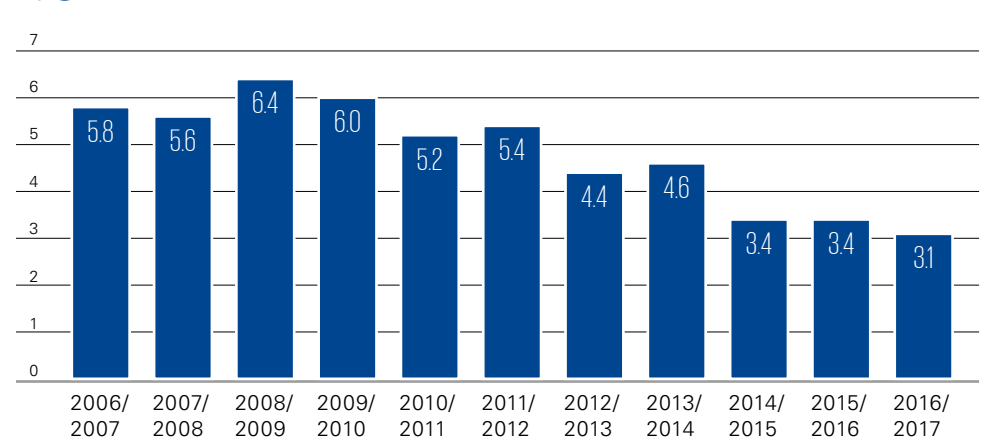
Primarily the three methods shown in Figure 45 are applied to determine the cost of debt and the debt ratio. The market perspective required by the IFRS is only fulfilled if the capital structure and the cost of debt are determined on the basis of peer-group data. As in the previous years, the majority of the companies surveyed met this IFRS requirement. Here, significantly more study participants used the peer group parameter in the current survey period to

determine the capital structure and the cost of debt. The portion that based their calculations on value in use was 69 percent (previous year: 61 percent); with the determination of the fair value less costs of disposal there was even an increase of 20 percentage points over the previous year (59 percent) to 79 percent. The other two methods were used at about the same level as in the past year. (Figure 45)

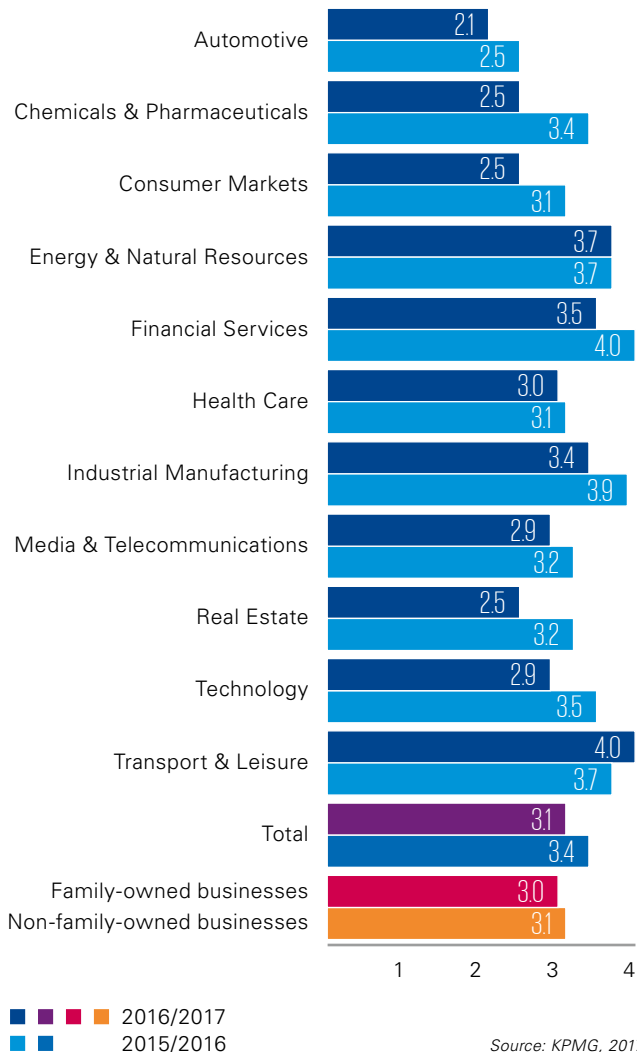
45 Determination of capital structure and cost of debt
Total (in percent, multiple choices possible)



46 Average cost of debt
Total (in percent)



47 Average cost of debt by industry (in percent)



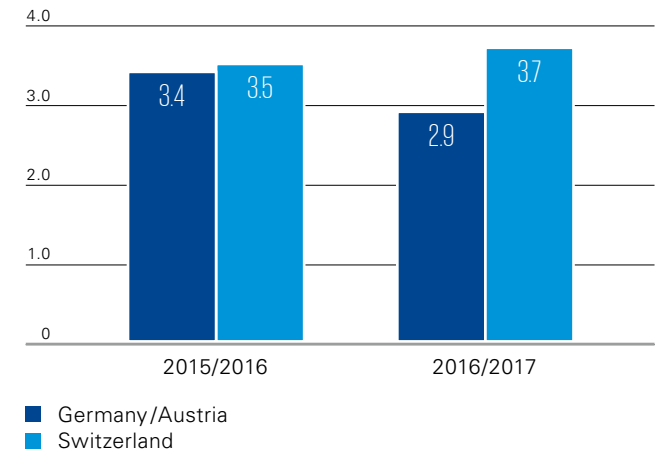
The cost of debt applied by the companies sank by 0.3 percentage points to 3.1 percent. This development was once again less than the decrease in the risk-free rate and can therefore be explained by an increase of the risk premiums for debt (so-called credit spreads). (Figure 46, page 47)

The decrease in the cost of debt was visible in almost every industry. The greatest decreases were observed in the sectors **chemicals & pharmaceuticals** by 0.9 percentage points to 2.5 percent and **real estate** by 0.7 percentage points to 2.5 percent. Only in **transport & leisure** was there, with 4.0 percent, an increase in the cost of debt compared to the previous year (3.7 percent). (Figure 47)

At the country level, the participants in Switzerland continued to have the highest financing costs for debt. It is remarkable that it was even 0.2 percentage points above the value for the previous year (2016/2017: 3.7 percent; 2015/2016: 3.5 percent). The increase of the risk premiums for debt even overcompensated the decline in the risk-free rate.

By contrast, in Germany and Austria the cost of debt decreased by 0.5 percentage points to 2.9 percent. (Figure 48)

48 Average cost of debt Germany/Austria versus Switzerland (in percent)



Debt ratio

The debt ratio is calculated using the ratio of the market value of the (net) debt to the market value of the total capital.

This year's study results show that the average debt ratio for the companies was, at 25.2 percent, almost at the same level as the previous year. (Figure 49, page 49)

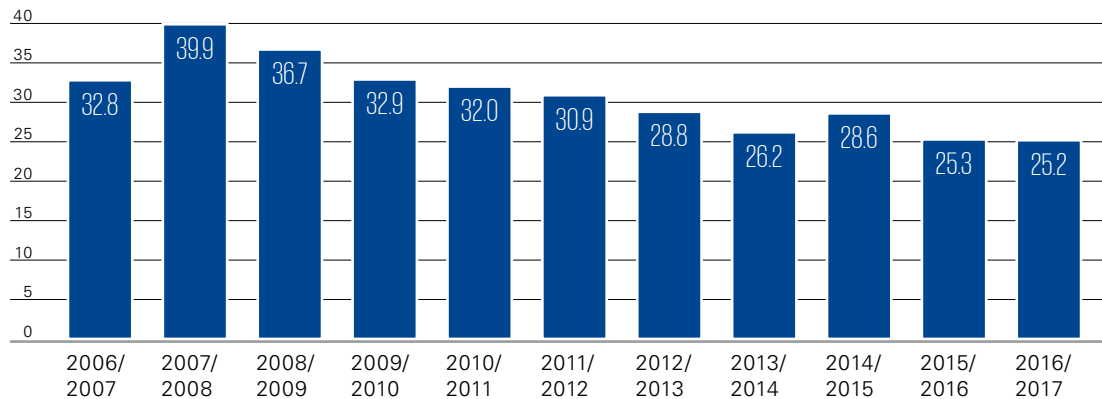
This slight decrease can primarily be attributed to the participating companies in Austria. They showed a decline in the debt ratio of 4.1 percentage points to 30.1 percent (previous year: 34.2 percent).

In Germany and Switzerland, by contrast, there was a slight increase of 0.3 percentage points and 1.4 percentage points to 25.0 percent and 23.6 percent, respectively. The participating companies from Switzerland continued to have the lowest debt ratio and simultaneously higher financing costs.

In the direct industry comparison, **real estate**, with 43.9 percent, had the highest debt ratio, followed closely by **transport & leisure** with 42.1 percent. The lowest debt ratio was to be found in **chemicals & pharmaceuticals** with 17.8 percent. (Figure 50)

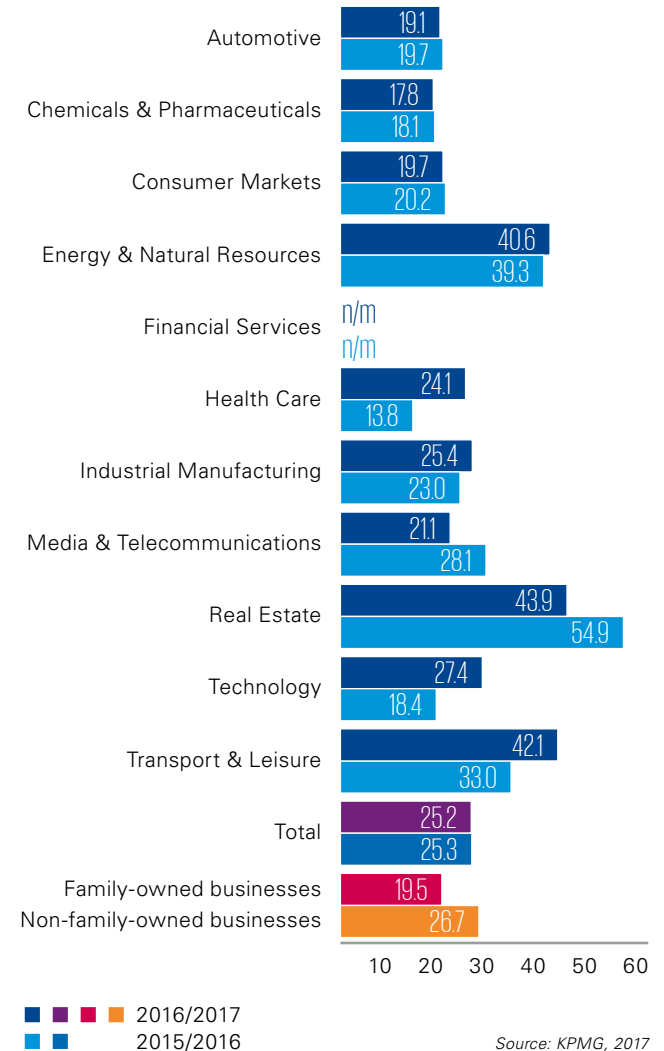
The debt ratio of the surveyed family-owned businesses was, in particular due to the deviating industry mix, much lower at 19.5 percent than that of non-family-owned businesses with 26.7 percent.

49 Average debt ratio
Total (in percent)



Source: KPMG, 2017

50 Average debt ratio by industry
(in percent)



Source: KPMG, 2017

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3.9 Sustainable Growth Rate

With a portion of 61 percent of the responses, significantly more of the companies than in the previous year (54 percent) applied sales and earnings growth rates from the past or detailed planning periods to determine the sustainable growth rate for the terminal value. This development should be viewed critically due to the potential and conceptual weak-

nesses of the method with regard to the equivalence between the cash flow and growth rates used. A proper valuation requires that the valuation-relevant cash flow is reduced by the profit retention for the operative sales and earnings growth rates. The growth rates derived, however, are frequently within the range of the company's historical inflation rate and in practice the result then generally matches the normally applied cash flow. The equivalence therefore appears to exist in general,

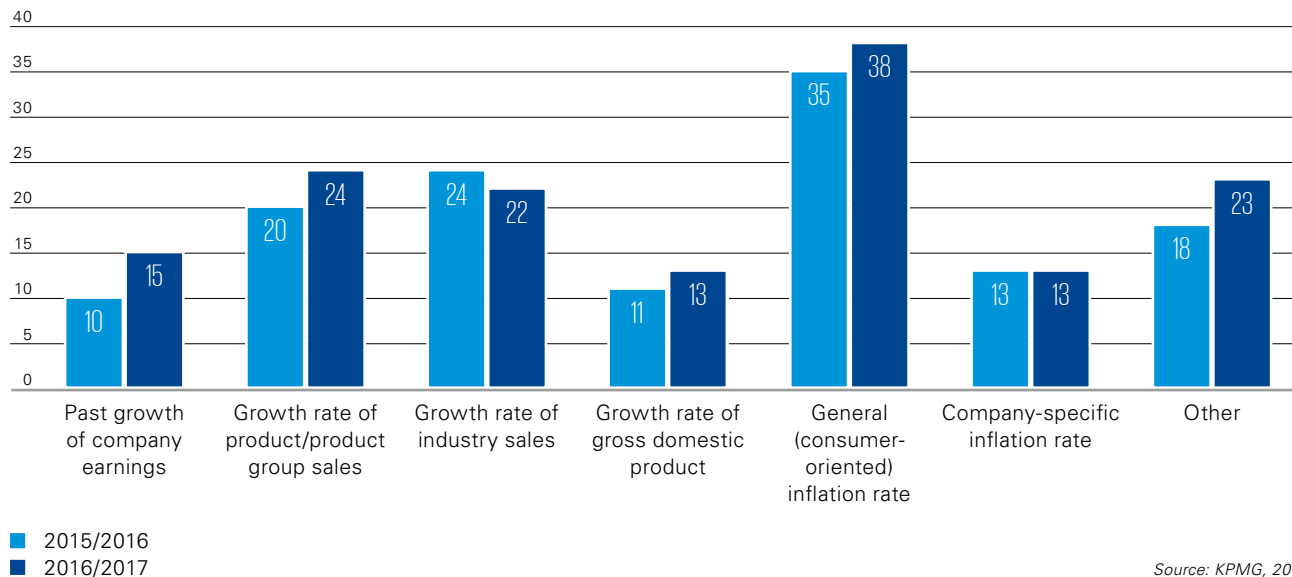
despite the conceptual weakness. In this context, we also recommend the key topics in the 2013 Cost of Capital Study.

Another 51 percent based the calculation of the sustainable growth rates on general economic growth and inflation rates. As in the previous year, only 13 percent of the participating companies applied company-specific inflation rates. Due to the fact that only company-specific inflation rates 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. (Figure 51)

The average growth rates in Austria and Switzerland were identical at 1.6 percent. While Swiss companies applied growth rates of 0.1 percentage points above those of the previous year, in Austria the increase was 0.3 percentage points. In contrast to these, in Germany a decrease was observed from 1.2 percent in the previous year to the current 1.1 percent. (Figure 52, page 51)

Family-owned businesses demonstrated a clear difference, at 1.1 percent, of 0.2 percentage points lower sustainable growth rate than non-family-owned businesses.

51 Measurement of the sustainable growth rate
Total (in percent, multiple choices possible)

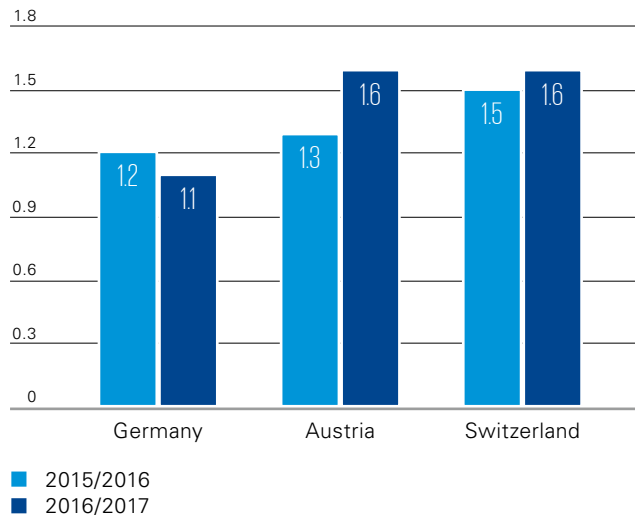


Source: KPMG, 2017

The average sustainable growth rate for all participants sank slightly to 1.2 percent (previous year: 1.3 percent). The growth rate does not depend on the planning horizon.

The average data also failed to reflect the very different developments of the individual industries.

52 Average sustainable growth rate
Germany versus Austria versus Switzerland
(in percent)

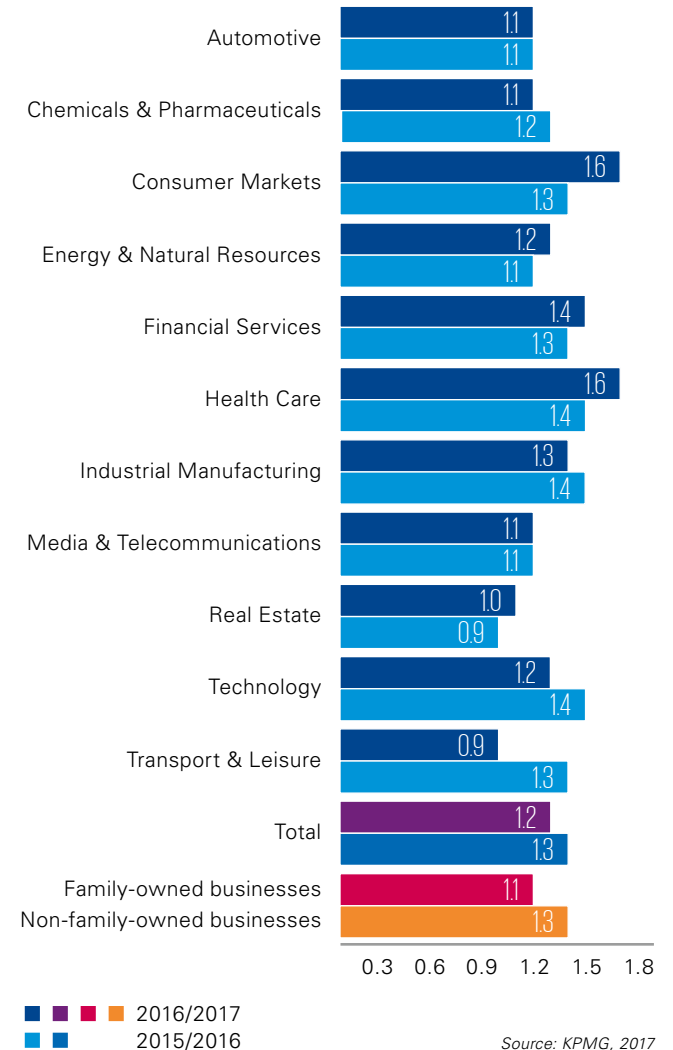


Source: KPMG, 2017

The clearest increase of the sustainable growth rate observed was 0.3 percentage points in **consumer markets**. The greatest decline was 0.4 percentage points in **transport & leisure**. The sustainable growth rate in this sector was, at 0.9 percent (previous year: 1.3 percent), also the lowest in the various industries. The highest sustainable growth rates this year were found in **consumer markets** and **health care** with 1.6 percent. (Figure 53)

Within the industries, differences were particularly to be found in the sectors **media & telecommunications** and **chemicals & pharmaceuticals**. Differences of 0.5 percentage points were observed in the sustainable growth rate between the sub-sectors **media** (1.3 percent) and **telecommunications** (0.8 percent) as well as 0.4 percentage points in the sub-sectors **chemicals** (1.2 percent) and **pharmaceuticals** (0.8 percent).

53 Average sustainable growth rate by industry
(in percent)



Source: KPMG, 2017

4 Impairment Test



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4.1 Trigger and Results

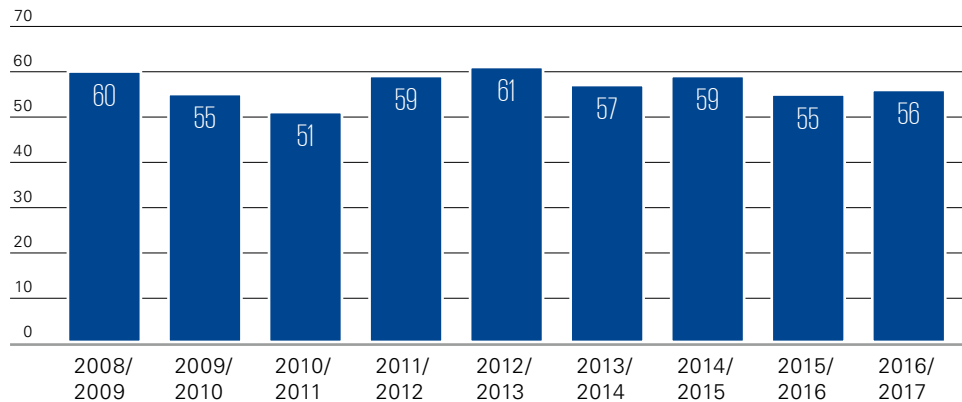
According to the results of this year's study, an impairment of goodwill or assets on the basis of an impairment test was recognized by 56 percent of all study participants. (Figure 54)

The portion of companies that only recognized a write-down on assets was, at 33 percent, on the same level as the previous years. Both asset as well as goodwill impairments were recognized in the current observation period by 17 percent of those surveyed and therefore 2 percentage points more than in 2015/2016. Only 6 percent of the participating

companies reported having recognized an impairment on goodwill alone (previous year: 8 percent). (Figure 55)

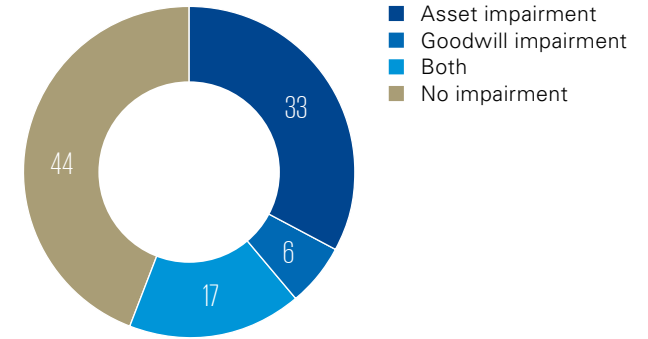
The average amount of asset impairments was 198 million euros and was therefore almost twice as high as the value for the previous year of 102 million euros. This result can be attributed to especially high extraordinary impairments in the **energy & natural resources** sector. In comparison to that, the average impairment on goodwill increased only by 22 percent to 84 million euros (previous year: 69 million euros). Here, on average the highest impairments were to be found in the **real estate** sector.

54 Recognition of an impairment
Total (in percent)



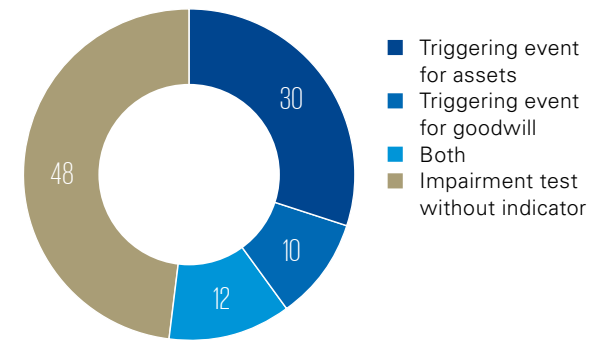
Source: KPMG, 2017

55 Recognition of an impairment
Total (in percent)



Source: KPMG, 2017

56 Triggering event
Total (in percent)



Source: KPMG, 2017

An extraordinary impairment test on the basis of a so-called triggering event, i.e. an indicator of an impairment, was performed by 52 percent of the companies (previous year: 49 percent). (Figure 56, page 53)

Similar to the prior years, the most frequent triggering events were, with 65 percent of the participants, poorer long-term expectations. For 17 percent, a decline in prices was the cause for impairment tests. Only 6 percent of the surveyed companies reported the cost of capital as the triggering event for an impairment. (Figure 57)

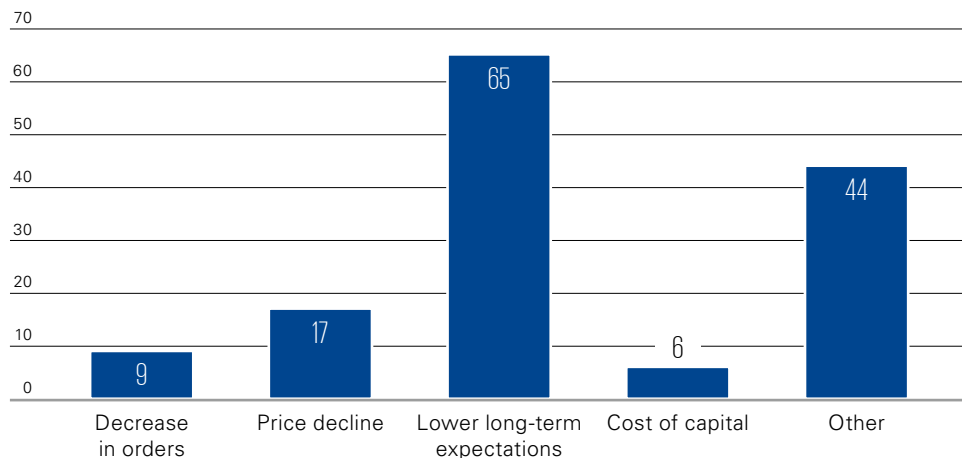
A correlation between the level of the cost of capital and an impairment and the amount of the impairment does not exist. In particular, it could not be found that companies with high costs of capital recognized impairments more frequently than average or have above-average amount of impairments.

4.2 Determination of the Recoverable Amount

The recoverable amount is defined as per IAS 36.6 and IAS 36.18 as the higher of either the fair value less costs of disposal or value in use.

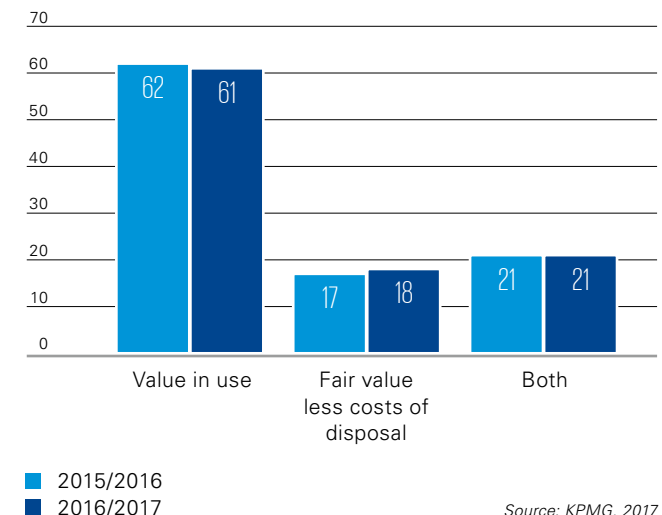
This year's study results were for the most part identical to those of the previous year. Once again 21 percent of all study participants determined both the value in use as well as the fair value less costs of disposal. Also the majority of companies only considered the value in use as the valuation concept

57 Cause of the triggering event
Total (in percent, multiple choices possible)



Source: KPMG, 2017

58 Method for determining the recoverable amount
Total (in percent)



Source: KPMG, 2017

(2016/2017: 61 percent; previous year: 62 percent). Exclusively fair value less costs of disposal was calculated by 18 percent (previous year: 17 percent) of the participants. (Figure 58, page 54)

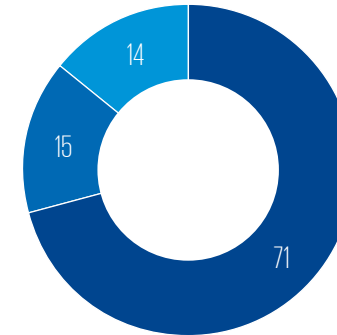
The analysis of the Cost of Capital Study according to the location of the company showed that the value-in-use approach was applied most frequently, but that regional differences did occur. While in Germany the portion of companies that only determined the value in use was 57 percent (previous year: 56 percent), this valuation approach was applied by 67 percent (previous year: 79 percent)

in Switzerland and even 82 percent (previous year: 72 percent) in Austria. (Figure 59)

For family-owned businesses as well, at 74 percent, the vast majority used only the value-in-use method to determine the recoverable amount; 10 percent preferred the fair value less costs of disposal. A similar picture could be found by non-family-owned businesses. Here, too, the most frequent approach was the value-in-use method (58 percent), although at 20 percent the fair value less costs of disposal was applied relatively frequently.

60 Valuation method for the determination of the fair value less costs of disposal

Total (in percent)



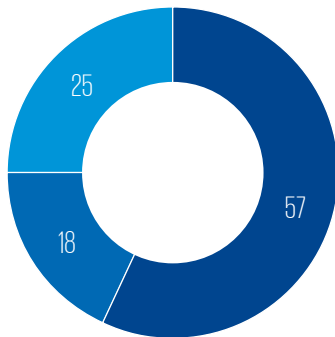
- DCF method
- Market-oriented method
- Both

Source: KPMG, 2017

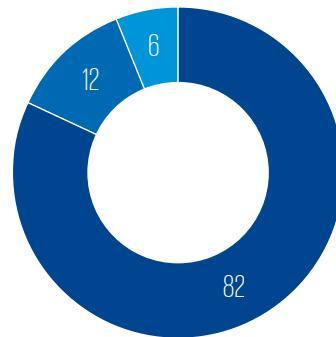
59 Method for determining the recoverable amount

Germany versus Austria versus Switzerland (in percent)

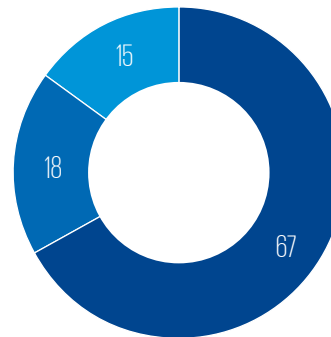
Germany



Austria



Switzerland



- Value in use
- Fair value less costs of disposal
- Both

Source: KPMG, 2017

In determining the fair value less costs of disposal, the discounted cash flow method (DCF method) continued to be the most-used valuation method. Of the companies surveyed, 71 percent determined the recoverable amount using this present-value-oriented method. The reason for this is the lack of comparable CGU market data for a market-oriented valuation method. Despite the continued dominance of the DCF method, the percentage of users sank by 15 percentage points compared to the previous year (86 percent). By contrast, the portion of companies that applied only the market-oriented method increased (by 5 percentage points to 15 percent) as did those that applied a market as well as a present-value-oriented method (by 10 percentage points to 14 percent). (Figure 60)

Along with the DCF method (60 percent), at 30 percent, especially family-owned businesses found the market-oriented valuation method (multiplier method) to be important, while non-family-owned businesses applied the DCF method much more frequently (73 percent) than the overall average.

“Market-oriented valuation methods such as the multiplier approach form an initial orientation point in the valuation of companies. Prerequisite to their use, however, is that the companies used for comparison are comparable to the valuation object, especially with regard to performance and risk. More than ever, nowadays this requires qualified analyses.”

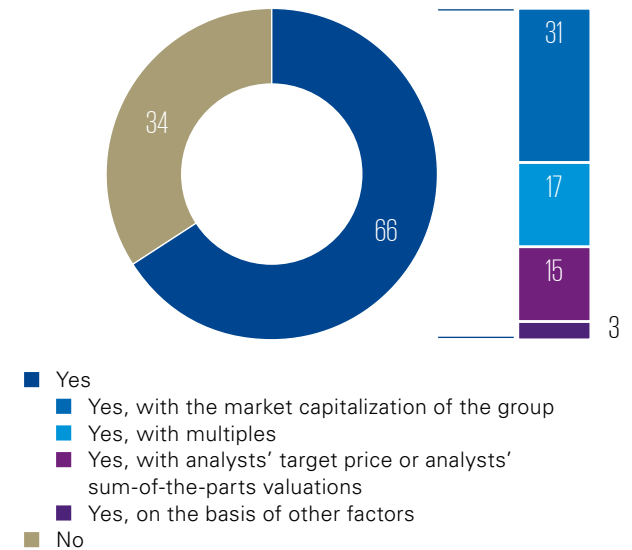
Stefan Schöniger
Partner, KPMG in Germany

4.3 Plausibility

Due to the fact that the fair value less costs of disposal method concept is a matter of the exit price and therefore primarily a matter of the estimate of 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 when calculating 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.

A plausibility test of the valuation results in the observation period was performed by a total of 66 percent of the listed study participants, the same percentage as the previous year. For the plausibility test of the valuation results of these companies, it is always recommended that the market capitalization be compared with the sum of the recoverable amount of all CGUs. At the level of the previous year, 31 percent (previous year: 30 percent) of the companies tested the plausibility of their valuation results on the basis of market capitalization of the group, while 17 percent (previous year: 15 percent) used multipliers and 15 percent (previous year: 16 percent) analysts' target prices or analysts' sum-of-the-parts valuations. (Figure 61)

61 Plausibility of valuation results
Listed companies
Total (in percent, multiple choices possible)



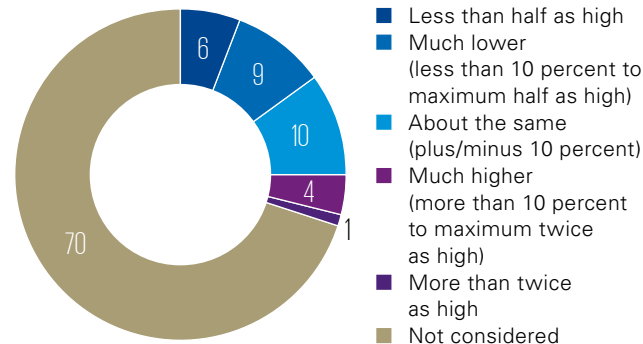
Source: KPMG, 2017

Due to the fact that market capitalization only reflects to a limited degree the control or a significant influence on the company – because of the frequently low number of shares traded – it may be recommendable within the reconciliation to consider a control premium. Furthermore, in a comparison of the values obtained according to the value in use method with the market capitalization, the valuation perspective and the information available to the capital market could play a role. Therefore, along with the market capitalization of the group, the industry and analysts' reports as well as multiples should always be used for the plausibility test.

An above-average percentage of companies that are listed on the DAX-30 performed a plausibility test of the values derived (2016/2017: 85 percent, previous year: 83 percent).

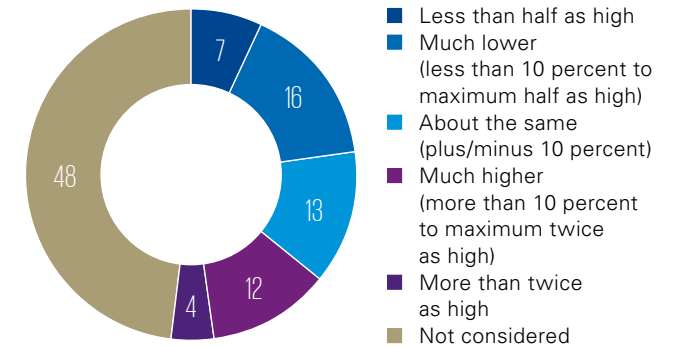
The portion of companies that performed a comparison of the market capitalization and the fair value less costs of disposal sank by 3 percentage points to 30 percent. Here, in 15 percent (previous year: 9 percent) of the companies the fair value was at least 10 percent below and in 5 percent of the companies at least 10 percent above the market capitalization (previous year: 11 percent). The portion of companies that made a comparison with the market capitalization of the group in value in use also decreased by 5 percentage points to 52 percent. (Figure 62 and 63)

62 Comparison of market capitalization to fair value less costs of disposal
Listed companies (in percent)



Source: KPMG, 2017

63 Comparison of market capitalization to value in use
Listed companies (in percent)



Source: KPMG, 2017

New Valuation Methods in Disruptive Times?

What impact increasing macroeconomic uncertainties as well as microeconomic changes from disruptive business models have on established companies and their future performance and risk profile was described in the sections on deriving cash flow and the cost of capital. As companies are subjected to a permanent process of change, this will become the new normal and result in changes in decision-making and valuation. Precisely the assessment of new, frequently disruptive business models is becoming particularly important. In the following five points we have summarized the material aspects that, in our opinion, established companies should take into consideration:

“The transfer of alternative valuation methods, for instance from the start-up environment, to innovative business models is not recommendable. The reason for their application is frequently not primarily the increased uncertainty of innovative business models, but rather much more so in the start-up-specific particularities, which do not apply for established companies. On that basis, simulation-based dynamic valuation methods remain the primary decision-making instrument for deriving performance and risk and a proper determination of value.”

Dr. Andreas Tschöpel
Partner, KPMG in Germany

1 Established decision-making methods have their limitations

Company decisions about corporate strategy, the associated volume of the required investments as well as the correct time for the decision are taking on a new dimension. Established decision-making mechanisms frequently no longer provide a straightforward recommendation. They are, as a rule, too static, are frequently based on “stable” risks and generally do not allow for a consistent, quick comparison of the options. Nowadays, decisions have to be made with a much greater degree of uncertainty about the forecasts for future developments. In view of the dwindling comparability of macroeconomic conditions and changing business models, reverting to (stable) historical parameters appears to be increasingly less suitable; the number of opportunities, on the other hand, increases dramatically and constantly.

2 The application of alternative valuation methods, for instance in the start-up environment, is not only based in the uncertainty of the business models

For the assessment of business models, for instance of start-ups, the valuation practice frequently applies alternative – albeit dramatically simplified – valuation methods and regularly justifies their application with the high degree of uncertainty for start-ups. High uncertainty describes the operative business model as well as the basic management skills of the founders with regard to the implementation of the innovative ideas as well as the transparent reflection in established forecasting methods. In addition, there are financial limitations at start-ups where they focus on the operative business in the early phases to the detriment of the development of controlling and financial competences. Furthermore, as a result of the high number of valuations required in innumerable rounds of financing, simple, standardized assessment methods are needed. Along with the high degree of uncertainty of future business models itself, there are a number of other start-up specific characteristics that justify the application of alternative valuation methods.

3 Cash-flow-oriented valuation methods remain the first choice for established companies

For established companies, management and controlling competences, default risks or growth limitations as a result of a lack of financial strength in connection with their decisions about innovative business models generally play a subordinate role. Instead, the focus is clearly on uncertainty and the lack of comparability of such business models. In view of this, and due to the financial consequences associated with such decisions, an application of simplified, alternative valuation methods is in principle not recommended. Established, cash-flow-oriented valuation methods (like the DCF method) continue to form the best conceptual foundation for meeting the new, increased requirements for the assessment of alternative options in times of diverging markets and converging business models as well. Established companies are also in principle familiar with such decision-making and valuation methods.

4 Cash-flow-oriented methods have to be adapted to the changed conditions

Cash-flow-oriented valuation methods do, however, have to be adapted to the new conditions and expanded by new approaches to consistently include performance and risk. This succeeds only if planning methods already reflect the specific business model at the operative level and transform the known integrated financial-indicator-based financial forecasts. At the same time, the problem of the increasingly incomparability of business models in the determination of the risk equivalent cost of capital must be solved. The risk equivalence between the valuation object and the comparative investment frequently assumed in the past with “stable” uncertainties can no longer be maintained in the future. Cash flows and the cost of capital must be based on the same information and assumptions and derived in parallel and consistently with one another. The much wider scope of big data available in the future will provide the necessary base of content for this.

5 It is precisely disruptive times that require clear, value-oriented decision-making

The expected value of future cash flow (performance) and the cost of capital (risk) must be determined simultaneously on the basis of flexible and dynamic simulation and planning models. This not only allows the increasing weaknesses of former – only partially applied – decision-making models to be overcome, it also assures the conceptually correct derivation of value on the basis of the equivalence criteria required. After all, it is the value that is the basis for the correct decision and makes strategic options comparable. Wrong values lead to bad decisions.

CEDA (Corporate Economic Decision Assessment), a decision-making method developed by KPMG, consistently links the uncertain cash flow required for a proper valuation with their individual cost of capital. Based on established valuation methods, this transparent comparison of innovative business models succeeds in not only considering the expected performance, but rather also includes the specific risk profile.

5 Relevance of Value and Enhancement of Value



5.1 Criteria for Investment Decisions

First of all, the objectives must be stipulated in the framework of investment decisions. Here, the company primarily orients itself on strategic and value-oriented targets.

In the orientation of strategic objectives, investment decisions are performed on the basis of strategically qualitative (for example, regional coverage) and/or quantitative (for example, sales or margin) objectives. The focus of these perspectives is on operative parameters and the resultant cash flow.

In addition, companies also prepare their investment decisions by means of ostensibly value-oriented targets such as the so-called EVA (economic value added) or the ROCE (return on capital employed). The core of such approaches is that the return required by the investors is taken into consideration in the course of the investment decision so as to make decisions that increase the value of the company. Frequently, the actual return expectations are, however, replaced by hurdle rate data that generally do not consider the individual risk profile of the specific investment. This includes the danger that “excessively” profitable investments will be made that might involve inordinately high risks whereas “low return” investments are rejected, although they are only associated with very minor risks. The challenge is therefore to not only determine the proper cash flow, but also to consider the proper risk-equivalent costs of capital for the investments under consideration.

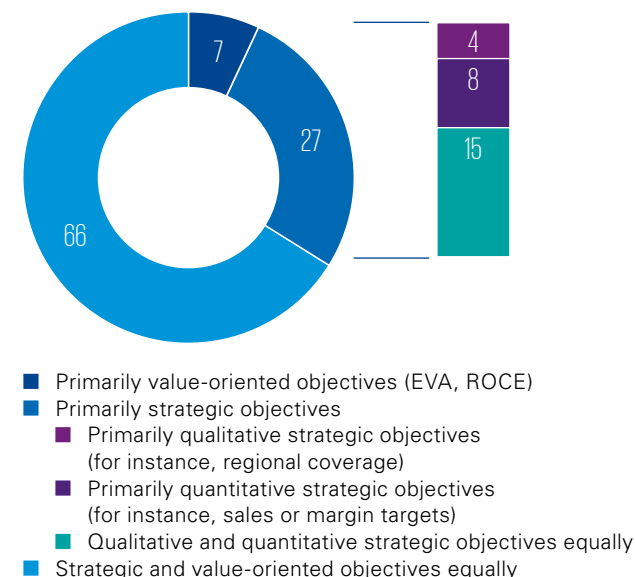
Investment decisions are, as a rule, for long-term periods of time. In times of macroeconomic uncertainties and microeconomic changes from disruptive business models, companies are faced with constantly new challenges to properly considering the valuation-relevant risks in the assessment of investment decisions. Furthermore, the continuing low interest, associated with favorable or readily accessible financing opportunities, may result in the underestimation of the risks that are associated with the target returns of investments and not reflecting them completely in the decision-making process.

In the course of this year’s study about two-thirds of the companies reported that they considered strategic and value-oriented objectives equally in the decision-making process (previous year: 67 percent). The remaining study participants (34 percent) applied, at 7 percent (previous year: 6 percent) only value-oriented criteria, 27 percent, identical to the previous year, applied primarily strategic objectives. (Figure 64)

In family-owned businesses even 71 percent of the participants reported using both strategic as well as value-oriented targets.

Special attention should be given to the consideration of expected economic value added within the framework of assessing investment alternatives. As shown above, these simplifying classical procedures may only to a limited degree meet the challenges and expectations of a modern decision-making criterion in the current and future market environment.

64 **Criteria in investment decisions**
Total (in percent)



Source: KPMG, 2017

Particular attention should be given to the fact that more static models such as EVA and ROCE generally compile valuation-relevant information of a company only partially and that not even consistently. Their strong reliance on the past, the orientation on accounting parameters as well as the lack or very limited equivalent consideration of risk may also restrict the information provided by these methods. We therefore recommend modern approaches that are based on multi-valued financial forecasts including simulation and scenario analyses and consistently compile performance and risk effects and consider these in the valuation calculation. 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.

5.2 Monitoring the Enhancement of Value

Investment decisions concluded must be continually monitored with regard to their actual value enhancement so as to be able to react to changes in the market environment quickly and in a targeted manner.

“Changes in value can only be transparently attributed to their causes, if the value drivers identified in the framework of the decision-making process are continuously monitored with regard to their impact on the company performance and the company risk. In this manner it is possible to detect poor developments at an early stage and to take appropriate counter-measures. Furthermore, the knowledge gained can be transferred to future projects and investments and therefore improve the decision-making basis as well as the corporate communication.”

Dr. Marc Castedello
Partner, KPMG in Germany

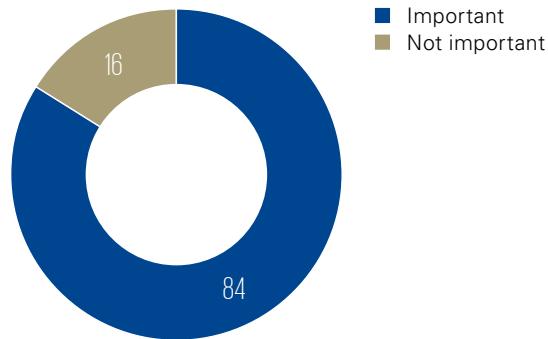
When questioned about the relevance of a value-oriented monitoring, 84 percent (previous year: 82 percent) of the participants reported that monitoring the value enhancement of an investment was an important aspect for decision-making and steering purposes. For the remaining 16 percent, the instrument was less important for controlling performance and did not play any role in the steering processes. (Figure 65, page 63)

A total of 62 percent (2015/2016: 56 percent) of the companies that performed a value-oriented monitoring focused on the change of performance and in particular on simplified key performance indicators (KPIs) as, for instance, sales, EBITDA, EBIT or ROCE. In addition to the development of performance, 38 percent (previous year: 43 percent) considered changes in risk on the basis of key risk indicators (KRIs). Here, however, the surveyed companies frequently focused only on the change of general market risks such as they are reflected in the market risk premium. (Figure 66, page 63)

In particular family-owned businesses monitored enhancement of value primarily only through the change of performance (73 percent), while only 59 percent of the non-family-owned companies observed changes in performance exclusively.

65 Relevance of monitoring the value enhancement

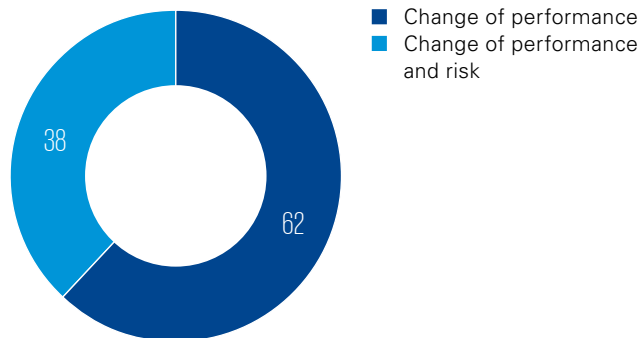
Total (in percent)



Source: KPMG, 2017

66 Monitoring of the value enhancement

Total (in percent)



Source: KPMG, 2017

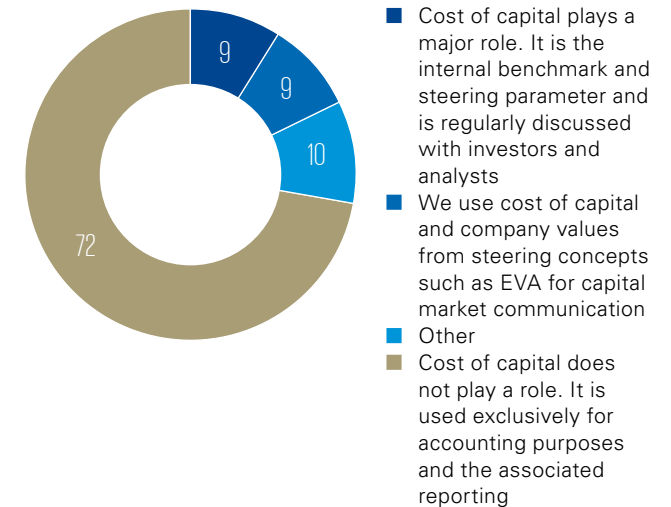
5.3 Cost of Capital in the Capital Market Communication

As in the previous year's results, the cost of capital and their development do not play a role in the capital market communication for 72 percent (previous year: 78 percent) of the participants. The company values determined – for instance for the purpose of an impairment test – were only applied for accounting purposes and for the reporting associated with that. A small portion of the companies considered the cost of capital determined in the framework of an impairment test as internal benchmark and steering parameters and reconcile these regularly with analysts and investors (2016/2017: 9 percent; previous year: 8 percent). With the discussion of these parameters, the companies increase their transparency for their investors and gain insights into 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.

Another 9 percent (previous year: 10 percent) of the surveyed companies used the cost of capital and company values from value-oriented steering concepts – for example, EVA – in the framework of the capital market communication. (Figure 67)

67 Communication and use of the cost of capital

Total (in percent)



Source: KPMG, 2017

“The development of the cost of capital should, just as the development of operative and financial indicators, be a component of the regular communication of the company to the capital market. Only if the shareholders know the development of the performance and risk indicators can they assess the development of the company value.”

Karen Ferdinand
Partner, KPMG in Germany

6 Online Industry Analyses



This year, for the first time, we provide all the industry-specific figures for the cost of capital parameters on our website.

At www.kpmg.de/kapitalkostenstudie-tableau (only available in German) you will find both the forecasting as well as the cost of capital parameters from the current study as well as the results of all the Cost of Capital Studies from previous years in readily viewable graphs.

There you have the opportunity to apply your own search criteria to display the industry and/or country-specific parameters that are relevant for you and to select their development over time.

Beyond that, you can also increase the degree of detail for the industry assessments. Interested readers have, for the first time, the opportunity to select sub-sector assessments for the sectors **consumer markets**, **chemicals & pharmaceuticals**, **financial services** as well as **media & telecommunications**.

As in the previous year, we have performed separate assessments of sectors/sub-sectors for which we had responses from at least five participants.

Instructions for the use of the interactive online industry analyses as well as sample analyses are shown in the following.

68 Instructions for KPMG Cost of Capital Study 2017 interactive

KPMG-Kapitalkostenstudie 2017

PARAMETER GESAMT

zeigt die Entwicklung des Parameters auf Basis aller Teilnehmer auf

PARAMETER GEFILTRT

zeigt die Entwicklung des Parameters auf Basis der gewählten Filterung(en) auf

ALLGEMEINE HINWEISE FILTERUNG

1. Pro Filter (Land, Bereich, Familienunternehmen) ist nur eine Auswahl möglich.
2. Die Filter sind kombinierbar (zum Beispiel Deutschland + Automotive).
3. Eine separate Auswertung erfolgt erst ab einer Anzahl von 5 Antworten.



- 1 ANALYSIERTER PARAMETER**
gibt den auf dieser Seite analysierten Parameter an
- 2 FILTER DAX-30**
zeigt die Entwicklung des Parameters ausschließlich auf Basis der DAX-30-Teilnehmer aus Deutschland auf
- 3 FILTER FAMILIENUNTERNEHMEN**
zeigt die Entwicklung des Parameters ausschließlich auf Basis der Teilnehmer, die sich als Familienunternehmen oder nicht als Familienunternehmen eingeordnet haben
- 4 FILTER NACH LAND**
zeigt die Entwicklung des Parameters ausschließlich auf Basis der Teilnehmer des ausgewählten Landes auf
- 5 FILTER NACH BEREICH**
zeigt die Entwicklung des Parameters ausschließlich auf Basis der ausgewählten Branche auf
- 6 ANZAHL ANTWORTEN**
gibt die Anzahl der Antworten an, auf der die Durchschnittsberechnung basiert

Source: KPMG, 2017



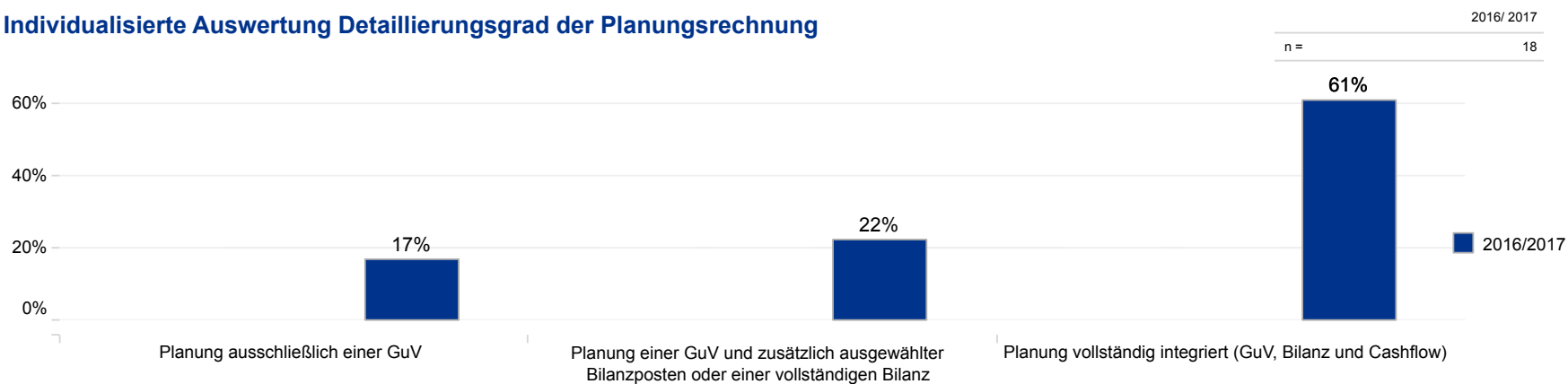
KPMG-Kapitalkostenstudie 2017

Detailierungsgrad der Planungsrechnung

DAX-30
FU
Nicht-FU

- AUTOMOTIVE
- CHEMICALS & PHARMACEUTICALS
- CONSUMER MARKETS**
- ENERGY & NATURAL RESOURCES
- FINANCIAL SERVICES
- HEALTH CARE
- INDUSTRIAL MANUFACTURING
- MEDIA & TELECOMMUNICATIONS
- REAL ESTATE
- TECHNOLOGY
- TRANSPORT & LEISURE
- CHEMICALS
- PHARMACEUTICALS
- CONSUMER MARKETS**
- RETAIL
- BANKING
- INSURANCE
- MEDIA
- TELECOMMUNICATIONS

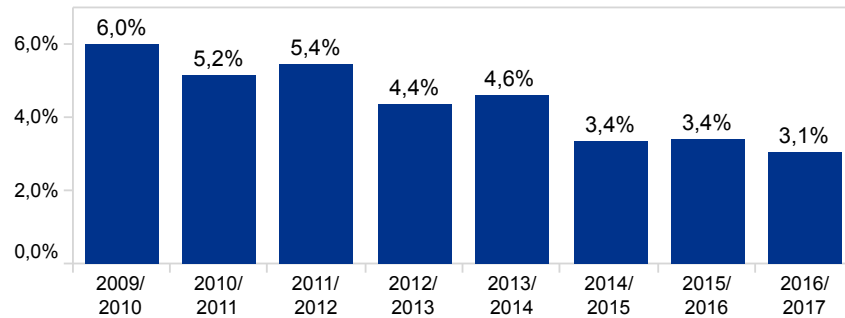
Individualisierte Auswertung Detaillierungsgrad der Planungsrechnung



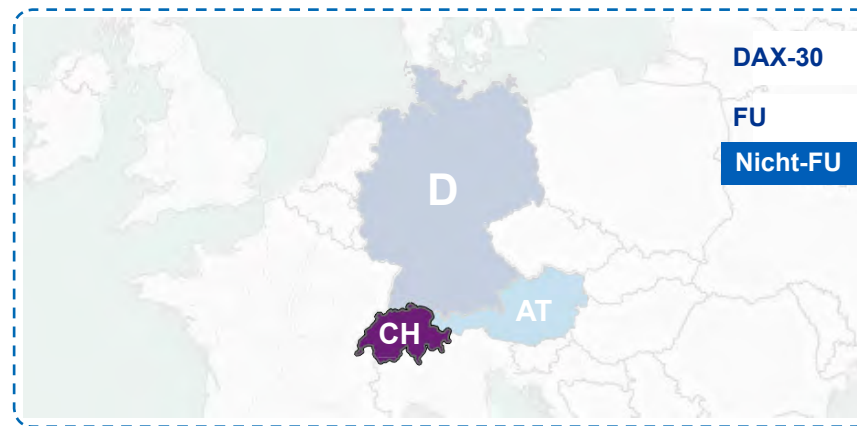
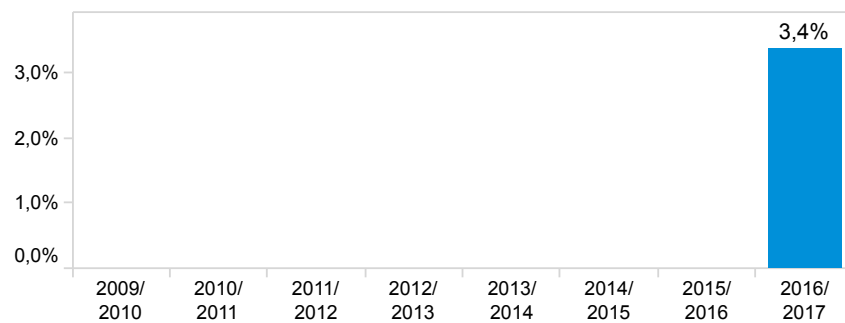
Source: KPMG, 2017

KPMG-Kapitalkostenstudie 2017

Die durchschnittlichen Fremdkapitalkosten sind aufgrund des gesunkenen Basiszinssatzes im Vergleich zum Vorjahr ebenfalls gesunken.



Individualisierte Auswertung Fremdkapitalkosten



AUTOMOTIVE		CHEMICALS	
CHEMICALS & PHARMACEUTICALS		PHARMACEUTICALS	
CONSUMER MARKETS		CONSUMER MARKETS	
ENERGY & NATURAL RESOURCES		RETAIL	
FINANCIAL SERVICES		BANKING	
HEALTH CARE		INSURANCE	
INDUSTRIAL MANUFACTURING		MEDIA	
MEDIA & TELECOMMUNICATIONS		TELECOMMUNICATIONS	
REAL ESTATE			
TECHNOLOGY			
TRANSPORT & LEISURE			

2016/2017
n = 20

Source: KPMG, 2017

KPMG-Kapitalkostenstudie 2017

Branchenauswertungen Corporates

Auswahl Bereich

Chemicals & Pha... **CHEMICALS**
PHARMACEUTICALS

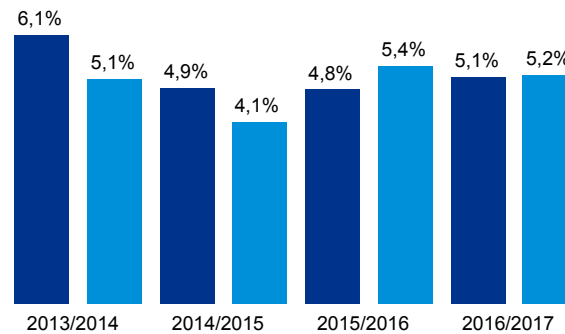
Enter search text

- Automotive
- Chemicals & Pharmaceuticals**
- Consumer Markets
- Energy & Natural Resources
- Health Care
- Industrial Manufacturing
- Media & Telecommunications
- Real Estate
- Technology
- Transport & Leisure

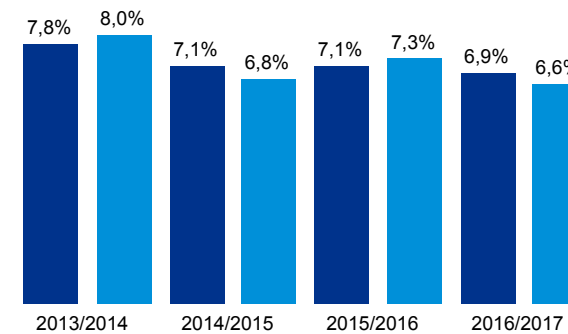
■ Gesamt
■ (Teil-)Bereich



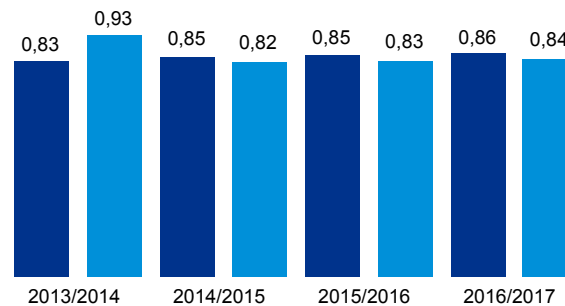
Durchschnittlich verwendetes Umsatzwachstum
Gesamt versus Chemicals & Pharmaceuticals



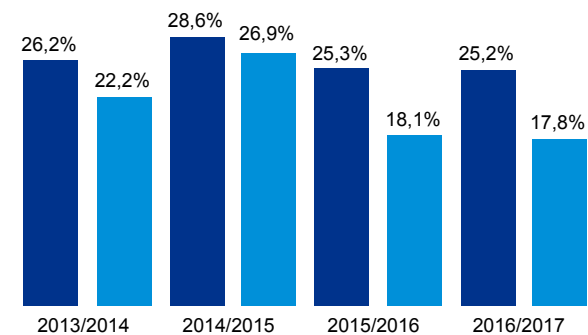
Durchschnittlich verwendeter WACC
Gesamt versus Chemicals & Pharmaceuticals



Durchschnittlich verwendeter unverschuldeter Betafaktor
Gesamt versus Chemicals & Pharmaceuticals



Durchschnittlich verwendete Fremdkapitalquote
Gesamt versus Chemicals & Pharmaceuticals



Source: KPMG, 2017

List of Abbreviations

CAPM	Capital Asset Pricing Model	IDW	“Institut der Wirtschaftsprüfer in Deutschland e.V.”, Institute of Public Auditors in Germany, Incorporated Association
CDAX	All German stocks listed on the German stock exchange in the general standard and prime standard	IFRS	International Financial Reporting Standards
CEDA	Corporate Economic Decision Assessment	KPI	Key Performance Indicator
CGU	Cash Generating Unit	KRI	Key Risk Indicator
CVA	Cash Value Added	M&A	Mergers & Acquisitions
DAX	Main German Stock Exchange	MDAX	German Mid Caps Stock Index
DAX-30	The 30 largest blue chips on the main German Stock Exchange	n/a	Not available
DCF	Discounted Cash Flow	n/m	Not meaningful
EBIT	Earnings Before Interest and Taxes	P&L	Profit & Loss Statement
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization	ROCE	Return on Capital Employed
EVA	Economic Value Added	S&P	Standard & Poor’s
FamDAX	DAXplus Family 30 Index, consists of the 30 largest and most liquid family-owned businesses (founding family holds at least 25 percent of the voting rights or seat in the management board of advisory board and 5 percent of the voting rights) in the Prime Standard of the German Stock Exchange	SDAX	Small Caps, the companies following the MDAX with market capitalization and exchange turnover
FAUB	“Fachausschuss für Unternehmensbewertung und Betriebswirtschaft des IDW”: Technical Committee for Business Valuation and Economics of the IDW	SFAS	Statement of Financial Accounting Standards
FinTech	Financial Technology	US-GAAP	United States Generally Accepted Accounting Principles
IAS	International Accounting Standards	VUKA	Acronym for volatility, uncertainty, complexity and ambiguity
		WACC	Weighted Average Cost of Capital

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