DIPLOMARBEIT

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„Real Options in Franchising. Real Option Clauses in Franchising Contracts. An empirical study."

Verfasserin

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1. Introduction

Beside theoretical frameworks for strategic decision-making, such as "transaction cost theory" and "resource- based view" (RBV), the "real options approach" (ROA) has gained more attention in management research. Since Myers (1977) introduced the term "real options" in 1977, the real options perspective has developed over the last 35 years. Sourcing in financial options theory, the real options approach has been applied to questions of strategy and managerial decision-making. The main advantage of the real options perspective is the integration of uncertainty to the strategic framework. In response to the fact that firms are confronted with an uncertain environment and future, option theory provides a concept, which embeds this uncertainty as an opportunity. Caused by the awareness, that uncertainty involves the possibility of flexibility, the firm can realise valuable future opportunities. The uncertainty is perceived to be valuable, due to the fact that it provides managers the possibility to incorporate new gathered information flexibly in the decision making process, which results in a constant improvement of the information basis for decisions.

Although scientific research has been conducted for the real option approach to joint ventures (Kogut 1991, Chi/ McGuire 1996, Folta 1998, Reuer/ Tong 2005, Folta/ Johnson/ O'Brien 2006, Estrada/ De la Fuente/ Martín-Cruz 2010, Cuypers/ Martin 2010, etc.) and licensing (Kulatilaka/ Lin 2006, Aulakh/ Jiang/ Pan 2009, etc.), the application of real option analysis to franchising represents a gap in scientific research, which lacks an extension in order to better understand franchising decisions. In dependence on conducted research for joint ventures as real options (Kogut 1991, Chi/ McGuire 1996, Folta 1998, Reuer/ Tong 2005), franchising is going to be assumed as a form of sequential market entry, and therefore might be seen a real option to defer immediate acquisition of a local partner. Following this logic franchising might be seen as a real option to expand, hence a real growth option.

Despite the need to analyse franchising itself as a real option, which would require a wider range of available data and qualitative research, this thesis should focus specifically on real option clauses in franchising contracts. The contractual arrangements between two franchising partners are individual in every case, but the occurrence of real option clauses in such contracts gives us information about the possible relation and intentions of the two contract partners. In respect to real option theory those option clauses represent the

contractual recorded arrangement between the franchising partners, which gives one party the right but not the obligation to exploit future opportunities. Therefore the option clause can be seen as the legally binding implementation of a real option. Consequently the clause is an instrument for a firm to assure a claim on future opportunities.

The occurrence or absence of such option clauses in franchising contracts might give hints to the intentions of the contractual partners, as well as have implications on partners' incentives.

The thesis is structured into a theoretical part (Chapters 3-5) and an empirical part (Chapter 6). In the theoretical part the basic real options literature and considerations are presented and hypotheses for franchising are generated. In the empirical study those hypotheses will be tested.

In Chapter 3, "Real Option Theory", the main principles of financial and real options theory are explained. As real options theory sources in financial option theory, it is feasible to get a brief review of the main concepts of this theory. However the focus will be set on real options, mentioning the assumptions of real options approach, the different types of real options, the basics of real options valuation, and the application of real options concept to strategic investment.

The next section (Chapter 4, "Real Options in Alliances") is going to present a part of the conducted real options research for alliances. Two directions of real options research in alliances will be the centres of attention. Firstly, the investigation of entry modes (joint ventures (JVs) and licensing) as real options. Secondly, the usage of option clauses in JV contracts, international JV contracts and licensing agreements. Although the real options approach, with its incorporation of uncertainty, seems to be promising, the combination with other theories (transaction cost theory or resource- based view (RBV)) can enrich real options research.

As the basic concepts of real option theory (Chapter 3, "Real Option Theory") and the literature dealing with real options and alliances (Chapter 4, "Real Options in Alliances") are introduced, the application of real options approach to franchising happens in Chapter 5, "Franchising and the Real Options Approach". A short overview of franchising and real option clauses in franchising contracts is given, before several hypotheses will be derived. The creation of the hypotheses and additional control variables is based upon the real options literature for alliances.

In the second part of this thesis (Chapter 6,"Empirical Study"), the theoretical considerations are tested in an empirical study. After a description of the measures used, and the most important frequencies, a factor analysis and a logistic regression are conducted.

The aim of this thesis should be to identify conditions, influencing the existence of contractual clauses in franchising arrangements, in order to better understand the intentions of the franchisor by utilising real options approach.

2. Methods

In order to get a basic understanding of the real options theory, the main principles of financial option theory need to be mentioned. Therefore a broad literature search (For instance via u:search[1], JSTOR[2], etc.) on the field of financial and real options has been conducted.

Due to the fact that there exists hardly any literature dealing with the real options approach in franchising, it is necessary to draw analogies from existing real options literature for joint ventures and licensing. Through applying the main insights from real options research in alliances to franchising, the creation of hypotheses for franchising is possible.

In the second part of this thesis, the hypotheses, derived from real options literature, will be tested empirically. Therefore a dataset of a research project ("Eigentumsstrategie von Franchise- Unternehmen in Deutschland"), conducted by ao. Univ.-Prof. Mag. Dr. Josef Windsperger, is used. The data collected contains German franchising firms, which answered questions in order to analyse the factors influencing the choice of ownership strategy of the franchisor. The data will be analysed with the statistic software SPSS (Statistical Package for Social Sciences) version 20.0. The statistical analysis comprises a factor analysis and a logistic regression. The results of the statistical testing, as well as the selected literature, should help to comprehend the basic principles of real options theory and the implications for franchisors' to use real option clauses in their contracts. Moreover this thesis represents a first attempt to apply real options concepts, developed for joint venture (JVs) and licensing, to franchising.

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[1] URL:
http://search.obvsg.at/primo_library/libweb/action/search.do?mode=Basic&vid=UWI&tab=default_tab ;
[2] URL: http://www.jstor.org/ ;

3. Real Option Theory

3.1   Financial Options

In general an option can be defined as: "(…) the right, in an uncertain future, to pick whatever action will turn out to be 'the best of' two or more actions, as the uncertain future unfolds."(Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001, p.13).

The emerging flexibility, from having the right to choose, represents one of the basic concepts of financial options theory. The right of choice withdraws implicitly the obligation to pick one action. Hence, "The buyer of an option receives the *right but not the obligation* to make the specified transaction."(Figlewski/ Silber 1990, p.4).

Options are useful devices in order to cope with uncertainty and are helpful instruments to reduce risk. A financial option is an instrument of derivative structure. Luenberger (1998) states that, "An option is a derivative security whose underlying asset is the asset that can be bought or sold (…)"(Luenberger 1998, p.319).

The history of option- like deals dates back to ancient Greece and Rome, where the basic idea of a transaction with a pre-specified date and place to a fixed price already existed. In the early 18th century forward contracts were common in Japan on the first organized commodity exchange. During the tulip mania in the 17th century in Holland, those option-like instruments led to a collapse, due to too high contract prices. The modern history of financial options starts with the Chicago Board of Trade (CBOT) in 1848, which was the first commodity exchange for forward contracts in the U.S., with future contract trading in the 1860s. During the 19th century primarily agricultural commodities were subject of option contracts in England and the U.S.. In 1919 the formation of the Chicago Mercantile Exchange (CME) took place. A division of the CME, the International Monetary Market (IMM) began trading the first financial future contract in May 1972. In April 1973, the Chicago Board Options Exchange (CBOE) started its commercial operations. Up to 1973 option contracts were traded on the Over the Counter Market (OTC). The linkage between the Singapore International Monetary Exchange (SIMEX) and the CME in 1984 enhanced internationalization and in 1988 "(…) all major stock exchanges and future exchanges sponsored options trading (…)"(Figlewski/ Silber 1990, p.10). (Dubofsky 1992, Figlewski/ Silber 1990)

During the long history of options, several different approaches in order to define financial options exist, for instance:

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„On traite sur certain marchés des opérations en quelque sorte intermédiaires entre les opérations fermes et les opérations à prime, ce sont les options."(Bachelier 1900, p.31)

„An option is the right, but not the obligation, to buy (or sell) an asset under specified terms. Usually there are a specified price and a specified period of time over which the option is valid."(Luenberger 1998, p.319)

"A **financial option** is an option to buy or sell a financial asset which already exists and is actively *traded* in a financial market in a *standard form* (stocks, shares, bonds, etc.)."(Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001, p.13)

"An option is defined as the right, without an associated symmetric obligation, to buy (if a *call*) or sell (if a *put*) a specified asset (e.g., common stock) by paying a prespecified price (the *exercise* or *strike price*) on or before a specified date (the *expiration* or *maturity* date)."(Trigeorgis 1996, p.69)

3.2   Terminology

In this section a very brief overview of the most important terms and concepts of options theory is given, on the basis of Howell, Stark, Newton, Paxson, Cavus, Pereira and Patel (2001).

3.2.1   Option Holder

The option holder is in possession of the right to acquire (call option) or to sell (put option) the option.

3.2.2   Option Writer

The option writer has the obligation to acquire or to sell the option to the option holder to the ex ante or ex post negotiated conditions.

3.2.3   Option Premium

The option premium is the price in order to acquire an option. As the option premium represents the price of the option itself, the original paid option premium is an irreversible expenditure.

3.2.4 Exercise Price or Strike Price

The exercise price or strike price is the price at which an option gives us the right to buy or to sell an asset. Usually the exercise price is fixed a priori, although in more complex option constructs, the exercise price happens to be variable, depending for instance on negotiations or on different pre-agreed determinants.

3.2.5 Stock Price or Asset Price

The stock price or the asset price refers to the price of the underlying at a certain point in time. The difference in value between the stock price and the exercise price is an essential condition in order to gain additional value from exercising an option.

3.2.6 Expiration Date

The expiration date represents the specific point in time, when an option expires. Therefore the contractual parties need to settle the duration of the option. The duration can be fixed a priori in the option contract, or can be interrelated to certain conditions or further negotiations. For European Call options it is the date when exercising the option is possible, due to the fact that European options have a fixed expiration date. According to real options for example it might be the possible date for new investments, the expiration date of a licence or a patent, the expected move of a competitor towards a new technology, etc..

3.2.7 Underlying Asset

The underlying asset of the option defines the asset, which an option allows to buy or to sell. The parties have to agree on the quantity and class or form of their economical interactions, which means defining the underlying. Concerning real options the underlying for instance could be a revenue stream, a production operation, etc..

3.2.8 Random Factor

The random factor represents "a variable whose random walk of value over time will drive the value of some derivative (such as a real option)."(Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001, p.5). As one of the basic ideas in option theory is the possible value change over time, the random factor allows us to observe this shifting in value by naming a certain variable. This variable might sometimes be hard to measure, but enables an approximation, which alleviates decision-making. In some cases the random factor equals the value of the underlying asset of the option. In financial options the random

factor would be the stock price, whereas in real options the random factor could be, for example, expected revenue streams, when holding the option to build up a new production facility. Further other random factors can influence the value of an asset, such as exchange rates, interest rates, etc.. Therefore the random factor is a value- driving factor for the option.

3.2.9 Random Walk

According to the assumption that the value of the option changes over time in an unforeseeable way, random or value- driving factors are not constant. This phenomenon, the changing of the value of the random factor over time, is called the random walk. Consequently the value is as likely to fall as to increase during any future period of time. Random walk analysis is feasible under perfect competition.

3.3 Call Options

In general the definition of a call option can be described as followed:

A call option is "the right to acquire an asset at some future time for a cost which is known now, however much the asset's market value may change meanwhile."(Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001, p.4).

The call option happens to be profitable for the option holder as soon as the strike price will be exceeded by the price of the underlying. The option holder gains advantage from increasing volatility, due to the fact that she holds the right but not the obligation to buy the option.

Further an option is called "in the money", when the price of the underlying, sometimes also called stock price, is higher than the exercise price. In this situation an exercise of the option enables the option holder to gain profit from the option. The opposite situation occurs when an option is said to be "out of the money", where the exercise price, or also called strike price, is higher than the stock price. In a circumstance of price equality, which means the exercise price equals the price of the underlying, the option is said to be "at the money". (Dubofsky 1992, Dixit/ Pindyck 1994, Luenberger 1998)

As a call option is the possibility and not the obligation to acquire, call options can be seen as the opportunity to get a free loan. Following this logic the value of a call option rises with the time to maturity and the interest rate. (Brealey/ Myers/ Allen 2006)

Call options can take various forms, therefore the term call option should not only be associated with operations on financial markets. In respect to real options different call

options are of importance, for example call options to invest, to produce, or to spread the option.

3.4   Put Options

The put option represents "the right to sell an asset in future, at a price known now, whatever its market selling price may be at that time."(Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001, p.5).

The put option happens to be profitable as soon as the price of the underlying occurs to be lower than the exercise price. The put option contains a boundary, due to the fact that the value of the underlying can not be less than zero.

3.5   European Option

Originally the terms European and American options described the difference in structure of options traded on the stock markets in Europe and in America. Nowadays the terminology refers to the structure of the option, irrespective of where the option is traded. (Luenberger 1998)

The European option is an "option which gives the right to invest (or sell out) on only one fixed future date."(Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001, p.5). Hence the European option can only be exercised at maturity. (Trigeorgis 1996)

3.6   American Option

In contrast to European options, American options offer the option holder (or the option writer) more flexibility, due to the fact that the American option is not bounded to one fix expiration date. The American option "gives us the right to invest (or to sell) at any time we choose, usually up to some fixed final date."(Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001, p.5) Therefore the exercise of the option is possible at any point in time until the final expiration date. (Luenberger 1998, Trigeorgis 1996) The option holder of an American option is more flexible than the holder of an European option and in consequence has a higher opportunity of gaining additional value through the option. Another form of an option is the perpetual option, an option, which will never expire. The occurrence of this type of option is in cases of land use or currency exchanges. (Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001)

3.7 Real Options

Real option- like instruments existed already in ancient Greece as the story of Thales of Milet, conveyed by Aristoteles tells us: The sophist philosopher Thales made a fortune by acquiring the right to rent olive presses before harvest. Thales was speculating on a good harvest, and as it turned out favourable for him, demand for olive presses increased, he was able to charge the high market price for lending the olive presses. (Copeland/ Antikarov 2001)

However, Stewart C. Myers formulated the term "real options" in 1977 in his article "Determinants of Corporate Borrowing", in analogy to financial options, when realizing that growth opportunities can be regarded as call options. As the origin of the real option theory lies in financial theory, the real option approach can be seen as an extension to the financial option approach. Myers (1977) realized that strategic planning requires finance and that the value of a firm is reliant on the future investment strategy of the firm. Therefore Myers (1977) perceives the firm to be a combination of two different asset types: Firstly, "(…) real assets, which have market values independent of the firm's investment strategy (…)"(Myers 1977, p.163). Secondly, "(…) real options, which are opportunities to purchase real assets on possibly favorable terms."(Myers 1977, p. 163). In this sense a real option "(…) is an option to change the ‚real' physical or intellectual activity of a business (...)."(Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001, p.14). For Luenberger (1998) "(…) options are associated with investment opportunities that are non financial instruments."(Luenberger 1998, p.340). Hence the processes concerning those investments can be seen as operational options, which are called "real options", in order to emphasize the fact that real activities or commodities are involved. (Luenberger 1998) Examples for real options might be: a new plant, new technology creation or implementation in a market, invention of a brand, generating an additional unit of output, employ additional staff, building a factory, purchase new equipment, buy new land in order to search for raw materials for later extraction, etc.. (Luenberger 1998, Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001)

"A real option exists if we have the right to take a decision at one or more points in the future (e.g. to invest or not to invest, or to sell out or not to sell out)." (Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001, p.2) Following this definition of a real option, the very basic structure of real options is demonstrated by Ander and Levinthal (2004).

The Structure of Real Options
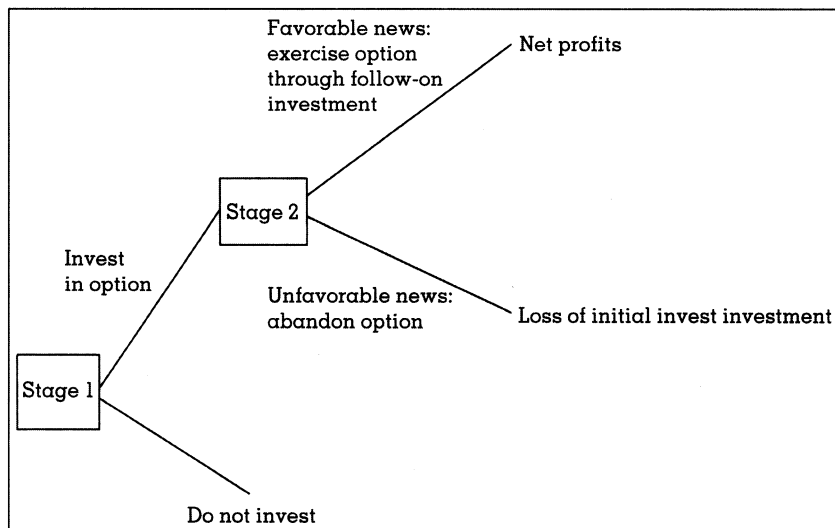
Figure 1: „The structure of real options", source: Ander/ Levinthal 2004, p. 75.

As Figure 1 shows, the first stage in the process represents the decision whether to make an investment or not, in detail, whether to acquire an option or not. At stage two, the decision whether to exercise the option or not takes place. Ander and Levinthal (2004) argue, that in case of the occurrence of favourable news the option will be exercised and in case of unfavourable news the option will be abandoned.

"Real Options (as opposed to financial options) represent a firm's investments in physical or human assets (as opposed to financial assets), which provide the firm the opportunity to respond to future events in a contingent fashion (…)."(Reuer/ Tong 2005, p.405) The main advantage an option lies in gaining new information and reacting in a flexible way, namely a learning process. An example of a real option, which creates learning opportunities, is the investment in a developing country, with potential future expansion, if the country grows. (Kogut/ Kulatilaka 2001)

"Real options have the potential to make a significant difference in the area of competition and strategy."(Trigeorgis 1996, p.19) Following Trigeorgis (1996) real options can create sustainable competitive advantages. For instance options to grow by making profitable future investments, or the ability to respond to a changing technological, competitive, business environment in a flexible and effective way. (Trigeorgis 1996) Therefore a real option can affect the value of a firm directly.

In order to draw an analogy to financial options a comparison of the main variables of financial and real options, taken from Howell, Stark, Newton, Paxson, Cavus, Pereira and Patel (2001, pp.19-20), is helpful:

Financial Options	Real Options
Stock Price	Net present value (NPV) of the potential investment, in case of making the investment today.
Underlying asset = unit of stock	Underlying asset = potential physical or intellectual investment
Exercise Price = Fixed price at which we can buy (call) or sell (put) a unit of stock.	Exercise Price = Fixed price at which we can make a business investment, or sell it up.
Expiry Date = Last date of exercise (American) or only date of exercise (European).	Expiry Date = Last day for possible investment (American), or only day for possible investment (European).

Table 1: Comparison of the main variables of financial and real options, see Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001, pp.19-20.

Further in financial options the option holder has the right to buy (call) or sell (put), whereas in real options the option holder has the opportunity to invest (call) or disinvest, sell up, (put) the option. This right of the option holder is regulated in financial options, concerning the continuity of this right, by having American-, European-, or perpetual styled options. In comparison to real options the continuity of the right of the option holder may vary among those three possibilities or takes a combination of this three types. (Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001)

As the analogy to financial options is not perfectly possible, which is demonstrated above in Table 1, problems occur in terms of options valuation (see Chapter 3.7.3.3, "Problems in Options Valuation").

However, "The key difference between a financial and a real option is that a decision about a financial option cannot change the value of the firm itself, while a wrong decision about a real option will change the firm's resources and its value."(Howell/ Stark/ Newton/ Paxson/ Cavus/ Pereira/ Patel 2001, p.7).

Therefore real options analysis is essential, as it alleviates to determine, when or if a firm should take one of the possible decisions, and how much money should be spend on purchasing an economic chance.

The question if the use of the real option approach is suitable for any investment is of importance. Ander and Levinthal (2004) argued for instance that a sequential stream of investment does not necessarily represent a real option.

Baecker and Hommel (2004) suggest three characteristics, to, in general, identify real investment projects as option rights:

"(1) payoffs are subject to some form of (market) risk (uncertainty),

(2) management possesses certain degree of freedom in allocating corporate funds or assets (flexibility), and, finally,

(3) using these degrees of freedom will lead to some form of sunk costs (irreversibility)."(Baecker/ Hommel 2004, p.3)

Schulmerich (2005) identifies as well criteria, when real options approach is sensible to apply:

In case of an investment decision, which is contingent. In case of high uncertainty, when gaining more information is advantageous. Further, when the value seems to lie in future growth options rather, than in current cash flow possibilities. At the time when the level of uncertainty creates flexibility, and, finally, when project updates are possible and strategy adaptations during the project exist. (Schulmerich 2005)

"Carrying over this insight from financial options to real options is what makes real options theory particularly appealing: it deals with one of firms' most important challenges by linking current strategic decisions with uncertainty about future outcomes."(Cuypers/ Martin 2010, p. 50)

Hence the real options approach "(…) encourages experimentation and the proactive exploration of uncertainty."(Bowman/ Moskowitz 2001, p.777).

3.7.1 Assumptions of the Real Options Approach

Real options theory is based upon several assumptions, most of them sourcing in financial option theory. As the assumptions concerning options valuation are discussed later in Chapter 3.7.3.2, "Assumptions of Real Options Valuation", this sections mentions only some basic principles underlying real options theory.

According to Kulatilaka and Perotti (1998) real options analysis contains two main assumptions:"

    a.) the firm has a monopoly over an investment opportunity,

    b.) the product market is perfectly competitive"(Kulatilaka/ Perotti 1998, p.1021).

Further one of the main principles of real options theory, is the effect of uncertainty (see Chapter 5.4.1, "Uncertainty"). "In real options theory, one of the main predictions is that higher levels of uncertainty will increase option value, which will in turn increase the likelihood of the occurrence of a real options investment."(Cuypers/ Martin 2010, p.62)

The rise in value results not from the uncertainty per se, but from the emerging flexibility

in the managerial decision making process. Hence, „The real options approach to valuation, or the modern theory of investment under uncertainty, is based on a simple but nevertheless profound insight: flexibility creates value."(Baecker/ Hommel 2004, p.2). This statement characterizes one of the most basic assumptions underlying real options theory: the creation of value via flexibility. Moreover the value- driving factors are assumed to follow an unforeseeable random walk (see Chapter 3.2.9, "Random Walk").

3.7.2 Types of Real Options

"A real option is the right, but not the obligation, to take an action (e.g., deferring, expanding, contracting, or abandoning) at a predetermined cost called the exercise price, for a predetermined period of time- the life of the option."(Copeland/ Antikarov 2001, p.5) Following this statement the decision maker has several possibilities how to act and react confronted with an uncertain environment. Hence a lot of different types of options exist. In research (Brealey/ Myers/ Allen 2006, Trigeorgis 1996, Bowman/ Hurry 1993) the attempt of categorizing the varying options has been made. In this section some of the most relevant types of options are going to be discussed.

According to Brealey, Myers and Allen (2006) the four most important real option types are:

1. *The option to make follow- on investments:*

   The basic idea behind the option to make follow- on investments is the cognition, that an investment today may create future opportunities. This type of option generates strategic value, even in situations, when projects are pursued with a negative net present value (NPV) or negative cash flows. Due to the fact that certain projects lead to call options on follow- on projects, strategic value is added to the project, beside the value of immediate cash flows. A company might be aware of the option to make follow- on investments, when for instance investing in a project in a new technology market in order to ensure their presence in the market, to gain from future opportunities or follow- on projects.

2. *The option to wait (and learn) before investing:*

   The option to wait, or the option to defer investment can be seen as a call option on the investment. In some circumstances the call option on the investment may be more valuable than the immediate commitment to invest. Therefore it seems to be more advantageous to defer a positive NPV project, especially under high uncertainty and when immediate cash flows of the project are low. Consequently

the option to wait offers the decision makers the opportunity to learn and gain more information confronted with an uncertain environment. Managers have the possibility to keep options open and act more flexible. Therefore Guthrie (2009) emphasizes the importance of learning options in situations concerning for instance market research, construction cost uncertainty, research and development (R&D), and resource extraction.

3. *The option to abandon:*

   The decision to abandon a project might be driven by several factors. The profitability of the project, the limited flexibility of the project in respect to future changes, the strategic orientation of the company, etc. can lead to the abandonment of a project. The option to abandon creates value for the company, due to the fact that it is equivalent to owning a put option. The assets, which are not used for the abandoned project anymore are shifted to other more valuable projects or sold. Hence the value of the project's assets represents the exercise price of the option to abandon. The option to abandon therefore acts as an insurance against the failure of a project.

4. *The option to vary the firm's output or its production methods:*

   The option to vary the firm's output or its production methods offers the firm the advantage of obtaining a higher level of flexibility. The assets of a project are deployed in a flexible way. The company has the possibility to modify the inputs or the outputs in the production process. For instance the firm builds the infrastructure or production facilities in order to be able to exchange the assets to get cheaper production processes or to create a range of valuable outputs. One prominent example for the option of switching the inputs of a production process is the one of an electric utility using an oil- fired plant, which can be converted into a gas- fired one. As circumstances are changing, such as oil price is rising while gas price is decreasing at the same time, the option to decide which raw material to use becomes particularly valuable for the electric utility. An example for the flexible exchange of outputs is a textile company, which is able to produce different products or designs of clothing through having a highly developed computer-controlled knitting machine. The possible exchange of assets creates the value of the option to vary the firm's output or its production methods.

Further, Trigeorgis (1996) presents a broader set of options naming four more option categorizations than Brealey, Myers and Allen (2006):

1. *The option to defer investment:*

   As above-mentioned, the option to defer, also the option to wait, is valuable to the firm, due to the fact that waiting enables the resolution of uncertainty through gaining more information and through learning. Trigeorgis (1996) perceives this type of option as an American call option and states the option to be especially valuable in case of long investment horizons and high uncertainty. As examples for those conditions Trigeorgis (1996) mentions resource extraction industries, real estate development, paper products, and farming.

   Leiblein (2003) also enhances the advantages of the option to defer investment, recognizing that premature commitment may lead to considerable risks. Further "Real option theory recognizes the expected value associated with this latter flexibility and indicates that, under uncertainty, it may be optimal to utilize market like mechanisms that provide greater flexibility."(Leiblein 2003, p.949). Following this logic the value of the option to wait for more information increases with a higher level of uncertainty and when the current cash flows, lost because of postponing investment, happen to be relatively low. (Leiblein 2003)

2. *The option to default during staged construction (Time-to-build option):*

   The option to default during staged construction accounts for the fact that a lot of investments in reality do not only need a single expenditure. As costs of investment can be staged over time, the option to choose at any stage whether to proceed investment or not, appears to be valuable. For instance the exploration of land in order to find raw materials can be seen as one stage of investment. After the exploration the decision to proceed, and to start mine working, might be influenced by the outcome of exploration work or the change in prices for the raw materials. If the outcome of the stage, or additional information turns out to be unfavourable for the project, the option to default at any stage is expedient. Therefore each stage can be seen as an option on future options and might be regarded in valuation like compound options. Trigeorgis (1996) states that in research and development (R&D) industries, in venture- capital financing, as well as in capital- intense, highly uncertain and long- development industries, this option is of particular importance.

3. *The option to expand:*

The option to expand provides the firm with the possibility to react to circumstances, which turn out to be more favourable than expected and represents a call option on future investments. Brealey, Myers and Allen (2006) entitle this option as the option to make follow- on investments. Trigeorgis (1996) emphasizes the linkage between the option to expand and growth options when he states that, "The option to expand may also be of strategic importance, especially if it enables the firm to capitalize on future growth opportunities."(Trigeorgis 1996, p.11).

4. *The option to contract:*

In case conditions turn out to be less favourable than expected for a project or investment the management of the firm can decide to reduce operations. The potential cost savings act therefore like the exercise price of the put option. Particularly the option to contract seems to be important when choosing between different operations (plants, technologies, etc.) in uncertain markets.

5. *The option to shutdown and restart operations:*

Another possibility, besides reducing operations, when the state of nature happens to be unfavourable for a certain period of time, is the option to shutdown and restart operations. For example a production facility can be closed temporarily until the market price of the product rises again. The firm has the opportunity to wait and to restart operations when conditions improve.

6. *The option to abandon for salvage value:*

As above-mentioned (Brealey/ Myers/ Allen 2006) the option to abandon provides the management with the possibility to close projects or investments, while benefitting from the salvage value. Trigeorgis (1996) defines the option to abandon for salvage value as an American put option on the investment's present value.

7. *The option to switch use:*

The incorporation of flexibility, by creating alternative choices regarding inputs as well as outputs of a production process adds value to the firm. According to Trigeorgis (1996) this process flexibility might be generated via technology, via the switching among several different suppliers, subcontracting policies, or geographical diversification of investments. Further product flexibility also increases a project's value, due to the switching among different outputs, for instance creating an alternative product with the existing assets.

In this context Leiblein (2003) states the real option argument that "(…) certain resources create economic value by providing the ability to flexibly switch use of

assets."(Leiblein 2003, p.950). For example, Reuer and Tong (2007) assume for multinational companies (MNC) the existence of a portfolio of switching options. In this respect, Kogut and Kulatilaka (1994) investigate the operating flexibility of dislocating production from one manufacturing plant to another foreign plant.

8. *Corporate growth options:*

Growth options are of particular strategic importance for a firm as they generate the right but not the obligation to profit from future opportunities. Following Trigeorgis (1996) the existence of growth options increases in multinational operations, strategic acquisitions, R&D, high technology, and in industries with multiple product applications or generations. For example, the investment in the first generation of a high technology product might create the option of future growth opportunities. Therefore the value of an option to grow is not only determined by its expected cash flows but also by the following future possibilities emerging from this first project.

Leiblein (2003) emphasizes the specific value of growth options in high technological industries, which Leiblein (2003) presumes to be characterized by the agglomeration of inter- generational knowledge spillovers and by the existence of weak appropriability regimes. "In these contexts, it will often be desirable to internalize activities associated with early generations of a product or technology in order to maintain a claim on the opportunity to participate in subsequent generations of that product or technology."(Leiblein 2003, p.949) Therefore the option to grow enables the firm to develop or expand a related product in the future. (Leiblein 2003)

Bowman and Hurry (1993) mentioned in their article "Strategy through the Option Lens: An Integrated View of Resource Investments and the Incremental-Choice Process" another term for options characterization, *the shadow option* (see Figure 2). The resources of an organization (e.g., its capabilities and assets) represent, from the option theory perspective, a bundle of options for future strategic choice. In order to gain advantage of the opportunities for strategic choice, it is necessary that decision makers are able to recognize these options. Therefore the existence of so called 'shadow options' can be assumed. Those shadow options might be hidden in the bundle of options and are waiting for discovery. For the recognition of such shadow options managers have to use retrospective sense making. (Bowman/ Hurry 1993)
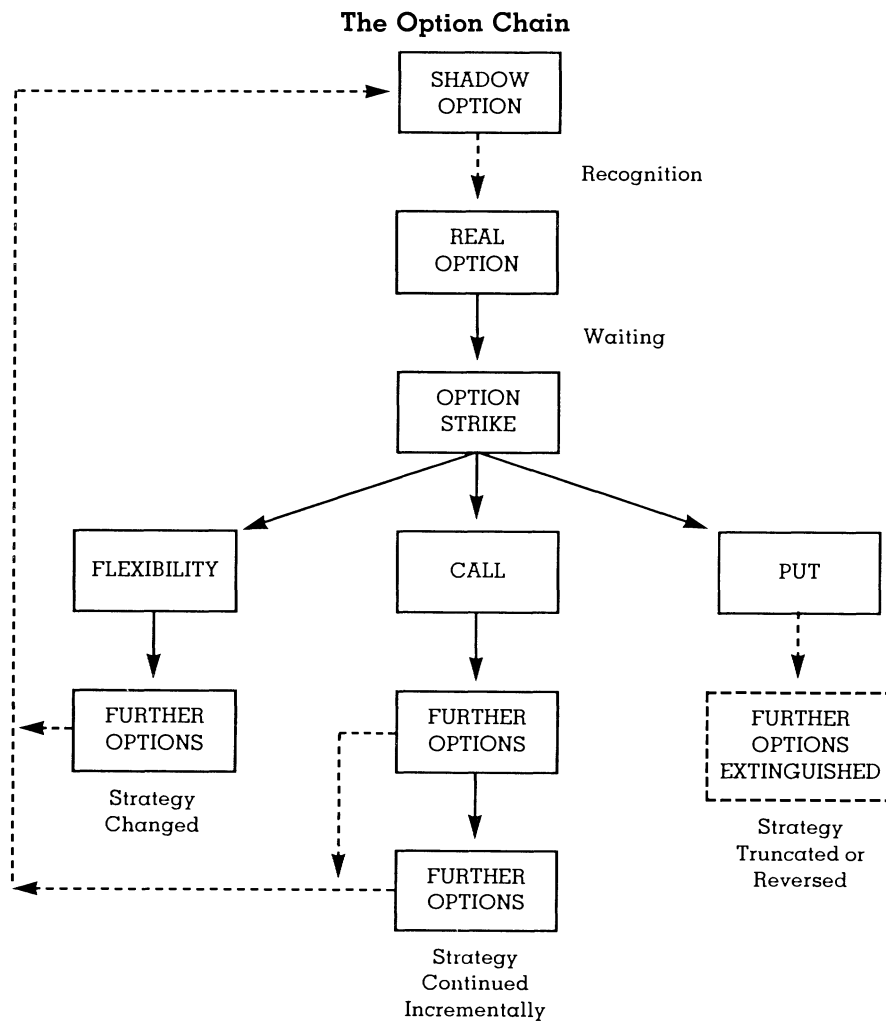
The Option Chain

Figure 2: „The option chain", source: Bowman/ Hurry 1993, p. 764.

Further Bowman and Hurry (1993) separate options into two basic categories:

1. *Incremental Options:* which represent simple call and put options.

2. *Flexibility Options:* which represent "choices to switch investment streams"(Bowman/ Hurry 1993, p.763). For instance the investment of an automobile producing firm in alternative technologies, such as electric- driven automobiles.

Therefore options create the mechanism of choice, which underlies strategy.

Another classification of options is presented by McGrath, Ferrier and Mendelow (2004). McGrath, Ferrier and Mendelow (2004) state that four types of options can be identified:"

1. as a component of total firm value,

2. as specific projects,

3. as choices, and

4. as a heuristic for strategic investment."(McGrath/ Ferrier/ Mendelow 2004, p.86).

In reality the characterization of real options is far more complex. It turns out that the occurrence of just one option happens to be the exceptional case. Instead options very often accumulate and compound options emerge. Therefore a combination of two or more of the above-mentioned options can occur. Especially in real options valuation compound options lead to highly complex frameworks. Hence it is important to keep in mind, that although the above-mentioned characterizations of options help to understand the process of integrating real options view into management decisions, the sharp assignment of those option categories remains rather theoretical. On the one hand the combination of options increases complexity of analysis, on the other hand compound options offer higher operating flexibility and therefore add more value to the firm. Schulmerich (2005) also emphasizes the fact that in reality the most common type of options are multiple interacting options.

3.7.3   Real Options Valuation

The valuation of real options represents one of the most problematic analysis processes in strategic management. As real options approach emerged originally from financial option theory, the real options approach can be perceived as an extension to financial option theory.

Since the valuation of options has a long tradition in financial budgeting several theoretical mathematical frameworks exist to calculate the value of an option.

The real option approach represents a challenge to traditional valuation techniques, such as the common technique of discounted cash flow. However the fundamental financial techniques and valuation methods will be applied to real option analysis in order to provide a basis for strategic decision-making.

The beginning of conceptual real options approaches can be determined with Myers's in 1977, who was "(…) thinking of discretionary investment opportunities as 'growth options' (…)"(Trigeorgis 1996, p. 15 ; see Myers 1977). The origins of quantitative real options analysis were made by research (Black, Scholes and Merton) in order to price financial options.

In the early 1970's Myron C. Scholes and Fisher Black invented an important instrument of option's valuation, the Black- Scholes formula. Robert C. Merton extended the model introduced by Scholes and Black. (Baecker/ Hommel 2004, Schulmerich 2005) In 1997

Myron C. Scholes and Robert C. Merton won the Nobel Price in Economic Sciences for their contributions to the methods for valuing derivatives.

Another important step in advancing the real options valuation has been taken by "(…) the recognition that an option can be replicated (…) from an equivalent portfolio of traded securities."(Trigeorgis 1996, p. 16). This knowledge is important since risk- neutral valuation was possible. Consequently the present value discounting of predicted future cash flows at a risk-free interest rate was feasible. Trigeorgis (1996) depicts the problem that in real options valuation one approach was to analyse the different real options in isolation. However valuing only one type of option at a time may not represent the real – life situation, due to the fact that projects in reality are characterized rather by multiple real options with high likely interdependencies. In order to face the complexity emerging from multiple real options also game theoretic approaches were considered. Still, various numerical analysis techniques, which profit from the possibility of the risk free valuation, alleviate the valuation of real options. (Trigeorgis 1996)

Trigeorgis (1996) defines two sorts of numerical techniques for option valuation in general:

1. Techniques "(…) that approximate the underlying stochastic processes directly, and are generally more intuitive (…)"(Trigeorgis 1996, p. 21). This group of valuation techniques embodies the Monte Carlo Simulation and differing lattice approaches. (Trigeorgis 1996)

2. Techniques "(…) that approximate the resulting partial differential equations."(Trigeorgis 1996, p.21). According to Trigeorgis (1996) those techniques are advantageous in order to explain dividend- like effects, option interactions and complex option constructs. As examples for such techniques Trigeorgis (1996) lists numerical integration, implicit or explicit finite-difference schemes, and analytic approximations.

For a more detailed summary of the development of real options valuation techniques since the early 1970's, see Trigeorgis (1996).

Copeland and Antikarov (2001) introduce a four- step process for valuing real options. (see Figure 3)
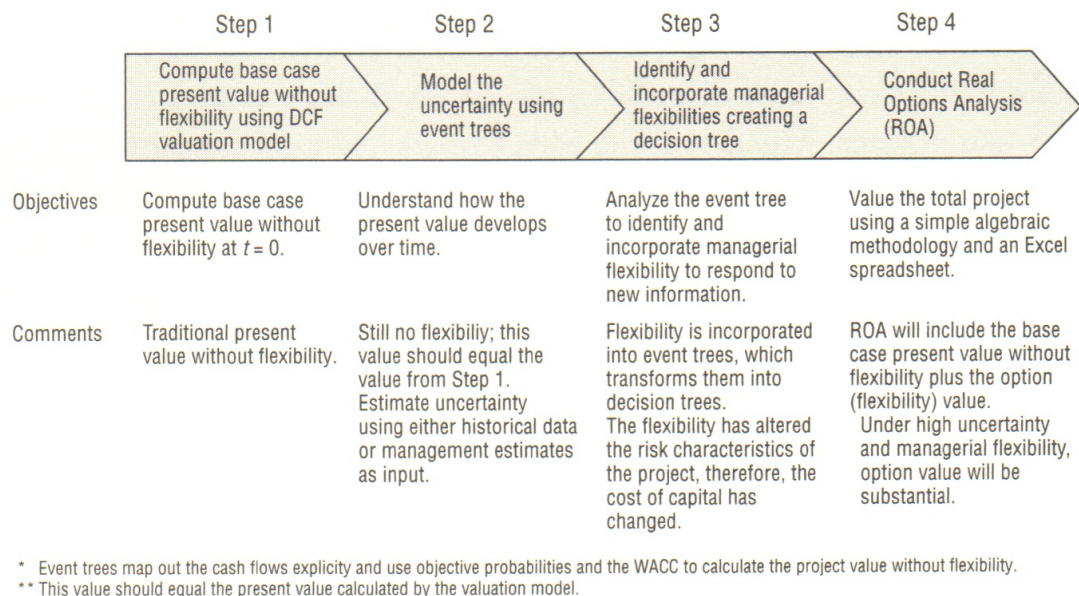

Figure 3: „Four- step process for valuing real options", source: Copeland/ Antikarov 2001, p.220.

In the first step the focus is put on a standard net present value analysis. The project's present value is calculated by a discounted cash flow valuation model. In the second step an event tree is developed, by incorporating a set of combined uncertainties. The volatility of the project therefore depends on the range of defined uncertainties. The event tree displays the model of uncertainties, which influence the value of the underlying asset over time. The third step of the process refers to the transformation of the event tree into a decision tree via integrating the possible decisions of managers. The decision tree gives an idea of the potential gains of optimal decisions. In the final step of the process of estimating the value of an option the payoffs in the decision tree are analysed. Therefore the method of replicating portfolios or risk- neutral probabilities is utilized. It is of importance to notice the fact that Copeland and Antikarov (2001) assume that the complex set of uncertainties can be simplified to only one uncertainty and that price fluctuation follows a normal random walk. (Copeland/ Antikarov 2001)

3.7.3.1 Option Value

The first explicit approach, in order to calculate the value of an option, dates back to 1900, when the French mathematician Bachelier addressed to the problem of finding a calculation formula for option value on the financial market. (Bachelier 1900, Figlewski 1990)

For financial options the value of the option in general is defined as the option premium. "An option's premium can be broken down into two parts: intrinsic value (sometimes called parity value), and time value (sometimes called premium over parity)."(Dubofsky 1992, p.14) The intrinsic value describes the value of the option, if exercise of the option takes places immediate. The time value represents the positive probability of a positive change of the underlying price. (Maisel 2009) The intrinsic value of an option at or out of the money equals zero. As the option happens to be in the money, the intrinsic value equals the amount the option happens to be in the money. In case a call option is at or out of the money, the option only has time value. (Dubofsky 1992) "The longer the time to expiration, the greater a call's time value, all else equal."(Dubofsky 1992, p.15) The time value of an option decreases over time resulting in having at expiration only the intrinsic value left. (Figlewski/ Silber 1990)

The time value of an option sources in two components: the leverage value and the value of the option feature. The leverage value describes the fact that the more time to expiration is left, the better is the possibility of earning interest with the, not immediately paid, exercise price. As the intrinsic value and the leverage value together form the value of a forward contract, the third value component is the value of not being obliged to exercise the option. (Figlewski/ Silber 1990)

Hence for a call option, the

$$Option\ value = Intrinsic\ value + Time\ value \begin{cases} Leverage\ value, \\ Value\ of\ the\ option\ feature. \end{cases}$$

In the same mode of thought, Kulatilaka and Perotti (1998) differentiate, as well, two factors, which describe the value of a real investment: the strategic value and the alternative value of not investing. The latter represents a form of flexibility, which is added to traditional valuation methods. (Kulatilaka/ Perotti 1998)

For McGrath, Ferrier and Mendelow (2004) the two sufficient conditions for the creation of option value are "(…) future choices and potential for proprietary access to outcomes."(McGrath/ Ferrier/ Mendelow 2004, p.86).

According to Brealey, Myers and Allen (2006) the value of a call option can be influenced by five variables:

1. The higher the price of an underlying asset, the more valuable an option to acquire it.
2. The lower the exercise price, the more valuable the option.

3. No payment of the exercise price before expiration date leads to a delay, which turns out to be most valuable when the interest rate is high.

4. The option turns out to be valueless if the exercise price exceeds the stock price at expiration date. In contrast, as soon as the stock price exceeds the exercise price, the option holder gains additional value. Accordingly, the value of the call option rises with the volatility of the stock price.

5. Long-term options are more valuable than short-term options. A greater period of time until expiration of the option implies a higher possibility of a rise in stock price.

In dependence on point 5, Figure 4 shows the value of a call option with different times to expiration.
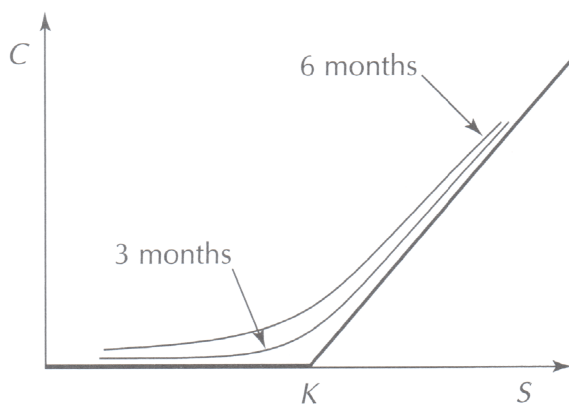

Figure 4: Option price curve with various times to expiration, Luenberger (1998), p.322.

S represents a given stock price, K describes the strike price and C ($C = \max(0, S - K)$) is the value of the call option at expiration. (Luenberger 1998) As demonstrated in Figure 4 the value of a call option rises with a longer the time to expiration. The value of an option hold for six months is bigger than the value of an option with three months duration.

In the following, some techniques in order to calculate the value of options are presented.

Discounted Cash Flow

In order to calculate the value of investment opportunities one prominent instrument used is the Discounted Cash Flow (DCF).

As real options are rarely traded, we value the option as if it could be traded. Therefore the present value of the underlying asset serves as a starting point for analysis. The calculation of the present value of the underlying asset is usually conducted by discounted cash flow. (Brealey/ Myers/ Allen 2006)

The standard procedure to value an asset follows two steps. First step is to derive the expected cash flows and the second step is to discount the cash flows at the opportunity cost of capital. (Brealey/ Myers/ Allen 2006) Hence a calculation about a future investment's attractiveness is possible for financial options.

Net Present Value

The net present value (NPV) is an instrument used in capital budgeting in order to estimate the earning power of an investment or a project. The method of net present value offers a relatively easy way to evaluate the present value of future monetary flows of an investment.

$$NPV = \sum_{t=1}^{T} \frac{C_t}{(1+r)^t} - I$$

The formula for the NPV is taken from Trigeorgis (1996):"
- r is the (risk-free) opportunity cost of capital,
- C_t is the (certain) net cash flow in year t,
- I is (single initial) investment outlay, and
- T is the number of years of the project's life."(Trigeorgis 1996, p. 31.).

Net present value analysis works with future incoming cash flows. In detail, the net present value regards inflation and returns in the analysis, while comparing the value of a dollar today to the value of the same dollar in the future. If the NPV happens to be negative, the project or in investment should be refused, whereas if the NPV is positive the investment or project should be conducted. However the NPV analysis faces several boundaries, due to the missing of considerations of different forms of flexibility. For instance the lack of the possibility, that future decision could change cash flows in a positive direction. Hence NPV analysis is said to settle too little value to an investment or project, due to its underlying assumption that an investment has to be done now or never. (Trigeorgis 1996, Schulmerich 2005, Maisel 2009, Woschnagg 2004)

Binominal Method

The calculation of the value of an option by using the binominal method is essentially the same process when solving decision trees. However it is necessary to discount within those decision trees and therefore option pricing theory is required. (Brealey/ Myers/ Allen 2006)

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The binominal method assumes that the stock price for the option can proceed in two directions, either rise or fall. This change in stock price will happen with a certain probability. As the stock price of the asset is able to change at any given point in time, the duration of the option can be split into several time intervals. Every time the stock price changes, it is assumed that it could change in two different directions with given probabilities.

"The general binominal method adds realism by dividing the option' life into a number of subperiods in each of which the stock price can make one of two possible moves."(Brealey/ Myers/ Allen 2006, p.585) For valuing the option it is suggested to analyse such a binominal "tree" by working backwards from the expiration date to the present. (Brealey/ Myers/ Allen 2006)

The Black- Scholes- Formula

One major problem in creating an options valuation model is that it seems to be based upon two factors, which are not directly observable: the price of an option follows a certain not predictable probability distribution and to find an appropriate risk- adjusted interest rate in order to discount the future probable payoffs of the option. In response to this problem Fischer Black and Myron Scholes invented the Black- Scholes formula. (Figlewski 1990)

Myron S. Scholes and Fischer Black invented the Black- Scholes Model in the early 1970's. In 1973 Black and Scholes published their article "The Pricing of Options and Corporate Liabilities" and derived the Black- Scholes formula for valuing options. Robert C. Merton extended the Black- Scholes formula with his no-arbitrage argument. (Schulmerich 2005)

According to Copeland and Antikarov (2001) the formula uses several assumptions: Firstly the formula is derived for a European call option. Secondly a single source of uncertainty, that remains fix over time, is presumed. Thirdly the coping with compound state of affairs is not intended. Fourthly the payment of dividends on the underlying asset is not regarded and fifthly a constant exercise price is assumed. (Copeland/ Antikarov 2001)

The Black- Scholes formula "(…) calculates the option's value when the stock price is constantly changing and takes on a continuum of possible future values." (Brealey/ Myers/ Allen 2006, p.585) The continuous division of the option's life into more and more subperiods provides a continuum of stock price changes at maturity, which can be described by a lognormal distribution. (Brealey/ Myers/ Allen 2006)

One advantage of the Black- Scholes formula is that it needs only five elements of input to calculate the value of a European call option: "the current value of the underlying asset, the cost of investment, the risk-free rate of return, the time to expiration of the option, and the volatility of the underlying asset."(Amram/ Kulatilaka 1999, p.28).

Based on financial option theory, and derived from Black- Scholes formula, "(…) the value of a call option is higher (1) the higher the value of the underlying asset (e.g., the stock), (…) (2) the longer the time to expiration, (…) (3) the lower the exercise price, (…) (4) the higher the variance of asset returns (…) and (5) the higher the riskless interest rate (...)" (Trigeorgis 1996, p.91).

Although Brealey, Myers and Allen (2006) state that "The Black-Scholes formula often suffices to value expansion options."(Brealey/ Myers/ Allen 2006, p.616), Black and Scholes (1973) are quite aware of the limitations of their formula when dealing with more complex options. In this context Black and Scholes (1973) are mentioning that, "the formula cannot be used, even as an approximation, to give the value of an option on an option."(Black/ Scholes 1973, p.652).

In case of using the traditional financial option valuing techniques one should always keep in mind that they represent only an approximation to the very complex and hard to measure real- life conditions. Dixit and Pindyck (1994) emphasize this complexity when stating, "(…), the value of a project depends on future prices of outputs and inputs, interest rates, etc."(Dixit/ Pindyck 1994, p.175). Therefore the valuation of real options via financial option techniques leads to a certain degree of fuzziness. Hence it is important to consider the main assumptions used in standard options valuation.

3.7.3.2 *Assumptions of Real Options Valuation*

The standard underlying assumptions of real options valuation according to Trigeorgis (1996) are:

1. Continuous trading is feasible, due to the presumptions that "(…) there are no transaction costs or (differential) taxes; (…) no restrictions on short sales (…), and full use of proceeds is allowed; (…) all shares of all securities are infinitely divisible; and (…) borrowing and lending (at the same rate) are unrestricted."(Trigeorgis 1996, p.83). Hence frictionless markets are assumed.

2. Constant (or apparent) risk- free (short term) interest rate over the duration of the option.

3. No dividend payments on the underlying asset over the duration of the option.

4. The price of the underlying follows "(…) a stochastic diffusion Wiener process (…)"(Trigeorgis 1996, p.83). (For an explanation of the Wiener process, also called Brownian motion, see Dixit/ Pindyck 1994)

Further Dubofsky (1992) mentions also, accordingly to the first assumption of Trigeorgis (1996), the important idea, which underlies the Black-Scholes formula: "Markets are always open and trading is continuous."(Dubofsky 1992, p.178).

Due to the fact that real options valuation techniques underlie certain (above- mentioned) assumptions, they represent simplifications of a highly complex reality. As Bachelier (1900) already realised in respect to calculation and valuation methods on the stock market in 1900: "(…) la dynamique de la Bourse ne sera jamais une science exacte."(Bachelier 1900, p.21).

3.7.3.3 Problems in Options Valuation

As the nature of options, financial options as well as real options is dynamic, several problems occur, when option valuation is conducted.

Financial valuation methods, such as DCF, do not include the possibility of managers making decisions and taking an advantage of emerging opportunities while the duration of a project. (Schulmerich 2005) The strategic decision-making and the flexible reaction to changing circumstances of managers can contribute additional value to the project. Moreover the DCF model does not include the implicit value of flexibility. (Bowman /Moskowitz 2001)

Therefore the traditional financial valuation methods, like DCF and NPV analysis are not sufficient for the valuation of a real option for several reasons. The assumptions underlying the DCF and the NPV analysis do not apply exactly to the nature of real option approach. Firstly the DCF and the NPV approach assume the investment to have the character of a 'now or never', respectively 'all or nothing' decision. Following this logic the project is perceived to be held passively. Secondly, the traditional valuation methods are based on the idea of a single expected cash flow, which is compiled by the future cash flows and their probabilities. Beside the problematic of accurate cash flow selection, the determination of the adequate discount rate represents a critical issue. Further the usage of a constant risk- adjusted interest rate, when discounting the cash flows, postulates that risk is perceived to be constant for the lifetime of the project. (Dixit/ Pindyck 1994, Maisel 2009) In fact "(…) there is no single, constant discount rate for options because the risk of

the option changes as time and the price of the underlying asset change."(Brealey/ Myers/ Allen 2006, p.575).

In practice the decisions, which are made during a project, are influencing the project's cash flow structure and the discount factor. (Schulmerich 2005) Therefore the traditional approaches of capital budgeting do not incorporate the additional value for a project, gained by flexible decision- making. Baecker and Hommel (2004) state that, the fundamental differences between real options and financial options lead to several problems in options valuation. For instance, the complexity increases as options are interacting or as there exist compound options, technical risks in regard to real options may occur, the problem of bounded rationality and information asymmetry, the consideration of competitive effects, such as a first mover advantage, etc.. (Baecker/ Hommel 2004) Summarizing, Baecker and Hommel (2004) mention that, "practitioners face a multitude of methodological challenges not encountered when using traditional valuation techniques."(Baecker/ Hommel 2004, p.5).

Further Dixit and Pindyck (1994) realised that, what they call "the orthodox theory of investment"(Dixit/ Pindyck 1994, p.4) does not include the essential "(…) qualitative and quantitative implications of the interaction between irreversibility, uncertainty and the choice of timing."(Dixit/ Pindyck 1994, p.4).

However, considering questions of real options valuation represents an essential tool in supporting managerial decisions. The valuation of projects from a real option perspective might differ substantially from traditional analysis (DCF, NPV, etc.), due to the awareness that real options can be useful instruments in order to minimize downside risk of investment, while maximizing upside opportunities. Consequently, managerial decisions of entry mode choice and the use of different investment strategies are influenced by the real options approach. The option "(…) is valuable because it gives *managerial discretion* to respond profitably to the realization of uncertain events."(Kogut/ Kulatilaka 1994, p.125).

3.7.4 Real Options and Strategic Investment

The real options approach offers new perspectives in order to solve problems of strategic investment decisions.

Dixit and Pindyck (1994) demonstrated the application of optimal investment rules, created originally in financial options theory in order to price options. (Dixit/ Pindyck 1994)

According to Leiblein (2003) the application of the real options approach to the field of strategic investment relies on two main principles. The first insight concerns the existence of "(…) opportunity costs associated with irreversible investment under uncertainty."(Leiblein 2003, p.948). Consequently, one of the basic principles of real options theory emerges: "(…) the ability to defer committing resources under uncertainty is valuable (…)"(Leiblein 2003, p.948). The second insight of real options theory, which influences strategic investment decisions, is the idea that growth options exist. Those growth options result form the fact that "(…) many investments create valuable follow- on investment opportunities (…)"(Leiblein 2003, p.948). Following the real options logic, these two main principles enhance managers to act flexibly and proactively, when confronted with uncertainty. The flexibility gained offers the possibility to benefit from future opportunities, through actively deciding to undertake upfront investments and to react in respect to new information in a flexible fashion. Therefore the managerial flexibility can be capitalized as soon as the firm gets new information (e.g., about market demand, competitive conditions, the success of new technologies, the operability of new processes, etc.). (Leiblein 2003)

Assumptions for the Real Options Approach in Strategic Investment

Two main assumptions underlie the applicability of real options approach to the field of strategic investment. Firstly, managers need to be capable of writing "(…) contracts that provide *implicit or explicit claims* on future, follow-on opportunities."(Leiblein 2003, p.948). In order to generate a claim on future opportunities, it is necessary for managers to anticipate ex ante the possibility of differences in options valuation ex post. (Chi/ McGuire 1996)

The second assumption creates difficulties in terms of measurability. It refers to the idea that, "(…) it is possible to *specify a distribution of expected returns* associated with an investment."(Leiblein 2003, p.948) a priori. The difficulty with this presumption emerges form the underlying definition of uncertainty. As Leiblein (2003) notes, the assumption of being able to estimate the expected value of an option, is rather based on the Knightian concept of risk (Knight 1921), which is measurable due to statistical probability distributions.

Further two main implications are linked to those two assumptions. Firstly, the firm value is build up of two components: "(…) the present value of existing assets in place and the present value derived from the creation of discretional future opportunities (...)"(Leiblein

2003, p.948). Besides, the structure of firm's value it is believed that the value of the two named component parts is estimable, which in reality turn out to be problematic. Secondly, managers with deeper insight and decision- making authority over uncertain projects will tend to underestimate the value of a project, when utilizing traditional valuation techniques. The value gained by the ability to update flexibly an investment strategy is not accounted for in traditional theories of investment or governance. (Leiblein 2003)

As a consequence of those considerations, „(...) firms may choose governance structures in a dynamic fashion in anticipation of future opportunities."(Leiblein 2003, p.949)

Further the demand for managers to react in a more flexible fashion increases: "Greater uncertainty creates the need for greater flexibility."(Amram/ Kulatilaka 1999, p.27).

In the next section, the focus is driven to the application of real options theory on problems of choosing a governance mode. Specifically, attention will be drawn to the real options approach in alliances, as subsequent, considerations for the real options approach in regard to real option clauses in franchising contracts are going to be presented.

4. Real Options in Alliances

In this chapter the focus will be driven to two main directions of real options approach in alliances. Firstly, the attention is drawn to the investigation of entry modes acting as real options. Secondly, certain contractual elements enabling the right to hold real options in alliances are matter of analysis.

Up to now, real options approach has been applied by literature to several fields of research. While Trigeorgis (1996), Folta (1998) focused on research and development (R&D) decision- making and investment, Kogut and Kulatilaka (2001) analysed the evolution of organizational capabilities as real options. Further entry decisions were considered with the real options approach, for instance Folta and Miller 2002a. Moreover researchers, like Kogut (1991), Kogut and Kulatilaka (1994), and Kulatilaka and Perotti (1998), dealt with the application of real options theory to expansion decisions.

Furthermore Estrada, De la Fuente and Martín-Cruz (2010) highlight the fact that real options theory represents a crucial instrument in order to explain various managerial decisions. The real options approach might be considered to be useful in fields such as, research and development (R&D) and information technology investments, technology licensing, technological joint ventures and industry entry decisions. (Estrada/ De la Fuente/ Martín-Cruz 2010)

4.1 Entry Mode as a Real Option

Among the first applications of real options theory to strategic managerial decision-making, is the idea that entry modes themselves could be regarded as real options. In this sense, studies (Kogut 1991, Chi/ McGuire 1996, Folta 1998, Reuer/ Tong 2005, Estrada/ De la Fuente/ Martín-Cruz 2010, Aulakh/ Jiang/ Pan 2009) are based upon the concept, that foreign market entry modes, such as joint ventures or licensing, can be perceived as being real options. A joint venture, for instance, which is followed by an acquisition by one of the partners, can therefore represent an option to defer investment, to learn and to grow.

In the following, the application of real options approach to joint ventures and licensing is presented.

4.1.1 Joint ventures

The first study, which draws attention to the application of real options theory to alliances, has been conducted by Kogut in 1991, with his article "Joint Ventures and the Option to Expand and Acquire".

According to Kogut (1991) joint ventures can be seen as strategic options. Specifically, the study, which is based upon data of 92 manufacturing joint ventures in the United States of America (USA), suggests the perception of joint ventures as real options to expand. Kogut (1991) assumes that "The exercise of the option is accompanied by an acquisition of the venture."(Kogut 1991, p.19). Therefore the joint venture itself operates as a real option to expand, which is terminated by the buyout of one partner. In detail Kogut (1991) divides the process of exercising the option into a decision of divestment and a decision of acquisition. This strategy towards expansion reacts to market developments and future technological opportunities. Especially in market environments characterized by a high degree of uncertainty, joint ventures, as instruments of sequential market entry, hold the advantage of sharing risks, costs and gains with a partner. Therefore joint ventures hold the potential to decrease total investment costs for each partner.

Kogut (1991) distinguishes between two types of acquisition in regard to the underlying motivation. The joint venture purchases, which are motivated through industry conditions, and those, that are initiated via "(…) the desire to expand in response to favourable growth opportunities."(Kogut 1991, p.20). Kogut (1991) addresses one delicate problem, the identification of the motivation for the acquisition of a joint venture. It might occur, that the primary motivation of a joint venture follows an intention towards risk reduction, instead of gaining the option to expand in a new market. This problem of heterogeneity in the motivation for joint ventures complicates the classification of joint ventures as real options and aggravates the valuation of joint ventures as real options.

As Kogut (1991) understands the joint venture as a call option, the timing of exercise of the option to expand is assumed to follow the basic principles of real options theory. Hence the acquisition of the venture takes place when the perceived value of the buyer exceeds the exercise price. The decision to expire the option is driven by two main factors: "the initial base rate forecast underlying the valuation of the business and the value of the venture to each party (or third parties) as realized over time."(Kogut 1991, p. 24). The relationship between these two factors is summarized in Kogut's (1991) hypothesis that "The venture will be acquired when its valuation exceeds the base rate forecast."(Kogut

1991, p.24). However is it essential to notice, that Kogut's (1991) considerations refer to determinations of the option value ex post.

Further Kogut (1991) emphasizes the critical role of learning and pre-emption in a joint venture. The joint venture offers the partners the possibility to learn in terms of technology, but also in regard to managerial skills.

Kogut (1991) suggests that the exercise of the option to expand, namely the acquisition of the venture by one of the partners, will be triggered by a certain signal. The hypothesis following this logic states that the timing of the exercise of the option should be initiated by a product market signal, "(…) indicating an increase in the venture's valuation."(Kogut 1991, p.19). Results show that an unexpected growth in the product market lead to a tendency towards acquisition, whereas unexpected shortfalls in product shipments have no effect on the exercise of the option. Therefore Kogut (1991) states "For if joint ventures are designed as options, then as long as the investment is sunk and the operating costs are moderate, downward movements should not lead to dissolution."(Kogut 1991, p.31). Hence it should lead to a process of waiting. Consequently, the prediction for the reaction of managers to short term market changes would lead to a process of waiting and learning. The results suggest that the decision of manager to acquire a joint venture "(…) is more significantly sensitive to annual departures from a long- term trend than to short- term indices of industry growth."(Kogut 1991, p.29). In case of negative short- term shocks, managers will tend to wait until the outcomes become more favourable. As the variable for growth turns out to have a positive effect on acquisition, "(…) acquisitions tend to occur when the market does better than its historical record."(Kogut 1991, p.30).

Further the concentration of the industry is assumed to have an effect on the acquisition decision in joint ventures. In industries where there are few competitors the vehicle of a JV to acquire is perceived to be important, because "In concentrated industries, joint ventures appear to be used as an intermediary step towards a complete acquisition."(Kogut 1991, p.29). In summary the parameters, which increase the possibility of an acquisition of the joint venture, identified by Kogut (1991) are: "(…) unexpected increases in the value of the venture and the degree of concentration in the industry."(Kogut 1991, p.31). However, the statistical results show no support that a rise in the likelihood of acquisition may be caused by consolidation. Moreover the results reveal that acquisition of the venture is more likely in ventures with research and development (R&D) activities or marketing and in ventures concentrating on distribution activities. (Kogut 1991)

The results of the study support Kogut's (1991) idea that joint ventures "(…) serve as platforms for possible future development."(Kogut 1991, p.32).
Kogut's (1991) considerations are of importance because they reveal the possibility to perceive joint ventures as a vehicle of sequential market entry, which act like real options to expand.

Chi and McGuire (1996) present another article, which focuses on joint ventures as real options. In their approach they formulate a model, which aims to explain the strategic choice between a collaborative venture (CV) and solitaire market entry. Chi and McGuire (1996) deduce a two- stage binomial model, which has its source in the financial option pricing model. Additionally to the real options arguments Chi and McGuire integrate transaction cost economics to their considerations. The initial stage of the model deals with the formation of the CV. The second stage is utilized to resolve uncertainty. The learning process starts at the very beginning of the CV and can be beneficial in order to learn more about the partner with the prevision of possible future expansion or acquisition. As a consequence the CV is seen to be a combined option, an option to learn, to expand and to grow. (Chi/McGuire 1996)
By definition CVs can include both, shared equity collaborations and ventures without equity shares between the partners. Chi and McGuire (1996) analyse in their study mainly equity joint ventures. In this context the authors propose the hypothesis, which might be tested in future research, that "A JV partner is more likely to have a lower equity share ceteris paribus when it holds an option to acquire the other's ownership stake at a predetermined price than if it does not hold such an option."(Chi/ McGuire 1996, p.303). This hypothesis entails the question, if the likelihood for holding an option to acquire in franchising compared to joint ventures is per se higher, due to the lack or low degree of equity ownership.
Chi and McGuire (1996) enhance the importance of the partners' differences in ex post valuations of the venture and ex ante asymmetries. Further their model combines two forms of uncertainty, which will be discussed in chapter 5.4.1, "Uncertainty".
The results of Chi and McGuire's (1996) investigations allude to the possibility that the options enclosed in the CV might influence the multinational enterprise's (MNE) choice of market entry mode. Chi and McGuire (1996) give a formula for calculating the expected return for an MNE from the venture in the presence of the enclosed options. The authors

declare that, "(…) the embedding of strategic options in a particular mode of operation can alter the MNE's assessment of different market entry modes."(Chi/ McGuire 1996, p.291). Folta (1998) is another author, who has realized that "(…) the real option framework is a valuable tool for understanding governance choice."(Folta 1998, p.1023).

Folta (1998) analyses also joint ventures as real options, but enriches the theoretical observations by minority direct investment. Therefore Folta (1998) assumes minority direct investments as well as joint ventures to be an "(…) option to defer either internal development or acquisition of a target firm or venture."(Folta 1998, p.1008). The study shows motives, why to use equity-based collaborations versus outright acquisition of a target firm. Following classical real option theory arguments Folta (1998) suppose that, "(…) the option to defer acquisition might create cash flow advantages relative to outright acquisition."(Folta 1998, p.1025).

The role and distinction of differing uncertainties (e.g., technological uncertainty) are examined. "The findings suggest that the cost of commitment in the face of technological uncertainty may offset the administrative benefits of hierarchical governance."(Folta 1998, p.1007) The results suggest that, minority investments would be preferred over joint ventures in case of dissimilar partners and when technology value is high. Conversely, joint ventures are favoured instead of minority investments in case of more rivals. (Folta 1998)

Furthermore the article proclaims that, "(…) equity collaborations provide a mechanism to capitalize in growth options."(Folta 1998, p.1008). Hence Folta (1998) discusses the dual role and the relationship of the option to defer and the option to grow.

Reuer and Tong (2005) widened the considerations of real options in alliances by adding an international perspective. In Reuer and Tong (2005) the utilization of explicit call options to purchase equity in international joint ventures (IJVs) is analysed. It is important to notice the fact that this study focuses on the buy side of explicit call options and uses also transaction cost arguments. The statistical analysis is based upon data from IJVs formed during the years 1995-2002, which are defined as equity joint venture based outside the USA with at least one partner being an US firm.

Reuer and Tong (2005) have realized that real options theory "(…) emphasizes the dynamic gains that firms may realize by using JVs as transitory investment structures in the presence of various uncertainties."(Reuer/ Tong 2005, p.404). For IJVs Reuer and Tong (2005) argue that call options can "(…) help to facilitate the implementation of a sequential investment strategy (…)"(Reuer/ Tong 2005, p.418).

As demonstrated above most studies recognize the non- equity entry mode as a value adding form of a sequential market entry strategy. Therefore the option to defer investment is assumed to play a significant role in respect to the gain in value for the firm. Folta, Johnson and O'Brien (2006) aim to explain the driving factors for making the option to defer a valuable instrument to the investing firm. As the option to defer is of lower value, the probability of a market entry is higher. Contrarily, a high value of the option to defer might lead to sequential market entry. This argument relies on the principle prediction of real options approach that, "(…) the firm faces additional opportunity costs due to the loss of flexibility that results from "committed", difficult to reverse actions."(Folta/ Johnson/ O'Brien 2006, p.434). Folta, Johnson and O'Brien (2006) analyse the resulting irreversibility of investment and the degree of uncertainty in terms of its influence on the market entry decision. Furthermore Folta, Johnson and O'Brien (2006) recognized the existence of interaction effects between uncertainty and irreversibility. A crucial closing statement of the study is that, "The evidence suggests that real option theory illuminates the determinants of both industry and firm-specific entry thresholds and implies that managers give weight to real options when they make entry decisions."(Folta/ Johnson/ O'Brien 2006, p.450).

Estrada, De la Fuente and Martín-Cruz (2010) investigated the application of the real option perspective on technological joint ventures (TJVs). Estrada/ De la Fuente/ Martín-Cruz (2010) state that, "(…) TJVs are analogous to financial call options in the sense that they provide their partners the right (not the obligation) to internalize the technology involved in the alliance (underlying asset) at a specific price (exercise price) at or before a specific date (expiration date)."(Estrada/ De la Fuente/ Martín-Cruz 2010, p.1185). Therefore the study aims to identify conditions, which are essential factors for the TJV's formation. The statistical results, based upon data of 4050 Spanish manufacturing firms in an eight-year time span, suggest a positive relationship between the TJV's formation and the degree of environmental technological uncertainty and the absorptive capacity of the TJV. On the contrary, opportunity costs and the risk of pre-emption by rivals seems to influence TJV's building in a negative way. Still Estrada, De la Fuente and Martín-Cruz (2010) confirm the real options approach by recognizing that TJVs can be seen as options to defer and as growth options for future technological expansion. Hence Estrada, De la Fuente and Martín-Cruz (2010) mention, "When a firm forms a TJV, it accesses a growth option for future technological expansion, while retaining the option to defer full commitment to this technology (…)."(Estrada/ De la Fuente/ Martín-Cruz 2010, p.1186).

Cuypers and Martin (2010) mention that research of the real options approach in regard to joint ventures (JVs) developed into two directions: The first stream deals with the empirical investigation of the fit between JV decisions with real options theory. The second stream analyses how flexibility can create value, through investigating the possible costs and benefits of investment in strategic real options with formal models. The empirical study of Cuypers and Martin (2010) is based upon data on equity JVs, established in China between 1979 and 1996 with one foreign partner involved. The JVs used in the study are spread over China's geographic area and operate in 59 distinct industries. Interestingly, the legal system in China prescribes, that for international joint ventures (IJVs) located in China the articles of association must contain an arrangement of the pricing mechanism, in order to value the JV in case of termination, and must include the contractual duration of the JV ex ante. Therefore the IJV formed in China can be perceived as a type of explicit real option, with its pre-specified criteria for valuation and duration of the agreement. Further Cuypers and Martin (2010) interviewed managers to verify on a qualitative level, what intentions drive the strategic decision of forming an IJV. As an example Cuypers and Martin (2010) cite one manager of an electronic firm's JV, who states that due to the unpredictability of the Chinese market, a real options approach has been used to structure the firms investments. (Cuypers/ Martin 2010) Hence, IJVs can be viewed as option like instruments in order to enter a foreign market sequentially. Cuypers and Martin (2010) results show "(…) that a real options perspective can be useful in modeling equity share decisions in JVs (…)"(Cuypers/ Martin 2010, p.63).

As demonstrated by the above-mentioned studies, JVs, TJVs and IJVs can be seen as real options. In the latter, the assumption of franchising as a real option, in analogy of viewing entry modes in general as real options, will be of importance.

4.1.2 Licensing

The next section focuses on the application of the real options approach to licensing. According to the licensing industry merchandiser's association (LIMA), "A license is an agreement through which a licensee leases the rights to a legally protected piece of intellectual property from a licensor – the entity which owns or represents the property — for use in conjunction with a product or service."[3]

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[3] LIMA, URL: http://www.licensing.org/education/introduction-to-licensing/ ; last access 15th May 2012.

The license is in most cases based upon a contractual agreement between the licensor and the licensee. The main difference between licensing and joint ventures, in terms of real option arguments, is the point in time, when expiration of the option takes place. In open-ended joint ventures the option holder has the right, but not the obligation to exercise the option at any favourable point in time, whereas in licensing the expiration of the option is determined by the end of the licensing agreement.

Aulakh, Jiang and Pan (2009) showed that licensing represents an agreement with a pre-specified duration. As the duration of the licensing agreement is fixed ex ante in the contract, an analogy to a European real option is drawn. An empirical test model is derived in order to explain factors influencing the duration of a licensing agreement. The results reveal the negative effect of uncertainty and risk of pre-emption by competitors on the duration of the licensing agreement. The moderating effect of irreversibility for the relation between the duration of the agreement and uncertainty is integrated in the model. Therefore, in case of low levels of irreversibility contracts under market and technological uncertainty appear to include shorter durations.

The study "(…) broadens the domain of real options research to include licensing as a tool that firms use to explore growth opportunities in foreign markets."(Aulakh/ Jiang/ Pan 2009, p.572)

As demonstrated above, real options theory is applicable to market entry mode decisions and leads in case of joint ventures and licensing to the existence of valuable growth options.

4.2   Option Clauses in Alliances

In order to stipulate the options embodied in alliances, contracts are provided with detailed option clauses. The aim of such clauses is to ascertain the rights of each party ex ante and in succession to avoid costly and time- consuming ex post negotiations. Following real options arguments such option clauses help to stipulate the right to the option, and enable the option holder to benefit from future opportunities, while limiting downside risk.
In regard to joint ventures Kogut (1991) explains the reason for an option clause: "The legal clause serves to regulate the assignation of the right to the underlying option. Such a clause may establish not only who has the first right to acquire, but also may set pricing rules."(Kogut 1991, p.20). However an essential remark of Kogut (1991) is that the option

clause, as it secures the right to the underlying option, should not be mistaken with the option itself. (Kogut 1991)

Furthermore Ziedonis (2007) states that, "(…) contracts granting one party the explicit right to exercise an option are rarely observed."(Ziedonis 2007, p.1619). Ziedonis (2007) criticizes the gap in research, which has not been narrowed by studies, such as Kogut (1991) and Folta and Miller (2002), in terms of explicit ex ante option clauses in contractual agreements.

However some studies (Chi/ McGuire 1996, Ziedonis 2007) aim to consider explicit option clauses in contractual agreements of alliances.

4.2.1 Option Clauses in Joint Ventures and International Joint Ventures

Chi and McGuire (1996) focus in their study on the firm's evaluation of collaborative ventures (CVs) as entry modes. Therefore a CV is perceived to act as an option to learn, to expand and to grow, as at the time of expiration one partner acquires the CV. The right to the option to acquire the CV will be fixed in an option clause. The question is: "Under what conditions would the two parties find it mutually beneficial to have such option clauses in their JV agreements?"(Chi/ McGuire 1996, p.292). To answer this question Chi and McGuire (1996) use a game theoretic approach, with the assumption that each party acts in order to maximize its expected gains (and anticipate the other party to follow the same strategy). The process of the joint venture (JV) creation is split into two stages. The first stage represents the negotiation process of the JV's contract and its implementation in the second stage. The party that values the venture more at the second stage, will have a greater incentive to buy out the other, given the assumption that the two parties happen to have divergent valuations of the venture at stage 2.

Hence one essential requirement for the option clause to provide value is "(…) that the partners anticipate a possible divergence between their ex post valuations of the JV."(Chi/ McGuire 1996, p.295).

Whereas Kogut (1991) follows the idea that the reason for a JV partner to buy out the other partner might source in the differing ex post evaluations of the assets of the JV, Chi and McGuire (1996) rather suggest that the "ex ante anticipation of the possibility of such ex post differences can by itself be one of the motives for their going into a JV in the first place."(Chi/ McGuire 1996, p.295).

Hence Chi and McGuire (1996) proclaim the existence of an *ex ante asymmetry* in the expectations of the JV partners. According to Chi and McGuire (1996) this *ex ante asymmetry* emerges when:

    a) One partner perceives less probability of valuing the JV more than the other.

    b) The partners anticipate different abilities to absorb knowledge in the JV.

    c) The partners foresee differing levels of uncertainty about the JV's outcome.

The *ex ante asymmetry* causes one of the partners "(…) to value the option more than the other partner does."(Chi/ McGuire 1996, p.296). Chi and McGuire (1996) present various transaction cost- related factors that can give rise to ex ante and ex post asymmetries between JV partners. Therefore the analysis deals with misappropriation risk and information asymmetry.

Further the motivation to utilize an option clause in a JV contract is identified by Chi and McGuire (1996) to source in the combination of three conditions:

1. The "(…) existence of uncertainty and learning potential (…)"(Chi/ McGuire 1996, p.301). This condition is of importance for the ability to gain additional value through the option.

2. The expectation of a "(…) shift in the bargaining power of the two partners in the course of their collaboration."(Chi/ McGuire 1996, p.301). This anticipation of an expected change in the bargaining power acts as an incentive to fix acquisition price ex ante in the contract.

3. The "(…) existence of some ex ante asymmetry in the expected gains from acquiring the JV."(Chi/ McGuire 1996, p.301).

Those conditions happen to be present in almost every JV in differing levels of strength. If an option- to- acquire clause will be implemented in a contract depends on the strength of the above-mentioned conditions. An increase in one of the conditions might lead to the implementation of an option clause. (Chi/ McGuire 1996)

In the same context Folta (1998) raises the question, why do future technology sellers subject themselves to the future buyout by the partner, and answers the question with regard to the capabilities of the partners at the initial negotiation stage.

Hence the reason for the existence of an option clause in the initial contract may be "(…) asymmetric bargaining power during the negotiation process (…)"(Folta 1998, p.1025).

This point seems to be of particular importance in regard to franchising agreements, as usually the franchisor holds more bargaining power than the franchisee.

Further Folta (1998), who is using transaction cost arguments as well, mentions that, "Restrictions on either partner's rights to buy out the other can be used to prevent premature termination of a relationship."(Folta 1998, p.1025). The longer duration of the option to defer acquisition offers the firm the possibility to gain from potential future cash flows. As Folta (1998) understands equity collaborations as options to defer acquisition, option clauses help to assure the claims on future gains. Therefore Folta (1998) states that, "The rights accompanying theses transactions serve to facilitate upside gains and pre-empt competitors."(Folta 1998, p.1025) The facilitation of potential upside gains represents a real options argument, whereas to forestall competitors is rather argued via transaction costs logic.

Reuer and Tong (2005) investigate the intentions for using an option clause in international joint ventures (IJVs). The buying out of one IJV partner is regulated via an explicit call option in the contract. The option to acquire the IJV is said to be explicit, due to the fact that the option is fixed in the contract in an explicit way ex ante and is not solely negotiated ex post. Reuer and Tong's (2005) approach is more distinct, than the general considerations of JVs as real options (Kogut 1991), due to the fact that Reuer and Tong (2005) concentrate on options clauses in IJVs. Reuer and Tong (2005) perceive the explicit call option to be an important contractual instrument in order to provide a firm with the possibility to secure a claim on:

a.) "(…) future expansion opportunities (…)"(Reuer/ Tong 2005, p.403), and

b.) act as safeguards.

Reuer and Tong (2005) use as well transaction cost arguments (protecting firms from contractual hazards, option as a safeguard) as real option arguments (helping firms to claim upside opportunities through sequential expansion) in developing their hypotheses. The research question is: "Under what conditions do firms use such clauses when forming international joint ventures (IJVs)?"(Reuer/ Tong 2005, p.404). The determination of conditions for the use of a legal clause, outlining the option to purchase an IJV, is essential, when following the basic real options assumption that an option clause might result in additional value for the firm holding the option.

In Reuer and Tong's (2005) perception, their approach contributes to real options research for three causes:

1. The "(…) gains the buyer potentially attains from acquiring equity in a JV ex post can be influenced by the ex ante specification of the call option clause."(Reuer/ Tong 2005, p.406). Therefore the legal right of the option holder to purchase equity at the end of the IJV is decisive for the value of the option. Hence the option value of engaging in the IJV is lower, in case of a lack of an option- to- acquire clause in the contract.

2. To know the conditions under which a IJVs have an option-to- acquire clause is necessary to understand the parent firms' intentions for creating IJVs. So far research (Kogut 1991, Chi/ McGuire 1996) has suggested implicitly the JV to be an option to expand sequentially and an opportunity to limit risk.

3. The negotiation of explicit call options can also be seen from a governance perspective and not only from a sequential expansion perspective. "Explicit call options serve not only as future claims but also as contractual safeguards."(Reuer/ Tong 2005, p.407) The option to acquire is also the right to change a hybrid governance structure into a hierarchical one.

Further the presence or absence of explicit call options can have "(…) important implications for partners' incentives (…)"(Reuer/ Tong 2005, p.407) and can be advantageous for the parent firm in regard to "(…) manage its exposure to contractual hazards."(Reuer/ Tong 2005, p.407).

As a result of Reuer and Tong's (2005) study the value of an option with an option- to-acquire clause seems to be higher, than without such a clause. This cognition sources in the fact that, "(…) for a real option to be present, the firm must have the right but not the obligation, to undertake some future specified action, enabling it to reduce downside risk while exploiting upside opportunities."(Reuer/ Tong 2005, p.419). Consequently, the absence of an explicit call option may result in not having the "right" to strike the option to expand. In this context managers should regard the evident fact that, "Without a secure right specified in the form of a contractual clause ex ante, much of the potential value created as suggested by real options theory may well be appropriated by the parties selling the equity ex post."(Reuer/ Tong 2005, p.419)

As demonstrated, the existence of an option clause is driven by some ex ante asymmetry in the anticipation of the partners, concerning the future opportunities of a project. Further the existence of the explicit option clause increases the value of the underlying option. In case

of joint ventures (JVs) or investments in research and development projects, the option clause ascertains the right to the underlying call option. So far, research (Kogut 1991, Chi/McGuire 1996, Folta 1998, Reuer/ Tong 2005) for JVs has not specified the underlying option to be an American or European styled one. In the event of the possibility to expire the option at any point in time during the venture, an American option exists, whereas in case of a contractual fixed duration of the collaborative venture, a European-styled option is created. The specific form of licensing is going to be discussed in the next section.

4.2.2 Option clauses in Licensing

Aulakh, Jiang and Pan (2009) demonstrated in their study, that licensing refers to a European call option. As the duration of a licensing agreement is fixed in the licensing contract ex ante, licensing, as an entry mode with the option to grow, can be perceived as a European- styled call option. Concerning this specific form of option, the decision of the timing, when to expire the option, has to take place ex ante, in order to be regulated in the licensing contract. (Aulakh/ Jiang/ Pan 2009)

Ziedonis (2007) investigates the licensing of university technologies. In detail Ziednois (2007) focuses on "(…) instances where firms purchased option contracts that explicitly confer the right but not the obligation to license a technology at the end of the contract term."(Ziedonis 2007, p.1620). Therefore Ziedonis (2007) analyses option contracts of companies purchasing the right to commercialize new technologies developed on universities. This option contracts enable the licensee the staging of investment. In case of the emerging of unfavourable information the investment in a university technology can be stopped. In this sense the licensee can profit from upside opportunities, while mitigate downside risk of investment in a new technology. (Ziedonis 2007)

The possibility to resolve various uncertainties over the duration of an option contract is the basic real option argument, why option contracts provide additional value to a firm. Therefore Ziedonis (2007) states that, "Contractual requirements that the firm evaluate the technology in-house are designed to facilitate the resolution of endogenous uncertainty—uncertainty that firms can reduce through their own efforts."(Ziedonis 2007, p. 1619). The short duration, often one or two years, of the new technology contracts, makes the resolution of exogenous uncertainty more difficult.

Ziedonis (2007) emphasizes the importance of verifying the basic tenets of real options

theory and addresses the lack of empirical work focussing on option contracts. In this context Ziedonis (2007) mentions that, "Because much of the empirical literature on the use of "options" in technology acquisition and management relies on "virtual" or "implied" options, the exploita- tion of actual option agreements in an empirical study represents an important contribution to the literature."(Ziedonis 2007, p.1630).

In summary, contractual licensing agreements with a fixed duration ex ante can be seen as valuable European call options. Further licensing contracts may help to regulate the staging of investment in order to explore new technologies or new markets, and to benefit from future opportunities.

4.3   Combined Approaches in Research

Although real options theory might be a helpful instrument in order to understand managerial decision making, it is important to keep in mind, that other theories, like transaction costs approach or resource based view will not be fully replaced. In fact the real options approach should be used as an extension via combining real options considerations with the existing theories in order to gain new perspectives.
Some research, such as Chi/ McGuire (1996), Folta (1998), Sanchez (2003), and Reuer and Tong (2005), already present in their studies a combined approach, by utilizing the real options approach and arguments, based in transaction costs theory (Williamson 1979).
The article of Chi and McGuire (1996) offers a model to investigate how transaction costs and strategic option considerations interact in order to impact an organization's evaluation of collaborative venturing as a market entry mode. (Chi/ McGuire 1996)
Folta (1998) recognizes the importance of real options approach as it „(...) can make a contribution in the context of governance choice."(Folta 1998, p.1026). Further, concerning the transaction costs perspective Folta (1998) states that the results of the study lend support to the transaction costs perspective and does not discredit the real options approach.
Aulakh, Jiang and Pan (2009) suggest a compound approach of real options theory and resource- based view for future research. The argument of Aulakh, Jiang and Pan (2009) for a connection of the two theories is based upon the idea that "(…) both perspectives examine the effective deployment of resources for future development opportunities."(Aulakh/ Jiang/ Pan 2009, p.573).

Beside the transaction costs theory Leiblein (2003) integrates the resource- based view into his study as well. Leiblein (2003) supports the opinion that a separation of the three theoretical approaches might lead to misconceptions and combines transaction costs theory, resource- based view and real options approach. Leiblein (2003) presents interrelated problems, which should be solved by managers, and which might provide a linkage of the three above- mentioned theoretical concepts. The first one refers to the identification and assembly of a bundle of resources that create value. The second problem deals with the governance of the resource bundle in order to capture this value. Whereas the first problem can be faced with the real options approach and the resource- based view, the second governance problem can be rather analysed with the transaction costs approach. (Leiblein 2003)

Leiblein (2003) showed "(…) how the resources and investment opportunities identified by the RBV and the Real Options approaches affect the relationship between exchange characteristics and governance choice identified by TCE."(Leiblein 2003, p.956). Further the "(…) potential sources of integration between these theories of organizational form and performance."(Leiblein 2003, p.952) should be investigated in more detail in future research.

Based on the above- mentioned arguments, a combined approach will enrich research perspectives. Therefore the integration of real options theory, resources- based view and transaction costs economics acts supportive to gain better insight in managerial decision-making.

5. Franchising and the Real Options Approach

5.1 Franchising

According to an explanation of the European Franchise Federation (EFF) "(…) franchising is a business model aimed at the distribution of goods and/or services based on the licensing of a brand, a set of intellectual property rights (the brand names, trademarks or trade names associated with the brand), a business format – bundled and sold as an asset."[4] In more detail the European Code of Ethics for Franchising (ECEF) defines franchising as follows: "Franchising is a system of marketing goods and/or services and/or technology, which is based upon a close and ongoing collaboration between legally and financially separate and independent undertakings, the Franchisor and its individual Franchisees, whereby the Franchisor grants its individual Franchisee the right, and imposes the obligation, to conduct a business in accordance with the Franchisor's concept."(EFEC 2008, p.3).

As in the latter empirical study (Chapter 6, "Empirical Study") only German franchises are analysed, it is important to mention the fact that the German franchise association (Deutscher Franchise Verband) commit itself to follow the ECEF. Although Germany adds a national annex, which concerns guidelines to pre-contractual disclosure, to the ECEF, the code is a widely used guideline for the members of the German franchise association. Another definition by Dnes (1992) states: „A franchise is created when one party, the franchisor, allows another, the franchisee, to use his trade name in operating a satellite business in return for fees. Associated franchise services, such as store design, training or the supply of products, may also be provided by the franchisor."(Dnes 1992, p.3). The franchisee has to pay an initial fee at the beginning of the franchise and royalty fees during the operation of the franchise to the franchisor. The franchisor and the franchisee have several rights, but also obligations towards each other. Most of these obligations may be regulated in the franchise agreement. In this context, "(…) a franchise agreement is most often understood as a contractual arrangement between two legally independent firms in which one firm, the franchisee, pays the other firm, the franchisor, for the right to sell the franchisor's product and /or the right to use its trademarks and business format in a given location for a specific period of time."(Blair/ Lafontaine 2005, p.3).

Other agreements, which are easily confused with franchising are for example, exclusive

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[4] EFF, URL: http://www.eff-franchise.com/spip.php?rubrique6 ; last access 15th May 2012.

or selective distribution agreements, cooperatives, agency agreements, etc..[5]

The advantages of franchising are for instance: centralized purchasing and consequently expenditure savings, national-wide advertising, professional management and long term strategy, central and standardized trainings and consistent support. (Wildhaber 2003) Therefore, according to the EFF, the franchisor is in charge of:

- "developing and constantly improving the franchise business's concept so as to ensure the credibility, quality and notoriety of the brand on the market,
- constantly improving the "franchise package" offered to the franchisee which includes: - seeking and guaranteeing better purchasing prices for goods and services, - optimising management and sales skills through on-going training,
- organising national or international advertising campaigns,
- steering the business's overall development strategy."[6]

Furthermore, the franchisee is responsible for:

- "guaranteeing the customer the best possible service,
- optimising his sales force and results,
- respecting the principles and manner of operating of the franchise business as defined in the franchise contract, which includes respecting the common identity and reputation of the franchise network, and the confidentiality of the business know-how transferred."[7]

As the questionnaire for the empirical study (see Chapter 12, "Appendix" and Chapter 6, "Empirical Study") was addressed to franchisors in Germany, the following considerations are drawn from the franchisor's perspective. Accordingly to the analogy of real options and several foreign market entry modes (joint ventures, licensing), the question emerges if franchising itself can be seen as a real option. In this sense the franchisor holds and option to learn, expand, and grow. The distinction between the two possible views (see Chapter 4, "Real Options in Alliances"), namely the entry mode itself as a real option or the option clause in the contractual agreement as a real option, can be applied to franchising as well. Despite the fact that additional research on the question, if franchising itself can be viewed as a real option should be conducted, the focus will be on real option clauses in franchising contracts, in order to set the research questions for the empirical study. (see Chapter 6, "Empirical Study")

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[5] EFF, URL: http://www.eff-franchise.com/spip.php?rubrique6 ; last access 15th May 2012.
[6] EFF, URL: http://www.eff-franchise.com/spip.php?rubrique6 ; last access 15th May 2012.
[7] EFF, URL: http://www.eff-franchise.com/spip.php?rubrique6 ; last access 15th May 2012.

5.2 Real Option Clauses in Franchising Contracts

Although research has already investigated real option clauses in joint ventures (Chi/ McGuire 1996, Folta 1998, Reuer/ Tong 2005, etc.) and in licensing agreements (Ziedonis 2007, Aulakh/ Jiang/ Pan 2009 etc.), the comparable studies for franchising do not exist so far.

In the questionnaire (see Chapter 12, "Appendix") one question, with the possibility to answer with "yes" or "no" was: "the franchisor has a contractual option to buy the franchise operation sold by the franchisee (i.e. pre-emption)"("Der Franchisegeber hat vertragliche Optionsrechte bei Veräußerung des Franchisebetriebes durch den Franchisenehmer (z.B.: Vorkaufsrecht).").

In regard to franchising, the right of pre-emption, which is normally fixed in an option clause in the franchising contract, describes the right but not the obligation of the franchisor to acquire the franchise after the termination of the franchising agreement in advance to all other potential buyers. Basically it is possible to grant the right of pre-emption to the franchisor as well as to the franchisee. The advantages of an option clause to acquire for the franchisor are the prevention of the misappropriation of know- how and brand name by a third party. Beside the controlling function, the right of pre-emption acts as an incentive for the franchisor to behave efficiently in regard to the franchise. (Taheri 2002)

According to the ECEF (2008) the franchise agreement should include at least the following essential terms:"

- the rights granted to the Franchisor
- the rights granted to the Individual Franchisee
- the goods and/or services to be provided to the Individual Franchisee
- the obligations of the Franchisor
- the obligations of the Individual Franchisee
- the terms of payment by the Individual Franchisee
- the duration of the agreement which should be long enough to allow Individual Franchisees to amortize their initial investments specific to the franchise
- the basis for any renewal of the agreement
- *the terms upon which the Individual Franchisee may sell or transfer the franchised business and the Franchisor's possible pre-emption rights in this respect*

- provisions relevant to the use by the Individual Franchisee of the Franchisor's distinctive signs, trade name, trademark, service mark, store sign, logo or other distinguishing identification
- the Franchisor's right to adapt the franchise system to new or changed methods
- provisions for termination of the agreement
- provisions for surrendering promptly upon termination of the franchise agreement any tangible and intangible property belonging to the Franchisor or other owner thereof."(ECEF 2008, p.6).

However, not all of the interviewed German firms, have an option clause, concerning the franchisor's right of pre-emption, in their contract. Following real options approach, the right of acquiring the franchise, can be seen form the franchisors' perspective, as a European call option. The option is European- styled, due to the fact that the franchisor is not in the position to choose the point in time, when the option is going to be expired. The expiration date is rather fixed by the decision of the franchisee to sell at a specific point in time.

As the following considerations and the study are based upon the franchisors perspective, the focus will be on explicit (contractual fixed) option clauses to acquire, hold by the franchisor.

5.3 Considerations

In order to derive several hypotheses, some main considerations and assumptions about franchising in respect to the real options approach should be mentioned. Most of those considerations are drawn in analogy to financial options theory and to the above-mentioned real options literature (Chapter 3, "Real Option Theory" and Chapter 4, "Real Options in Alliances") dealing with alliances.

Firstly, franchising is seen as an option to expand, namely as a form of sequential market entry. Hence franchising itself represents a growth option. The option holder is the franchisor.

Secondly, the option clause is the legal regulation, which constitutes the right of the option on the underlying. In the following the option clause, which fixes the franchisor's right of pre- emption will be analysed. Therefore, the existence of an option clause stipulates an explicit call option (the franchisor has the right of pre-emption).

Thirdly, based upon financial options theory, the assumption is made that, the existence of an option clause enhances the value of the franchising arrangement for the franchisor (option holder).

Fourthly, the option clause only adds value to the firm, if the franchisor has the ex ante anticipation of an increase in the value of the underlying ex post.

Fifthly, it is presumed, that the franchisor has a bigger firm size than the franchisee. The considerations are drawn from the franchisor's perspective, as the questionnaire was addressed to the franchisor.

In the following, an attempt is made to derive five hypotheses for describing the relationship between the possibility of an option clause existence in the franchise agreement and several factors. In analogy to the existing real options literature for alliances, factors are chosen in order to test, whether they have a significant influence in the area of franchising as well. In the next Chapter 5.4, "Hypotheses", the above-mentioned assumptions and considerations are presumed.

5.4 Hypotheses

In the following section, five hypotheses, emerging from the review of the theoretical literature, are going to be presented. Due to the lack of literature for the application of the real options approach to franchising, analogies are drawn from research of joint ventures and licensing, in order to derive hypotheses for franchising agreements. The hypotheses address topics, such as uncertainty, the duration of the franchising arrangement, know-how transferability and the sector of operations. In terms of uncertainty, a differentiation between perceived environmental uncertainty and perceived behavioural uncertainty is conducted. The aim is to analyse, how these factors might influence the likelihood of an option clause existing in the franchising contract. The following hypotheses will be generated via real options arguments, but also resource- based view considerations are integrated (see Chapter 5.4.3, "Know-How Transferability" and Chapter 5.4.4, "Sector of Operation").

5.4.1 Uncertainty

Uncertainty represents one of the main concepts underlying real options theory. Despite the various existing definitions of uncertainty, the most relevant for this thesis will be presented in the following.

The distinction of Knight (1921) between uncertainty and risk forms one crucial consideration for real options theory. For Knight (1921) risk can be calculated via the probabilities of the outcomes of decisions. This concept resembles rather the idea, based in financial option theory, of a random walk of the underlying asset. In real options approach, however uncertainty can not be measured solely via probabilities. The available information is too imprecise to ascertain an exact mathematical analysis. According to Penrose (2009) this lack of information results in a deficit of the manager's confidence. Therefore uncertainty is defined as the manager's degree of confidence to cope with future situations, respectively the manager's confidence in his expectations or estimates. Consequently, gaining new and more information about the determinants of uncertainty can only reduce this subjective uncertainty of managers. (Penrose 2009) Hence the definition of Penrose (2009) of uncertainty fits better to the concept of real options. Further Folta (1998) presents a distinction of two forms of uncertainty:

a) Endogenous uncertainty, and

b) Exogenous uncertainty.

a) *"Endogenous uncertainty can be decreased by actions of the firm."* (Folta 1998, p.1010) Investments under endogenous uncertainty can be staged, in order to have the possibility of incremental learning. At each stage, new information about growth opportunities might be gathered. "The greater the endogenous uncertainty, the higher the incentive to invest sequentially." (Folta 1998, p.1011) As a consequence of this sequential investment growth options emerge. Further the ability to stop investment at any point in time corresponds to compound options. Hence the resolution of endogenous uncertainty might be best supported by sequential investment or via transitional governance. (Folta 1998)

b) In contrary to endogenous uncertainty, *"(...) exogenous uncertainty is largely unaffected by firm actions (...)"* (Folta 1998, p.1011). The essential factor for resolving exogenous uncertainty is time. The opportunity of the firm to wait for more information is valuable. Examples for exogenous uncertainty might be the lack of information about the potential industry, concerning infrastructure, industry specifics, legislation regimes, growth potential, etc.. In case of immediate investment (acquisition) instead of waiting, the irreversible costs of investment must be complemented by the opportunity costs of abdicating the option to defer investment. The risk, emerging from irreversibility of investment, is lower when dealing with exogenous uncertainty, which is rather project or firm specific, than with exogenous uncertainty, which is rather subfield or industry specific. (Folta 1998)

Concluding, it can be supposed that if a firm is confronted with endogenous uncertainty, it has an incentive to invest, although in a sequential way, whereas if a firm is facing exogenous uncertainty, it has rather an incentive to wait.

In the following, two hypotheses will be derived for the issues of perceived environmental uncertainty and behavioural uncertainty.

5.4.1.1 *Perceived Environmental Uncertainty*

The term perceived environmental uncertainty refers to the subjective anticipation of managers about future events. As managers experience high levels of environmental uncertainty their decisions will be affected. In case of real options logic, managers will prefer to hold options open, when experiencing high environmental uncertainty. Bowman and Hurry (1993) state one of the basic principles of real options approach, "The value of an option increases as the volatility of the underlying asset's value rises (…)"(Bowman/ Hurry 1993, p.766). In this context it is important to notice, that environmental volatility can not only be seen as an external phenomenon, it can be seen as a function of exogenous reasons and endogenous reasons, such as organizational learning. As organizations learn more about the environment, they perceive less uncertainty. A process of exploration is transformed to a process of exploitation until the environment changes eminently. In order to react to the environmental changes the organization has to start the process of exploration again. Bowman and Hurry (1993) apply this concept of stability and instability to the relationship of organizations performance, the opportunities emerging from the environment and organization's investment. (Bowman/ Hurry 1993) Bowman and Hurry's (1993) proposition, based on theoretical considerations, is that "(…) Given realistic perceptions of environmental uncertainty, organizations that hold options during unstable periods and strike options in stable periods will show superior long-term growth and profit performance compared to organizations exhibiting other types of investment."(Bowman/ Hurry 1993, p.767). Hence Bowman and Hurry (1993) recommend managers to face environmental uncertainty by applying real options thinking. Therefore the process of learning represents one major instrument in order to reduce perceived environmental uncertainty.

The incorporation of new information, which influences the managerial decision- making process substantially as a value- adding factor, is also recognized by Chi and McGuire (1996). Concerning the value of an option Chi and McGuire (1996) mention that, "(…) the value of the option is greater as the option holder experiences higher uncertainty."(Chi/

McGuire 1996, p.301). The conclusion that the value of the option is influenced by the change in uncertainty is not entirely correct, due to the fact that, "It is not the uncertainty per se, but rather the potential for improving decisions on the basis of new information gathered, that makes the options valuable."(Chi/ McGuire 1996, p.291).

In Folta (1998) the market value of firms, which operate in emerging industries, is based on their future growth options. This consideration forgoes the assumption, that uncertainty is higher in emerging industries. Accordingly, Folta (1998) tests the hypothesis that "Technological uncertainty should lead to a preference for equity collaboration over acquisition."(Folta 1998, p.1014). The results show strong support for the hypothesis of technological (exogenous) uncertainty's influence on governance decisions. (Folta 1998)

In respect to licensing Ziedonis (2007) hypothesizes: "The greater the uncertainty embodied by an invention, the more likely a firm will purchase an option contract prior to making a licensing decision, all else equal."(Ziedonis 2007, p.1620). The hypothesis finds support in the results and affirms the basic principle of real options theory, that the option becomes more valuable in case of higher uncertainty. Therefore investment in new technologies and inventions is accompanied by a high degree of technological and commercial uncertainty. Following the results of Ziedonis (2007) the likelihood of firms to purchase option contracts increases with the uncertainty inherent in the invention. (Ziedonis 2007) This finding is crucial in regard to franchising contracts, as a higher degree of uncertainty embodies a higher possibility for growth options to become more valuable over time. In order to ascertain this future opportunity the implementation of an option clause in the franchising contract is sensible.

The distinction between several forms of uncertainty has been investigated in research as well and seems to be of significant importance. Referring to international joint ventures (IJVs) Cuypers and Martin (2010) show "(…) that normal real options predictions are ineffective when uncertainty is resolved endogenously, but all the more powerful when the firm faces exogenous uncertainty."(Cuypers/ Martin 2010, p.64) Cuypers and Martin (2010) argue that real options logic is not applicable in case of endogenous uncertainty and enumerate three reasons: Firstly, the presumption of financial option theory, of investors as price takers is not sufficient for investors confronted with endogenous uncertainty, as they can for instance negotiate prices and conditions. This assumption is deduced from the idea of financial option theory, that uncertainty is resolved independently from the investor's actions. Secondly, the resolution of endogenous uncertainty is possible through active investment. Thirdly, the active response to endogenous uncertainty might lead to further

opportunities. (Cuypers/ Martin 2010) Therefore Cuypers and Martin (2010) emphasize that the existence of a real option strongly depends on the underlying source of uncertainty, which the option is supposed to hedge. As demonstrated Cuypers and Martin (2010) tend to question the applicability of the real options approach in case of endogenous uncertainty. Cuypers and Martin (2010) criticize Ander and Levinthal (2004) by arguing that the costs of minimizing endogenous uncertainty, for instance through control mechanisms or organizational changes, might exceed the potential benefits of a real option. In addition, Cuypers and Martin (2010) remark that in future studies, the effects of two or more different forms of uncertainty should be examined. (Cuypers/ Martin 2010) Still, in reality, the strict classification of endogenous or exogenous uncertainty remains problematic.

In the context of technological joint ventures (TJVs) Estrada, De la Fuente and Martín-Cruz (2010) emphasize the advantages of flexibility, emerging from high uncertainty. The support of their hypothesis, "The greater the technological uncertainty, the more likely the firm is to form a TJV."(Estrada/ De la Fuente/ Martín-Cruz 2010, p.1189), endorses the real option approach. Further Estrada, De la Fuente and Martín-Cruz (2010) highlight the crucial role of the managers' perception of technological uncertainty in the managerial decision- making process. Therefore it is necessary, to include the managers' anticipation of environmental uncertainty, when analysing real option clauses in franchising contracts. Following real options arguments the perception of environmental uncertainty by managers, encloses the managers' expectations of how flexibly the firm may cope with new information. Further the perception of environmental uncertainty by managers includes the managers' estimation of the ability of the firm to learn. The value added through gaining the possibility to learn is essential, when considering investment projects. The additional flexibility adds value to the franchise. Consequently, the possession of a real option is particularly valuable under high degrees of perceived environmental uncertainty.

H1: The higher the perceived environmental uncertainty, the higher is the likelihood of the usage of an option clause.

5.4.1.2 Behavioural Uncertainty

Besides perceived environmental uncertainty, behavioural uncertainty may affect the likelihood of an option clause in a franchising contract. This type of uncertainty refers to the lack of knowledge about the partner's capabilities and resources.

Folta (1998) addresses this form of uncertainty, when stating that in case of uncertainty about the future capabilities of the target firm, " (…) investments in knowledge should have the characteristic of trial-and– error learning."(Folta 1998, p.1010). Due to the fact that the resources and the ability of the partner to exploit them in a profitable way are unknown, uncertainty emerges. Along the duration of the option, the partners gain more information about each other, and the possibility to improve their decisions rises. This flexibility in the decision- making process adds value to the option.

Chi and McGuire (1996) refer to this problem with the term 'partner uncertainty'. Chi and McGuire (1996) define partner uncertainty by the collaborative experience the partners have with each other. They combine market uncertainty (product is new to the market) and partner uncertainty and set the hypothesis that if a product is new to a market, or the two partners have no experience with each other, the likelihood of an option clause in JV contracts increases. Therefore they hypothesize "A JV is more likely to contain an option-to-acquire clause ceteris paribus if its product is new to the local market or if its two partners have had no prior collaborative experience with each other."(Chi/ McGuire 1996, p.302). Chi and McGuire (1996) assume that an increase in any of these two uncertainties (market or partner uncertainty) will lead to a higher possibility that the option partners implement an option clause in their initial contract.

From a real options perspective, the resources of a firm create a bundle of options. These options, emerging from the specific capabilities and assets of a firm, enable future strategic decisions. (Bowman/ Hurry 1993) As the resources of the franchisee are unknown to the franchisor, the potential of a gain in value, emerging from the higher flexibility, rises. The implication for managers in negotiating franchising contracts is that an option to expand in the future promises to be more valuable, when uncertainty about the franchisee's resources and capabilities seems to be high. Therefore the implementation of an option to acquire clause in the franchising contract stipulates the right to the option, and is more likely in conditions of high- perceived partner uncertainty.

H2: The higher the perceived uncertainty about the franchisee's capabilities and resources, the higher is the likelihood of the usage of an option clause.

5.4.2 Duration of the Franchising Arrangement

As demonstrated in Chapter 3.7.3.1, Option Value, one of the main principles in financial options theory is that, the longer the time to expiration of a call option, the higher its value. This basic premise of the options approach is derived from the Black- Scholes formula and is valid for European call options. In order to apply financial option theory to real options, research (Ziedonis 2007, Aulakh/ Jiang/ Pan 2009, Estrada/ De la Fuente/ Martín-Cruz 2010) has considered this principle assumption.

Aulakh, Jiang and Pan (2009) analysed in their study the effect of different types of uncertainty and the risk of competitive pre- emption on the duration of licensing agreements in the foreign market. Besides the recognition of a moderating effect of irreversibility on the relationship between uncertainty and the licensing duration, Aulakh, Jiang and Pan (2009) compile two hypotheses for different forms of uncertainty. The first hypothesis incorporates market uncertainty by assuming that a high level of market uncertainty results in a shorter duration of the licensing arrangement. The second hypothesis refers to technological uncertainty by also suggesting a negative relationship between the duration of a licensing agreement and the level of technological uncertainty. Surprisingly, the statistical results show differing findings, rejecting the first hypothesis, while supporting the second one.

However, Cuypers and Martin (2010) state that, "The duration of an option determines its value insofar as longer time horizons provide more opportunities for the option to become in-the-money."(Cuypers/ Martin 2010, p. 56). The longer duration of an option enables the resolution of uncertainty, through having the time to collect additional information and to learn. It is important to notice that Cuypers and Martin's (2010) data for their study is based upon joint ventures (JVs) in China with an ex ante specified duration of the JV. The duration of the JV contract has to be fixed in the JV's articles of association, as it is compulsory for JVs in China by law. In some franchising contracts, duration is as well specified ex ante.

In the same context, Ziedonis (2007) mentions for licensing of university technologies that, "(…) the short time period of the option contract (…) limits the opportunity to use the option to resolve exogenous uncertainty (...)"(Ziednois 2007, p.1619).

Estrada, De la Fuente and Martín-Cruz (2010) state that the duration of a technological joint venture (TJV) represents the timespan available for developing the underlying technology. The longer this time horizon is, the more valuable is the TJV. (Estrada/ De la Fuente/ Martín-Cruz 2010)

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Therefore a JV with an explicit option- to- acquire clause and no fixed duration of the JV can be seen as an American call option. In case of the right of pre-emption, fixed in the franchising contract, the duration of the franchise agreement is determined by the franchisee. The franchisee wants to sell the franchise and the franchisor holds the right to buy in advance to competitors. Hence the franchisor has no influence on the duration of the franchising agreement. In this sense the franchising agreement acts like a European call option. The value of a call option, as demonstrated in Figure 4, increases as the time to expiration rises. The franchisor holding an option clause gains more value and future opportunities, when the duration of the franchising agreement is higher.

H3: The longer the duration of a franchising agreement, the higher is the likelihood of the usage of an option clause.

5.4.3 Know-How Transferability

For the next hypothesis concerning the degree of know- how transferability, not only real options arguments are used. As demonstrated in Chapter 4.3, "Combined Approaches in Research", this method broadens the existing considerations of the managerial decision-making processes and the governance choice.

The following considerations are based upon the assumption that know- how is perceived as a valuable resource, which generates a competitive advantage. Further know- how transferability is presumed to be an indicator for the intangibility of a system. The underlying assumption is that intangible assets, like know- how, are harder to transfer. The more intangible assets exist in a system, the higher is the know- how transferability. The higher the level of tacit know- how, the harder it is for the firms to absorb and exploit the knowledge of the partner. Concerning the level of know- how transferability leads analysis to a more firm specific level. The firm specific capabilities and resources to absorb know-how might influence the firms' governance choices substantially.

As Trigeorgis (1996) mentions "Sustainable competitive advantages (…) empower companies with valuable options to grow through future profitable investments and to more effectively respond to unexpected adversities or opportunities in a changing technological, competitive, or general business environment."(Trigeorgis 1996, p.19). These competitive advantages are a result of the firm's resources and capabilities. Ekeledo and Sivakumar (2004) utilize a resource- based approach in order to explain the entry mode choice of manufacturing and service firms. Therefore a comparison of the

choice between a full control mode, such as a wholly owned subsidiary, and a shared entry mode of control, such as management contracts, licensing or joint ventures, is drawn. Ekeledo and Sivakumar (2004) hypothesize "A firm with a valuable tacit know-how that is a competitive advantage in a foreign market will use a full control mode to enter the market: the firm will adopt sole ownership as an entry mode."(Ekeledo/ Sivakumar 2004, p.77). The statistical results do not support this hypothesis. Consequently, the choice of entry mode seems not to be significantly influenced by tacit know-how, according to the data used by Ekeledo and Sivakumar (2004).

Further Estrada, De la Fuente and Martín-Cruz (2010) confirm for technological joint ventures (TJVs) that "(...) The greater the firm's absorptive capacity, the more likely the firm is to form a TJV."(Estrada/ De la Fuente/ Martín-Cruz 2010), p.1189).

The uncertainty is related negatively to the degree of know- how transferability. Folta, Johnson and O'Brien (2006), who investigated the effect of uncertainty and irreversibility of investment on the market entry mode decision, found that, "(…) the negative effect of UNCERTAINTY is more pronounced when considering entry into industries (...) requiring more investment in intangible assets."(Folta/ Johnson/ O'Brien 2006, p. 445).

The ability to learn during the option period from the partner in a collaborative venture makes the option to defer immediate investment more valuable. However, Ziedonis (2007) remarks that, "(…) firms that are better able to "absorb" the technology during the contract period may have reduced incentives to subsequently license the invention."(Ziedonis 2007, p.1618). The easier it is to absorb the know-how, which means a higher degree of know-how transferability, the less the firm will be interested in acquiring the partner at the end. The hypothesis of Ziedonis (2007) in this matter is "(…) Firms better able to evaluate an invention will be less likely to purchase an option contract prior to making a licensing decision, all else equal."(Ziedonis 2007, p.1620). The results show support for this hypothesis and indicated henceforth the firm specific impact on the options value via the firms' capabilities to absorb know- how. Consequently Ziedonis (2007) highlights that "(…) firms in the sample that are better able to evaluate an external technology are less likely to purchase an option."(Ziedonis 2007, p. 1618).

The lower the know- how transferability, the greater the incentive to use an option clause in the franchising contract. On the one hand the option clause can be seen as a way to obtain more control, on the other hand the option- to- acquire seems to be more valuable as for instance tacit know- how is involved.

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H4: The harder it is to transfer know-how (e.g.: tacit knowledge), the higher is the likelihood of the usage of an option clause.

5.4.4 Sector of Operation

The sector of operation might as well influence the choice of market entry mode. Blomstermo, Sharma and Sallis (2006) investigate the entry mode choice of 140 Swedish service firms, by differing hard and soft- service firms. In opposition to hard- service firms, soft- service firms are defined by their inseparability of production and consumption. Blomstermo, Sharma and Sallis (2006) suggest for soft- service firms the use of a high control mode, when entering a foreign market, and find that "The statistical analysis shows that, in general, soft-service firms are much more likely than hard service firms to choose a high control entry mode over a low control entry mode."(Blomstermo/ Sharma/ Sallis 2006, p.211).

Further Ekeledo and Sivakumar (2007) also distinguish between separable (hard) and non-separable (soft) service firms. By using a resource- based approach, firms of the service sector are compared in their entry mode choice, with manufacturing firms. One of Ekeledo and Sivakumar's (2007) hypothesis, which finds support in the statistical analysis is that, "Compared to manufacturing firms, a larger percentage of non-separable service firms enter foreign markets with a combination of FDI and a franchising entry mode."(Ekeledo/ Sivakumar 2007, p.83). Ekeledo and Sivakumar (2007) found a significantly difference in the entry mode choice of manufacturing and service firms, which sources, in Ekeledo and Sivakumar's (2007) opinion, in the simultaneity of consumption and production in case of soft services.

Kogut (1991) showed for joint ventures a greater likelihood of acquisition in joint ventures, when research and development (R&D) activities or marketing and distribution is involved, than for production activities.

Blomstermo, Sharma and Sallis (2006) state that, "(...) services are characterized by intangibility, and inseparability of production and consumption (...) (Blomstermo/ Sharma/ Sallis 2006, p.213). This intangibility leads to a higher degree of uncertainty, which results in more flexibility in managerial decision- making and henceforth a higher option value. The implementation of an option clause is therefore more valuable in case of service firms, due to the greater learning potential during the franchising agreement.

H5: Firms operating in services have a greater likelihood of the usage of an option clause, than firms operating in production and distribution.

5.4.5 Control Variables

Beside the above- mentioned implications, other factors may influence the likelihood of the existence of an option clause in a franchising contract. Henceforth four variables are chosen, which could be tested, with data accessibly through the franchising questionnaire in Chapter 6, "Empirical Study", empirical study. Those four variables are elaborateness of contractual agreement, experience of the franchisor, trust and coordination mechanisms.

The *Elaborateness of contractual agreement* refers to the possibility that a contract, which in general is more detailed, might show a greater likelihood of the use of an option clause in the contract. The more explicit the contractual franchising agreement is generally, the higher the trend towards an option clause.

The *Experience of the franchisor* can impact the occurrence of option clauses in franchising contracts in that way that the more experience the franchisor has, the more the contract might include option clauses. As the franchisor has more experience, the franchisor may have developed better contracting and negotiation skills via learning. (Leiblein 2003)

On the other hand firms with a lot of experience with international joint ventures, have a lower interest in purchasing explicit options. Still, the contrary argument, which seems to be more attractive, is that firms with more experience have a greater ability to write more complete contracts and are better trained in negotiating. (Reuer/ Tong 2005) Hence the likelihood of an option clause might increase with the degree of experience of the franchisor.

Further *Trust* could affect the usage of option clauses, namely "(…) higher trust might lead to the decision "(…) not to rely upon detailed contracts to ensure predictability."(Leiblein 2003, p.954). However the existence of trust may reduce the necessity of high commitment entry mode forms, such as joint ventures, and might forward the use of more flexible forms, such as contracts. (Estrada/ De la Fuente/ Martín-Cruz 2010) The impact of trust between the contracting partners should be examined more in detail in real options research.

The practice of *Coordination mechanisms* in a franchising arrangement could influence the likelihood of an option clause in a negative way. Coordination mechanisms, for instance frequent meetings of the franchisor and the franchisee, can help to facilitate the transfer of knowledge; under the assumption that in face-to face meetings the exchange of know- how is easier. In this context Leiblein (2003) mentions that, "(…) the coordination mechanisms associated with various forms of organization mediate the relationship between exchange

characteristics and governance choice."(Leiblein 2003, p.954).

Those four variables should be tested, in order to identify their relationship in regard to the likelihood of an option clause in a franchising contract.

5.4.6 Other variables in Research

In real options research attention has been drawn to some additional variables to the above mentioned. In this Chapter the variables, competitors, core versus non- core business, legal regimes, cultural distant partner, industry differences and irreversibility of investment are briefly mentioned.

The number of *Competitors* in a market is analysed in order to explain the decision between forming joint ventures and outright acquisition and has been interconnected to the risk of pre-emption. (Kogut 1991, Folta 1998) Further the factor competition is used as a control variable, when investigating licensing under real options perspective. (Ziedonis 2007)

The question if a firm operates in its *Core versus non-core business* has a significant impact on the entry modes choice. Folta (1998) showed a greater likelihood of joint venture formation over acquisition, when the primary businesses of the partners differ. As businesses of the partners are dissimilar, greater amounts of uncertainty emerge and more potential for learning and increasing the knowledge base is gained. (Kogut 1991, Folta 1998) However, for the usage of explicit call options in international joint ventures (IJVs) Reuer, Tong and Peng (2005) found "(…) that IJVs situated in a firm's core business are more likely to use explicit call options, and those in other product markets, even ones somewhat similar to the core business, are less likely to use these contractual arrangements."(Reuer/ Tong 2005, p.418). Concerning licensing Ziedonis (2007) distinguishes between firms' intentions when entering a business dissimilar to their core area of operations. The idea of exploitation and exploration plays an important role in this context. The hypothesis that "(…) Firms with a higher level of technological knowledge related to an invention will be more likely to license the invention, all else equal."(Ziedonis 2007, p.1621), is supported by the data.

Further considerations about the *Legal regimes* of a host country and its influence on the governance structure are conducted. The likelihood of an explicit option (option to acquire) in a (international) joint venture is assumed to be higher, when the host country provides a weaker intellectual property regime or legal regime. (Chi/ McGuire 1996, Reuer/ Tong 2005) Although the argumentation of Chi and McGuire (1996), and Reuer and Tong

(2005) is mainly based upon transaction costs economics, the logic outcome can be viewed from a real options perspectives as well. The increasing uncertainty prevails the firms with valuable future opportunities.

The more *Cultural distant a partner* is, the more likely the firm will use an explicit option in the contract. Reuer and Tong (2007) demonstrated that cultural distance is connected with a higher amount of downside risk. The possibility to respond to behavioural uncertainty is valuable and "(…) firms are more likely to use explicit call options in the culturally most distant countries."(Reuer/ Tong 2005, p.418).

The next variable refers to *Industry differences.* The underlying presumption of this variable is that emerging industries provide valuable growth options. The growth potential of technical subfields animates firms to form joint ventures instead of entering the industry with immediate acquisition. (Folta 1998) However studies exist (Reuer/ Tong 2005, Reuer/ Tong/ Peng 2006), which show results leaving concerns to the idea, that emerging economies confer valuable growth options.

The *Irreversibility of investment* represents another factor with influence on the entry mode choice of the firm. Folta, Johnson and O'Brien (2006) demonstrated that irreversibility of investment has a significant positive impact in regard to the effect of uncertainty to market entry. Irreversibility of investment should be analysed in future real options research, as the interaction effect of irreversibility and uncertainty has been verified. (Folta/ Johnson/ O'Brien 2006)

Due to the lack of data and the appropriate framework, the variables mentioned above, will not be taken into account in the statistical analysis of option clauses in franchising contracts in Chapter 6, "Empirical Study". Still, it is of importance to keep those factors in mind, when trying to draw conclusions by means of the empirical results.

5.4.7   Summary of Hypotheses and Control Variables

In order to provide a better overview, the five hypotheses for the usage of option clauses in franchising contracts are summarized below:

H1: The higher the perceived environmental uncertainty, the higher is the likelihood of the usage of an option clause.

H2: The higher the perceived uncertainty about the franchisee's capabilities and resources, the higher is the likelihood of the usage of an option clause.

H3: The longer the duration of a franchising agreement, the higher is the likelihood of the usage of an option clause.

H4: The harder it is to transfer know-how (e.g.: tacit knowledge), the higher is the likelihood of the usage of an option clause.

H5: Firms operating in services have a greater likelihood of the usage of an option clause, than firms operating in production and distribution.

The control variables utilized for the statistical analysis of the likelihood of option clauses in franchising contracts are: elaborateness of contractual agreement, experience of the franchisor, trust and coordination mechanisms.
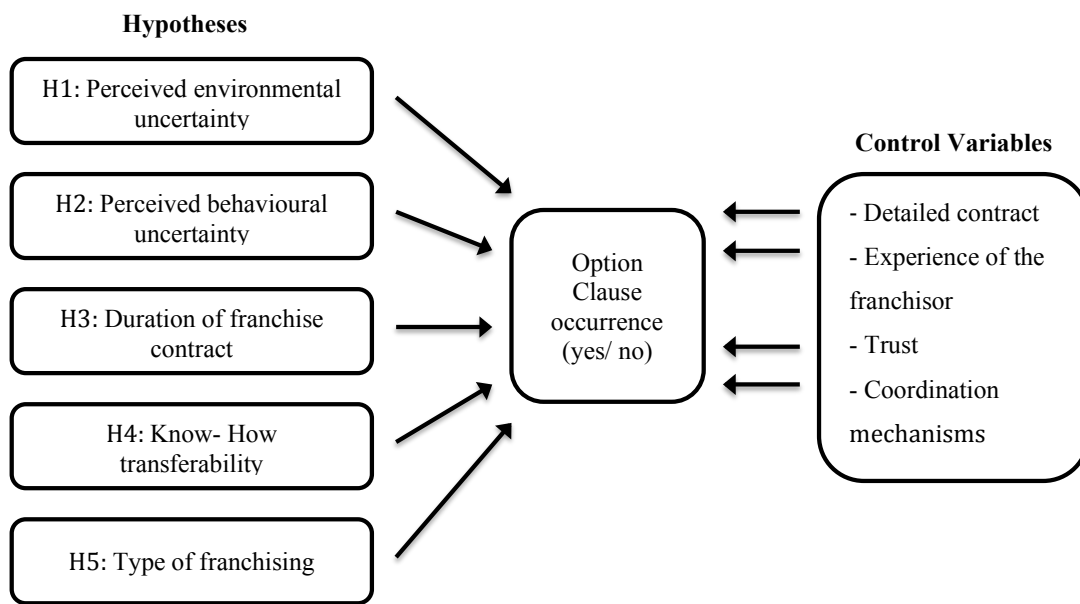
Figure 5: Model summary for empirical study, Angelika Brix.

6. Empirical Study

6.1 Problem Definition and Objectives

In the research project „Eigentumsstrategie von Franchise- Unternehmen in Deutschland" conducted by ao. Univ.-Prof. Mag. Dr. Josef Windsperger a questionnaire has been given to German firms to analyse the factors influencing the choice of ownership strategy of the franchisor. As the data has been collected from the franchisors', an analysis of the results has to be understood from the franchisors perspective. The questionnaire (see Chapter 12, "Appendix") contents the question, "the franchisor has a contractual option to buy the franchise operation sold by the franchisee (i.e. pre-emption)"("Der Franchisegeber hat vertragliche Optionsrechte bei Veräußerung des Franchisebetriebes durch den Franchisenehmer (z.B.: Vorkaufsrecht)."). This question could be answered by "yes" or "no", which leads us to several possible research questions, why in some cases this option rights are contractually fixed and why in other cases they are not. As demonstrated in Chapter 5, "Franchising and the Real Options Approach", several hypotheses emerge from theory. Those hypotheses should be tested empirically in the following, using the software for statistical testing SPSS (Statistical Package for Social Sciences) version 20.0. The aim of this analysis is to test whether the in Chapter 5.4, "Hypotheses", conducted hypotheses can be approved with the available data.

6.2 Methodology

In order to test the in the former derived hypotheses, it is essential to identify the questions (variables) in the questionnaire (see Chapter 12, "Appendix"), which are useful in respect to the hypotheses. With the aim of using the variables sensitive, it seems feasible to adapt some of the variables, after descriptive statistics were done. In the next step, a factor analysis is conducted, in order to cluster the variables after a reliability analysis. Afterwards, a logistic regression with the newly formed variables is calculated. As the dependent variable is binary, the use of a linear regression analysis would be inappropriate. The logistic regression analysis may reveal if the hypotheses can be corroborated.

6.2.1 Description of Data and Collection

The data for the empirical study was compiled via a questionnaire (see Chapter 12, "Appendix"), which was answered by franchisors in Germany. The number of franchising firms, which answered the questionnaire, is 137. The questionnaire contains specific

questions concerning the ownership strategy of the franchisor, the contractual agreement between the franchisor and the franchisee and general information about the franchisor's firm.

6.2.2 Measures

Most of the variables in the questionnaire are inquired via a seven point Likert scale, where "1" represents "not correct at all" and "7" means "fully correct". Some answers had to be filled in by the participants, for instance "Average number of annual formal meetings between franchisor and franchisee" or "Contract length in years". One question deals with the type of franchising, where the franchise is operating. This question had three possibilities to answer: product franchising, sales/distribution or services. The dependent variable "the franchisor has a contractual option to buy the franchise operation sold by the franchisee (i.e. pre-emption)", has a nominal scale ("yes" or "no") and is therefore dichotomous.

6.2.2.1 Variables

Dependent variable:

The dependent variable for the logistic regression analysis is "the franchisor has a contractual option to buy the franchise operation sold by the franchisee (i.e. pre-emption)"(A014_07b).

Independent variables:

Perceived environmental uncertainty:

H1: The higher the perceived environmental uncertainty, the higher is the likelihood of the usage of an option clause.

The following three questions are supposed to provide data concerning the perceived environmental uncertainty:

- The sales at the outlet level is very fluctuating (A013_02),
- It is very difficult to predict the market development at the outlet level (A013_03), and
- The economic environment in the local market is changing rapidly (A013_06).

Behavioural uncertainty:

H2: The higher the perceived uncertainty about the franchisee's capabilities and resources, the higher is the likelihood of the usage of an option clause.

The variable, dealing with behavioural uncertainty, should be created with the following three questions:

- It is very difficult to measure the performance of the outlet manager (franchisee or manager) (A013_01),
- It is very difficult to control the behavior of the outlet manager (franchisees or managers) (A013_04), and
- It is very difficult to assess the competencies and capabilities of the outlet manager (franchisee or manager) (A013_05).

Duration of the franchise contract:

H3: The longer the duration of a franchising agreement, the higher is the likelihood of the usage of an option clause.

Therefore the question "Franchise contract length in years" will be analysed.

Know- How transferability:

H4: The harder it is to transfer know-how (e.g.: tacit knowledge), the higher is the likelihood of the usage of an option clause.

For this hypothesis the variable "KNOW HOW" should be formed with eight questions: How difficult is it to transfer to franchisees

- brand name,
- marketing know-how,
- organizational know-how,
- administrative know how,
- quality management know how,
- accounting know how,
- human resources know how, and
- IT know-how.

Type of franchise:

H5: Firms operating in services have a greater likelihood of the usage of an option clause, than firms operating in production and distribution.

The "Type of franchising" is essential for testing this hypothesis. Although three answers are possible for the question, namely, "Product franchising", "Sales/Distribution" or "Service", in Chapter 6.3.2, "Frequencies", those three categories will be reduced to two categories. This is feasible not only with regard to content but also with regard to the available data.

6.2.2.2 Control Variables

Detailed contract:

"The contract specifies the tasks of the partners in great details", measures how detailed a contract between the franchisor and the franchisee is, on a seven point Likert scale.

Experience of the franchisor:

The experience of the franchisor is captured by asking the "Year when first franchised outlet was opened in Germany/Swi/Aut". This question gives an idea of the duration of operations in general of the franchisor. As the data collected gave only the date, when the first outlet was opened, the data had to be transformed into years. The assumption concerning the experience of the franchisor is that, the higher the variable "age" is, the more experience does the franchisor have.

Trust:

For the variable trust a factor analysis (Chapter 6.3.3, "Factor Analysis") is conducted in order to test, if the following eight questions could be clustered to one variable:

- The cooperation is based on partnership basis (A006_01),
- The exchange of information between us and the partners goes beyond the agreed scope (A006_02),
- There is great trust between ourselves and the partners (A006_07),
- There is an atmosphere of openness and honesty between us and the partners (A006_08),
- We trust the people with whom we have longterm relationship (A006_03),
- The majority of people trust other (A006_04),
- Most people are trustworthy (A006_05), and
- Most people behave cooperatively if they are trusted (A006_06).

Coordination mechanisms:

In order to measure how strong coordination mechanisms are between the franchisor and the franchisee the following four questions are choosen:

- Average number of annual formal meetings between franchisor and franchisee,
- Average of number of franchisor's visits to franchisee,
- Annual training - number of days franchisor will train franchisee, and
- Annual training - number days franchisee's employees will be trained.

The presumption is that, the higher the number of meetings and trainings, the greater the personal interaction between the partners and the stronger the coordination mechanisms.

6.3 Analysis of the Study

6.3.1 Descriptive Statistics

As the number of various variables is with thirty very high, only the most important results are going to be presented in the following. Further the arguments, why some variables needed to be transformed are presented.

6.3.2 Frequencies

6.3.2.1 Dependent Variable

137 franchising firms have answered the questionnaire. The question if the "the franchisor has a contractual option to buy the franchise operation sold by the franchisee (i.e. pre-emption)" with the possibility to answer rather "yes" or "no", was answered by 124 of the participants, while 13 values for this question were missing. Of the 124 answers, 40 participants gave the answer "no" and 84 participants affirmed having an option clause in their franchising contract. In per cent, 90,5% of the franchising firms in the study answered the question, concerning the existence of an option clause. Of those who answered the question 32,3% stated "no" and 67,7% answered with "yes". (see Figure 6)
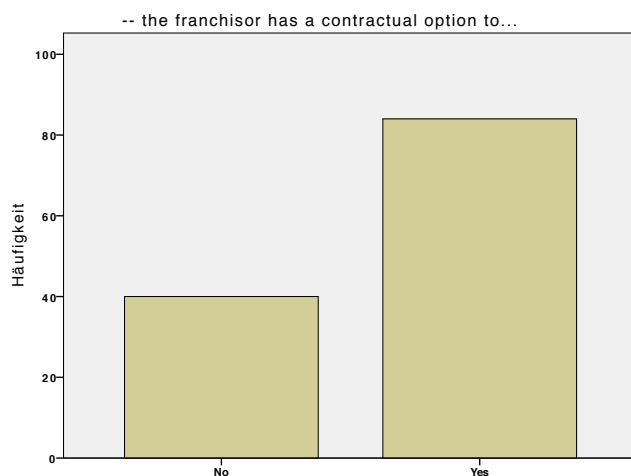
Figure 6: Frequencies, The franchisor has a contractual option to buy the franchise operation sold by the franchisee

The dependent variable for the regression analysis of the data therefore is, whether a firm has an option clause in the franchising contract or not. Hence the variable "the franchisor has a contractual option to buy the franchise operation sold by the franchisee (i.e. pre-emption)" represents a dichotomous variable, which has been coded for the logistic regression analysis with "0" = "No (option clause)" and "1" = "Yes (option clause exists in the contract)".

6.3.2.2 Independent Variables

Duration of the franchise contract in years (B014_01b)

Concerning the duration of the franchising agreement most of the 119 responses (18 values are missing), namely 47,1% answer 5 years. (see Figure 7) Further 30,3% of the franchisors state that their contract length is 10 years, which leads to the fact that most of the cases are concentrated at two values.

This result is not surprising, when knowing that in franchising contract durations of 5 years are very common. (Adams/ Jones/ Hickey 1997, Blair/ Lafontaine 2005)
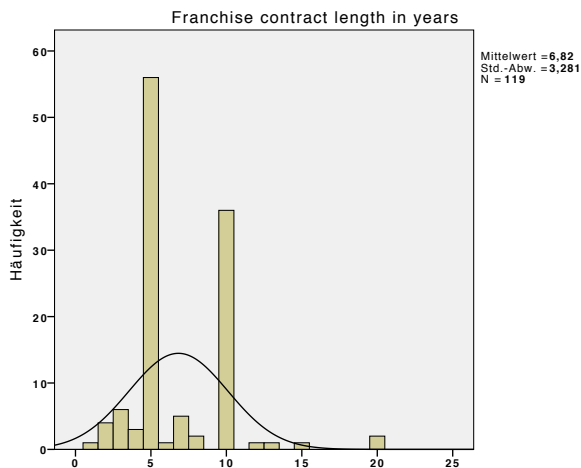
Figure 7: Frequencies, Histogramm, Franchise contract length in years

In order to mitigate logistic regression analysis, the variable "franchise contract length in years" (B014_01) is recoded into a variable (B014_01b), with the values "0"= short contract and "1"= long contract. A short contract in this context is defined by having a value for the years smaller than "9", a long contract has a value bigger than "9". (years < "9" – short contract ; years > "9" – long contract) As apparent below (see Table 2) 65,5% of the respondents have contracts with their franchisee up to 9 years length and 34,5 % have a duration of their contract above 9 years length.

Franchise contract length 0/1

		Häufigkeit	Prozent	Gültige Prozente	Kumulierte Prozente
Gültig	short contract	78	56,9	65,5	65,5
	long contract	41	29,9	34,5	100,0
	Gesamt	119	86,9	100,0	
Fehlend	- 9	18	13,1		
Gesamt		137	100,0		

Table 2: Frequencies, Franchise contract length in years, coded.

Type of franchising (B001)

The franchisors are asked in the questionnaire to identify the type of franchising, in which they are involved by marking one of the three answer possibilities: "Product franchising",

"Sales/ Distribution" or "Service". The 127 answers of the franchisors (10 missing values) showed 63,8% of the answers for "Service", 33,1% for "Sales/ Distribution" and only 3,1% for "Product franchising". (see Figure 8)
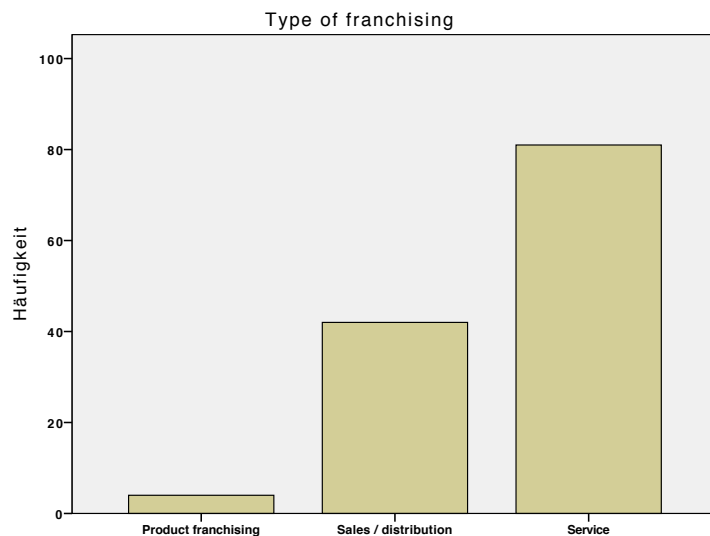
Figure 8: Frequencies, Type of franchising

In respect to hypothesis 4 (H4), which refers to the type of franchising, and in order to alleviate statistical analysis, the variables "Sales/ Distribution" and "Product franchising" are united. ("1"= product franchising/ sales, distribution; "2"= service) The integration of "Product franchising" into "Sales/ Distribution" is feasible, also due to the fact that the value for "Product franchising" is very low. In Table 3 the frequencies for the new variable (B001b) show that of the 127 franchises, 36,2% are "Product franchising" or "Sales/ Distribution" and 63,8% belong to the type of "Service" franchising.

Type of franchise

		Häufigkeit	Prozent	Gültige Prozente	Kumulierte Prozente
Gültig	Product franchising & Sales/ Distribution	46	33,6	36,2	36,2
	Service	81	59,1	63,8	100,0
	Gesamt	127	92,7	100,0	
Fehlend	- 9	10	7,3		
Gesamt		137	100,0		

Table 3: Frequencies, Product franchising /Sales Distribution and Services.

6.3.2.3 Control Variables
Year when first franchised outlets was opened (AGE)

Due to the fact that the participants of the questionnaire were asked when their first outlet was opened, the year dates needed to be transformed into years, in order to conduct a measure for the age of the firm. This value for the age of the firm, is further logarithmised in order to avoid skewness. (see Figure 9 and Figure 10)
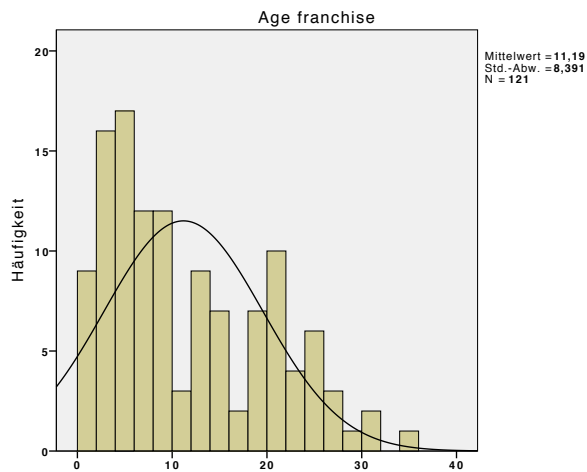
Figure 9: Frequencies; Histogramm, Age of the franchise
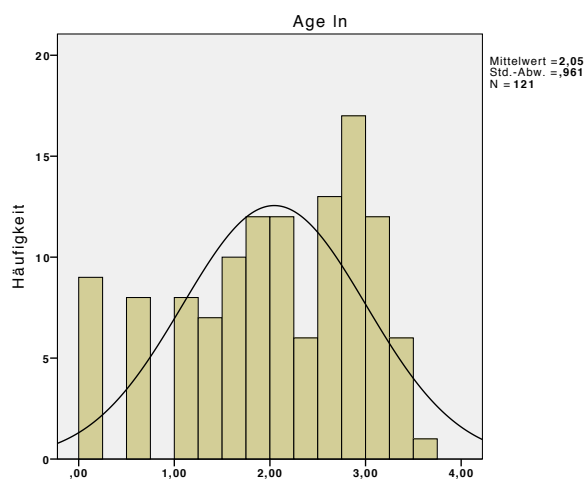
Figure 10: Frequencies, Histogramm, Age of the franchise, Ln

Statistiken

		Age franchise	Age ln
N	Gültig	121	121
	Fehlend	16	16
Mittelwert		11,19	2,0454
Median		9,00	2,1972
Standardabweichung		8,391	,96120
Varianz		70,405	,924
Schiefe		,650	-,564
Standardfehler der Schiefe		,220	,220
Kurtosis		-,671	-,566
Standardfehler der Kurtosis		,437	,437
Perzentile	25	4,00	1,3863
	50	9,00	2,1972
	75	18,50	2,9174

Table 4: Frequencies, Comparison of "Age" and "Age" logarithmised.

As demonstrated in Table 4 the logarithmised values, enhance the data in the direction of a normal distribution.

6.3.3 Factor Analysis

The aim of factor analysis is to identify factors, which underlie a bundle of variables in order to reduce complexity and enable an interpretation. Factor analysis can be helpful when aiming to find groups of clusters of variables.

For some of the chosen questions, it is necessary to test whether those questions can be incorporated in new variables. Therefore a factor analysis is conducted. In respect to content, several questions are suspected to build a cluster. The variables in question are those, concerning perceived environmental uncertainty, behavioural uncertainty, know-how transferability, trust and coordination mechanisms. In order to test how many factors can be identified an exploratory factor analysis is done. The method of rotation for the principal component analysis is Varimax and the Kaiser's criterion is used.

The most important output for the factor analysis of the above-mentioned variables is as follows:

KMO- und Bartlett-Test

Maß der Stichprobeneignung nach Kaiser–Meyer–Olkin.		,730
Bartlett–Test auf Sphärizität	**Ungefähres Chi-Quadrat**	1396,184
	df	325
	Signifikanz nach Bartlett	,000

Table 5: KMO- and Bartlett test, factor analysis for all relevant variables.

The Kaiser- Meyer- Olkin (KMO) test shows a result of 0,73 and is therefore greater than the required 0,5. (see Table 5) Hence the value for a satisfactory factor analysis is met. The Bartlett test is highly significant (p< 0,001).
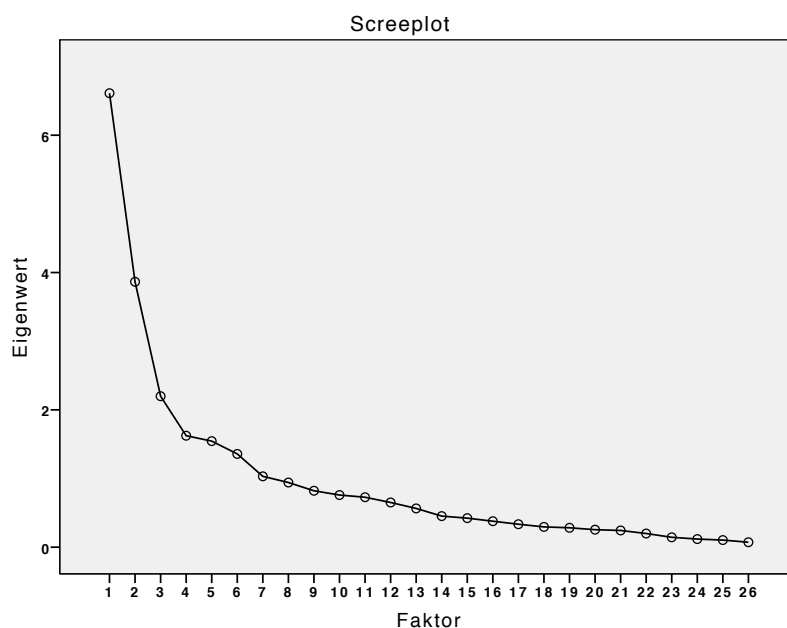
Figure 11: Screeplot, factor analysis with all relevant variables, identification of seven components.

As the screeplot in Figure 11 shows, seven components are identified by SPSS 20.0, when applying Kaiser's criterion. The Kaiser's criterion counts a component as soon as the eigenvalue exceeds the value of 1. However Kaiser's criterion sometimes overestimates the number of factors. In the screeplot in Figure 11 two points of inflexion can be recognized: the first one after three factors and the second one after six factors. For the following logistic regression (see Chapter 6.3.5, "Regression Analysis") six components will build new variables.

6.3.3.1 Uncertainty

Concerning uncertainty another factor analysis tests, whether perceived uncertainty, captured in the questionnaire, can be distinguished into environmental and behavioural uncertainty. When running a factor analysis with all six items, dealing with uncertainty, SPSS 20.0 reveals the following results:

KMO- und Bartlett-Test

Maß der Stichprobeneignung nach Kaiser–Meyer–Olkin.		,605
Bartlett–Test auf Sphärizität	**Ungefähres Chi-Quadrat**	230,600
	df	15
	Signifikanz nach Bartlett	,000

Table 6: KMO- Bartlett test, factor analysis for uncertainty.

The Kaiser- Meyer- Olkin (KMO) test result (see Table 6) is 0,605 and therefore exceeds the required 0,5. Further, the Bartlett test is highly significant (p< 0,001).

Erklärte Gesamtvarianz

Komponente	Anfängliche Eigenwerte			Summen von quadrierten Faktorladungen für Extraktion			Rotierte Summe der quadrierten Ladungen		
	Gesamt	% der Varianz	Kumulierte %	Gesamt	% der Varianz	Kumulierte %	Gesamt	% der Varianz	Kumulierte %
1	2,162	36,028	36,028	2,162	36,028	36,028	2,067	34,447	34,447
2	1,877	31,279	67,308	1,877	31,279	67,308	1,972	32,861	67,308
3	,879	14,658	81,965						
4	,461	7,683	89,649						
5	,365	6,080	95,729						
6	,256	4,271	100,000						

Extraktionsmethode: Hauptkomponentenanalyse.

Table 7: Total Variance Explained, uncertainty.

As Table 7 indicates, the first eigenvalue lies by 2,162. The corresponding factor therefore explains on average 36,028% of the variance of the variables. The percentage of explained variance for the last four factors reaches 14,658%. According to the Kaiser's criterion, two factors can be extracted, as two eigenvalues exceed the value of 1. (2,162 and 1,877)
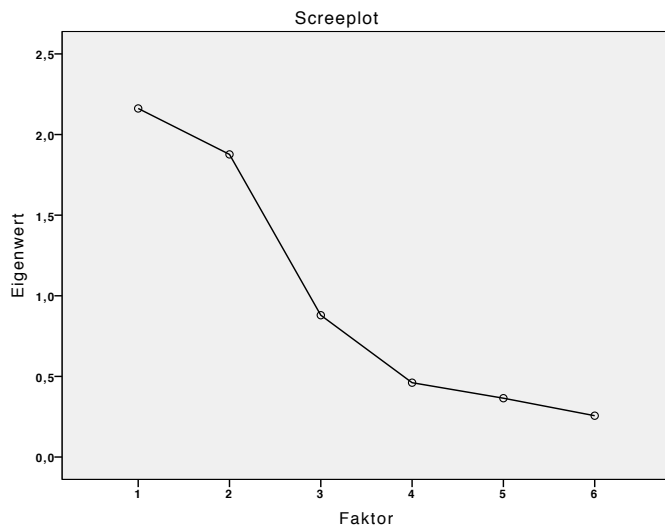
Figure 12: Screeplot, factor analysis for uncertainty, identification of two factors.

The screeplot in Figure 12 demonstrates, that for the variable "uncertainty" two components can be recognized. Kaiser's criterion as well as the point of inflexion (elbow) technique, lead to the identification of two components.
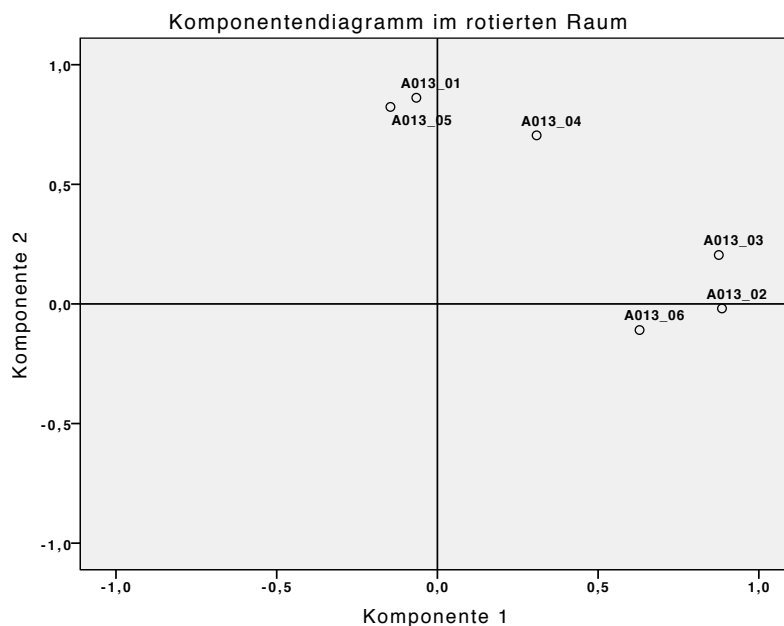
Figure 13: Factor plot, Uncertainty, identification of two components.

The Figure 13 shows the two components extracted from factor analysis. A013_03, A013_02 and A013_06, which refer to the variable PEUC (perceived environmental uncertainty), are concentrated around the x- axis. A031_01, A013_04 and A013_05 are situated around the y-axis and are, with regards to content, representing BUC (behavioural uncertainty).

Further a reliability analysis confirms, that an affiliation of the six uncertainty variables is not sensitive.

Reliabilitätsstatistiken

Cronbachs Alpha	Anzahl der Items
,626	6

Table 8: Reliability analysis for uncertainty, Cronbachs Alpha.

As Cronbachs Alpha (α) is below 0,65 it is rather not recommendable to subsume the six questions concerning uncertainty. The separation of those variables into perceived environmental uncertainty and behavioural uncertainty might be more adequate and is tested in the following. (see Table 8)

6.3.3.1.1 Perceived environmental uncertainty

The three questions (The sales at the outlet level is very fluctuating, It is very difficult to predict the market development at the outlet level, The economic environment in the local market is changing rapidly) measuring perceived environmental uncertainty form one component.

Komponentenmatrix[a]

	Komponente 1
The sales at the outlet level is very fluctuating	,887
It is very difficlut to predcit the market development at the outlet level	,864
The economic environment in the local market is changing rapidly.	,674

Extraktionsmethode: Hauptkomponentenanalyse.

a. 1 Komponenten extrahiert

Table 9: Component matrix, perceived environmental uncertainty.

In Table 9 the factor loading is demonstrated. The factor has a lower impact on the variable "The economic environment in the local market is changing rapidly", than on the other two variables.

Reliabilitätsstatistiken

Cronbachs Alpha	Anzahl der Items
,742	3

Table 10: Reliability analysis, perceived environmental uncertainty.

The reliability analysis for the three variables shows a Cronbachs Alpha (α) of 0,742. This value is acceptable, and therefore the new variable "perceived environmental uncertainty" (PUC) is formed and used in the later logistic regression. (see Table 10)

6.3.3.1.2 Behavioural Uncertainty

The second component of uncertainty is formed by the three questions, concerning behavioural uncertainty. (It is very difficult to measure the performance of the outlet manager (franchisee or manager), It is very difficult to control the behaviour of the outlet manager (franchisees or managers), It is very difficult to assess the competencies and capabilities of the outlet manager (franchisee or manager))

Erklärte Gesamtvarianz

	Anfängliche Eigenwerte			Summen von quadrierten Faktorladungen für Extraktion		
Komponente	Gesamt	% der Varianz	Kumulierte %	Gesamt	% der Varianz	Kumulierte %
1	1,931	64,356	64,356	1,931	64,356	64,356
2	,700	23,348	87,704			
3	,369	12,296	100,000			

Extraktionsmethode: Hauptkomponentenanalyse.

Table 11: Total Variance Explained, behavioural uncertainty.

The identification of one factor with the Kaiser's criterion (eigenvalue 1,931 > 1) is demonstrated in Table 11. This factor explains on average 64,356% of the variance of the variables.

Reliabilitätsstatistiken

Cronbachs Alpha	Anzahl der Items
,742	3

Table 12: Reliability analysis, Cronbachs Alpha, behavioural uncertainty.

As reliability analysis calculates a Cronbachs Alpha (α) of 0,742 (see Table 12), the new variable "behavioural uncertainty" (BUC) is created.

6.3.3.2 Know- How

In order to subsume the eight questions, which deal with the know- how transferability between the franchising partners, another factor analysis and a reliability analysis is conducted. The aim of these analyses is to check whether an incorporation of those variables is possible.

KMO- und Bartlett-Test

Maß der Stichprobeneignung nach Kaiser–Meyer–Olkin.		,877
Bartlett–Test auf Sphärizität	Ungefähres Chi-Quadrat	731,627
	df	28
	Signifikanz nach Bartlett	,000

Table 13: KMO- Bartlett test, know- how.

The Kaiser- Meyer- Olkin (KMO) test result is 0,877 and therefore reaches a great score (between 0,8 and 0,9). Additionally, the Bartlett test is highly significant (p< 0,001). (see Table 13)

Erklärte Gesamtvarianz

Komponente	Anfängliche Eigenwerte			Summen von quadrierten Faktorladungen für Extraktion		
	Gesamt	% der Varianz	Kumulierte %	Gesamt	% der Varianz	Kumulierte %
1	5,061	63,264	63,264	5,061	63,264	63,264
2	,841	10,515	73,778			
3	,558	6,971	80,750			
4	,527	6,589	87,339			
5	,417	5,216	92,555			
6	,255	3,188	95,743			
7	,221	2,764	98,506			
8	,119	1,494	100,000			

Extraktionsmethode: Hauptkomponentenanalyse.

Table 14: Total Variance Explained, know- how.
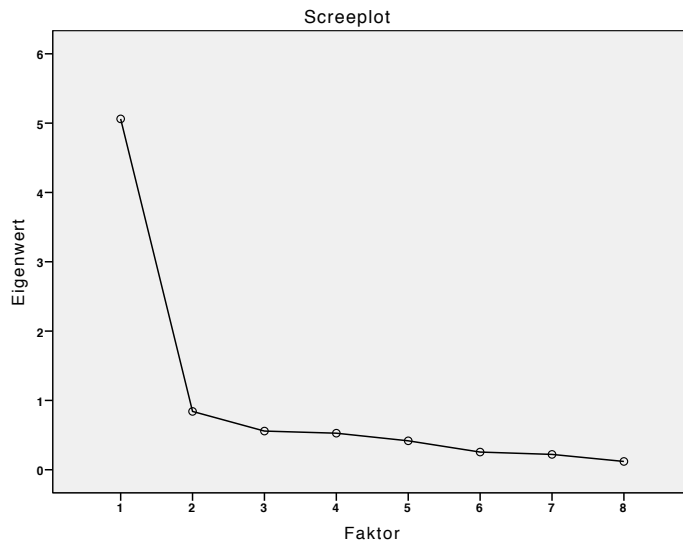
Figure 14: Screeplot, know- how, identification of one factor.

In Figure 14 the identification of one factor for the variable KNOW- HOW is demonstrated. The eigenvalue of 5,061, with the corresponding factor explaining 63,264% of the variance of the variables is shown in Table 14.

Reliabilitätsstatistiken

Cronbachs Alpha	Anzahl der Items
,913	8

Table 15: Reliability analysis, Cronbachs Alpha, know- how.

According to reliability analysis the Cronbachs Alpha (α) for the variable KNOW- HOW is 0,913, which is an excellent value for the eight items. (see Table 15) Consequently the variable KNOW- HOW is conducted and utilised in the logistic regression.

6.3.4 Control Variables

The control variables, concerning "trust" and "coordination mechanisms" are also analysed with the aim to subsume the questions.

6.3.4.1 *Trust*

For the variable trust, the factor anaylsis reveals two components. The measure for trust between the franchisor and the franchisee contains eight questions (see Table 16).

Rotierte Komponentenmatrix[a]

	Komponente	
	1	2
The cooperation is based on partnership basis	,844	,083
The exchange of information between us and the partners goes beyond the agreed scope	,746	,079
We trust the people with whom we have longterm relationship	-,002	,545
The majority of people trust other	-,024	,837
Most people are trustworthy	,044	,875
Most people behave cooperatively if they are trusted	,177	,759
There is great trust between ourselves and the partners	,908	,007
There is an atmosphere of openness and honesty between us and the partners	,919	,014

Extraktionsmethode: Hauptkomponentenanalyse.
Rotationsmethode: Varimax mit Kaiser–Normalisierung.

a. Die Rotation ist in 3 Iterationen konvergiert.

Table 16: Rotated Component Matrix, trust, identification of two components.

Viewing the rotated component matrix (see Table 16) the first two and the last two variables (A006_01,02,07,08) load strongly on the first factor. Accordingly the variables (A006_03,04,05,06) can be summarised in the second factor.
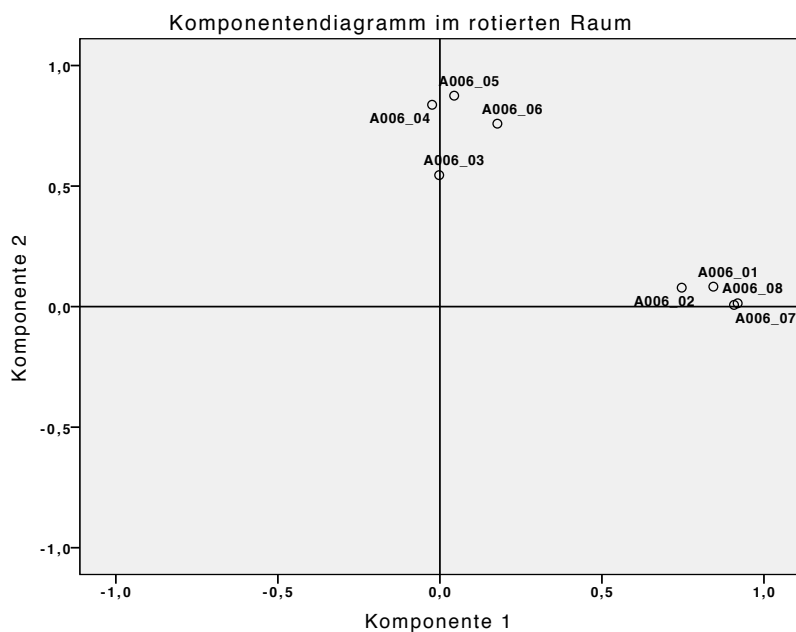
Figure 15: Factor plot, trust, identification of two components.

As Figure 15 exhibits, two components can be identified, when analysing all eight trust- variables.

Reliabilitätsstatistiken

Cronbachs Alpha	Anzahl der Items
,737	8

Table 17: Reliability analysis, Cronbachs Alpha, trust.

The reliability analysis of all eight trust- variables indicates a Cronbachs Alpha (α) of 0,737. (see Table 17) The value of Cronbachs Alpha (α) improves as the trust- variables are distinguished into two new variables, namely "trust 1,2,7,8" and "trust 3,4,5,6". For both of the new variables, Cronbachs Alpha (α) amounts to 0,876 (see Table 18).

Reliabilitätsstatistiken

Cronbachs Alpha	Anzahl der Items
,876	4

Table 18: Reliability analysis, Cronbachs Alpha, trust 1,2,7,8 and trust 3,4,5,6.

Komponentenmatrix[a]

	Komponente
	1
The cooperation is based on partnership basis	,861
The exchange of information between us and the partners goes beyond the agreed scope	,768
There is great trust between ourselves and the partners	,908
There is an atmosphere of openness and honesty between us and the partners	,916

Extraktionsmethode: Hauptkomponentenanalyse.
a. 1 Komponenten extrahiert

Komponentenmatrix[a]

	Komponente
	1
We trust the people with whom we have longterm relationship	,536
The majority of people trust other	,829
Most people are trustworthy	,878
Most people behave cooperatively if they are trusted	,779

Extraktionsmethode: Hauptkomponentenanalyse.
a. 1 Komponenten extrahiert

Table 19: Component matrix, trust 1,2,7,8.   Table 20: Component matrix, trust 3,4,5,6.

In Table 19 and Table 20 the factor loadings of the two newly conducted variables for trust are indicated. The first variable "trust 1,2,7,8" has high factor loadings for all questions. The main focus in the four questions is set on the trust between the franchisor and its partners. The variable "trust 3,4,5,6" shows for the question "We trust the people with whom we have a long-term relationship" a lower factor loading than the other three questions. The questions of variable "trust 3,4,5,6" concern the general believes about trusting people. Both variables are going to act as control variables in the logistic regression.

6.3.4.2   Coordination mechanisms

Another control variable incorporated into logistic regression deals with coordination mechanisms. The four questions, concerning the number of meetings and annual trainings, can form one variable, due to the results of factor analysis (see Table 21).

Komponentenmatrix[a]

	Komponente
	1
Average number of annual formal meetings between franchisor and franchisee	,708
Average of number of franchisor's visits to franchisee	,749
Annual training – number of days franchisor will train franchisee	,847
Annual training – number days franchisee's employees will be trained	,726

Extraktionsmethode: Hauptkomponentenanalyse.

a. 1 Komponenten extrahiert

Table 21: Component matrix, coordination mechanisms.

After a reliability analysis (see Table 22), which shows a Cronbachs Alpha (α) of 0,727, the four questions are subsumed to the variable "COORMECH".

Reliabilitätsstatistiken

Cronbachs Alpha	Anzahl der Items
,727	4

Table 22: Reliability analysis, Cronbachs Alpha, coordination mechanisms.

When COORMECH was conducted, the problem of the existence of outliers emerged.
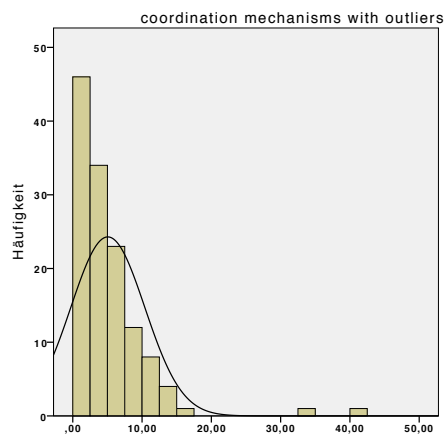
Figure 16: Histogramm, COORMECH.
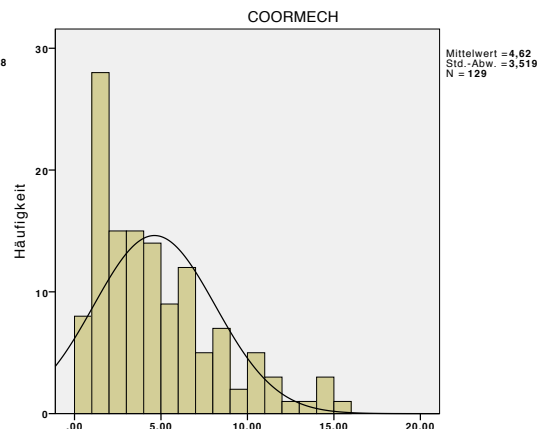
Figure 17: Histogramm, COORMECH without outliers.

In order to eliminate the outliers, some values were changed to missing values. Three outliers showed extremely high values. For instance, one respondent (case 76) stated an average number of annual formal meetings between the franchisor and the franchisee of 80. In case of annual trainings the answer scored 100. (see Figure 16 and Figure 17)

Statistiken

		coordination mechanisms with outliers	coordination mechanismis without outliers
N	Gültig	130	129
	Fehlend	7	8
Mittelwert		5,0558	4,6221
Median		3,8125	3,7500
Standardabweichung		5,33753	3,51902
Varianz		28,489	12,384

Table 23: Statistics, comparison of COORMECH with and without outliers.

After the elimination of outliers, by replacing missing values, the variance of the variable COORMECH changed from 28,489 to 12,384. The standard deviation is reduced from 5,33753 to 3,75. (see Table 23)

In summary the independent variables emerging from factor analysis are *Perceived environmental uncertainty* (PEUC), *Behavioural uncertainty* (BUC), *Know-how transferability* (KNOW HOW). The control variables conducted after factor analysis are *Trust in partners* (TRUST 1,2,7,8) and *Trust in people in general* (TRUST 3,4,5,6) and *Coordination mechanisms* (COORMECH).

Furthermore the variables for calculating the logistic regression are *the franchisor has a contractual option to buy the franchise operation sold by the franchisee* (A014_07b), *Duration of the franchise contract in years* (B014_01b), *Type of franchising* (B001b), *The contract specifies the tasks of the partners in great details* (DETAIL), and *Year when first franchised outlets was opened* (AGE ln). The statistics for the five independent variables and the five control variables can be read in Table 24 and Table 25.

Statistiken

		PEUC	BUC	Franchise contract length 0/1	KNOW HOW	Type of franchise
N	Gültig	127	127	119	137	127
	Fehlend	10	10	18	0	10
Mittelwert		3,7323	3,6273	,34	3,5796	1,64
Median		3,6667	3,6667	,00	3,5000	2,00
Standardabweichung		1,35956	1,24836	,477	1,30069	,483
Varianz		1,848	1,558	,228	1,692	,233

Table 24: Statistics, variables for logistic regression.

Statistiken

		The contract specifies the tasks of the partners in great details	Age In	trust1,2,7,8	trust3,4,5,6	coordination mech. no outliers
N	Gültig	100	121	136	136	129
	Fehlend	37	16	1	1	8
Mittelwert		5,17	2,0454	5,7960	4,6906	4,6221
Median		5,00	2,1972	6,0000	4,7500	3,7500
Standardabweichung		1,326	,96120	1,03914	1,17427	3,51902
Varianz		1,759	,924	1,080	1,379	12,384

Table 25: Statistics, variables for logistic regression.

In order to get a better overview of the above- mentioned variables and the corresponding hypotheses Table 26 provides a short summary.

Name	Variables for logistic regression	Description
Dependent Variable	A014_07b	the franchisor has a contractual option to buy the franchise operation sold by the franchisee (i.e. pre-emption)
Hypotheses:		
Perceived environmental uncertainty	PEUC	The sales at the outlet level is very fluctuating
H1		It is very difficult to predict the market development at the outlet level
		The economic environment in the local market is changing rapidly
Behavioural uncertainty	BUC	It is very difficult to measure the performance of the outlet manager (franchisee or manager)
H2		It is very difficult to control the behavior of the outlet manager (franchisees or managers)
		It is very difficult to assess the competencies and capabilities of the outlet manager (franchisee or manager)
Duration of franchise contract	B014_01b	Franchise contract length in years
H3		
Know-How tranferability	KNOW HOW	How difficult is it to transfer to franchisees -- brand name
H4		--marketing know how
		--organizational know-how
		--administrative know-how
		-- quality management know-how
		-- accounting know-how
		-- human resources know-how
		-- IT know-how
Type of franchising	B001b	Type of franchising
H5		
Control Variables:		
Detailed contract	A010_05	The contract specifies the tasks of the partners in great details
Experience of franchisor	B005_01c (Ln age)	Year when first franchised outlet was opened in Germany/Swi/Aut (age)
Trust	TRUST 1	The cooperation is based on partnership basis
		The exchange of information between us and the partners goes beyond the agreed scope
		There is great trust between ourselves and the partners
		There is an atmosphere of openness and honesty between us and the partners
	TRUST 2	We trust the people with whom we have longterm relationship
		The majority of people trust other
		Most people are trustworthy
		Most people behave cooperatively if they are trusted
Coordination mechanisms	COORMECH	Average number of annual formal meetings between franchisor and franchisee
		Average of number of franchisor's visits to franchisee
		Annual training - number of days franchisor will train franchisee
		Annual training -number days franchisee's employees will be trained

Table 26: List and description of variables for logistic regression

6.3.5 Regression Analysis

A logistic regression has been conducted for the dependent variable, "the franchisor has a contractual option to buy the franchise operation sold by the franchisee (i.e. pre-emption)" ("Der Franchisegeber hat vertragliche Optionsrechte bei Veräußerung des Franchisebetriebes durch den Franchisenehmer (z.B.: Vorkaufsrecht)."), and the variables in Table 26. The logistic regression is calculated with the method "enter". This means that all covariates are included in the regression in one block and that parameter estimates are created for each block. A logistic regression analysis is feasible, as the dependent variable is dichotomous.

Output of the logistic regression:

Zusammenfassung der Fallverarbeitung

Ungewichtete Fälle[a]		N	Prozent
Ausgewählte Fälle	Einbezogen in Analyse	82	59,9
	Fehlende Fälle	55	40,1
	Gesamt	137	100,0
Nicht ausgewählte Fälle		0	,0
Gesamt		137	100,0

Table 27: Summary of cases in the logistic regression.

The number of cases included in the analysis is 82 out of 137, which equals 59,9%. (see Table 27)

Codierung abhängiger Variablen

Ursprünglicher Wert	Interner Wert
No	0
Yes	1

Table 28: Dependent variable encoding, logistic regression.

Table 28 shows the coding for the dependent variable with 0="No" and 1="Yes".

In the following, "Block 0" or the "Beginning Block" is presented:

Klassifizierungstabelle[a,b]

			Vorhergesagt		
			-- the franchisor has a contractual option to...		Prozentsatz der Richtigen
Beobachtet			No	Yes	
Schritt 0	-- the franchisor has a contractual option to...	No	0	23	,0
		Yes	0	59	100,0
	Gesamtprozentsatz				72,0

a. Konstante in das Modell einbezogen.
b. Der Trennwert lautet ,500

Table 29: Classification Table, logistic regression.

According to Table 29 the number of accepted cases is 82. Without knowledge of the estimated regression coefficient all of the respondents would be assigned to the bigger

group (59). Further 72% of cases are classified correctly. The results from Block 1 show an improvement of this value to 73,2% (see Table 36).

Variablen in der Gleichung

		Regressionsk oeffizientB	Standardfehl er	Wald	df	Sig.	Exp(B)
Schritt 0	Konstante	,942	,246	14,686	1	,000	2,565

Table 30: Variables in the equation, logistic regression.

The odds ratio of the dependent variable is 59/23= 2,565 for the total sample. (see Table 30) In Table 30 the model is demonstrated, when containing only the constant, without any predictors. The regression coefficient B gives the logarithmised odds ratio, 0,942.

Variablen nicht in der Gleichung

			Wert	df	Sig.
Schritt 0	Variablen	PEUC	7,876	1	,005
		BUC	,002	1	,962
		B014_01b	3,991	1	,046
		KnowHow	1,706	1	,191
		B001b	,006	1	,940
		A010_05	,371	1	,543
		B005_01c	1,886	1	,170
		trust1	,319	1	,572
		trust2	3,743	1	,053
		COORMECH	3,200	1	,074
	Gesamtstatistik		15,739	10	,107

Table 31: Variables not in the equation, logistic regression.

Table 31 shows the situation before adding the independent variables to the model.

In the next part, „Block 1" is analysed. The method for the logistic regression is „Enter".

Omnibus-Tests der Modellkoeffizienten

		Chi-Quadrat	df	Sig.
Schritt 1	Schritt	18,642	10	,045
	Block	18,642	10	,045
	Modell	18,642	10	,045

Table 32: Omnibus Tests of Model Coefficients, logistic regression.

The difference in the information explained in the model, compared to Block 0, is significant with 0,045 (p<0,05). The value of chi-square (χ^2) is 18,642 (> $\chi^2(0,95;10)$=18,31). The degrees of freedom (df) show the number of parameters in the model. (see Table 32)

Modellzusammenfassung

Schritt	–2 Log– Likelihood	Cox & Snell R–Quadrat	Nagelkerkes R–Quadrat
1	78,678[a]	,203	,293

Table 33: Model summary, logistic regression.

The Nagelkerkes R- square is demonstrated in Table 33 and has a value of 0,293. Hence the explained variance is 29,3%. The -2 Log Likelihood amounts 78,678 and the Cox & Snell R square 0,203. (see Table 33)

Hosmer-Lemeshow-Test

Schritt	Chi-Quadrat	df	Sig.
1	7,500	8	,484

Table 34: Hosmer and Lemeshow test, logistic regression.

The Hosmer and Lemeshow test checks if the predicted values of the model differ significantly from the observed data. Therefore it is desirable to get a result, which is not significant (p>0,05). As the results in Table 34 indicate a significance of 0,484 (>0,05) the model seems to predict the data well.

Kontingenztabelle für Hosmer-Lemeshow-Test

		-- the franchisor has a contractual option to... = No		-- the franchisor has a contractual option to... = Yes		
		Beobachtet	Erwartet	Beobachtet	Erwartet	Gesamt
Schritt 1	1	6	5,660	2	2,340	8
	2	3	4,321	5	3,679	8
	3	5	3,491	3	4,509	8
	4	4	2,732	4	5,268	8
	5	1	2,107	7	5,893	8
	6	1	1,614	7	6,386	8
	7	0	1,176	8	6,824	8
	8	2	,930	6	7,070	8
	9	1	,609	7	7,391	8
	10	0	,361	10	9,639	10

Table 35: Contingency table for Hosmer Lemeshow test, logistic regression.

Table 35 presents the ten steps of the Hosmer Lemshow test with the observed and predicted frequencies.

Klassifizierungstabelle[a]

			Vorhergesagt		
			-- the franchisor has a contractual option to...		Prozentsatz der Richtigen
	Beobachtet		No	Yes	
Schritt 1	-- the franchisor has a contractual option to...	No	7	16	30,4
		Yes	6	53	89,8
	Gesamtprozentsatz				73,2

a. Der Trennwert lautet ,500

Table 36: Classification table, logistic regression.

Regarding Table 36 it is obvious that the groups are not equally distributed (23 versus 59). In this regression model 73,2 % (60 of 82 cases) of the franchisors holding an option contract were classified in the right group. As above- mentioned, the model of Block 0 had 72% of the cases classified correctly, which demonstrates an improvement in Block 1. However, the results for franchisors of not holding a contractual option are not very good. Only 30,4% of the cases are predicted correctly.

Variablen in der Gleichung

		Regressionsk oeffizientB	Standardfehl er	Wald	df	Sig.	Exp(B)
Schritt 1[a]	PEUC	-,518	,241	4,607	1	,032	,596
	BUC	-,026	,264	,010	1	,921	,974
	B014_01b	,926	,740	1,565	1	,211	2,524
	KnowHow	,343	,248	1,923	1	,166	1,410
	B001b	,112	,617	,033	1	,856	1,118
	A010_05	-,033	,241	,018	1	,892	,968
	B005_01c	-,491	,295	2,761	1	,097	,612
	trust1	-,499	,328	2,317	1	,128	,607
	trust2	-,205	,303	,460	1	,498	,814
	COORMECH	,057	,098	,334	1	,564	1,058
	Konstante	6,235	3,439	3,288	1	,070	510,479

a. In Schritt 1 eingegebene Variablen: PEUC, BUC, B014_01b, KnowHow, B001b, A010_05, B005_01c, trust1, trust2, COORMECH.

Table 37: Variables in the equation, logistic regression.

In Table 37 the regression coefficient B, the Wald statistics and the Exp (B) is summarized. This output shows the estimates for the coefficients for the predictors in the model. The Wald statistics, with a chi- square distribution, tests if the b- coefficient of one predictor is significantly different from zero. Exp (B) represents the odds ratio of each coefficient. Hence Exp (B) shows the change in odds, caused by a one- unit change in the predictor. The odds are defined as the probability of an event happening divided by the probability of that event not happening. The Exp (B) is the proportional change in odds. Therefore the interpretation of the Exp (B) is as follows: a value bigger than 1 indicates, that an increase in the predictor will increase the odds of the outcome happening. Hence a value smaller than 1 will decrease the odds, when the predictor increases. The only variable tested that results to be significant (p<0,05) is PEUC (perceived environmental uncertainty) with a value of 0,032. The Wald statistics for PEUC rises to 4,607. As the respondents change their answers by one unit on the seven point Likert scale, the probability ratio of the odds decreases by the factor 0,596. This negative relationship between the PEUC and the probability of the occurrence of an option clause in a franchising contract stays in contrast to hypothesis 1 (H1). In H1 the increase in PEUC was predicted to increase the likelihood of the usage of an option clause in a franchising contract. Consequently H1 is not confirmed, as the influence of PEUC on the possibility of the occurrence of an option clause is negatively related. The increase in one unit in PEUC nearly halves the odds of an option clause. The chance of having an option clause in a franchising contract decreases by 40,4% (1- Exp (B)) as PEUC increases by one unit. This result is surprising, as it reveals doubt to the real options argument, that higher uncertainty would lead to more investment via real options in order to maximise future opportunities.

The other variables miss the significance level (p<0,05). The variable B005_01c (experience of the franchisor) is the one exceeding the significance level at fewest, with a value of 0,097. The least significance is reported for the variable BUC (perceived behavioural uncertainty), with a value of 0,921. Hence the hypotheses 2-5 (H2- H5) show no significant result in the model.

Therefore the considerations, emerging from theory, can not be supported for franchising with the available data. Only H1 shows a significant influence on the dependent variable. Conversely to the theoretical predictions, a negative relationship between perceived environmental uncertainty and the likelihood of the occurrence of an option clause in a franchising contract is found.

Korrelationsmatrix

		Konstante	PEUC	BUC	B014_01b	KnowHow	B001b	A010_05	B005_01c	trust1	trust2	COORMECH
Schritt 1	Konstante	1,000	-,352	-,402	,074	-,057	-,378	-,464	-,134	-,443	-,454	-,164
	PEUC	-,352	1,000	-,066	,219	-,239	-,018	-,030	-,044	,376	-,131	,021
	BUC	-,402	-,066	1,000	,022	-,171	-,013	,277	-,030	,092	,056	,189
	B014_01b	,074	,219	,022	1,000	-,037	-,060	-,243	-,222	,013	-,071	-,164
	KnowHow	-,057	-,239	-,171	-,037	1,000	,036	,013	-,166	-,286	,233	-,088
	B001b	-,378	-,018	-,013	-,060	,036	1,000	,267	,014	-,122	,115	,037
	A010_05	-,464	-,030	,277	-,243	,013	,267	1,000	-,022	-,136	,139	-,047
	B005_01c	-,134	-,044	-,030	-,222	-,166	,014	-,022	1,000	,073	-,027	,064
	trust1	-,443	,376	,092	,013	-,286	-,122	-,136	,073	1,000	-,219	-,087
	trust2	-,454	-,131	,056	-,071	,233	,115	,139	-,027	-,219	1,000	,139
	COORMECH	-,164	,021	,189	-,164	-,088	,037	-,047	,064	-,087	,139	1,000

Table 38: Collinearity matrix, logistic regression.

In order to check for multicollinearity a collinearity matrix has been conducted. As all of the values in Table 38 are smaller than 0,8, the problem of multicollinearity is excluded.

Fallweise Liste[b]

		Beobachtet			Temporäre Variable	
Fall	Ausgewählter Status[a]	-- the franchisor has a contractual option to...	Vorhergesagt	Vorhergesagte Gruppe	Resid	ZResid
60	S	N**	,879	Y	-,879	-2,691
74	S	N**	,928	Y	-,928	-3,584
81	S	N**	,900	Y	-,900	-2,997

a. S = Ausgewählte, U = Nicht ausgewählte Fälle und ** = Falsch klassifizierte Fälle.
b. Fälle mit studentisierten Residuen größer als 2,000 werden aufgelistet.

Table 39: Case summary, residuals, logistic regression.

Table 39 shows the summary of the residuals of the logistic regression. Three cases were predicted to have an option clause in their contracts, but turn out to be wrongly classified. For instance case 60 was predicted to have an option clause in the contract (Y) with the probability 0,879. However, as the case was not right classified the residuals show a value of -0,879 (0- 0,879).

6.3.6 Concluding Remarks

The results of the logistic regression lend support to the real options argument that perceived environmental uncertainty influences the decision of managers to implement explicit option clauses in the franchising contract. However the increase in the perception of environmental uncertainty does not lead to a rise in the likelihood of the existence of explicit option clauses in a franchising agreement. Conversely, the increase in perceived environmental uncertainty minders the probability of the existence of an option clause. The other tested variables, concerning the perceived behavioural uncertainty, the duration of the franchise contract, the know- how transferability and the type of franchising show no significant results. Also the control variables, dealing with the elaborateness of the contractual agreement, the experience of the franchisor, trust and coordination mechanisms are not significant. Reasons for these insignificant results may be the problematic of applying real options considerations for joint ventures and licensing to franchising, the available dataset and sample size or the difficulty of measuring uncertainty. Interestingly, Folta and Miller (2002) found for buyouts in equity partnerships, that a high level of uncertainty decreases the likelihood of a buyout. Folta and Miller's (2002) underlying argument is that the resolution of uncertainty fosters decisions concerning commitment. The hypothesis of Folta and Miller (2002) assumes that the incentive to invest irreversible is rather low under conditions of high uncertainty. As there are less growth options under low levels of uncertainty, partner buyouts are more common. For franchising the statistical analysis of the available data reveal as well a negative relationship between perceived environmental uncertainty and the likelihood of the occurrence of an option clause. Higher perceived environmental uncertainty seems to decrease the incentive of fixing the right of pre- emption in an option clause in the franchising contract. However it is important to note that the introduced study is based upon data, which is limited in terms of sample size and geographical area (Germany). Further future research should also investigate the question if the existence of an explicit option clause in franchising agreements influences the perception of managers towards uncertainty.

7. Discussion of Results

Although the results of the statistical analysis reveal the significant influence of perceived environmental uncertainty (PEUC) on the likelihood of the occurrence of an explicit option clause in the franchising contract, the direction of this relation differs from the projected direction in hypothesis 1 (H1). H1: The higher the perceived environmental uncertainty, the higher is the likelihood of the usage of an option clause. The assumed positive relationship between PEUC and the likelihood of the usage of an option clause could not be approved with the available data. Conversely, the logistic regression analysis showed a negative relationship between those two variables. Therefore an increase of PEUC leads to a decrease in the likelihood of the usage of an option clause. In case of hypothesis 2 (H2: The higher the perceived uncertainty about the franchisee's capabilities and resources, the higher is the likelihood of the usage of an option clause.), which deals with the behavioural uncertainty (BUC), the analysis of the available data shows no significant result. One major problem, when drawing analogies from real options research in joint ventures and licensing towards franchising, is the divergence in defining uncertainty in the different studies. The distinction between exogenous and endogenous uncertainty (see Folta 1998, Cuypers/ Martin 2010) seems feasible, however, the uncertainties analysed in this thesis do not coincide exactly with those definitions. For instance, the questionnaire (see Chapter 12, "Appendix") deals with the franchisors' perspective of external uncertainties and not with the subjective analysis of exogenous uncertainties. A mathematical framework would be required in order to investigate the effects of exogenous uncertainties on the likelihood of the occurrence of an option clause. Especially BUC may be rather categorized as a form of endogenous uncertainty. Cuypers and Martin (2010) already stated that the use of real options logic might be inappropriate, when a firm is confronted with endogenous uncertainty. Cuypers and Martin (2010) argue, that the underlying assumptions of real options theory, sourcing in financial options theory, do not include the idea that the firm itself can resolve uncertainty. In financial option theory, the possibility of the firm to make investments, negotiate and create future opportunities is not taken into account. Therefore an analysis of the impact of exogenous uncertainties on the occurrence of an option clause in franchising contracts should be a task for future research, as the data for the empirical study (see Chapter 12, "Appendix") is rather concerned with firm specific uncertainties. The third hypothesis (H3: The longer the duration of a franchising agreement, the higher is the likelihood of the usage of an option clause.) could not be supported by the results. The

presumption of H3, that longer time horizons lead to more valuable options sources in financial options theory. In this context, franchising was assumed in the thesis to represent a sequential form of market entry and was proclaimed to act like a European call option. However for franchising, in opposition to joint ventures or licensing, the bargaining power during the negotiation process is disposed uneven. As the data of the empirical study reveals, most of the franchising contracts are fixed up to five or ten years. Although the franchisee has the right to decide at which point in time the disposal of the franchise should take place, the franchisor has ex ante the bargaining power to decide about the duration of the agreement. Further the decision to implement an option clause (e.g. with the right of pre-emption) in the franchising contract can be assumed to be initiated rather through the franchisor than the franchisee. Hence the ex ante fixed duration of franchising contracts, as well as the greater bargaining power of the franchisor might be reasons for the non- affirmation of H3.

Concerning the transfer of know-how hypothesis 4 (H4) predicted that a low level of know-how transferability should increase the likelihood of the usage of an option clause. The problem of this hypothesis is, that the argumentation towards know-how as a driving factor for the option clause occurrence is mostly based in resource based view (RBV). Following real options logic, a low level of know-how transferability embodies a higher degree of uncertainty, which should enable a greater chance for learning and should offer future opportunities to the firm. However, in practice, real options logic seems to ignore one essential factor for firms, which are using their know-how as a major instrument to gain a competitive advantage: control. Basically the same problem occurs when hypothesis 5 (H5) is not confirmed. H5: Firms operating in services have a greater likelihood of the usage of an option clause, than firms operating in production and distribution. The intangibility in respect to service firms, another RBV argument, leads to the above-mentioned desire of the firm to obtain control. At this point real options theory is reaching its limits and it is feasible to combine the real options approach with other theoretical frameworks (e.g. transaction costs economics, RBV) in order to better understand the incentives of franchising firms to implement explicit option clauses in their contracts. Besides the combination of approaches, a broader set of data on international franchising companies might help to test the most basic real options assumptions. Although the real options approach seems to be promising in regard to understand strategic decision making processes, the crucial role of control should not be forgotten. Therefore an extension of the

real options theory towards an analysis of different uncertainties and the reactions of managers, when confronted with those uncertainties, is recommendable.

8. Conclusion

In summary, the main principles of financial and real options theory were presented, the application of the basic real option concepts in alliances (joint ventures, licensing) was demonstrated and the theoretical attempt to use real options approach in franchising was conducted. Further the, from theory, derived hypotheses were statistically tested with a dataset using a questionnaire, answered by German franchising firms.

The aim of this thesis was to identify factors, which influence the likelihood of the usage of an option clause in a franchising contract. The main prediction of real options approach is the relevant influence of uncertainty on the managerial decision making process and on strategic investment decisions. The idea, that real options can be useful instruments in order to minimize downside risk of investments, while maximizing upside opportunities, offers new perspectives of considering problems, such as entry mode decisions, investment strategies and project's valuation. Although research investigated the application of the real options approach in the field of joint ventures (Kogut 1991, Chi/ McGuire 1996, Folta 1998, Reuer/ Tong 2005, etc.) and licensing (Aulakh/ Jiang/ Pan 2009, etc.), the extension towards franchising is new. In order to create testable hypotheses, analogies were drawn from real options considerations in alliances to franchising. Therefore franchising was assumed to represent a sequential form of market entry, with the aim of deferring immediate investment, hence a real option to defer. Further franchising can be seen as an option to expand, learn and grow. Beside the need to investigate the presumption, that franchising can be perceived as a real option, this thesis focused on the explicit option clauses in franchising contracts. Therefore the option clause is the legally binding implementation of a real option. The existence of an explicit option clause in the franchising contract has been investigated from the franchisors perspective. The only factor with a significant influence on the likelihood of the usage of an option clause was the perceived environmental uncertainty. Surprisingly a negative relationship between perceived environmental uncertainty and the occurrence of an option clause is indicated by the available data.

However, the real options approach could help to understand decision- making processes and managerial strategic considerations under uncertainty. The arising flexibility can add

value to the firm, as the exploitation of future opportunities is facilitated through the possibility of gaining new information.

8.1   Future Research Perspectives

Due to the fact, that the application of real options theory to franchising is considerably new, a lot of future research questions emerge. As this thesis represents an attempt in order to combine real options logic and franchising, a major research desideratum on this field remains.

The importance of approving the most basic real options principles in regard to franchising is pre-eminent. Therefore it would be necessary to test whether franchising can be seen as a real option. Further the question if a franchise agreement creates growth options should be tested, by generating new mathematical frameworks. Besides the mathematical examination of this problem, qualitative research should give an insight of the managers' incentives, when considering franchising as an entry mode. The question, if managers perceive franchising as a real option, would help to investigate the active utilisation of real options approach in management. In addition to the managers' perception, the organisational implications for choosing real options projects to invest should be studied. Another important issue in respect to the general assumption emerging from real options theory, is the idea, that real options add value to the firm. Reuer, Tong and Peng (2006) tested for IJVs, if those IJVs provide valuable growth options. Analysis of the valuation of a franchise agreement using real options theory is recommendable, before dealing with the question if the franchise agreement, as a real option, adds value to the firm. In more detail tests would be required to investigate whether option clauses in franchising contracts procure additional value, as presumed by real options theory. In case of an option to acquire clause, the evaluation if the value of an acquisition is influenced by the existence of an explicit option clause should be tested.

Future research should focus as well on the franchisee. The intentions, advantages and disadvantages of the franchisee for signing a contract with an option clause would be of interest. As this thesis deals with basic considerations of real options principles only from the franchisor's perspective an extension to the franchisee- side (put option) is essential. Consequently the combined franchisor- franchisee motives in writing franchising contracts should be examined following a real options approach. Research findings concerning the franchisors' and franchisees' motives could give a hint to an additional issue. The reasons,

why firms opt for selling call or put options ex ante, with an explicit option clause in the franchising contract, rather than negotiating conditions ex post. For understanding such a problem, a connection in research of the practice of explicit call options in franchising contracts and the general view of franchising as a real option would be advantageous. Moreover, the comparison of different market entry modes as real options (joint ventures, licensing, franchising, etc.) or an investigation of the different use of option clauses in those entry modes can be a task for future researchers.

Although real options approach seems to be promising in explaining problems of managerial decision making, real options theory should not be apprehended as a self-sufficient tool. The combination of real options approach and existing theories, such as transaction costs (TC) economics, or the resource- based view (RBV) is more feasible and creates an extensive framework for future development opportunities.

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12. Appendix

EIGENTUMSSTRATEGIE VON FRANCHISE-UNTERNEHMEN IN DEUTSCHLAND

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Unterstützt vom
Deutschen Franchise-Verband (DFV)
(Geschäftsführer: Torben Leif Brodersen*)*

Firmenname und Adresse: (optional!)

Tel. Nr.
E-Mail:

Ziel des Fragebogens ist es, die Einflussfaktoren bei der Wahl der Eigentumsstrategie von Franchiseunternehmen aus der Sicht des Franchisegebers zu untersuchen.

Grundsätzlich sind nach Möglichkeit alle gestellten Fragen zu beantworten. Sollten Sie auf eine Frage keine Antwort wissen, so versuchen Sie bitte die bestmögliche Antwort zu finden. Sie finden den Fragebogen auch unter folgendem Link: http://im.univie.ac.at/Windsperger/news/?no_cache=1. Ferner können Sie auch eine Online-Version ausfüllen: https://www.soscisurvey.de/muf2010/
(Passwort: umfrage2010). Für etwaige Probleme beim Ausfüllen des Fragebogens stehe ich Ihnen gerne persönlich zur Verfügung (Email: josef.windsperger@univie.ac.at oder 00431427738180).

*Ich möchte mich für Ihre freundliche Unterstützung schon im Voraus recht herzlich bedanken. Die Untersuchungsergebnisse werden im Rahmen einer **Tagung des Deutschen Franchise-Verbandes** präsentiert werden, zu der Sie eingeladen werden. Ferner veröffentlichen wir nach Auswertung der Ergebnisse einen Projektbericht, der Ihnen übermittelt wird.*

Im Folgenden nehmen Sie zu Aussagen über verschiedene Bereiche Ihrer Unternehmung Stellung. Bitte kreuzen Sie jenes Feld an, das aus Ihrer Sicht (als Franchisegeber) der Unternehmenssituation am besten entspricht.

Hier ist ein BEISPIEL:	Trifft überhaupt nicht zu	Trifft teilweise zu	Trifft vollständig zu
Unser Markenname ist sehr wichtig für den Systemerfolg.	1 ☐ 2 ☐ 3 ☐	4☐ 5☐ 6☐	7☐

Wenn Sie der Meinung sind, dass der Markenname sehr wichtig für den Erfolg ist, dann kreuzen/klicken Sie das ganz rechte Feld *‚7' (Trifft vollständig zu)* an. Umkehrt ist das ganz linke Feld *‚1' (Trifft überhaupt nicht zu)* anzukreuzen, wenn Sie der Auffassung sind, dass der Markenname nicht wichtig für den Erfolg ist.

A. Spezifische Fragen zur Wahl der Eigentumsstrategie des Franchisegebers			
In welchem Ausmaß entstehen dem *FRANCHISENEHMER am Beginn der Vertragsbeziehungen* **Investitionsaufwendungen?**	Überhaupt nicht	Teilweise	In sehr großem Ausmaß
Aufwendungen für Schulungen am Beginn der Vertragsbeziehung.	1 ☐ 2 ☐ 3 ☐	4☐ 5☐ 6☐	7☐
Aufwendungen für spezifischen technischen und organisatorischen Support durch den Franchisegeber.	1 ☐ 2 ☐ 3 ☐	4☐ 5☐ 6☐	7☐
Aufwendungen für die Ausstattung des Standortes am Beginn der Vertragsbeziehung.	1 ☐ 2 ☐ 3 ☐	4☐ 5☐ 6☐	7☐

Alle erhobenen Daten werden streng vertraulich behandelt und nur in aggregierter Form verwendet. Anhand des Datenmaterials können keine Rückschlüsse auf einzelne Unternehmen gezogen werden.   *1*

In welchem Ausmaß entstehen dem *FRANCHISEGEBER am Beginn der Vertragsbeziehung* Investitionsaufwendungen?	Überhaupt nicht			Teilweise			In sehr großem Ausmaß
Aufwendungen für Franchisenehmer-Schulungen am Beginn der Geschäftsbeziehung	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Aufwendungen für technische Unterstützung des Franchisenehmers am Beginn der Vertragsbeziehung	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Aufwendungen für den Aufbau der Organisation des lokalen Standortes	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

**Wenn Sie als Franchisegeber expandieren wollen,
können Sie folgende EIGENTUMSSTRATEGIEN wählen:**

(a) Eröffnung neuer Franchisenehmer-Standorte und/oder (b) neuer eigener Filialstandorte.
Bei der Wahl von Franchisenehmer-Standorten können Sie zwei Strategien unterscheiden:

- **Single-unit Strategie** (der Franchisenehmer ist Eigentümer eines Standortes)
- **Multi-unit Strategie** (der Franchisenehmer ist Eigentümer von mindestens zwei Standorten)

Worin sehen Sie als Franchisegeber (FG) die Vorteile durch Multi-Unit-Franchising (MUF) im Vergleich zum Single-Unit-Franchising (SUF)?	Großer Vorteil durch Single-Unit-Franchising			Kein Unterschied zwischen MUF und SUF		Großer Vorteil durch Multi-Unit-Franchising	
Größeres lokales Marktwissen	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Effizientere lokale Serviceleistungen	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Größeres Unternehmenswachstum	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Größere administrative Fähigkeiten	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Mehr organisatorische Innovationen im Franchisesystem	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Schnellere Marktdurchdringung	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Effizienteres lokales Personalmanagement	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Bessere Qualitätskontrolle	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Mehr Produktinnovationen	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Effizienterer IT-Einsatz im Franchisesystem	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Effizienterer Know-how-Transfer zwischen der Zentrale und den lokalen Partnern	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Bessere Zusammenarbeit zwischen Zentrale und den lokalen Partnern	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Effizientere Kontrolle der lokalen Standorte	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Größere Finanzierungsmöglichkeiten bei der Eröffnung neuer Standorte	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Geringere Finanzierungskosten	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Nehmen Sie bitte zu folgenden Fragen als Franchisegeber Stellung:	Trifft überhaupt nicht zu			Trifft teilweise zu			Trifft vollständig zu
Unser Markenname ist sehr stark im Vergleich zu unseren Konkurrenten.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Die Qualität unseres Franchisesystems hat einen sehr guten Ruf.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Unser Franchisesystem ist sehr anerkannt im Vergleich zu unseren Konkurrenten.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
Unser Markenname ist sehr wichtig, um einen Wettbewerbsvorteil zu erzielen.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

2

Nehmen Sie bitte aus Ihrer Sicht zu folgenden Aussagen Stellung:	Trifft überhaupt nicht zu	Trifft teilweise zu		Trifft vollständig zu
Es herrscht großes Vertrauen zwischen uns und den Partnern.	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Es herrscht eine Atmosphäre von Offenheit und Ehrlichkeit zwischen uns und den Partnern.	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Der Informationsaustausch zwischen uns und den Partnern geht über das vereinbarte Ausmaß hinaus.	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Die Zusammenarbeit beruht auf partnerschaftlicher Basis.	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Personen, denen wir vertrauen, sind jene, mit denen wir schon eine längere Beziehung aufgebaut haben.	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Die meisten Menschen vertrauen den Anderen.	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Die meisten Menschen sind vertrauenswürdig.	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Die meisten Menschen verhalten sich kooperativ, wenn man ihnen vertraut.	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐

Wie schwierig ist das Know-how des Franchisegebers auf den Franchisenehmer in den folgenden Bereichen übertragbar?	Sehr leicht zu übertragen	Teilweise übertragbar		Sehr schwierig zu übertragen
Markenname	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Marketing-Know-how	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Organisatorisches Know-how	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Administratives Know-how	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Qualitätsmanagement-Know-how	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Controlling-Know-how	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Human Resources-Know-how	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
IT-Know-how	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐

In welchem Ausmaß haben Sie im letzten Jahr die folgenden Ziele realisiert?	1-Viel schlechter als geplant	4-ca. gleich wie geplant		7-Viel besser als geplant
Einsparungen bei den Verwaltungskosten	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Systemwachstum	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Bessere Anpassung des Produkt- bzw. Dienstleistungs-programmes an die Kundenwünsche	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Effizientere Koordination zwischen Zentrale und lokalem Standorten	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Verringerung der Kosten	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Steigerung der Erträge	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Zunahme der Innovationen	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Einsparungen bei den Koordinations- und Kontrollkosten	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Höhere Qualität der angebotenen Produkte	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Gewinnwachstum	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐

Worin sehen Sie als Franchisegeber die Vorteile durch Franchising im Vergleich zu eigenen Filialbetrieben?	1-großer Vorteil durch Franchising	4-kein Unter-schied		7-großer Vorteil durch eigene Filialen
Größeres lokales Marktwissen	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Bessere Qualitätskontrolle	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Mehr Innovationen	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Geringere Finanzierungskosten bei Expansion	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Größere administrative Fähigkeiten	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐
Effizienteres Human Resources Management	1☐ 2☐ 3☐	4☐	5☐ 6☐	7☐

3

Der Franchisevertrag kann die verschiedenen Aufgabenbereiche der Franchisebeziehung (wie z. B. Werbung, Produkt- bzw. Dienstleistungsangebot, Betriebsmittelbeschaffung, Festlegung der Verkaufspreise, Ausbildung und Anstellung von Mitarbeitern) durch **SPEZIFISCHE RECHTE und ENTSCHEIDUNGSRECHTE** regeln.

Spezifische Rechte geben im Vertrag genau an, wer unter bestimmten Umständen was zu tun hat (wie z. B. welches Werbematerial bei bestimmten Events zu verwenden ist).
Entscheidungsrechte geben im Vertrag genau an, wer über einen bestimmten Sachverhalt zu entscheiden hat (wie z. B. wer über den Einsatz von Werbemaßnahmen oder über die Ausbildung der Mitarbeiter zu entscheiden hat).

Nehmen Sie bitte aus Ihrer Sicht (als Franchisegeber) zu folgenden Aussagen Stellung:	Trifft überhaupt nicht zu		Trifft teilweise zu			Trifft Vollständig zu
Die Aufgabenbereiche des Franchisegebers werden durch ENTSCHEIDUNGSRECHTE im Vertrag sehr detailliert geregelt.	1 ☐ 2 ☐ 3 ☐		4 ☐	5 ☐ 6 ☐		7 ☐
Die Aufgabenbereiche des Franchisegebers werden durch SPEZIFISCHE RECHTE im Vertrag sehr detailliert geregelt.	1 ☐ 2 ☐ 3 ☐		4 ☐	5 ☐ 6 ☐		7 ☐
Die Aufgabenbereiche des Franchisenehmers werden durch ENTSCHEIDUNGSRECHTE im Vertrag sehr detailliert geregelt.	1 ☐ 2 ☐ 3 ☐		4 ☐	5 ☐ 6 ☐		7 ☐
Die Aufgabenbereiche des Franchisenehmers werden durch SPEZIFISCHE RECHTE im Vertrag sehr detailliert geregelt.	1 ☐ 2 ☐ 3 ☐		4 ☐	5 ☐ 6 ☐		7 ☐
Die Zusammenarbeit zwischen uns und den Franchisepartnern ist im Vertrag sehr detailliert geregelt.	1 ☐ 2 ☐ 3 ☐		4 ☐	5 ☐ 6 ☐		7 ☐

Nehmen Sie bitte aus Ihrer Sicht (als Franchisegeber) zu folgenden Aussagen Stellung:	Trifft überhaupt nicht zu	Trifft teilweise zu			Trifft vollständig zu
Die Absatzmenge auf den lokalen Standorten ist starken Schwankungen unterworfen.	1 ☐ 2 ☐ 3 ☐	4 ☐	5 ☐ 6 ☐		7 ☐
Es ist sehr schwierig, die Marktentwicklung der lokalen Standorte zu prognostizieren.	1 ☐ 2 ☐ 3 ☐	4 ☐	5 ☐ 6 ☐		7 ☐
Es ist sehr schwierig, das Verhalten des Standort-Managers (Franchisenehmer oder Geschäftsführer) zu kontrollieren.	1 ☐ 2 ☐ 3 ☐	4 ☐	5 ☐ 6 ☐		7 ☐
Es ist sehr schwierig, die Leistungen des Standort-Managers (Franchisenehmer oder Geschäftsführer) zu messen.	1 ☐ 2 ☐ 3 ☐	4 ☐	5 ☐ 6 ☐		7 ☐
Es ist sehr schwierig, die Kompetenzen und Fähigkeiten des Standortmanagers (Franchisenehmer oder Geschäftsführer) zu ermitteln.	1 ☐ 2 ☐ 3 ☐	4 ☐	5 ☐ 6 ☐		7 ☐
Das wirtschaftliche Umfeld auf den lokalen Märkten ändert sich rasch.	1 ☐ 2 ☐ 3 ☐	4 ☐	5 ☐ 6 ☐		7 ☐
Die Umsatzprognosen bezüglich der Entwicklung der lokalen Standorte sind normalerweise sehr präzise.	1 ☐ 2 ☐ 3 ☐	4 ☐	5 ☐ 6 ☐		7 ☐
Manchmal gibt der Franchisenehmer relevante Informationen nicht an den Franchisegeber weiter.	1 ☐ 2 ☐ 3 ☐	4 ☐	5 ☐ 6 ☐		7 ☐
Franchisenehmer müssen regelmäßig kontrolliert werden, um sicherzustellen, dass sie ihre Aufgaben erfüllen.	1 ☐ 2 ☐ 3 ☐	4 ☐	5 ☐ 6 ☐		7 ☐

Der Franchisevertrag enthält folgende Bestimmungen:	Ja	Nein
Der Franchisenehmer darf neben dem Produktprogramm des Franchisegebers auch andere Produkte/Dienstleistungen vertreiben.	☐	☐
Der Franchisenehmer muss mehr als 50 % der Betriebsmittel/ Vorprodukte vom Franchisegeber oder von vorgegebenen Lieferanten beziehen.	☐	☐
Der Franchisegeber legt die Verkaufspreise für die vom Franchisenehmer angebotenen Produkte/Dienstleistungen unverbindlich fest.	☐	☐
Das Marktgebiet des Franchisenehmers ist geografisch abgegrenzt (Gebietsschutz-Klausel).	☐	☐
Der Franchisenehmer hat einen exklusiven Kundenschutz.	☐	☐
Der Franchisevertrag enthält eine Wettbewerbsklausel für die Geschäftstätigkeit nach Ablauf/Kündigung des Vertrages.	☐	☐
Der Franchisegeber ist Eigentümer oder Hauptmieter des Standortes des Franchisebetriebes.	☐	☐
Der Franchisegeber hat vertragliche Optionsrechte bei Veräußerung des Franchisebetriebes durch den Franchisenehmer (z.B. Vorkaufsrecht).	☐	☐
Der Franchisebetrieb ist vererbbar.	☐	☐

In welchem Ausmaß entscheidet der Franchisenehmer über folgende Bereiche?	Überhaupt nicht		teilweise				In sehr großem Ausmaß
Durchführung von Investitionsprojekten am lokalen Standort	1 ☐	2 ☐ 3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	
Finanzierung von lokalen Investitionsprojekten	1 ☐	2 ☐ 3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	
Auswahl von Lieferanten	1 ☐	2 ☐ 3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	
Anstellung von Mitarbeitern am lokalen Standort	1 ☐	2 ☐ 3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	
Ausbildung der Mitarbeiter am lokalen Standort	1 ☐	2 ☐ 3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	
Produkt- bzw. Dienstleistungsangebot am lokalen Markt	1 ☐	2 ☐ 3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	
Verkaufspreise am lokalen Standort	1 ☐	2 ☐ 3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	
Einsatz von Werbe- und Verkaufsförderungsmaßnahmen	1 ☐	2 ☐ 3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	
Ausstattung des Franchisenehmer-Standortes	1 ☐	2 ☐ 3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	
Beschaffung der Betriebsmittel/Vorprodukte	1 ☐	2 ☐ 3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	
Einführung neuer Produkte am lokalen Markt	1 ☐	2 ☐ 3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	
Einsatz des Controllingsystems am lokalen Standort	1 ☐	2 ☐ 3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	

B. Bitte machen Sie folgende Angaben zu Ihrem Unternehmen:

Welche Art von Franchising betreibt Ihr Unternehmen?

☐ Produktion ☐ Vertrieb ☐ Dienstleistung

Wie groß ist die Anzahl der firmeneigenen **Filialstandorte** in Deutschland im Jahre 2009?

Anzahl: _____

Wie groß ist die Anzahl der **Franchisenehmer-Standorte** in Deutschland im Jahre 2009?

Anzahl:

Wie groß ist die **Anzahl der Franchisenehmer** in Deutschland im Jahre 2009?

Anzahl:

Wann wurde der erste Franchisebetrieb in Deutschland eröffnet?
Jahr:

Geben Sie die Anzahl der Mitarbeiter in der Systemzentrale an?	Anzahl:

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Wie hoch ist die **fixe Einstiegsgebühr** des Franchisenehmers zu Beginn der Vertragsbeziehung (in EUR)? Betrag in EUR: _____
Wie hoch sind die **durchschnittlichen Investitionskosten** (*ohne Einstiegsgebühr*) des Franchisenehmers am Beginn der Vertragsbeziehung? Betrag: _____
Wovon hängt die laufende **variable Gebühr** ab? ☐ Fixer Betrag ☐ Umsatz ☐ Gewinn ☐ Andere Größen: Welche? _____
Wie hoch ist diese laufende **variable Gebühr**? Prozentsatz : _____   oder Betrag: _____
Wird zusätzlich eine Werbe- bzw. Marketinggebühr verrechnet? **Ja** ☐   **Nein** ☐   Wovon hängt diese ab? ☐ Umsatz   ☐ Andere Größen: Welche? _____
Wie hoch ist diese **Werbe- bzw. Marketinggebühr**? Prozentsatz _____ oder Betrag: _____
Wie lange ist die vertragliche **Laufzeit** des Franchisevertrages? Anzahl der Jahre:
Wie oft finden **formelle Treffen** zwischen Franchisegeber und Franchisenehmer (wie Tagungen, Ausschüsse) pro Jahr statt? **Anzahl:**
Wie oft finden **Besuche** des Franchisegebers beim Franchisenehmer statt? **Anzahl:** _____
Laufende Schulung: An wie vielen Tagen pro Jahr wird der Franchisenehmer vom Franchisegeber besucht? Anzahl der Tage: _____
An wie vielen Tagen pro Jahr werden die Mitarbeiter des Franchisenehmers geschult? Anzahl der Tage: _____
Grundschulung: Wie viele Tage dauert die Grundausbildung und praktische Schulung des Franchisenehmers vor Eröffnung eines Franchisebetriebes? Anzahl der Tage: _____

Wir möchten uns für Ihre freundliche Unterstützung recht herzlich bedanken. Bei Interesse übermitteln wir Ihnen nach Abschluss der Untersuchung gerne die Ergebnisse. Bitte geben Sie hier Ihre **Email-Adresse** an:

Bitte übermitteln Sie den ausgefüllten Fragebogen an:

13. Abstract (English)

In this thesis a first attempt is made in order to apply the real options approach to franchising. The aim of the theoretical and empirical investigations is to identify driving factors for the existence of real option clauses in franchising contracts.

Originating in financial options theory, the real options approach bares on essential advantage: the integration of uncertainty to the strategic framework. As firms are confronted with differing uncertainties and an uncertain future, options theory represents a way to embed uncertainty as an opportunity. It is not the uncertainty per se, but rather the cognition that uncertainty involves the possibility of flexibility, which adds value to the firm. An option is defined as the right, but not the obligation, to buy or sell a specific asset on or before a specified point in time to ex ante précised conditions. The option holder profits from the opportunity to decide flexibly. This re- and proactive approach adds value to the firm, as the integration of newly gathered information can ameliorate the decision making process. In opposition to financial options, the underlying asset of real options represents a potential physical or intellectual investment. One basic prediction of the real option approach, in respect to strategic management, is that the firm's value is not only determined by its present or intrinsic value but also by the additional time value, which can be gained by recognizing and exploiting future opportunities for the firm. The options value is supposed to change over time, following a random walk, and is assumed to be higher when the volatility of the underlying asset's value increases.

In dependence on conducted research for joint ventures as real options (Kogut 1991, Chi/ McGuire 1996, Folta 1998, Reuer/ Tong 2005, etc.), franchising is going to be assumed as a form of sequential market entry, and therefore operates as a real option to defer immediate acquisition of a local partner. Following this logic franchising might be seen as a real option to expand, hence a real growth option. Despite the need to analyse franchising itself as a real option, which would require a wider range of available data and qualitative research, this thesis focuses specifically on real option clauses in franchising contracts. The option clause stipulates the right to the option. In respect to real option theory, option clauses, such as for instance an option-to- acquire-clause, represent the contractual recorded arrangement between the franchising partners. The option holder obtains the right but not the obligation to exploit future opportunities. Therefore the option clause can be seen as the legally binding implementation of a real option. Consequently the clause is an instrument for a firm to assure a claim on future opportunities. The occurrence or absence of such option clauses in franchising contracts might give hints to the intentions of the

contractual partners, as well as have implications on partners' incentives.

The thesis concentrates on explicit option clauses in franchising contracts, and is structured in a theoretical and an empirical part. The theoretical part provides an overview of the most important real options principles and presents hypotheses, derived in analogy to real options considerations in alliances (joint ventures, licensing). In the second part of the thesis, the hypotheses are tested statistically. The data for the statistical analysis stems from the research project „Eigentumsstrategie von Franchise- Unternehmen in Deutschland", conducted by ao. Univ.-Prof. Mag. Dr. Josef Windsperger. A questionnaire has been given to German franchising firms in order to analyse the factors influencing the choice of ownership strategy of the franchisor. The results show a negative relationship between the likelihood of the usage of an option clause and perceived environmental uncertainty. Hence the hypotheses, derived from theory, could not be supported for franchising with the available data. However, the real options approach seems to be a promising concept to explain managerial strategy and investment decisions, as real options theory incorporates uncertainty as an opportunity into the model. Future research should focus in particular on combined approaches and should conceive real options approach as an extension to theories, such as transaction cost theory or resource- based view.

14. Abstract (German)

Die vorliegende Diplomarbeit stellt einen ersten Versuch dar, den Realoptionsansatz auf Franchising anzuwenden. Das Ziel der theoretischen und empirischen Untersuchung ist es, ausschlaggebende Faktoren für die Existenz von Realoptionsklauseln in Franchising Verträgen zu identifizieren.

Der Realoptionsansatz, welcher seinen Ursprung in der Finanzoptionstheorie hat, beinhaltet einen essentiellen Vorteil: die Integration von Unsicherheit in das strategische Model. Nachdem Unternehmen mit verschiedenen Arten von Unsicherheit und einer unsicheren Zukunft konfrontiert sind, eröffnet die Optionstheorie einen Weg die Unsicherheit als Chance in das Model einzugliedern. Hierbei ist nicht die Unsicherheit per se das wertsteigernde Element für ein Unternehmen, sondern vielmehr die Erkenntnis, dass Unsicherheit verbunden ist mit der Möglichkeit auf Flexibilität. Eine Option ist definiert als das Recht, und nicht die Pflicht, einen bestimmten Posten beziehungsweise Vermögenswert zu kaufen oder zu verkaufen, an einem oder vor einem im Voraus bestimmten Zeitpunkt, zu ex ante spezifizierten Konditionen. Der Optionsinhaber profitiert von der Möglichkeit flexibel entscheiden zu können. Dieser auf Reaktion und Aktion

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gerichtete Ansatz verschafft dem Unternehmen zusätzlichen Wert, da die Integration von neu gewonnenen Wissen und Informationen den Entscheidungsprozess verbessert. Die der Option zugrundeliegende Anlage stellt bei Realoptionen, im Gegensatz zu Finanzoptionen, ein potentielles physisches oder intellektuelles Investment dar. Eine der grundsätzlichen Annahmen des Realoptionsansatzes, in Bezug auf strategisches Management, ist jene, dass der Unternehmenswert nicht nur durch den gegenwärtigen Wert, sondern zusätzlich durch den zukünftigen Wert definiert ist. Dieser zukünftige Wert kann vom Unternehmen erlangt werden, durch das Erkennen und das Nutzen von zukünftigen Chancen. Es wird angenommen, dass der Wert einer Option sich über die Zeit verändert, und zwar einer Zufallsbewegung folgend, die als Random- Walk bezeichnet wird. Einer weiteren Annahme zufolge steigt der Wert einer Option mit der Erhöhung der Volatilität des Wertes der zugrundeliegenden Anlage.

In Anlehnung an bereits durchgeführte Forschungen, Joint Ventures (Kogut 1991, Chi/ McGuire 1996, Folta 1998, Reuer/ Tong 2005, etc.) betreffend, wird Franchising als eine Form von sequentiellem Markeintritt gesehen, und repräsentiert somit eine Realoption, die unmittelbare Akquisition eines lokalen Partner zu verschieben. Dieser Logik folgend, kann Franchising als Realoption zu Expandieren wahrgenommen werden, also eine Realoption zu Wachsen. Ungeachtet der Notwendigkeit Franchising an sich als Realoption zu analysieren, was eine ausgedehntere Menge an verfügbaren Daten und qualitative Forschung erfordern würde, beschäftigt sich die vorliegende Diplomarbeit speziell mit Realoptionsklauseln in Franchising Verträgen. Die Realoptionsklausel schreibt das Recht auf die Option fest. In Bezug auf die Realoptionstheorie repräsentieren Optionsklauseln, wie zum Beispiel das Vorkaufsrecht, vertraglich aufgezeichnete Vereinbarungen der beiden Franchising Partner. Der Optionsinhaber erhält das Recht, jedoch nicht die Pflicht, zukünftige Chancen auszunutzen. In diesem Sinne kann eine Realoptionsklausel als rechtlich bindende Durchführung einer Realoption gesehen werden. Folglich ist eine Optionsklausel für ein Unternehmen ein Instrument zur Sicherung des Anspruches auf zukünftige Möglichkeiten. Das Auftreten oder Fehlen von Optionsklauseln in Franchising Verträgen könnte sowohl Hinweise auf die Absichten der Vertragspartner geben, als auch Auswirkungen auf die Motivation der Partner haben.

Thema der Diplomarbeit sind explizite Optionsklauseln in Franchising Verträgen. Die Arbeit ist in folgendermaßen strukturiert: ein theoretischer wird gefolgt von einem empirischen Teil. Der theoretische Teil gibt einen Überblick, die wichtigsten Realoptionskonzepte betreffend, und stellt Hypothesen vor, welche in Analogie zur

bestehenden Forschung des Realoptionsansatzes in Allianzen (Joint Ventures, Licensing) gebildet werden. Im zweiten Teil der Arbeit werden die Hypothesen statistisch getestet. Die Daten für die statistische Analyse stammen vom Forschungsprojekt „Eigentumsstrategie von Franchise- Unternehmen in Deutschland", welches von ao. Univ.-Prof. Mag. Dr. Josef Windsperger durchgeführt wurde. Ein Fragebogen wurde an deutsche Franchising Unternehmen gesandt, um die Einflussfaktoren bei der Wahl der Eigentumsstrategie von Franchiseunternehmen aus der Sicht des Franchisegebers zu untersuchen. Die Ergebnisse zeigen eine negative Beziehung zwischen der Wahrscheinlichkeit der Verwendung einer Optionsklausel und der wahrgenommenen umweltbedingten Unsicherheit. Somit können die Hypothesen, welche aus der Theorie abgeleitet wurden, für Franchising mit den vorhandenen Daten nicht bestätigt werden. Dennoch scheint der Realoptionsansatz ein vielversprechendes Konzept zu sein, um geschäftsführende Strategien und Investment Entscheidungen zu erklären, da die Realoptionstheorie Unsicherheit als Chance in das Model eingliedert. Die zukünftige Forschung sollte besonders auf die Kombination von verschiedenen theoretischen Ansätzen eingehen, und den Realoptionsansatz als Erweiterung von bestehenden Theorien (z.B.: Transaktionskostentheorie, Ressourcentheorie) begreifen.

15. Curriculum Vitae

**Europass
Lebenslauf**

Angaben zur Person	
Nachname / Vorname	**Brix Angelika**
Staatsangehörigkeit	Österreich
Geschlecht	Weiblich
Berufserfahrung	
Daten	Von 2005- 2012, zuletzt 09. 01 - 31. 03. 2012
Beruf oder Funktion	Sachbearbeiterin Geschäftsführung, Sachbearbeiterin Rechtsabteilung
Wichtigste Tätigkeiten und Zuständigkeiten	Administration, Datenbankbearbeitung, Projektmitarbeit
Name und Adresse des Arbeitgebers	Dorotheum GmbH & Co KG, Dorotheergasse 17, 1010 Wien Tel.: +43-1-515 60-0, Fax: +43-1-515 60-443
Tätigkeitsbereich oder Branche	Kunstmarkt, Auktionsbetrieb
Schul- und Berufsbildung	
Daten	Seit WS 2005 Studium der Internationalen Betriebswirtschaft (IBW) und Kunstgeschichte
Bezeichnung der erworbenen Qualifikation	Matura 2005, Sacré Coeur Pressbaum, Schwerpunkt Europaklasse
Hauptfächer/berufliche Fähigkeiten	Spezialisierung in IBW auf International Management und International Marketing
Name und Art der Bildungs- oder Ausbildungseinrichtung	Universität Wien, Dr.-Karl-Lueger-Ring 1 , 1010 Wien

Persönliche Fähigkeiten und Kompetenzen

Muttersprache	Deutsch

Sonstige Sprache(n)

Englisch, Französisch, Spanisch, Italienisch, Latein

Selbstbeurteilung

Europäische Kompetenzstufe (*)

	Verstehen				Sprechen				Schreiben	
	Hören		Lesen		An Gesprächen teilnehmen		Zusammen-hängendes Sprechen			
Englisch	C2	Kompetente Sprach-verwendung	C2	Kompetente Sprach-verwendung	C1	Kompetente Sprach-verwendung	C2	Kompetente Sprach-verwendung	C2	Kompetente Sprach-verwendung
Französisch	C1	Kompetente Sprach-verwendung	C1	Kompetente Sprach-verwendung	B2	Selbständige Sprach-verwendung	B2	Selbständige Sprach-verwendung	C1	Kompetente Sprach-verwendung
Spanisch	B1	Selbständige Sprach-verwendung	B1	Selbständige Sprach-verwendung	A2	Elementare Sprach-verwendung	A2	Elementare Sprach-verwendung	B1	Selbständige Sprach-verwendung
Italienisch	B1	Selbständige Sprach-verwendung	B1	Selbständige Sprach-verwendung	A2	Elementare Sprach-verwendung	A2	Elementare Sprach-verwendung	A2	Elementare Sprach-verwendung
Latein	A2	Elementare Sprach-verwendung	B2	Selbständige Sprach-verwendung	A1	Elementare Sprach-verwendung	A1	Elementare Sprach-verwendung	A1	Elementare Sprach-verwendung

(*) Referenzniveau des gemeinsamen europäischen Referenzrahmens

Soziale Fähigkeiten und Kompetenzen

Kommunikativ, Weltoffen, Flexibel, Team-orientiert

IKT-Kenntnisse und Kompetenzen

Microsoft Office Programme (Word, Excel, Power Point, Outlook), SPSS (Statistical Package for Social Sciences) 20.0, Mac OS X Lion 10.7.4

Sonstige Fähigkeiten und Kompetenzen

Hobbys: Volleyball, Gitarre, Tanzen, Lesen, Reisen

Führerschein

Klasse B

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