1. **Old and New Financial Paradigms**

## Klaus Spremann

*The finance industry has become an unmanageable clutter of all kinds of theories. At root, however, it still revolves around the assumption that the capital market works pretty well. The players in this capital market – fi- nancial investors and companies – concentrate their attention on com- monplace financial contracts. They think in terms of securities and yields. They try to diversify their holdings and occasionally adapt their portfolios as and when situations change.*

# Research into Financial Theory

In his book *The Structure of Scientific Revolutions*4, American theoretician THOMAS KUHN (1922-1966) once and for all put an end to the notion that scientific disciplines develop according to regular blueprints. He showed that the sum of all research efforts does not create a coherent whole. In- stead, he argued, normal research activity leads to contradictory outcomes and hence to crises that can only be resolved by scientific breakthroughs (or revolutions). Until then, the paradigms inherent in the various theories had coexisted as "concrete solutions to problems that the expert communi- ty has accepted" (Kuhn's definition of paradigms). The same holds true both for financial theory and the real world of finance.5 So what is truly at stake in this discipline, which emerged about a century ago out of investi- gations into how companies can find funds and how they can invest?

Any attempt to define the finance industry as that subset of economics that concerns itself with money falls well short of the mark. After all, we live in a money-based economy in which all resources are measured in terms of

4 To this end, KUHN picked up and elaborated on the ideas expounded by Polish theoretician LUDWIK FLECK (1896-1961) in his monograph *Emergence and Development of a Scientific Fact*.

5 For a discussion that examines this whole field on the basis of its paradigms, see: KLAUS SPREMANN: *Finance*, 3rd edition, Oldenbourg Verlag, Munich (2007).

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their monetary value. Marketing too is ultimately all about the money that is to be earned by selling products. And even if we refer to it under the pseudonym of compensation, human resources likewise focuses essentially on the exchange of money for labor. Money alone therefore does not dis- tinguish the finance industry from other economic disciplines. Rather, the finance industry focuses on money that will only be payable or available in the future. Contractually defined rights that accompany these future pay- ments are a further relevant issue. There are three sets of such rights: first, the right to claim payment; second, the right to information; and third, the possibility of influencing decisions that in turn can affect the amount of and risks attached to future payments. To summarize, financial theory ex- amines:

* The value of future payments, including the rights that accompany them
* The forms (i.e. transactions) in which payment is made
* The methods used to influence the expected value of and/or risk to these payments

Research into financial theory is often delimited by a strong focus on the forms of transfer, i.e. the financial contracts or transactions. Financial con- tracts are contracts in which one party receives money now and, in return, grants rights and claims to the other party that will guarantee some form of performance or return in the future. Debt and equity are the two most im- portant financial contracts, although capital expenditure too is examined. Payments effected today lay the foundation for subsequent returns. What- ever the case, a time differential between performance and counterperfor- mance is at the very core of financial theory. Why? Because risks, rights to information and the possibility of influencing decisions exist only if coun- terperformance is set sometime in the future. All the paradigms that have shaped current financial theory (and a number of revolutions too) share this common understanding of the object of research.

# Old Finance

The first financial paradigm has been known since *The Merchant of Ve- nice*, in which WILLIAM SHAKESPEARE introduces us to the way business- people thought in the Renaissance. Antonio, the merchant, reduces every- thing to a question of money and is constantly confronted with funding and investment issues:

* Where can I find funds? Who will supply them and on what terms?
* What projects are open to me? How much profit can I make on these investments?

These questions are as valid today as they were then. Whether they have new business ideas or new product ideas, all entrepreneurs face the same challenge: First find a promising project, then find someone to finance it. Once a number of project financing offers have been solicited, the next step is to choose which modes of financing are most suitable for which projects. In modern parlance, this is the investment appraisal and feasibili- ty study phase. JOEL DEAN6 (1906-1979) was the first economist to use a variable that is still applied in this context today: the internal rate of inter- est on a series of payments. Dynamic investment costing methods assume a perfect capital market and compare the returns this can deliver with the likely returns on the project. Unlike these methods, however, DEAN com- pares both investment and financing options at the same time. His model juxtaposes all financing options at a low internal rate of interest with all projects whose internal rate of interest is greater than the critical return. To this end, critical returns are set so high that budgets are balanced. Tradi- tional textbooks are full of this kind of observation.

In the 1950s, business administration doctrine concentrated primarily on the relationship between finance and accounting. The business managers of the day believed that financing and investment transactions were re- flected above all on the balance sheet. Creditors paid considerable atten- tion to balance sheet ratios. A company's degree of indebtedness (or gear- ing ratio), for example, was calculated from the ratio of debt to the carry- ing amount of equity. Metrics that set the carrying amount of profits in relation to the carrying amount of equity (the return on equity, ROE) and total assets (the return on investment, ROI) likewise rose to prominence at this time. ROE – annual profits divided by the carrying amount of equity – became an especially popular measure. DU PONT was the first to break ROE down into the product of three metrics. In the process, he established the doctrine of what became known as value drivers. In effect, value driv- ers are the knobs and controls that can be tweaked to maximize ROE. To- day, management consulting firms all argue that their own definitions of Economic Value Added and cashflow before tax are the right ones, while the differences between EBIT and EBITDA drive many a student to des- pair.

6 In his book *Capital Budgeting and Managerial Economics*, New York (1951).

The 1950s financial theory paradigm described above is today referred to as traditional finance theory or, somewhat disrespectfully, as "old finance". Traditional financial theory does not assume the existence of a capital market. Each and every financial contract is unique. Accordingly, the pos- sibility of comparison with "customary market rates" does not exist in the world of traditional finance. To this day, this school of thought continues to influence the way people – especially practitioners – think about finance. Many entrepreneurs too are still guided by terms fashioned in this era. CEOs never tire of telling their people (for whom carrying amounts have been immutable yardsticks since time immemorial) that improving ROI is the overriding goal. Who does not feel the market is unfair when it drives companies to ruin? Who doesn't believe that accounting measures such as EBITDA are important to the finance industry? Be that as it may, the main deficiency of *old finance* is this: The countless details it addresses ultimately leave us in the dark about a company's aims. While some au- thors believe these aims could indeed be described in terms of ROE, others object that *long-term* profits are far more important. Still others argue that companies should apply themselves first and foremost to safeguarding their substance. This teaching raised a number of peculiar problems, how- ever, such as the taxation of paper profits. Some authors have even gone so far as to derive morally justified prices for products from the right of a company to exist.

# Neoclassical Finance

Triggered by confusing new events and mechanisms in the capital markets, especially in the English-speaking world, a scientific revolution occurred around 1960.

* The law of the market, as we know, is the law of one price. So how is it that, following the assumption of financial planning, different fi- nancing options can be offered on differing terms to one and the same company in one and the same capital market?
* Why should accounting, balance sheet ratios and their derivative me- trics be so important when shareholders operating on the financial markets are more concerned with stock prices and market values? And what do paper profits say about a company if financial investors are interested only in the returns generated by value added and divi- dends relative to market value?

Since "old finance" was unable to answer these questions, a new paradigm emerged – and indeed had to emerge. It can be described like this: Assume a capital market that is working smoothly. Then explain every phenome- non in the finance industry in terms of how it would be valued in such a perfect market. This paradigm is today referred to as the neoclassical theory of finance, because neoclassical economics generally puts the mar- ket at the center of all its theories.

The approach embodied in this neoclassical theory of finance was revolu- tionary. Italian economic theorist FRANCO MODIGLIANI (1918-2003) and MERTON MILLER (1923-2000), that tireless advocate of market economic thinking, surprised the economic world with hypotheses that earned them the Nobel Prize and remain valid to this day.

1. MODIGLIANI and MILLER understood that, in a market economy, the price reflects how attractive a good is to the population in general. It therefore follows that the value of a company is the price that shares in the company command in a capital market that is perfect (or at least works well). This is the basis on which financial investors in such a market calculate when they will receive money and with what degree of probability. As a result, the value of a company can be de- rived directly from the cashflow surplus that is distributed to eligible persons in the form of dividends, or that is otherwise distributed to the owners of the company.
2. That, according to MODIGLIANI/MILLER, is why it is so important to *increase the value of the company*. For any company whose purpose is to create benefits for its capital providers, this must be top priority. In formulating their hypotheses, the two economic theorists drew on the insights on monetary theorist IRVING FISHER (1867-1947). FISHER had realized that, in the capital market, the wishes or preferences of owners can be separated from investment decisions and delegated to managers. If these managers complete projects in a way that gene- rates positive net capital value, the said eligible persons will maxim- ize their own utility independently of their own preferences. In other words, the best way for company managers to increase shareholders' prosperity is to increase the value of the company – even if they are unaware of the shareholders' preferences. This was a revolutionary discovery. Neither profit nor "long-term" gain are the crucial va- riables. The most important thing is value added, and this is deter- mined from cashflow surpluses. This realization relegates paper prof- its to a role in enabling more accurate forecasts (where these are needed) for the cashflows that actually determine value.
3. MODIGLIANI/MILLER further shook the world of economists by ar- guing that many of the activities advocated by old finance actually have no bearing whatsoever on value creation. MODIGLIANI/MILLER advanced a number of "theories of irrelevance". The first is that a firm's borrowing policy does nothing to increase its value. And in- deed, their argument holds true: If an English broker suggests that I invest my money (together with a sizeable collateral loan) in stocks, I could save myself both the fee for the loan and the broker's fee. After all, I could just as well gain powerful leverage on my own by exploit- ing the market conditions that apply to myself and the broker alike. Second, the two economists argued that dividend policy too is irrele- vant to value creation – as is the question of whether a company or shareholder hedges a transaction.

The paradigm established by the neoclassical theory of finance – where the price that can be realized in a perfect capital market is the crucial factor – has since been elaborated further in modern portfolio theory and option price theory. Here again, we see how the assumption of a perfect market provides fertile soil for the formation of theories.

# Modern Portfolio Theory and Option Price Theory

While MODIGLIANI and MILLER were conducting research into company value and objectives and developing the irrelevance theories we have just discussed, HARRY MARKOWITZ (\*1927) was working on what became known as modern portfolio theory (MPT). In the 1960s, JAMES TOBIN (1918-2002), WILLIAM F. SHARPE (\*1934) and others also expounded and developed this theory. MARKOWITZ *et al* posited not only a capital market that works well but also one in which information works efficiently. In such a market, new information and all consequences that can be antic- ipated from such information will affect prices correctly and immediately. The prices in this market therefore always reflect information that is al- ready known somewhere or other. Only genuinely new information causes prices to change. This is because only genuinely new information surprises people and influences prices in the form of random events on the stock markets. This theory explains why prices move erratically, plotting a "ran- dom walk". One proponent of the efficiency hypothesis, BURTON G. MALKIEL, gave his bestseller the doubtless calculatedly ambiguous title "A Random Walk Down Wall Street".

But is this efficiency hypothesis fully valid in all cases, or is it only an approximation? As academic as this question may seem at first glance, capitalism stands or falls by the answer. Ultimately, this is the question of whether capital markets are and should remain a private party for big play- ers, or whether the door is open to the public at large. If the efficiency hypothesis is generally valid, even less well-informed players can buy and sell in this market at any time. As with MALKIEL's monkey throwing darts at the financial pages of a newspaper, the uninformed need not be afraid of having the wool pulled over their eyes by their better-informed peers. *An efficient capital market protects the uninformed*. Such a market can there- fore be opened to the wider investing public. Efficient markets are demo- cratic markets. Moreover, open financial markets are the only way to satis- fy modern society's voracious appetite for capital. On the other hand, mar- ket players must be informed if a market is not efficient: "Beware! The current price may not reflect the true value known only to the better- informed." Having said that, would you buy a lottery ticket if the draw had already taken place and the outcome was known to only a handful of people, but not to either you yourself or the general public? Where a mar- ket is not efficient, the general public is well advised not to engage in di- rect transactions. They should instead turn to better-informed experts and delegate the orders they place. This, however, would make accessing the market significantly more difficult and would limit market activities to a small number of people. The capital market could then no longer be seen as a key institution in modern society. It follows that the regulator's desire for open capital markets can only be met if one assumes that information efficiency prevails. Only then can small investors too act without fear.

If we combine modern portfolio theory with the efficiency hypothesis, all financial investors, however large or small, will diversify their risk in light of returns that are regarded as random. Since all financial investors will have the same information, they will all ultimately assemble portfolios that vary in size but not in their composition. A standard portfolio thus emerges, known as the market portfolio. According to this theory, inves- tors behave rationally when their portfolios match the market portfolio precisely and when all securities are held passively. To put it another way, they behave like ships in a rough sea: There is not much point trying to anticipate the impact of each and every wave and moving the cargo around to avoid damage. It makes more sense simply to tie everything fast.

WILLIAM F. SHARPE, JOHN LINTNER and JAN MOSSIN's7 work enriched

modern portfolio theory by adding a model that illustrates the relationship between expected rates of return (i.e. the cost of capital) and the risk to which a company is exposed: the capital asset pricing model (CAPM). This model is very highly regarded in both theory and practice. In the CAPM model, the cost of capital depends on what is known as the quantity *beta*. Beta expresses the non-diversifiable risk to which an investment is exposed. Every CEO today knows that this beta is the pivotal factor that determines the cost of capital. Larger beta values indicate higher costs of capital and are discounted more heavily. Accordingly, the farther off a cashflow is in the future, the less it contributes to adding value. By con- trast, lower beta values imply lower costs of capital and are not discounted so heavily. Betas have not proved to be particularly stable in empirical estimates, however. It therefore makes little sense to try to determine beta values to the third decimal place, as some "beta fetishists" are inclined to do. Rather, an expert eye is needed to arrive at as accurate an estimate as possible. Once this has been done, the CAPM does its job well. Above all, it underscores two valuable insights: 1. The higher the risk associated with an investment, the higher returns it is likely to generate on the capital mar- ket. 2. This risk/return correlation is valid only for "systematic" risks, i.e. risks that cannot be reduced or eliminated by further diversification.

This, then, is the first theoretical complement to the paradigm set by the neoclassical theory of finance. Modern portfolio theory, the efficiency hypothesis and the capital asset pricing model are all based on the assump- tion of a perfect market. A second complement – which likewise assumes a perfect market – is what is called option price theory. The idea of putting a value on payments of a general nature that will occur in the future and are therefore uncertain (i.e. giving them the price tag that they should have in a perfect market) arose around 1970. The technique used was to model them on the basis of other payments whose price was known. This simulation or replication strategy now allowed numeric values to be attached to options by assuming that returns on the underlying objects would follow a random walk. The binomial technique used to this day to determine option prices thus came into being. In 1972, FISCHER BLACK (1938-1995) and MYRON

7 JOHN LINTNER: *The Valuation of Risk Assets and the Selection of Risky In- vestments in Stock Portfolios and Capital Budgets*. Review of Economics and Statistics, vol. 47 (1965), pp. 13-37; JAN MOSSIN: *Equilibrium in a Capital As- set Market*. Econometria, vol. 34 (1966), pp. 768-783; WILLIAM F.SHARPE: Capital Asset Prices: *A Theory of Market Equilibrium under Conditions of Risk*. Journal of Finance, vol. 19 (1964), pp. 425-442.

S. SCHOLES8 (\*1941) even went so far as to develop a self-contained for- mula to calculate the price of call options on stocks. The payments asso- ciated with calls were replicated to arrive at the target figure. To this end, BLACK and SCHOLES set up a portfolio consisting of a certain number of stocks and a credit facility. The composition of this portfolio varied over time and as a function of the price of the underlying objects (the stocks). It is fair to regard this BLACK-SCHOLES formula as the zenith of the neoclas- sical financial theory paradigm. The formula underscores the rich variety of nuances a theory can unfold when it is posited on the assumption of a perfect market.

# Empirical Financial Market Research

By about 1980, computers and databases stuffed with historic price charts were commonplace. The obvious question to ask, therefore, was whether all the theories derived from the assumption of a perfect market were of any genuine value in the real world. This question might have seemed confusing to model theoreticians. It is the clarity of the formulation that demonstrates the quality of a model, they would argue. This clarity is deli- vered by expressing models in the "language" of mathematics. And every- one naturally bases their work on assumptions that roughly reflect reality. After all, no-one wants to be accused of developing their theories in an ivory tower, do they? And if the cut and thrust of day-to-business chooses to depart from a model here and there – well, that's real life's problem, not the problem of the scientific community, isn't it? This, at least, was the prevailing opinion at the time. By taking this line, most researchers effec- tively inoculated their theories against attempts to disprove them – and also against any unwanted confrontations with reality. In his seminal work on scientific theory, *The Logic of Research*, Austrian-British philosopher KARL R. POPPER (1902-1994) had nevertheless shown as far back as 1935 that knowledge can advance only if theories are exposed to attempts to disprove them and therefore run the risk of being refuted.

For the theory of finance, this became possible thanks to the availability of huge volumes of data – and the computers with which to analyze them – as of the 1980s. Analysts everywhere began to feed historical prices into sta- tistical programs. One powerful motivator was undoubtedly the hope of

8 FISCHER BLACK and MYRON SCHOLES: *The Pricing of Options and Corporate Liabilities*. Journal of Political Economy, vol. 81 (1973), pp. 637-654.

being able to make money on larger or smaller discrepancies between theory and reality. Financial companies thus sprang up left, right and cen- ter between 1980 and 2000, while the incumbent banks constantly referred to the "models" they had developed in their financial analysis. In 1999, ANDREW W. LO and A. CRAIG MACKINLEY's book *A Non-Random Walk Down Wall Street* took a critical potshot at MALKIEL's earlier work. Sur- prise, surprise, modern, empirical approaches to finance did indeed reveal that, in places, the very rudimentary models used by neoclassical finance were not fully aligned with reality.

Of the revolutionary questions asked in the early days of this empirical financial market analysis paradigm, here are just three:

* Is information efficient in the real world's financial and stock mar- kets? Or can smart analysis of the available information enable cer- tain individuals to make better forecasts and thereby possibly to "beat the market" (i.e. to outstrip the performance of the passively held market portfolio postulated by modern portfolio theory)?
* Are the costs of capital calculated using the CAPM realistic? Or might the beta not be the only factor that influences them? Might they not also be influenced by profit/earnings ratios or the size of the com- pany, for example?
* Do the phenomena witnessed in the bond and foreign exchange mar- kets (such as the formation of interest rates) harmonize with econom- ic theories?

The only answer the neoclassical theory of finance could give to these questions was to reassert that the assumption of a perfect market should reflect actual reality with sufficient accuracy. Therefore, as soon as data and computers became available, hordes of researchers seized the opportu- nity to compare theory and reality. Contradictions, known in the trade as antinomies, were discovered on all sides. Perhaps the best known of these antinomies is the "January effect". Increasingly, it became apparent that, alongside the assumption of a perfect market, a number of other simplify- ing assumptions too had slipped in unnoticed.

One of these simplifying assumptions is the notion that volatility is con- stant. However, Polish-French mathematician BENOÎT MANDELBROT (\*1928) discovered that volatility on the financial markets actually varies. Calm phases give way to troubled phases. "Volatility clusters" arise. Logi- cally, therefore, most of the statistical methods used for empirical studies fail because they posit constant volatility. New estimation methods were needed. ROBERT ENGLE (\*1942) thus formulated what became known as

the ARCH models that earned him the Nobel Prize in 2003. These models accommodate the empirically verified fact that volatility changes over time and in relation to certain events.

A further simplifying assumption implicit in MARKOWITZ's modern port- folio theory – and therefore in the neoclassical theory of finance – was that of normal distribution. Returns on stocks and bonds, the most important categories of securities, were expected to follow the bell-shape of the Gaussian graph. Empirical research nevertheless dug up a number of yield distributions that were not symmetrical but lopsided. Other graphs had "fat tails", indicating that the empirical probability of extreme volatility was much greater than the theory had assumed.

Finally, in 1992, EUGENE FAMA (\*1939) and KENNETH FRENCH (\*1954)

used empirical data to refute the CAPM, the flagship of the neoclassical financial theory paradigm.9 "Beta is dead", the pundits proclaimed. Yet why exactly did the CAPM underperform so alarmingly on empirical va- lidity? The reason is surprisingly simple: People do not stick closely enough to the recommendations of modern portfolio theory. Yes, the theory is impressively clear and consistent. Yes, it earned its progenitors MARKOWITZ, TOBIN and SHARPE a Nobel Prize. Yes, banks base their investment recommendations on this theory. But no, it does not reflect reality. On the contrary, people invest their money only partly on the basis of rational considerations. In many cases, they trust to feelings or ill- considered impulses. At times they are simply driven by fear. This realiza- tion heralded the golden age of *behavioral finance*10 between 1995 and 2000. This new discipline showed us that our substantial self-confidence is often groundless; that we often look to the past rather than to the future; and that we have a hard time understanding and therefore accurately as- sessing risk. DANIEL KAHNEMAN (\*1934) and VERNON L. SMITH (\*1927),

the staunchest defendants of behavioral finance, were rewarded in 2002 with a Nobel Prize for their ground-breaking research into the way in which people really make decisions.

Since around 2000, others have been exploring a further reason for the empirical shortcomings of the CAPM and modern portfolio theory. Empir- ical research has repeatedly stressed the importance of macroeconomic

9 EUGENE F. FAMA and KENNETH R. FRENCH: *The cross-section of expected stock returns*. Journal of Finance, vol. 47 (1992), pp. 427-465.

10 RICHARD H. THALER*: The Winner's Curse. Paradoxes and Anomalies of Eco- nomic Life*. Princeton University Press, Boston (1994).

variables to what happens on financial markets. The neoclassical theory of finance, however, had excluded one issue that appears patently obvious: the fact that the "external economy" shapes events on the stock markets. Now, therefore, economic cycles, macroeconomic consumption patterns and capital spending in the real economy are also factored into the equa- tion. It turns out that the neoclassical assumption of perfect capital markets linked to the simplifications mentioned above was not so bad after all. Its models were just a little too simple. From the start, they precluded second- ary factors of influence. Yet it also turns out that investors are smarter (i.e. more rational) than we thought. Contrary to all the basic models (portfolio theory and the CAPM, for instance), they do indeed actively take account of such secondary issues. This, of course, is especially true of large inves- tors such as fund managers. Unlike small investors, they are less at the mercy of their own psychological weaknesses. This explanation therefore does not see investors as partially irrational victims of their behavioralist thought patterns. On the contrary, they take more aspects into considera- tion than neoclassical financial theory admitted. That is precisely why these models cannot accurately describe what really happens on the world's financial markets.

# Corporate Finance

The first crucial insights delivered by the neoclassical theory of finance were the irrelevance theories expounded by MODIGLIANI and MILLER. These findings proved frustrating to the world of corporate finance and investment. Neither gearing policy, dividend policy nor the hedging of currency risks has any impact whatsoever on whether a company meets its overriding goal of increasing its value? Back in 1960, no-one was prepared to believe that the irrelevance theories had, at one fell swoop, destroyed any utility in making elaborate observations of corporate gearing and leve- rage. The assumptions inherent in the notion of a perfect capital market were thus discarded as the basis for further investigation into corporate finance. And indeed, two phenomena contradicted the idea of the perfect market even before empirical financial market research was in a position to present its findings:

* In all countries, economic output is taxed at different rates depending on whether it can be assigned to external creditors or shareholders. Interest that a company pays for the use of debt capital is an expense and, as such, is not liable to corporate tax. Taxes are, however, levied

on profits. In other words, equity and debt receive unequal treatment for tax purposes.

* Nor are markets fully transparent. Every CEO has a measure of dis- cretionary leeway that no-one else can influence. Shareholders who delegate tasks to the CEO therefore do not have full control over the latter's decisions. They can only provide incentives to encourage a CEO to act in their best interests. In reality, it is also true that manag- ers provide more thorough information to their bankers than to their shareholders.11 The result is a considerable information imbalance (or asymmetry) between managers, shareholders and providers of debt finance.

These two facts contradict the model of a perfect market, which assumes that debt and equity will be treated identically for tax purposes and that all information is available with equal transparency to all market players.

If these real-world conditions are factored in and combined with the other assumptions that underpin the perfect market, the result is a much more realistic basis for the strictly scientific treatment of corporate finance. One initial insight is that the structure of capital *is* important. After all, it is much easier to borrow money than to increase equity capital by issuing new shares, for example. One reason is that new borrowings receive prefe- rential tax treatment. Another is that management boards and banks share information more closely. In other financing activities too, tax issues and information balances play a similarly decisive role. Some such activities are especially well suited to sending credible signals to the market, which in turn reduces the cost of the resultant principal-agent relationships.

The calculation methods used to value a company are among the best- known outcomes of research into corporate finance. Defined formulas allow a company to determine how gearing, say, will influence the overall value of the company. The latter is defined as the sum of the values of equity and debt. MILES and EZZELL's12 weighted average cost of capital (WACC) crops up in the formulas used to calculate company value. The tax rate is the second most important variable. An alternative approach to

11 MICHAEL C. JENSEN and WILLIAM H. MECKLING: *Theory of the Firm: Mana- gerial Behavior, Agency Cost and Ownership Structure*. Journal of Financial Economics, vol. 3 (1976), no. 4, pp. 305-360.

12 JAMES A. EZZELL and JOHN R. MILES*: The Weighted Average Cost of Capital, Perfect Capital Markets, and Project Life: A Clarification*. Journal of Finan- cial and Quantitative Analysis, vol. 15 (1980), pp. 719-730.

corporate valuation uses what is known as the tax shield (taxable profits less depreciation) to calculate the adjusted present value of the company. These formulas today underpin every assessment of company value that measures the present value of future cashflows. In addition, ALFRED RAPPAPORT (\*1932) and others showed which value drivers affect the target variables thus quantified and thereby determine their value.

A second significant finding of recent research into corporate finance is that the various forms of financing are in effect subject to a "pecking or- der". The standard pecking order dictates that companies initially prefer internal (equity) to external (debt) financing. Any entrepreneur will con- firm that internal resources are indeed the dominant source of financing for investment activities. On the other hand, debt financing is not nearly as important as capital market researchers would have us believe. Incidental- ly, this principle also holds true in the USA, where corporate investment is, as it turns out, financed and driven primarily by the capital market. The pecking order theory explains why top management first draws on internal resources, then borrows fresh funds if necessary, and only considers in- creasing capital when both of these options have been exhausted. Accord- ing to S. C. MYERS and N. S. MAJLUFF13, the reason is once again the im- balance in the information that is available to managers and the providers of funds. The same asymmetric information structure is also responsible for the underpricing of new share issues.

Of late, traditional forms of corporate finance have been complemented by what is known as entrepreneurial finance or venture/growth finance. Un- like inherited patterns of corporate finance, cashflows, claims to cashflows and contracts on which to assert such claims are not the only factors that link the providers and users of capital in this model. Expertise and man- agement skills are now added to the purely monetary connection.14 Real economic skills and abilities are distributed equally between the providers and users of capital. The former are no longer merely portfolio investors (unlike shareholders in traditional corporate finance models). In the con- text of venture capital and growth financing, the relationship between the providers and users of capital is no longer reduced to the issuing of com- mercial paper that can be sold at any time on a secondary market. Exits too

13 STEWART C. MYERS and NICHOLAS S. MAJLUFF: *Corporate financing and investment decisions when firms have information that investors do not have*. Journal of Financial Economics, vol. 13 (1984), pp. 187-221.

14 JANET KIHOLM SMITH and RICHARD L. SMITH: *Entrepreneurial Finance*. 2nd edition, John Wiley & Sons, Weinheim (2003).

now have to be planned carefully and are therefore also governed by the underlying financing contracts.

# Strategic Corporate Finance

The neoclassical paradigm has unquestionably had the strongest formative influence on the theory of finance. As we saw earlier, this paradigm as- sumes a capital market that is perfect in every respect. By adding a number of assumptions to simplify matters, it is possible to develop this paradigm into a comprehensive theory of finance that comprises modern portfolio theory, the capital asset pricing model (CAPM) and the Black-Scholes formula to calculate the price of call options.

The theory of corporate finance has been similarly influential, although its underlying assumptions are less strongly idealized. For example, this theory addresses practical issues such as discrepancies in the tax treatment of debt and equity and the information imbalances between market players. It thus arrives at a realistic description of the structure of capital. The agency theory – the model that describes the relationship between princip- al and agent – then also sheds light on issues relating to delegation and control, i.e. corporate governance.

Both paradigms (for a moment ignoring the fruits of empirical financial market research) model a smooth-working capital market. The neoclassical theory of finance models a more heavily idealized market, the theory of corporate finance a more realistic one.

In both paradigms, financial investors are presented as portfolio investors. They find the capital market good and attractive and naturally concentrate on commercially available financial contracts. They have no interest in transactions that bypass the market. They diversify their investments, ac- cept market prices as given and adapt their portfolios to changing circums- tances. As a group, these portfolio investors shape what happens on the capital market. On their own, however, none of them has sufficient power to break the rules by which the market operates. That, at least, is what most people think.

## On the Attractiveness of Markets and the Impotence of Market Players

Let us therefore briefly recap on the fundamental functions and properties of markets. Markets can be likened to cities, for three reasons. First, they

clearly reveal the whole spectrum of what is on offer. Second, they allow observers to compare and engage in certain transactions. Third, they pro- vide individuals with feedback about how others rate their performance.

These three functions are generally perceived to be attractive. That is why people willingly go to cities to exploit the opportunities for comparison and make use of the broader range of offerings. They even accept feedback and bow to outside classifications because these come not from other indi- viduals, but represent a collective view. Such attraction fuels urban growth, allowing cities to perform their functions ever better – as long as negative scale effects do not set in. It goes without saying that new indi- viduals who arrive in the city have to adapt to some extent. They must observe the rules that already apply. Within the framework of these rules, however, they are free to innovate and themselves work to promote change.

That is exactly how capital markets and financial centers develop and grow. Those who are interested in finance and investment willingly partic- ipate in the capital markets and go to the financial centers. Each individual discovers for him- or herself that it is better to realize transactions via the market than in any other way. This realization drives the further growth of capital markets, which become even more attractive as a result. Innovative financing solutions are welcome and create advantages. Capital markets too have rules, the most important of which is to adapt to pricing struc- tures.

Both regular markets and financial markets thus exhibit two characteristic attributes:

* They attract transactions. Players discover that they benefit more from participating in the capital market than from trying to find other arrangements that bypass the market.
* Markets and financial markets make market players into quantity adjusters. Given the size of the market and the large number of play- ers, no one individual expects to be able to influence prices. Players therefore accept market prices as given and discover for themselves that it is best to optimize quantity adjustments.

When issuing new securities on the primary market, investment banks align their actions with precisely these attributes. True, each new issue changes and expands the capital market. However, the terms of each issue are still aligned with the current pricing situation on the secondary market. Essentially, investment banks pursue two objectives at once. They want to

place the entire volume on the market; in doing so, however, they also want existing price structures to change as little as possible.

Investors who adhere to the neoclassical and corporate finance schools are portfolio investors. To them, the capital market is a good and attractive institution. It therefore goes without saying that they will concentrate on regular financial contracts. They have no interest in transactions that by- pass the market. They diversify their investments, accept market prices as given and adapt their portfolios to changing circumstances. A large num- ber of such portfolio investors can shape what happens on the capital mar- ket. Individually, however, none of them has sufficient power to break the rules by which the market operates.

We have outlined the general attraction of the market and the inability of the individual to influence prices. Nevertheless, there are situations in which these "rules" do not apply. In strategic corporate finance, players do indeed adopt positions that bypass the market or even flatly contradict the prevailing market wisdom. The sections that follow describe some of these situations.

## Complexity-Driven Problems with Valuation

There are times when capital markets are not perfect enough to put a price on the items traded within their confines. For example, the capital market often fails to strike a correct price for complex strategic transactions that require extensive analysis. This is because analysts and investors either omit or skimp on the time-consuming and expensive analyses that would be necessary to determine accurate prices. In such cases, a company that pursues a strategic financial policy has no choice but to ignore current market valuations and concede short-term losses. Ultimately, if market players are convinced that they are doing the right thing strategically, long- term value growth will be reflected in current market valuations.

*Complex* and *long-term* collaboration, merger or acquisition plans are a good example. Traditional financial market theory gives two answers to the question of when it makes sense for companies to grow by means of acquisitions, mergers or alliances: 1. When such ventures can tap syner- gies. 2. When collaboration will yield a knowledge transfer from which both companies benefit. However, these traditional yardsticks by which to measure decisions about collaboration are rather rudimentary. They either partially or completely ignore longer-term and more complex strategic considerations.

For this reason, Chapter 2 discusses strategies that cannot be accurately valued using just the traditional yardsticks of financial market theory. Fi- nancial markets tend to be wary of diversification strategies, for instance, and often punish undertakings that venture in this direction by deducting what is known as the "conglomerate discount". Entrepreneurs who suc- cessfully apply certain principles to diversification and give their company a clear strategic orientation can thus further increase the value of the com- pany in the long term.

Collaborative strategies that adjust a company's product portfolio are another example in which capital market players often arrive at different valuations to corporate management. Having performed in-depth analysis of market developments, management often wants to buy in skills in such cases. Analysts and investors nevertheless remain unconvinced by the prospect of collaboration. As a result, the value of the company erodes because managers have a hard time communicating the complexity of their future projections to capital market players. To make matters worse, man- agement cannot publicly disclose too many details of its deliberations for fear of playing into the hands of rival enterprises.

Where collaborative investments have a very long-term horizon, compa- nies often find themselves penetrating markets and/or developing business models to which traditional investors still prefer to give a wide berth. In the long run, however, these commitments pay off because the companies concerned gain first-mover advantage and stay a step ahead of competitors in their chosen markets.

One last example of investments in which traditional yardsticks are inade- quate involves decisions on collaboration taken in anticipation of future market developments by companies in complex markets such as telecom- munications. For capital market players, it is often difficult to put a fair price on a transaction that will give a company access to necessary re- sources in the long term, but that will initially have no impact – or even a negative impact – on profitability.

In all these cases, management must buck the market trend and accept short-term losses (in the form of a deteriorating stock price) in order to increase value in the long run.

## Information Imbalances in Markets

Other situations in which players act contrary to the dictates of the market involve constellations where different players have access to different in-

formation. Such discrepancies can be exploited in the interests of strategic action. Especially in critical situations – when a company is in financial distress or needs to be restructured, say – it can be tempting to doctor a company's strategic communication in order to leverage information im- balances to the company's advantage. In principle, the players concerned can choose between three generic communication strategies: embellish- ment, silence and deception. These strategic alternatives are discussed in detail in Chapter 3 and applied to a variety of collaborative permutations.

Information discrepancies can also lead to the formation of investor coali- tions. The sheer volume of capital available to them – be it borrowed or jointly controlled by a community of partners – can be enough to influence market prices. Right now, these coalitions receive substantial backing from international investors such as state-backed and pension funds, which want to earn a return on their copious volumes of liquid funds. By exploiting the considerable leverage potential of bank loans, these coalitions can even target major corporations as acquisition candidates, powerfully demon- strating their market power in the process. They are thus in a position to assert their demands even from a minority position.

## Combining the Provision of Knowledge and Capital

Combining the provision of knowledge and capital likewise creates oppor- tunities for strategic financial action. Financial theory speaks of the "Fisher separation", the separation of the management and ownership of a compa- ny. This separation primarily allows investors to engage in short-term commitments with the aim of participating in corporate cashflows that do not transfer knowledge. This is a practice applied mostly by established firms which, as a result, can trade their financing contracts at any time. These companies draw their knowledge not from equity investors, but from managers and external sources such as consultants and research or- ganizations.

On the other hand, there are also situations in which the relationship be- tween external investors and the company is consciously structured to go beyond a mere financial interest. Where external financial backers supply management expertise as well as money, and where this knowledge and money are inseparably intertwined, conventional securities are not the best solution. In such situations, investors sign up by definition for the long term. The seminal knowledge they contribute to a company does not grow and bear fruit – and hence deliver the returns expected by the investor – overnight. In other words, longevity is inherent in any financial relation-

ship that also involves knowledge transfer. This explains why no liquid public market exists for these financial contracts. Accordingly, pundits speak of private rather than public capital. Entrepreneurial finance, venture capital and private equity all belong to this category. It is therefore only logical that these forms of funding are used by innovative businesses and startups where it would make no economic sense to separate monetary aspects from knowledge and expertise.

Such financing structures can also be of use to established companies that have run into financial difficulties and need to invest in order to restruc- ture. Traditional investors tend to be frightened off by the uncertain out- look and long lock-in periods in such cases. These commitments are there- fore attractive only to investors who pursue a clear financial strategy, whose expertise enables them to forecast the prospects of success realisti- cally and who can positively influence the performance of their own capi- tal. Here again, we find the capital market reaching its limits – limits that strategic corporate finance can transcend to deliver superior results.



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