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„Corporate Diversification: Theory versus Reality“

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Dedicated to my parents.

Thank you for your life-time support and for helping me make my dreams come true.

Statutory declaration

Hereby, I declare that I have authored this thesis independently, that I have not used other than the declared sources, and that I have explicitly marked all material which has been quoted either literally or by content from other sources.

This master thesis has not been previously presented as an examination paper in this or any other form in Austria or abroad.

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List of Abbreviations

BITS	Business Information Tracking Service
E&D	exploration and development
EBIT	earnings before interest and taxes
EPS	earnings per share
FTC	Federal Trade Commission
GEPS	growth in earnings per share
M&A	mergers and acquisitions
RPR	risk premium ratio
RR	related ratio
S&P	Standard & Poor's index
SFAS	The Statement of Financial Accounting Standards
SR	specialization ratio
VR	vertical ratio

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Introduction

Corporate diversification has been a concern to economists ever since its existence. After the greatest diversification outbreak during the 1960s and 1970s, researchers began to observe positive impact of diversification on firm value. However, the big wave of corporate refocusing in the 1980s gave rise to doubts on the benefits of corporate diversification. Therefore, I decided, on one hand, to analyze in-depth theory on corporate diversification – in particular, its costs and benefits, scope and scale as well as other influencing factors, and on the other hand, to find empirical evidence supporting or denying the theoretical framework in order to challenge the prevailing argument about diversification as value-destroying action.

To my knowledge, the last literature review on the topic of corporate diversification was conducted by Montgomery (1994) that examined arguments leading firms to diversification, surveyed and interpreted evidence on diversification and firm performance and identified diversification patterns. However, the incentives for corporate diversification were observed too broadly discussing three different perspectives; market-power view, agency view and resource view. Moreover, this review was published prior to the outbreak of the greatest wave of empirical evidence on the effects of diversification on firm value which began in the middle of 1990s. In my thesis, I go far beyond the scope of the latest literature review. I analyze in-depth both theory and reality of corporate diversification and focus on finding a comprehensive answer to the ultimate question: *“Does diversification destroy firm value?”*

My thesis is structured as follows. In the first chapter – *Theories of corporate structure selection*, I start with analyzing the factors having an effect on firm value in general – that is, agency phenomenon and theory of internal capital market. Next, I explore the influence of corporate structure – conglomerate versus stand-alone - on capital allocation. In the second chapter – *Theories of corporate diversification*, firstly, I study the types of diversification strategies, secondly, the drivers behind a firm’s decision to diversify and lastly, the environmental prerequisites for corporate diversification. In the last chapter – *Trends in*

corporate diversification, I focus on the real development of diversification since its beginning across firms, industries and time. Here, the greatest emphasis is put on reviewing the overall empirical evidence on the diversification's effect on firm value and on challenging the results.

1. Theories of corporate structure selection

Corporate structure selection concerns a firm's decision on whether to integrate its divisions in a conglomerate¹ or operate them separately as stand-alone firms. It is a very important decision, since as stated in Berkovitch et al. (2006), the choice of corporate structure may impact shareholder value, firm's profitability as well as sustainability.

In this section, I firstly shortly introduce agency phenomenon, theories of internal capital market and then I present Berkovitch et al. (2006) model, which shows how firms can optimally decide about their corporate structures in general; when it is optimal for them to structure their divisions separately as stand-alone firms and when it is optimal for them to integrate their divisions in a conglomerate.

1.1. Agency phenomenon

Agency theory, the study of conflicting interests between principal and agent, has been a major issue in economic research. In relation to corporate finance, an agency relationship occurs when a *principal's (shareholder's)* welfare depends on the actions undertaken by an *agent (manager)* who acts on behalf of the principal². Generally, the agency relationship has to deal with a moral hazard problem; given the value of a compensation, the agent will exercise the least effort required, while the principal has to motivate the agent acting on his behalf to the greatest effort and to choose a contract which maximizes an owner's welfare. With regards to the agency theory, Jensen (1986) introduces the free cash flow theory as a source of this conflict. He defines free cash flow as "*cash flow in excess of that required to fund all projects that have positive net present values when discounted at the relevant cost of capital*" (Jensen, 1986, p.323). In this sense, given the excess resources in managers' hands which enhance their power in a firm, managers tend to focus on empire building and let the firm grow inefficiently, rather than distribute the excess cash to

¹ Throughout my thesis I use the term "conglomerate" interchangeably with "diversified firm", "multi-divisional firm" and "multi-segment firm" and the term "stand-alone" interchangeably with "focused firm", "single-divisional firm" and "single-segment firm".

² Another forms of agency relationship exist between lender and borrower, manager and subordinate, insurer and insured (Coase, 1937).

shareholders. The more free cash flow there is, the more serious the conflict over firm's payout policy becomes.

There are many possibilities how a firm can use the excess cash when there are no attractive investment opportunities anymore. Firstly, a firm may decide to distribute cash to shareholders either through dividend payment or share repurchase. Secondly, it may use excess funds to cover interest payments and load new debt. Thirdly, a firm may consider acquisition or merger in order to expand its business operations. In his work, Jensen (1986) presents how debt can mitigate the agency costs of free cash flow, how it can be used as an alternative to dividend and lastly, why expansion within the same line of business or takeovers leading to liquidations tend to be more profitable than diversifying actions.

Free cash flow theory of debt

Noteworthy, before deciding for debt financing, a firm has to consider also the costs associated with any debt contract, so called *agency costs of debt*. Leverage has disadvantages in form of increased bankruptcy costs and costs of financial distress. Optimally, a firm chooses its debt-equity ratio such that firm value is maximized - that means marginal costs of debt equal marginal benefits (Jensen, 1986).

Not surprisingly, much more attention has been paid to the costs of debt rather than to its benefits. Regarding this discrepancy, Jensen (1986) points out the role of debt in increasing organizational efficiency. He suggests that a debt contract can be used as a mechanism for binding managers to their promise of distributing the future cash flows under the condition that proceeds from such a contract are not retained, but used for example for share repurchase instead. This seems to be a more promising idea than the mere promise of long-lasting increase in dividend payments, since dividend cuts are very likely to happen in the future. In this sense, debt works as an effective alternative to dividends. In exchange of debt for stock, shareholders become debt holders, and hence they receive the right to call for a bankruptcy procedure in the case that managers fail to pay back the interest or the principle. It is the threat of bankruptcy and subsequent liquidation which makes debt an effective control mechanism. Jensen (1986) refers to this effect as "*control hypothesis*" of debt. Moreover, he points out the importance of debt as a control mechanism especially for

firms with low growth opportunities and substantial amount of excess cash and in the cases of leveraged buyouts. Since debt payments decrease the amount of free cash flow at managers' disposal, debt can be considered to be an optimal contract solving for the agency conflict between corporate managers and shareholders.

Free cash flow theory of M&As

As already stated, mergers and acquisitions represent one way managers can disgorge excess cash instead of distributing it to shareholders. Jensen (1986) brings forward that M&As as well as leveraged buyouts within the same business line are profitable, whereas diversifying takeovers are inefficient. He demonstrates his theory on the example of oil industry. The changes in the energy market in 1970s leading to radical price increase and subsequent decrease in consumption left the industry with excess cash and capacity at the same time. Consequently, in line with the agency costs of free cash flow, managers continued to invest heavily in E&D activities despite of the fact that these investments were expected to yield returns lower than cost of capital. In addition, managers underwent diversification programs through which oil companies acquired new businesses in retailing, manufacturing, office equipment or mining which later turned out to be unsuccessful acquisitions. However, such transactions might have still led to less waste of funds compared to the internal investments in unprofitable projects. Nevertheless, the mergers undertaken among oil companies within the industry led to decrease in excess spending on E&D and decreased the capacity in refining and distribution. These mergers resulted in substantial increase in firms' efficiency and value (Jensen, 1986).

Hence, Jensen (1986) argues that in declining industries, which was also the case of the oil industry in 1970s, M&As within the industry shall increase the value, while M&As outside the industry shall decrease the value. The same shall be true for the tobacco industry as well, where firms have to deal with declining demand while generating large free cash flow. This implies that the success of diversifying M&As may be dependent on the industry characteristics as well as the current economic environment.

1.2. Internal market (in)efficiency

Obviously, a firm's investment decisions are partly influenced by the availability of funds in the firm. Several studies have reported on the relation between corporate structure and financing constraints. The *efficient internal capital market hypothesis* suggests that diversification, generally, is supposed to create value, in which the cash flows created within a firm can be merged and thus enable the most efficient capital allocation³. However, as will be shown later, sometimes diversified firms seem to fail at efficient capital allocation, given the presence of the diversification discount. Gertner et al. (1994) refine the basic contract models by Hart & Moore (1989) and Bolton & Scharfstein (1990, 1993) and point out the role of asset ownership in the efficiency of internal capital markets which in turn results in several trade-offs pointing out to possible sources of inefficiency.

Trade-off between increased monitoring incentives and decreased managerial incentives

According to the model by Gertner et al. (1994), monitoring activity increases the liquidation value of an asset under supervision, and hence it does make a sense for an owner of the asset to engage in monitoring. Since corporate headquarters is the owner of the assets in internal capital market, the monitoring incentives are enhanced. Moreover, given that the control rights are in the hands of corporate headquarters instead of managers, managers cannot divert any more private benefits, and hence they are refrained from any empire building activities. In this sense, managerial incentives are decreased in internal capital market.

Trade-off between asset redeployability and poaching across divisions

When it comes to financing multiple projects, it is reasonable for an investor to redeploy assets in another project, once a project performs poorly. Gertner et al. (1994) show that it is very convenient and efficient when the investor is the owner of the assets which is the case of corporate headquarters. Hence, better asset redeployability speaks in favor of internal capital markets.

³ See Williamson (1975), Stein (1997), and Rajan et al. (2000).

However, Gertner et al. (1994) ignored the costs associated with transfer of funds in internal capital market. With respect to the costs, Rajan et al. (2000) point out the expenditures faced by each division which tries to protect its property rights. Here, capital allocation process is not dependent only on the decision made by corporate headquarters, but it becomes a political issue among divisions. Since divisional managers are aware of the fact that corporate headquarters allocates resources according to investment prospects, they tend to distort their funding requirements, which in turn results in inefficient investment. This is commonly referred to as the *inefficient market hypothesis* or the *cross-subsidization hypothesis*.

Nevertheless, there are mechanisms that are able to control managerial behavior. In addition to the advantages of asset ownership as suggested by Gertner et al. (2006), Ozbas (2005) presents the usefulness of control rights in influencing managerial behavior through organizational processes and structures such as rigid capital budgeting and job rotation programs in the former case and centralization and hierarchies in the latter case.

Winners-picking versus losers-sticking

The possibility of asset redeployment brings up, however, the dark side of internal capital markets. This is mentioned in Stein's (1997) concept of winners-picking and losers-sticking. His idea is based on the scenario in which corporate headquarters has to finance multiple projects simultaneously. Since corporate headquarters faces financing constraints by itself, it deliberately chooses to finance the most promising projects (winners) over less promising ones (losers). Furthermore, since corporate headquarters can easily redeploy assets across projects, it may take assets away from poor performing projects leaving them with less resources at their disposal than they would receive as stand-alones (Stein, 1997).

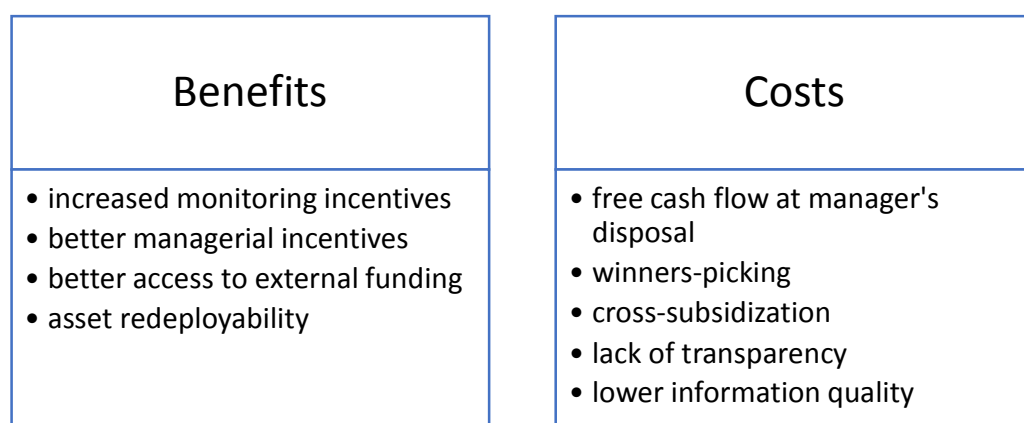
Trade-off between efficiency and transparency

The decision on corporate structure reflects a firm's demand for efficiency and information transparency. With respect to the former, a conglomerate has a clear advantage over a stand-alone firm in providing managerial incentives. In this sense, Berkovitch et al. (2006) refer to "*yardstick competition*" for resources between divisions in a conglomerate, which supports greater efficiency of internal incentives to managers of different divisions. In

this way, a conglomerate can suppress agency problems, and hence diminish under- and overinvestment problems (Stein, 1997).

However, with regards to transparency, the roles change. While a conglomerate has an access to aggregate data only, a stand-alone firm can access unit-specific information. Concerning this trade-off between efficiency and information transparency, Berkovitch et al. (2006) point out that the efficiency of yardstick competition depends strongly on the correlation between the divisions' operations. The higher the correlation, the greater the efficiency. In this respect, more "*related*" divisions can benefit from the integration much more. Moreover, regarding the market specific information, they highlight the importance of financial markets' degree of development and efficiency. In this sense, a stand-alone structure is more valuable only in the case when financial markets are sufficiently efficient (Berkovitch et al., 2006).⁴ Concerning the *transparency hypothesis*, Krishnaswami & Subramaniam (1999) find, with regards to information asymmetry and its effects on frequency and benefits related to corporate spin-offs, that the firms engaging in spin-offs face higher levels of information asymmetry than their size and industry-corresponding stand-alone counterparts. Moreover, they report that the information issues improve considerably after completing the spin-off.

Figure 1: Benefits and costs of internal capital market



Source: own illustration

⁴ Thomas (2002) actually finds that diversified firms face smaller stock revaluations with regards to earnings announcements compared to the portfolios of their stand-alone counterparts, implying that outside investors can better estimate the earnings of diversified firms which contradicts the *transparency hypothesis*.

All in all, there are theories speaking in favor as well as against the efficiency of internal capital market, as depicted in the above Figure 1. On one hand, internal capital market shall be more efficient in dealing with agency problems resulting in managers' empire building initiatives and in capital allocation process. On the other hand, larger internal capital market may provide more free cash flow at a manager's disposal for deriving his private benefits. Furthermore, poor performing divisions may end up worse off in a conglomerate than as stand-alones regarding the availability of resources, once corporate headquarters engage in a winners-picking strategy. Yet, better access to external funding may help fund divisions which could not be funded as stand-alones. In addition, increased internal competition may, finally, result in inefficient investment decisions (cross-subsidization) due to internal political battle between divisions. However, internal capital market enables to redeploy the assets to its most efficient use. Also, it has also been argued that there is a lack of detailed information in a conglomerate in comparison to a stand-alone firm (transparency hypothesis). It is the case that the information quality is worse in a conglomerate compared to a stand-alone firm. Apparently, there are always costs as well as benefits associated with a respective corporate structure. In the following, Berkovitch et al. (2006) model shall clarify, when a conglomerate structure is a better choice than a stand-alone structure.

1.3. Model of corporate structure selection

In order to understand the corporate structure selection process, Berkovitch et al. (2006) present the following model. There are two independent economic units which can be structured either as two separate stand-alone firms or together in one integrated firm. In both cases, a firm's structure is a two-level hierarchy: headquarters and divisional managers. While headquarters wants to maximize shareholder value, managers aim at maximizing their own utility. Hence, this set-up raises the question on the optimal design of corporate structure to deal with the moral hazard problem resulting from the discrepancy in the goals of the two agents.

In the model it is assumed that managers search for investment opportunities which they apply in the economic units thereafter. In the investment opportunity set, there is only one project which can be worked out in two different ways using two unique technologies –

good and *bad* - which require different investment and yield different cash flows. *Good* technology is more valuable and requires less capital investment than *bad* technology. Furthermore, while *bad* technology is always available, *good* technology is available only with the probability $p_G < 1$. Here, it is assumed that only the manager can observe the availability of *good* technology, whereas headquarters is not able to do so (high costs associated with information search inhibits headquarters from finding the information on its own). The manager can though inform headquarters about the availability of *good* technology with no cost accruing.

The project's present value of the expected cash flow is given by $a \cdot PV_G$ and $a \cdot PV_B$ where PV_G and PV_B represent scalars, and a is a firm specific parameter standing for the profitability level achieved by the firm's product in the future. Given the assumption on firm specific nature of a , the distributions for the two economic units are supposed to be independent. Moreover, the parameter a is observable on the financial market. While market observes a through research explicitly, both headquarters and the manager can infer only its implicit value from market prices. Its value can be either a_H or a_L , while $a_H > a_L$, a_H occurs with the probability π and a_L occurs with the probability $1 - \pi$.

The project's net present value is given by $NPV_{i,j} = -I_i + a_j \cdot PV_i$ with i (technology) = G (good), B (bad) and j (state) = H (high), L (low). Since it is assumed that technology G is more valuable than technology B , it is the case that $NPV_{G,j} > NPV_{B,j}$ in both states. Moreover, to make the information about a valuable, it is assumed that the project's net present value is positive in all states except for the state with high investment and low profitability.

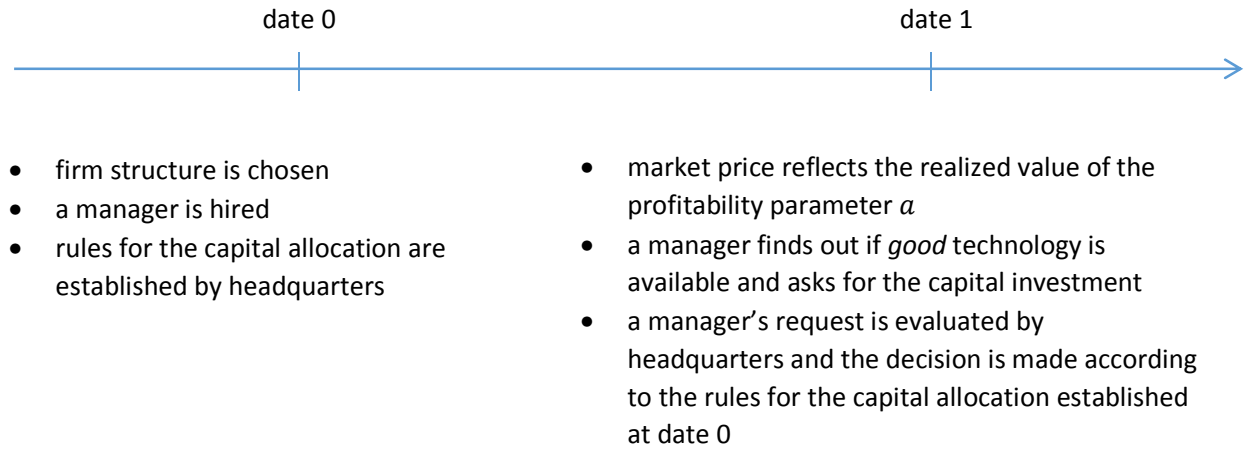
Noteworthy, in the model of Berkovitch et al. (2006), firm value indicates the growth opportunities of the firm. These growth opportunities include two components. The first component is the "*expansion growth*" which is assumed to be available with the probability equal 1 and it is captured by the net present value of *bad* technology NPV_B . The second component is the "*innovation growth*" which is assumed to be less certain, and hence it is represented by both, the net present value of *good* technology NPV_G and its availability probability p_G .

The choice of the optimal corporate structure is influenced by two factors “the incentive structures” and “the availability of information about the investment projects” (Berkovitch et al., 2006, p.828.). The former is important, because a manager’s utility depends on the resources at his or her disposal. In the model, the manager’s utility is a monotonically increasing function of the capital investment, where $u(0) \geq 0$. This implies that in the case where both technologies are available, the manager is more likely to reveal the *bad* one only, as it requires more capital investment. Berkovitch et al. (2006) suggest two possible scenarios how this incentive problem can be solved; either through wage compensation, where the manager is paid more if he or she delivers good project, or through threatening to disapprove a bad project if the manager fails to deliver the good one⁵. For simplification reasons, Berkovitch et al. (2006) choose to analyze only the case when threatening to reject the project is more effective than wage compensation.

The second factor influencing the choice of the optimal capital structure, information availability, plays role in the following. The distinction between a stand-alone firm and a conglomerate lies in separation of the two economic units. In the former case, each economic unit is formed as a separate stand-alone firm and also traded on the market separately from the other economic unit. Hence, all agents on the market are able to learn the value of the profitability parameter α from the stock price of each firm. However, in the latter case where both economic units are integrated in a joint firm, a conglomerate, the only information about the realized profitability parameter which can be observed by the agents on the market is the weighted average of the two divisions. Also, the capital budgeting process of one economic unit depends on the process of the other unit. The following Figure 2 represents the sequence of events.

⁵ It is shown in Berkovitch & Israel (2004) that the method of wage compensation is dominant in the case when the probability of a good project being available is low, while in the other case when the probability of a good project being available is high, it is the second method – threat of disapproval – which dominates. The idea behind this argument is that the higher the probability of good project’s availability makes the first method too expensive, since the manager must be compensated more frequently.

Figure 2: Sequence of events



Source: own illustration with reference to (Berkovitch et al., 2006)

As for the firm structure, there are two possible scenarios. Firstly, the two economic units are formed as two separate publicly traded companies. Secondly, both economic units form together one publicly traded conglomerate. The final decision on the corporate structure is the one that maximizes the shareholder value (Berkovitch et al., 2006). In the following, capital allocation in both corporate structures is presented.

1.3.1. Capital allocation in a stand-alone firm

In a stand-alone firm, capital allocation in each economic unit depends only on the profitability parameter a of the respective economic unit and the investment request of its manager. The set of possible reports, which the manager chooses from, includes r_G and r_B . The former demonstrates that both technologies are available, while the latter shows only the availability of the *bad* one. The project acceptance rule is determined by headquarters, such that shareholder value is maximized given the incentive compatibility constraint that the manager reveals the truth about all technologies available⁶. The optimization problem of

⁶ In this sense, $\lambda(B, a_j)$ is the probability that headquarters accepts *bad* technology given the profitability parameter a_j with $j=L, H$ and the manager's report r_B . Hence, the expression $(1 - \lambda(B, a_j))$ stands for the probability that no technology is approved. Respectively, $\lambda(G, a_j)$ represents the probability that headquarters accepts *good* technology given the profitability parameter a_j with $j=L, H$ and the manager's report r_G . However, in the case that *good* technology is disapproved, *bad* technology is approved. This scenario dominates the other one where both technologies would be rejected given the fact that higher probability of disapproving both

selecting the acceptance probabilities that maximize shareholder value can be set up in the case of a stand-alone firm following Berkovitch et al. (2006);

$$\begin{aligned} \text{Max}_{\lambda(i,a_j)} V_{SA} &= E_a \left[(1 - p_G) \lambda(B, a_j) NPV_{Bj} + p_G \left(\lambda(G, a_j) NPV_{Gj} + (1 - \lambda(G, a_j)) NPV_{Bj} \right) \right] \\ &\text{with } i = G, B \text{ and } j = L, H \end{aligned}$$

S.t.

$$\begin{aligned} \lambda(B, a_j) u(I_B) &\leq \lambda(G, a_j) u(I_G) + (1 - \lambda(G, a_j)) u(I_B) \quad \forall j \\ \lambda(i, a_j) &\in [0, 1] \quad \forall i, j \end{aligned}$$

where the first constraint represents the *incentive compatibility constraint* encouraging the manager's truthful reporting behavior – that is, the manager reveals the availability of *good* technology only if his or her utility in this case exceeds the utility which he or she would derive otherwise. The second constraint ensures that the acceptance probability is between 0 and 1.

Berkovitch et al. (2006) consider two cases with respect to the value of the profitability parameter a . Firstly, when the profitability parameter a is low ($j = L$), it is optimal for headquarters to reject *bad* technology which leads to negative net present value and approve *good* technology which results in positive net present value⁷. However, in the second case, where the profitability parameter a is high ($j = H$), both technologies have positive net present value, hence, *bad* technology cannot be directly rejected. Berkovitch et al. (2006) find a critical value which helps to identify the optimal acceptance probabilities given the high profitability state.

Proposition 1:

$$\text{Let } R \equiv \frac{NPV_{GH} - NPV_{BH}}{NPV_{BH}} \text{ and } U_r \equiv \frac{u(I_G)}{u(I_B)}$$

technologies diminishes the manager's expected utility and hence lowers his or her incentives to report to headquarters truthfully.

⁷ Thus, $\lambda(B, a_L) = 0$ and $\lambda(G, a_L) = 1$.

then there is $\Delta_{SA} = \frac{1 - p_G}{p_G} (1 - U_r)$ such that:

1) when $R \geq \Delta_{SA} \Rightarrow \lambda(B, a_H) = U_r$ and $\lambda(G, a_H) = 1$

2) when $R < \Delta_{SA} \Rightarrow \lambda(B, a_H) = 1$ and $\lambda(G, a_H) = 0$.

The first expression in the *Proposition 1* states that when the expected benefit from inducing truthful reporting exceeds the costs, headquarters always accepts *good* technology and it accepts bad technology with the probability $U_r < 1$. The second expression suggests that when the relation is reversed, the costs exceed the benefits, it is no more optimal for headquarters to give the manager the incentives to report truthfully. Thus, the decision is delegated to the manager who in the pursuit of maximizing his or her own utility prefers *bad* technology to *good* technology given that *bad* technology requires more capital investment.

Now that we have identified the optimal project acceptance probabilities, we can derive the value of a stand-alone firm. Firstly, in the low profitability state, the value of a stand-alone firm is simply the net present value of project using *good* technology multiplied by its availability probability (in the low profitability state, *bad* technology leads to negative net present value):

$$V_{SA}(a_L) = p_G \cdot NPV_{GL}$$

Secondly, in the high profitability state, there are two cases to be distinguished with respect to the benefits from inducing truthful project reporting. In the first case, when it is optimal for headquarters to encourage the manager to reveal the availability of *good* technology, the value of a stand-alone firm is the net present value of project using *bad* technology multiplied by its availability and acceptance probability plus the net present value of project using *good* technology multiplied by its availability probability:

$$V_{SA}(a_H) = (1 - p_G) NPV_{BH} U_r + p_G NPV_{GH} \quad \text{if } R \geq \Delta_{SA}$$

In the second case, when the induction of truthful reporting is due to the high costs no longer optimal and the investment decision is delegated to the manager, the value of a stand-alone

firm equals simply the net present value of project using *bad* technology in a high profitability state, since the manager always chooses *bad* technology:

$$V_{SA}(a_H) = NPV_{BH} \quad \text{if } R < \Delta_{SA}$$

With respect to the above derivation of firm value, Berkovitch et al. (2006) point out, that the value of a stand-alone firm reflects already the realization of the profitability parameter a , yet it does not take into account the manager's investment request. Hence, if a firm is traded for the price $V_{SA}(a_L)$ or $V_{SA}(a_H)$, both headquarters and the manager can infer that the value of the profitability parameter a is low or high respectively.

Finally, according to Berkovitch et al. (2006), ex-ante value of a stand-alone firm accounting for both the high and low state probabilities is given by:

$$V_{SA} = (1 - \pi)V_{SA}(a_L) + \pi V_{SA}(a_H)$$

or

$$V_{SA} = \begin{cases} (1 - \pi)p_G NPV_{GL} + \pi((1 - p_G)NPV_{BH}U_r + p_G NPV_{GH}) & \text{if } R \geq \Delta_{SA} \\ (1 - \pi)p_G NPV_{GL} + \pi NPV_{BH} & \text{if } R < \Delta_{SA} \end{cases}$$

Hence, there is no difference in firm value in the low profitability state, but there is different firm value in the high profitability state with respect to the projects' acceptance probabilities which in turn depend on the critical value Δ_{SA} which identifies the decision maker. In the first case, it is optimal for headquarters to decide. A good project is always accepted and a bad project is approved only with the probability $U_r < 1$. In the second case, it is the manager who decides. For him or her the only optimal decision is to accept the project using *bad* technology.

1.3.2. Capital allocation in a conglomerate

In the following, firm value will be derived for the case where the two economic units are structured together in a conglomerate. In this set up, the two economic units are also referred to as two divisions. Berkovitch et al. (2006) argue that under this corporate structure joint headquarters allows for information sharing and thus it gives rise to the “yardstick

competition” between the two units. Hence, capital allocation in an economic unit which is part of a conglomerate does not depend only on the value of the profitability parameter which was the case in a stand-alone firm, but it depends also on the request for resources made by the other unit. Also, the capital allocation mechanism set up by headquarters is based on this unit-dependence which empowers headquarters to give better incentives to managers. The following Table 1 shows how the availability of technology is distributed between the two divisions.

Table 1: The joint distribution of projects in a conglomerate

State	$i_2 = g$	$i_2 = b$	Marginal probability Pi_1
$i_1 = G$	p_{Gg}	p_{Gb}	p_G
$i_1 = B$	p_{Bg}	p_{Bb}	$1 - p_G$
Marginal probability Pi_2	p_g	$1 - p_g$	

Source: Berkovitch et al (2006), p. 832.

Berkovitch et al. (2006) denote the project availability for the first division with $i_1 = G, B$ and with $i_2 = g, b$ for the second division where G and g represent project using *good* technology and B and b stand for project using *bad* technology. They also assume that the availability probability of *good* technology is the same for each division, formally $p_G = p_g$. Furthermore, as it was also assumed in the stand-alone case, it is only the manager who can monitor project’s availability. Since now a single market price reflects the value of a conglomerate, it is no more possible to infer the value of the profitability parameter α for a single unit. The true value of each unit can be inferred only in a special case where the profitability parameter is the same for both units. This happens with the probability π^2 in the high profitability state and with the probability $(1 - \pi)^2$ in the low profitability state. Hence, the units have different profitability parameters with the probability $\pi(1 - \pi)$. Hereafter, this situation is referred to as a *mixed realization* and it is denoted with $j = M$. In this case, the net present value of a project is defined as:

$$NPV_{iM} \equiv \frac{1}{2}NPV_{iH} + \frac{1}{2}NPV_{iL} \text{ with } i = B, G$$

Based on the assumptions in the low profitability state, it is assumed also in the case of *mixed realization* that the net present value of project using *good* technology is positive and the net present value of project using *bad* technology is negative. Moreover, as it was case in the stand-alone firm, headquarters chooses capital allocation mechanism such that the expected net present value is maximized and technologies are reported truthfully. In contrast to the stand-alone case, the set of possible reports is bigger, since divisional managers inform about the availability of technology at the same time. Furthermore, based on truthful revelation, each divisional manager assumes that the other manager declares the availability of his or her projects truthfully. Also, in this case, the project acceptance rule is designed, such that shareholder value is maximized with respect to the incentive compatibility constraint⁸;

$$\max_{\lambda(i_1, i_2, a_j)} V_C = E_a \left[\sum_{i_1 i_2} p_{i_1 i_2} \lambda(i_1, i_2, a_j) NPV_{i_1 j} + \sum_{i_2} p_{G i_2} (1 - \lambda(G i_2, a_j)) NPV_{B j} \right]$$

with $i_1 = B, G, i_2 = b, g$ and $j = L, H, M$

S. t. :

$$\sum_{i_2} p_{G i_2} \lambda(B i_2, a_j) \leq \sum_{i_2} p_{G i_2} [\lambda(G i_2, a_j) U_r + (1 - \lambda(G i_2, a_j))] \quad \forall j$$

$$\lambda(i_1, i_2, a_j) \in [0, 1] \quad \forall i_1, i_2, j$$

Here, the value of the first division consists of the expected net present value of the investment into the requested technology and the expected net present value of the investment in *bad* technology when *good* technology is rejected. Moreover, the first constraint is the incentive compatibility constraint. It must be the case, that the expected utility of the divisional manager must be greater when he or she informs about the availability of *good* technology (right side of inequality), than in the case when he or she conceals its

⁸ The project acceptance rule of the first division is determined as follows: $\lambda(i_1, i_2, a_j)$ stands for the probability with which headquarters approves technology i_1 given that the manager of the first division informs about the technology i_1 , the manager of the other division informs about the technology i_2 and the profitability parameter is a_j . Respectively, the reported project i_1 is disapproved with the probability $(1 - \lambda(i_1, i_2, a_j))$. As it was in the previous case, if a bad project is rejected, no investment takes place, if a good project is rejected, a bad project is automatically accepted.

availability (left side of inequality). The second constraint ensures again that the project acceptance probability is between 0 and 1.

As it was the case in a stand-alone firm, here, Berkovitch et al. (2006) also distinguish between two scenarios with respect to the profitability state. In the first scenario, where the profitability parameter is low in both divisions or mixed, if only *bad* technology is available, no investment is made. If both technologies are available, headquarters accepts *good* technology. In the second scenario, where the profitability parameter is high in both divisions, the solution is no more so intuitive and it is determined by the degree of correlation between the two units. Berkovitch et al. (2006) identify $\rho^* \equiv 1 - \frac{U_r}{1-p_G}$ as the critical value of correlation. For simplicity they only analyze the case where $\rho \geq \rho^*$. Moreover, they find a critical value Δ_i which determines the optimal project acceptance probabilities as follows:

Proposition 2:

There is $\Delta_i \equiv \frac{(1-p_G)(1-\rho)}{p_G + (1-p_G)\rho} (1-U_r)$ such that

1) if $R \geq \Delta_i$ then $\lambda(i_1 i_2, a_H) = 1$ for $i_1 \neq B$ and $i_2 \neq g$

and $\lambda(Bg, a_H) = \frac{U_r - (1-p_G)(1-\rho)}{p_G + (1-p_G)\rho}$

2) if $R < \Delta_i$ then $\lambda(Bg, a_H) = \lambda(Bb, a_H) = 1$ and $\lambda(Gg, a_H) = \lambda(Gb, a_H) = 0$.

Here, the first expression says that when the benefits from inducing truthful reporting exceeds the costs, headquarters accepts the project which is requested by the manager of the first division, unless he or she asks for the investment in *bad* technology, while the manager of the second division wants to invest in *good* technology. In this case, *bad* technology is approved only with the probability $\lambda(Bg, a_H) = \frac{U_r - (1-p_G)(1-\rho)}{p_G + (1-p_G)\rho}$. The second expression indicates that in the reverse case, where the costs exceeds the benefits, headquarters is no more encouraged to induce truthful reporting from the manager, hence it delegates the investment decision to the divisional manager. As before, the manager always accepts *bad* technology which maximizes his private benefits.

In contrast to the stand-alone case, Berkovitch et al. (2006) point out that due to the “*yardstick competition*” between the divisions, headquarters in a conglomerate experiences more flexibility in the capital allocation process because it can make project approval dependent on both managers’ reports. In particular, when the manager of the first division reports *bad* technology, headquarters can condition its approval upon the report from the manager of the second division. Hence, headquarters is more likely to approve project using *bad* technology in the first division when also the second manager reports the availability of *bad* technology only. However, in the reverse case, when the second manager reports *good* technology, the acceptance probability of *bad* technology is lower in the first division. Consequently, a bad project is more likely to be accepted in a conglomerate than in a stand-alone firm.

In addition, Berkovitch et al. (2006) present the following implications of correlation existing between the two units. Firstly, if investment opportunities faced by the two units are highly correlated, headquarters has greater acceptance flexibility in a conglomerate than in a stand-alone firm as a report from one division reveals to certain extent information about the other unit. Secondly, a bad project is less likely to be rejected in a conglomerate than in a stand-alone firm and its acceptance probability increases with the correlation coefficient ρ . Therefore the costs of inducing truthful reporting is lower in a conglomerate and it is reduced with ρ . This implies that the expected probability of rejecting a bad project denotes the cost of inducing truthful reporting. Thus, headquarters in a conglomerate is more effective in inducing the manager to reveal true project availability than in a stand-alone firm.

1.3.3. The optimal choice of capital structure

Regarding the optimal choice between a stand-alone firm and a conglomerate, Berkovitch et al. (2006) refer to the comparison of firm value under these two different set-ups. Moreover, they distinguish also the case where headquarters decides upon the investment decision and the case where the investment decision is delegated to the manager. Thus, there are possible three scenarios:

Proposition 3:

1. If $R \geq \Delta_{SA}$

then a conglomerate structure should be chosen for the two economic units if

$$\pi \geq \frac{((1 - \rho)p_G + \rho)U_r}{\rho + (1 - \rho)p_G U_r} \text{ and a stand – alone structure should be chosen otherwise.}$$

2. If $\Delta_{SA} \geq R \geq \Delta_i$

then a conglomerate structure should be chosen for the two economic units if

$$\pi \geq \frac{(1 - p_G(1 + R))(p_G + \rho(1 - p_G))}{(1 - p_G)(\rho + (1 - \rho)p_G U_r)}$$

and a standalone structure should be chosen otherwise.

3. If $\Delta_i \geq R$

then a stand – alone structure should be chosen for the two economic units.

The above proposition by Berkovitch et al. (2006) implies that a conglomerate structure is optimal only if the probability parameter a_L is highly probable – that is, if project is more likely to be low profitable because under this set up, a conglomerate structure is more efficient in inducing the truthful reporting from the manager than a stand-alone structure. Furthermore, integration of the two units in a conglomerate is more advantageous if correlation between the two units is high. It should be pointed out that higher correlation is linked in this model to the “*related integration*”, hence to the case where there is positive relation between the core business activities of the two economic units.

1.3.4. The implications of the model

With respect to a firm’s growth opportunities, which are illustrated in the model of Berkovitch et al. (2006) as the prospects for expansion growth on one hand and innovation growth on the other hand, the model proposes the following. Regarding the expansion growth, all else equal, units in a conglomerate are valued less than their stand-alone counterparts. However, the reverse is true concerning the innovation growth. Here, all else

equal, a conglomerate has higher value than a comparable stand-alone firm. Given this, Berkovitch et al. (2006) theory suggests that the diversification discount and premium may be dependent on the characteristics of a firm's divisions.

Furthermore, Berkovitch et al. (2006) show that the diversification discount happens to conglomerates in the case where the availability probability of both technologies is high. On the contrary, diversification premium occurs in the case where this probability is low. The authors relate the availability probability of both technologies to the investment in R&D. In this sense, they find usual that firms that allocate more funds in R&D are more likely to realize innovation growth. Hence, a conglomerate operating in industry with intensive (moderate) R&D investments is very likely to be valued at discount (premium) in comparison to a comparable stand-alone firm (Berkovitch et al., 2006). However, this implication contradicts to certain extent the proposition that innovation growth enhances the value of a conglomerate relative to a stand-alone firm.

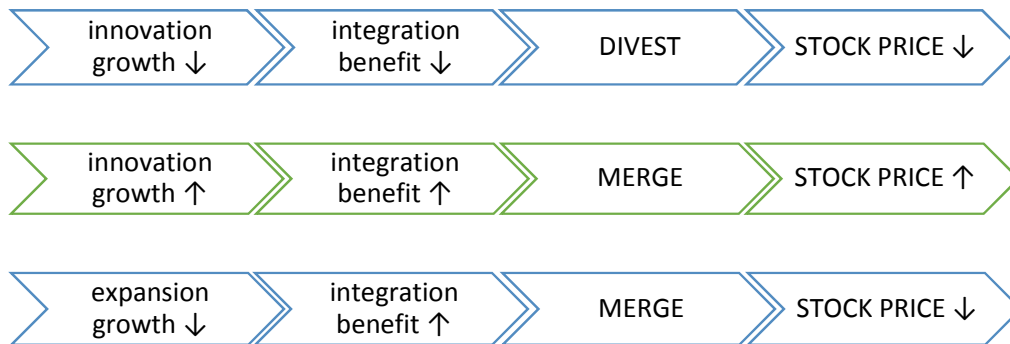
In addition, it is pointed out in Berkovitch et al. (2006) that there exists an inverse relationship between the required rate of return and the net present value of expansion and innovation growth, NPV_{BH} and NPV_{GH} respectively. Given the definition of the benefit from integration $R \equiv \frac{NPV_{GH} - NPV_{BH}}{NPV_{BH}}$ and the cost of integration $\Delta_i \equiv \frac{(1-p_G)(1-\rho)}{p_G + (1-p_G)\rho} (1 - U_r)$, clearly R is dependent on the required rate of return. In particular, it grows by the ratio $\frac{NPV_{GH}}{NPV_{BH}}$. However, Δ_i is independent of the required rate of return. Hence, it is the relative sensitivity of NPV_{iH} to the changes in the required rate of return which determines the effect of these changes on the choice of corporate structure. In this sense, if innovation growth is more elastic to changes in the required rate of return than expansion growth, then a conglomerate is traded at the discount and investors require higher rate of return in comparison to a comparable stand-alone firm. Similarly, if innovation growth is less elastic to changes in the required rate of return than expansion growth, then a conglomerate is traded at the premium and investors require lower rate of return relative to a comparable stand-alone firm. The idea behind this argument is that if future cash flows are discounted with higher required rate of return, then firm value is lower. Moreover, if it is the case that the elasticity of innovation growth (project using *good* technology) to changes in the required

rate of return is greater than the elasticity of expansion growth (project using *bad* technology), then the decrease in the net present value is larger for a bad project than for a good project which leads to more benefit from integration R . Consequently, in the pool of firms, which are identical except for the required rate of return and project's elasticity relative to the required rate of return, if the elasticity of a good project is greater than the elasticity of a bad project, then less valuable units will form a conglomerate. In the other case, where the elasticity of a good project is lower than the elasticity of a bad project, more valuable units will form a conglomerate. Consequently, this leads the diversification discount in the former case and to the diversification premium in the latter case.

Finally, Berkovitch et al. (2006) highlight the implications of one-time change in the expected growth for corporate spin-offs and mergers which in turn allows for predicting investor reactions to spin-off and merger announcements. Firstly, with respect to change in expansion growth, captured by NPV_{BH} , if this rises, then the benefit from integration R is reduced. Since the cost of integration is unaffected, integration will be worth less if higher expansion growth is expected. In this sense, the optimal decision for a firm would be to divest the unit. Secondly, with respect to change in innovation growth, represented by NPV_{GH} , if this declines, then again the benefit from integration will be reduced. Hence, a firm would optimally spin off when there is expected increase in expansion growth or when there is expected decrease in innovation growth. However, while in the first case the spin-off announcement is reflected by a higher stock price, in the second case, the effect is reverse and the firm is valued less. Similarly, a firm would optimally merge when there is expected increase or decrease in innovation and expansion growth respectively. As before, while the merger announcement in the former case is linked to an increase in stock price and higher firm value for a conglomerate, in the latter case it is associated with a decrease in stock price and lower firm value for a conglomerate. The above implications are illustrated in the below Figure 3.

Figure 3: Stock price reaction to corporate decision on divestures and mergers





Source: own illustration with reference to Berkovitch et al. (2006)

All in all, even though Berkovitch et al. (2006) clearly present in their model when it is optimal to choose a conglomerate over a stand-alone structure, they relate the advantages of integration only to the case when the core business activities of divisions in a conglomerate are positively “related”. In contrary, “unrelated” diversification is more likely to result in the diversification discount. Nevertheless, their simple model may help explain the differences in market reactions to merger and spin-off announcements as well as another diversifying actions. On one hand, the diversification premium is assumed to reflect a conglomerate’s efficiency in inducing managerial incentives for truthful reporting especially when facing low profitability prospects which results in more efficient capital allocation relative to a stand-alone firm as suggested by the *efficient internal capital market hypothesis*. On the other hand, the diversification discount is supposed to indicate a conglomerate’s inefficiency in capital allocation relative to a stand-alone firm when facing high profitability prospects which might be a consequence of agency problem and/or inefficient cross-subsidization between divisions. Noteworthy, both cases happen to explain the diversification premium and discount of “related” diversification only. Thus, whether a diversified firm is valued with the discount or the premium may be significantly dependent upon both the firm’s characteristics as well as its diversification strategy. This should be proved in the course of the last chapter, in which the model implications will be discussed further and compared with empirical findings.

2. Theories of corporate diversification

In the course of this chapter, my literature review will provide definitions and characteristics of corporate diversification, leading forces behind a decision to diversify and factors influencing a firm's propensity to undertake a diversifying action both organizational and industrial.

2.1. Scope and scale of corporate diversification

Once a company decides to diversify its business, it has to determine the scope and the scale of its diversification strategy. In this sense, the company has to decide, firstly, on the *degree* to which new business will relate to its current strengths and competences, secondly, on the *amount* of diversity suitable for the company (Rumelt, 1986). In broader sense, the company has to choose whether it adopts *focused* or *unrelated* strategy. While in the former case the company usually stays in the same industry or enters related markets, in the latter case it usually takes over business which has little in common with its current core operations. On the other hand, as Rumelt (1986) points out, there is no clear diversification strategy in the narrow sense of meaning. Firstly, I will address the efficiency question of the two broadly defined diversification strategies – focused versus unrelated - and the factors determining the appropriateness of each of them. Secondly, I will discuss more narrow definitions of diversification. Finally, I will review the optimal level of corporate diversification.

2.1.1. Broader scope of diversification: focused versus unrelated diversification

In order to determine the optimality of the two broad diversification strategies, Stein (1997) investigates, whether a focused strategy can outperform the strategy of unrelated diversification in the theoretical winner-picking aspect excluding any effects of lessened credit constraints, which often comes as by-product of the latter strategy.

Argument in favor of diversification

Despite of excluding any advantage from lessened credit constraints, Stein (1997) identifies clear argument speaking in favor of diversification given that the outcomes of the

projects can be correlated and headquarters is able to estimate these outcomes correctly. Obviously, if diversification represents a way to make the outcomes of the projects less correlated, then the value of a firm rises with the level of diversification (Stein, 1997). Similarly, given that forecasting errors made by external agents are imperfectly correlated across segments, Thomas (2002) argues that combined reported earnings of a diversified firm may imply smaller absolute value of the percentage error in forecasting a firm's cash flows – that is, less information asymmetry. In this way, information asymmetry can be easily diversified across divisions of a conglomerate. Thus, the relative advantage of managers' private information over outsiders' expectations is diminished. This is referred to as the *information diversification hypothesis* (Thomas, 2002)⁹.

However, the previous argument is somewhat trivial. It may be the case that a company follows what would be identified as a focused strategy and still the outcomes of the projects do not have to be necessarily correlated. Stein (1997) gives in this context an example of pharmaceutical industry. A company in this type of industry finances R&D for numerous drugs. This might look like a focused strategy, still the individual components of the projects' outcomes might be distinct. Thus, the company can easily engage in winner-picking despite of its relatively focused strategy. Furthermore, the argument supporting diversification is strongly dependent on the assumption that a company is able to predict the outcomes of the projects accurately (Stein, 1997).

Argument in favor of focus

Stein's (1997) argument favoring focused strategy is built up on the last statement that questions a firm's ability to correctly estimate the projects' outcomes. In favor of focus speaks the assumption on the existing correlation between the errors in the evaluation of projects. In particular, errors in evaluation does not harm as long as there is correlation

⁹ Thomas (2002) finds in his analysis of analysts' forecast errors that the greater the degree of diversification, the smaller the forecast errors and less diversity among forecasts which supports the *information diversification hypothesis*. However, once it is controlled for any effect of diversification on the volatility of returns and earnings, diversification results in greater forecast errors and greater diversity among forecasts favoring the *transparency hypothesis*. Noteworthy, when Thomas (2002) compares the forecast errors of diversified firms to those of their matching-firms portfolios in order to eliminate any diversification effect on the volatility of returns and earnings, he finds very similar results.

between these errors. And such prediction errors are more likely to be correlated while following a focused strategy rather than diversifying in an unrelated way. The idea behind is that while monitoring two related projects, any error in the assessment of one project is very likely to occur in the assessment of the second one and both projects receive an appropriate amount of resources. In this sense, a focused strategy is more desirable than an unrelated strategy if headquarters' signals are less exact (Stein, 1997).

Firm's resource profile as determining factor

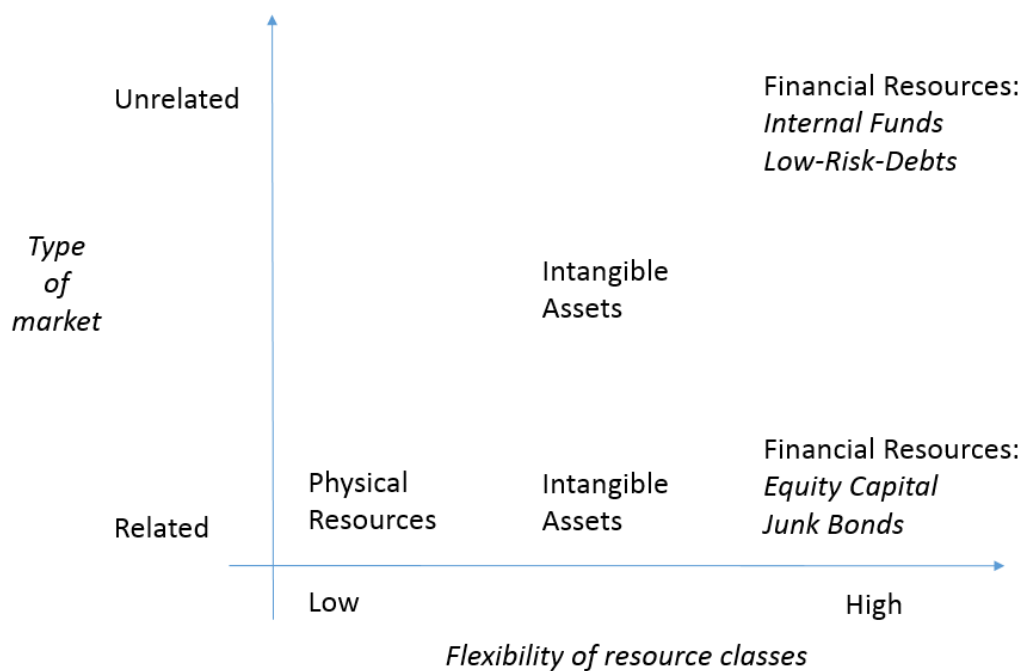
Based on a firm's resource profile, Chatterjee & Wernerfelt (1991) determine systematic factors influencing the type of diversification which a firm is likely to pursue. In particular, they identify the type of a market that a firm decides to expand to. Their paper is based on the basic premise, that a firm chooses the market for diversification, such that this market provides a competitive advantage for the firm. According to Porter (1987), such a competitive advantage can be achieved by transferring the firm's skills and resources to new markets¹⁰. Chatterjee & Wernerfelt (1991) assume that if a resource should have influence on the type of diversification, this should depend on the specificity of this resource in the relevant industry¹¹. Obviously, the "*flexibility*" of a resource - a resource characteristic, which determines whether the resource can be used only for one or more end-products, will constrain the firm in terms of degree of diversification it can follow. While the firms with flexible resources can choose to expand to more or less related industries, the firms with inflexible resources can afford unrelated diversification only. In particular, Chatterjee & Wernerfelt (1991) refer to both tangible and intangible assets as fairly inflexible, while financial resources are considered flexible. Noteworthy, availability of some tangible and financial resources for diversification is limited to the excess capacity of the current business, while some intangible assets such as brand name, patents or knowledge and expertise can be effectively used in another products (Chatterjee & Wernerfelt, 1991). Following this assumptions, the below Figure 4 shows that tangible and intangible assets should prompt

¹⁰ Resources have been identified as a driver of corporate diversification by number of theories, such as Penrose (1959), Gorecki (1975), Rumelt (1986), Lecraw (1984) and Caves (1996) as well as proved empirically by work of Lemelin (1982) and Stewart, Harris, & Carleton (1984).

¹¹ See also Gorecki (1975), Williamson (1975) and Gort, Grabowski, & McGuckin (1985).

related diversification, whereas financial assets are expected to motivate any kind of diversification. In particular, since related diversification is considered less risky by capital market (Montgomery & Singh, 1984; Lubatkin & O'Neill, 1987; Barton, 1988), this type of diversification will be associated with external financing more than unrelated diversification, which on the other hand will be related to internal financing (Chatterjee & Wernerfelt, 1991).

Figure 4: The relationship between the flexibility of resources and the type of market



Source: Chatterjee & Wernerfelt (1991, p. 37)

The above theory is supported by empirical findings to certain extent. Bettis (1981) and Barton (1988) present positive association between capital expenditures and related diversification strategy. Regarding the physical assets, Chatterjee & Wernerfelt (1991) find also that higher capital expenditures are linked more to related diversification in the subsample of high-performing firms, while the reverse relationship is found in the subsample of low-performing firms. However, there is no statistical significance given in either sample.

With respect to intangible assets, Chatterjee & Wernerfelt (1991) identify that firms operating in research- and/or marketing-intensive industries have expanded in more related way. The authors imply that this may be attributable to the relative inflexibility of innovative

capabilities with respect to their redeployability in development of different end-products. Moreover, their results also suggest that the necessity of intangible assets differs from industry to industry, which may explain why some firms do not undertake related diversification even though this is considered preferable.

Regarding financial resources, in line with the expectations, internal funds providing long-term liquidity seem to be associated with unrelated diversification most, while short-term liquidity is not related as much. Behind the decision to diversify in unrelated way, firstly, Chatterjee & Wernerfelt (1991) implicitly assume that managers are able to discover unrelated opportunities leading to exceptional performance, which despite of unfavorable market perceptions, reflects the best interests of shareholders. Secondly, they relate the relationship between internal funds and unrelated diversification to the implications of agency theory. Moreover, with reference to Palepu's (1986) findings, Chatterjee & Wernerfelt (1991) suggest that excess internal funds may imply diversification because in doing so, takeovers can be prevented and management can keep control over the firm. In order to compare the explanatory power of the two possible explanations, Chatterjee & Wernerfelt (1991) investigate the relation between the initial degree of risk and nature of market which the firm decided to enter. In order to support the agency phenomenon, higher initial level of risk should be related to more unrelated diversification. Surprisingly, when comparing the results between high- and low-performing firms, the presence of agency behavior was implied in the latter category of firms only. In particular, in the sample of high-performing firms, higher initial risk levels were associated with more related diversification. Thus, when unrelated diversification was pursued in the interest of shareholders, this had positive impact on the firm's performance. On the other hand, when this type of diversification should decrease the total risk only, then unrelated diversification resulted in lower performance. Such results make sense, since if managers were pursuing their own interest only, in line with the agency theory, those firms would be very likely to perform poorly¹². In addition, Chatterjee & Wernerfelt (1991) suggest that the lower performance may

¹² Similar results are presented by Montgomery & Singh (1984), Lubatkin & O'Neill (1987) as well as by Barton (1988).

come from the use of short-term financing in diversifying actions which is in general not appropriate for long-term projects. However, this often represents the only possibility for low-performing firms to finance their investments.

Notwithstanding the expectations, availability of cheaper external financing imply neither related nor unrelated diversification (Chatterjee & Wernerfelt, 1991). As possible explanations Chatterjee & Wernerfelt (1991) suggest the following. Firstly, firms make sure that their decision for the type of diversification complies with the investors' expectations, since equity is traded on the market. Secondly, with reference to Smith (1986), firms simply avoid new equity issuance due to subsequent negative effects on stock prices and control rights.

Noteworthy, ambiguous results on the patterns of corporate diversification lead to conclusion that firms neither expand completely randomly, nor do they do so in a certain way. A firm's performance does not depend on the type of diversification chosen, but rather on the fit between a firm's diversification strategy and its resource profile. Hence, the nature of resources at a firm's disposal is very likely to determine the direction of the firm's diversification strategy.

2.1.2. Narrow scope of diversification

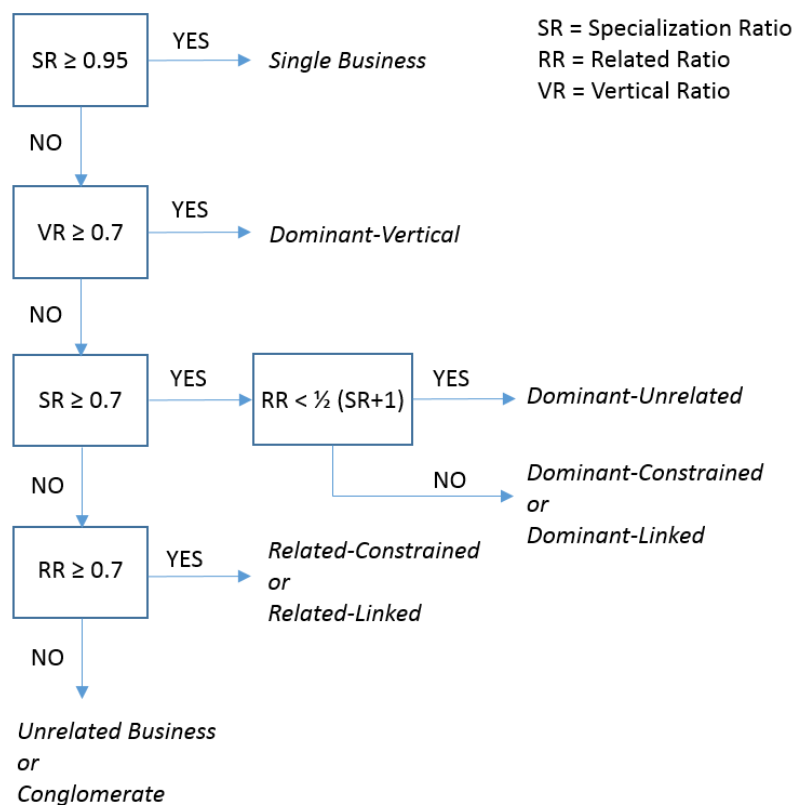
As already mentioned in the beginning of this sub-chapter, there is no consensus among researchers on the general definition or measure of diversification. Still, the formulation of concepts and measurement techniques by Rumelt (1986) seems to be meaningful from the management's point of view and its reliability has been proved in the research community (Montgomery, 1982). Rumelt's (1986, p.11) framework is based on the concept of *"diversification strategy"* which includes both Chandler's (1966) notion of diversification as a strategy and Harvard interpretation of strategy as *"the relation between competence and opportunity"*. In this sense, Rumelt (1986, p.11) defines diversification with respect to the *"firm's commitment to diversity per se"* based on the former notion as well as the relation between old and new activities with regards to *"strengths, skills or purpose"* spanning this diversifying actions.

Founded on the framework of Wrigley (1970), firstly, the measurement of diversity is grounded on the firm's *specialization ratio* which is defined as "*the proportion of a firm's revenue that is attributable to its largest discrete product-market activity*" (Rumelt, 1986, p. 29). The discrete product-market activity is considered to be a business that is not dependent on any other of the firm's businesses from the strategic point of view meaning that any change in quality and scope of this business is not restricted by another of the firm's businesses and has no substantial impact on the operations or strategy of another of the firm's businesses (Rumelt, 1986). Secondly, diversity is measured according to the firm's *related ratio* which Rumelt (1986, p.29) refers to as "*the proportion of its revenues that are attributable to the largest group of business that are related in some way to one another*". Business *relatedness* occurs when firm's businesses share a common competence, expertise, resource, market or strategy. If each of the firm's businesses in one related group has to be linked only to one other member of the group, this is referred to as *linked relatedness*. On the other hand, if each member of the group is linked directly to all and all are linked to each another, this is considered to be *constrained relatedness*. Thirdly, *vertical ratio* defined as "*the proportion of a firm's revenues attributable to all of the by-products, intermediate products, and final products of a vertically integrated sequence of manufacturing operations*" is used to classify diversity (Rumelt, 1986, p. 29).

Based on these measurement ratios, Rumelt (1986) defines four main categories of diversification strategy: *Single*, *Dominant*, *Related* and *Unrelated Business* and divides all but the first one into subcategories which sums up to nine different classifications. The assignment of diversification categories is shown in the below Figure 5. *Single Business* is referred to a nonvertically integrated company ($VR < 0.7$) that has specialization ratio higher than 0.95 as well as to a vertically integrated company ($VR \geq 0.7$) whose end-product business provides at least 95% of total revenues. The *Dominant Business* category includes, firstly, vertically integrated companies ($VR \geq 0.7$), here referred to as *Dominant-Vertical*, whose end-products do not contribute to more than 95% of total revenues, secondly, nonvertically integrated companies ($VR < 0$) whose specialization ratios are lower than 95% but still higher than 70%. The latter can be additionally classified as follows. Firstly, there is *Dominant-Constrained* class

that is represented by nonvertically integrated *Dominant Business* firms whose diversifying activities are based on certain competences or resources related to the primary dominant business activity and that are all linked to one another. Secondly, there is *Dominant-Linked* category that includes also nonvertically integrated *Dominant Business* firms that diversify by expanding current competences and resources of the primary dominant business as well as by building on newly acquired competences and resources. In this case, however, new businesses are linked to the firms' core activity only indirectly through some other of the firm's businesses. Lastly, there are *Dominant-Unrelated* nonvertical firms falling into the *Dominant Business* category whose diversifying activities are not related to their core business.

Figure 5: Assignment of diversification categories



Source: own illustration with reference to Rumelt (1986, p. 30)

The category of *Related Business* covers nonvertical firms whose largest group of related businesses contributes by more than 70% of total revenues ($RR \geq 0.7$), while no single business contributes by more than 70% ($SR < 0.7$). Those *Related Business* firms, whose new

activities are linked to specific competences or resources of their core business activity and that are consequently all related to each other, are in the category of *Related-Constrained* firms. On the other hand, those *Related Business* firms, whose new activities are built on current competences and resources different in their scale and scope and on new competences and resources acquired, that are not directly linked to their core business, are referred to as *Related-Linked* firms.

The last major category of diversification strategy, *Unrelated Business*, includes nonvertically integrated firms that diversify regardless the relation between new activities and their core businesses. In such case, no largest group of firm's related businesses covers more than 70% of total revenues. There are two subcategories of *Unrelated Business* firms. Firstly, there are *Acquisitive Conglomerates* known for their aggressive expansions into new markets by acquiring unrelated businesses. In order to classify for an *Acquisitive Conglomerate*, a company has to fulfill for the last five years following; its earnings per share have grown yearly at least by 10%, the firm has acquired at least five new business, of which at least three have been unrelated to the firm's core business and lastly such firm has issued new equity shares with total value equal or greater than the amount of common dividends distributed during this period. Secondly, there are simply *Unrelated-Passive* firms that do not fulfill the classification for the former category.

All in all, Rumelt's (1986) approach to measure the firm's scope of diversification is innovative in a way that it reflects the management perspective such that it studies the firm as a whole instead of looking at the firm as a sum of separate parts. Contrary to the traditional diversity measures such as "*product-count*" that is based on the product classes of Standard Industrial Classification, Rumelt's (1986) categorization can be considered the right proxy for the categories of diversification strategies. To support this, it has been proved that Rumelt's classification system was superior to simple measures of diversity in uncovering significant differences in financial performance and policies among firms (Rumelt, 1986).

2.1.3. Scale of corporate diversification

After a firm has determined the scope of its diversification strategy – degree to which new business will be related to its current operations – it has to decide upon the scale of diversification. In particular, it needs to be resolved *how many* new businesses are optimal for the firm to be run. This may not be an easy question to answer. Not surprisingly, there are not many, if any study dealing with this issue. Nevertheless, the work of Stein (1997) on internal capital markets provides some ideas that may be relevant for the diversification strategy as well.

First, the notion of tight credit constraints assigns more resources from outside investors to headquarters rather than individual project managers. According to this theory, headquarters is more efficient at capital allocation than individual managers which in the end may increase its ability to receive more total funds from external capital market (Stein, 1997). Converted to the matter of diversification, divisions in a conglomerate may benefit from lessened credit constraints compared to similar units run as stand-alone companies¹³.

Second, the more projects under the supervision of headquarters, the less credit constraints. In the most extreme case, credit constraints may not be binding at all (Stein, 1997). Thus, ideally, the firm should run as many businesses as possible. However, in reality, firms cannot grow forever and without accruing any costs. In order to make the case more realistic, Stein (1997) suggests that headquarters' monitoring ability decreases as the number of projects overseen rises. Nevertheless, in this regard Stein (1997) points out that progress in the monitoring technology may outweigh the costs associated with increasing number of projects. The question is, to what extent this technology is reliable and can substitute human resources. If there was no adequate technology, more projects would simply require more personnel. In this sense, Stein (1997) reasonably assumes that bigger staff would mean new layers in a firm's structure which would result in additional agency problems. Obviously, either headquarters would have to supervise more projects or some middle managers would be needed to take over a part of control. In the former case, headquarters maintains full control over resource allocation and can directly derive all the private benefits created by the

¹³ This effect is further discussed in chapter 2.3.2 as one of the financial benefits of corporate integration.

projects under its supervision. However, the ability of any individual agent to acquire new information is constrained. With regards to this, Stein (1997) points out that two middle managers can gather in total more information about the projects under their supervision than any single supervisor. Hence, there seems to be a trade-off between the quality of information, which would be supported by an organizational structure consisting of more layers – middle men, and an aspiration to have the most direct access to the private benefits, which would be guaranteed in the case of only one supervisor.

In addition to worsened information quality, larger scale of a firm's diversity causes inefficiencies in resource allocation within a conglomerate. On one hand, there is visible inefficient transfer of resources in favor of poor performing divisions in order to provide managers with investment incentives. On the other hand, based on the sociological models of equity inside organizations¹⁴, Rajan et al. (2000) relate inefficient cross-subsidization within a firm to CEO's compliance with standards of intra-organizational equity. In this sense, CEO allocates the capital between divisions "fairly" rather than in a value-maximizing way in order not to disappoint anyone.

2.1.4. Optimal level of diversification

With regards to the optimal level of diversification, there exist no right answer. Stein (1997) points out two compelling arguments. First, conditional on both focus enhancing the correlation between project outcomes and relative little error in the assessment of projects' outcomes by headquarters, in that case a focused strategy would make internal capital market less optimal. Hence, an unrelated diversification should be preferred over a focused strategy. Second, given that there exist errors in the evaluation of projects' outcomes and focus enhances the correlation between these errors, in that case, a focused strategy would make internal capital market more optimal and should be preferred over unrelated diversification. Noteworthy, Stein (1997) highlights with regards to the choice of optimal strategy the role of a decision maker. Namely, if the decision maker is a founder, any unrelated diversification would be assumed to be value-increasing. However, if the decision

¹⁴ See Adams (1965) and Homans (1961).

maker is a manager, as it is often the case, then diversification may result in value decrease. As shall be seen, empirical evidence of diversification's effects on wealth is considerably inconsistent. Consequently, Stein's (1997) predictions are exact only as long as the diversification strategy is pursued in the interest of a firm's shareholders.

Another studies provide alternative suggestions on the issue of the optimal diversification level. In general, Marshall et al. (1984) argue that firms would optimally combine minimally correlated activities (preferably, negatively) if there are costs associated to expanding or maintain lines of business by the means of acquisition or direct investment. More specifically, Maksimovic & Phillips (2002) model demonstrates that a firm's comparative advantage, coming from the firm's production ability in a particular industry, predestinates the firm to reach higher growth and size in that industry. Hence, the optimal number and size of market segments, which a firm should operate, is determined by its comparative advantage across different markets.

Furthermore, Maksimovic & Phillips (2002) model proves the effect of change in demand on the growth of a conglomerate's division to be dependent upon the division's productivity. Most importantly, the model shows that change in demand faced by one division has an influence on the growth rates of the other divisions regardless agency problems and capital market imperfections. In particular, consistent with the efficient internal market hypothesis, if a firm's division attains higher (lower) productivity than another divisions, an increase in demand for that division decreases (increases) the growth rates of the other divisions.

Noteworthy, Maksimovic & Phillips (2002) point out that if a firm is much more productive in one market than the other one, such firm chooses optimally to specialize in that market. Similarly, if the firm's productivity is not much different across markets, such firm chooses optimally to diversify. Hence, a firm's decision to diversify is partly dependent on its comparative advantage in the two markets. Regarding the relation between a firm's productivity and specialization within a set of firms, this is dependent upon both the distribution of skills within these firms and the distribution of skills across firms. In the case when the organizational capability (here in terms of productivity) is industry-specific, firms

with high productivity in one market tend to have low productivity in another markets. Hence, a firm with no special skill in any market is likely to be less specialized. In the other case when organizational capability is not industry-specific, all firms split their production evenly between the markets. Therefore, there is no relation between a firm's productivity and its level of specialization and productivity is similar across all markets. Yet, bigger firms have higher productivity than smaller firms across all markets. In particular, the higher the number of markets served by a conglomerate, the greater its level of general ability. Therefore, firms that diversify across many markets are very likely to reach average ability in all of them¹⁵.

All in all, given the lack of research on this topic, there is no evident trend suggesting the optimal level of diversification. The right amount of diversification seems to be highly individual. Nonetheless, there are certain restrictions regarded to a firm's organizational structure and capabilities that have to be considered before deciding on a particular diversification strategy and that are very likely to influence the diversification's effects on firm value.

2.2. Drivers behind corporate diversification

In general, the gains resulting from corporate diversification can be derived from the benefits of corporate integration and are represented by two main categories: *operating* and *financial*. The benefits of the first category come clearly from the increased productivity and efficiency in production, distribution, marketing, management and research, which can be achieved through company integration. In the second category, there are benefits associated with possibilities of larger internal capital markets as well as market imperfections. In addition, diversifying actions, especially, are driven by the opportunity for *firm-level diversification* including efficient managerial contracts, the possibility to monitor externalities as well as the opportunity to respond to changes in product life cycles, which cannot be simply

¹⁵ In particular, a regression analysis has revealed a positive relation between a firm's average productivity and its level of focus consistent with the empirical evidence on the diversification discount (Maksimovic & Phillips, 2002).

replicated by single-segment firms. Noteworthy, the drivers behind a firm's decision to diversify, which are to be discussed in the following, represent the benefits for the firm, and hence are supposed to enhance firm value. Clearly, there are another incentives leading firms to diversification from the managerial point of view. These benefits, however, are earned at the expense of shareholders and thus they are very likely to result in a decrease in firm value. Therefore, I consider such drivers as a possible explanation for the diversification discount rather than benefit of corporate diversification and I will discuss these drivers separately in the next chapter.

2.2.1. Operating benefits

As for the operating benefits, this would obviously involve economies of scale and scope with regards to both manufacturing processes and management skills. Moreover, mergers may enhance the competitiveness of the combined firm, its research capabilities as well as technological expertise. Noteworthy, greater operational efficiency drives mainly intra-industry mergers also known as related mergers. This concerns firms whose cash flows are perfectly or almost perfectly correlated (Lewellen, 1971). However, Levy & Sarnat (1970) show that such economic benefits are not present in a pure conglomerate mergers.

Manufacturing economies of scale and scope

Based on the resource-based theory, excess capacity in a firm's productive components – resources (purchased factors, services created and expertise accumulated) – leads the firm to expansion as long as this represents a more profitable way of using additional resources (Penrose, 1959). Noteworthy, Penrose (1959, p.68) excludes the achievement of "*state of rest*" (equilibrium) for the following three reasons: difficulties arising from the indivisibility of resources, alternative uses of the same resources under different conditions in a "*specialized*" manner, and continuous creation of new services in the process of operation and expansion. However, instead of expanding, a firm could sell the excess resources externally in the market, which diminishes the motivation for corporate diversification unless external transfer is exposed to market failures (Teece 1980, 1982). Moreover, external transfer may involve valuable organizational and individual expertise

(Teece, 1982), contracting issues associated with the sale of intangible assets (Wernerfelt, 1988; Caves, 1996) and transaction costs - managers may demand compensation for the uncertainties linked to such recontracting and owners may be unwilling to share the managerial capabilities (Marshall et al., 1984). Marshall et al. (1984) relate this motive for corporate diversification to technology of production and valuation under uncertainty. In this sense, a conglomerate can use an input factor to the manufacturing process more efficiently than a focused firm under the following conditions; first, the input is required before demand is known; second, the input cannot be stored or exchanged between firms at no costs; third, the input has a valuable alternative use within the conglomerate.

Despite the theoretical framework favoring economies of scale and scope as one of the main drivers behind diversification, the empirical evidence is rather inconsistent. Even though Walker (2000) reports that 42% of acquiring firms between 1980 and 1996 chose a diversification strategy as a strategic objective¹⁶, the number of diversifying acquisitions decreased during 1990s. Moreover, if economies of scale was the driver behind mergers, clearly higher merger frequency would be expected among small firms than among larger ones. However, the empirical evidence shows that in reality the reverse is true (Gort, 1969).

Managerial economies of scope

Based on the *theory of organizational capabilities*, firms are made up of organizational capabilities – the qualifications and expertise of management¹⁷ – which can be to some extent transferred across businesses (Matsusaka, 2001). In this regard, Matsusaka (2001) points out that given the high value of these capabilities, it may not make any sense for a firm to close its business when the sales drop, instead it may be reasonable to search for another area where these capabilities could be utilized. Obviously, such a search process involves risk which may be accounted for only by the means of trials and errors – by starting new ventures and monitoring the effects – that is to say through diversification (Matsusaka, 2001). In this

¹⁶ In addition, there were the following strategies identified as strategic objectives of acquiring companies: geographic expansion, expansion of product line, market share increase, and vertical integration.

¹⁷ In particular, the organizational capabilities are referred to as the combined tangible resources and the abilities of employees, especially top and middle management, such as marketing skills, distribution skills, product development skills, organization skills among others (Chandler, 1990).

sense, firms go into new businesses in an experimental way meaning that they exit those that do not work out and expand the successful ones. There is an evidence on this pattern in the 1986 annual report of General Electric, which provides the following statement: *“Each business was to be number one or number two in its particular market. For those that were not, we had a very specific prescription – they were to be fixed, sold or closed”* (Chandler, 1991, p. 44).

The model developed by Matsusaka (2001) is unique in two ways; first, it includes a dynamic feature of diversification, second, it captures the element of uncertainty, which is very closely associated with any diversifying action and which has not been accounted for so far¹⁸. With regards to the dynamics associated to diversification, Matsusaka (2001) finds that firms continually start new businesses and leave the existing ones in the course of searching for better matches for their organizational capabilities¹⁹. Noteworthy, there is no evidence on the firms reaching and staying at any kind of static organizational equilibrium. Contrarily, Matsusaka (2001) observes recurrent series of acquisitions and divestures, both simultaneous and interchanging, which gives support to his view of diversification as a continuous searching process. The main message of the model by Matsusaka (2001, p.420) is that *“diversification can be an optimal strategy, even when there is a specialization premium”* – that is, it can represent a value-maximizing strategy.

Another managerial driver, mentioned by Ravenscraft & Scherer (1987), comes from the perspective of a target company which by means of merger may ensure proper managerial succession in the case when the management of a larger acquiring company possesses skills and abilities superior to the target’s management. On the other hand, managers in the acquiring company may be interested in the merger themselves by reason of enhanced reputation and compensation linked to running a large corporate enterprise (Ravenscraft &

¹⁸ The model is based on the framework of neoclassical paradigm of the firm, which was also used by Jovanovic (1993) and Maksimovic & Phillips (1999). The former model explains the long-term trends in diversification, however it omits uncertainty and dynamics of a searching process linked to it. The latter model accounts for divisional productivity, but it is static as well.

¹⁹ This conclusion is based on the 30-year acquisition and divestiture behavior pattern of the five companies, Gulf & Western, International Telephone & Telegraph, Lingo-Temco-Vought, Litton, and Textron – the so called conglomerate kings.

Scherer, 1987). Moreover, managers in the acquiring company themselves often see the opportunity to cooperate with management of a target company. In particular, they expect valuable complementarities in managerial skills and expertise. For instance, an acquiring company would supply financial resources, while a target company would contribute with expertise in product development and production (Matsusaka, 1993)²⁰.

Marketing economies of scale

Apart from manufacturing and management, integration of firms results in economies of scale also with respect to marketing activities. First, cost can be saved through integration of distribution channels. Second, firm's competitiveness may be enhanced by merging with complementary brand on one hand and by building a monopolistic position through acquisitions on the other hand. Not surprisingly, Ravenscraft & Scherer (1987) find an evidence of firm movement into industries with heavier other selling expenses (costs associated with field sales representatives, coupons, samples, customer service) through which companies seek economies of scale. Closely linked to the latter is advertising intensity. Ravenscraft & Scherer (1987) suggest that industries, where the products are strongly differentiated, may be very popular targets of diversification. At the same time, companies unfamiliar with such product strategies may refrain from entering such industries as it is case in R&D-intensive markets.

Complementarity in research and technology know-how

Another operating benefit assigned to a conglomerate merger concerns the complementarity in research and technology know-how that is linked to new products (Lewellen, 1971). Obviously, expenses associated with R&D can be reduced through economies of scale, yet greater technological expertise can be achieved. Numerous studies have showed the pattern of US corporations moving into industries of immense technological prospects. R&D-exhaustive actions entail, however, certain skills, which may discourage companies coming from less R&D-intensive markets from entering such industries

²⁰ With regards to managerial synergy hypothesis, see also Berg (1969), and Sobel (1999).

(Ravenscraft & Scherer, 1987). It has also been empirically proved that R&D-exhaustive industries face much less acquisitions (Ravenscraft & Scherer, 1987). Similarly, Hyland & Diltz (2002) find that diversifying firms tend to have low R&D-to-assets ratio suggesting that either the benefits linked to larger internal capital market do not motivate firms to diversify or these firms simply fail to utilize new abilities in improved R&D spending.

2.2.2. Financial benefits

With regards to the financial benefits, here one would count financial synergy, increased debt capacity, risk reduction through the portfolio diversification as well as taking advantage of undervalued targets (Lewellen, 1971; Fluck & Lynch, 1999). Moreover, Ravenscraft & Scherer (1987) mention the effect of lessened tax obligations achieved through pooling of losses and internalization of capital transfers. In the following, the major financial benefits are discussed in more detail.

Financial synergy

The theory of mergers and divestitures suggests that firms choose to merge mainly due to the fact that otherwise as a result of agency problem, they would be unable to finance projects as stand-alone. In this theory, a conglomerate represents simply a technology allowing for project financing in the times of financial distress. Once the distressed period is overcome, the financial cooperation ends and the acquired assets are divested (Fluck & Lynch, 1999). However, in their work, Fluck & Lynch (1999) come to two contradictory conclusions. On one hand, mergers boost the value of the integrated firms in the course of financing projects, which could not be financed otherwise. On the other hand, since the profitability of such projects is marginal only, finally integrated firms are valued less than stand-alones.

Regarding the first implication, Fluck & Lynch (1999) assume in their theory that firms merge in order to survive, hence their model is applicable to start-up companies or firms in financial distress, which are unable to finance projects as stand-alones. This financial synergy hypothesis is supported by the research of Hubbard & Pahlia (1999) who find that in the merger wave of 1960s conglomerate mergers concerned more likely financially constrained firms in comparison to related mergers.

With respect to the second implication, given that the profitability of the projects financed in a conglomerate is marginal, Fluck & Lynch (1999) suppose that once the merged firm reaches profitability, management prefers divestiture over conglomerate since there are coordination costs associated with running a conglomerate. The resulting decrease in the shareholder value is in line with the theories on corporate diversification as value-destroying mechanism. However, in this case, the merged firm is still valued more after diversification than in the other case when the firms would continue operations as stand-alones. Moreover, Fluck & Lynch (1999) base their argument of coordination costs on the assumption that in the case of financial distress, unrelated diversification is more likely than related diversification. They argue that within the same industry the potential acquirer may face financial constraints as well as the target. Therefore it is more probable that a firm will be acquired by a company coming from a different industry. This shall prove the conglomerate capacity to deal with the negative impact of financial distress (Fluck & Lynch, 1999).

In addition, in support of the theory of financial synergy arising from mergers, Hadlock et al. (2001) present evidence that corporate diversification helps alleviate information asymmetry problems linked to equity issues as stated by Myers & Majluf (1984). In particular, their findings show that announcements of equity issues by diversified firms have less negative impact on stock return than those made by their focused counterparts. Clearly, these results contradict both the *transparency hypothesis* and the *inefficient investment hypothesis* discussed in the first chapter.

Increased debt capacity

In a world of taxes, debt increases market value of equity through tax benefits implied by the tax-deductability of interest. In the case of merger, when the borrowing capacity of a combined company is automatically increased, leverage serves as a useful and stable mechanism enhancing the wealth of shareholders (Lewellen, 1971).

With respect to the above statement, Lewellen (1971) relates it to the risks faced by a lender and the corporate debt capacity. In particular, lender's willingness to lend funds to a company is related to the probability of a company's inability to meet its debt obligations defined by the loan agreement. In the case of a merged company it is interesting to identify

the extent to which merger grants a protection for the lender, which would not be provided if the lender would lend to the potential merger parties independently. In this sense, Lewellen (1971) shows that if two companies merge, the probability of the merged company becoming unable to meet its debt obligations clearly decreases in as much as the cash flows of the potential merger partners are not related, such that they are unlikely to default on their debt payments at the same time. Usually, it would be sufficient for the cash flows considered to be less than perfectly correlated. Given this, there would be always enough excess cash available in one company to cover the debt obligations brought to the combined company by the other company that would be currently unable to meet its debt payments. Moreover, the creditworthiness of the merged company is not enhanced only with respect to one lender. Lewellen (1971) argues that merger reduces the risk of any claimholder, except for senior debt holders, who may be granted junior positions in the course of merger. Such situations could be, however, easily inhibited through appropriate debt covenants.

Regarding any empirical evidence on diversification having influence on debt capacity, the conclusions are rather ambiguous. On one hand, Weston & Mansinghka (1971) report increasing percentage of leverage used by conglomerates in 1960s. On the other hand, Comment & Jarrell (1995) find no major economic significance in any event. Hence, either diversification does not lead to expansion of conglomerate's debt capacity or managers simply do not make use of it. Still, Billet (2003) discovers negative correlation between the diversification discount and resource transfer to divisions that would be very likely credit constrained otherwise.

Risk reduction

Risk reduction, in particular decrease in variability of earnings, which is derived from investment and effort dispersion over different businesses, is one of the most common argument speaking in favor of diversification. Variability of a firm's earnings goes hand in hand with the overall firm riskiness. Noteworthy, since merger decreases the aggregate default probability, a combined company shall be more attractive for prospective lenders. Indeed, Comment & Jarrell (1995) document an increase in a firm-specific risk with the level

of corporate focus. With respect to this, Lewellen (1971) points out the distinction between diversification from lender's and borrower's point of view. From the lender's perspective, diversification means lending small shares of his portfolio to distinct companies. By means of this, lender reduces the likelihood that many borrowers will default simultaneously, however, still he cannot influence the probability of default of any individual borrower. From the borrower's point of view though, diversification is associated with merging operations which results in a decrease of joint probability of default, as each merger partner can be backed by the excess cash of the other one. In this sense, merger generates for lenders opportunities that are referred to as "*participating interest-and-repayment possibilities*", which could not be attained if lenders would lend to the same group of companies independently (Lewellen, 1971, p. 532). In the same manner, Levy & Sarnat (1970) point out cost savings which a conglomerate can achieve when accessing capital markets in financial need. Moreover, they relate this cost advantage at least partially to the decrease in risk faced by lender which is achieved through diversification. Hence, merger gives rise to extra debt capacity of a combined company.

Furthermore, Lewellen (1971) argues that no unused debt capacity has to be given in any of the prospective merger party prior to merger in order to take the advantage of the increased debt capacity in the combined company. Further leverage prospects are likely even if the potential merger partners have already fully exploited their respective debt capacities. The only requirement for this theory to be applied is that both lender and borrower are averse to the risks and costs attributable to default. Apart from the economic perspective, Lewellen (1971) points out the social impact of enhanced security of debt obligations as well. Since debt payments of one party in the merged company can be backed by the other one if necessary, activities, which would be otherwise impeded by impatient lenders, can be continued. Nevertheless, there are costs as well. In particular, given the protection provided by the merged company, operations, which would be discontinued otherwise due to noncompliance with market requirements, may be inefficiently maintained. This comes as no surprise, since each coin has two sides.

Nevertheless, Comment & Jarrell (1995) state that lower risk attained through corporate diversification may not appear so valuable for shareholders, who are able to diversify through own portfolio of stocks. They base their argument on the recent improvement of investors' competences to diversify individually which is most likely a consequence of reduced transaction cost and growth of mutual funds. Moreover, given that corporate diversification reduces the ability of investors to create portfolios of their own choice (Levy, 1991), this clearly demotivates diversification at corporate level. Similarly, Alberts (1966) and Levy & Sarnat (1970) find no additional value in corporate diversification, since conditional on perfect capital markets, investors are able to diversify their own portfolios.

Finally, one would believe that the stock market returns of the individual conglomerates will correlate strongly with the S&P index, given that the diversification is supposed to reduce the risks of the individual business lines. However, in Ravenscraft & Scherer (1987) study, the average market portfolio correlation of 0.57 implies that the diversification was not pursued in its pure risk-eliminating sense. Moreover, the stocks of the individual conglomerates were considered by investors as extremely risky. Overall, some conglomerates do perform extraordinarily well, however, at the same time their diversification activities do not help much reduce the risk of their stocks.

Market misvaluation

Additional financial benefit of merger may come from temporary valuation fallacy on stock market. In this sense, Lewellen (1971) suggests that in the case when a firm is undervalued by the market and there is another firm able to buy it at a price lower than the fair value, the stockholders of the acquiring firm are likely to profit from this transaction. An increase in market equity value takes place after the market realizes the current undervaluation and adapts the price of the assets accordingly. Obviously, taking advantage of market undervaluation requires following. Firstly, it is necessary that such re-appraisal of the assets really happens. Secondly, the price paid by the acquiring firm including all transaction costs associated with the acquisition must not be higher than the new adjusted value. Therefore, it would be essential for the market valuation fallacy to be large enough so

that it could become a prerequisite for such lucrative profit achievement (Lewellen, 1971). Clearly, discrepancies in valuation can be related to economic shocks such as changes in technology or security prices, which make the valuation more volatile in the sense that historical information becomes inefficient in forecasting future (Gort, 1969).

However, the research shows that there are no regular and lasting valuation errors in the market visible which would be large enough to satisfy the conditions for a prospective source of value creation (Fama, 1965; Cohen & Pogue, 1967; Jensen, 1968). Hence, individual investors seem to be as good at determining mistakes and revealing information as corporations (Lewellen, 1971). Thus, taking advantage of undervalued firms appears to be the least reliable financial benefit of merger.

2.2.3. Firm-level diversification

A credible motive for conglomerate organization must have an influence on firm's cash flows, which is certainly not the case of pure financial benefits reconstructing claims with no effect on income stream (Marshall et al., 1984). In addition to operating synergies, Marshall et al. (1984) present another motives influencing the firm's cash flows, which imply the integration of minimally correlated activities. Noteworthy, the motives to be discussed cannot be replicated by investors through building their own portfolios. In this regard, Marshall et al. (1984, p.4) point out that cash flows of diversified firm differ significantly from those of single-segment firm – that is they are not simply “repackaged”. In addition, Rumelt's (1986) *response theory* provides another example for firm-level diversification, which cannot be replicated by focused firms.

Profit-based contracts

The first motive for firm-level diversification comes from the agency theory introduced in the first chapter. With regards to agency relationship, solutions for the principal's problem depend on risk perceptions of both the principal and the agent, and observability of the agent's effort (Harris & Raviv, 1978, 1979; Shavell, 1979)²¹. Under the

²¹ If the agent's effort can be directly observed or judged on a firm's performance, there exists an optimal contract solving for the agency issue completely. If the principal is more risk averse than the agent, the optimal

assumption that the principal is less risk averse than the agent and the agent's effort cannot be directly observed, Marshall et al. (1984) propose that the owners' monitoring ability will be improved as profit will become a more exact measure of the managers' effort, given that the firm-level diversification diminishes the dependence of profits on arbitrary factors. Since the managers face lower risk (their effort will precisely define profits), they are inclined to exercise the given level of effort in return for lower compensation. In this way, both the owners and the managers benefit. Thus, the enhanced efficiency of contracts offers an incentive for diversification.

Moreover, different risk perceptions by owners and managers give rise to another agency issue. Since the manager's compensation is based on firm profit, the manager perceives risk as volatility of the firm profit. Therefore, the manager is inclined to exchange some expected return for a decrease in the non-systematic element of the variance of the firm profit. However, the owner is not likely to agree. Given that the firm-level diversification decreases the non-systematic element of the variance of the firm profit, Marshall et al. (1984) argue that this agency issue is resolved and both the owner and the manager benefit. In this sense, agency problems imply the benefit of firms consisting of divisions with minimally correlated non-systematic return elements (Marshall et al., 1984).

Monitoring the externalities

As another motive for conglomerate formation, Marshall et al. (1984) propose the opportunity for a firm to regulate the covariance of its cash flows and the return to the market (the total cash flow accruing to all assets). This can be done through controlling the level of activities in such firms including the choice of activities, products' prices, labor hired, capital acquired among others. In particular, the greater the absolute value of covariance between the returns in two different industries, the greater the incentive for merger offered by financial externalities (Marshall et al., 1984). In another words, Marshall et al. (1984) point

contract is such that the agent rents the firm's capital for a fixed financial amount. In that case, the agency problem is again resolved completely regardless the agent's effort. If the principal is less risk averse than the agent and the agent's effort cannot be observed exactly, the optimal contract is to compensate the agent conditional on the firm's performance. The expected compensation is equal the agent's reservation wage for the optimal level of the effort chosen by the agent. This type of contract is the most common in practice, therefore it is also assumed in Marshall et al. (1984) theory.

out that the greater the probability for returns in one industry to be larger than their average, while the returns in the other industry are lower than their average, the greater the motive for conglomerate formation.

The response theory

On one hand, the total risk of sales and earnings is associated to economic cycles, on the other hand, it is also linked to product-life cycles. The latter association causes much bigger concern to business managers, since the product obsolescence results in a decrease in demand, which cannot be easily recovered in the next cycle as it is usually the case for demand downturn caused by economic recession. Therefore, the risks linked to product life-cycles are considered the key driver for corporate diversification and to be very likely eliminated exactly by the means of diversifying activities (Rumelt, 1986). Similarly, Weston & Mansinghka (1971) find that the firms are pursuing defensive diversification in order to eschew revenue and profit instability, unfavorable growth prospects, unfavorable competitive changes, technological obsolescence and intensified uncertainties linked to their industries.

With respect to product life-cycle, negatively correlated returns represent a valuable protection against falling demand not through a new unrelated action but rather through a new product whose qualities are related to the causes of declining profitability of the old product. In this sense, Rumelt (1986, p.81) refers to this kind of strategy as the one of “*response*” rather than “*escape*”. This strategy requires two conditions to be satisfied. First, business strategy is expressed by a function rather than a product. Second, adequate skills and experience in management, technology and marketing are necessary for fast innovation and its effective implementation (Rumelt, 1986). Such firm qualities that reduce the risks linked to the product life-cycle in the most effective way are those embodied in the category of *Related Business*²² firms, in which diversification can be controlled. On one hand, the firms in this category cannot eliminate the total systematic risk of the economy since they are not

²² The category of *Related Business* firms includes non-vertical firms whose largest group of related businesses contributes by more than 70% of total revenues ($RR \geq 0.7$) whereas no single business contributes by more than 70% ($SR < 0.7$).

sufficiently diverse, on the other hand, they are diversified enough to offset the decrease in demand for an obsolescent product through introducing a new one as its functional alternative. Consequently, this category is expected to be associated with the lowest risk in earnings and to achieve at least as high average return as other categories (Rumelt, 1986).

However, Rumelt's (1986) empirical evidence proved the dominance not only for the *Related Business* category, but for the *Dominant-Constrained* category as well²³. Noteworthy, diversification per se has not contributed much to the decrease in the relative risk of the firm's earnings. Apparently, the art of connection between the firm's businesses plays an important role in the overall effect of the firm's diversifying activities. The lowest variability in a firm's earnings relative to return was achieved by companies that opt for little product-market diversity (the largest business group contributes by more than 70% to total revenues), while they control the level of diversification by linking all businesses to the competences of their core business, which is common for *Dominant-Constrained* and *Related-Constrained* firms. Surprisingly, *Dominant-Vertical* firms showed one of the worst risk performances of all (only *Dominant-Linked* and *Dominant-Unrelated* firms performed even worse), even though they resemble *Related-Constrained* firms regarding their end-products. This reveals that risk-return performance of firms committed to a single material cannot be improved through the effects of end-product diversification (Rumelt, 1986).

2.3. Organizational prerequisites for corporate diversification

Obviously, certain characteristics of an organization, in particular structure and strategy, should play an important role in the process of corporate diversification. The questions are: *Is there an organizational structure that is preferred in the case of*

²³ As a combined measure for measuring return relative to risk, Rumelt used in his study risk premium ratio (RPR), defined as $RPR = (\text{growth in earnings per share (GEPS)} - 0.015) / \text{standard deviation of annual GEPS}$, where 0.015 is an approximation to the risk-free after-tax return. The higher RPR, the better. Rumelt considered both return on equity and return on book capital or equity misleading. The former is dependent on market fluctuations as well as changing expectations of investors. The latter returns are sensitive to inflation and capital turnover rates. Therefore, as a measure of return was here taken the firm's average rate of GEPS. Conditional upon uniform growth assumptions, GEPS is related to the firm's incremental return on investment. Also, it provides a market-free approximation of stockholder benefit. *Related-Constrained* category achieved the highest RPR (0.775) followed by *Dominant-Constrained* category with the RPR of 0.658.

diversification? If yes, is it this certain structure that defines the diversification strategy or is it the other way around? The answers to these questions can be partly found in the study of Rumelt (1986) and are discussed in the following subsection. In addition, it is examined what other organizational factors could influence the success of corporate diversification.

2.3.1. Organizational structure and strategy

As demonstrated in the below Table 2 adapted from the Rumelt's (1986) study, by the 1960s almost half of the largest US enterprises was run as *product-divisional* organizations and by the 1970s more than three quarters of firms chose this type of organizational structure. Obviously, the rise in this category was at the expense of *functional* organizational structure. Except for the *functional-with-subsidaries* firms, the remaining two categories, *geographic division* and *holding company*, were represented only negligibly.

Table 2: Estimated percentage of firms in each organizational category

Organizational Category	1949	1959	1969
Functional	62.7	36.3	11.2
Functional with subsidiaries	13.4	12.6	9.4
Product Division	19.8	47.6	75.5
Geographic Division	0.4	2.1	1.5
Holding Company	3.7	1.4	2.4

Source: Rumelt (1986, p. 65).

The investigation into the sources of change in distribution revealed that this was mostly triggered by change in the organizational structure rather than by firms leaving and being substituted by firms with another structures.

Relationship between organizational strategy and structure

Noteworthy, a great part of theory relates a firm's organizational structure to its corporate strategy. In this sense, Rumelt (1986) highlights the causal relationship between these two firm characteristics. Based on his research, between the 1950s and the 1970s, the majority of the largest 500 enterprises had diversified in a considerable extent and had implemented *product-divisional* structures at the same time. Moreover, his study has two important implications. First, the more extensive diversification of a firm, the higher the

probability of a firm having a multidivisional structure. Second, this probability had rapidly increased over time in all but two categories²⁴. Hence, apart from obvious positive relationship between diversification and divisionalization, there was a continuous tendency towards divisionalization as such in firms from all strategic categories (Rumelt, 1986).

As for the *Single Business* category, here, the firms had changed their organizational structure to *product-divisional*, apparently, for reasons other than increased diversification. Rumelt (1986) mentions in this sense two examples. First, the firm Donnelly that pursued divisionalization in order to enhance efficiency through independent management of its book printing and commercial printing activities. Second, Interstate Brands, a bread and cake producer, that had bought over time numerous packaged and canned foods businesses, which were not integrated in *functional-with-subsidiaries* structure, but were operated as individual divisions instead. Nevertheless, both examples imply increased tendency towards diversification even in the firms with low product diversity or one dominant product (Rumelt, 1986).

Especially in the *Dominant Business* category, the tendency towards divisionalization was obvious even though there was significant proportion of firms, mostly vertically integrated oil and steel producers, which had kept *functional* structures. The majority of oil companies had *functional* or *geographic-division* structures, while steel companies had employed generally more centralized structures with subsidiaries executing manufacturing and marketing tasks, which are not part of their core business - transformation of ore and coke into mill products. Among the vertically integrated firms, which changed to *product-divisional* structure, there were predominantly firms operating in rubber, forest products and aluminum industries (Rumelt, 1986). In addition, Rumelt (1986) finds out that diversification clarifies a great part of the deviation in organizational types identified among the largest 500 enterprises. In particular, his research shows evident tendency towards diversification and higher propensity of more diversified firms to adopt *product-divisional* structures²⁵.

²⁴ The probability had not increased over time in *Single Business* and *Unrelated-Passive* category. Overall, Rumelt (1986) distinguishes in his study 9 different categories of diversification strategy. See the chapter 2.1.2. for further reference.

²⁵ In his study, Rumelt (1986) uses two different explanatory variables – strategic categories and specialization ratio - to confirm statistical significance of the relationship between structure and diversity at the 1% level.

With regards to the casual relationship between a firm's structure and strategy, this implies that certain organizational structures are linked to certain diversification strategies and vice versa. In his study, Rumelt (1986) shows that in the decade 1949-1959 firms that diversified had greater tendency to adopt divisional structures than equivalent firms that did not diversify to such extent. In the next decade, the tendency continued in the *Single Business* category, but not in the *Dominant Business* category, in which the firms implemented divisional structure regardless their degree of diversification. According to Rumelt (1986), the reason for this discrepancy may be the time gap between the structural and strategic change in those companies. His argument is supported by Chandler's (1966, p.389) finding that "*structure often failed to follow strategy*". Moreover, this implies that structure may influence strategy. In particular, in the case of *Single* or *Dominant Business* firm, if such a firm decides to implement *product-divisional* structure as a possible reaction to low diversity in its products, it may be prone to diversify to even greater extent than if it had not changed its structure. Not only the general managers profit from greater scope of their units, but divisional structure provides favorable administrative environment for easy and fast diversification. As in the first case, where strategy was supposed to trigger structure, here again a significant relationship between divisionalization and consequent diversification was found in the first decade, but not in the following decade.

All in all, there was apparently a strong relationship between divisionalization and diversification between 1949 and 1959 among all firms. In the following decade, *Single Business* firms had still great tendency to adopt divisional structure after they had diversified. This was not true for the *Dominant Business* category, in which the model of diversification has obviously changed. Consequently, until 1960s diversification strategy triggered organizational pressure calling for divisionalization, however, later once divisionalization has been standardized, divisional structure has reacted to normative theory rather than to organizational needs (Rumelt, 1986). To sum up, first, there is an organizational structure – *product-divisional* - that favors diversification strategy as such more than others. Second,

Comparing the explanatory power of these two variables, Rumelt (1986) finds out that the strategic categories significantly outperform specialization ratio – a measure based simply on the amount of diversity.

obviously, corporate diversification requires certain type of organizational structure – *divisional* - for its successful implementation implying a causal relationship between organizational structure and strategy. Whether structure follows strategy or strategy follows structure depends on the period, degree of a firm's specialization as well as another attributes linked to individual firms.

2.3.2. Another organizational prerequisites

Apart from a complex organizational structure and strategy, there are another organizational characteristics having influence on the success of corporate diversification. The following organizational attributes were identified by Rumelt (1986) mostly as the reasons for the decision of vertically integrated firms not to diversify: almost commodity features of their products, issues in the process of transfer of skills and technology, managerial values and attitudes focused on production and last but not the least the size of the firm and its poor performance per se.

Transferability of skills and technology

Undoubtedly, the more extensible the business, the easier the diversification process. Therefore, it is much harder to diversify for companies focusing on a single product, resource or process, which are typical features of a vertically integrated firm. By comparison, in science-based industries, such as electrical or chemical, technology is applicable in areas very distinct to the original one given its extensible quality. Rumelt (1986) uses, first, the example of electrical industry, in which the companies initially focused on generating power and then used the technology to develop goods running on electric motors such as radio, television and computer. Second, also chemical industry enabled the companies to operate in markets as distinct as textiles or antibiotics. However, many vertically integrated firms focused their R&D on process rather than product. In particular, they were more interested in enhancing the efficiency of their production process rather than altering the quality of their end-products. Consequently, such production-focused R&D of steel, oil, paper and nonferrous metals enterprises resulted in cheaper or superior products, whereas technology-oriented R&D removed the limits of sciences, industries and products (Rumelt, 1986).

Despite the hurdles to the diversification, which vertically integrated firms had faced, some of them went successfully through very carefully chosen actions and finally shifted their skills and strengths to related markets. First, Rumelt (1986) mentions in this regard American Chain and Cable, manufacturer of chains, cables and wire products, which began with forward integration into machine tools, automobile brakes, steering mechanisms and materials handling equipment, then continued to the market for electronic instruments and finally added industrial tools and electro-mechanical relays to its portfolio. Second, Rumelt (1986) brings the example of Trans Union²⁶ that moved from building and leasing of railroad tank cars to import-export, credit and loan business, and real-estate development. With respect to the way, how these companies diversified their business, Rumelt (1986, p.134) refers to a forward integration into assembled products as the *"illusion of diversification"*. Another way of diversification for vertically integrated firms would be manufacturing products which could be used as an alternative to the primary ones. However, since these companies focus more on the product itself rather than its function, new products with a similar function could be seen as competitors rather than relatives. An example is given by steel companies that perceive aluminum and plastics as rival materials rather than natural alternatives. This view is a logical result of heavy investment in capital-intensive and rigid procedures (Rumelt, 1986).

Managerial values and attitudes

In addition to the organizational structure, certain managerial postures linked to the single-industry strategies of the vertically integrated firms are very likely to inhibit the process of diversification as well. Managerial values and attitudes in such firms tend to give considerable significance to the products and processes themselves. Moreover, executives themselves are very proud of their role in the production process which undoubtedly influences the tendency of such companies to diversify (Rumelt, 1986). In particular, this is true for the steel industry characterized by low profitability levels and overcapacity. In this sense, Joel Dirlam (1965), an economist, points out that it is how steel executives perceive

²⁶ Before 1968, Union Tank Car.

their functions - *as an adoption of a specific way of life rather than running a business* - which has the greatest impact on the firm's propensity to diversify.

Size and poor performance

Even in the case when the above mentioned hurdles would be eased and overcome, the size of a firm itself plays, obviously, a significant role in the process of diversification. Regarding this, Rumelt (1986) shows that some of the oil companies in his study running petrochemical, plastic and fertilizer businesses identified as *Dominant Businesses*, if separated from the core business, would be counted in *Fortune 500*²⁷ on their own which makes any attempt to diversify even more difficult, if not impossible.

First, fractional expansion of business in such companies would result only in marginal changes in profitability and growth rate. Second, any new business added would be negligible in the company's large organizational structure and hence forced to be run in the shadow of the core business activities. Third, Federal Trade Commission limits the diversifying actions of giant enterprises in order to control the intensity of economic power in the hands of one company (Rumelt, 1986).

On top of large size, poor profitability of vertically integrated firms in the *Dominant Business* category does not make diversification any easier. Their poor performance reflected in low price-earnings ratios makes any acquisition unattractive. It is very costly not only due to significant dilution in the stock price, but also due to the overall volume required. In particular, in the case of large *Dominant-Vertical* firms, the diversification requires a substantial commitment in order to have an evident influence on total earnings (Rumelt, 1986).

All in all, despite of the numerous firm's characteristics which impede diversification, it seems, that it is mostly the nature of the industry itself which prevents all market players from diversifying activities. The oligopolistic competition requiring capital-intensive investments in raw materials and plants keeps the companies in these industries re-investing in spite of low investment returns. As stated by Rumelt (1986), each firm is aware of the fact

²⁷ The list of the largest 500 industrials.

that given the competition it is almost impossible to win, but it is certain to lose if it does not keep the pace with the rest.

2.4. Industrial prerequisites for corporate diversification

Undoubtedly, apart from organization specific drivers of diversification, there are also different industrial characteristics playing role in merger activities. As will be shown, some industry attributes trigger certain merger incentives more than the others. In particular, there are identified market entry barriers, industry growth, market density, long-run average cost, volatility as well as the value of hard and soft information as key market features having influence on the merger frequency. In the following, each industrial prerequisite will be discussed in bigger detail.

Market entry barriers

Regarding the market entry barriers, Gort (1969) argues that in industries with small entry barriers, firm value should not exceed much the replacing costs of the firm's physical assets. These costs set the valuation range, and thus they predict the probability of mergers driven by valuation discrepancies. In the case, when there are high entry barriers into the industry, firm value reflecting the value of its future earnings may be higher than the costs of its tangible assets. Given that the estimation of future earnings is more challenging than the assessment of current costs of physical assets, both valuation range and merger rate are more likely to be greater in industries with high entry barriers (Gort, 1969). Moreover, times or industries with rapid increase in number of new entrants lead to larger share of managers whose competences are ambiguous. Consequently, there is then larger variance in quality of firms with respect to managerial abilities, which in turn enhances merger frequency (Gort, 1969).

Industry growth

Not surprisingly, Gort (1969) points out that merger activities are related to industry growth as well. In industries with growing demand, firms can gain additional capacity either through creation of own production sites or through acquisition of the facilities already available. Obviously, dispersion of valuation shall be greater in industries where there are

numerous firms requiring supplementary capacity. Furthermore, high industry growth implies upward pressure on asset prices, and hence causes larger variance in asset valuation as well.

In addition, Gort (1969) assumes an inverse relationship between building the monopoly and industry growth. He reasons his assumption by following. On one hand, regarding non-growing industries, a firm's growth generated through expansion of capacities will increase the competition in the market. Therefore, in such industries growth of firms is more likely to be initiated through acquisitions, given that firms want to inhibit the increase in competition. On the other hand, in fast growing industries, expansion of capacity does not automatically trigger severe competition. Moreover, in such industries, monopoly power tends to decrease over time as there are more players in the market. Thus, if merger is driven by attempts to reduce competition, merger rate and industry growth will be inversely related (Gort, 1969). Notwithstanding Gort's (1969) assumptions, his empirical evidence reveals a positive relationship between merger frequency and the growth of industry, which contradicts the theory on the objective to weaken competition having influence on the rate of mergers. Even though Gort's (1969) evidence did not support the monopoly theory, its outcome is consistent with the findings of most analyses indicating a movement of companies from low- to high-growth industries, especially, in the merger wave of 1960s. In this sense, Ravenscraft & Scherer (1987) confirm that diversifying companies choose industries growing faster than their home industries. Surprisingly, when actively diversifying companies were compared to the overall sample, the former did not come necessarily from stagnating markets. By contrast, many of the active diversifiers had diversified from markets growing faster than new markets they entered (Ravenscraft & Scherer, 1987). Similarly, Hyland & Diltz (2002) reject the hypothesis that diversified firms come from industries with limited growth opportunities. This may imply that companies from high-growth markets simply look for another investment projects. Moreover, such companies may simply have no additional ability to acquire targets from fast growing industries. All in all, although high industry growth may be appealing, it is not appropriate for each company to move to such industry.

Market density

With respect to the pursuit of monopoly, Gort (1969) argues that a greater frequency of mergers is expected in industries where there are few firms with substantial market shares. By contrast, in industries with many small players, monopoly power resulting from acquisitions will not be strong enough to have an impact on prices and profits in the market. Thus, gains from monopoly power are more likely in less dense markets. Apparently, the presence of only few market players goes hand in hand with the level of market entry barriers. After merger, higher entry barriers in market result in longer period of reduced competition generating gains in earnings. However, at the same time Ravenscraft & Scherer (1987) prove empirically that diversification is used as means of overcoming enter-barriers of highly concentrated markets. In addition, they assume that companies may use diversification to alleviate the negative impact of too heavy investment activities, which could “*spoil*” the industry. Overall, earlier industrial organization research studying the relationship between firm performance and industry structure variables (concentration, industry growth, and scale among others) presented at best a neutral, not a positive relationship between diversification and firm performance which contradicts the expectations drawn by market-power view, which states that firms diversify to attain monopolistic position in the market (Montgomery, 1994).

Noteworthy, Santalo & Becerra (2008) identify the influence of competition from focused firms on the performance of diversified firms. In particular, diversified firms are better off in markets with a few specialized firms, while they are worse off in markets where specialized firms capture a significant market share. Their findings support the theory on *transaction costs* and *incomplete contracts* stating that the competitive advantage in vertically linked industries is assigned to either focused or diversified firms depending on the market configuration. In particular, when there are only few market participants - buyers and/or sellers, it is highly probable that due to the lack of bargaining capability the relationship between them will be influenced by hold-up issues²⁸. Therefore, a competitive advantage of a vertically integrated firms is greater than that of focused firms in more

²⁸ See Williamson (1986).

crowded markets where they are very likely to benefit from lower transaction costs in trading with markets with less participants (Santalo & Becerra, 2008).

Long-run average cost

Based on the economies of scale hypothesis, Gort (1969) assumes that in the industries, where the size of a firm impacts its efficiency, concurrently to building the mergers there will be changes in the average firm size as well. In this sense, if there are changes in the shape of the long-run cost curve, such that this drives mergers, old firms are expected to grow simultaneously as well as new firms are likely to enter the industry on large scale, which results in increasing average size of firms in the respective industry. Since it is less difficult to attain the firm size for a minimum cost through creating new capacities than through mergers, in growing industries there will be mergers less frequent.

Noteably, as for industries with identical growth, for those with substantial number of new entrants, higher merger rates may occur, given that there are some firms entering the market at the size too small to be efficient. Hence, the more new firms on the market, the bigger the probability of inefficiently small firms and the higher merger frequency (Gort, 1969). This phenomenon is also supported by Gort's (1969) empirical evidence, which shows subtle positive relationship between merger rate and the number of firms present in the industry.

However, this evidence also contradicts Gort's (1969) previous assumptions on the relation between the merger frequency and market entry barriers as well as market density. In particular, one would expect fewer market players in the less dense industries with high entry barriers. Obviously, each merger driver is supported by different industry characteristics. In this sense, larger barriers to market entry and resulting lower market density are important factors with regards to reducing competition through the pursuit of monopoly. Here, fewer firms in the market give doubtless rise to merger activity. On the other hand, with respect to taking advantage of both manufacturing and managerial economies of scale, lower market entry barriers are essential for a substantial number of inefficiently small firms to enter the market, which in turn are more likely to merge than efficiently sized firms.

Volatility

Industry volatility is another important factor influencing a firm's decision to diversify. The more volatile the environment with regards to time or place, the more common diversification. Moreover, even in the case, when managers are offered a choice, they prefer risky or more promising project, which may provide a cue why diversifying companies are more likely to expand to new and growing markets (Matsusaka, 2001). In this regard, Matsusaka (2001) points out the following implications; given that low promising business is highly uncertain, diversifying firms may either expand to an industry with lower success expectations even though there are investments prospects perceived as better matches or practice synergies recognized as wild guesses by third parties that will be unsuccessful in the end.

The value of hard and soft information

The relative value of *hard versus soft information*²⁹ seems to play a role in defining the competitiveness of diversified firms in a given industry compared to focused firms. Given that soft information cannot be reliably passed on to external participant (Stein, 2002; Faure-Grimaud et al., 2003), it is very likely that both hard and soft information are not valued equivalently in different settings. In particular, soft information could be communicated inside a firm with much less effort than externally (Schleifer & Vishny, 1991; Servaes, 1996) which provides corporate headquarters with information advantage unreachable for outside investors. Therefore, in industries, where soft information is of great importance, diversified firms could earn a premium resulting from improved accessibility of financial sources (Santalo & Becerra, 2008).

²⁹ Petersen (2002) defines hard information as numerical in its substance, obtained impersonally and having the same value for different agents.

3. Trends in corporate diversification

In the final chapter of my thesis, the literature review will focus on the trends of corporate diversification. Firstly, four great waves of corporate diversification in the 20th century will be introduced and discussed. Secondly, the trends in diversification strategies during the largest diversification waves will be presented. Finally, decades of empirical research on diversification's effect on firm value will be reviewed and criticized and thus shall prove diversification as either value-enhancing or value-destroying strategy. In the course of the review, factors determining the success of diversification will be examined as well.

3.1. Four great waves of corporate diversification

Referring to the research of Ravenscraft & Scherer (1987), the twentieth century has seen four great waves of corporate diversification, beginning in 1901, and repeating in 1920s, 1968 and 1980. Each of this wave had, however, different characteristics. The first wave was characterized mostly by horizontal mergers by means of which many large companies competing in one industry were joined in conglomerates that usually became the dominating players in the markets they served. The second wave concerned mostly public utility sector and product line extensions. During this wave, companies merged vertically, horizontal mergers, if occurred, resulted rather in building oligopoly than monopoly, which was typical for the first merger period. Moreover, by the 1960s more strict antitrust constraints had restricted many of the horizontal mergers. Contrary to the first and the second period, in the third wave of mergers, mostly conglomerates were built. By the beginning of the fourth wave, antitrust regulation had been weakened giving rise to more horizontal mergers. Moreover, in this period, many hostile takeovers had taken place. Noteworthy, the biggest wave of all can be considered the third one, happening in 1960s.

Based on the Federal Trade Commission's "Corporate Patterns" report³⁰, Line of Business reporting program³¹ and its four-digit industry category system³², Ravenscraft &

³⁰ A detailed profile of product line sales of the 1000 largest domestic manufacturing companies.

³¹ FTC surveyed disaggregated data from US manufacturing enterprises whose total assets exceeded \$1 billion or which were among the top 250 US manufacturers in terms of sales for the period 1974 -1977.

³² FTC's four-digit industry category system was much broader on average than more commonly used SIC four-digit industries (Ravenscraft & Scherer, 1987).

Scherer (1987) come in their analysis to the following conclusions. First, all companies in the period 1950-1977 increased their diversification. An average number of company's business lines had increased 2.85 times by 1977. Second, there was observed apparent inequality regarding the size of business lines. The largest companies in terms of sales added to their businesses new lines that were considerably smaller, whereas smaller companies added lines that were sized equally to their current lines. Third, the degree of diversification was much higher for smaller companies than for larger ones which makes smaller companies much more active in acquisition activities. In particular, in the list of the FTC's Line of Business sample members, only one of the first 12 companies was among top 200 manufacturing enterprises in 1950 and 10 companies were not even included among members in that year. Finally, three quarters of the companies observed preferred an external path to diversification through acquisition of existing lines to an internal path through building own new lines of business.

Even though the most of the research on diversification has focused on the U.S., this market was not the only one where diversification played a major role. Diversification was massively pursued also in Canada (Caves, 1980), Japan (Goto, 1981) and the United Kingdom (Goudie & Meeks, 1982).

3.2. Trends in diversification strategy during the biggest merger waves

Based on the qualitative assessments as well as quantitative measures of corporate diversification presented within the second chapter, Rumelt (1986) studied *Fortune 500*³³ firms in the period from 1949 to 1969 and came to the following results regarding the trends in diversification strategies.

Table 3: Estimated percentage of Fortune 500 firms in each strategic category

Strategic Category ³⁴	1949	1959	1969
Single Business	34.5	16.2	6.2

³³ Fortune 500 includes the largest US firms that fulfill the following requirements; firstly, 50% of their revenues is attributable to manufacturing or mining operations, secondly, they provide public reports on their financial status and lastly they are among the largest 500 companies meeting these requirements in terms of consolidated revenues (Rumelt, 1986).

³⁴ See the chapter 2.1.2. for detailed classification of firms into the respective subcategories.

Dominant Business	35.4	37.3	29.2
<i>Dominant-Vertical</i>	15.7	14.8	15.6
<i>Dominant-Constrained</i>	18.0	16.0	7.1
<i>Dominant-Linked</i>	0.9	3.8	5.6
<i>Dominant-Unrelated</i>	0.9	2.6	0.9
Related Business	26.7	40.0	45.2
<i>Related-Constrained</i>	18.8	29.1	21.6
<i>Related-Linked</i>	7.9	10.9	23.6
Unrelated Business	3.4	6.5	19.4
<i>Unrelated Passive</i>	3.4	5.3	8.5
<i>Acquisitive Conglomerate</i>	0.0	1.2	10.9

Source: own illustration with reference to Rumelt (1986, p. 51)

As shown in the above Table 4, from 1949 to 1969 the share of companies that diversified either in related or unrelated way had grown by more than 50% from 30% in 1949 to 65% in 1969. The importance of the *Related Business* category had been growing. Over the years, the number of firms in this category had almost doubled. While the *Related-Linked* subcategory had nearly tripled its size from 8% in 1949 to 23.6% in 1969, the number of firms in the second *Related Business* category, *Related-Constrained*, had grown from 18% to almost 30% in 1959, but then dropped to 21% in 1969. The increase in the *Unrelated Business* category was even more substantial from 3.4% in 1949 to almost 20% in 1969. On the other hand, the number of *Single Business* firms, in which more than 95% of total revenues come from a single product, decreased from 34.5% in 1949 to 6.2% in 1969. Regarding the *Dominant Business* class, in which a single product contributes to total revenue in the range from 70 to 95 percent, here the quantity of firms, firstly, had slightly increased to 37% in 1959 and then had declined by more than this amount to 30% by 1969. In particular, the *Dominant-Vertical* category, which includes mostly firms dealing with oil, steel and aluminium products, had been stable around 15% through the period observed. On the other hand, the number of firms in the *Dominant-Constrained* class, had dropped substantially from 16% in 1959 to 7% in 1969. The other two rather small dominant categories, *Dominant-Linked* and *Dominant-Unrelated*, had developed differently. While the number of firms in the former category had been growing steadily from 0.9% to 5.6% over the years, the latter category experienced in 1959 an increase from 0.9% to 2.6% followed by a decrease of the same amount in 1969.

Obviously, over the years 1949-1969, even more and more firms in *Fortune 500* had decided to diversify their businesses. There was an extensive movement from *Single Business* category to *Related* and *Unrelated Business* categories. This gives rise to the question, whether *Single Business* firms had diversified or these had been rather acquired or displaced by another firms that classified for the membership in *Fortune 500*. In this regard, Rumelt (1986) finds out that 51.3% of the original *Fortune 500* firms changed one category for another and 95% of these changes increased the diversification of the firms. Small discrepancies were caused by the M&As or displacement of the firms also referred to as an *entry-exit* phenomenon. Furthermore, Rumelt (1986) points out that both change in the firm's strategy and the entry-exit phenomenon have an influence on the results and that their importance is comparable in all categories as shown in the below Table 5.

Table 4: Sources of change in diversification strategies between 1949-1969

	Category			
	Single	Dominant	Related	Unrelated
Percent of 500 in 1949	34.5	35.4	26.7	3.4
Percent of 500 in 1969	6.2	29.2	45.2	19.4
Change	-28.3	-6.2	18.5	16.0
<i>Portion Due to Shifting</i>	-14.4	-2.9	11.6	5.7
<i>Portion Due to Entry-Exit</i>	-13.9	-3.3	6.9	10.3
Percent Change Due to Shifting	50.9	46.8	62.7	64.4

Source: Rumelt (1986, p. 54)

In addition, Rumelt (1986) finds no particular pattern with respect to the acquisition rates among the strategy categories, in particular *Single Business* firms were no more or less likely to become a target of acquisition than firms belonging to another category. Furthermore, regarding the transition rates between the categories, there were no significant differences in the two decades observed. Clearly, during both decades there was only negligible number of diversified firms changing to less diversified strategies. Noteworthy, the mere difference between the two decades was, firstly, two times higher proportion of *Single Business* firms transitioning to the *Related Business* category in the latter decade and secondly, considerably larger proportion of all firms changing to the *Unrelated Business* category in the second decade.

3.3. Empirical evidence on corporate diversification and firm value

Given the theoretical benefits associated with the diversification such as economies of scale and scope regarding manufacturing, managerial skills as well as R&D, financial benefits, and risk reduction among others, one would expect diversified firms to outperform the non-diversified ones. However, as shown in several studies, this is not always the case. Overall, empirical findings on corporate diversification are very diverse in terms of both research outcomes as well as methodology used. In general, there are two contradicting conclusions; one group of researchers argues that diversified companies trade at discount in comparison to stand-alone firms, while the other group finds some evidence on the diversification premium instead. Those studies are usually based on the Berger & Ofek (1995) excess value methodology, which compares a firm's actual value to the imputed stand-alone values for individual divisions. Event studies analyzing the stock performance after diversification announcements represent another very common methodology used to measure diversification's effects on firm performance. Nevertheless, a number of studies do not even distinguish between related and unrelated diversification, and those that do make such differentiation have a tendency to arrive at inconsistent results. A more precise analysis by Rumelt (1986) focusing on the relation between diversification strategy and firm performance in terms of risk and profitability ratios, which will be discussed at first, provides more comprehensive conclusions and points out the main factors influencing the success of diversification. Next, numerous empirical findings on the diversification's effect on firm value will be reviewed, prevailing regularities will be summed up and finally, arguments favoring both the diversification discount and premium will be discussed and challenged.

3.3.1. Diversification strategy, organizational structure, industry and firm performance

Obviously, the diversification's effect on firm performance is influenced by several firm- and industry specific factors, such as a firm's strategy, structure as well as industry in which the firm operates. As shall be seen in the course of this subchapter reviewing Rumelt's (1986) comprehensive analysis, each of these factors individually plays an important role, however, their joint effects are not negligible either.

Diversification strategy and its influence on firm performance

Apparently, the type of diversification strategy has a significant influence on a firm's performance. From a broader view, Healy et al. (1992) relates better firm's operating performance to mergers combining highly overlapping businesses – *related diversification* – rather than to mergers with less business overlap – *unrelated diversification*. From a narrow view, Rumelt (1986) highlights differences in firms' performance with respect to the four main categories of diversification strategy (*Single, Dominant, Related* and *Unrelated Business*). Noteworthy, the statistical significance of the results rose substantially when the firms were classified according to his nine subcategories³⁵. The results are summarized in the below Table 3.

Table 5: Performance summary of the diversification strategies

Performance		
High	Medium	Low
Dominant-Constrained	Related-Linked	Dominant-Vertical
Related-Constrained	Single	Unrelated-Passive
Acquisitive Conglomerate		

Source: Rumelt (1986, p. 94)

Firstly, *Dominant-Constrained (DS)* and *Related-Constrained (RC)* firms, both based on the model of controlled diversity, performed the best. Such firms do not concentrate on a single product, yet they do not operate in multiple industries. New businesses are built on a firm's core competences and resources and all are linked to each other. In this sense, such companies rarely enter businesses with which their management is not familiar. This complies with the *theory of organizational capabilities* according to which firms use diversification in order to find the best match for their assets³⁶. Secondly, *Dominant-Vertical (DV)* firms were among the poorest performers. With respect to this finding, Rumelt (1986) mentions that these firms have to deal with special barriers on their way to diversification.

³⁵ See the chapter 2.1.2. for detailed classification of firms into the respective subcategories.

³⁶ See the chapter 2.2.1. for detailed discussion.

The *Dominant-Constrained* firms performed among the best, while the *Dominant-Vertical* firms performed poorly. Thirdly, in the *Unrelated Business* group there were extreme differences between the two subcategories even though one would expect these two kinds of businesses to be very much alike. The subgroup of *Unrelated-Passive (UP)* firms performed surprisingly among the poorest with respect to all performance measures, whereas the second subgroup, *Acquisitive Conglomerates (AC)*, performed around average with respect to profit, significantly above average with respect to growth, but considerably poorly with respect to relative variability of earnings. Here, one would not expect such differences within one category, since researches often do not distinguish between these two subgroups. The reason for this discrepancy may be following. Contrary to the *Acquisitive Conglomerate*, an *Unrelated-Passive* company is usually built from two differently related companies which creates unrelated merger with weak administration. Interestingly, both subcategories of *Unrelated Business* firms operated from a large part in science-based markets. The below Figures 6 and 7 clearly demonstrate significant differences between the four major categories as well as considerable dissimilarities between the subcategories.

Figure 6: Category means: risk-premium ratio vs. return on invested capital

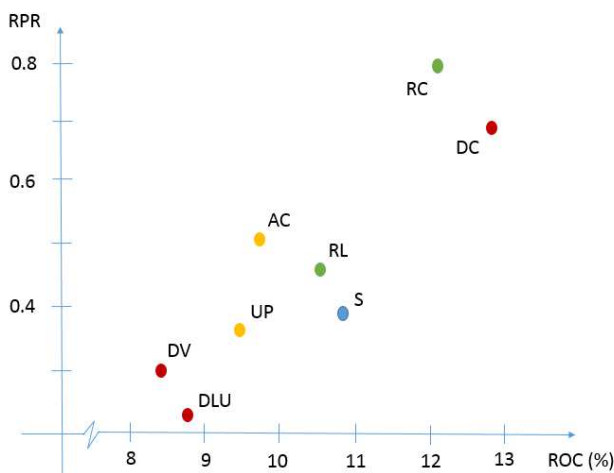
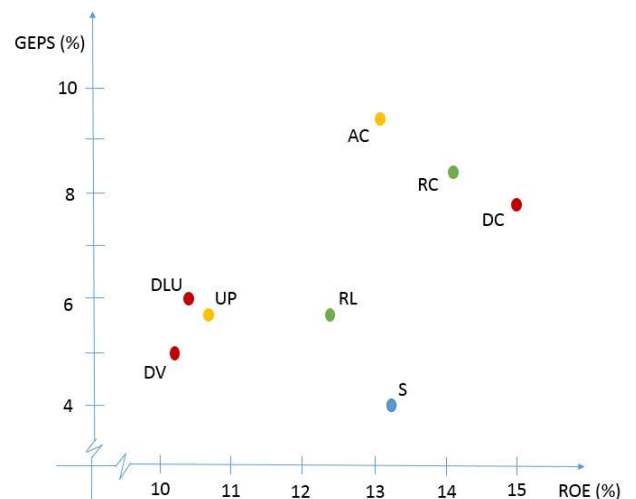


Figure 7: Category means: growth in EPS vs. return on equity



Note: Single (S), Related-Constrained (RC), Related-Linked (RL), Dominant-Constrained (DC), Dominant-Linked and Dominant-Unrelated (DLU), Dominant-Vertical (DV), Unrelated-Passive (UP), Acquisitive Conglomerate (AC)

Source: own illustration with reference to Rumelt (1986, pp.124-125)

Both figures show that *Related-Constrained* and *Dominant-Constrained* categories outperformed the other ones in virtually all measures. However, these results should not imply a causal relationship between the level of control in diversification and a firm's performance. In this sense Rumelt (1986) suggests that high performance simply reduces the necessity of larger scope of diversification. This argument is partially supported by the results of *Dominant-Vertical* group consisting of firms which have commitment to a single business, in particular a single raw material. Such firms are internally interdependent in a way that makes any attempt to diversify almost impossible.

With respect to the general notion on diversified firms outperforming non-diversified firms, Rumelt (1986) presents numerous contradicting examples. Firstly, in his study the *Unrelated-Passive* category, which is a subcategory of unrelated diversification strategy, performed below the average rates in terms of profit and growth, while the non-vertical firms in *Single (S)* and *Dominant Business* class performed in some cases better than diversified companies in the *Related Business* group. Secondly, there are considerable discrepancies between different performance measures. In particular price-earnings ratio does not seem to support the results provided by the profitability and growth variables³⁷. While the *Dominant-Constrained* class outperformed the *Related-Constrained* class in terms of returns and growth, it significantly underperformed not only the *Related-Constrained* class, but the overall average in terms of price-earnings ratio. Moreover, the *Related-Linked* category underperformed constantly both mentioned categories, however, it reached the highest average price-earnings ratio of all.

Organizational structure and its effect on firm performance

Concerning the organizational structures, Rumelt (1986) identifies considerable differences between the categories. First, the firms with *product-divisional* tactics generally performed better than the firms having *functional* or *functional-with-subsidiaries* structures. Second, the two functional types of structures performed surprisingly very differently. While

³⁷ Similarly, Matsusaka (1993) finds positive abnormal returns for diversifying acquisition announcements, but negative reactions for related acquisitions.

the *functional-with-subsidiaries* firms outperformed the *functional* firms in terms of earnings growth, the reverse was true for the sales growth. Furthermore, while the *functional* firms were almost as profitable as the *product-divisional* firms, on average the *functional-with-subsidiaries* firms lagged behind the both types of firms. With respect to these results, Rumelt (1986) links the outperformance of the *product-divisional* firms to their unique compensation, management, planning and capital-allocation systems. In particular, both the systems used and the structure itself enable the top management to distribute capital independently among the most promising divisions. In this way, each division is treated individually which allows the firm to fully enjoy the benefits of diversification strategy; some divisions may represent cash cows or may be spun off, some businesses may be less risky, others may entail more risk but higher profits (Rumelt, 1986).

Industry, diversification strategy and their joint effect on firm performance

According to the escape theory, firms often choose to diversify in order to escape from businesses with falling rates of profit and growth. A firm's poor performance is caused by either participating in slowly growing markets with fierce competition or by a firm's inability to compete in favorable markets (Rumelt, 1986). Obviously, if a diversification strategy is built on skills and experience already acquired by the firm, also referred to as *Dominant-Constrained* or *Related-Constrained*³⁸ strategy, this firm is more likely to succeed than if it chose to enter only somewhat related or unrelated markets. However, firms with lack of skills and experience have no other choice than to pursue unrelated diversification strategy and will most probably opt for acquisition. Except for the science-based industries, such as chemicals, electronic and industrial machinery³⁹, where science-based research may result in linked and unrelated diversification and where high performance is related to

³⁸ The attribute of *Constrained* diversification refers to non-vertically integrated firms whose diversifying activities are based on certain competences or resources related to the primary dominant business activity which are all linked to one another. The difference between *Dominant* and *Related* category lies in the total contribution of any single business in the firm to total revenues. If any single business contributes by more than 70%, this firm belongs to the former category, otherwise it is included in the latter one. See the chapter 2.1.2. for further reference.

³⁹ In the group of science-based industries were included: chemicals, business machines, electrical machinery and electronics, aerospace and instruments.

innovation in technology, firms in another industries adopting those strategies are expected to perform worse than firms following constrained strategies. Rumelt (1986) justifies this with the argument that poor performance of nonscience-based firms was the cause for pursuit of unrelated, dominant-linked or dominant-unrelated strategies rather than the result and that their low performance cannot be fully offset by those diversifying strategies.

Noteworthy, the empirical evidence supports Rumelt's argument only to certain extent. First, it indicates that science-based industries obviously achieve a premium on their return on equity over nonscience-based industries. Second, even though nonscience-based firms slightly underperformed, the results were not strong enough to give a support to the hypothesis. Moreover, Rumelt's (1986) evidence shows that *Unrelated* science-based firms underperformed significantly in comparison to other industries. Obviously, either science-based firms have moved to unrelated markets due to low profitability or their strategy decision led to poor performance.

Investigating the low-performers: Dominant-Vertical and Unrelated Passive firms

In the research of Rumelt (1986) there are two categories of corporate diversification strategy that have performed significantly worse than the other strategies, in particular *Dominant-Vertical* and *Unrelated-Passive* firms. While the former type of firm has a control over all stages in the production process, the latter type of firm runs a set of unrelated businesses. Rumelt (1986) investigates why *Dominant-Vertical* firms opt so rarely for corporate diversification and why *Unrelated-Passive* firms do not perform better given negligible restrictions on diversifying activities in this category. In the following, both low-performance strategies will be discussed in a greater detail in order to find possible explanations for their poor performance. As shall be seen, all strategy, structure and industry are responsible for low-performance of these firms.

With respect to the first underperforming category – *Dominant-Vertical*, Rumelt (1986) highlights the impact of this category on the overall economy since firms in this category represented 44% of the 100 largest firms in 1969. Given the advanced stage of the maturity of the industries in which these firms operate and the rather homogenous qualities of their products, one would not expect these companies to perform better than any average

large enterprise. Yet, it remains unclear why these companies are reluctant or unable to vary their strategies even though they perform poorly on a continuous basis. Nevertheless, the other firms in the *Dominant* parent category – the *Dominant-Constrained* firms – have happened a lot to diversify their one-business operations driven by their poor performance and have outperformed the vertically integrated firms in their category in terms of both profit and growth.

Noteworthy, the beginning of the twentieth century has seen a massive wave of industrialization which accompanied by the economies of scale gave rise to a lot of large-scale integrated enterprises. A successful strategy of large-scale required a firm to control its sources of raw materials, which could be reached by vertical integration. This concerned mostly extractive and agriculturally based industries such as oil, lumber and paper, metal, rubber, meat packing and fresh fruit (Rumelt, 1986). These firms had expanded rapidly during the first half of the century. However, by 1950s the growth had slowed down resulting in reduced margins for the firms and overcapacity in the industry. This was not surprising given the large degree of the firms' dependence on demand, the capital-intensive nature of the respective industries and their advanced stage of maturity. In this sense, Rumelt (1986) points out that ongoing oligopolistic competition practically always leads to overcapacity in industry and low profits for all firms involved.

On one hand, one would not expect companies in extractive industry to yield more than a minimal return given a little degree of technological innovation. On the other hand, it remains unclear why those companies kept reinvesting in their low profitable businesses instead of changing their strategies. The absence of diversification was visible at most in the steel industry. In other industries, there were some attempts to diversify, however just a small number of companies considered their new businesses strategically significant (Rumelt, 1986).

Apparently, the strategy of vertical integration entailed an organizational structure based on different production stages. Not surprisingly, the most common type of the structure chosen by diversified firms that were vertically integrated was the *functional-with-subsidaries* (Rumelt, 1986). On one hand, this kind of an organization enables diversified

operations to be separated from the firm's core business. On the other hand, given that the general managers of diversified subdivisions have the same competences as the managers of functional divisions, the former have to struggle for resources and top management interest with another units that simply build together one business. Moreover, the general managers of subdivisions are supposed to evaluate their business projects in an objective way, while being tied to the firm's core business. With regards to this organizational structure, Rumelt (1986) identifies the need for two different methods of assessment and control – one which would manage the functional divisions and handle the daily strategic concerns affecting the core business, and the other one which would coordinate the general managers of the diversified subdivisions. Obviously, none of the two methods can be undertaken at no expense of the other one.

On one hand, this type of organizational structure, which is based on different functionalities - *production stages*, clearly supports organizational efficiency. On the other hand, such a structure regulates the number of generalists – executives who observe and are in charge of the firm as a whole (Rumelt, 1986). Moreover, Rumelt (1986) highlights in this regard that separation of an integrated firm into departments tends to favor investment style focusing on capacity and “*balance*” rather than on investment return and alternative uses of funds (p.136). This view is supported by Ackerman (1969) who discovered that in the integrated firm there is only one department in charge of analyses of major investments which in turn disregards the effects on productivity or the demand for extra capacity in other departments related to it in the production chain. By contrast, in diversified firms, divisional managers inclined to incorporate subdivision interrelationships in their investment analyses (Ackerman, 1969).

Noteworthy, a company's loyalty to one product or industry constraints diversification by itself. If such a strategy gets institutionalized through organizational structure, the constraints are even more intensified. In addition to the complexity of organizational structures discussed above, from the point of view of industry, Rumelt (1986) mentions the advanced stage of maturity of the industry, in which a vertically integrated firm usually

operates, as another hurdle in the process of diversification. Thus, it comes as no surprise that vertically integrated firms opt so rarely for corporate diversification.

With respect to the second underperforming category – *Unrelated-Passive*, notably, the two diversification sub-strategies of the *Unrelated-Business* group, differ significantly in their performance. The firms pursuing the *Unrelated-Passive* strategy – diversification into unrelated businesses without prompt and constant acquisitions – showed lower performance in terms of profits, growth as well as risk premium ratios. By contrast, the firms in the *Acquisitive Conglomerates* group following tactics of rapid and large-scale expansion performed a way better with respect to all measures. This leads us to have a look on the factors, which make these two subcategories distinct.

Regarding this, Rumelt (1986) focuses on the expansion tactics of the *Unrelated-Passive* firms. He identifies the following three ways of development that prevailed among those firms. First, such firms had developed from holding companies. Second, they had evolved through merger of two or more large companies. Third, firms in this category had simply expanded further from their core markets in both related and unrelated way. Based on these different ways of development and on distinct strategic and structural characteristics of the companies involved, Rumelt's study (1986) indicates several explanations why those firms performed so poorly compared to another diversified firms.

In order to achieve above average performance an *Unrelated-Passive* firm would be required to carefully select principal business, be prepared to sell-off poor performing divisions and have such an organizational structure which would compel revenues and provide generalists that would decide about allocation of resources and solve the issues arisen (Rumelt, 1986). However, there is hardly any *Unrelated-Business* firm complying with these conditions.

With regards to the firms that evolved from holding companies, these were usually run for a long time without any actual headquarters or formal supervision and capital allocation procedures. Thus, when these firms were transformed to full-product-division organizational structures, several product lines or businesses were immediately divested. Given the lack of strategic course from the top management and the difficulties associated

with interdivisional cash allocation, each business unit in such a company had developed rather on its own. Moreover, the management of these companies obviously failed to transfer capital from mature to more promising growing businesses. Consequently, one could not expect these companies to perform better than average (Rumelt, 1986).

Regarding the corporations that were created through mergers, Rumelt (1986) points out the fact that prior to merger at least one of the merging companies had already undertaken many acquisitions leading to diversification. When such broadly unrelated companies had merged, the difficulties in their core businesses as well as intercompany competition for power between the merging partners had caused harsh strategic and administrative burdens.

Finally, the last group that evolved through continuous diversification faced the same strategic and administrative issues as the previous group. Furthermore, it was often the case that diversification did not help those firms to improve their performance which was the primary reason for their decision to diversify (Rumelt, 1986). Rumelt also points out that, especially, the *Unrelated-Business* firms were required to focus their strategy on the administrative issues such as special kinds of commands, compensation and capital allocation systems. Given the way how these firms had evolved, most of the *Unrelated-Passive* firms had simply weak administrative systems or administrative structures favoring *Related-Business* strategies. Finally, in contrast to *Acquisitive Conglomerates*, *Unrelated-Passive* firms did not treat each business independently but they strived to make the most of the synergies among unrelated divisions or they tried to unite groups of unrelated divisions having in common some practices and traditions (Rumelt, 1986).

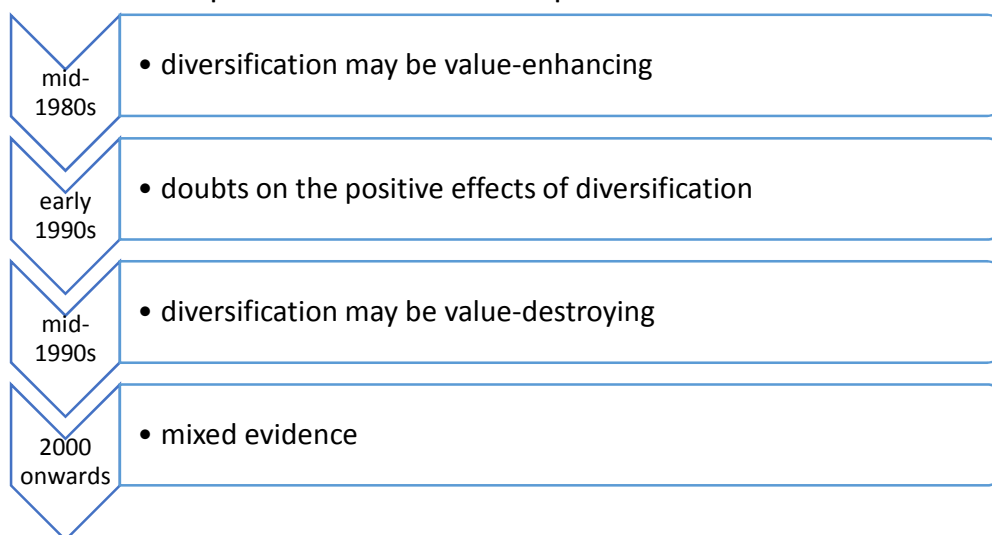
All in all, significant relationship between a diversification strategy and a firm's performance has been proved despite of a strong correlation between a firm's industry and its strategy. These two cannot be simply separated. The outperforming industries are very likely to include *Related-Business* firms and at the same time these firms are very likely to operate in high performing industries. Consequently, one cannot consider the diversification strategy to be independent of the industry in which a firm operates (Rumelt, 1986). In this sense, Rumelt (1986) points out that *Dominant-Vertical* firms should not blindly adopt

Related-Constrained strategy just because this strategy outperformed the others. Both strategies may rationally react to distinct technological and economic settings of their respective industries. Moreover, Rumelt (1986) finds out that a nature of connections between old and new businesses has even greater explanatory power than overall diversification strategy. Obviously, Rumelt's (1986) categorical system is truthfully pioneering. Even though there were numerous attempts in the past to find an association between firm's profitability and the measures of diversity (Eslick⁴⁰; Gort, 1962⁴¹), it was found for the first time with Rumelt's (1986) nine-category technique. Moreover, the empirical outcome based on Rumelt's categorization indicates that the firm's performance is strongly linked to the organizational type (*functional or product-divisional*) rather than the range of its product-market scope and to the art of relation between the firm's businesses (constrained or linked) rather than their quantity (single, dominant, related or unrelated).

3.3.2. Prevailing regularities in performance of diversified firms

Remarkably, the opinions on efficiency of corporate diversification have evolved through time as shown by the Figure 8.

Figure 6: Evolution of the opinions on the wealth effects of corporate diversification



Source: own illustration based on Hyland & Diltz (2002)

⁴⁰ Eslick tried to find an association between return on equity and the 4-digit product count for 450 *Fortune 500* firms without success.

⁴¹ Gort's attempt to associate growth in assets and return on equity to a diversification measure built on 4-digit product count and a specialization ratio showed very small and insignificant correlations.

The first studies go back to the beginning of 1980s, when the final wave of diversification took off. Then, empirical analyses reported slightly positive abnormal returns to diversifying acquisition announcements⁴². By 1985, given the enthusiasm associated with the general tendency towards corporate diversification, it was commonly believed that diversification does not have negative effect on firm value at least. However, in the beginning of 1990s, economists started to doubt the idea that diversification might increase firm value or that it does not decrease the value at best (Hyland & Diltz, 2002)⁴³. The negative view on diversification peaked in the mid-1990s, when a great number of studies concluded that diversification might destroy firm value⁴⁴. From the beginning of 2000 onwards, the notion of diversification discount has still prevailed, even though a couple of studies have shown that diversification premium might occur as well⁴⁵.

A deeper analysis of Ravenscraft & Scherer (1987) shows interesting results. First, 13 conglomerates accounting for almost half of the acquisitions in the merger wave of 1960's had performed 3.6 times better than the S&P portfolio until the peak of the merger wave was reached in 1968. However, by 1974 when the merger activity had slowed down and investors had become aware of the fact that conglomerates are not able to manage their acquisitions as expected, the stocks of those companies had lost more than 50% of their value and had performed only 86% as well as S&P portfolio. Even though by the peak of the last merger wave in 1983, conglomerates had again outperformed S&P portfolio by 2.7 times. This period was more known for massive divisional sell-offs. Second, there were vast differences in the performance of stocks of the individual conglomerates. In 1983, at the peak of the last merger wave, 6 out of 13 observed conglomerates' stocks performed worse than S&P portfolio, 3

⁴² See Jensen & Ruback (1983), Schipper & Thompson (1983), Bradley et al. (1988), and Matsusaka (1993).

⁴³ See Porter (1987), Ravenscraft & Scherer (1987), and Kaplan & Weisbach (1992).

⁴⁴ Lang & Stulz (1994) report a significant diversification discount in every year dating back to 1978. Servaes (1996) identifies a significant diversification discount in the 1960s and early 1970s. For further evidence, see Comment & Jarrell (1995), Loughran & Vijh (1997), Berger & Ofek (1995).

⁴⁵ See Anderson et al. (2000), Hermalin & Katz (2000), Rajan et al. (2000), Scharfstein & Stein (2000), Schlingemann et al. (2000), Walker (2000), Whited (2001), Schoar (2002), Lamont & Polk (2002), and Wulf (2009) for the evidence on diversification discount and see Hubbard & Palia (1999), Billet & Mauer (2000), and Hadlock et al. (2001) for the evidence on diversification premium.

stocks were somewhat better and 3 stocks were substantially better. In particular, one conglomerate outperformed S&P index by 16 times.

Noteworthy, Matsusaka (2001) highlights five different regularities that had occurred the most within the empirical studies on performance of diversified companies until 1999. Not surprisingly, the most common outcome of the research is that *“diversified firms trade at discount relative to single business firms”* (p.411.). In particular, diversified firms are found to have lower *Tobin’s q* and tend to be discounted up to 15% (Lang & Stulz, 1994; Servaes, 1996; Berger & Ofek, 1995). Moreover, Megginson et al. (2004) find that on average, every 10% decrease in corporate focus leads to 9% reduction in relative stockholder wealth, a 4% decline in firm value and a 1.2% decrease in operating cash flow returns over the three years following merger⁴⁶. However, it is not quite clear what is a cause and what is a consequence; whether the stocks of diversified firms are traded at discount as a result of a firm’s diversification or firms simply opt for diversification because their stocks are discounted⁴⁷.

Second, it is often the case that companies sell-off the businesses that were acquired in an unrelated way. Comment & Jarrell (1995) show the tendency of companies towards corporate focus during 1980s which was associated with positive stock return. They find that among the exchange-listed firms the proportion of firms with a single segment rose from 38.1% in 1979 to 55.7% in 1988 and the change was positively related to the same-year and prior-year stock returns. Furthermore, Morck, Schleifer, & Vishny (1990) find that in 1980s unrelated diversification was punished by stock market and hence the following spin-offs were logical actions aiming to offset the negative effects of past conglomeration in 1960s and 1970s. Regarding the market reactions to divestiture decisions, Kaplan & Weisbach (1992) also present positive effects on stock price of focus increasing divestitures, even though diversification resulted in the increased shareholder value of the merged company initially

⁴⁶ Their research also implies the influence of the payment method on a firm’s long-run stock performance, this variable is, however, only secondary to the focus variable, and is only marginally significant for operating performance and changes in firm value.

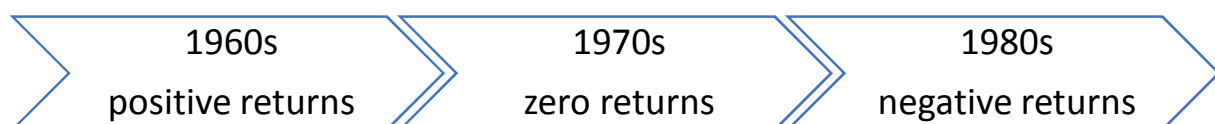
⁴⁷ Servaes (1996) finds that a part of the diversified firms trade at the discount because they are diversified, not because they perform poorly and choose to diversify. However, the firms in his study are sampled every three years only, therefore it may be the case that performance of focused firms deteriorates over the period of 2 years causing them to diversify.

consistent with the financial synergy hypothesis. Nevertheless, it is important to mention the fact that firms do not necessarily divest their targets due to poor performance. Mitchell & Lehn (1990) suggest that conglomerates choose to spin-off their divisions also as a result of inefficient acquisitions. In this sense, firstly, firms may decide to divest in order to revert the inefficient acquisitions made by the acquired targets. Secondly, “bad” bidders whose acquisitions led to decrease in value may simply become targets of future takeovers more often than “good” bidders (Mitchell & Lehn, 1990).

The third and the fourth regularity refer to positive announcement returns in the 1960s; the former with regards to a conglomerate’s diversifying plans and the latter regarding individual diversifying acquisitions. Both regularities contradict the agency theory that is believed to be the main reason for a company’s decision to diversify. If diversification was pursued against the interests of shareholders, the stock price would fall, not rise. Apparently, the trend of diversified stocks trading at the premium is not much significant, given that in the 1980s this tendency disappeared and the stock returns to the announcements of diversifying acquisitions were varied.

Overall, market perceptions of diversification have changed significantly during 1960s – 1980s – the biggest merger waves. As shown in the below Figure 9, Matsusaka (1993) reports that the first merger wave was perceived by market substantially positively. Then, in the 1970s, mergers have earned zero returns on average. Finally, the last merger wave of the 1980s was viewed by market the most negatively. Noteworthy, the first wave of acquisitions in the 1960s and early 1970s was regarded as “unrelated” diversification (Ravenscraft & Scherer, 1987), while the last wave was characterized as “a return to corporate specialization” (Bhagat et al., 1990).

Figure 7: Market perceptions of diversification during the biggest merger waves



Source: own illustration with reference to Matsusaka (1993)

In this regard, Matsusaka (1993) suggests the following explanations for these significant changes in investors' sentiments. First, it may be the modification of anti-trust laws – rigid in the 1960s and relaxed in the 1980s – which has caused the difference. Second, it may simply lie in the *first-mover advantage* of the first merger wave of the 1960s. While the first movers took the advantage of improved organizational structure, the imitators in the second wave might have misunderstood its functionality. Lastly, it may be the case that the investors have just misvalued the first diversifying actions. This comes at no surprise, given the radical nature of the innovation in the corporate structure and investors' unfamiliarity with it.

Why investors react differently to diversification announcements

The wealth effects of corporate diversification are usually reflected in the changes of stock prices. Following pattern is observed for the stock prices of target companies in numerous stock price analyses. The stock price of the target is usually trending downward, but it starts to rise around the date when a merger is announced to the public. If the merger comes to pass, the stock price of the target disappears. In the case, when the merger does not happen, the target's stock price is usually trending downward again (Ravenscraft & Scherer, 1987). However, as for an acquiring company, the pattern is not so obvious. The prevailing evidence show neither positive nor negative abnormal returns for the acquirer in the period one month before the merger is announced and after the merger happens, even though in some cases there was observed downward trend in the latter period. Much less evidence indicates modest positive abnormal returns of the acquirers at the time of merger happening (Ravenscraft & Scherer, 1987).

With regards to different stock returns to diversification announcements, the model in Matsusaka (2001) provides some cues why investors are in support of diversification in some cases and against it in others. Given that managers learn the productivity of a particular activity ahead of investors, diversification announcements are supposed to reflect this quality⁴⁸. In particular, an announcement to diversify by a specialized firm is perceived as

⁴⁸ This insight is a result of the model extension by means of which Matsusaka (2001) incorporates a force that deteriorates the match quality. This extension makes the model more realistic, since it is highly probable that

negative message – this implies a decline in a firm’s current business – whereas an announcement to diversify made by a start-up firm searching for a good match is regarded as positive message – this means that a good match was found (Matsusaka, 2001). In the same way, if a diversified firm announces new diversification, this could imply several things. First, it could signal that the last attempt was not more successful than the current business, which would be perceived as neutral message. Second, it could imply that the last attempt was better than the existing business, but not enough to be worth specializing in, which would result in positive message. Thirdly, an announcement to diversify by a diversified firm could indicate that the last business action was a flop, which would in turn signal negative message. Finally, this theory may help explain why the stock returns to diversification announcement were positive in the 1960s, and then negative in the 1980s. While in the former period there might have been more companies searching for the right match, in the latter period these companies could have already become matured specialized companies.

Furthermore, Matsusaka (2001) provides associations of stock returns with divestures and refocusing actions. The results are summarized in the below Table 6.

Table 6: Predicted abnormal stock returns conditional on type of announcement and strategy of the announcing firm⁴⁹

	Announcement in Period <i>t</i>			
Strategy in Period <i>t-1</i>	<i>Diversifying Acquisition</i>	<i>Refocusing Divesture</i>	<i>Nonrefocusing Divesture</i>	<i>Liquidation</i>
<i>Specialized</i>	< 0*	NA	NA	< 0*
<i>Diversified</i>	> = < 0**	> 0***	> = < 0**	< 0*
<i>Start-up</i>	> 0***	NA	NA	NA

*Investors conclude a decline in productivity. Abnormal stock return is negative.

** Announcement is consistent with an increase, no change or a decrease in productivity.

*** Investors conclude an increase in productivity. Abnormal stock return is positive.

Source: Matsusaka (2001, p. 425)

eventually competition will come with better products or processes, causing drop in the profits of a firm’s existing business.

⁴⁹ The cell entries represent the expected sign of the abnormal stock return. The expectations are based on the Matsusaka’s (2001) model that assumes that managers learn the productivity before investors do, and hence, a change in a firm’s strategy reflects the value of the productivity index.

Not surprisingly, the table shows that the stock reaction is negative to a diversifying acquisition announcement of a specialized firm and to an liquidation announcement of both specialized and diversifised firms. The stock price goes downward because investors infer a decline in productivity. Contrarily, in the case of start-ups, investors react positively as they expect the firm to find new good match to its capabilities. The same is true for diversified firms, which decide to divest unprofitable businesses and refocus their capabilities on better matches. Nevertheless, the reaction of investors to diversifying acquisitions and nonrefocusing divestures of diversified firms are not one-sided, they tend to depend on the effects of these actions on the firm's productivity. In other words, the reaction is supposed to be consistent with an improvement or deterioration of the firm's performance. Overall, according to the theory of organizational capabilities, an announcement to diversify may be regarded as a good message signaling that the current business performs well enough to prevent liquidation (Matsusaka, 2001). If a diversified firm trades at discount, it does not mean necessarily that diversification resulted in poor performance. It may simply indicate that it has not found a good match, yet.

All in all, the opinion on the performance of diversified firms is two-sided. There is an evidence on both diversification discount and premium. Even though the empirical evidence on diversified firms trading at discount prevails, it is not very clear why this is the case. Apparently, there must be difference in behavior between diversified and stand-alone firms. In the following, there are discussed several theories that attempt to explain one or the other trend.

3.3.3. Arguments in favor of the diversification discount

The most common arguments favoring the diversification discount are based on the *agency theory*, which accounts for the managerial incentives to diversify. Usual managerial incentives include *empire building* pronounced by the free cash flow theory (Jensen, 1986), reducing *employment risk* (Amihud & Lev, 1981), *managerial entrenchment* (Schleifer & Vishny, 1989) and *information rents* (Choe & Yin, 2009). Indeed, there is evidence on a strong relation between managerial incentives and diversification (Hyland & Diltz, 2002; Anderson et al., 2000). In particular, Hyland & Diltz (2002) show that managers of diversified firms

receive considerably higher payment after diversification and Anderson et al. (2000) find that managers in diversified firms are likely to face lower pay-for-performance sensitivities and lower stock holdings⁵⁰. The agency premise itself, however, explains capital misallocation and excessive expansion in general. More profound arguments are provided by the *cross-subsidization* hypothesis resulting from the differences in *managerial power* (Rajan et al., 2000) as well as by the *differences in investment opportunities* (Wernerfelt & Montgomery, 1988; Lang & Stulz, 1994) faced by diversified and focused firms. In the following, the most common arguments will be discussed.

Agency costs

There are several reasons supporting the agency theory in having influence on the diversification discount. First, based on the *free cash flow theory*, managers tend to “waste” the free cash flow at their disposal in the pursuit of private benefits (Jensen, 1986)⁵¹. With regards to diversification, this agency effect is even intensified given the more chances and possibly more resources for capital distortion by managers in diversified firms⁵². Indeed, Kaplan and Wiesbach (1992) support this theory by presenting successful acquirers having lower free cash flows relative to unsuccessful acquirers.

In addition to Jensen’s (1986) empire building argument, another agency theories explain the diversification discount through managerial overconfidence and risk-aversion in behavior of managers having stake in a company who prefer to diversify the company itself instead of their own portfolios⁵³ (Amihud & Lev, 1981; Schleifer & Vishny, 1989; May, 1995; Aggarwal & Samwick, 2003). In this sense, managers with more private wealth in a firm tend to diminish their risk through diversifying actions. In particular, Amihud & Lev (1981) prove empirically that managers opt for mergers in order to reduce their “*employment risk*”, that is risk of being fired or losing reputation, which cannot be diversified on any capital market.

⁵⁰ However, suboptimal corporate governance in diversified firms cannot explain the diversification discount completely; in contradiction to expectations, diversified firms have more outside directors, no difference in independent block holdings and sensitivity of managerial turnover to performance similar to focused firms (Anderson et al., 2000).

⁵¹ See the first chapter for a further discussion of the agency theory.

⁵² Stein (2001) attributes higher occurrence of information distortion to firms with job-rotation programs and higher management turnover which make managers less accountable for their investment decisions.

⁵³ See the chapter 2.2.1. for a further discussion.

Firstly, they find that firms run by managers are more likely to merge than firms run by owners. Secondly, they identify more diversified operations in firms controlled by managers than in firms controlled by owners⁵⁴. Since managers' income is dependent on a firm's performance, managers are very likely to engage their firms in merger activities by means of which they expect to smooth their income stream. Noteworthy, a decrease in the volatility of a firm's cash flow stream may be even in the interest of diversified shareholders, given that risk reduction decreases the compensation level required to attract and maintain risk-averse managers or diminishes the biases in managers' investment choices (Hermalin & Katz, 2000).

Moreover, Schleifer & Vishny (1989) suggest with the term *managerial entrenchment* that managers might pursue diversification in order to entrench themselves in a firm – that is, increase the firm's need for his or her particular abilities. Furthermore, Aggarwal & Samwick (2003) find a positive relation between diversification and managerial incentives. However, their findings imply that the managers choose to diversify as a reaction to changes in private benefits rather than to lower their exposure to risk.

Apart from the pure managerial perspective, there are another agency drivers explaining the diversification discount. First, *increased debt capacity* as a benefit of diversification may result in conflicts among claimholders once a firm finds itself in financial distress (Brealey & Myers, 1999) and thus may cause inevitably a decrease in firm value. Second, *information rents* paid to division managers represent agency costs, which are supposed to offset the benefits of lessened credit constraints associated with internal capital markets (Choe & Yin, 2009). In general, information rents must be paid to managers in order to enhance truthful reporting. Choe & Yin (2009) argue that information rents are higher in diversified firms compared to focused firms due to either loss of control by the headquarters (as suggested by Rajan et al., 2000) or higher compensation of division managers.

Cross-subsidization and managerial power

Obviously, the agency perspective provides explanations for inefficient capital allocation in large internal capital markets in general. Rajan et al. (2000) attempt to address

⁵⁴ In addition, Hyland & Diltz (2002) provide some evidence on the association between managerial ownership and value creation through diversification.

directly the issue of resource misallocation in a diversified firm. Therefore, I decided to discuss their model in bigger detail. In their model it is assumed, first, that headquarters' control over capital distribution is limited; it can allocate resources *ex ante*, but it cannot enforce allocation of a surplus generated *ex post*⁵⁵. Second, a distribution of surplus among divisions is based on the bargaining power of the individual division and it is possible to influence the final allocation through a particular investment choice⁵⁶. Especially, managers can choose between an *efficient* high-return and a *defensive* low-return investment. If the actions are contractible, the former investment is the optimal one. In the other case, the latter investment prevents poaching across divisions⁵⁷. Not surprisingly, the defensive investment is preferred over the efficient one, given that the surplus generated by the manager's division will be ultimately shared within the firm and the distribution cannot be enforced. This choice is even more significant if the manager has better resources and chances than the other ones.

Noteworthy, even though headquarters cannot enforce the surplus allocation *ex post*, still it can transfer resources *ex ante* in order to induce an efficient investment. On one hand, such transfers will be made towards divisions with better opportunities – a strategy referred to as *winner-picking* (Stein, 1997). In this sense, diversification could create value, given that a stand-alone firm could not get additional financing so easily and efficiently⁵⁸. On the other hand, resource transfers must be made also towards divisions with less resources and worse opportunities in order to decrease the inter-division diversity. In this way, diversified firms misallocate resources to avoid greater distortion on average (Rajan et al., 2000).

⁵⁵ The feature of non-contractibility is very common in the literature. Even though accounting control guarantee that all funds transferred to a division are indeed invested, it cannot be contracted on type of investment to be undertaken by the other division (Rajan et al., 2000). See Myers (1977) for difficulties associated with contracting on investment.

⁵⁶ Rajan et al. (2000) mention with regards to the negotiations among divisions the Chandler's (1966, p.166) statement about the budgeting process in General Motors under Durand's management: "*When one of them [Divisional Managers] had a project why he would vote for his fellow members; if they would vote for his project, he would vote for theirs. It was a sort of horse trading.*"

⁵⁷ For clarification, Rajan et al. (2000) refer to the defensive investment as highly specialized, in a sense that it is only this division that knows how to operate it, which disables the other division to overtake the project.

⁵⁸ This benefit of diversification is mentioned by Williamson (1975), Stein (1997) and Matsusaka & Nanda (2002).

In addition, the model by Rajan et al. (2000) implies *when* such transfers do make sense. In particular, headquarters will relocate the funds from one division to the other only if the costs of doing so are offset by benefits resulting from improved investment incentives – that is, either the opportunity costs of defensive investment are high or the prospects of one division are not much better than those of the other one. In other words, too much diversity between divisions in terms of resource-weighted opportunities makes any resource transfer inefficient. Thus, inter-firm diversity results in costs. Moreover, Rajan et al. (2000) show, that the greater the diversity, the higher the costs – that is, larger diversification discount in relation to a portfolio of single-segment firms⁵⁹. There are two assumptions regarded to their model. First, diversity is supposed to increase resource relocation from divisions with comparatively *high resource-weighted prospects* and comparatively *low prospects* to divisions with comparatively *low resource-weighted prospects* and comparatively *high prospects*. Second, diversity is also expected to increase resource relocation in favor of a division with *low resource-weighted prospects* if the former division has comparatively better prospects. While the first assumption is completely in line with the efficient internal market hypothesis, the second one contradicts this theory. Consequently, the decision whether a division will make or receive resource transfers, which are enhanced by higher diversity, depends on size-weighted prospects rather than prospects themselves (Rajan et al., 2000)⁶⁰. The following Table 7 compares the conclusions of Rajan et al. (2000) with the efficient internal market hypothesis and the inferences on the influence of diversity on division investment concluded by Scharfstein & Stein (2000).

⁵⁹ Rajan et al. (2000) highlight the issue that a division with the best prospects has to share the common surplus ex post. This division will undertake the efficient investment only if the other division supplies enough surplus to make it valuable. If there is too much diversity between the divisions regarding their resources and opportunities, investment incentives do not work and each division makes the defensive investment.

⁶⁰ The regression analysis supports the model predictions in that the signs of the estimated coefficient correspond to the model estimates, whereby the coefficient are statistically different from 0 at the 1 percent level (Rajan et al., 2000).

Table 7: Effect of diversity of opportunities on internal transfers: theoretical predictions

	<i>Adjusted Investment in Segments with</i>			
<i>Theory</i>	$q > \bar{q}$ $\lambda q > \bar{\lambda q}$	$q > \bar{q}$ $\lambda q < \bar{\lambda q}$	$q < \bar{q}$ $\lambda q > \bar{\lambda q}$	$q < \bar{q}$ $\lambda q < \bar{\lambda q}$
Efficient internal capital market hypothesis	+	+	-	-
Rajan et al. (2000)	-	+	-	+
Scharfstein & Stein (2000)	-	-	+	+

Note: The divisions are divided according to both opportunities (first line) and resource-weighted opportunities (second line) as follows; the first column stands for divisions with both opportunities and resource-weighted opportunities better than a firm's average. The second column represents divisions with better opportunities but worse resource-weighted opportunities than a firm's average. The third and the fourth column follow the same logic. The cell contains "+" if the division receives a transfer and "-" if the division makes a transfer.

Source: Rajan, Servaes, & Zingales (2000, p. 60)

As shown in the Table 7, the theory of Rajan et al. (2000) shares some ideas with both the efficient internal capital market hypothesis and the theory of Scharfstein & Stein (2000) on internal capital market. Concerning the former, the first assumption by Rajan et al. (2000), which predicts transfers from divisions with better resource-weighted opportunities and worse opportunities to divisions with worse resource-weighted opportunities and better opportunities, is consistent with the efficient market hypothesis (columns 2 and 3). However, the ideas contrast with regards to transfers from divisions that are superior with respect to both prospects and resource-weighted prospects. While the efficient internal capital market hypothesis suggests resource relocation exclusively in favor of divisions with better opportunities regardless their resource-weighted opportunities, Rajan et al. (2000) argue in the course of their second assumption exactly the opposite – that is, resources flow to the divisions with worse resource-weighted opportunities regardless their opportunities (columns 1 and 4). Noteworthy, the theory of Scharfstein & Stein (2000) contradicts the theory of efficient internal capital market in all cases. In particular, Scharfstein & Stein (2000) show that an inter-firm "socialism", which is based on the rent-seeking behavior of managers, results in weaker divisions being funded at the expense of the stronger ones (p.2537). Moreover, their study highlights the fact that this issue gets severed if there is large diversity between divisions with regards to their investment chances, which supports the conclusion on costs of diversity by Rajan et al. (2000). Nevertheless, the theories match only if the division with better (worse) prospects has better (worse) resource-based prospects at the

same time (columns 1 and 4). In another case, Rajan et al. (2000) predict transfers to divisions with worse resource-weighted opportunities regardless their investment opportunities, while Scharfstein & Stein (2000) expect exactly the opposite (columns 2 and 3).

All in all, Scharfstein & Stein (2000) as well as Rajan et al. (2000) show the evidence on *cross-subsidization* in diversified firms through which divisions with worse opportunities invest at margin more than their stand-alone counterparts⁶¹. Rajan et al. (2000) relate the degree of inefficiencies to diversity in resource-weighted opportunities across divisions⁶². Finally, both studies imply that it may be different “*use of power*” which could explain the difference in behavior between diversified and stand-alone firms (Scharfstein & Stein 2000; Rajan et al., 2000, p. 39). In particular, Rajan et al. (2000) regard the capital budgeting process within a firm as a political conflict between divisions. In other words, they disagree with the idea of authoritative headquarters having the full control over capital allocation. Similarly, so called *influence cost* models point out to the attempts of managers from low-prospect divisions to manipulate internal capital allocation in their interest (Meyer et al., 1992). In addition, Ozbas (2005) presents a model of internal competition for corporate funds which shows, firstly, that managers in a conglomerate tend to falsify the payoffs of their projects in order to get corporate funding, even though this might have a negative consequences on their career. Secondly, his model demonstrates that the higher the level of integration, the worse the effect and its consequences on the effective capital allocation in a conglomerate. Moreover, in support of the agency theory explaining the diversification discount, Jiraporn et al. (2006) find evidence that the firm is more probable to be diversified, the more restricted the shareholders rights are. Apparently, weaker shareholder rights are very likely to result in inefficient diversification⁶³.

⁶¹ See also Lamont O. (1997), Shin & Stulz (1998) and Berger & Ofek (1995).

⁶² Moreover, Wulf (2009) attributes the degree of cross-subsidization to diversity in quality of public signals about investment opportunities.

⁶³ In particular, Jiraporn et al. (2006) report a 1.1%-1.4% decrease in firm value for each additional governance obligation imposed on shareholders. Moreover, the negative effect of strict corporate governance has greater impact on industrial diversification rather than geographical.

Better investment opportunities for focused firms

Furthermore, Wernerfelt & Montgomery (1988) as well as Lang & Stulz (1994) report that focused firms face better investment opportunities than diversified firms. In this regard, Chen, (2006) proves that the market reacts significantly positively to capital investments announced by focused firms, while the market reaction to the announcements made by diversified firms is rather insignificant. Better investment opportunities could also give rise to a big trend towards corporate focus in 1980s⁶⁴. Noteworthy, Comment & Jarrell (1995) find a positive impact of corporate focus on shareholder wealth. In addition to the differences in the expected cash flows for diversified and focused firms, Lamont & Polk (2001) find that the diversified firms have significantly higher future returns than focused firms which is reflected by the discount in value of diversified firms today⁶⁵. By contrast, diversified firms with low expected returns earn a premium. This is referred to as the value effect – valuations of assets today are in a negative relation to future returns. In this regard, Lamont & Polk (2001) state that the differences in expected returns may arise due to various factors including volatility, misvaluation, taxes and liquidity⁶⁶.

Nevertheless, it is not clear how much diversification discount can be attributed to capital misallocation due to the agency costs and to another factors. Apparently, one or more arguments speaking in favor of the diversification discount is certainly of great importance. Otherwise, the benefits of internal capital market would lead to the diversification premium, instead of discount.

3.3.4. Doubts on diversification as value-destroying action

Despite the prevailing evidence on the diversification discount, recently, a number of studies have pointed out several flaws linked to this evidence and have questioned the idea of diversification having a negative impact on firm value. First, there is some evidence

⁶⁴ Comment & Jarrell (1995) report 55.7% of exchange-listed firms serving a single business segment in 1988 as compared to 38.1% in 1979.

⁶⁵ Their study shows that the cross-sectional variance of excess values is associated to future cash flow and returns differences between diversified and focused firms as well as the covariance between the cash flows and returns.

⁶⁶ However, Lamont & Polk (2001) are unable to find statistically significant evidence on the cause of differences in expected returns on diversified and focused firms.

contradicting the agency theory in explaining the diversification discount. Second, not surprisingly, business environment has been found accountable for differences in performance between diversified and single-segment firms. Third, endogeneity in both decision process and firm's characteristics may cause a noise in the diversification's effect on firm value. Forth, biases in both statistical measures of diversification and methodology used cast some doubts on the significance of research outcomes. Finally, there is some evidence on efficient capital allocation in internal capital market as well as diversification as value-maximizing strategy, obviously, denying the value-destroying impact of diversification. In the following, the most important arguments will be discussed in bigger detail.

Evidence contradicting the agency theory

There are several empirical studies contradicting the agency theory in explaining the diversification discount. First, even though the agency theory offers some explanations why diversified firms may trade at discount, it indicates why diversified firms may trade at premium at the same time. In particular, the agency models introduce *information asymmetry* issues in firms in general. It is the *efficient internal capital market hypothesis*, which serves as remedy to the mentioned problems and which may provide some indication on the positive effects of diversification if it works well⁶⁷. Noteworthy, the relationship between the volatility of a firm's returns and its manager's welfare is endogenous – based on the arrangement of managerial compensation agreed (Hermalin & Katz, 2000)⁶⁸. Numerous studies have analyzed the influence of diversification on information and volatility. Beginning with Diamond & Verrecchia (1982) who show the optimal managerial compensation arrangement and argue that risk-reduction diminishes the agency costs. However, later it is argued that it is the improved information which results in lower agency costs. Marshall et al. (1984) suggests that both information about the firm's returns indicating the manager's effort

⁶⁷ Starting with Chandler (1977) who states that a management involved in coordination of specialized divisions in a multidivision firm leads to greater efficiency and profitability than could be attained by stand-alone firms, Weston (1970), Williamson (1975), Stein (1997) and Khanna & Tice (2001) find internal capital markets more efficient than external capital markets.

⁶⁸ Generally, a risk-neutral principal tends to insure risk-averse agent, however, a moral hazard problem leads to a trade-off between the provision of insurance and the provision of incentives (Hermalin & Katz, 2000). In particular, this trade-off is dependent on the level of the principal's informativeness about the agent's behavior (Hölmstrom, 1979; Shavell, 1979).

and reduction of the manager's accountability may improve the agency issues. Also, Aron (1988) shows how independent information about returns of a diversified firm help reduce the costs needed to induce the manager's effort.

Apparently, internal capital market is likely to prevail over less-advanced capital markets that struggle with information imperfections. Especially, there seems to be less information asymmetry in internal (between divisional managers and headquarters) than in external capital market (between headquarters and external investors) (Stein, 1997)⁶⁹. Noteworthy, this theoretical framework has also been supported by empirical evidence. Hubbard & Palia (1999) show positive abnormal returns for diversifying acquisitions of the 1960s and relate them to information advantages associated with creation of internal capital markets.⁷⁰ Even though nowadays public has better access to company-specific information, still the insider information remains the most valuable and hidden from a third party. Moreover, only little diversification discount has been found in emerging markets which advocates an important role of internal capital market in substituting missing external financing possibilities (Fauver et al., 2003; Khana & Palepu, 2000).

Second, with regards to the managerial empire building, if investors perceived equity issue announcements of diversified firms as a signal of managerial inefficient empire building efforts, one would expect negative reactions to such an announcement. However, Hadlock et al. (2001) show that markets react less negatively to equity issue announcements of diversified firms than to those of focused stand-alones. In addition, Matsusaka (1993) finds that bidder shareholders gained from diversifying acquisitions during the 1960s merger wave indicating that these actions were not undertaken purely for managerial intentions. In particular, this research show that the target companies acquired during this merger wave were highly profitable which supports the *managerial synergy hypothesis* – acquirers looking for complementarities in managerial skills and expertise. On one hand, investors appreciate

⁶⁹ See Alchian (1969) and Williamson (1970) for the initial idea of managers having information and monitoring advantage, and Matsusaka & Nanda (2002) for more recent research.

⁷⁰ Their conclusion is limited to diversifications during the 1960s, when computers, databases, analyst reports and other sources of company-specific information were less accessible and markets for risky debt were illiquid compared to nowadays.

highly, when management of the target company remains preserved. On the other hand, investors punish acquirers whose boards are represented from a larger part by inside directors which are perceived as entrenched managers pursuing their personal objectives (Matsusaka, 1993).

Third, with regards to managers with a stock ownership in a company seeking risk reduction opportunities in diversification (Amihud & Lev, 1981; May, 1995), Denis et al. (1997) find an opposing evidence - significant negative relation between the degree of diversification and managers' stock ownership⁷¹. Similarly, Lewellen et al. (1989) find no support for the assumption that greater managerial stockholdings should enhance the motivation for risk reduction. Also Liebeskind & Opler (1994) document that privately owned firms are less diversified than their public counterparts. In addition, Palia (1999) links managerial stock or option ownership to less cross-subsidization. Even though higher managerial and blockholder ownership are essentially linked to lower degrees of diversification, there is no evidence found that diversification is in such cases more valuable (Denis et al., 1997)⁷². Regarding corporate governance and its relation to diversification, Anderson et al. (2000) cannot provide support for the influence of differences in governance structure on either a decision to diversify or variation in the scale of the diversification discount. However, Hoechle et al. (2012) find that better corporate governance is related to less value destruction⁷³. Also, Servaes (1996) and Lins & Servaes (1999) find that differences in corporate governance do have an influence on the shareholder wealth. On one hand, Servaes (1996) discovers lower insider ownership in diversified firms selling at discount.

⁷¹ However, by allowing for the relationship between managerial ownership and diversification to be non-linear (by including the square of managerial ownership as another explanatory variable) Denis et al. (1997) detect positive relationship for fifty and higher percentage of managerial stock ownership implying that risk-reduction benefits concern high ownership levels especially.

⁷² The findings imply that diversification reduces value in firms with managerial ownership less than 10% and more than 20%. There is no significant difference between the sample firms with the ownership between 10% and 15%. Overall, diversification is not related to increase in firm value at any managerial ownership level.

⁷³ Hoechle et al. (2012) handle simultaneously the endogeneity of diversification, firm value and corporate governance by means of Heckman (1979) sample selection models and dynamic panel generalized method of moments (GMM) by Wintoki et al. (2012). Both models report considerable diversification discount – outcome challenging the previous research on this topic. Moreover, a great part of the diversification discount is explained by corporate governance variables.

Similarly, Lins & Servaes (1999) report that the diversification discount is only found in the German firms with insider ownership less than 5 percent. On the other hand, higher insider ownership is linked to the firms facing lower costs of diversification (Servaes, 1996). However, Lins & Servaes (1999) find no evidence on the importance of the ownership structure in Japan or U.K. In line with the agency costs theory, the Japanese firms trade at discount only if they are strongly related to an industrial group – so called *keiretsu*. Given that these groups function as a conglomerate, clearly, individual firms may benefit from the effects of diversification without being diversified. Taken together, there is only vague support for the notion that the diversified firms with low managerial share of stock face greater decrease in value than the diversified firms with higher managerial stake which questions the impact of managerial incentives to diversify and thus weakens the explanatory power of the agency theory.

Significant influence of business environment

Apparently, the costs and the benefits related to diversification do not need to be identical across industries⁷⁴ (Gort, 1969; Santalo & Becerra, 2008) and business cycles (Dimitrov & Tice, 2006; Choe & Yin, 2009). Choe & Yin (2009) imply that diversified firms are more likely to be traded at discount during the recession, while the economic expansion causes discount to fall and the premium to rise. Similarly, different institutional environment causes differences in effects of diversification on shareholder wealth across countries (Lins & Servaes, 1999). Lins & Servaes (1999) show that diversified firms in Germany earn neither a premium nor a discount⁷⁵. However, in Japan and United Kingdom diversified firms trade significantly at discount of 10 percent and 15 percent respectively.

Not surprisingly, regardless the corporate structure, different firms face different business opportunities. Ferris et al. (2002) report on the basis of international joint ventures that diversification does not destroy value either at announcement date or from a long-term perspective. However, they identify that diversification effect on firm value is dependent upon a firm's access to financial sources and growth opportunities. In particular, the

⁷⁴ See the chapter 2.4. for further discussion of industrial prerequisites for corporate diversification.

⁷⁵ Due to the low number of firms in German sample, the results for this country are rather imprecise.

diversification discount occurs only if diversifying firms face low growth opportunities and have a lack of cash. Furthermore, Maksimovic & Phillips (2002) argue that the studies, which use *Tobins's q* measure calculated from single-segment firms, implicitly assume that all firms – diversified and focused – face the same investment opportunities within an industry and are supposed to enhance their investment activities once the industry single-segment *q* rises. However, empirical findings imply that diversified and focused firms might have different investment opportunities (Maksimovic & Phillips, 2002; Gomes & Livdan, 2004). Both studies argue that the two firm types differ in productivity and firm size. In particular, except for the smallest firm size, Maksimovic & Phillips (2002) report that diversified firms are found to be less productive than focused firms⁷⁶. They assign the differences in productivity to differences in organizational abilities. In line with the value-maximizing strategy, they predict conglomerates to grow less in a particular division, given that the other divisions are more productive and face an increase in demand. This argument contradicts the notion of *inefficient cross-subsidization* that conglomerates tend to invest more in low productive divisions, given the additional resources coming from another divisions facing an increase in demand.

Even though an obvious trend towards corporate focus following the last merger wave of 1980s speaks in favor of diversification discount (Comment & Jarrell, 1995; John & Ofek, 1995; Daley et al., 1997; Desai & Jain, 1999)⁷⁷, there is evidence that the rise in the number of divesting and/or refocusing firms in the 1980s can be linked to intensified market discipline (Denis et al., 1997; Berger & Ofek, 1999), not the diversification discount per se⁷⁸. Alternatively, the relative value of focused firms could be enhanced by changes in

⁷⁶ Based on a firm's comparative advantage and its influence on the firm's optimal level of diversification (see the chapter 2.1.4.), Maksimovic & Phillips (2002) argue that conditional on equilibrium state, if a high level of firm organizational ability is market specific, focused firms are more productive than diversified firms of the same total size.

⁷⁷ This literature on corporate spin-offs and divestitures reports significantly positive long-term performance when firms become focused through the divestiture of their non-core businesses.

⁷⁸ In this regard, Comment & Jarrell (1995) admit that much of the trend in focus comes from changes in sample rather than changes within firms. Moreover, positive impact of focus on shareholder wealth is significant only if an accounting measure of performance is included in the regression. In addition, higher asset turnover in diversified firms implies that book values will be consistent with market values more frequently in diversified firms leading to a decrease in Tobin's *q* and thus to positive correlation between corporate focus and *q*.

competitive and control restrictions favoring specialization such as lessened antitrust enforcements (Schleifer & Vishny, 1991), increased international competition (Liebeskind & Opler, 1994), and search for a better match for a firm's organizational capabilities (Matsusaka, 1993). Moreover, Denis et al. (1997) identify neither a pattern of quick and voluntary refocusing actions nor uncommon industry concentration of firms increasing their focus. In particular, corporate market control seemed to play an important role in the change of corporate strategies⁷⁹. In addition, Chatterjee & Wernerfelt (1991) find no consensus in their literature review about the link between the level of corporate focus and accounting-based measures of performance. Hence, industry shocks of 1980s apparently fail to explain the diversification discount and the following refocusing wave. Moreover, a couple of empirical studies highlight the role of payment method (cash vs. stock) in acquisitions and its effect on an acquiring firm's long-term performance. In particular, the acquirer's long-run stock performance is better following cash rather than stock transactions (Loughran & Vijh, 1997)⁸⁰. This, obviously, cast some doubt on diversification being the only cause for a decrease in firm value.

Endogeneity in decision process and firms' characteristics

Most of the empirical research on diversification has focused on explaining cross-sectional differences between diversified and specialized firms by comparing the value of multiple-segment firm to the imputed value of single segment firm multiples. Obviously, endogeneity in both decision to undertake diversification and in methodical differences between the types of firms make any differentiation between the implied influence on a firm value considerably difficult and hence it may even exclude the discount as indication of value destruction⁸¹. Moreover, empirical studies usually choose the firms for control group

⁷⁹ Denis et al. (1997) report that more than 50% of the firms that reduced their level of diversification faced at least one of the market disciplinary events such as being target of an acquisition event, financial distress or management turnover in the year prior to change in their diversification strategy.

⁸⁰ Similarly, Ghosh (2001) and Linn & Switzer (2001) find a positive association between cash transaction and a firm's long-run operating performance.

⁸¹ Villalonga (2004b) mentions that the estimation of diversification's effect on firm value represents usual statistical issue of estimating causal inference in observational studies. In particular, the simple average difference in results between treatment and control group can be used as unbiased estimate of the treatment effect as long as units are assigned to treatment randomly. In the case of diversification and managerial decision

according to size and industry, as though these firm characteristics were the only two characteristics in which diversified firms differ from focused firms (Villalonga, 2004b). In this regard, Campa & Kedia (2002) report broken down to single-segments years that conglomerates differ considerably from single segment firms with regards to their characteristics. In particular, single-segment years of conglomerates are larger in size, more leveraged and have lower R&D expenditures than their single-segment counterparts, which is consistent with the findings of Hyland & Diltz (2002). Noteworthy, multiple-segment firms differ significantly among them based on their diversification profiles. Concerning the capital investment and profitability expressed as capital expenditures to sales ratio and EBIT to sales ratio respectively, diversifying firms have higher capital investment as well as profitability, whereas refocusing firms and firms undertaking both refocusing and diversification have lower capital investment and profitability than single-segment firms. Diversified firms that do not change their number of segments tend to come from mature industries facing lower growth prospects and lower R&D expenditures, while having higher profitability and capital investment. These differences imply a relation between a firm's characteristics and its choice of diversification strategy (Campa & Kedia, 2002).

Apparently, a firm's decision to diversify is endogenous and it is a reaction to external changes (fraction of conglomerates in industry, merger activity) (Campa & Kedia, 2002; Villalonga, 2004b). Thus, neglecting the endogenous nature of a firm's diversifying action may help explain much of the diversification discount. Indeed, after application of recent econometric techniques for causal inference, Villalonga (2004b) reports the disappearance of the diversification discount as such which is in line with the findings in Campa & Kedia (2002), Graham et al. (2002) as well as in a number of event studies of diversifying acquisitions⁸². Even though Campa & Kedia (2002) find a negative relation between the firm's

making, however, assignment to treatment is not random, given the unavailability of experimental data. In such case, Villalonga (2004b) suggests two ways to infer causality; first, natural experiments as used by Lamont (1997) in his study of oil companies' investment decisions after oil price shock in 1986; second, other statistical techniques such as matching estimators based on propensity scores (Dehejia & Wahba, 1998; Abadie & Imbens, 2002) or Heckman et al. (1998) two-stage method. In his study, all three methods yield different estimates of the diversification's effect on firm value. Nevertheless, none of these methods imply that diversification destroys value.

⁸² See Schipper & Thompson (1983), Hubbard & Palia (1999), Matsusaka (1993) and Hyland & Diltz (2002).

decision to diversify and firm value, they suggest that the same firm characteristics, which make the firm diversify, do account for the diversification discount as well. In particular, given the joint estimation of a firm's decision to diversify and its firm value, Campa & Kedia (2002) report a diversification premium. In addition, Graham et al. (2002) show that the decrease in *excess value*⁸³ of acquiring firms in the period around the acquisition can be almost entirely explained by buying already "*discounted*" targets⁸⁴.

Biases in measures and methodology

First, Hund et al. (2010) point out to the static feature of cross-sectional analysis, which is so widely used among researchers. Agency issues resulting in an inefficient subsidization of poor divisions, overinvestment in more risky projects as well as value reduction due to lack of transparency are reflected in decrease in firm value at the time of diversification – that is at a particular point in time. By contrast, comparing the dynamic performance of multi-segment firms to single segment firms through time allows to distinguish prevailing arguments favoring the diversification discount from a rational learning paradigm. In particular, the rational learning model by Pástor & Veronesi (2003) ignores inefficient managerial investment decisions as well as negative projections for diversified firms as long as diversified firms face lower uncertainty about the average profitability. According to Hund et al. (2010) theory, the diversification discount mirrors the convex nature of discounting function and the diversity in uncertainty about mean profitability among diversified and specialized firms. The diversity lies in different rates of convergence for these two types of firms to the same market-to-book ratio. In general, as time goes on, market participants realize a firm's average profitability and the market value of the firm will meet its book value, eventually. In contrast to the arguments for the diversification discount predicting an average change in annual excess value being zero, Hund et al. (2010) report a larger decrease for specialized firms and a lower decrease for diversified firms, even though

⁸³ The notion of negative excess value refers to Berger & Ofek (1999) who find that on average conglomerates are valued less than a weighted portfolio of imputed stand-alone values for separate segments.

⁸⁴ In addition, Graham et al. (2002) find that the decline in excess value is visible in many cases; it appears for firms engaged in both related and unrelated acquisition (economic event), for firms (not) expanding the number of segments (pure accounting event) and also for firms that end up single or multi-segment after the merger event.

specialized firms have higher excess value at the beginning. The results prove that diversified firms face lower volatility in operating profitability which enhances learning for diversified firms. If this is the reason for the diversification discount, diversification per se is neither value-enhancing nor value-decreasing. In this way, rational learning paradigm helps explain the diversification discount even in the case when diversified firms and their stand-alone counterparts face the same level of risk or the same cash flow stream. Apparently, it is organizational form per se – some type of *cross-division effect* – that causes the differences in uncertainty about a firm's mean profitability across diversified and specialized firms (Hund et al., 2010).

Second, in line with the risk reduction hypothesis, that diversification reduces the volatility of a firm's asset value and hence the overall firm riskiness, there is evidence that the book values of corporate debt in computing the excess value clearly underestimates the market value of corporate debt for diversified firms compared to focused firms (Mansi & Reeb, 2002; Glaser & Müller, 2010). Moreover, Glaser & Müller (2010) find no diversification discount in low-leveraged firms, lower risk of financial distress and lower equity volatility for diversified firms. Apparently, the risk reduction hypothesis has a great impact on the size of the diversification discount in analyses using the Berger & Ofek (1995) excess value methodology (Glaser & Müller, 2010). A decrease in a firm's risk improves the bondholder value, but only at the expense of shareholder wealth⁸⁵.

Third, the majority of empirical studies, analysing the returns of firms that increase or decrease the number of segments in which they operate as reflected by their respective SIC codes, relies on segment data reported by COMPUSTAT, which is prone reporting biases⁸⁶. First, there is significant flexibility in a firm's segments reporting (Pacter, 1993). Given such flexibility, firms can decide, based on their strategic objectives, which segments (not) to

⁸⁵ The idea behind is that a firm's equity can be viewed as a call option on the firm's assets since shareholders are residual claimants – their obligations come only after all the other claims. See Merton (1974) for a model of corporate debt valuation.

⁸⁶ Maksimovic & Phillips (2002) use alternatively data from Longitudinal Research Database, maintained by the Center for Economic Studies at the Bureau of the Census, which contains detailed plant-level data. The biggest advantage is that coverage is at the plant level, therefore it precisely represents in which industries a multi-segment firm operates. Alternatively, Villalonga (2004a) uses the Business Information Tracking Service (BITS) – a database covering the whole U.S. economy at the establishment level.

report (Hayes & Lundholm, 1996). In this regard, Lichtenberg (1991) states that the degree of disaggregation in segment financial reporting is inferior to the true degree of a firm's industrial diversification. Second, Villalonga (2004a) points out ambiguity in the definition of a segment in The Statement of Financial Accounting Standards⁸⁷. Third, it is hardly to distinguish a pure *accounting event* – adding new business segments reported, from a real *economic event* – undertaking a diversifying acquisition (Graham et al., 2002)⁸⁸. In this regard, Hyland & Diltz (2002) point out that only 72% of the reported changes can be considered as meaningful diversification events. Consequently, misallocation may occur at both firm and industry level. This is very likely to result in distortion of the industry mean and median *qs*, which are so widely used as benchmarks for the valuation of segments (Villalonga, 2004a). Indeed, Villalonga (2004a) reports the diversification discount when the firms are classified using COMPUSTAT segments, while he finds a significant premium for diversified firms relative to single-segment firms when the firms are classified according to BITS business units. Villalonga (2004a, p.482) suggests that the difference may lie both in “relatedness” and “strategic accounting”. The former explanation indicates that the diversification discount refers to unrelated diversification, while the premium refers to related diversification. Since the related strategy is preferred over unrelated strategy, when all the firms are put together, not surprisingly, the overall effect on firm value is a premium. The latter explanation indicates that the discount occurs because diversified firms report their activities into segments such that their segments may seem to underperform the single-segment firms which they are compared to⁸⁹. Both explanations seem to be responsible for the observed variation in results between BITS and COMPUSTAT. Furthermore, Campa & Kedia (2002) document an obvious time patterns in the excess value measures. This may be attributed to the changes in

⁸⁷ SFAS defines a segment as “a component of an enterprise engaged in providing a product or service or a group of related products and services primarily to unaffiliated customers (i.e., customers outside the enterprise for a profit” (FASB 1976, paragraph 10a in Villalonga 2004a). Consequently, segments can be a sum of two or more activities, vertically or otherwise related (Villalonga, 2004a; Davis & Duhaime, 1992). Moreover, Davis & Duhaime (1992) document that in 5-10% of cases, firms formed one-segment business that were absolutely not related.

⁸⁸ In this regard, Hayes & Lundholm (1996) link a firm's segment reporting to strategic managerial objectives.

⁸⁹ Villalonga (2004a) mentions game-theoretic models according to which high performing firms are less likely to disclose financial information relative to low performing firms (Darrough & Stoughton, 1990; Feltham et al., 1992).

distribution of single-segment firms around the mean or to the entry and exit firms in the sample. In particular, exiting (entering) firms with low (high) excess values decrease (increase) the median industry multiplier in that year, and hence increase (decrease) the relative valuation of existing firms in the sample. Consequently, the median excess value of diversified firms will be affected by the variation in industry structure rather than by variation in its fundamental value. Given that the variation in industry structure is not random, but dependent on firms' decisions to diversify or refocus, then changes in industry structure may explain much of the diversification discount. Indeed, Campa & Kedia (2002) find various exit rates for the different diversification profiles. Obviously, firms tend to move to industries with low exit rates. Thus, there is a relation between changes in industry structure and a firm's decision to diversify.

Lastly, Whited (2001) links diversification discount to both the measurement error in *Tobin's q*⁹⁰, which is used widely as a proxy for a firm's investment opportunities, and the correlation between a firm's investment opportunities and cash flow. Another issue in inconsistency of empirical implications may be caused by different measures of diversification⁹¹. Noteworthy, a great part of empirical studies provides conflicting results and fails to achieve statistical significance. The research implications depend significantly on the sample chosen, timing as well as the choice of statistical measures.

Evidence on efficient capital allocation in internal capital market

In favor of internal capital market efficiency speaks partly also the model of Rajan et al. (2000) mentioned earlier suggesting both positive and negative effects of diversification. According to their study, diversification premium is possible if a firm is not diversified too

⁹⁰ Lins & Servaes (1999) argue that *Tobin's q* reflects the capitalized value of the benefits from diversification with no need for risk adjustment. However, *Tobin's q* is based on market's perceptions of the benefits from diversification. Thus, *Tobin's q* is only a suitable proxy as long as the market is efficient and the firm value is unbiased estimate of the present value of the firm's cash flows. Moreover, after accounting for the variables influencing the *q* (firm size, R&D expenditures and credit constraints faced by single-segment firms), Lins & Servaes (1999) find a decrease in valuation differences between highly diversified and single-segment firms.

⁹¹ Rajan et al. 2000 and Lamont & Polk (2002) use standard deviation of investment within an industry as a measure of diversification, while Choe & Yin (2009) link diversification to lower correlation between divisional states.

much⁹². In the case that inter-firm diversity is not high, transfers of resources are targeted towards their most efficient use and such diversified firm trades at premium in comparison to a portfolio of stand-alone firms. Similarly, Inderst & Laux (2005) show that symmetry in divisions' financial resources and growth opportunities affects competition for scarce resources and managerial incentives to invest efficiently. In particular, competition among divisions enhances managerial incentives only if divisions have similar projects in terms of financial resources and growth prospects. In addition, Maksimovic & Phillips (2002) state that resource allocation in a conglomerate is efficient; conglomerates tend to grow in their most productive segments when that segment faces an increase in demand and when the other segment faces a decrease in demand. Similarly, Choe & Yin (2009) show that a diversified firm is more efficient in resource allocation than a focused firm, given that the divisions face different states – that is, the advantage of diversification lies in the lower correlation between the divisions⁹³.

Evidence on diversification as value-maximizing strategy

Several studies point out that diversification is in line with the maximization of shareholder value (Matsusaka, 2001; Maksimovic & Phillips, 2002; Gomes & Livdan, 2004). Especially, the organizational theory raised by Matsusaka (2001) provides important implications for the explanation of the diversification discount. First, it contradicts the prevailing theory on high divestiture rates pointing to flop of diversification strategies in that it regards a large quantity of divestitures as unsuccessful experiments rather than unsuccessful strategies.

Second, the model allows that diversified firms trade at discount even though diversification is promoted as value-maximizing strategy. The explanation is as follows; diversified firms that are in the process of searching for good matches face the cost of running multiple businesses for an uncertain amount of time, while specialized firms have already found good matches, finished searching and derive the benefits of specialization.

⁹² Rajan et al. (2000) mention in this regard the example of General Electric, which ended up at the 8th percentile of their sample in terms of diversity, and at the 75th percentile in terms of value.

⁹³ Higher correlation between the divisions implies lower probability that the divisions will end up in different states, which decreases the diversification advantage.

Third, it is implied by the model that a firm pursues diversification strategy as soon as its organizational capabilities do not match its existing business. This may indicate that the more developed organizational capabilities of a firm, the more value can be created through diversification. Furthermore, the model also implies in this regard that firms are not profitable prior to diversification, not the other way around.

The fourth implication of the model is related to the evolution of corporate business meaning that in the course of searching process for good matches, a firm enters at the beginning one market, however, it may, finally, operate in another market. The model supposes a firm's behavior pattern as follows; if there is no or only a bad match between the firm's current business and its organizational capabilities, it diversifies – searches for a better alternative. If the new match is good enough, it relocates to that market leaving the existing business⁹⁴.

Lastly, concerning the refocusing and subsequent divestiture of an inferior business, the model supposes a positive stock reaction to a refocusing announcement and better performance of the existing business given that this business represents a good match and the firm derives benefits from specialization.

Noteworthy, the idea of this model challenges both the general notion that specialization is better and more efficient and the popular agency phenomenon that managers pursue own ambitions at the expense of shareholders' interests. Nevertheless, Matsusaka (2001) finds an explanation for the diversification discount, yet he confronts the agency theory by presenting positive abnormal stock returns to diversification announcements.

3.4. The latest trends in the corporate strategy

Despite of difficulties in obtaining the recent data, obviously, the level of diversification might have increased or decreased to certain extent in the last years. Noteworthy, another big wave of corporate spin-offs came in the pre-crisis year in 2007,

⁹⁴ Matsusaka (2001) provides numerous examples fitting this behavior pattern, such as Textron, which started with textiles and ended up in defense, Gulf & Western, which started with distribution of automobile parts, then moved to tobacco industry and ended up in communication industry.

when firms spun-off their parts worth \$234 billion in total (The Economist, 2011). In addition, The Economist (2011) reports another peak in 2011 with Fiat spinning-off a division producing lorries and tractors, Motorola separating its handset-manufacturing business, ITT spinning-off its defence and information business and also Carlos Slim, Mexican billionaire, separating Minera Frisco from his Carso conglomerate (The Economist, 2011). The major force behind these actions was assumed to be the diversification discount which was reckoned to be around 9%. Noteworthy, the diversification discount is much bigger in the U.S., western Europe than in Asia and developing economies, where diversified firms trade at a significant premium and become even more diversified – Samsung Electronics heading to pharmaceuticals (The Economist, 2011).

Interestingly, big American technology firms go against the trend of massive divestitures. Oracle, a software producer, has taken up hardware business, and Hewlett-Packard, a computer manufacturer, diversifies into software and services (The Economist, 2011). The latter move is observed also at another originally computer-makers only, such as Dell. However, there is lack of recent empirical research on this topic, which leaves the answer on the diversification's effect on firm value still open. Clearly, these moves does not seem to be reckless actions, but rather deliberate decisions responding to new customer needs.

Noteworthy, recently, firms seem to take advantage of both focus and diversification. In particular, Billet & Mauer (2000) unique analysis of tracking stock⁹⁵ shows that despite of prevailing arguments about the inefficiency of internal capital markets resulting in great wave of corporate spin-offs, a number of diversified firms prefer to issue a tracking stock over any other restructuring action in which they may profit from both specialization (transparency) and internal capital markets (operating synergies, co-insurance effect, taxation of a

⁹⁵ Tracking stock is a common form of equity linked to a specific division within a firm. Even though tracking stock divides the firm's business into quasi-pure players, no separation of assets and liabilities take place – a stockholder has ownership interest in the company as a whole. The return on tracking stock indicates the operating performance of the specific division to which it is related. Hence, an analysis of the firm's tracking stock enables direct implications on the benefits and costs on internal capital markets. Moreover, in this way managerial incentives can be directly linked to the performance of their divisions.

consolidated equity, lower overhead costs)⁹⁶. A significantly positive relationship between the market reaction to the announcement of tracking stock issue and proxies for the value of internal capital markets points out the importance of internal financing. Moreover, the authors report a lower diversification discount for the firms choosing this new corporate structure in comparison to similar diversified firms.

Apparently, the recent development of corporate strategies among firms around the world are very well captured by an economist Steven Kaplan: *“as long as your conglomerate is doing well, you can probably keep it together, but when it doesn’t work, it gets broken up”* (The Economist, 2011). All in all, it seems that firms are currently divesting their divisions rather than diversifying, even though this may not be true for all industries. Nevertheless, this trend will end eventually and another diversification boom might come again.

⁹⁶ Noteworthy, another forms of restructuring do not allow to preserve the benefits of internal capital markets.

Conclusion

“Does diversification destroy firm value?” Well, no, it does not necessarily. The fact that the answer on this question is not straightforward has already been implied by the discussion on the agency theory and internal market efficiency within the first chapter. Apparently, theoretical arguments both in favor and against internal capital market find their support in reality as showed in the last chapter. Given the both costs and benefits of internal capital market, it comes at no surprise that empirical evidence on the diversification’s effect on firm value is ambiguous.

Whether diversification destroys firm value, depends on numerous factors. First, it certainly does make a difference, whether a firm diversifies in related or unrelated way. The theoretical model on corporate structure selection implies preference for a conglomerate structure only if the units to be integrated are highly correlated – that is, related. However, empirical evidence on this subject is two-sided. On one hand, there are numerous studies linking benefits of diversification to high correlation between divisions (Rumelt, 1986; Chatterjee & Wernerfelt, 1991; Healy et al., 1992; Rajan et al., 2000; Villalonga, 2004a; Inderst & Laux, 2005). On the other hand, there is plenty of evidence proving the opposite – associating the advantages of diversification to low correlation between divisions (Lewellen, 1971; Marshall et al., 1984; Stein, 1997; Thomas, 2002; Choe & Yin, 2009).

Second, the impact of diversification is closely related to the current business environment, both internally in terms of firm structure, strategy, management and product-life cycle as well as externally with regards to industry, business cycle and investment opportunities. Noteworthy, Rumelt (1986) discovers a causal relationship between diversification and firm structure; on one hand, product-divisional structure favors diversification, on the other hand, diversification requires divisional structure. What comes first remains, however, unclear.

Third, a major role on the diversification’s effect on firm value is certainly played by the choice of statistical measures and methodology. Empirical research on corporate diversification and its influence on firm value focuses mainly on comparing the value of a diversified firm to imputed stand-alone values for its individual divisions and concludes,

generally, diversification discount (Lang & Stulz, 1994; Berger & Ofek, 1995; Servaes, 1996). However, after accounting for biases in statistical measures and methodology, not only the diversification evaporates, it even turns into premium (Campa & Kedia, 2002; Villalonga, 2004b). Moreover, event studies analyzing the market reactions to diversification announcements complicate the things even more. The majority of them neglects the distinction between related and unrelated diversification, and those that do not, provide rather dubious results. The only comprehensive analysis seems to be the one by Rumelt (1986), which distinguishes between several corporate strategies and relates firm performance to risk and profitability measures. That study, clearly, demonstrates the advantages of controlled diversity – that is, related diversification.

Apparently, diversification strategies have evolved through time. In the 20th century, diversification concerned almost exclusively manufacturing companies enriching their product lines with new products, while the 21st century experiences an obvious trend of manufacturers diversifying into services – that is, unrelated businesses. Based on the successful stories of conglomerate giants such as General Electric or Berkshire Hathaway, obviously, unrelated diversification may enhance firm value. So far, one would associate high profitability of diversified firms to operating and financial benefits as well as advantages linked to firm-level diversification. However, as my literature review reveals, those benefits happen to be offset by managerial objectives leading firms to inefficient capital allocation and excessive expansion. Even though there is evidence diminishing the explanatory power of the agency theory, more needs to be done on the research of factors influencing the effects of diversification, especially, with regards to the latest trends.

All in all, given the arguments in favor of both the diversification discount and premium, one can pronounce diversification as neither value-increasing nor value-decreasing strategy. The impact of any corporate strategy depends, obviously, upon a couple of industry- and firm-specific factors, which are prone to change over time. Therefore, a firm's decision to diversify or focus should be re-evaluated continuously. As long as diversification represents the best possible use of a firm's resources, given the current business environment, it seems to maximize firm value.

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Internet

<http://www.economist.com/node/18440915> (access on 29th October 2014); from the print version of The Economist (24th March 2011). Corporate restructuring: Starbursting

Appendix

Abstract (English version)

In my master thesis I review theories and empirical studies on corporate diversification by means of which I reveal numerous factors influencing a firm's decision to diversify as well as the diversification's effect on firm value. With respect to forces driving firms to diversification, I identify three main drivers of corporate diversification from value-maximizing perspective: *operating benefits* including economies of scale and scope in terms of manufacturing, marketing, management and R&D; *financial benefits* based on financial synergy, risk reduction and market imperfections; and advantages linked to *firm-level diversification*, which cannot be achieved in a stand-alone firm. Apart from these benefits, conglomerates are found to be more efficient in capital allocation relative to stand-alone firms. Nevertheless, there are also managerial objectives driving firms to diversification, which provide benefits to managers at the expense of shareholders. In addition, *cross-subsidization* and *internal power struggles* between divisions are found accountable for firm value destruction. Apart from these driving forces, I identify a number of firm- and industry-specific prerequisites for corporate diversification. Obviously, the trends in diversification strategy have changed over time and so have also empirical conclusions about the diversification's effect on firm value. Even though arguments in favor of the diversification discount seem to prevail, recently, there has been risen a vast amount of critique and evidence questioning this conclusion. Apparently, diversification per se might be considered value-maximizing strategy. Yet, diversification may result in a decrease in firm value conditional upon several factors - scale and scope of diversification, expansion strategy, firm structure, as well as current business environment.

Abstract (German version)/Abstrakt (deutsche Version)

Im Rahmen meiner Masterarbeit beschäftige ich mich mit einer Zusammenfassung von theoretischen und empirischen Studien, die sich auf die Unternehmensdiversifikation beziehen. Im Zuge dieser Zusammenfassung identifiziere ich nicht nur verschiedene Faktoren, die den Einfluss auf die Diversifikationsentscheidung des Unternehmens haben, sondern auch den Effekt der Diversifikation auf den Firmenwert. Im Bezug auf die Faktoren, die die Unternehmen zur Diversifikation bewegen, betone ich die folgenden drei Haupteinflussfaktoren aus der wertmaximierenden Perspektive: *die Betriebsvorteile*, die die Kosteneinsparungen durch Verbund- und Großenvorteile im Rahmen der Produktion, Marketing, Management sowie Forschung und Entwicklung umfassen; *die Finanzierungsvorteile*, die auf den finanziellen Synergieeffekten sowie auf der Riskreduktion und den Marktmängeln basieren; und schließlich die mit der *Unternehmensdiversifikation* verbundene Vorteile, die durch die Einzelunternehmen selbst nicht erzielt werden können. Neben diesen Vorteilen scheinen die Konglomerate im Vergleich zu den Einzelunternehmen effizienter in der Kapitalzuweisung zu sein. Dennoch gibt es die Diversifikationsentscheidung treibenden Faktoren aus der Sicht der Manager, von denen die Führungskräfte zum Lasten der Aktionären profitieren. Des Weiteren werden *Quersubventionierung* und *interner Machtkampf* unter den Divisionen als firmenwertmindernd wahrgenommen. Außer dieser treibenden Faktoren identifiziere ich mehrere unternehmens- und industriespezifischen Voraussetzungen für die Unternehmensdiversifikation. Offensichtlich haben sich sowohl die Trends von den Diversifikationsstrategien als auch die Forschungsergebnisse im Bezug auf den Einfluss der Diversifikation auf den Firmenwert während der Zeit verändert. Auch wenn es scheint, dass die Argumente für den Diversifikationsdiskont überwiegen, ist in der letzten Zeit eine Menge von Kritik und Gegenargumenten aufgetaucht, die die früheren Forschungsergebnisse bezweifeln. Anscheinend könnte die Diversifikation an sich als wertmaximierend betrachtet werden. Dennoch könnte sie abhängig von diversen Faktoren – wie zum Beispiel Diversifikationsumfang, Wachstumsstrategie, Unternehmensstruktur und aktuelles Unternehmensumfeld - eine Minderung des Firmenwertes zur Folge haben.

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