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Capital Structures and Internationalisation

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Preface

It is, of course, a good feeling to look back on the thesis, once the project has been completed. We hope that the readers will find the research interesting and that it will contribute to an increased knowledge of the subject.

During the time that has proceeded, we have received support from several people who we would like to thank. A special thanks to all companies who participated in the questionnaire, and to Karin Jonnergård and Niclas Andrén for their academic guidance. For the final contents we take full responsibility ourselves.

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Abstract

The internationalisation of a company is enabled by integration of markets. New markets mean new revenues, but also demand capital to finance the expansion. To bring in new capital may offer new possibilities but also higher debt-equity ratios, which affect how external interested parties value the company.

This thesis, inspired by previous and mainly US based research, researches the debt-equity ratio of Swedish multinational and domestic companies, sampled from the Stockholm Stock Exchange. The research questions have focused on the impact of certain internationalisation variables on the debt-equity ratio; how does the debt-equity ratio differ between international and domestic companies? Can a difference be explained by the degree of internationalisation? Can a difference be better explained by the presence of international ownership? By measuring the concept internationalisation as both trade and presence, the questions were operationalised

into four hypotheses. The theories used in connection were the agency, bankruptcy and trade-off theories, as well as previous studies' ideas on owner influences.

The gathered data was statistically analysed using SPSS, where none of the hypotheses were found statistically significant. This can be explained by the expectations having been based on the previous research, and because the Swedish market is genuinely different in structure from markets where the previous research were conducted (size, legislation etc.) these assumptions were found inapplicable. Because the Swedish market is small, we further conclude, even the relatively few large companies that exist are not large enough to draw benefits from their size.

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1.

Introduction

The first chapter will give the reader an introduction to the thesis. This includes the background of the problem area, the aim of the research, delimitation, and ends with an outline of the remainder of the thesis.

1.1 Background

Increased amounts of technological opportunities and access to other markets create options of internationalisation to companies. It is a global trend, but becomes even more pertinent to Swedish companies from the membership of the European Union. Even though Sweden has chosen to stay out of the European Monetary Union, at least during the introductory phase, it is of great importance for Swedish companies to consider the competitive effects if they neglect opportunities of expanding to other markets. However, internationalisation demands capital to finance an expansion. To bring in new capital offers new possibilities but also higher debt-equity ratios.

Capital structures have been examined in many international studies, but since the capital structure is affected by firm-specific characteristics there is not one single theory to characterise it. A company's finance department gets to decide how much of an investment that is to be financed through debt. This decision will be based on the cost of capital. Although a higher leverage means a higher cost of capital, debt financing has the very big advantage of being tax deductible. The cost of external financing depends to a large extent on the external party's perception of the company, where solidity, beta-values etc. play an important role.

Two previous research articles that draw somewhat different conclusions from the same phenomenon, namely the debt-equity ratios among multinational and domestic companies, have inspired this thesis. The first (Lee and Kwok, 1988) concludes that multinationals have lower debt-equity ratios than domestics, the other (Chen et al., 1997) also concludes that multinationals have lower debt-equity ratios than domestics, but that among the multinationals the ratio is positively correlated to the degree of internationalisation. Both articles are based on studies of US companies and will be further presented in chapter three. Inspired by the above mentioned articles, the debt-equity ratios of Swedish listed companies are compared with the degree of internationalisation. Previous studies have shown that foreign investors prefer investing in companies that they know of (Merton as referred in Dahlquist and Robertsson, 2001). As a consequence it can be expected that companies well known abroad should have higher liquidity, and higher debt-equity ratios from the access to a larger financial market. Another study indicates that foreign ownership is lower in highly leveraged firms (Dahlquist and Robertsson, 2001). As an additional factor the debt-equity ratios are also compared with the degree of foreign ownership.

1.2 Research aim and questions

As mentioned in the introduction, it is of great importance for Swedish companies to consider the competitive effects if they neglect opportunities of expanding to other markets. To consider this, it is of interest to find out about the capital structure of Swedish companies and which factors that affect it. The purpose of this thesis is to study the difference in debt-equity ratios of Swedish companies, and to see if differences in internationalisation in form of international trade, presence and ownership are good explanatory factors. These are all factors previously found to affect capital structures. Further, by analysing the data statistically we wish to find differences in the variables' explanatory values.

The research questions:

1. How does the debt-equity ratio differ between Swedish international and Swedish domestic companies?
2. Can a difference be explained by the degree of internationalisation?
3. Can a difference be better explained by the presence of international ownership?

Internationalisation is looked upon from a trade, foreign presence and ownership aspect.

The trade aspect is measured by the degree of internationalisation by the ratio between foreign net income and total net income. The presence aspect is measured by the ratio between the number of foreign employees and total number of employees, as well as by foreign subsidiaries. The ownership structure can have a great impact on a company's decision-making and behaviour, and is considered by the size of foreign owned share of capital and share of votes. Listings on foreign stock exchanges are also considered, as well as size and business sector as additional parameters.

Of the articles mentioned in the previous section, only Dahlquist and Robertsson (2001) have used a Swedish population and as far as the authors are aware there have been no other previous studies conducted in the chosen field in Sweden. Neither have any studies directly comparing debt and ownership been found. It is therefore interesting to refer the results to the previous articles' results, to see if their findings are relevant on the Swedish market. The results of this thesis may also show whether an international owner structure has a better explanatory value for companies' debt-equity ratios than the level of internationalisation by trade and presence.

1.3 Delimitation

The study includes 47 companies listed on the Swedish Stock Exchange. It is necessary to use a relatively large number of companies to receive generalisability. Companies in pure banking, insurance, finance and some service sectors are excluded as they have an obviously different capital structure, and normally are less leveraged. This is motivated under section 2.5.

We do not differ between international and multinational companies. According to the UN, a company is multinational if it owns or controls production and / or service facilities in any other country than the home country (Kedner, G. and Svenberg, S-Å, 2000). By classifying companies without foreign subsidiaries as domestic companies, even if they have income from exports, the problem of identifying “purely” domestic companies is circumvented and comparisons are made possible on a general level. The companies are categorised as either multinational or domestic as of the latest annual report.

This study only takes direct foreign ownership into consideration. There is no available information on how Swedes use foreign investment vehicles or how foreigners use Swedish investment vehicles. Hence, besides it being virtually impossible to fully measure indirect ownership internationally, it results in a deviation from real values. We are also aware that individual ownership can differ greatly in size, e.g. a specific family or sphere can have a large impact on companies from a possession of a large amount of shares, or differences in voting rights. However, since firstly this is an already well documented area, and secondly somewhat out of the scope of this thesis, it will not be further dealt with.

A direct comparison to the previous studies mentioned is not possible with regard to domestic companies, as this thesis does not include many purely domestic companies.

Sweden as a market is not large enough for many large purely domestic companies to exist. It also means including companies not on these lists, which, due to reasons of time and costs, is not possible. Further, unlisted companies are not always comparable in size and open for anyone to invest in.

1.4 Outline

The structure of this thesis is shown below. A reader not interested in methodology may turn directly to chapter three, or one who is unfamiliar with statistical methods may leave out chapter four. The core results of the thesis then lies in chapters five and six.

Chapter 1: The chapter gives a brief introduction to the research problem of the thesis. It consists of the background, research aim and questions, definitions, delimitation and outline.

Chapter 2: Chapter two presents the fundamental factors and methods of this thesis. It describes the approach to the research and working processes. It also includes the choice of theories, collection of data, literature review and criticism of sources, from a theoretical point of view.

Chapter 3: Chapter three presents and describes previous studies, theories used, and the hypotheses.

Chapter 4: The variables are discussed and operationalised. The empirical research is presented with frequencies, debt-equity ratios, tests of hypotheses and additional tests for classes of size, business sectors etc.

Chapter 5: The hypotheses' results are analysed and discussed in connection with the chosen theories.

Chapter 6: The results from the research are summarised along with reflections. Further research areas are recommended.

2. Method

This chapter explains the overall approach, choice of method, empirical study, literature review and criticism of the sources, from a theoretical point of view.

2.1 The overall approach

By using a deductive approach (model - reality - model) we have been using quantitative statistical data to study the debt-equity ratio (from now on also mentioned as D/E ratio) of Swedish multinational and domestic companies, and to check for factors to explain differences in the ratios. The data has, when available, been collected for the three years 1998 – 2000, to receive a more thorough result. Our starting point lies in the previous studies which are described in chapter three. The agency, bankruptcy and trade-off theories have been used to explain the theoretical view of owners and management effects on leverage.

After having gathered all the necessary statistical data and operationalised the hypotheses, SPSS was used to analyse the information. The explanatory value of the variables internationalisation of trade, presence and ownership, vs. the D/E ratio as dependent variable were investigated. The aim was also to see which has the highest explanatory value. In the analysis it was also controlled for the other independent variables business sector, foreign listings, and size to categorise our findings. The companies' averages over the three year period were used to even out temporary fluctuations. The results were analysed in terms of the chosen theories, and we then returned to see if they were consistent with any of the results from previous studies,

which claim that the D/E ratio is positively related to the degree of internationalisation.

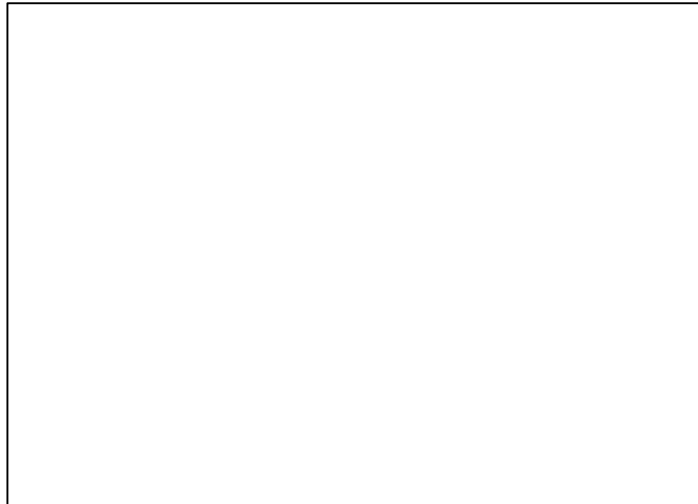


Figure 2.1: The Framework

Approach

2.2 Choice of method

The methods used to answer the research questions are explained in the following.

2.2.1 Methodology

1. How does the D/E-ratio look among Swedish international and Swedish domestic companies?

To answer the first question, primary data was used for each company group for each year, collected from the homepages and annual reports. All ratios were calculated to follow the same formula; book value of long-term debt through book value of total equity plus long-term debt. A dummy variable was used to distinguish the companies with one or more foreign subsidiaries from companies without any foreign subsidiaries, which were to be considered as domestic companies. The average ratios over the three year period were used.

2. Can a difference be explained by the degree of internationalisation?

Primary data collected from annual reports, company homepages and by sending e-mails (Appendix C) was used to answer this question. By using e-mails we wished to avoid the following problems:

- ⇒ Time consuming search for information
- ⇒ High telephone costs (when information was not publicly available)
- ⇒ The questions were made more easy to distinguish as a written document (for the interviewee)
- ⇒ Time consuming note taking (replies were directly available in writing)

The companies were in a second step also sent reminders by e-mails and contacted by telephone, as the companies' replies were not always very immediate.

The internationalisation measures were measured for each company group for each year as the foreign sales ratio, foreign employees ratio and the number of foreign subsidiaries. The averages over the period were used in the SPSS analysis. Measuring internationalisation by these ratios did not only provide different angles for the analysis and interpretation of the results, but also provided as alternative measures,

since not all companies could be expected to share detailed company information with external parties. The results were then analysed statistically using SPSS, compared and tested, and checked for sectors, size and foreign listings.

3. Can a difference be better explained by the presence of international ownership?

The third research question was answered by measuring foreign ownership as a continuous variable in relation to the D/E ratio, using both primary and secondary data. Foreign ownership was measured for each company group each year as the percent of share capital and votes held by foreign investors. The companies' averages over the period were then analysed statistically using SPSS, compared and tested, and checked for sectors, size and foreign listings.

2.2.2 Research process

The research process of this thesis can best be described in seven phases. Phases one and two were the first and most important ones, where defining problems (1) and objectives (2) set the prerequisites of the whole thesis. Then came the phase where a good theoretical connection and the collection of secondary data (3) created the base of the phase to come, which was the choice of relevant variables and measures (4). The next phase of extensive collection of primary data (5) was very time consuming, and resulted in a delay for which the authors are not entirely to blame. This especially counts for the case where public material was not made available, as discussed under 2.4.3. The companies were then contacted and asked to send it to us, which they did not always do. Nevertheless, after having set the foundation, the next phase (6) meant tests were conducted to identify how the chosen variables affect companies' D/E

ratios. Finally, the results from the analysis were interpreted and discussed in relation to the four hypotheses set up (7). This process is illustrated below.

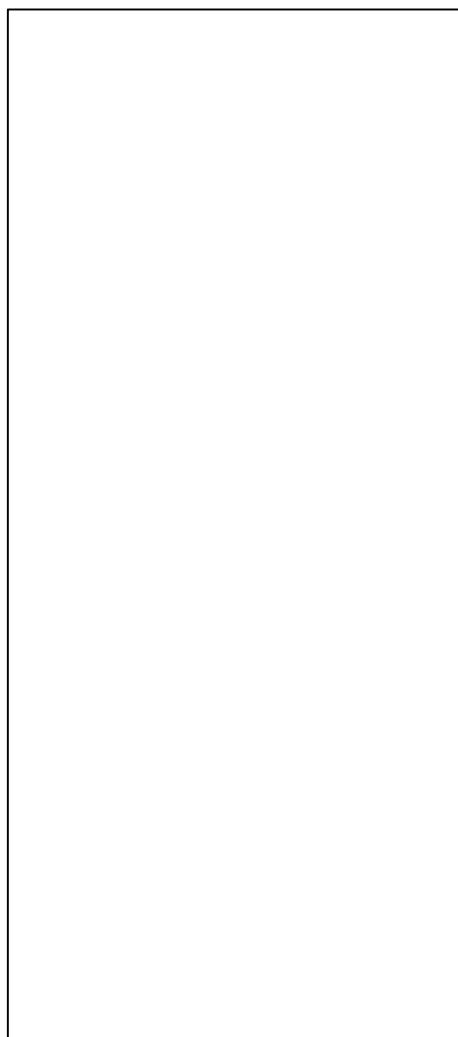


Figure 2.2: The Research

Process

2.3 Choice of theories

As described earlier, previous studies were used to develop the foundation of our research, enabling a general reference to their results. They were chosen, after having studied a range of theories and articles, because they are frequently referred to and representative of the lion's share of research made in this field. As to the agency, trade-off and bankruptcy theories, they were not directly measured in this thesis as they were in the previous studies because this simply was not practicable. Instead, these theories were measured indirectly through the measures chosen, and were thereby and consequently included. One study was found comparing foreign ownership and leverage, as in our third research question, although it was not a main research question of that study. It will therefore be referred to only briefly in the analysis.

2.4 Data collection

All statistical data were collected from the Stockholm Stock Exchange (SAX), SIS Ägarservice, company homepages, annual reports, e-mails (please see Appendix C), and by phone calls to the companies.

2.4.1 Primary data collection

The first step in collecting primary data after the sampling of companies to be included was done (see section 2.5) was to calculate all variables' ratios. This was done by using public material such as annual reports and the companies' homepages. Simultaneously an e-mail was sent (Appendix C), for timesaving reasons. Surprisingly many companies replied, although not enough information was received to proceed with the analysis. An additional second step was therefore necessary to

gain the remaining information, and the companies were contacted by phone calls and e-mails where the needed information was not yet received. Only in relatively few cases the needed information was not received.

2.4.2 Secondary data collection

The secondary data collection consisted of gathering information regarding owner structures, as in the third research question. The main source was SIS Ägarservice, who annually publishes data showing the owner structures of the companies whose share data is regularly published in Swedish daily news media. Since this does not apply to all companies included in this research, the companies were also contacted by e-mail and by phone calls to provide us with this information. Secondary data was used to classify the companies according to business sector and foreign listings, where the former followed the system used at the Stockholm Stock Exchange and the latter was provided by the companies. As regards secondary data in form of literature and previous studies, please see section 2.7.

2.4.3 Experience from the research

The major concern when collecting the information was time. The plan of work of a pre-categorised deductive thesis like this emphasised preparations for the field study. From previous experience of field studies the collecting of data was expected to take a large portion of the time set for this thesis, yet it was still underestimated. The collecting was very time consuming and resulted in a delay for which the authors were not entirely to blame. This specifically counted for the case where public material at libraries in form of annual reports were not made available. The companies were then contacted and asked to send them to us, which they did not

always do. Another concern was whether the companies would share specific sales information with external parties, but the willingness to do so was surprisingly high. All in all, the amount of data finally received for this research turned out extensive.

2.5 Population and sampling

The population was Swedish multinational and domestic companies. The sample was chosen at random from the Stockholm Stock Exchange (SAX) lists to receive a general comparability between the companies. The companies included in the research, originally 60, were chosen at random from the companies available at the Stockholm Stock Exchange (SAX) A and O lists, using a sampling function in Excel. The companies had to have been listed on the exchange since 1998. Requiring a longer listing period would have made the selection less representative, excluding the large share of IT and telecom companies that have entered the market in recent years. A shorter listing period could give the research bias from temporary fluctuations on the market.

Pure banking, insurance, finance and some service companies were excluded as they have an obviously different capital structure and level of leverage. The study would lose in value if companies with banking, insurance and finance companies within the group were strictly excluded, since these are considered normal business functions. This phenomenon is therefore neglected. The service companies excluded are companies with tacit knowledge, such as pure consulting companies mainly without actual "physical" products. For example, software companies are included since the software is considered a product, whereas a management consulting company is excluded because the company's assets are tacit. Another type of service company has been allowed in the sample, such as Scandic Hotels AB, since their assets are explicit in the form of hotel buildings, inventory and the like.

2.6 Reliability, validity and bias

Both primary data, secondary data and studies are referred to in this thesis. However, some quality issues need to be discussed in relation to the approach concerning reliability, validity and bias (Saunders M. et. al, 2000).

Reliability: When the research lacks standardisation there is always a risk that another researcher would get a different result. Since this is a post analysis of a random sample, there is certainly a chance that a different random sample would bring a different result. Also, since we used direct ownership of the companies, the real ownership will be underestimated. If statistical research has low reduction, such as this one, it increases the reliability of the sample. In essence, the results from this specific sample can be considered highly reliable.

Validity: The interesting issue is whether or not the findings have generalisability. The aim of this thesis was to analyse the relation between internationalisation of trade, presence and ownership vs. D/E ratio. A relatively large number of the available listed companies were studied to reach generalisability. The measures used were developed from previous research, and recommended by Swedish researchers. The results should therefore be highly valid.

Bias: Reduction increases the risk for skewness or bias, meaning a misrepresentation or failure in the covering of the population or badly chosen measures, and a possibility of systematic over and underestimation in the research. As the reduction of

the sample was small and measures were well-tested, bias should not reduce the research's validity.

2.7 Literature review

Since the overall topic area is well documented, we have used literature in the form of books that cover corporate governance, the basics of corporate finance, and the chosen theories. Our secondary research has also included a large share of current academic articles found relevant to identify main authors within the research area, and to gain a deeper insight into the current problem area. From these it was found that the area of foreign ownership and D/E ratio has not been thoroughly covered, as it is discussed in this thesis. This is especially true in the case of small markets like Sweden.

2.8 Criticism of the sources

Primary data: Criticism regarding our own research can be found under section 2.6.

Secondary data: Since the secondary data used in the empirical study of ownership was gathered from different sources (SIS Ägarservice and annual reports) it was not possible to eliminate the fact that the figures were collected at different dates, but the time differences were minor and therefore we considered the effects small. Also, some companies' financial years ended in April, which can be considered to mislead the results. However, in a long term perspective, which is assumed in this thesis, this will not have any severe effect on the results.

Books: The literature used mainly contained theoretical discussions, and does not cover all areas of the research aim. For the case relevant empirical research was not found in the literature, articles were used instead.

Articles: Most articles found relevant in the field were conducted to confirm previous research, which made the appearance of new variables and measures rare. It was interesting to see that the research often gave somewhat contradictory results to the previous ones (as with the ones described this thesis). Further, the previous studies were mainly conducted on the US market which is huge, especially in comparison to small markets like Sweden's.

3.

Theoretical background

This chapter presents the main theories that explain firms' finance decisions and capital structures. These are the agency, bankruptcy and trade-off theories. Further, we consider ownership structure as an explanatory factor for firms' capital structures.

3.1 Previous studies

Since the publication of the irrelevance theorem by Modigliani and Miller (1958), that states that the finance decisions of a firm are irrelevant to its market value, the existence of an optimal capital structure has been discussed. Below two noteworthy studies regarding this area will be presented.

Lee and Kwok (1988) investigated differences in the capital structure of US domestic corporations (DCs) and US based multinational corporations (MNCs). In their research, they focused on differences in agency costs and bankruptcy costs that affect the D/E ratio of MNCs. They found that MNCs tend to have higher agency costs of debt and lower bankruptcy costs than DCs. According to Lee and Kwok, MNCs have lower bankruptcy costs not because of their international diversification, but because of larger size in comparison to DCs. They argue that corporate international diversification does not reduce bankruptcy risk. Furthermore, they found that MNCs have lower D/E ratios than DCs.

Chen et al. (1997) extended the research of Lee and Kwok and investigated the relationship between international activities and capital structures of MNCs. Their research was based on two theories of capital structure; the trade-off theory and the agency theory. They found that the investigation of Lee and Kwok explains the capital

structure of MNCs only partially. Further they came to the conclusion that *"If two companies have the same size, bankruptcy costs, growth opportunities, and profitability, but one is MNC and the other is DC,...the MNC will have a lower debt ratio than the DC."* (Chen et al., 1997, p. 574). But they also found that within MNCs there is a positive relationship between the level of international activities and the D/E ratio.

3.2 Agency theory

Agency costs are costs due to conflicts of interests. Companies usually face two different types of agency costs; agency costs of debt and agency costs of equity. The first one arises from conflicts of interest between stockholders and bondholders of a firm, whereas the latter arises from the fact that managers cannot be controlled perfectly by the firm's owners (Ross et al., 1999).

The problem of agency cost of equity dates back to Adam Smith. In *"The Wealth of Nations"* he wrote the following about joint stock companies:

" The directors of such companies, however, being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master's honor, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company." (Adam Smith, 1776, *The Wealth of Nations*, p. 700, as quoted in Jensen and Meckling, 1976)

In this often cited quote Smith pointed out that an individual who is an owner of a company will work harder than one who is just a manager. This results in a conflict of interests between the two parts and, therefore, leads to increased equity costs.

According to Smith, managers do not maximise the value of the firm, they only preserve it to secure their own survival.

Jensen and Meckling (1976) defined the agency relationship *"...as a contract under which one or more persons (the principal(s)) engage another person to perform some service on their behalf which involves delegating some decision making authority to the agent."* (Journal of Financial Economics (3), p. 308). As usually both parties are utility maximisers, it is obvious that the agent will not always act in the principal's best interest. According to the authors, the goal is to tie compensation to performance through a written contract, which minimises the agent's self-serving behaviour. By tying compensation to performance through a written contract, principals establish incentives for the agent and at the same time they monitor the agent's behaviour, both of which involve costs. In other words, the principal faces agency costs, because she or he has to control that the agent's decision making is optimal from the principal's point of view.

The control of agency problems is important for the survival of organisations. Agency problems arise since the writing and enforcement of contracts is not free of costs. (Jensen and Fama, 1983). In accordance with Jensen and Meckling, agency costs of equity can be defined as the sum of monitoring expenditures by the principal, bonding expenditures by the agent and the residual loss, i.e. the costs of enforcing contracts that exceeds the related benefits (Jensen and Meckling, 1976).

Oxelheim (1996) mentioned a special type of the principal-agent problem, which is based on the fact that insiders and outsiders of a company have contradictory interests. Insiders' portfolios are generally less diversified, and therefore they want to reduce the operational risk more than outsiders do. Moreover, managers want to increase their own value to the company by extending the company's activities into areas where they have competitive advantages. Managers also intend to increase the size of the company, because this is often connected with higher prestige, higher

wages and more power. Jensen (1986) also mentioned this overinvestment problem. According to Jensen, managers have incentives to let their company grow beyond the optimal size and to accept projects with a negative net present value to the company. He argued that a higher free cash flow and less growth opportunities increase the risk of overinvestment. Overinvestment could be avoided by issuing debt. Thus, debt has a control effect in this situation. But increased leverage also leads to rising agency costs of debt and increased bankruptcy costs. Jensen pointed out that the optimal D/E ratio is reached when the marginal costs of debt offset the benefits. At this point the value of the firm is maximised.

Agency cost of debt arises from conflicts of interests between shareholders and bondholders. If shareholders finance investments through debts, they have an incentive to pursue selfish strategies. The use of such strategies does not only hurt the bondholders, it is also costly for the shareholders as they reduce the market value of the firm (Ross et al., 1999). According to Jensen and Meckling (1976), agency costs of debt consist of the opportunity wealth loss due to the impact of debt on the firm's investment decisions, the monitoring and bonding expenditures by the bondholders and the firm, and the bankruptcy and reorganisation costs.

Myers (1977) wondered why firms do not borrow as much as possible to maximise their tax savings. Reasons for this phenomenon could be imperfect capital markets, managers who want to protect their jobs by low D/E ratios or signalling to investors about the firm's business risk and profitability. In addition, Myers gave a further explanation, the underinvestment problem. For this purpose he divided the value of the firm in two parts, the market value of assets already in place and the present value of the firm's option to make future investments. Whereas the value of the latter one does depend on further investments, the first one does not depend on such further investments. Any promised payment from bondholders will give the firm an incentive to abandon a future project with positive net present value. Thus, the existence of

corporate debt could reduce the present market value of the firm by weakening its intention to undertake good future investments. Myers argued that such actions increase shareholder wealth only in the short run, but in the long run shareholders bear the costs of inappropriate investment decisions themselves.

3.3 Bankruptcy theory

Bankruptcy risk is the always-present risk that a firm will be unable to fulfil its debt obligations. Both equity and bondholders face bankruptcy risk when they decide to invest in something. Bankruptcy costs can be divided into direct costs for liquidation or reorganisation, indirect costs due to inefficient actions by the management, and losses from the inefficient liquidation of a company (Oxelheim, 1996). Jensen and Meckling (1976) argued that a distinction has to be made between bankruptcy and liquidation. Bankruptcy refers to a firm that cannot meet a current payment on a debt obligation, which in turn means that the firm's shareholders have lost all claims on the firm. Liquidation occurs when the market value of the firm's future cash flows is lower than the assets' opportunity costs, which could be realised by selling them.

Shapiro (1978) mentioned that individual foreign investments are riskier for a firm than domestic investments. However, diversification of operations in a number of countries, which are not perfectly economically integrated, could reduce risk through reduced variation in earnings. Furthermore, Shapiro argued that increased risk due to individual foreign projects could be offset by beneficial portfolio effects, if foreign cash flows and domestic cash flows are not highly correlated. The lower earnings variability of MNCs may, according to Shapiro, not be based on foreign source earnings, but on the larger size of MNCs compared to DCs and on the increased product diversification of MNCs. A reduction in total earnings variability leads to a

more stable cash flow and thus reduces the bankruptcy risk of a firm. As a result an MNC could leverage itself more highly due to a reduction in its marginal cost of capital. Bradley et al. (1984) showed that the optimal firm leverage is negatively related to expected bankruptcy costs. Oxelheim (1997) argued that a company with high bankruptcy costs would require more equity to reduce the probability of bankruptcy. Thus, high bankruptcy costs motivate lower debt ratios. Warner (1977) and Ang, Chua and Mc Connell (1982) suggested that the cash flows of large corporations are diversified, thus, they are less vulnerable for bankruptcy. This reasoning is consistent with the one of Shapiro. Homaifar et al. (1994) also found a positive relationship between leverage and firm size.

Shapiro (1978) further mentioned that increased leverage in countries like Japan and Germany will not necessarily lead to increased financial risk, because of the close relationships between banks and companies in those countries. This means that the relationship between leverage and bankruptcy risk varies among countries due to cultural differences.

Titman (1984) described bankruptcy risk from the view of outside stakeholders of a firm. Employees and customers may face costs in connection with a liquidation of the firm, because employees lose their jobs and customers lose their rights and guarantees on products. Hence, outside stakeholders will demand a risk premium, which results in that the costs are transferred to the firm's shareholders. According to Titman, a firm with high liquidation costs of employees and customers could reduce these costs by decreasing its debt ratio, which in turn would decrease the probability of liquidation. Titman and Wessels (1988) found that the debt ratio is negatively related to the uniqueness of a firm's line of business, i.e. firms with unique or specialised products have relatively lower debt ratios.

3.4 Trade-off theory

Modigliani and Miller (1963) showed that firms prefer debt financing, if interest costs are tax-deductible. Moreover, they said that a firm, which operates in an environment with a corporate income tax, should use 100% debt financing in a perfect market. As firms do not use 100% debt financing, there must exist other determinants of capital structure. As above mentioned, all firms face bankruptcy cost. Since bankruptcy (financial distress) costs increase as a firm uses more leverage, firms may balance the costs and benefits of debt financing.

The trade-off theory states that companies balance bankruptcy costs against possible tax advantages of debt. According to the trade-off theory companies with higher bankruptcy costs or lower tax advantages have lower D/E ratios. At low leverage levels tax benefits outweigh bankruptcy costs, and at high leverage levels bankruptcy costs outweigh tax benefits. The optimal capital structure balances these costs and benefits. When the marginal tax savings from debt financing is equal to the marginal loss from bankruptcy costs the optimal debt-ratio is reached (Miller, 1977). Homaifar et al. (1994) provided some evidence that, in the long run, the leverage is positively related to corporate tax rates, but they could not show a positive relationship between leverage and non-debt tax shelter ratio on a significant level. Moreover, in the short run, neither the relationship between leverage and corporate tax rates was statistically significant.

Since the theories provided are generally acknowledged, but the previous studies have been conducted on such genuinely different markets from Sweden's (US companies) showing slightly different results, it cannot be concluded that the results are representative to Sweden.

3.5 Presentation of the first hypothesis

The monitoring and control costs of MNCs increase with geographical diversification, which results in higher costs explained by the principal-agent problem. Issuing more debt to finance investment projects could reduce this increase in agency costs of equity. Debt does not only provide tax benefits for a firm; it also puts pressure on the firm to fulfil its obligations to the bondholders in form of interest and principal payments. According to the trade-off theory, companies balance benefits from tax deduction and bankruptcy costs. However, MNCs have diversification advantages from their international operations, which reduces their bankruptcy risk twofold; from an operational aspect because of geographical dispersion and from a financial aspect because of a more diversified portfolio. As a result, MNCs should have lower marginal costs of capital than DCs, and more diversified MNCs should have lower marginal costs of capital than less diversified ones.

H 1: *MNCs have higher D/E ratios than DCs.*

Null hypothesis: *MNCs have the same D/E ratios as DCs.*

3.6 Presentation of the second hypothesis

We further argue that the companies D/E ratio increases with their geographical diversification, i.e. internationalisation of their activities. An increase in international activities will result in an increase in international trade. As a consequence, a high involvement of MNCs in international trade will result in a high debt ratio.

H 2: *MNCs with a high level of international trade have higher D/E ratios than MNCs with a low level of international trade.*

Null hypothesis: *MNCs with a high level of international trade have the same D/E ratios as MNCs with a low level of international trade.*

3.7 Presentation of the third hypothesis

International presence is another indicator of MNCs' degree of international activities. The more an MNC is involved in international activities, the more it will invest in international operations for increasing its international presence. Here the argument is that, among MNCs, those with a high level of international presence will have a higher D/E ratio than those with fewer international investments.

H 3: *MNCs with a high level of international presence have higher D/E ratios than MNCs with a low level of international presence.*

Null hypothesis: *MNCs with a high level of international presence have the same D/E ratios as MNCs with a low level of international presence*

3.8 Owner influences

The company's credit relation with its bank can be used as a signal of credibility to other parties, especially the customers. The same argument is applicable to the owner side of the company, that a certain type of owner is an asset to the company in its external contacts. With banks, with an international exposure, follows an information system and network of contacts (Collin, 1997). Further, previous studies have shown that foreign investors prefer investments in companies that they know of (Dahlquist and Robertsson, 2001, Merton). A company known outside its home country is likely to be known for reasons of diversification. This recognition can give a lower cost of capital, as access to funding from the international market can lower the borrowing costs. Hence, they tend to increase debt. Access to international funding can also be used for risk diversification, especially when the business is internationally diversified. It can, as a consequence of these facts, be expected that companies well known abroad should have higher liquidity and increased D/E ratios from the access to a larger financial market.

Conventional studies explain D/E-ratios by geographical diversification of operations and products etc., but not many have considered international ownership in connection with leverage. Since Sweden can be described as an owner driven stock market, this could constitute an additional explanatory factor.

3.9 Presentation of the fourth hypothesis

A research article by Dahlquist and Robertsson (2001) shows that foreign ownership is lower in highly leveraged firms. This would consequently mean that the higher the D/E-ratio, the less foreign ownership. The second hypothesis, based on recognised theories, suggested that the D/E-ratio increases among international companies, which would then, consistently to Dahlquist and Robertsson's findings, mean that truly

international companies have the least international owner structure. Contrary to the findings of Dahlquist and Robertsson, we argue that international recognition tends to increase borrowing, thus an international ownership structure is high when the level of internationalisation is high. Consequently to our previous reasoning, companies with a high level of internationalisation tend to have a high D/E ratio. Thus, the D/E ratios of companies with a high level of foreign ownership must be higher than the D/E ratios of companies with a low level of foreign ownership.

H 4: *Companies with a high level of foreign ownership have higher D/E ratios than companies with a low level of foreign ownership*

Null hypothesis: *Companies with a high level of foreign ownership have the same D/E ratios as companies with a low level of foreign ownership*

4.

Empirical research

This chapter contains the operationalisation of the variables, a presentation of frequencies and the empirical research analysis.

4.1 Variables used

This thesis uses similar but simplified measures to the previous studies'. The results claim to be referable to the results from the previous research, although not by any direct comparison.

4.1.1 Debt-equity variable

By looking at a company's capital structure it is possible to form an opinion of its long-term capacity to pay and its ability to resist insolvency. The basic rule is that the higher the amount of own capital to finance its business, better the company's capital strength. One way to measure a company's capital strength is the D/E ratio, and the ordinary definition is debt through equity. Although this thesis refers to the results from previous research, some distinctions from the their definition of D/E ratio were necessary to make.

By capital structure we mean D/E ratio, since this represents the financial leverage. Chen et al. (1997) and Lee and Kwok (1988) define D/E ratio as long-term debt over the sum of long-term debt and market value of equity. Other measures of financial

structure have been used in previous research, e.g. Ferri and Jones (1979) employed the ratio of total debt to total assets (D/TA). As just seen, one part of the denominator that Chen et al. (1997) and Lee and Kwok (1988) used in their measure of D/E ratio was the market value of equity. In this thesis it was chosen to diverge from the market value and instead use the book value of equity to measure D/E ratios. The reasons for this divergence are several. First, market values can fluctuate rather much over a shorter period. Chen et al. and Lee and Kwok both used periods of ten years or longer, which results in more stable market values than market values over a three year period. Secondly, determining market values depends on future expectations on growth of the values; in this case it would mean adjusting historical values. There are several variables to calculate with, which can often be very difficult to distinguish and which could give rise to misleading market values, one which is inflation. For reasons of time and costs, inflation values for all companies for all years in all operating countries were not collected, and book values were used instead. Finally, in accordance to Swedish reporting standards, ÅRL 2nd chapter §4, it is stated that the value of an asset should be set carefully not to be overvalued, and debts should be carefully valued at prices which do not undervalue. Consequently, realistic and comparable values will be reached for all Swedish companies. In addition, this is in accordance to the reasoning about misleading market values.

Further, in accordance with Swedish accounting standards Swedish companies are obliged to disclose liabilities and provisions. As long as expected future liabilities are unknown to amounts and dates of maturity they shall be accounted as provisions (ÅRL) 4th chapter §9. As soon as the amounts and maturity dates are known they should instead be accounted as liabilities (FAR's accounting recommendation for annual reporting in joint-stock companies no. 4, point 1 and 2). Since provisions are unknown liabilities it was decided to include them in the definition of long-term debt. In this thesis D/E ratio is defined as book value of long-term debt through book value

of total equity plus long-term debt, where long-term debt is to be read as debt running over more than one year.

The debt-equity formula:

$$\text{D/E ratio} = \frac{\text{Long term debt}}{\text{Long term debt} + \text{Book value}} \quad (1)$$

of equity

The D/E ratio was calculated for each company for each year as a three decimal figure. In the analysis, the arithmetic average of D/E ratios from 1998 to 2000 has been used to even out fluctuations.

4.1.2 Other variables

4.1.2.1 Level of internationalisation

Internationalisation of trade

The companies are classified according to the level of internationalisation. Companies without foreign subsidiaries are classified as domestic (see 1.4).

The proxy used to measure the level of internationalisation in terms of trade was the ratio of foreign net income to total net income (from now on also referred to as FNI), which measures the extent of international activities by sales, including exports. This takes both revenues and expenses into consideration, although it neglects differences in tax rates between countries. Another measure of internationalisation is the ratio of

foreign pre-tax income to total income (from now on also referred to as FPI), also used by Chen et al. According to them, the FPI avoids the effect of differences in foreign taxes. Since Swedish and US tax legislations are not the same, it was chosen to employ the FNI instead of the FPI. Moreover, not all companies were willing to share information concerning geographically specified sales figures with outsiders, which would have made it impossible to calculate the FPI. Using the FNI resulted in a minimised reduction as well as the avoidance of the foreign tax considerations (both the foreign net income and the total net income include tax obligations).

$$\text{FNI} = \frac{\text{Foreign net income}}{\text{Total net income}} \quad (2)$$

In the analysis, the arithmetic average of FNI from 1998 to 2000 has been used to even out fluctuations in foreign income. It was, for some IT companies, found that the fluctuations in foreign income were extreme. Regardless of whether a positive or negative direction it cannot be expected that extreme results should last over a period longer than three years and in hindsight we have seen a lot of technology and IT companies disappearing off the market. This explains why we chose the arithmetic average.

Internationalisation by presence

The proxy for measuring the level of internationalisation of investments was the ratio of number of foreign employees to total employees (FER), a measure frequently used by Swedish researchers¹, and the number of foreign wholly owned subsidiaries.

¹ The measures were recommended by Karin Jonnergård at Lund University, and Mats Forsgren at Uppsala University.

The FER measure contributed to a low reduction of the gathered information. Information about total number of employees and number of foreign employees by country was frequently provided in the annual reports, in accordance to Swedish reporting standards, ÅRL 5th chapter, §18.

$$\text{FER} = \frac{\text{Number of foreign employees}}{\text{Total employees}} \quad (3)$$

The FER-measure was given as three decimal figure. In the empirical research, the arithmetic average from 1998 to 2000 has been used.

Foreign subsidiaries were considered to classify companies as MNCs or DCs. A dummy variable was used to distinguish between MNCs and DCs; MNCs = 1 and DCs = 0. In accordance with the UN definition given in section 1.4, Swedish companies with one or more foreign subsidiaries were classified as multinationals, whereas companies without foreign subsidiaries were classified as domestic companies. If a company had one or more foreign subsidiary during 2000, it was classified as an MNC.

The number of wholly owned foreign subsidiaries were also considered to check for possible benefits of an increased number of foreign subsidiaries on capital structure, i.e. from the subsidiaries creating an increased foreign recognition. Subsidiaries were defined as wholly owned by the parent company owning more than 90% of the share capital, in accordance with Swedish law, ABL Chapter 14 §31, SIL §2, 3 mom. The reason for the line being drawn at 90% is that the parent company by owning this

large amount of the share capital, according to the Swedish law ABL of 1944, possessed the right to a compulsory redeem of the remaining shares and thereby to become the sole owner (RSV, 2000, part 2, p. 1100).

Internationalisation of foreign ownership

The foreign ownership can be suggested a consequence of international trade or investment decisions. It can also enable or speed up an internationalisation decision. Foreign ownership was measured by the percent owned of share capital, and percent owned of votes. It may be expected that ownership in terms of votes should have a larger impact than ownership in terms of capital, since the votes represent a greater ability to influence company decisions.

Most information was gathered through SIS Ägarservice. However, the information was not available for all companies for all years, in which case the information was received from the companies themselves. Still, for a few companies some years, and for different reasons, some of the owner figures were missing. The owner percentages provided by Ägarservice contained figures with one decimal, and the same were requested for the figures provided by the companies. The arithmetic averages ownership of both share capital and votes over the period 1998 to 2000 were used in the analysis.

4.1.2.2 Foreign listings

Listings on foreign stock exchanges are a means of foreign financial marketing, creating foreign recognition. The home bias effect means that investors prefer investing in companies present on the home market, motivating why the variable was chosen. It can be expected that the listing is a good means of marketing, e.g. a company like Ericsson would not have been available to global investors unless listed on one of the internationally most important stock exchanges, hence affecting the

capital structure. The listings were analysed through dummy variables between foreign listings and no foreign listings, where foreign listings = 1 and no foreign listings = 0. If the company was listed during 2000 on a foreign stock exchange, it was classified as a foreign listed company over the three investigated years.

4.1.2.3 Size

Total assets at book value (TA) were included as control variables for company size. Measures employed in other studies were e.g. the natural logarithm of market value of common equity (Chen et al., 1997), and average value of total assets (Lee and Kwok, 1988). In this thesis the arithmetic average of TA over the period 1998 – 2000 was used. The companies were also categorised into six size classes to experience any similarities, as can be seen in section 4.2. The categorisation is based on the classification system used by Statistics Sweden (SCB). SCB's categorisation is based on turnover, whereas the categorisation in this research is based on TA. The companies in this research were chosen from the Stockholm Stock Exchange and the classes included start at the TA of 20 MSEK (the smallest companies in TA belonged to this group, but it is to be interpreted as including all below).

4.1.2.4 Business sector

The Stockholm Stock Exchange's (SAX) system to classify listed companies into sectors has been used. It is based on the international Global Industry Classification Standard (GICS), making it more attractive to foreign investors. It has ten main industry sectors (as shown below) with four additional sub levels. The classification is based on the main business of the company as to how the income has been generated, making it a market-based classification system rather than production-based (SAX's

web-site). Under this system, real estate is classified as a sub-section to finance. As explained in chapter one and two the pure finance sector is excluded from the population, whereas real estate is included. In the rest of the thesis, sector 7 below will be referred to as real estate.

SAX's official industry sectors:

1. Energy
2. Materials
3. Industrials
4. Consumer Discretionary
5. Consumer Staples
6. Health Care
7. Financial
8. Information Technology
9. Telecommunication Services
10. Utilities

4.2 Expectations

In accordance with the four hypotheses in chapter three the expectations for the empirical study were the following:

- A positive correlation between the D/E ratio and the dummy variables for DCs (=0) and MNCs (=1)
- A positive correlation between D/E ratio and FNI
- A positive correlation between D/E ratio and FER
- A positive correlation between D/E ratio and the number of foreign subsidiaries
- A positive correlation between D/E ratio and foreign ownership of capital
- A positive correlation between D/E ratio and foreign ownership of votes

Furthermore, strong positive correlation between FNI and FER and between FER and the number of foreign subsidiaries were expected. It was also expected for foreign ownership of capital and of votes to be highly positively correlated. Despite the expected high correlation between some of the variables, it was decided to include all of them in the research to identify which of the variables can best explain companies' D/E ratios.

4.3 Descriptive data and frequencies

47 companies were left after 13 were excluded (as described below under Reduction). In accordance with the chosen definitions and as of the latest annual report (2000 or equivalent), 11 (23.4%) companies were classified as DCs and 36 (76.6%) as MNCs. During the period, five companies became MNCs (Beijer, Nexus, Feelgood, Peab, Pronyx), and one reverted to become a DC (Europolitan).

Five companies were listed on foreign stock exchanges, as of the latest annual report. The business sector Utilities has no companies representing it.

In the analysis, the companies were evaluated both individually and grouped into different classes (see 4.4). Below the company data is divided into classes, enabling a quick overview of the results.

D/E class	Frequency	Percent	Cumulative Percent
0.000 - 0.199	19	40.4	40.4
0.200 - 0.399	12	25.5	66.0
0.400 - 0.599	12	25.5	91.5
0.600 -->	4	8.5	100.0
Total	47	100.0	

Table 4.1

Foreign owners capital D/E Class Mean	Total votes Mean	D/E ratio Assets Mean	FNI (%) Mean	FER Mean	Number foreign subsid. Mean	Foreign owners Mean
0.000 - 0.199	0.085	0.263	0.290	20.2	25.5	
	24.1	2199.2				
0.200 - 0.399	0.320	0.529	0.443		17.3	25.8
	24.8	10403.3				
0.400 - 0.599		0.502	0.619	0.362	23.3	21.7
	17.1	9819.5				
0.600 →		0.762	0.185	0.274	3.0	12.5
	10.0	9234.8				

Table 4.2

In tables 4.1 and 4.2 above the investigated companies are presented grouped into four D/E classes. 40.4% of the companies have D/E ratios below 20% and only 8.5% have D/E ratios above 60%. The companies with the on average highest FNI and highest number of foreign subsidiaries have D/E ratios of 0.400 – 0.599, whereas the companies with the highest FER average can be found in the group of D/E ratios between 0.200 – 0.399. This group also has the highest average of ownership of capital and of votes.

TA class (MSEK)	Frequency	Percent	Cumulative Percent
0.0 - 99.9	6	12.8	12.8
100.0 - 199.9	6	12.8	25.5
200.0 - 499.9	4	8.5	34.0
500.0 - 999.9	9	19.1	53.2
1000.0 - 19999.9	17	36.2	89.4
20000.0 ----	5	10.6	100.0
Total	47	100.0	

Table 4.3

TA Class	D/E ratio	Total		Number	Foreign	Foreign
		FNI (%)	FER	foreign	owners	owners
votes	Assets (MSEK)	Mean	Mean	subsid.	capital	
	Mean	Mean	Mean	Mean	Mean	Mean

Capital Structures and Internationalisation

0.000 - 99.9 81.9	0.164	0.039	0.017	0.1	16.7	15.7
100.000 - 199.9 160.0	0.178	0.151	0.256	1.9	32.3	33.1
200.000- 499.9 315.7	0.236	0.294	0.318	3.4	15.5	14.8
500.000 - 999.9 695.1	0.375	0.353	0.151	9.0	16.7	13.7
1000.000 - 19999.9 132.5	0.345	0.510	0.530	33.4	26.9	24.4
20000.0 → 38235.1	0.460	0.715	0.647	39.7	25.4	21.1

Table 4.4

Tables 4.3 and 4.4 the companies are presented grouped according to their size in total assets. In the group with total assets between 1 000.0 – 19 999.9 MSEK 36.2% of the companies are represented and 8.5 % of the companies had 200.0 – 499.9 MSEK total assets. The highest average of FNI, FER and number of foreign subsidiaries can be found in the group with total assets above 20 000.0 MSEK. Companies with total assets between 100.0 – 199.9 MSEK have the highest average of foreign ownership of capital and of votes.

Business Sectors	Frequency	Percent	Cumulative Percent
Energy	1	2.1	2.1
Materials	7	14.9	17.0
Industrials	14	29.8	46.8
Consumer Discretionary	5	10.6	57.4
Consumer Staples	1	2.1	59.6
Health Care	5	10.6	70.2
Real Estate	4	8.5	78.7
Information Technology	8	17.0	95.7
Telecommunication Services	2	4.3	100.0
Total	47	100.0	

Table 4.5

owners	Total	D/E ratio	FNI (%)	FER	Number	Foreign	Foreign
					subsid.	capital	owners
Assets	Business Sector	Mean	Mean	Mean	Mean	Mean	Mean
Energy	2857.6	0.311	.	0.963	19.7	41.0	44.6
Materials	9054.8	0.339	0.509	0.275	8.5	19.6	18.6
Industrials	12084.9	0.409	0.639	0.497	24.1	18.8	15.6
Consumer	Discretionary		0.200	0.259	0.221	12.7	28.0
24.8	987.9						

Capital Structures and Internationalisation

Consumer Staples 3199.4	0.352	0.482	0.489	13.0	31.2	32.3
Health Care 3822.2	0.200	0.967	0.530	73.8	24.2	21.8
Real Estate 2817.0	0.580	0.029	0.015	1.1	12.6	10.0
Information Technology 25.0 428.8		0.126	0.166	0.249	6.2	26.4
Telecommunication 2009.6 Services	0.218	0.000	0.000	0.0	80.8	80.8

*Table
4.6*

In the tables 4.5 and 4.6 the companies are grouped according to the business sectors they belong to. In the business sector industrials 14 companies are included in the research, whereas the business sectors energy and consumer staples are only represented by one company each. The business sector health care shows the highest FNI average and the highest average number of foreign subsidiaries. Industrials have the highest average of total assets and telecommunication services have on average most foreign owners of votes and of capital.

4.4 Reduction

Of the 60 companies picked at random, there was an initial reduction of 13. This was due to companies either not complying with the obligation of a listing since 1998, it not being possible to find sufficient information, the companies not wanting to participate, or simply that the companies did not exist over the whole research period due to e.g. mergers and acquisitions.

Some of the companies would for competitive reasons not share specific data with us, e.g. share of sales outside Sweden, which consequently resulted in that some information was not available throughout the period. The partial reduction was accepted instead of excluding those companies from the research, because excluding them and thereby increasing the reduction would have reduced the reliability of the outcome of the analysis. As described in section 2.2.1, this was partially compensated for by phone calls to the companies.

4.5 Tests

To run tests on the data calculated for each company, SPSS 10.0 was used.

T-tests, non-parametric tests and correlation

Two different tests were conducted to test the assumptions of the four hypotheses. First, t-tests for two independent variables were used to measure the probability of the null hypothesis. The t-test is based on the underlying assumption that the variables are normally distributed. The most frequent, the Pearson product-moment correlation which is independent of scale of measurement and independent of sample size, was used.

As the independent samples within the investigated variables were too small to assume normally distributed (less than 30 observations), non-parametric tests were conducted as well. The Mann-Whitney test is the most common non-parametric test for two independent samples and was therefore chosen as a second test. As all four hypotheses were one-tailed, the significance values at the one-tailed level were used for testing them. The results from the t-tests and the non-parametric tests were compared, which made the test of the null hypotheses more reliable.

Correlation between variables to find a linear correlation were also run. This was tested at the two-tailed level. Although only positive correlation between the variables was expected, the possibility of negative correlation could not be totally eliminated, hence two correlation tests were employed. The Pearson correlation assumes that the variables are normally distributed. As not all variables included in the test could be assumed normally distributed, because of less than 30 observations, the Spearman's rank correlation was used to test for non-parametric correlation. The Spearman's rank correlation coefficient measures association between variables at the ordinal level. Thus, it is a non-parametric version of the Pearson correlation based on the ranks of the data rather than the actual values.

The correlation value has to be close to +1.00 or -1.00 to represent a relationship between variables, and a value close to 0.00 represents no correlation at all between the variables. The sign of the correlation (positive or negative) indicates the direction of the distribution, and the absolute value of the correlation coefficient indicates the strength of the relationship. The significance value has to be less than 0.05 to show a significant relationship between two variables. Even if no significant linear correlation can be shown the variables may be correlated, but the relationship is in this case not linear. Therefore, even scatter plots were made to identify other than linear correlation. No other correlation than those described in section 4.6 – 4.9 could be identified. All results can be seen in the Appendices, where the scatter plots are found in Appendix G.

Grouping of variables

For conducting tests with two independent samples it was necessary to divide the investigated variables into two independent groups. As previous research in this area did not use tests with independent samples, but regression analyses, previous groupings of the variables did not exist.

The grouping of variables in the first hypothesis was DCs and MNCs, as given in section 1.3. MNCs were classified as companies with at least one foreign subsidiary.

	Number of companies
MNC	36
DC	11
Missing	0

For testing the second hypothesis FNI had to be grouped into two independent groups. This hypothesis should only be tested with respect to FNI of MNCs, not FNI generated through export by DCs. It was chosen to classify MNCs with up to 50% FNI as MNCs with low international trade, and those with more than 50% FNI as MNCs with high international trade. The reason for this choice is that if an MNC generates more than half of its total income abroad, it will be more dependent on its foreign income than on its domestic income. In accordance with the definition of an MNC in section 1.3, all foreign income is classified as international income; i.e. no distinction is made between neighbour countries or countries far away from Sweden. Hence, an MNC with more than 50% FNI is categorised as an MNC that has a high level of international trade.

FNI	Number of companies
0% – 50%	12
50.001% →	17
Missing	7

To test the third hypothesis two variables, FER and the number of foreign subsidiaries, which are both measures of a company's international presence, had to be grouped. MNCs with up to 50% FER were classified as MNCs with low international presence, and MNCs with more than 50% FER were classified as MNCs with high international presence. The argument for this grouping is similar to the one for the grouping of FNI. A Swedish MNC, which has more employees

abroad than in its home country, puts more effort into its international presence than on its presence at home.

FER	Number of companies
0% – 50%	16
50.001% →	16
Missing	4

Number of foreign subsidiaries was grouped by defining MNCs with up to ten foreign subsidiaries as having low international presence, whereas those with more than ten foreign subsidiaries were assumed to have high international presence. The idea behind this grouping was to distinguish between MNCs that only operate in neighbouring countries and MNCs that have operations in more distant countries. A company that internationalises itself usually starts in neighbouring countries. Most of the observed countries had several foreign subsidiaries within the Nordic region, which is why it was suitable to categorise MNCs with up to ten foreign subsidiaries as only operating in neighbouring countries. This assumption is not in all cases true, but generally it is valid for the test.

Foreign subsidiaries	Number of companies
0.3 - 10.0	19
10.1 →	14
Missing	3

For testing the fourth hypothesis companies D/E ratios had to be divided into two independent groups. D/E ratios up to 20% were classified as low and D/E ratios above 20% as high. It may appear strange to classify D/E ratios above 20% as high, because companies with much higher D/E ratios are usually not seen as highly indebted. The point with this grouping was to separate companies with relative low D/E ratios from those with moderate or high D/E ratios.

D/E ratios	Number of companies

0% – 20%	19
20.001% →	28
Missing	0

Test for normal distribution

Because the variables were grouped to conduct tests with two independent samples as described above, the number of observations within the different groups was below 30. Therefore, a normal distribution within the different groups could not be assumed and histograms were employed to test for it. These histograms are published in Appendix F. Although the different groups within the variables are sometimes rather small, they are relatively normally distributed.

To secure the t-test results, even non-parametric tests (see above) were employed, which do not assume a normal distribution of the variables.

4.6 Test of hypothesis one

The first hypothesis was:

H 1:	<i>MNCs have higher D/E ratios than DCs.</i>
Null hypothesis:	<i>MNCs have the same D/E ratios as DCs.</i>

T-test

To test whether Swedish MNCs and Swedish DCs differ with respect to D/E ratios, an independent samples t-test was used. The result showed a one-tailed significance of 0.117 on a 95% level which is not considered significant. Because the significance has to be below 0.05, the null hypothesis cannot be rejected.

Mann-Whitney test

There were too few observations for DCs (11) to assume an approximately normal distribution, and a Mann-Whitney test was also employed to test the first hypothesis. The results of this test showed a significance value of 0.107 at the one-tailed level. As a consequence the null hypothesis could neither be rejected with the Mann-Whitney test.

The results of the t-test and the non-parametric test gave comparably high significance values, hence, the null hypothesis could not be rejected. Thus, a significant difference in the D/E ratio of DCs and MNCs could not be identified. However, the MNCs showed a mean of 0.332 and DCs showed a mean of 0.236, and these figures indicate a tendency that MNCs have a generally higher D/E ratio than DCs.

Correlation

	Pearson correlation	Significance (2-tailed)	Spearman's rank correlation	Significance (2-tailed)
Foreign subs. – D/E	0.177	0.233	0,183	0.217

Table 4.7

As can be seen from this table, the significance value is very high (above 0.05), which indicates that there is no linear correlation between the variables.

4.7 Test of hypothesis two

The second hypothesis was:

H 2:	<i>MNCs with a high level of international trade have higher D/E ratios than MNCs with a low level of international trade.</i>
Null hypothesis:	<i>MNCs with a high level of international trade have the same D/E ratios as MNCs with a low level of international trade.</i>

T-test

Before conducting the t-test for this hypothesis, the sample was divided into two groups. The first group showed MNCs with an FNI up to 50%, the second above 50%. The result of the t-test was not significant (0.331). The null hypothesis cannot be rejected, meaning no significant difference between the groups can be shown. The mean of the first group was 0.347, and 0.376 for the second. This outcome (mean) indicates a slightly higher D/E for MNCs with a higher level of foreign trade.

Mann-Whitney test

Each of the two FNI groups had less than 30 observations, which means that it cannot be assumed that the data is normally distributed. Therefore, a non-parametric test was employed. The significance value of this test was 0.329. Thus, the null hypothesis could neither be rejected by the non-parametric test.

The T-test and the non-parametric test both showed high significance values. As a consequence the null hypothesis could not be rejected in this case.

Correlation

	Pearson correlation	Significance (2-tailed)	Spearman's rank correlation	Significance (2-tailed)
MNCs D/E - FNI	-0.017	0.930	0.033	0.866

Table 4.8

The correlation between MNCs' D/E ratios and FNI ratios showed a two-tailed significance of 0.930, which is regarded as insignificant. Thus, FNI is not linearly correlated to MNCs' D/E ratios. Neither can there be shown any significant correlation between FNI ratios and MNCs' D/E ratios when running a partial correlation that controls for company size (TA) and business sectors.

Foreign net income-class Mean	D/E ratio Mean	FNI (%) Mean	Number of MNCs	Total assets
0.01% - 25% 8	4 158.6	0.410		0.100
25.01% - 50% 1 195.1	0.283	0.425	4	
50.01% - 75% 10 636.7	0.356	0.624	8	
75.01% - 100% 19 947.2	0.399	0.930	8	

Table 4.9

Eight MNCs were missing in this table due to lack of information. The results indicated that the lowest D/E ratio mean was 0.283 when companies' FNI were

between 25.01% - 50.0%. The highest D/E ratio mean, 0.410, was when companies' FNI were between 0.01% - 25%. The latter figure indicates the highest D/E ratio when companies income were mainly generated domestically. The table also shows that when companies generate more than 50% of their income abroad they increase their D/E ratio but not to the same level as they had when their FNI was below 25%. Moreover, the table shows that MNCs who earn more than 50% from abroad also have much more assets compared to those below 50% of FNI. Noteworthy is that Swedish MNCs who earn more than 25% from abroad have a progressive increase in their D/E ratios. Yet, the group with an FNI between 0.01% - 25% still have the highest D/E ratios among Swedish MNCs.

4.8 Test of hypothesis three

The third hypothesis was:

H 3:	<i>MNCs with a high level of international presence have higher D/E ratios than MNCs a with low level of international presence.</i>
Null hypothesis:	<i>MNCs with a high level of international presence have the same D/E ratios as MNCs with a low</i>

T-test

The international presence was measured by two variables; foreign employees ratio (FER) and number of foreign subsidiaries. Before the test, FER was further divided into two groups where the first group had a FER up to 50%, and the second group above 50%. The results from the test showed a significance value of 0.357 meaning no significant difference between the two group variables could be identified,

hence the null hypothesis could not be rejected. The mean results were 0.356 for 0 – 50%, and 0.326 for 50% - 100%, meaning no noteworthy difference can be seen.

Another t-test was also conducted to test *the number* of foreign subsidiaries' influence on the D/E ratio. By splitting MNCs according to their number of foreign subsidiaries into two groups, the first group included MNCs with up to 10 foreign subsidiaries, and the second group MNCs with more than 10. This test had a significance value of 0.205 and showed no significant difference between the variables. As a consequence the null hypothesis could not be rejected. The mean results in the group with 0.3 – 10.0 foreign subsidiaries were 0.355, and for MNCs with more than 10 foreign subsidiaries 0.288, indicating a slightly lower D/E ratio for MNCs with more than 10 foreign subsidiaries.

Mann-Whitney test

Two Mann-Whitney tests were conducted to test the third hypothesis. The same groupings of the variables as in the t-test were used. The first one tested whether MNCs with the higher foreign employee ratios have higher D/E ratios than MNCs with the lower foreign employee ratios. This test gave a significance value of 0.339, which indicates that the null hypothesis cannot be rejected. The second one tested whether MNCs with more than 10 foreign subsidiaries have higher D/E ratios than MNCs with fewer foreign subsidiaries. The significance value of the second test was 0.293, which means that the null hypothesis cannot be rejected in this second case either.

Both, the t-tests and the non-parametric Mann-Whitney tests showed high significance values. As a result of these outcomes, the null hypothesis of the third hypothesis cannot be rejected.

Correlation

	Pearson correlation	Significance (2-tailed)	Spearman's rank correlation	Significance (2-tailed)
D/E - FER	-0.029	0.873	0.000	0.999
FER - FNI	0.859	0.000	0.847	0.000
No. of Foreign subs. - D/E	-0.159	0.378	-0.013	0.943
No. of Foreign subs. - FER	0.536	0.002	0.686	0.000

Table

4.10

Neither the FER nor the number of foreign subsidiaries are linearly correlated to MNCs' D/E ratios. The outcome is the same even when running a partial correlation that controls for company size (total assets) and business sectors by keeping these variables constant. FER and FNI, though, are highly positively correlated. The number of observations for measuring correlation between FER and FNI is only 27, but as both the Pearson correlation and the Spearman's rank correlation identified a similarly high correlation between the two variables, the result can be observed as valid. The highly linear correlation between FER and FNI explains the similarity of results to the second hypothesis. FER and number of foreign subsidiaries are also positively correlated.

4.9 Test of hypothesis four

The fourth hypothesis was:

H 4:	<i>Companies with a high level of foreign ownership have higher D/E ratios than companies with a low level of foreign ownership.</i>
Null hypothesis:	<i>Companies with a high level of foreign ownership have the same D/E ratios as companies with a low level of foreign ownership.</i>

T-test

Foreign ownership was measured in two ways, in percent share of capital and votes respectively. The variables were also divided into two groups, where the first included companies with a D/E ratio up to 20%, and the second companies presenting a D/E ratio above 20%. Hence, two t-tests were conducted. The first tested the difference between foreign owners of capital and D/E ratios. This presented a significance level of 0.278, meaning the null hypothesis cannot be rejected. The foreign ownership of capital mean for the group with the lower D/E ratio was 0.255, whereas the foreign ownership of capital mean of the group with the higher D/E ratio was 0.221. This indicates that foreign ownership of capital is slightly higher in companies with low D/E ratios.

The second test was conducted between the foreign ownership of votes and D/E. The significance level was 0.229, and neither this test can reject the null hypothesis. Companies with D/E ratios of 0-20% had a mean of 0.241 on foreign ownership of votes, and companies with D/E ratios above 20% had a mean of 0.196 on foreign ownership of votes. The mean results indicate that foreign ownership of votes is higher for companies with lower D/E ratios.

Mann-Whitney test

Two non-parametric tests were employed to control the outcome of the t-tests. The first one tested whether companies with D/E ratios above 20% have more foreign ownership of capital than companies with low D/E ratios. The significance value of this test was 0.278, thus, the null hypothesis cannot be rejected. The second one tested whether companies with D/E ratios above 20% have more foreign ownership of votes than companies with low D/E ratios. This test showed a significance value of 0.229.

As the two t-tests and the two non-parametric tests showed comparably high significance values the null hypothesis could not be rejected.

Correlation

	Pearson correlation	Significance (2-tailed)	Spearman's rank correlation	Significance (2-tailed)
D/E - % votes	- 0.239	0.119	- 0.135	0.382
D/E - % capital	- 0.184	0.227	- 0.117	0.444
% capital - % votes	0.970	0.000	0.934	0.000

Table 4.11

As seen, there is no significant linear correlation between foreign ownership of capital and D/E ratios and between foreign ownership of votes and D/E ratios. Hence, foreign ownership cannot be given any explanatory value. As can be seen, an expected high linear correlation exists between foreign ownership of votes and foreign ownership of capital.

Additionally, it was tested for differences between MNCs and DCs. The significance values for the independent samples t-test for differences foreign ownership of capital and of votes were 0.477 and 0.487 respectively, meaning the null hypothesis cannot be rejected. The non-parametric tests showed significance values of 0.247 for foreign owners of capital and 0.305 for foreign owners of votes, thus, neither with this test can the null hypothesis be rejected. The mean for foreign owners of capital among MNCs (36) was 0.234, and among DCs (9) 0.238. The mean for foreign owners of votes for MNCs (35) were 0.214, and among DCs (9) 0.216. Thus, only slightly higher values for DCs of foreign ownership of both capital and votes indicate a difference among the groups.

4.10 Criticism of the choice of measures

The measures of the variables used in this research were partially chosen in accordance with measures used in previous studies. In some cases the measures derive from those used in the studies we refer to. Three reasons for this can be named; first, not all of the measures were practicable for this study. In this case an adjustment aiming to minimise the effects on the test result was made, e.g. the adoption of FPI to FNI. Secondly, it was found that previous studies did not always use objective measures, and it was argued that a distinction from previous measures was necessary to guarantee the reliability of this research, e.g. the choice to use book values as described in section 4.1.1. As a result the most common measures were not always included in the study. For example the most common definition of D/E ratio is debt through equity, adjusted as described under section 4.1.1. Third, this research contains some new aspects, which were not included in previous studies in this area. Measures like FER and the number of foreign subsidiaries can therefore not be found in the studies we refer to, neither can share of foreign owners.

5.

Analysis of results

This chapter consists of a summary and an analysis of the results from the empirical study.

5.1 Analysis of hypothesis one

5.1.1 Research question and hypothesis

The aim of the first research question was to investigate how the D/E ratios between Swedish MNCs and Swedish DCs differ. This question was then analysed by employing a one-sided hypothesis stating that Swedish MNCs have higher D/E ratios than Swedish DCs. In accordance to the theoretical background in chapter three MNCs should have higher D/E ratios than DCs due to the fact that they are more diversified from a geographical as well as financial aspect. As a result MNCs should have lower bankruptcy costs and a more diversified portfolio, thus they should have more debt than DCs. The results from the t-test and the non-parametric test showed no significant difference between the D/E ratios of Swedish MNCs and Swedish DCs. Neither could any significant correlation between the variables be identified. However, the mean results indicate a slightly higher D/E ratio for Swedish MNCs than for Swedish DCs.

5.1.2 Theoretical connection and possible explanations

Contrary to the assumption of the first hypothesis the results from the empirical study gave that there exists no significant difference between the D/E ratios of Swedish DCs and those of Swedish MNCs. This result means that previous studies in this area (Lee and Kwok, 1988, and Chen et al., 1997) are not applicable to Swedish companies. There are several reasons that can explain this outcome for Swedish companies.

As mentioned in chapter three, debt does not only provide tax benefits and reduce agency costs of equity, but debt also puts financial pressure on the firm which increases bankruptcy costs. A possible explanation of the outcome of the empirical study is, therefore, that Swedish MNCs prefer to use both debt and equity financing to the same extent when financing international investment projects as they use for financing domestic investments. Shapiro (1978) mentioned that individual foreign investments are riskier than domestic ones. If Swedish MNCs are on average less diversified than US MNCs, the different outcome of this study compared to the referred US studies could be explained by the fact that Swedish MNCs face riskier international investments than their US competitors. Riskier investments result in a higher bankruptcy risk, which in turn means higher costs of capital. Therefore, Swedish companies may prefer to use retained earnings for financing international investments. Consequently they would use less debt financing. Even DCs use primarily retained earnings to finance investments, because of the fact that they are usually smaller than MNCs. Oxelheim (1996) mentioned that small companies rarely have direct access to foreign capital markets and that they are not able to meet required information needs for attracting interest when issuing bonds. This fact results in that they often face higher costs of capital than large companies, which is why they according to the first hypothesis should have lower D/E ratios than MNCs. Swedish MNCs are normally smaller than US MNCs, which could mean that they have less access to international financial markets. This could be a reason why Swedish MNCs have approximately the same D/E ratio as Swedish DCs.

Another possible explanation of the outcome could be that the increasing agency costs of MNCs are offset by decreasing bankruptcy costs. Consequently, the costs of capital would not change noteworthy with increasing international diversification. A further explanation could be cultural differences. Shapiro (1978) named that the close relationship between banks and companies in some countries reduces financial risk. Swedish companies have a closer relationship to their bank than US companies, which can explain why Swedish MNCs do not have lower D/E ratios than Swedish DCs, as was the case in the US studies. Contrary to the first hypothesis Swedish MNCs do not show higher D/E ratios than Swedish DCs on a significant level, which could be due to other cultural differences. Swedish companies are possibly more risk averse and do not want to finance investments by making as much debt as possible.

5.2 Analysis of hypothesis two

5.2.1 Research question and hypothesis

The aim of the second research question was to investigate if MNCs' D/E ratios change with the degree of internationalisation. MNCs' degree of internationalisation was defined in two way; as engagement in international trade and as international presence. Therefore the second research question was analysed by using two different hypotheses. International presence of Swedish MNCs were included in hypothesis three, which is presented under 5.3.1. Hypothesis two, which investigated international trade, was formulated as a one-sided hypothesis stating that MNCs with a high level of international trade have higher D/E ratios than MNCs with a low level of international trade. The sample was divided into two groups; one group showed MNCs with an FNI up to 50%, and the other group showed MNCs with an FNI above 50%. The results from the t-test and the non-

parametric test showed no significant difference between the D/E ratios of these two groups. Then FNI was divided into quarters and the mean values showed highest D/E ratios for MNCs with the lowest level of FNI. When the FNI reached above 50% a slight increase in its D/E ratio along with the increase in FNI could be seen. Any linear correlation between MNCs' D/E ratios and foreign net income could not be shown.

5.2.2 Theoretical connection and possible explanations

The results from the empirical study showed that there exists no significant difference between MNCs' debt ratios and their level of internationalisation. This result must be interpreted as the previous study made by Chen et al. (1997) in this area not being indisputably applicable to Swedish companies. However, the empirical study also showed that Swedish MNCs, which have the highest mean assets, also generate most of their net income from abroad. Those MNCs showed a slight tendency to have higher D/E ratios than those who earn only 50%-75% from abroad. Thus, this finding shows a tendency to what Chen et al. (1997) discovered, that within MNCs there exists a positive relationship between the level of international activities and the D/E ratio. Even if this finding shows a tendency that our expectation regarding the second hypothesis is correct, it could not be shown on a significant level. The fact that it could not be shown on a significant level is the reason why the interpretation of the study done by Chen et al. (1997) is not considered applicable to Swedish MNCs. The reasons named under 5.1.2 are also possible reasons why there exists no significant difference in the D/E ratio of Swedish MNCs.

Another explanation for the outcome of the empirical study is that Swedish MNCs are relatively small compared to US MNCs. As a result of their smaller size Swedish MNCs face more competition when they internationalise. Higher

competition, in turn, is combined with a higher risk of bankruptcy, and this would mean that Swedish MNCs have on average higher bankruptcy costs than US MNCs. According to Oxelheim (1997) high bankruptcy costs require more equity to reduce the probability of bankruptcy. Thus, Swedish MNCs would borrow less money and finance their international projects through equity.

Yet another explanation why Swedish MNCs did not show any significant correlation between the variables and no significant difference in their D/E ratios could be today's option of hedging transactions and financial assets and the Swedish membership of the European Union. When conducting the empirical study it was found out that most of the Swedish MNCs conduct their operations within the European Union and therefore use stronger currencies like the US dollar and the Euro in their foreign trade instead of the Swedish krona. The membership in the European Union also makes it easier for trade within the Union with no tariffs between countries and shared rules and regulations in all member states. Traditionally, Swedish exports go to a geographically close market, i.e. northern Europe. This could lead to a high correlation between foreign and domestic cash flows. According to Shapiro (1978) a high correlation between foreign and domestic cash flows could offset the positive effect that geographical diversification has on bankruptcy risk. As mentioned earlier, increased bankruptcy risk would result in companies using equity instead of debt when financing their projects. Thus, that northern Europe / the Euro zone is the primary market of Swedish MNCs could explain the empirical research's divergence from the study of Chen et al.

5.3 Analysis of hypothesis three

5.3.1 Research question and hypothesis

As mentioned above, the second research question was whether a difference in companies' D/E ratios can be explained by their degree of internationalisation. In this thesis two kinds of internationalisation were investigated. The first one, international trade, was included in the second hypothesis. A third hypothesis was formulated which included internationalisation in form of international presence. According to this hypothesis, MNCs with a high level of international presence should have higher D/E ratios than MNCs with a low level of international presence. In the empirical study international presence was measured by two different variables; FER and number of foreign subsidiaries. Therefore, two t-tests and two non-parametric tests were run, but none of these tests identified a significant difference in the D/E ratios of MNCs with high international presence or those with low international presence. Neither the mean results showed any noteworthy difference between the FER group from 0-50% and the FER group above 50%, however, the mean results for the number of foreign subsidiaries showed a lower D/E ratio for MNCs with more than ten foreign subsidiaries than those with less foreign subsidiaries. No significant correlation between D/E ratio and FER or D/E ratio and the number of foreign subsidiaries could be identified. As it was expected, FER and the number of foreign subsidiaries are relatively strongly correlated, and there is a strong linear correlation between FER and FNI. The strong correlation between FER and FNI can be explained by a high ratio of foreign employees which are employed by foreign subsidiaries, and not by the Swedish headquarters.

5.3.2 Theoretical connection and possible explanations

The outcome of the tests of the third hypothesis has to be interpreted as neither FER nor the number of foreign subsidiaries can explain the D/E ratio of Swedish MNCs. However, the mean results for the test of MNCs number of foreign subsidiaries are interesting to mention, because of the great difference among the

two groups. An explanation why Swedish MNCs with more than ten foreign subsidiaries have lower D/E ratios than those with fewer foreign subsidiaries, could be the uniqueness of their business. Sweden has natural resources like iron, zinc, ore, electrical power and forest, which several MNCs included in the empirical study work with. These lines of business demand certain technical skills, know-how, machines and infrastructures in their production processes. These skills in combination with the natural resources and infrastructure have over time formed a unique set of production prerequisites. This has allowed companies in related lines of businesses to become large international companies, e.g. Assi Domän and SKF. Due to unique production prerequisites, these companies have used competitive advantages to expand into market leaders. As such they do not face hard competition which, in turn, will reduce the probability of bankruptcy. This can be seen in accordance with the study made by Titman and Wessels (1988), which states that firms with unique and specialised products or lines of businesses have relatively lower debt ratios than other types of firms. However, this outcome could neither by the t-test nor by the non-parametric test be identified on a significant level, which is why it can only be classified as a tendency. Hence, the question remains why no significant difference in Swedish MNCs D/E ratios could be shown in the test of the third hypothesis.

The reasons mentioned under 5.1.2 and 5.2.2 can also explain why any significant difference could not be shown in this case. A further explanation can be that Swedish MNCs face higher liquidation costs than US MNCs. The power of trade unions in Sweden and even in the other EU member states, which are the main markets for most Swedish MNCs, and contracts, which determine minimum wages and period of notice, are possible reasons for higher liquidation costs of Swedish MNCs. Titman (1984) mentioned that a firm with high liquidation costs of employees and customers could reduce these costs by decreasing its D/E ratio. A lower D/E ratio would decrease the probability of bankruptcy and thus also the probability of liquidation. If Swedish MNCs have higher liquidation costs than US

MNCs, they could reduce their D/E ratio to decrease these costs; i.e. they would, *ceteribus paribus*, have lower D/E ratios than US MNCs.

5.4 Analysis of hypothesis four

5.4.1 Research question and hypothesis

The third research question (fourth hypothesis) was a resulting question of the first, and the aim was to see if the difference in D/E ratio between Swedish MNCs and Swedish DCs could be (better) explained by the presence of international ownership. This question was operationalised and processed statistically by formulating a one-sided hypothesis, suggesting a larger share of foreign owners would lead to a higher D/E ratio. This was in theoretical consensus with the previous one-sided hypotheses. The data was then processed against the D/E ratio in groups according to the size of D/E being below or above 20%. It was also processed as international vs. domestic companies. Both foreign ownership in terms of share of capital and of votes were measured to study if a difference could be seen.

In accordance with our reasoning in chapter three, a higher D/E ratio for companies with a higher degree of foreign ownership was expected to be found. As with the previous hypotheses, the results of the two parametric t-tests and the two non-parametric tests were found insignificant. Neither were there any significant correlation between the variables. The mean results for the groups, however, indicate that foreign ownership of both capital and votes were somewhat higher in companies with a D/E ratio of 20 % or below. When studying foreign ownership in terms of share of capital or votes, it was expected to find votes to have the larger impact, if any difference were to be found at all. The correlation between foreign

ownership of votes and foreign ownership of capital was very high, dismissing any remaining thought that it might make a difference which measure was used.

The expectation was also that the foreign ownership would differ significantly between MNCs and DCs. There was no significant correlation between foreign ownership of capital or votes and D/E ratios. Further, the differences indicated in the mean results were negligible and only indicated a difference between MNCs and DCs with slightly higher values of foreign ownership for DCs.

A consequence of the test results is that foreign ownership cannot be seen as a good explanatory factor of capital structure in Swedish companies.

5.4.2 Theoretical connection and possible explanations

In chapter three it was argued that a company's owner structure, especially when major owners are represented on the company board, can be of importance to the supply of risk capital (Carlsson 1997). That a certain type of owner is an asset to the company in its external contacts was also argued by Collin (1998), especially if (international) bank connections follow. Whether this is so, it appears not to have affected Swedish companies' leverage, nor the level of foreign investment in the company shares.

Another explanation as to why foreign ownership is not significant to the leverage can be ascribed the "professionalisation" of ownership, e.g. the global investment banks and institutions. Three things direct the power to management instead of owners according to Carlsson (1997); venture capital needs, competence needs and the external interested parties.

Venture capital needs – owner capital today is mainly supplied by professional / institutional owners instead of private owners. Their criteria for investment are usually to receive dividends and to see short term profit.

Competence needs – professional owners are normally not very familiar with the details of the business.

External interested parties – the owner is only one of several external interested parties that the management must consider.

Although simple, these are explanations as to why capital was favoured to votes in the mean results. Still, international recognition from owners cannot be used to explain the leverage of the Swedish companies.

Today the banking and finance industries are in a phase when expansion across borders increases, not the least in Europe. The globalisation of capital markets is creating giant financial institutions with access to local information and knowledge from local presence, which may explain that there is virtually no difference in foreign ownership between MNCs and DCs. The homogeneity between MNCs and DCs may also be ascribed the size and characteristics of the Swedish market. In an international perspective, Sweden has few large companies, meaning even the large companies are not large enough to benefit from e.g. recognition or contact networks.

Dahlquist and Robertsson (2001) argued that foreign ownership is lower in highly leveraged firms. Contrary to Dahlquist and Robertsson, it was argued that international recognition from increased foreign ownership would increase borrowing, and an international ownership structure would increase with the level of internationalisation. Even though previous studies are somewhat contradictory the results can be explained by risk aversion among foreign investors. This is also what Dahlquist and Robertsson argued, and their results showed a larger share of foreign ownership in companies with a low D/E ratio.

6.

Conclusions and Recommendations

This chapter gives a summary of the conclusions from the analysis of the results. Some reflections concerning the research will be provided as well as suggestions to further research.

6.1 Introduction

The conclusions are primarily based on the analysis of the results from the statistical tests presented in chapter four, but they are also influenced by the authors' subjective choice of methods in its realisation. Therefore, the reader should be aware of the risk of drawing premature conclusions. The conclusion given in this chapter should be seen as a summary of all indicators from the previous chapters.

6.2 Conclusions

The analysis started with the first hypothesis, of which the aim was to see if the companies showed any difference in their D/E ratio depending on if they were DCs or MNCs. The results showed no significant difference between Swedish DCs and MNCs regarding their D/E ratios. The following two hypotheses focused only on Swedish MNCs and different variables like FER and FNI ratios, which were used to explain differences in their D/E ratios. However, no significant results from the empirical study indicated any difference in the companies D/E ratios using the above mentioned variables. However, a slight tendency towards an increased D/E ratio for MNCs with a higher level of foreign net income could be found, but

MNCs with more than ten foreign subsidiaries showed a lower D/E ratio than those with fewer foreign subsidiaries. Finally, in the fourth hypothesis foreign ownership, in terms of capital and votes, was employed to see if any difference could be found between Swedish DCs' and MNCs' D/E ratios. Neither these results showed any significant difference in their D/E ratios.

In chapter five several reasons were given as to why the chosen variables do not explain differences in Swedish DCs' and MNCs' D/E ratios in the same way as previous studies on US companies. Among those were that Swedish MNCs face riskier investments abroad, that they have less access to foreign capital markets, that they have a higher correlation between foreign and domestic cash flows and that they are more risk averse than US MNCs. The main reasons behind these explanations were nearly always that Swedish MNCs are smaller than US MNCs, and therefore face other conditions in the process of internationalisation. Further, cultural differences with respect to risk propensity could explain the outcome of this thesis.

The smaller size of Swedish MNCs compared to US MNCs was the most important reason why the outcome of this thesis is different from previous US research in this area. It is therefore of interest to analyse why Swedish MNCs in general are smaller companies than US MNCs and how this fact influences capital decisions. A contributing reason why Swedish MNCs are smaller than US MNCs could be the fact that Sweden and the USA do not have the same tax legislation. The US tax system may give US companies a tax advantage by e.g. paying less tax and having more possibilities to make profit adjustments and allocations. In this case US companies could borrow more money to finance investment projects. Thus, they would grow faster than Swedish companies. Even if the Swedish tax legislation offers companies to partly deduct interest costs, it is not enough to meet the benefits of the US legislation.

Sweden as a member state in the EU has to follow the European Treaty, which does not always work in favour of growth opportunities for Swedish companies to become large MNCs. Article 81 and 82 draw lines regarding rules on competition within the EU. According to these two articles no company, whether in a dominant position or not, is allowed to make agreements which may affect trade between member states in a for consumers negative way. This includes fixed prices, limits or controls of production and division of markets. If any company within the EU would make an agreement which would infringe these articles it should automatically be void. As these two articles are mostly meant to work in favour of consumers, it has also worked in favour of companies situated outside the EU. For instance, two former Swedish manufacturers of vehicles (both lorries and passenger cars), which together had most of Scandinavia's sales market regarding lorries wanted to merge some years ago. The European Court came to the conclusion that these two companies were in a dominant position in manufacturing lorries in the Nordic region and therefore they were not allowed to merge. This resulted in that two of the US' largest vehicle companies bought the division of passenger cars in each company and thereby increased their sales market in both the USA and in Europe. This was enabled by the purchase being outside its home market, which was not the case for the Swedish companies.

Another reason could again be that the US market is much larger than the Swedish market. Because of this growth opportunity on a larger domestic market US companies are probably better prepared for growth outside USA. US companies who internationalise are in general larger than Swedish ones, which is why they face less tough competition on the global market place. As a result, their international investment projects are less risky than the ones of Swedish companies. The USA is divided into different states with their own rules and regulations for each state and on top of those, a constitution which all states have to follow. Thus, the US' states can be compared to the different countries in Europe, which also have their own rules and regulations. Moreover, within the EU, the

European Treaty works on top of each member states' legislation; i.e. seen from both a geographical, size and legislative view the EU is comparable to the USA. By looking at it this way, the definition of a Swedish MNC that does not have a foreign subsidiary located outside the EU can be compared to a US DC in previous studies. Thus, to make a better comparison with previous studies all companies listed on all stock exchanges within the EU should be included in the research population, as discussed under 6.3 (Reflections and further research).

Sweden has also not yet decided whether to confess to the EMU. This means that although Swedish companies have full access to the European market, there is still a lack in the European financial integration. This especially has competitive effects for companies acting within the EU since a lack in a financial integration means differences affecting interest rates as well as currency decisions. From a competitive point of view, Sweden would therefore largely benefit from a EMU membership.

These examples show the difficulties for Swedish companies to grow within the EU and can be seen as possible reasons why there are not very many large Swedish MNCs.

Another reason for the divergence of this study from previous ones could be a cultural difference in propensity of risk. As earlier mentioned, there is a closer relationship between banks and companies in Sweden, which should result in higher borrowing compared to US companies who do not have as close relationships to banks, but finance their investment projects primarily through stockholders. That Swedish companies are more risk averse than US companies could be explained by the amount of stockholders. A large amount of stockholders increases the propensity of risk for a company and vice versa. In general, Swedish companies have few stockholders, which could make them more risk averse than US companies. The Swedish stockholders' wealth would be negatively affected in

the case of bankruptcy, and as a result they do not want to finance investments by making as much debt as possible. The smaller amount of stockholders could be a reason why Swedish companies prefer to grow through retained earnings instead.

As for the influence of ownership on capital structure, there are two main issues to consider. First, professionalised owners through institutions has led to owners acting through agents and not participating directly. Today, the largest foreign investors in Swedish companies are US funds. The institutions are often global and therefore have access to local information, which then rejects the argument that MNCs would benefit from international recognition. Second, a risk aversion among foreign investors may explain the (somewhat) larger share of foreign ownership in companies with lower D/E ratios (DCs), as opposed to investing in MNCs with higher D/E ratios.

6.3 Reflections and further research

While working with this dissertation many questions appeared that in different ways were related to the purpose. One dealt with whether it was correct to base the research questions on research made on the US market, which is fundamentally different. The purpose was to investigate whether these globally acknowledged “truths” of internationalisations’ effect on leverage are valid on a market like Swedens’. This thesis contributes with the knowledge that the US based research may not be applicable to Swedish companies. Other questions that have been reflected upon concern issues for further research. These questions are presented here to give the reader an impulse of related areas to look into:

- As this thesis did not successfully identify variables affecting the capital structure of Swedish companies, there must be other possible variables that can describe

Swedish companies' leverage. It is also of interest to try to establish to what extent the factors affect the structure.

- As mentioned in section 6.2, to make a better comparison with previous studies all companies listed on all stock exchanges within the EU should be included in the research population. Further, the definition of MNCs should be changed to companies with headquarters within the EU having at least one subsidiary outside the EU. The rest of the companies would be defined as DCs. Under point 4.7 a table with FNI quarters was presented where MNCs with FNIs up to 25% have the highest D/E ratios. Further, there is a progressive increase in the D/E ratios of MNCs who earn more than 25% from abroad. According to the definition above, companies in the group up to 25% FNI would be classified as domestic companies. It might then be possible to identify a progressive increase in the MNCs D/E ratios with increasing levels of internationalisation, in compliance with the studies by Chen et al. (1997) and Lee and Kwok (1988).

6.4 Final Words

The research has been very interesting and of value to the authors. Hopefully it will contribute to an increased understanding of the complexity of internationalisation variables' effect on growth opportunities for Swedish companies. The complexity was recently and again brought up when the merger between two Swedish major banks was denied by the EU competition authorities. After all, becoming a major international player does not depend only on leverage, but also on the market on which you act, and not the least the size of it.

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ABBREVIATIONS

D/E **Debt – equity ratio**

DC **Domestic company**

FNI	Foreign net income ratio
FPI	Foreign pre-tax income ratio
FER	Foreign employee ratio
FS	Foreign subsidiaries ratio
GICS	Global Industry Classification Standard
MNC	Multinational company
SAX	Stockholm stock exchange
SCB	Statistics Sweden
TA	Total assets
ÅRL	Swedish reporting standards, Årsredovisningslagen

Correspondence with Mats Forsberg 27th - 28th April 2001

From: "Mats Forsgren" <mats.forsgren@fek.uu.se> Save Address - Block Sender
To: "Barbro Lundberg" <lundberg_barbro@hotmail.com> Save Address
Subject: RE: Klassificering av internationaliseringsgrad
Date: Sat, 28 Apr 2001 22:15:30 +0200
Reply Reply All Forward Delete Previous Next Close

Hej!

De vanligaste måtten är andel export, andel utlandsförsäljning, andelen investeringar utomlands och antal anställda utomlands. Tillförlitligaste måttet är det sistnämnda.

Mats Forsgren

-----Original Message-----

From: Barbro Lundberg [mailto:lundberg_barbro@hotmail.com]
Sent: Friday, April 27, 2001 1:51 PM
To: mats.forsgren@fek.uu.se
Subject: Klassificering av internationaliseringsgrad

Vi är tre studenter från Lunds Universitet som skriver vår magisteruppsats inom finansiering. För att besvara en av våra forskningsfrågor behöver vi klassificera de svenska listade bolagen (A, O) efter grader av internationalisering. Helst skulle vi vilja kunna klassificera ett antal som "domestika" (DC:s).

Våra handledare Karin Jonnergård och Niclas Andréén rekommenderade oss att kontakta dig som Sveriges främsta auktoritet på detta område. Hur skulle du rekommendera att vi går tillväga?

Vänliga hälsningar,
Lotta Björk, Nicole Jung, Barbro Lundberg
lundberg_barbro@hotmail.com

Below are examples of the reminder e-mails sent to the companies. This was written in Swedish because all companies were Swedish speaking, and no translation risk exists since the answers to the questions were in figures, not subjective judgements.

Till ekonomiavdelningen på



Vi är tre ekonomistudenter vid Lunds Universitet som skriver magisteruppsats inom finansiering. Ert företag (koncernen) har valts ut att ingå i vår studie och vi har kontaktat er tidigare, dock utan svar. Vi behöver data från fem år bakåt (1996 – 2000) och det finns inte alltid tillgängligt på internet. Vi behöver därför komplettera vår informationsinsamling med vissa uppgifter och skulle bli väldigt tacksamma om ni kunde svara på följande två frågor:

- Hur stor andel av koncernens intäkter har genererats utanför Sverige för åren 2000 respektive 1996 (Faktiska siffror inkl. export)?
- Vilka andra börser än Stockholmsbörsen är ni listade på?

Vänliga hälsningar,

Lotta Björk
Nicole Jung Nilsson
Barbro Lundberg

Till ekonomiavdelningen på



Vi är tre ekonomistudenter vid Lunds Universitet som skriver magisteruppsats inom finansiering. Ert företag (koncernen) har valts ut att ingå i vår studie och vi har kontaktat er tidigare, dock utan svar. Vi behöver data från fem år bakåt (1996 – 2000) och det finns inte alltid tillgängligt på internet. Vi behöver därför komplettera vår informationsinsamling med vissa uppgifter och skulle bli väldigt tacksamma om ni kunde svara på följande tre frågor:

- Hur stor andel av koncernens intäkter har genererats utanför Sverige för åren 2000, 1999, 1998, 1997 samt 1996 (Faktiska siffror inkl. export)?
- Vilka andra börser än Stockholmsbörsen är ni listade på?
- Hur stor andel av aktiekapitalet respektive rösterna är utlandsägda?

Vänliga hälsningar,

Lotta Björk
Nicole Jung Nilsson
Barbro Lundberg

	D/E ratio	FPI ratio	FPI ratio	Foreign	Foreign	Size	Size	C
--	-----------	-----------	-----------	---------	---------	------	------	---

Capital Structures and Internationalisation

		(pre-tax income)	(foreign employees)	ownership (% of capital)	ownership (% of votes)	(total assets)	(ln TA)
Nordifa	0,865	0,628	0,778	2,6	1,1	319,7	5,76738306
Affärsstrategerna i Sverige AB	0,089	0,000	0,000	5,8	2,6	177,7	5,18009674
Atlas Copco	0,427	0,974	0,898	30,2	31,1	50834,7	10,8363345
Biacore International AB	0,350		0,385	57,3	57,3	578,2	6,35991983
Beijer & Alma	0,369	0,537	0,204	2,0	1,4	959,8	6,86672493
Cardo	0,579	0,922	0,797	4,2	424	7238,7	8,88719691
Cloetta Fazer	0,352	0,482	0,489	31,2	32,3	3199,4	8,07071857
Technology Nexus AB	0,011	0,010	0,003	21,9	21,9	203,7	5,31664832
Cherryföretagen AB	0,036	0,301	0,127	20,7	27,0	123,6	4,81705055
Daydream Software	0,004	0,000	0,000	3,6	2,0	42,1	3,74004774
Drott AB	0,624	0,056	0,045	16,0	14,2	26435,3	10,1824555
SKF AB	0,565	0,952	0,867	38,3	23,4	37217,3	10,524529
Gambro	0,124	0,987	0,949	15,2	12,5	12405,8	9,42591938
Getinge Industrier	0,045	0,947	0,775	17,6	11,0	5611,9	8,63264462
Glocalnet	0,177	0,000	0,000			88,6	4,48413186
Icon Medialab	0,098			64,3	64,3	1204,9	7,09415185
Haldex	0,484	0,960	0,736	12,4	12,4	3815,0	8,24669594
Clas Ohlsson AB	0,044	0,244	0,172	27,5	29,3	384,6	5,95220383
Klippan AB	0,586	0,754	0,03	12,7	12,7	551,1	6,31191628
Rörvik Timber AB	0,584	0,396	0,000			712,5	6,56877991
Lundin Oil	0,311		0,963	41,0	44,6	2857,6	7,95773739
Lundberg	0,136	0,003	0,001	3,1	0,8	14648,4	9,59208639
Feel Good Svenska AB	0,461		0,01	21,1	21,1	160,3	5,07704706
Europolitan Holdings AB	0,258	0,000	0,000	80,8	80,8	3930,5	8,27652192
IBS AB	0,182	0,661	0,671	23,4	17,0	1421,2	7,25925686
Mandamus Fastigheter	0,741	0,050		11,7	11,7	5382,0	8,59081533
MultiQ International AB	0,160			25,1	25,1	93,3	4,53582011
Medivir	0,022			9,9	7,0	354,7	5,87127236
North Atlantic Natural Resources AB	0,000	0,000	0,000	45,1	45,1	81,3	4,39814602
NIBE Industrier AB	0,399	0,492	0,371	12,5	15,0	784,6	6,66517403
Närkes Elektriska AB	0,023	0,000	0,000	3,4	1,9	841,2	6,73482944
Opcon	0,405		0,000	36,6	36,6	196,2	5,27913455
AssiDomän	0,299	0,650	0,634	18,2	18,2	34785,0	10,4569415
PEAB	0,594	0,113	0,093	28,9	13,2	7126,0	8,87150535
Realia AB	0,819	0,006	0,000	19,6	13,2	4802,1	8,4768086
Sandvik AB	0,385	0,944	0,790	24,1	18,8	41903,3	10,6431199
Sapa AB	0,401	0,747	0,554	22,1		9259,5	9,13340533
Scandic Hotels AB	0,199	0,534	0,538	46,8	46,8	3275,4	8,09419528
SinterCast AB	0,015		0,660	45,2	47,1	105,1	4,65491228
Fagerhult ASB	0,344	0,424	0,099	0,5	0,5	672,7	6,51129947
SSAB Svenskt Stål AB	0,258	0,508	0,071	13,0	13,9	17899,0	9,79250012
Pronyx	0,402	0,157	0,085	3,3	3,3	90,7	4,50755736
Tricorona Mineral AB	0,243		0,000	6,4	3,2	95,4	4,55807858
Trio AB	0,062		0,736	64,1	64,1	196,8	5,28218798
Trelleborg AB	0,277	0,724	0,670	22,3	11,4	17174,3	9,75116936
Wedins Norden AB	0,534	0,218	0,270	28,6	12,8	631,4	6,44793958
VLT AB	0,189	0,000	0,000	16,6	8,0	524,7	6,26282667

D/E class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0,000 - 0,199	19	40,4	40,4	40,4
	0,200 - 0,399	12	25,5	25,5	66,0
	0,400 - 0,599	12	25,5	25,5	91,5
	0,600 -->	4	8,5	8,5	100,0
	Total	47	100,0	100,0	

Foreign owners % of capital D/E class Mean	Foreign owners % of votes Mean	Foreign D/E Total ratio Assets Mean	Foreign net income (%) Mean	Foreign employee ratio Mean	Number of foreign subsidiaries Mean
0,000 - 0,199 25,5	0,199 24,1	,085 2199,2	,263	,290	20,2
0,200 - 0,399 25,8	0,399 24,8	,320 10403,3	,529	,443	17,3
0,400 - 0,599 21,7	0,599 17,1	,502 9819,5	,619	,362	23,3
0,600 --> 12,5	--> 10,0	,762 9234,8	,185	,274	3,0

TA class

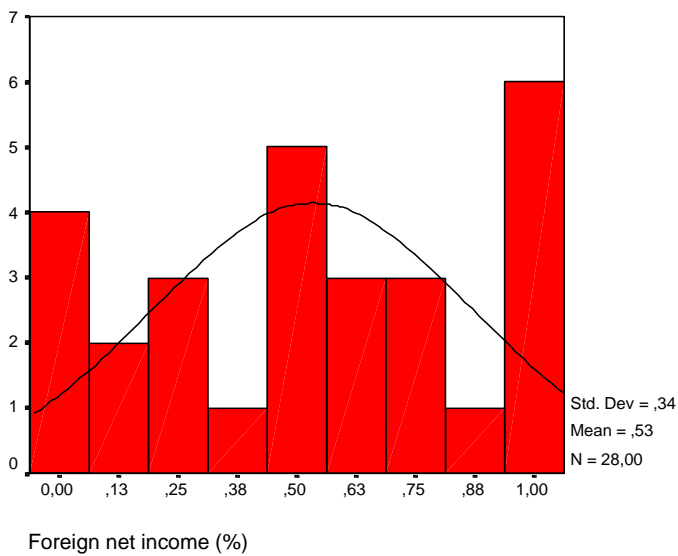
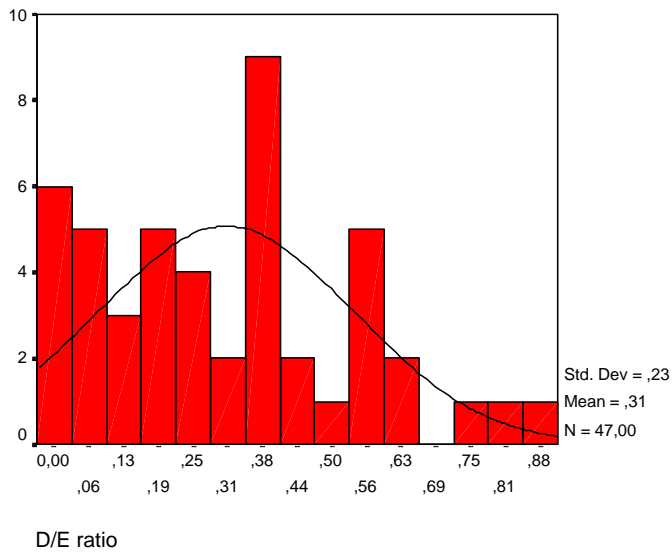
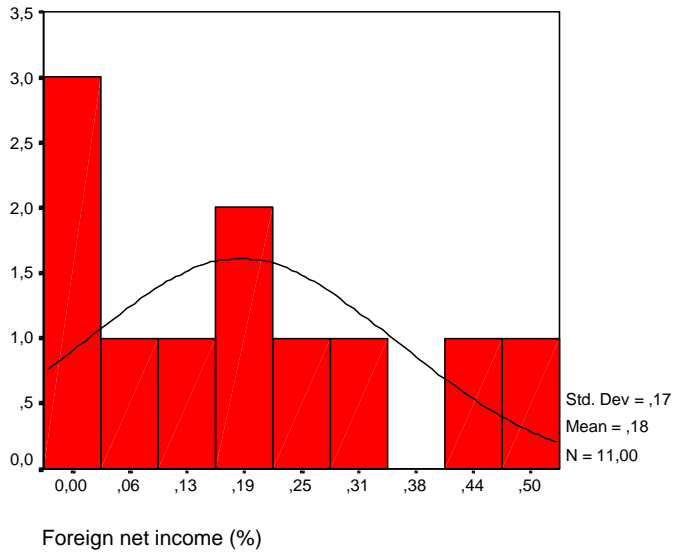
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0.0 - 99.9	6	12,8	12,8	12,8
	100.0 - 199.9	6	12,8	12,8	25,5
	200.0 - 499.9	4	8,5	8,5	34,0
	500.0 - 999.9	9	19,1	19,1	53,2
	1000.0 - 19999.9	17	36,2	36,2	89,4
	20000.0 ----	5	10,6	10,6	100,0
	Total	47	100,0	100,0	

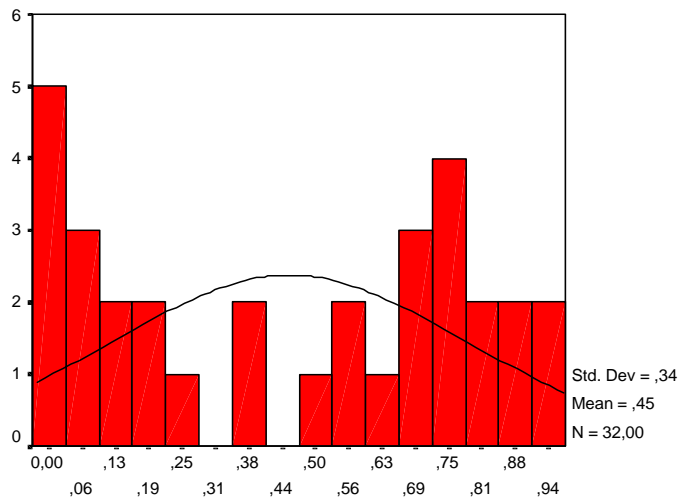
Foreign owners % of capital TA class Mean	Foreign owners % of votes Mean	Total D/E ratio Assets Mean	Foreign net income (%) Mean	Foreign employee ratio Mean	Number of foreign subsidiaries Mean
0.0 - 99.9 16,7	15,7	,164 81,9	,039	,017	,1
100.0 - 199.9 32,3	33,1	,178 160,0	,151	,256	1,9
200.0 - 499.9 15,5	14,8	,236 315,7	,294	,318	3,4
500.0 - 999.9 16,7	13,7	,375 695,1	,353	,151	9,0
1000.0 - 19999.9 26,9	24,4	,345 7132,5	,510	,530	33,4
20000.0 ---- 25,4	21,1	,460 38235,1	,715	,647	39,7

Business Sectors

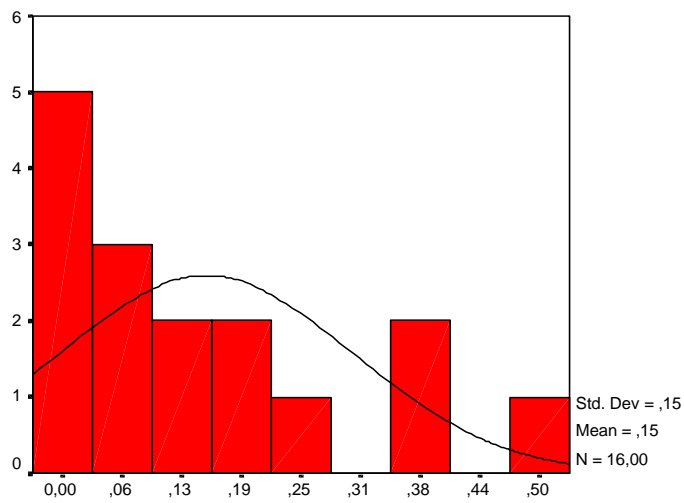
		Frequency	Percent	Valid Percent	Cumulative Perce
Valid	Energy	1	2,1	2,1	2
	Materials	7	14,9	14,9	17
	Industrials	14	29,8	29,8	46
	Consumer Discretionary	5	10,6	10,6	57
	Consumer Staples	1	2,1	2,1	59
	Health Care	5	10,6	10,6	70
	Real Estate	4	8,5	8,5	78
	Information Technology	8	17,0	17,0	95
	Telecommunication Services	2	4,3	4,3	100
	Total	47	100,0	100,0	

Foreign Number of foreign subsidiaries Business Mean	Foreign owners % of capital Sectors Mean	Foreign owners % of votes Mean	D/E ratio Total Mean	Foreign net income (%) Assets Mean	Foreign employee ratio Mean
Energy 19,7	41,0	44,6	,311 2857,6	.	,963
Materials 8,5	19,6	18,6	,339 9054,8	,509	,275
Industrials 24,1	18,8	15,6	,409 12084,9	,639	,497
Consumer Discretionary 12,7	28,0	24,8	,200 987,9	,259	,221
Consumer Staples 13,0	31,2	32,3	,352 3199,4	,482	,489
Health Care 73,8	24,2	21,8	,200 3822,2	,967	,530
Real Estate 1,1	12,6	10,0	,580 12817,0	,029	,015
Information Technology 6,2	26,4	25,0	,126 428,8	,166	,249
Telecommunication Services ,0	80,8	80,8	,218 2009,6	,000	,000

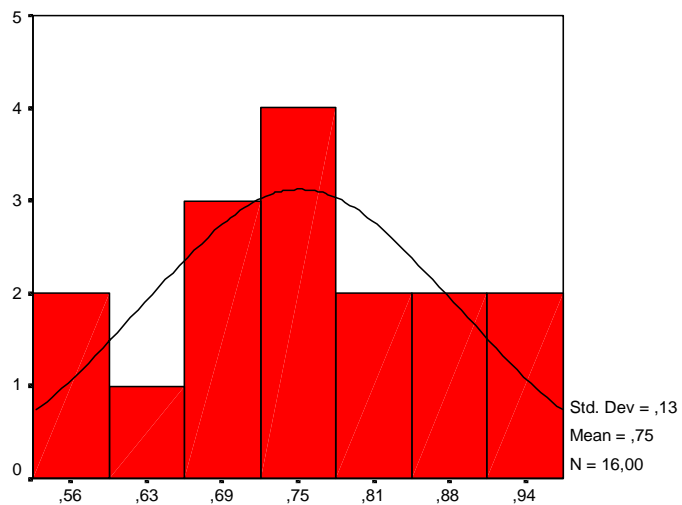




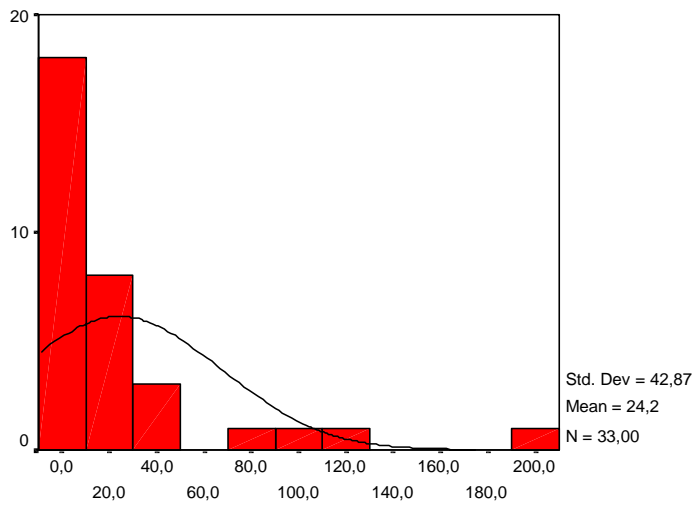
Foreign employee ratio



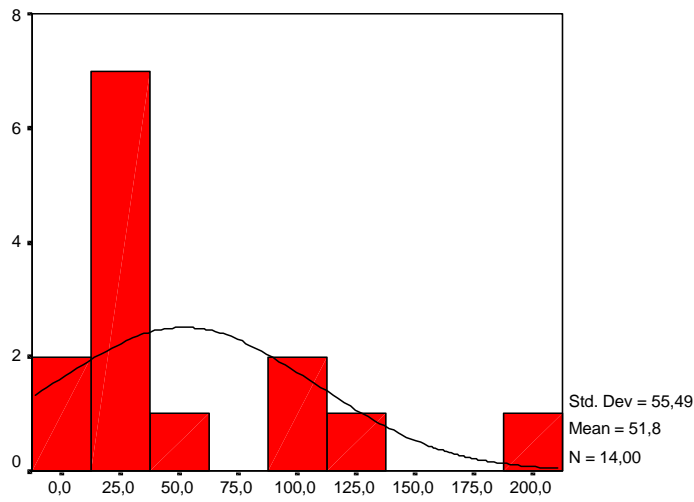
Foreign employee ratio



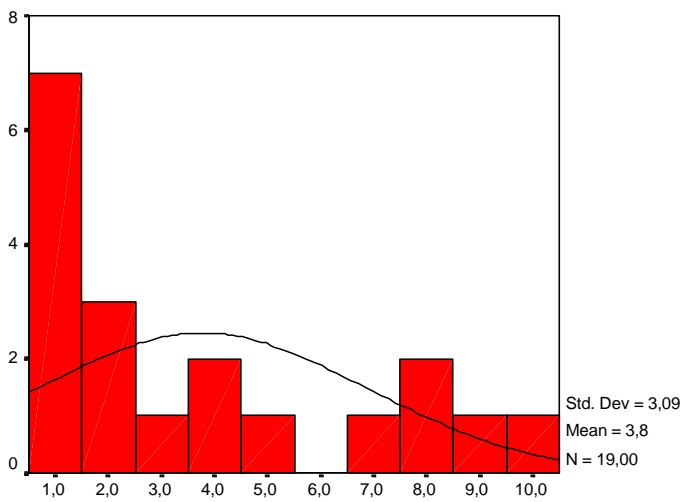
Foreign employee ratio



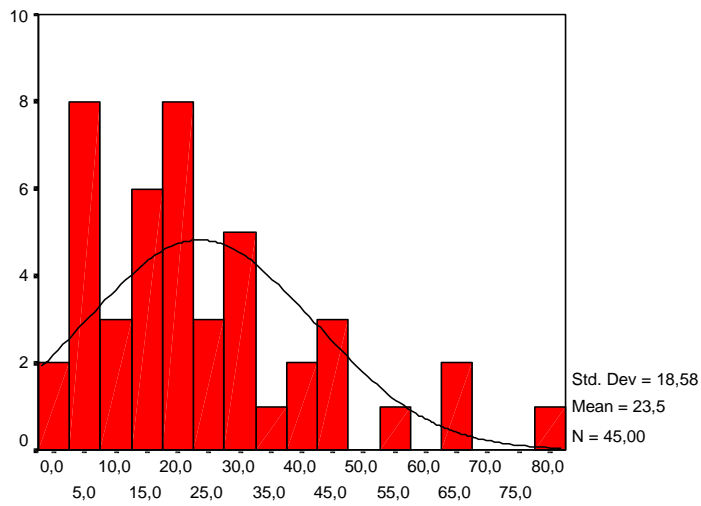
Number of foreign subsidiaries



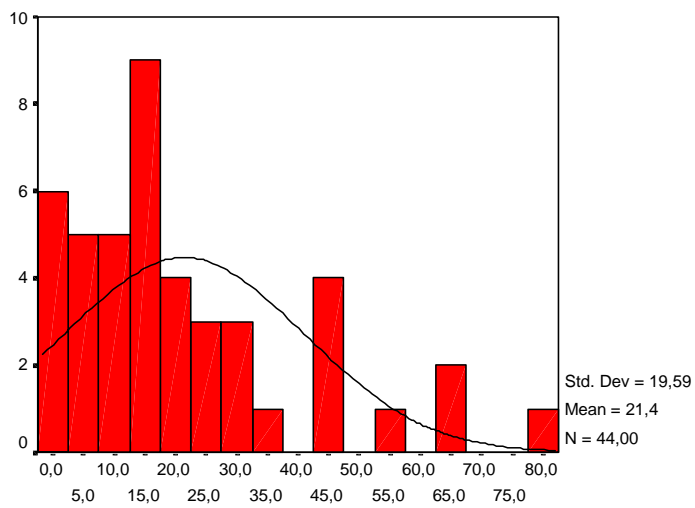
Number of foreign subsidiaries



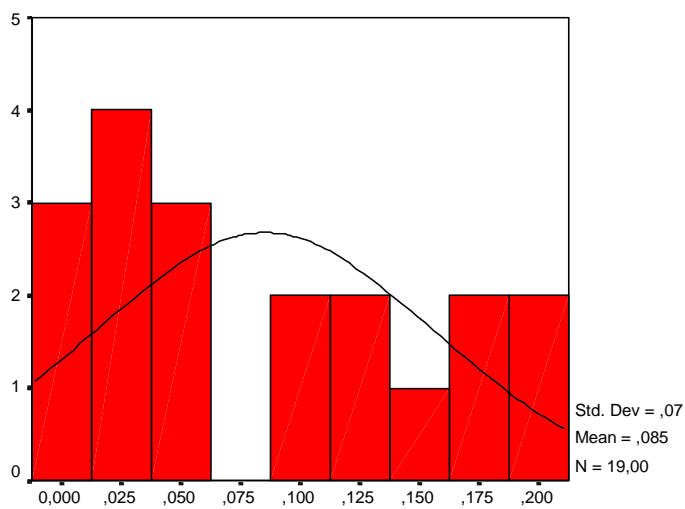
Number of foreign subsidiaries



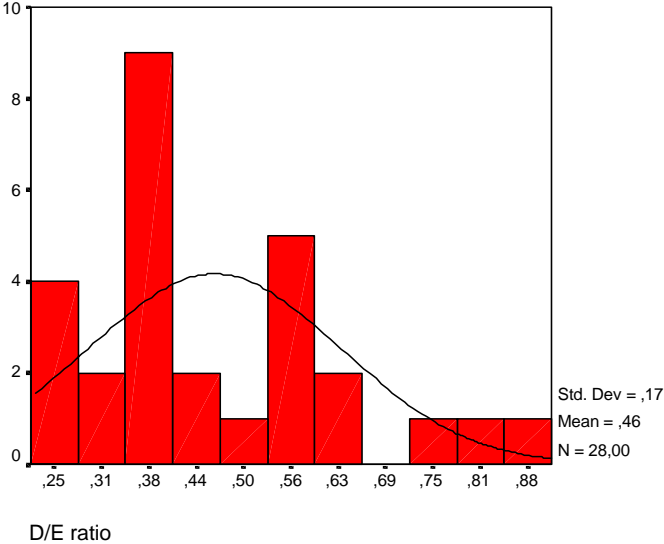
Foreign owners % of capital

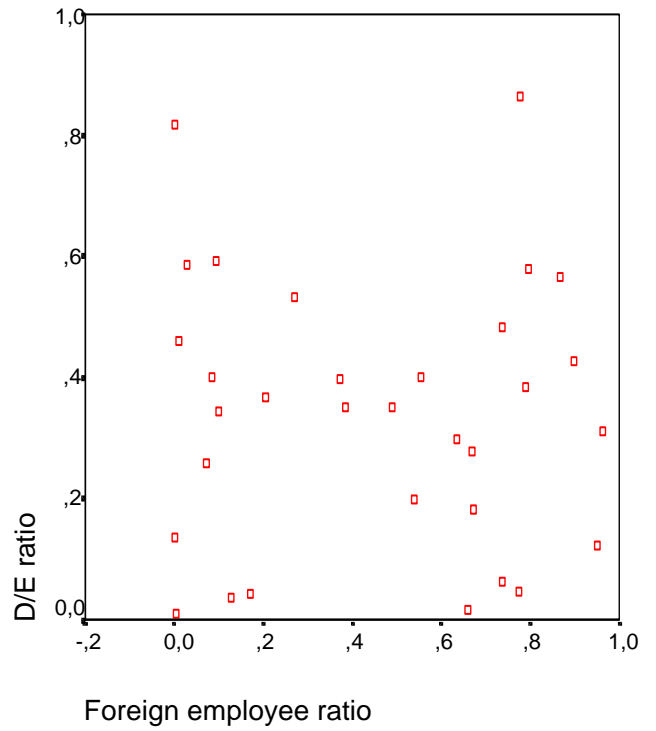
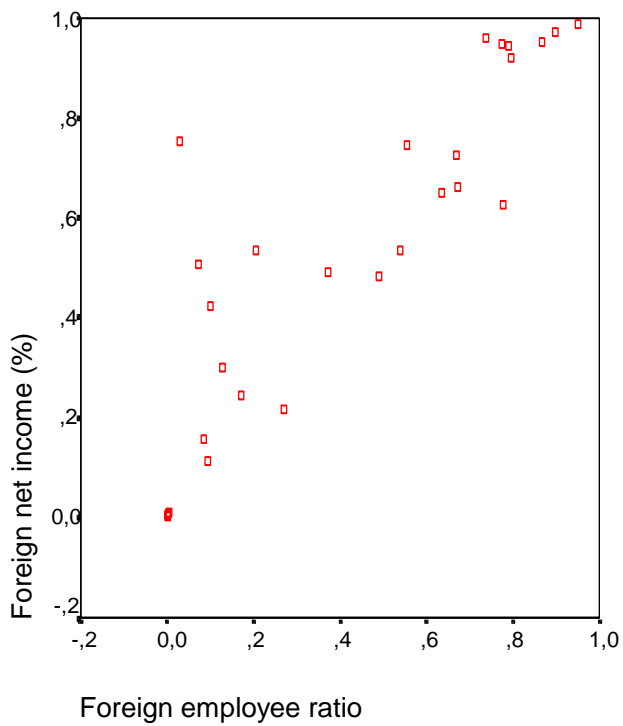
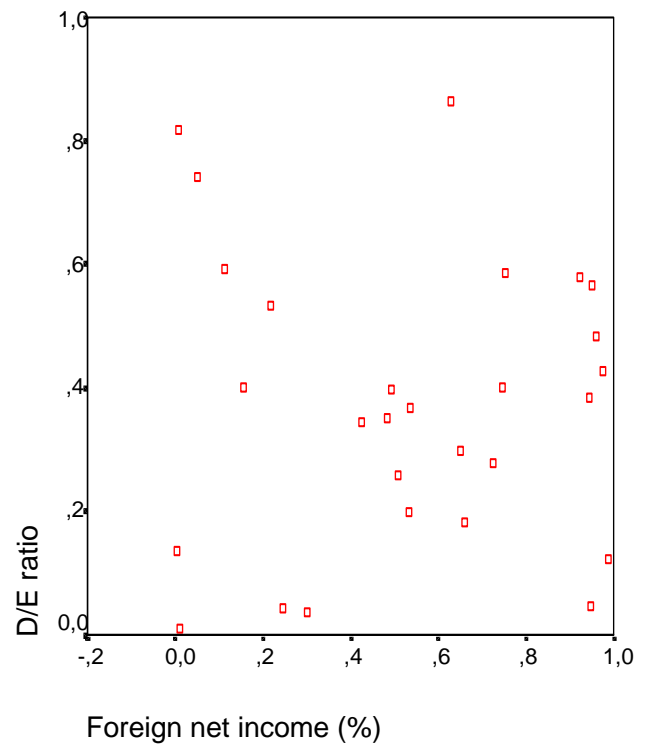
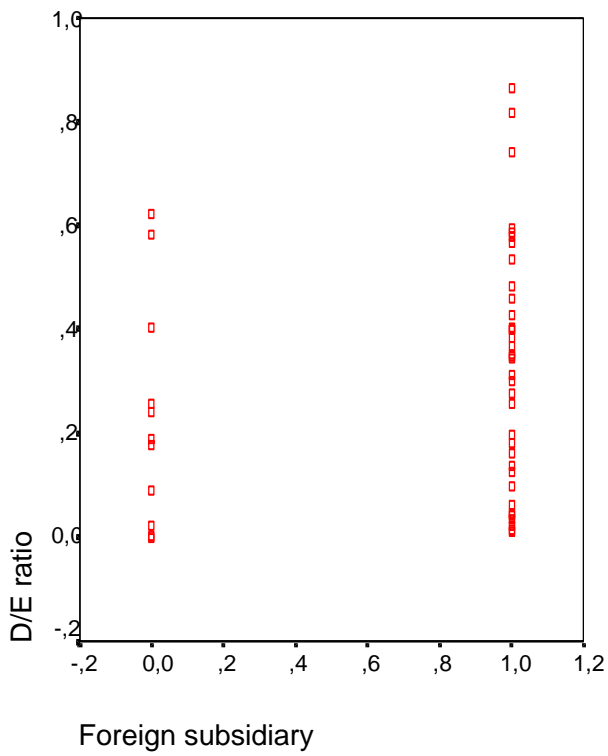


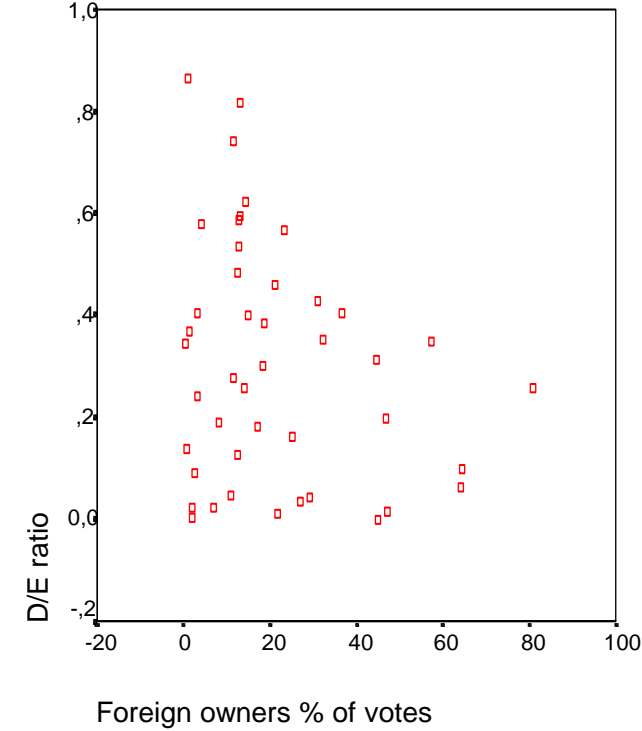
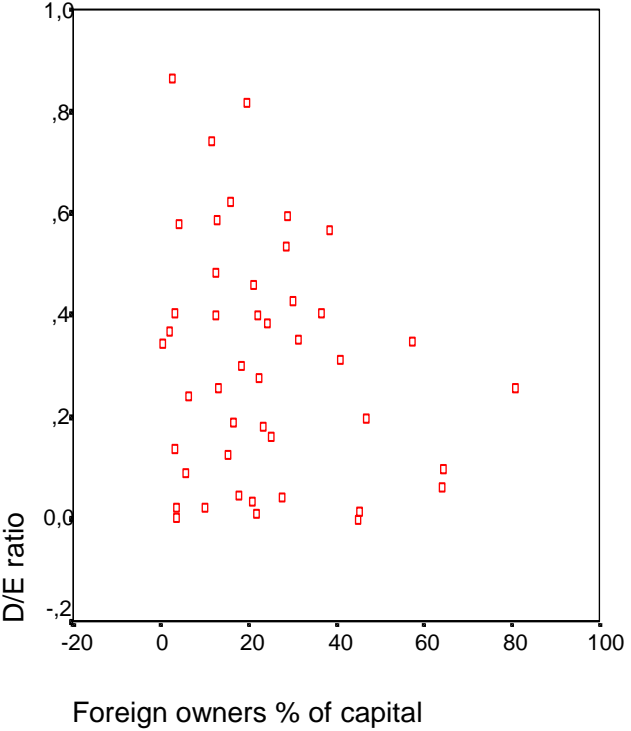
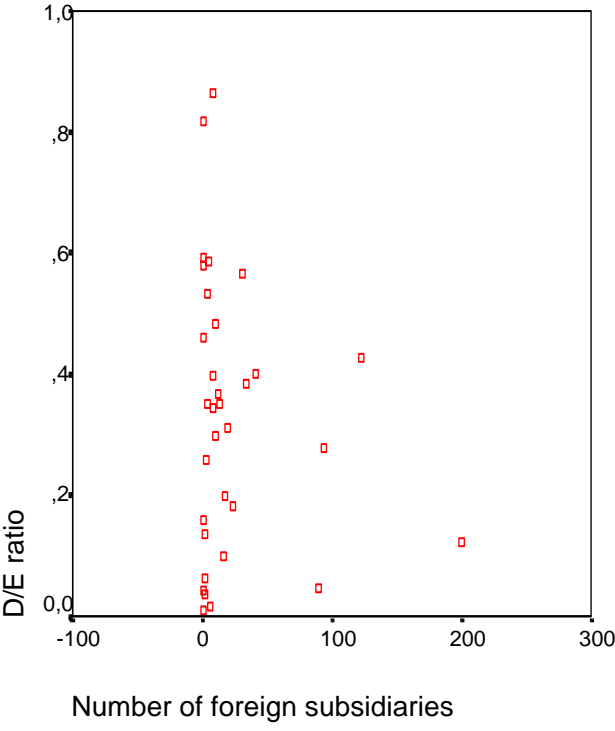
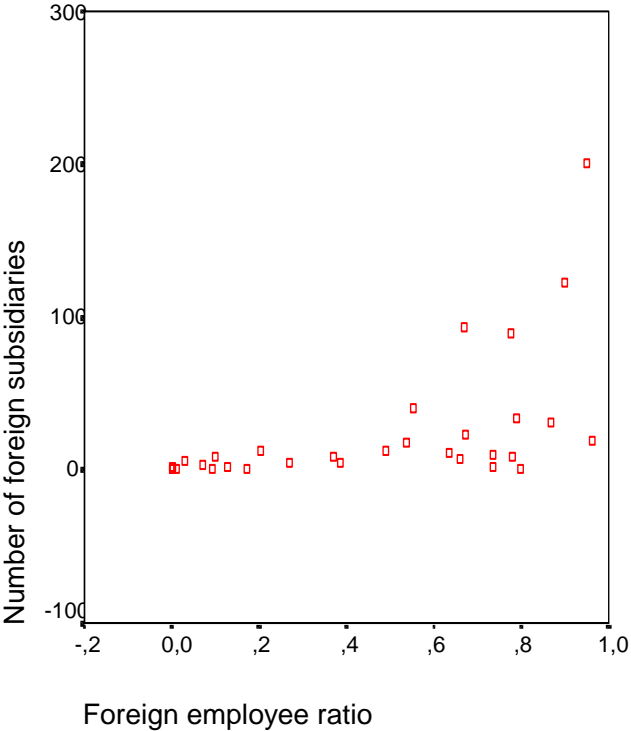
Foreign owners % of votes

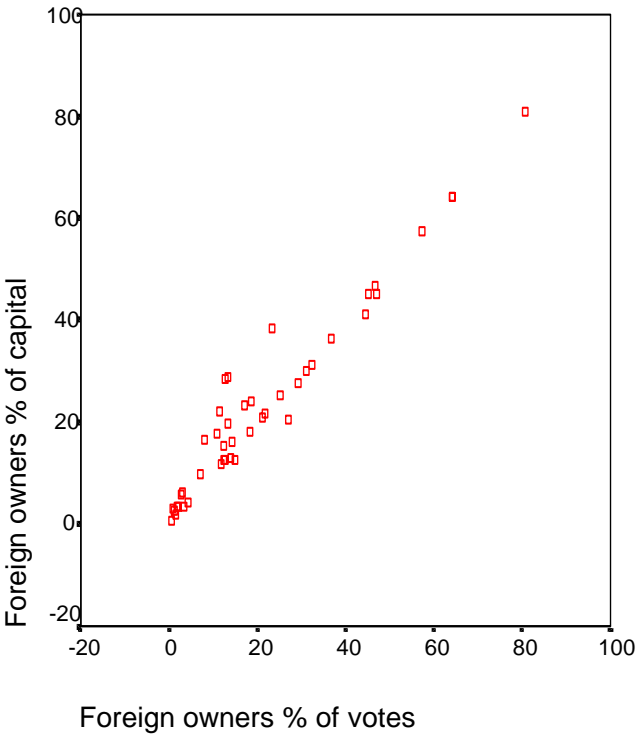


D/E ratio









T-tests

1st HYPOTHESIS

Group Statistics

	Foreign subsidiary	N	Mean	Std. Deviation	Std. Error Mean
D/E ratio	= MNC	36	,33156	,23222	3,8704E-02
	= DC	11	,23600	,21976	6,6259E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
D/E ratio	Equal variances assumed	,132	,718	1,209	45	,233	9,5556E-02	7,9069E-02	-6,36971E-02
	Equal variances not assumed			1,245	17,409	,230	9,5556E-02	7,6735E-02	-6,60517E-02

2nd HYPOTHESIS

Group Statistics

	Foreign net income groups	N	Mean	Std. Deviation	Std. Error Mean
D/E ratio	0% - 50%	12	,34650	,28407	8,2005E-02
	50.001% - 100%	16	,37629	,20116	4,8788E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower
D/E ratio	Equal variances assumed	2,772	,107	-,331	27	,743	-2,97941E-02	8,9903E-02	-,21426
	Equal variances not assumed			-,312	18,566	,758	-2,97941E-02	9,5421E-02	-,22983

3rd HYPOTESIS

Group Statistics

	Foreign employee groups	N	Mean	Std. Deviation	Std. Error Mean
D/E ratio	0% - 50%	16	,35594	,22327	5,5817E-02
	50.001% - 100%	16	,32625	,22837	5,7094E-02

Independent Samples Test

		Levene's Test for Equality of Variances	t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower
D/E ratio	Equal variances assumed	,071	,792	,372	30	,713	2,9688E-02	7,9845E-02	-,13338
	Equal variances not assumed			,372	29,985	,713	2,9688E-02	7,9845E-02	-,13338

Group Statistics

	Foreign subsidiary groups	N	Mean	Std. Deviation	Std. Error Mean
D/E ratio	0.3 - 10	19	,35458	,26995	6,1931E-02
	10.1 -->	14	,28814	,14434	3,8578E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower
D/E ratio	Equal variances assumed	6,745	,014	,835	31	,410	6,6436E-02	7,9582E-02	-9,58732E-02
	Equal variances not assumed			,911	28,697	,370	6,6436E-02	7,2963E-02	-8,28592E-02

4th HYPOTHESIS

Group Statistics

	Debt ratio groups	N	Mean	Std. Deviation	Std. Error Mean
Foreign owners % of capital	0 % - 20%	18	25,517	19,726	4,649
	20,001% -->	27	22,133	18,030	3,470

Independent Samples Test

		Levene's Test for Equality of Variances	t-test for Equality of Means					

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower
Foreign owners % of capital	Equal variances assumed	,480	,492	,594	43	,556	3,383	5,696	-8,104
	Equal variances not assumed			,583	34,261	,564	3,383	5,801	-8,403

Group Statistics

	Debt ratio groups	N	Mean	Std. Deviation	Std. Error Mean
Foreign owners % of votes	0 % - 20%	18	24,083	21,195	4,996
	25,001% -->	26	19,554	18,594	3,647

Independent Samples Test

		Levene's Test for Equality of Variances	t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower
Foreign owners % of votes	Equal variances assumed	1,243	,271	,750	42	,457	4,529	6,037	-7,654
	Equal variances not assumed			,732	33,479	,469	4,529	6,185	-8,047

assumed							
Group Statistics							
	Foreign subsidiary	N	Mean	Std. Deviation	Std. Error Mean		
Foreign owners % of capital	= MNC	36	23,406	16,698	2,783		
	= DC	9	23,811	26,053	8,684		

Independent Samples Test

		Levene's Test for Equality of Variances	t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
								Lower	
Foreign owners % of capital	Equal variances assumed	3,154	,083	-,058	43	,954	-,406	7,004	-14,531
	Equal variances not assumed			-,044	9,704	,965	-,406	9,119	-20,809

Group Statistics

	Foreign subsidiary	N	Mean	Std. Deviation	Std. Error Mean
Foreign owners % of votes	= MNC	35	21,357	17,578	2,971
	= DC	9	21,600	27,371	9,124

Independent Samples Test

		Levene's Test for Equality of Variances	t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower
Foreign owners % of votes	Equal variances assumed	3,443	,071	-,033	42	,974	-,243	7,407	-15,192
	Equal variances not assumed			-,025	9,761	,980	-,243	9,595	-21,694

Mann-Whitney Tests

1st HYPOTHESIS

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
D/E ratio	47	,30919	,23066	,000	,865
Foreign subsidiary	47	,77	,43	0	1

Ranks

	Foreign subsidiary	N	Mean Rank	Sum of Ranks
D/E ratio	= DC	11	19,50	214,50
	= MNC	36	25,38	913,50
	Total	47		

Test Statistics

	D/E ratio
Mann-Whitney U	148,500
Wilcoxon W	214,500
Z	-1,244
Asymp. Sig. (2-tailed)	,214
Exact Sig. [2*(1-tailed Sig.)]	,217

a Not corrected for ties.

b Grouping Variable: Foreign subsidiary

2nd HYPOTHESIS

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
D/E ratio	36	,33156	,23222	,011	,865
Foreign net income groups	28	1,59	,50	1	2

Ranks

	Foreign net income groups	N	Mean Rank	Sum of Ranks
D/E ratio	0% - 50%	12	14,17	170,00
	50.001% - 100%	16	15,59	265,00
	Total	28		

Test Statistics

	D/E ratio
Mann-Whitney U	92,000
Wilcoxon W	170,000
Z	-,443
Asymp. Sig. (2-tailed)	,658
Exact Sig. [2*(1-tailed Sig.)]	,679

a Not corrected for ties.

b Grouping Variable: Foreign net income groups

3rd HYPOTHESIS

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
D/E ratio	36	,33156	,23222	,011	,865
Foreign employee groups	32	1,50	,51	1	2

Ranks

	Foreign employee groups	N	Mean Rank	Sum of Ranks
D/E ratio	0% - 50%	16	17,19	275,00
	50.001% - 100%	16	15,81	253,00
	Total	32		

Test Statistics

	D/E ratio
Mann-Whitney U	117,000
Wilcoxon W	253,000
Z	-,415
Asymp. Sig. (2-tailed)	,678
Exact Sig. [2*(1-tailed Sig.)]	,696

a Not corrected for ties.

b Grouping Variable: Foreign employee groups

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
D/E ratio	36	,33156	,23222	,011	,865
Foreign subsidiary groups	33	1,42	,50	1	2

Ranks

	Foreign subsidiary groups	N	Mean Rank	Sum of Ranks
D/E ratio	0.3 - 10	19	17,79	338,00
	10.1 -->	14	15,93	223,00
	Total	33		

Test Statistics

	D/E ratio
Mann-Whitney U	118,000
Wilcoxon W	223,000
Z	-,546
Asymp. Sig. (2-tailed)	,585
Exact Sig. [2*(1-tailed Sig.)]	,602

a Not corrected for ties.

b Grouping Variable: Foreign subsidiary groups

4th HYPOTHESIS

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Foreign owners % of capital	45	23,487	18,581	,5	80,8
Debt ratio groups	47	1,60	,50	1	2

Ranks

	Debt ratio groups	N	Mean Rank	Sum of Ranks
Foreign owners % of capital	0 % - 20%	18	24,28	437,00
	20,001% -->	27	22,15	598,00
	Total	45		

Test Statistics

	Foreign owners % of capital
Mann-Whitney U	220,000
Wilcoxon W	598,000
Z	-,533
Asymp. Sig. (2-tailed)	,594

a Grouping Variable: Debt ratio groups

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Foreign owners % of votes	44	21,407	19,588	,5	80,8
Debt ratio groups	47	1,60	,50	1	2

Ranks

	Debt ratio groups	N	Mean Rank	Sum of Ranks
Foreign owners % of votes	0 % - 20%	18	23,61	425,00
	20,001% -->	26	21,73	565,00
	Total	44		

Test Statistics

	Foreign owners % of votes
Mann-Whitney U	214,000
Wilcoxon W	565,000
Z	-,477
Asymp. Sig. (2-tailed)	,633

a Grouping Variable: Debt ratio groups

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Foreign owners % of capital	45	23,487	18,581	,5	80,8
Foreign subsidiary	47	,77	,43	0	1

Ranks

	Foreign subsidiary	N	Mean Rank	Sum of Ranks
Foreign owners % of capital	= DC	9	21,00	189,00
	= MNC	36	23,50	846,00
	Total	45		

Test Statistics

	Foreign owners % of capital
Mann-Whitney U	144,000
Wilcoxon W	189,000
Z	-,511
Asymp. Sig. (2-tailed)	,610
Exact Sig. [2*(1-tailed Sig.)]	,625

a Not corrected for ties.

b Grouping Variable: Foreign subsidiary

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Foreign owners % of votes	44	21,407	19,588	,5	80,8
Foreign subsidiary	47	,77	,43	0	1

Ranks

	Foreign subsidiary	N	Mean Rank	Sum of Ranks
Foreign owners % of votes	= DC	9	19,89	179,00
	= MNC	35	23,17	811,00
	Total	44		

Test Statistics

	Foreign owners % of votes
Mann-Whitney U	134,000
Wilcoxon W	179,000
Z	-,684
Asymp. Sig. (2-tailed)	,494
Exact Sig. [2*(1-tailed Sig.)]	,510

a Not corrected for ties.

b Grouping Variable: Foreign subsidiary

Pearson correlation

Correlations measured among DCs and MNCs

		D/E ratio	Foreign net income (%)	Foreign employee ratio	Foreign owners % of capital	Foreign owners % of votes	Total Assets	Natural logarithm of TA
D/E ratio	Pearson Correlation	1,000	,205	,090	-,184	-,239	,221	,367
	Sig. (2-tailed)	,	,223	,565	,227	,119	,136	,011
	N	47	37	43	45	44	47	47
Foreign net income (%)	Pearson Correlation	,205	1,000	,894	-,038	-,056	,471	,534
	Sig. (2-tailed)	,223	,	,000	,830	,753	,003	,001
	N	37	37	36	35	34	37	37
Foreign employee ratio	Pearson Correlation	,090	,894	1,000	,159	,146	,470	,545
	Sig. (2-tailed)	,565	,000	,	,321	,368	,001	,000
	N	43	36	43	41	40	43	43
Foreign owners % of capital	Pearson Correlation	-,184	-,038	,159	1,000	,970	,003	,018
	Sig. (2-tailed)	,227	,830	,321	,	,000	,985	,906
	N	45	35	41	45	44	45	45
Foreign owners % of votes	Pearson Correlation	-,239	-,056	,146	,970	1,000	-,049	-,053
	Sig. (2-tailed)	,119	,753	,368	,000	,	,750	,732
	N	44	34	40	44	44	44	44
Total Assets	Pearson Correlation	,221	,471	,470	,003	-,049	1,000	,777
	Sig. (2-tailed)	,136	,003	,001	,985	,750	,	,000
	N	47	37	43	45	44	47	47
Natural logarithm of TA	Pearson Correlation	,367	,534	,545	,018	-,053	,777	1,000
	Sig. (2-tailed)	,011	,001	,000	,906	,732	,000	,
	N	47	37	43	45	44	47	47
Class	Pearson Correlation	,388	,526	,507	,082	,012	,612	,934
	Sig. (2-tailed)	,007	,001	,001	,593	,938	,000	,000
	N	47	37	43	45	44	47	47
Number of foreign subsidiaries	Pearson Correlation	-,059	,576	,555	-,029	-,080	,415	,457
	Sig. (2-tailed)	,703	,000	,000	,854	,619	,005	,002
	N	44	35	42	42	41	44	44
Foreign subsidiary	Pearson Correlation	,177	,576	,587	-,009	-,005	,176	,331
	Sig. (2-tailed)	,233	,000	,000	,954	,974	,236	,023
	N	47	37	43	45	44	47	47

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Correlations within MNCs

		D/E ratio	Foreign net income (%)	Foreign net income class	Foreign employee ratio	Foreign employee classes	Foreign owners % of capital	Foreign owners % of votes	Total Assets
D/E ratio	Pearson Correlation	1,000	-,017	-,002	-,029	,047	-,307	-,385	
	Sig. (2-tailed)		,930	,991	,873	,797	,069	,022	
	N	36	28	28	32	32	36	35	
Foreign net income (%)	Pearson Correlation	-,017	1,000	,967	,859	,841	,103	,086	
	Sig. (2-tailed)	,930		,000	,000	,000	,601	,671	
	N	28	28	28	27	27	28	27	
Foreign net income class	Pearson Correlation	-,002	,967	1,000	,765	,777	,057	,069	
	Sig. (2-tailed)	,991	,000		,000	,000	,775	,732	
	N	28	28	28	27	27	28	27	
Foreign employee ratio	Pearson Correlation	-,029	,859	,765	1,000	,973	,306	,273	
	Sig. (2-tailed)	,873	,000	,000		,000	,089	,137	
	N	32	27	27	32	32	32	31	
Foreign employee classes	Pearson Correlation	,047	,841	,777	,973	1,000	,221	,172	
	Sig. (2-tailed)	,797	,000	,000	,000		,225	,354	
	N	32	27	27	32	32	32	31	
Foreign owners % of capital	Pearson Correlation	-,307	,103	,057	,306	,221	1,000	,955	
	Sig. (2-tailed)	,069	,601	,775	,089	,225		,000	
	N	36	28	28	32	32	36	35	
Foreign owners % of votes	Pearson Correlation	-,385	,086	,069	,273	,172	,955	1,000	-
	Sig. (2-tailed)	,022	,671	,732	,137	,354	,000		
	N	35	27	27	31	31	35	35	
Total Assets	Pearson Correlation	,132	,469	,458	,411	,441	,006	-,066	1,
	Sig. (2-tailed)	,442	,012	,014	,019	,012	,972	,706	
	N	36	28	28	32	32	36	35	
Natural logarithm of TA	Pearson Correlation	,251	,471	,471	,421	,455	-,078	-,183	
	Sig. (2-tailed)	,140	,011	,012	,016	,009	,652	,294	
	N	36	28	28	32	32	36	35	
Class	Pearson Correlation	,279	,482	,488	,416	,450	,011	-,092	
	Sig. (2-tailed)	,099	,009	,008	,018	,010	,951	,601	
	N	36	28	28	32	32	36	35	
Number of foreign subsidiaries	Pearson Correlation	-,159	,558	,489	,536	,527	-,052	-,097	
	Sig. (2-tailed)	,378	,003	,011	,002	,002	,772	,597	
	N	33	26	26	31	31	33	32	

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Spearman's rho

Correlations measured among DCs and MNCs

		D/E ratio	Foreign net income (%)	Foreign employee ratio	Foreign owners % of capital	Foreign owners % of votes	Total Assets	Natural logarithm of TA
D/E ratio	Correlation Coefficient	1,000	,321	,168	-,117	-,135	,407	,407
	Sig. (2-tailed)		,052	,281	,444	,382	,005	,005
	N	47	37	43	45	44	47	47
Foreign net income (%)	Correlation Coefficient	,321	1,000	,908	,097	,107	,560	,560
	Sig. (2-tailed)	,052		,000	,580	,545	,000	,000
	N	37	37	36	35	34	37	37

Capital Structures and Internationalisation

Foreign employee ratio	Correlation Coefficient	,168	,908	1,000	,186	,181	,541	,541
	Sig. (2-tailed)	,281	,000	,	,243	,265	,000	,000
	N	43	36	43	41	40	43	43
Foreign owners % of capital	Correlation Coefficient	-,117	,097	,186	1,000	,934	,061	,061
	Sig. (2-tailed)	,444	,580	,243	,	,000	,690	,690
	N	45	35	41	45	44	45	45
Foreign owners % of votes	Correlation Coefficient	-,135	,107	,181	,934	1,000	-,008	-,008
	Sig. (2-tailed)	,382	,545	,265	,000	,	,957	,957
	N	44	34	40	44	44	44	44
Total Assets	Correlation Coefficient	,407	,560	,541	,061	-,008	1,000	1,000
	Sig. (2-tailed)	,005	,000	,000	,690	,957	,	,
	N	47	37	43	45	44	47	47
Natural logarithm of TA	Correlation Coefficient	,407	,560	,541	,061	-,008	1,000	1,000
	Sig. (2-tailed)	,005	,000	,000	,690	,957	,	,
	N	47	37	43	45	44	47	47
Class	Correlation Coefficient	,410	,547	,547	,158	,094	,970	,970
	Sig. (2-tailed)	,004	,000	,000	,300	,544	,000	,000
	N	47	37	43	45	44	47	47
Number of foreign subsidiaries	Correlation Coefficient	,166	,824	,824	,157	,062	,570	,570
	Sig. (2-tailed)	,281	,000	,000	,320	,702	,000	,000
	N	44	35	42	42	41	44	44
Foreign subsidiary	Correlation Coefficient	,183	,669	,719	,077	,104	,345	,345
	Sig. (2-tailed)	,217	,000	,000	,615	,501	,018	,018
	N	47	37	43	45	44	47	47

** Correlation is significant at the .01 level (2-tailed).

* Correlation is significant at the .05 level (2-tailed).

Correlations within MNCs

		D/E ratio	Foreign net income (%)	Foreign net income class	Foreign employee ratio	Foreign employee classes	Foreign owners % of capital	Foreign owners % of votes	Total Assets
D/E ratio	Correlation Coefficient	1,000	,033	,049	,000	,054	-,239	-,333	,2
	Sig. (2-tailed)		,866	,805	,999	,771	,161	,051	,1
	N	36	28	28	32	32	36	35	
Foreign net income (%)	Correlation Coefficient	,033	1,000	,963	,847	,824	,123	,071	,4
	Sig. (2-tailed)	,866		,000	,000	,000	,534	,727	,0
	N	28	28	28	27	27	28	27	
Foreign net income class	Correlation Coefficient	,049	,963	1,000	,755	,769	,041	,032	,4
	Sig. (2-tailed)	,805	,000		,000	,000	,836	,874	,0
	N	28	28	28	27	27	28	27	
Foreign employee ratio	Correlation Coefficient	,000	,847	,755	1,000	,962	,284	,183	,3
	Sig. (2-tailed)	,999	,000	,000		,000	,116	,324	,0
	N	32	27	27	32	32	32	31	
Foreign employee classes	Correlation Coefficient	,054	,824	,769	,962	1,000	,230	,110	,4
	Sig. (2-tailed)	,771	,000	,000	,000		,205	,555	,0
	N	32	27	27	32	32	32	31	
Foreign owners % of capital	Correlation Coefficient	-,239	,123	,041	,284	,230	1,000	,904	-,0
	Sig. (2-tailed)	,161	,534	,836	,116	,205		,000	,9
	N	36	28	28	32	32	36	35	
Foreign owners % of votes	Correlation Coefficient	-,333	,071	,032	,183	,110	,904	1,000	-,1
	Sig. (2-tailed)	,051	,727	,874	,324	,555	,000		,3
	N	35	27	27	31	31	35	35	
Total Assets	Correlation Coefficient	,262	,471	,481	,376	,440	-,002	-,147	1,0
	Sig. (2-tailed)	,123	,011	,010	,034	,012	,989	,399	
	N	36	28	28	32	32	36	35	
Natural logarithm of TA	Correlation Coefficient	,262	,471	,481	,376	,440	-,002	-,147	1,0
	Sig. (2-tailed)	,123	,011	,010	,034	,012	,989	,399	
	N	36	28	28	32	32	36	35	
Class	Correlation Coefficient	,278	,485	,497	,442	,500	,125	-,011	,9
	Sig. (2-tailed)	,101	,009	,007	,011	,004	,468	,952	,0
	N	36	28	28	32	32	36	35	
Number of foreign subsidiaries	Correlation Coefficient	-,013	,746	,649	,686	,708	,100	-,027	,5
	Sig. (2-tailed)	,942	,000	,000	,000	,000	,581	,884	,0
	N	33	26	26	31	31	33	32	

** Correlation is significant at the .01 level (2-tailed).

* Correlation is significant at the .05 level (2-tailed).

PARTIAL CORRELATION COEFFICIENTS

Controlling for.. ASSETS SECTOR

	DEBTRATE NO.SUB	FNI	FER
DEBTRATE	1,0000 -,2155 (0) (22) P= , P= ,312	-,0553 (22) P= ,798	,0721 (22) P= ,738
FNI	-,0553 ,5920 (22) (22) P= ,798 P= ,002	1,0000 (0) P= ,	,8486 (22) P= ,000
FER	,0721 ,5412 (22) (22) P= ,738 P= ,006	,8486 (22) P= ,000	1,0000 (0) P= ,
NO.SUB	,5412 (22) (0) P= ,312 P= ,	-,2155 1,0000 (22) P= ,002	,5920 (22) P= ,006

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

PARTIAL CORRELATION COEFFICIENTS

Controlling for.. ASSETS SECTOR

	<u>DEBTRATE</u>		<u>SUBSIDIA</u>
	<u>CAPITAL</u>		<u>VOTES</u>
DEBTRATE	1,0000 -,2130 (0) (40) P= , P= ,176	,1884 (40) P= ,232	-,1651 (40) P= ,296
SUBSIDIA	,1884 ,0101 (40) (40) P= ,232 P= ,949	1,0000 (0) P= ,	,0001 (40) P= ,999
CAPITAL	1,0000 (40) (40) P= ,296 P= ,000	-,1651 ,9702 (40) P= ,999	,0001 (0) P= ,
VOTES	-,2130 1,0000 (40) (0) P= ,176 P= ,	,0101 (40) P= ,949	,9702 (40) P= ,000

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed