INAUGURAL LECTURE
OCTOBER 14, 2010

THE TECHNOLOGY OF CORPORATE FINANCE

PROF. DR. REZAUL KABIR

UNIVERSITEIT TWENTE.
THE TECHNOLOGY OF CORPORATE FINANCE

PROFESSORIAL INAUGURAL LECTURE GIVEN TO MARK THE OCCASION OF APPOINTMENT AS

THE CHAIR OF CORPORATE FINANCE AND RISK MANAGEMENT

AT THE SCHOOL OF MANAGEMENT AND GOVERNANCE OF THE UNIVERSITY OF TWENTE ON THURSDAY, OCTOBER 14, 2010

BY

PROF. DR. REZAUL KABIR
DEAR RECTOR MAGNIFICUS,
DISTINGUISHED COLLEAGUES FROM HOME AND ABROAD,
LADIES AND GENTLEMEN:

It is a privilege that I can speak to this audience on my most favourite subject that even after three decades of learning still keeps me buoyant. The inaugural lecture is a tradition to familiarize the audience with a newly appointed professor’s specialization in the discipline. So, I shall first illustrate in non-technical terms the content of Corporate Finance and the theme of this lecture. Afterwards, I shall present a synopsis of some of my past and current research.

I joined this young entrepreneurial research university last year. Its mission is to integrate social and engineering sciences; to develop High Tech with Human Touch. In this context, I have chosen the title of my lecture as the technology of corporate finance. If any one thinks that I shall be talking about new money machines or supercomputers that can provide quick answers of financing problems, then let me tell you at the outset that you will be disappointed. The thesis that I am going to put forward is that it is a myth to associate technology with machines only. True technological development comes from managing a set of combined scientific knowledge and resources – technical and non-technical. Corporate finance is a good example in this regard.

CORPORATE FINANCE

Let me start with explaining what corporate finance is all about. Here, I take resort to a few legendary textbooks. In the most simplistic form, one can say that it is about the financial decisions of firms, the range of activities in which finance managers are engaged in. Brealey, Myers and Allen (2008) assert two main types of financial decisions: (i) spending money i.e. what investments should a firm make; and (ii)
raising money, i.e. how should it pay for those investments? These two decisions are vital for any firm, be it small, medium or large enterprises, private or public corporations.

The authors of another popular textbook, Ross, Westerfield, Jaffe and Jordan (2008) stress that the most important job of a financial manager is to increase the value of the firm by making smart decisions. Value is created when the cash paid to firm’s investors (shareholders and debtholders) is greater than the cash raised in the financial markets. Figure 1 shows the cash flows that form the main activities of a finance manager. The focus is on value because cash flows take place over time and these require to be discounted to allow meaningful comparison in present value terms. Value also reflects the impact of other considerations like firm’s obligation to employees, customers, suppliers, creditors and the society.

![Figure 1: Cash flows managed by the finance manager. Source: Brealey, Myers and Allen (2008)](image-url)
Survey evidence indicates that the tasks of finance managers have evolved immensely during the last two decades and these can vary across countries and firm size (see for example, Brounen, de Jong and Koedijk, 2004). Megginson, Smart and Graham (2010) sketch the practice of corporate finance as involving five basic functions:

(i) Financing function – raising capital for company’s operations and investments;
(ii) Financial management function – managing firm’s cash flows;
(iii) Capital budgeting function – selecting the best investment projects;
(iv) Risk management function – managing firm’s exposure to risk; and
(v) Corporate governance function – developing a suitable corporate governance structure.

This list shows that raising and investing capital is associated with a range of related activities that also form an integral part of corporate finance. Duffhues (2002) has also emphasized such a broad categorization so as to include all ‘financial decision making’ activities of firms. The finance manager of a firm must have adequate knowledge regarding the identification, measurement and management of different risk exposures (coming from changes in, for example, foreign exchange rates, interest rates or commodity prices). Finally, designing an appropriate corporate governance framework whereby interests of different stakeholders (owners, managers, employees, creditors, customers, suppliers) are duly taken into account is also a vital corporate finance function.

TECHNOLOGY

So far the introduction on corporate finance; now the other part of the title: technology. According to the popular on-line encyclopedia, Wikipedia, the term ‘technology’ is described as the usage and knowledge of tools, techniques, systems or methods of organization. The Oxford dictionary defines technology as the application of scientific knowledge for
practical purposes. The word originated in the 17th century from the Greek word ‘technologia’ – téchnē: an art, skill or craft; and – logía: the study of something, or the branch of knowledge of a discipline. Following this characterization, I shall use my inaugural address to demonstrate the richness of corporate finance in applying scientific knowledge from a long list of disciplines. I believe, this is what technology is all about.

Many people typically overlook this true meaning of technology, and become artificially more amazed with the exterior outfit. In everyday language, the term is used to refer to novel techniques and equipments. These are, of course, extremely important both in our personal, professional as well as social lives. But, technological improvement should not be linked with wearing white gowns only.¹ Mastering knowledge to organize and manage different kinds of resources is the actual key to technological innovation. The appropriate use of aggregate knowledge an organization possesses also makes sure that bad things do not happen to a good technology.

THE TECHNOLOGY OF CORPORATE FINANCE

The technology one can encounter in the practice of corporate finance can be presented in Figure 2. As you can see, finance has intense links with many subjects. In my own work, I rely heavily on utilizing ideas from some of these disciplines. The relationship with several subjects is well-known and straightforward, while in many other cases, it is still evolving.² Since a comprehensive discussion of each and every link will

---

¹ A report published in 2009 by the National Endowment for Science, Technology and the Arts in the UK shows that investments made by private sector business on traditional scientific research and development expenditures represent only 11 per cent of the total investment in innovation. The rest includes a range of complementary investments needed to commercialize ideas, including product design, training in new skills, organizational innovation, developing new customer offering and brands, and copyright.

² Many of these links have given rise to established terms like financial mathematics, financial engineering, financial architecture; not to speak of neuro finance, biological finance, forensic finance, nuclear finance.
take a long time, I shall briefly focus on a few illustrations. Therefore, the following discussion is by no means meant to be complete.

Corporation finance manager needs information provided by accounting to estimate cash flows and value financial claims. Accounting professionals prepare financial statements based on certain principles and rules whereas finance professionals use accounting information to gain insights into the firm’s cash flows. The profit figures we all are interested in are meant to shed light on how a company is performing. But, traditional accounting based on historical cost (where assets and liabilities are carried at their original value) and accrual (where revenues and expenses are recorded when incurred) approaches leads
to estimates that can not be taken in their face values to make sound decisions. Corporate finance practitioners thus need to understand the foundation of accounting information. Similarly, when companies want to raise new capital, these transactions need to be marketed properly to potential investors. In this respect, corporate finance professionals need to know marketing principles. Another subject is economics which is essential to understand corporate finance. Popular theories on agency – managers’ interests need not align with those of investors, asymmetric information – managers know more about their firm than others, and signalling – managers communicate information indirectly, have become standard tools to explain loads of corporate finance issues. Microeconomic matters like incentives and risk sharing, to macroeconomic issues such as oil price changes, financial crises and recession, all affect corporate financing and investments.

The influence of organization theory is also prominent in corporate finance. Here, the main advantage is that one can study organizational issues from multiple viewpoints: principal/agent theory, transaction cost theory, resource-based theory, institutional theory, and so on. Ideas borrowed from domains like strategy, entrepreneurship, and the phenomena like institutionalization, globalization help explain corporate finance issues, especially of small and medium sized enterprises and firms from emerging market economies. Studies have also shown that the pattern of corporate financing activities can be fully understood by an examination of social relations, for example, director interlocks (Mizruchi, Marquis and Stearns, 2006). The logic of sociological finance has been used by Zajac and Westphal (2004) to analyze the finding from a commonly used corporate finance technique (event study) to measure stock market reactions to corporate policies. Recently, another study (Prechel and Morris, 2010) shows that corporate as
well as political structures enacted in the 1980s and 1990s gave opportunities to managers to engage in inflating firms’ balance sheets.

Insights from psychology to understand investor and managerial behaviour in the financial context have made behavioural finance an established body of research. More and more studies are showing the presence of several anomalies in finance, and many economists are discarding the idea that investors / managers always behave rationally and financial markets are efficient. Behavioural finance thus sheds light to areas that can not be explained using orthodox economic principles. Let me just use one recent study as an illustration. Kaplanski and Levi (2010) analyze 288 large-scale (with at least 75 casualties) world-wide aviation disasters that occurred during 1950-2007, and find that the average capital market loss is more than $60 billion per accident whereas the estimated actual loss is no more than $1 billion. They observe that on the third day after the disaster, there is an increase in stock returns that is about half the magnitude of the first day’s decline. The stock price reversal continues and the stock market fully reverts back in about 10 days after the accident. The authors provide bad mood and anxiety coming from the media coverage as the explanation of the associated stock price changes. The way individual’s emotional states influence financial decision-making process is the area of neuro-finance. Psychological concepts like overconfidence and herding seem to have a neural basis and are used in finance research. Tseng (2006) states that with the help of medical technology such as positron emission tomography and magnetic resonance imaging, researchers conduct controlled experiments to investigate brain activities involving financial decisions.4

---

4 A recent study (Dickhaut et al., 2010) on neuro-accounting proposes that the way accounting principles have emerged has distinct parallels with the evolution of human brain in evaluating economic exchange.
Law has especially been dominating the finance scene last few years, although a large number of studies have in the past examined the effect of diverse financial regulations. The topic received my interest while I was a PhD student. In a joint study with Theo Vermaelen, I examined the stock market liquidity effect of introducing insider trading restrictions (for details, see Kabir and Vermaelen, 1996). A few years ago, Peter-Jan Engelen and I undertook a study to investigate the effect of trading suspension regulation on the disclosure of new information to the capital market (Engelen and Kabir, 2006). Throughout the last several years, substantial research emphasis has been on examining the relationship between a country’s legal origin (civil law and common law) and corporate financing issues as well as financial market development.

Financial crisis always gives a boost towards new demand for increased regulation. The USA has been in the front position for many decades. Whenever something goes wrong, demands for regulatory reforms arise, and many other countries follow suit. Several new laws covering banking, investment and securities trading were introduced during the post-1930s era. In the late 1970s, the USA started a process of de-regulation of financial markets that accelerated in the 1980s and 1990s, and culminated in 1999, with the repeal of the Glass-Steagall Act of 1933, introduced to segregate investment banking from commercial banking. Then when the dotcom bust appeared and Enron collapsed, the period of re-regulation started. The Sarbanes-Oxley Act was introduced in 2002 in order to strengthen firm’s corporate governance measures. New rules were enacted to control the behaviour of listed companies, their auditors and lawyers. This year is full of discussions on the Wall Street Reform and Consumer Protection Act – a document of more than 2000 pages covering almost every aspects of finance. One thing we should remember is that financial crises have always taken place in spite of all regulations countries had. After the crises in Latin America, East Asia and Japan we have now seen that Western industrialized countries are not immune too.
Will current attempts to impose new regulations reduce the likelihood of further financial crises? Alas, the answer is no. The chairperson of the U.S. Securities and Exchange Commission has recently acknowledged that the agency was not even aware of the accounting technique used by Lehman Brothers to hide some of the risks it took before its collapse in September 2008. Instead of changing behaviour solely by means of rules and regulations, which will always be faced with finding ways to circumvent these, a more effective and long-term approach, I believe, is to educate all financial market participants - bankers, traders, brokers, investors - about the pros and cons of financial decision makings, their impact on firms and the macro-economy, and also on prevailing ethics, norms and values.

Mathematics and Statistics are two areas with massive application on finance. Many people like mathematics because of its value in understanding corporate finance. In analyzing whether capital investments make sense, corporate finance principles require that we discount a series of long-term cash flows and find out if present value of benefits exceeds the costs. Mathematical methods are enormously helpful in this regard. A simple but elegant formula was developed in 1958 by Myron Gordon (born on October 15, 1920 and died on July 5, 2010): \( P = \frac{D}{(k-g)} \). The formula states that the price of a share (\( P \)) equals future dividend (\( D \)) divided by a factor (expected return \( k \) minus growth rate \( g \)). The formula is a straightforward mathematical exercise that allowed investors to estimate share price. There have been many more sophisticated applications of mathematics. Paul Samuelson (born on January 2, 1932 and died on December 13, 2009) was instrumental in using mathematical insights in (financial) economics. The most renowned recognition came in 1997 when the Nobel Prize in economics was awarded to Robert Merton and Myron Scholes because of their earlier work (with Fischer Black) on developing mathematical model on options theory that analyzes different claims shareholders and debtholders have on a firm.
An important input in the option pricing formula is the estimate of how volatile the assets will be over the life of the option. Statistical methods are used in this regard. Statistics also provides the basic framework for finance, the mean-variance analysis which allows different investments to be compared in terms of the trade-off between expected return (measured by mean return) and risk (measured by the variance of returns). An investor who cares only about these two metrics will always prefer an investment that offers the highest mean return for any given amount of risk, or the lowest amount of risk for any given return. Many of us are analyzing financial data and examining empirical relationships among various variables. Obviously, we can not do this without statistics. The use of statistical tools to analyze finance issues was formally recognized by awarding in 2003 the Nobel Prize for economics to Clive Granger and Robert Engle. ‘Granger causality test’ to estimate which of several variables produce an effect on the others is routinely used by financial economists. The statistical technique developed by Engle (called ARCH: autoregressive conditional heteroskedasticity) is widely used in assessing risk of financial portfolios. The technique throws away the assumption that the volatility of financial assets is constant; rather it changes over time in predictable ways, depending on its own behaviour in the past.

Although finance is a social science discipline, there is continuous interest on understanding how financial market behaviour in general or some extreme events can be analysed with the help of knowledge from Physics – the analysis of natural phenomena. Many of these like Brownian motion and uncertainty, oscillation and dynamical systems, etc. seem to have the potential in explaining financial phenomena. The so-called financial physicists are trying to reach new levels of sophistications. Lo and Mueller (2010) argue that the parallels between physics and finance are closer due to the fact that the Black-Scholes-Merton option pricing formula is also the solution to the heat equation. Interestingly, the authors also remind us the following:
“Among the multitude of advantages that physicists have over financial economists is one that is rarely noted: the practice of physics is largely left to physicists. When physics experiences a crisis, physicists are generally allowed to sort through the issues by themselves, without the distraction of outside interference. When a financial crisis occurs, it seems that everyone becomes a financial expert overnight, with surprisingly strong opinions on what caused the crisis and how to fix it. Imagine how much more challenging it would have been to fix the Large Hadron Collider after its September 19, 2008 short circuit if, after its breakdown, Congress held hearings in which various constituents - including religious leaders, residents of neighboring towns, and unions involved in the accelerator’s construction - were asked to testify about what went wrong and how best to deal with its failure. Imagine further that after several months of such hearings, politicians - few of whom are physicists - start to draft legislation to change the way particle accelerators are to be built, managed, and staffed, and compensation limits are imposed on the most senior research scientists associated with the facility.”

Finally, I should mention that developments in the information technology sector have benefitted the finance industry enormously. Financial institutions are now providing improved services to their clients. The growth of high speed computerized trading has provided new opportunities to capital market investors / high-frequency traders as they can trade very quickly at lower costs. Computer generated trading strategies (algorithmic trading) are used to benefit from wrong pricing of financial instruments. While these developments are applauded, new risk of market destabilization has also arisen. An example is trading in which unusually large numbers of orders to buy or sell stocks are placed in a second, only to be cancelled within another second, a phenomenon called “quote stuffing”. In
the US, there is allegation that orders taking place with the click of a computer mouse might have created “flash crash” of May 6, 2010 when the Dow Jones Industrial Average plunged by 700 points in a few minutes. Research on this kind of phenomenon to know the origin of an event has given birth to a new expression called forensic finance – the term introduced by Stephen Ross (in Risk Magazine, 1999) and formalized by Ritter (2008) following the approach adopted by typical forensic investigators using information from DNA, teeth, etc.

As I mentioned earlier, it is not my intention to describe each link. The list of disciplines presented in Figure 2 is by no means exhaustive. One can show links with some other subjects too. A recent study shows that biology (genes and testosterone) can affect risk-sensitive financial decisions (Sapienza, Zingales and Maestripieri, 2009). Who knows one day someone will come up with an insight from Geology that can be applied to predict financial earthquakes? But, the message is that the field of corporate finance is extremely versatile; it has no precise boundary; it enormously benefits from diversity coming from its relationship with other disciplines. All in all, the subject of corporate finance is technologically so advanced that we can be very proud of it. But, it does not mean that we can blindly use any model to predict the future. In fact, there is a great danger of finance being influenced too much by other disciplines when some people, especially those who do not practice finance, starts stretching it towards rocket science. One can not rule away that an overemphasis on falsified financial technology, where computers got more dominance than people, techniques got more attention than substance, worked out as a disaster and intensified the current financial crisis. This is a lesson to be remembered for the future. The international weekly magazine The Economist (July 8, 2009) points out this lesson as follows:
"No economic theory suggests you should value mortgage derivatives on the basis that house prices would always rise. Finance professors are not to blame for this, but they might have shouted more loudly that their insights were being misused."

I would like to use the remaining time of this lecture to illustrate a few of my research projects.

**FINANCING WITH DEBT OR EQUITY**

Companies can raise short-term and long-term funds in two ways: internally by retaining earnings and externally from the capital market. The two principal external sources are equity and debt. These come from either private sources like private placements and bank loans, or public sources like issuing new securities in domestic and foreign capital markets. In addition to these formal sources of finance, there exist other financing channels like angel financing (from high net-worth individuals) and trade credit (from suppliers or customers), and for many emerging countries, informal sources (e.g. moneylenders, cooperatives, informal banks).5

An important corporate finance issue is whether a private company should become public by seeking a listing on a stock exchange. The combined stock markets in the USA have a total market capitalization of about $15 trillion. These are also the world’s most active markets. Tokyo and London stock exchanges have market capitalization of $3.3 trillion and $2.8 trillion, respectively. Among the emerging countries, China and India play a big role. The number of domestic companies listed on Indian exchanges is the largest in the world. In the ten years between 1995 and 2005, stock markets in East

---

Asia witnessed thousands of new listings of domestic companies. The number appearing on China’s stock exchanges grew from 320 to 1390. On the other hand, many companies are also leaving stock exchanges in recent months. This is particularly happening for firms from developed countries whose plans were thwarted by various uncertainties including the lack of enthusiasm of investors.

The sale of shares by a company to the investing public for the first time is commonly known as initial public offering (IPO). There are good reasons for firms to remain private: managers of private firms have freedom to take decisions they like without any external interference; they also possess greater control of firms’ resources. But, a few other reasons like the constant pressure from owners and banks, the need to raise additional capital by means of subsequent offerings, the desire to grow further and increase visibility necessitate firms to go public. A recent study (Chemmanpur, He and Nandy, 2009) finds that
firms that are larger in size, have higher sales growth, greater market share, operating in more capital-intensive industries, and in industries characterized by riskier cash flows, are more likely to go public.

Interest for companies to go public has temporarily declined in recent years: from about 1800 worldwide IPOs in 2007 to about less than 600 in 2009. You may remember one of the largest IPO made by the Agricultural Bank of China – the country’s third-largest bank – which took place on early July, 2010. The bank hoped to raise about €15 billion. Another example is the planned re-listing of General Motors – the US car manufacturer that triggered the largest industrial bankruptcy in 2009. IPOs are also used by small companies. For example, the microlending company from Mexico – Compartamos Bank – went public in 2007; India’s largest microlending company SKS Microfinance in this year. Once listed, financing opportunities of companies increase. They are no more exclusively dependent on bank loans. Due to the credit crisis,
many companies are opting to issue new equity. Since 2009, about 30 listed Dutch firms raised new equity capital. The last week of September 2010 witnessed the world’s biggest ever equity offering of $70 billion by Brazil’s oil company Petrobas.

Question like how much debt is optimal (providing highest value) for a company has been keeping corporate finance lively for several decades. The split between debt and equity is popularly known as capital structure. Franco Modigliani and Merton Miller were the first to show that, under certain assumptions (no imperfections like taxes, distress, etc.), the amount of debt held by a company makes no difference to its total value. The intuition is that the value of a firm is derived on the basis of its quality of assets in generating future cash flows, not on its financing. This intuition has become a foundation stone of corporate finance. The funny thing about their proposition is that it is only true in circumstances that are rare in practice. Companies do try not to incur too much debt.

Figure 5 shows that 9% of corporate funding in the UK in 2007 was raised through the bond market while 32% was in the form of loans. The trend is similar in continental Europe, with just 3% of German companies’ liability in the form of bonds but 39% in loans. In the USA, by contrast, only a quarter of companies’ debt was in the form of bank loans, with 14% of their funding raised via bonds. Bank lending declined substantially during the financial crisis. Ivashina and Scharfstein (2010) report that total bank loans in the USA fell from $701 billion in the second quarter of 2007 (the peak of the credit boom) to $150 billion in the last quarter of 2008. The credit crisis has triggered the alarm that smaller companies, highly dependent on bank lending, struggled to receive financing from banks and to refinance their existing debts. Global bond issuance from non-financial companies has now surpassed corporate loans. Non-financial companies have issued $1.1 trillion worth of bonds during Jan-Aug 2009. It exceeded the annual record of $898 billion set in 2007.
In a joint study with Abe de Jong and Thuy Thu Nguyen, I investigate the financing mix of a sample of about 12,000 non-financial listed firms from 42 industrialized and emerging countries. One must recognize that many complications arise in cross-country measurement/comparison of the amounts of debt and equity. It is possible to measure these in book values (using the par or face value) or in market values; one can differentiate short-term from long-term borrowing; accounting conventions can distort the true picture; certain types of liabilities (for example, lease obligations, off-balance sheet liabilities) are not reported in a transparent manner. Figure 6 depicts the median long-term debt ratio estimated in market values for a few countries. It shows that these ratios are not that high. The finding is consistent with some other studies which show that leverage ratios of corporations in many industrialized countries have been declining. Listed firms have usually little debt compared to private firms.
Decisions on how much to finance a company by debt is usually explained with the help of a few theories. The trade-off theory indicates that firms choose a certain capital structure by weighing the benefits (tax deductibility of interest payments, reduction of free cash flows, etc.) and costs (financial distress, agency conflict between shareholders and debtholders, etc.) of additional debt. Firms set a target ratio and move towards it by trading-off the costs against the benefits. The asymmetric information or pecking order theory indicates that because of the costs of issuing new securities (managers use their private information to value these securities), firms prefer to use retained earnings first. But, when retained earnings are not enough, firms issue debt first because it has a less adverse effect. Equity is issued as a last resort.

Our study (de Jong, Kabir and Nguyen, 2008) shows that a firm’s capital structure is influenced by firm-specific factors like firm size, asset tangibility, profitability, firm risk and growth opportunities. We find that the impact of some firm factors on debt use is strong in many countries. If a firm has a high fraction of tangible assets, then these
assets can be used as collateral, mitigating the risk of the lender. Hence, firms with a large amount of tangible assets have high leverage. Larger firms use higher levels of leverage as these firms are usually more diversified and have more stable cash flows. We observe a negative relation between profitability and corporate leverage; it suggests that firms prefer to use retained earnings for new investments. Growth opportunities of firms show a negative relationship with debt-ratios. The finding is consistent with the conjecture that firms with more growth opportunities in the future prefer to keep leverage low so that they do not give up profitable investments. However, we also find that in each country one or more firm-specific factors are not really important in determining debt ratios (See Table 1). Statistical test indicates that the implicit assumption of equal firm-level determinants of leverage across countries made earlier by some other researchers, does not hold.

Figure 7: Factors affecting financing mix choice.

Our study documents that debt-ratios are not only affected by firm-factors but also by country-specific factors like investor rights protection, market/bank based financial system, stock/bond market development and growth rate of a country’s gross domestic product.
(see Figure 7). In the analysis of the direct impact of country-specific factors, we observe that certain factors like GDP growth rate, bond market development and creditor right protection significantly explain the variation in capital structure across countries. Moreover, we find considerable explanatory power of country-specific variables beyond firm-specific factors. Another interesting finding is that country-specific variables influence firms’ financing mix indirectly. For example, we observe that in countries with a better law enforcement system and a more healthy economy, firms are not only likely to take more debt, but the effects of some firm-level determinants of leverage such as growth opportunity, profitability and liquidity are also reinforced.

The recommendation we provide in this analysis is that country-specific factors do matter in determining and affecting the leverage choice around the world, and it is useful to take into account these factors appropriately in the analysis of capital structure of firms.

Table 1: Number of countries showing statistically significant relationships between firm-specific factors and debt ratio.

<table>
<thead>
<tr>
<th></th>
<th>Expected relationship</th>
<th>Positive relationship</th>
<th>Negative relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm size</td>
<td>+</td>
<td>21</td>
<td>1</td>
</tr>
<tr>
<td>Asset tangibility</td>
<td>+</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Profitability</td>
<td>-</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Growth opportunity</td>
<td>-</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Risk</td>
<td>-</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Liquidity</td>
<td>-</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Tax</td>
<td>+</td>
<td>2</td>
<td>8</td>
</tr>
</tbody>
</table>
In addition to examining the factors influencing the debt-ratio of companies, an interesting avenue of research has been to examine the announcement effect of financing decisions. In a joint study with Peter Roosenboom on new equity issues by Dutch firms, we document that share prices decline significantly (see Figure 8). The most widely accepted explanation of this finding is that new equity issues convey pessimistic information about the value of the issuing firm. We also find that larger issues are associated with a larger decline in stock price. Since new issues are sold at a discount, we also examine the impact of these discounts. Unsurprisingly, we find that stock issues with higher discounts experience a more negative price decline. We also investigate the long-term operating performance of firms subsequent to equity issues. Measures like returns on assets and return on sales systematically show an abnormal decline in performance. We undertake some further investigations and find these results to be consistent with the conjectures that (a) corporate managers possess private information and decide to issue new equity when the prevailing market price is larger than their intrinsic value; and (b) equity financing leads shareholders to incur increased agency costs as the probability of managerial overinvestment increases. Cohen and Zarowin (2010) show that earnings management activities (both accrual-based as well as real) can also be an explanation of the post-equity issue underperformance of firms. Although these are considered as plausible views, a recent study by DeAngelo, DeAngelo and Stulz (2010) claims that the primary reason that a firm issues new equity is to satisfy its shortage of cash. They observe that without equity offerings, about 63% of issuers would have run out of cash and be forced to change their operating and/or financing decisions, and 81% of would have had subnormal cash balances.

---

6 A recent example is the announcement made on September 28, 2010 by the French tire manufacturer Michelin to raise €1.2 billion of new equity to finance its expansion into fast-growing emerging markets. The issue price of these new shares represents a 31% discount to the closing share price of a day earlier.
Companies undertake a variety of activities related to expansion or downsizing. Mergers and acquisitions, diversification, restructurings like asset sales, spin-offs, are popular examples. After the lacklustre period associated with the financial crisis, many observers are expecting mergers and acquisitions to come back. Earlier studies have found that M&A takes place in waves coinciding with business cycles. Companies that are hoarding cash may use these for M&A purposes. Popular corporations like Google and Oracle are reported to have more than $22 billion of cash / liquid assets. During the six months to the end of June 2010, M&A deals with a value of about $1.2 trillion remain well below the peak of $2.6 trillion reached during the first half of 2007. You may remember the recent deals in the Netherlands like Spyker-Saab, Canon-Océ. Recently on Aug 19, 2010, we have seen the $7.7 billion offer from the computer chip manufacturer Intel to buy McAfee – the popular antivirus-software firm – at a price of

Figure 8: Stock returns around the announcement of equity issues.
$48 per share which is 60% higher than the previous day’s closing price. This is even small compared to the hostile bid of almost $39 billion from the mining giant BHP Billiton for another mining/ fertilizer company: PotashCorp. Deals targeting emerging markets have been growing steadily throughout the last several years. Asian companies are also expected to become more active in Europe and the USA.

A popular form of corporate restructuring is that of increasing or decreasing firm’s diversification to different areas of businesses. Such activities generate both benefits and costs. Diversified firms can have more access to internally generated resources, can create and exploit market power advantages, and can have the ability to exploit excess resources. On the other hand, diversified firms are prone to severe agency and incentive problems that can lead to inefficient resource allocation. Interesting questions like why firms diversify and what are the effects of corporate diversification on firm performance are routinely being examined in the academic literature.

A few years ago, while I was at Tilburg University, I started to work on Indian business groups with Sytse Douma and Rejie George. Business group is a network whereby several firms are informally bound together through ownership, control and social relationships. These groups are present in many developed as well as emerging economies, and encompass independent companies including both stock exchange listed as well as unlisted firms. Japanese groups called Keiretsu and Korean groups called Chaebol are long-standing examples. Many of you may have heard of Indian group called Tata which has about 140 years of history and makes everything from tea, salt to buses and cars.

In examining corporate diversification by business group firms in India, hypotheses are developed using a multi-theoretic perspective that we introduced earlier in another paper (Douma, George and Kabir, 2006) and which is presented in Figure 9. A unitary perspective is inadequate
for emerging economy firms because it provides a partial view only. By incorporating elements of the agency, resource-based and institutional theories, we provide a more holistic perspective that helps to identify the differing influences of various categories of shareholders among Indian firms. This is important because the theoretical postulates concerning the relationship between a firm’s ownership structure and its performance were developed and empirically tested primarily in developed capital markets.

While considering the nature of business groups, we observe that diversification can take place at both firm and group levels. At the firm level, existing firms diversify into new lines of business, while at the group level new firms are established to pursue additional lines of business. Two relevant questions are: why do group affiliated firms
diversify at all when the expected benefits of diversification can be achieved at the group level? How business group features influence the corporate diversification – firm performance relationship? In a study together with Rejie George, I investigate these questions. We consider the fact that firms affiliated to business groups undertake diversifying operations to share some of the common benefits and costs. For example, member firms tap the group’s capital and managerial resources and utilize these efficiently for additional diversification activities; they can benefit from inter-firm cooperation in the form of access to complementary resources and various internal business transactions. On the other hand, business groups can have other objectives that are not necessarily in congruence with the objectives of each member firm. For example, inefficient resource allocation or expropriation of the wealth of minority shareholders can occur among group affiliated firms. We use the framework presented in Figure 10 to conduct our analysis.

![Figure 10: The intermediating effect of business group on the diversification and performance relationship.](image)
Group-affiliation can complement firm level diversification by moving/sharing resources within the member firms of the group. Larger and more diversified business groups are able to provide privileged access to resources to member firms in facilitating their diversification pursuits. Larger business groups can also internalize the costs associated with group structures more efficiently. Greater group level diversification can develop dynamic capabilities associated with obtaining requisite licenses, technical knowhow, and setting up distribution networks. Major types of owners like institutions, corporations and directors can have conflicting incentives for their firms to engage in either more or less diversification.

Our findings reveal that, at first sight, diversification strategies of firms in India lower firm performance. However, when we turn our attention to firms’ affiliation with business groups, some interesting results emerge. We find that Indian firms affiliated to business groups are significantly more diversified than independent firms. Within the group-affiliated firms we document a differential impact of corporate diversification. In particular, we observe that firms affiliated to large business groups mitigate the underperformance from corporate diversification. On the other hand, we find that business group diversity has no significant moderating effect. Overall, the findings support the conjecture that firms affiliated to larger business groups are able to utilize certain resources so as to generate better performance out of their individual diversification strategies. With regard to domestic corporate and director ownerships, we detect a differential impact based on whether these ownerships are linked with affiliated or unaffiliated firms.

**CORPORATE GOVERNANCE**

Corporate governance has become a truly interdisciplinary area with work being undertaken by researchers from finance, accounting,
management, economics and law (Bebchuk and Weisbach, 2010). Research covering various issues related to company shareholders, managers, and executive pay has mostly been dominant. On diverse issues surrounding these areas, I had the privilege to work with quite a large number of colleagues. Considering the limited amount of time available today, I shall focus on executive pay related research that I have been doing recently. This is also an area that triggers a lot of interest from the general public, regulators, journalists and academics. Who won’t after hearing that in 2008 the top executives in the USA earned 300 times more than average workers? Although this differential is much less in Europe, stunning headlines like the following frequently appear on the media: executive’s salary has ballooned; chief executive’s pay has sky rocketed; fat cat remuneration makes managers super rich. Unlike top managers of industrial firms, the fact that football, golf or tennis players earn millions of dollars is perceived to be the result of hard work. In any case, pay is a topic, which we all like to discuss whenever it concerns others, but prefer to avoid when it deals with ourselves.

Providing corporate managers with performance-based pay like bonus, stocks, options can increase their motivation and thus contribute to an increase in firm performance. Pay is also a mechanism to attract and retain the best qualified people, and establish a long-term binding relationship with the firm. On the other hand, many believe that high level of pay is an outcome of managerial power and it helps executives to extort personal gains at the expense of other stakeholders. In a joint study with Piet Duffhues, I analyze the remuneration data of top management team of a sample of Dutch non-financial listed firms. Although we could not obtain all the data that we wished to collect, we undertook a detailed statistical analysis that accounted for company size, leverage, industry affiliation, etc. Yet we were unable to find any systematic evidence of a positive pay-performance relationship (see Duffhues and Kabir, 2008). It seems an analysis over the longer run, as done by Frydman and Saks (2010), may help to improve our
understanding of executive pay practices. At the same time, O’Reilly and Main (2010) show that executive pay setting process can also be explained by social psychological mechanisms like norms of reciprocity and social influence of board of directors.

Many people believe that top managers receive high pay because of the action or inaction of various entities. A group that received criticism is the one of pay consultants who advises firms on the appropriate amount and structure of executive pay packages. As professional experts, consultants help firms to optimally design top executives’ pay by offering a valuable service. On the other hand, critics argue that they do not act independently because they have strong incentives to advocate generous pay in order to enhance their chance of being re-employed in the future by the client firm for both pay and non-pay related services. Recent studies document that chief executive officers (CEOs) of firms that use compensation consultants receive higher pay relative to those who do not employ any consultant (Cadman, Carter and Hildegeist, 2010; Conyon, Peck and Sadler, 2009). In a joint study with Marizah Minhat, I find that many UK firms seek recommendations from not just one but several compensation consultants. Anecdotal evidence suggests that these consultants (see Figure 11) do not come cheap (they charge about £500 - £800 an hour for their services). Murphy and Sandino (2010) observe that the average pay consulting fee paid in 2006 for a sample of Canadian companies was almost US$ 90,000. If a consultant does not come cheap, then it poses the question: why firms use these costly multiple compensation consultants?

It has been argued that firms use diverse pay consultants because they want to obtain independent recommendations from each of them. This practice is also essential in order to design an optimal pay package as different consultants specialize in different aspects of pay. Will the use of multiple consultants lead to a lowering of executive pay?
Not necessarily. Firms can create an impression that the decision on pay has been made by seeking advice from different consultants.

In our study (Kabir and Minhat, 2010), we present some remarkable findings. We observe that equity-based pay of CEOs increases significantly when firms rely on a higher number of compensation consultants. It can suggest that different consultants indeed specialize in different aspects of pay. Interestingly, our analysis also shows that while an increase in the number of compensation consultants is associated with an increase in CEO compensation, there is no corresponding decline in CEO compensation when firms reduce the number of pay consultants. The evidence lends support to the conjecture that firms employ multiple pay consultants to provide a justification of increased level of executive compensation.

Figure 11: Number of pay consultants used by UK firms (2003-2006).
It is almost impossible for consultants to advise openly and critically on pay. We argue that pay consultants usually advise in favour of higher pay in order to maintain their business interests with client firms and survive from competition for both pay and non-pay related businesses (for example, providing consultancy on human resource management, internal control, insurance, financial and risk management). They want to ensure the continuity of their business. The prospect of lucrative business interests incentivize them to compete intensely with each other. We examine this issue and find support for it because the market share of compensation consultants is positively related to CEO pay. This is particularly true for consultants with the two largest market shares in the UK (i.e. New Bridge Street and Towers Perrin). The finding is consistent with the argument that by advising towards higher pay, compensation consultants tend to survive competition from other consultants.

Most studies on executive pay analyze issues from the viewpoint of firms’ shareholders. An interesting question is: how firms’ other investors react to executive pay awards? Aren’t creditors also concerned with soaring pay levels? Managers are often compensated with substantial stock option grants so that they are not reluctant to accept value increasing but risky investment projects. In this way, shareholders can benefit from future stock price increases. But, when the additional risky investments increase the firm’s default probability, creditors will undoubtedly suffer. It is therefore quite reasonable to believe that creditors will not allow an increase in the default risk to go unmarked. They are smart enough to anticipate increased risk-taking tendency of managers arising out of incentive pay. Therefore, creditors are expected to charge a higher borrowing rate to compensate for any future loss.

In order to examine this premise, Hao Li, Yulia Veld-Merkoulova and I undertake a study to examine a sample of UK firms. An appealing feature of the study is that we focus not only on cash-based incentive (bonus) and equity-based incentives (stock and option grants), but
also on defined benefit pensions - a liability of the firm that can be viewed as debt-based pay. Pensions belong to the important category of executive compensation that has not yet been investigated thoroughly. These have the potential to closely align the interests of the managers with those of the creditors (i.e. keeping the firm solvent).

Our empirical results show that firms awarding their CEOs with higher proportions of defined benefit pensions experience a significant reduction in the cost of debt. On the other hand, companies with high level of stock options granted to the CEOs are severely punished by the capital market: these firms face a higher borrowing cost. Another remarkable contribution from our study comes from splitting stock option compensation into two categories: performance-vested stock options that may further motivate managers to take extra risk to meet these targets, and traditional stock options that do not have any targets attached. We observe that investors react to performance-vested stock options and traditional stock options differently: firms with relatively more performance-vested stock options holdings face a higher cost of borrowing. The general conclusion from this study is that creditors of firms are fully aware of both risk-taking and risk-avoiding incentives created by various executive pay components. Therefore, while making decisions on executive pay packages, board of directors should also consider its impact on the cost of debt financing.

CONCLUDING WORDS

Before I finish the lecture, I would like to thank many individuals who have played a significant role in bringing me to this stage of my career. First of all, I thank the Executive Board of the University for appointing me to this Chair. Secondly, my sincere gratitude goes to Paul van Loon. I would not be in this country without his encouragement. In 1986, he invited me to come to the Netherlands to do my PhD research.
Recently, when I was in the UK, it was Paul again who was instrumental for me to join this University. I thank him for the trust and confidence. Next, I would like to thank Christian Wolff and Theo Vermaelen whose guidance during the PhD research established the foundation of my academic career. Profound gratitude goes to the huge number of co-authors from home and abroad (they are simply too many to mention here) with whom I was fortunate enough to work on a variety of interesting research projects and publish in many books and journals. I thank many colleagues of our School for wholeheartedly welcoming me to join their exciting groups, be it in teaching or research. I am looking forward to working with you and thereby expanding our professional activities. Special thanks to colleagues from a large number of foreign universities who came to Twente to attend the international symposium on corporate finance and governance. Finally, I am extremely thankful to my dearest family who had to spend countless days and weeks year after year without me and who gave me all the time necessary to do what I liked to do. The love and affection from family, relatives and friends keep me inspiring forever.

I thank you all for your kind attention.
REFERENCES


Prof. Rezaul Kabir holds a Ph.D. degree in Finance and Master degrees in Business Administration and Economics. Prior to joining the University of Twente, he was a Professor of Finance at the University of Stirling (Scotland, UK) and an Associate Professor of Finance at the University of Tilburg (The Netherlands).

Prof. Kabir has taught a large number of undergraduate and graduate courses on corporate finance / financial management at universities in Antwerp, Beijing, Liege, Maastricht, New York, Stirling and Tilburg. His research is primarily multi-disciplinary, empirical and policy-oriented, and spans a wide variety of issues on corporate finance, corporate governance, capital market research, financial market regulation and investments. Articles authored by him have appeared in several books as well as prominent economics, finance and management journals.