

Shareholder loans in Swedish private equity

A study of the financial implications of shareholder loans in companies owned by private equity

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Abstract

In recent years, shareholder loans have been a debated subject in Sweden. However, no independent research into the subject has been done. This paper analyses the presence of shareholder loans in companies owned by private equity funds in Sweden.

We find that shareholder loans are common. 82 percent of all companies acquired by private equity funds in 2010 and 2011 used shareholder loans as part of their financial structure. The interest rate on shareholder loans is on average 10 percent in the analysed data sample.

By combining the findings in our dataset with previous research on capital structure and returns from private equity funds we find that shareholder loans on average represent approximately 8 percent of total returns.

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1 Introduction

In the last three decades, private equity has become a common ownership form for companies in a wide variety of industries. In Sweden, private equity firms have been criticised for using shareholder loans with high interest rates in order to lower corporate taxes. Studies have been conducted on the financial impact that tax shields have on external debt in leveraged buyouts. However no similar independent studies have been conducted on the presence and impact of shareholder loans in Swedish private equity owned companies.

The objective of this study is to determine how common shareholder loans are in Swedish companies owned by private equity, how high the interest rate is on these loans and how much the shareholder loans impact the total return of the investments.

This study combines results from previous research with findings from a uniquely collected data set in order to develop a framework for analysing the financial impact on shareholder loans.

1.1 Summary of findings

We find that shareholder loans are, in fact, common in Swedish private equity owned companies. Approximately 80 percent of all companies acquired by private equity in 2010 and 2011 were partly financed with shareholder loans. This represents a significant increase to previous years and indicates that shareholder loans have increased in popularity.

On average, the observed interest rates on shareholder loans are 10 percent; however the interest rates vary significantly between companies. We have not been able to identify the reasons for this, but some potential explanations include:

- Varying credit risks in different companies motivate different risk premiums.
- Corporate interest rates vary over time, both because of variations in the pricing of risk and because of variations in the repo rate. The varying rates could be explained by the fact that companies have been acquired in different periods of time.
- Lack of clear guidelines from Swedish Tax Agency (STA), regarding what constitutes an acceptable interest rate on shareholder loans, can cause companies to apply different interest rates.

We have developed a framework which combines our findings on the interest rate with previous research on the rate of return, in order to determine the impact of shareholder loans on the internal rate of return ("IRR") for private equity funds. Our findings indicate that the impact of shareholder

loans on IRR varies significantly, depending on the interest rate on the shareholder loans and the holding period.

2 Background

2.1 A brief background to private equity companies

Leverage buyout firms, more commonly known as private equity (PE) firms, are specialised investment firms that use a large portion of debt relative to equity financing. Typically, these firms invest in existing and mature businesses, where they believe economic value can be created through favourable market conditions and improved operational efficiency (Kaplan and Strömberg [2009]). In order to be able to implement many of the necessary strategies, the majority of the shares of the business are often acquired. The term leveraged buyout comes from the fact that the acquisitions are financed with a large proportion of debt, hence the expression leveraged buyouts. The equity part is raised through a fund, to which investors commit investment capital. The investors can be wealthy individuals or institutional investors (referred to as Limited Partners). However, the rest is raised through debt. The private equity funds are organised as limited partnerships with General Partners managing the fund with a typical investment horizon of ten years.

Research has shown that private equity firms do, in fact, add real value (see for example Kaplan and Strömberg [2009]; Bergström, Grubb and Jonsson [2007]). Despite this, the private equity business is often portrayed in media as companies that rely heavily on market timing, superior information and tax avoidance strategies in order to create returns (see 2.3). In Sweden, where private equity firms have been involved in the privatisation of the welfare sector, the tax avoidance strategies used by private equity firms have received a lot of attention lately (Ringström [2012]).

2.2 Swedish tax legislation on cross-border internal loans before January 2013

The issue of Transfer Pricing with its cross border transactions and lack of clear guidance is a complex area. While the rules on transfer pricing are not always that unequivocal and straightforward, STA need to preserve the national tax base (Skatteverket 2012). According to STA, tax optimisation, as well as tax avoidance, in a leveraged buyout rest on two cornerstones. First, the acquisition is financed by shareholder loans and external loans to the Swedish holding company. The so called “push down” technique is used to create tax deductible expenses in order to erase the taxable income within the group. The other part is to make sure to channel the interest income into parent

companies located in countries where interest income is taxed at a low rate or not taxed at all, such as Jersey, Guernsey or Luxemburg. According to STA, this is done by charging artificially high interest rates, up to 15 percent (see Section 2.5 for further details on how shareholder loans are incorporated into the financing).

2.2.1 The OECD Guidelines and the Swedish national Tax Act

Sweden has adopted the view of the OECD transfer pricing guidelines (RÅ [1991]). Although the OECD guidelines are not legally binding, they provide guidance on the application of the essential “arm’s length principle” for the valuation for tax purpose of cross border transaction between associated enterprises (OECD [2012]). Thus, the guidelines help to establish how cross-border intra-group transactions should be priced. Since the guidelines are not binding, each country may have its own interpretation of what is regarded as arm’s length pricing in intra-group financing. The principle aims to prevent taxable profits being artificially shifted out of the country’s jurisdiction. Internal financing through shareholder loans distinguishes itself from external financing.¹ Although the interest rate is deductible in both cases, the interest due to intra-group financing will stay within the group and hence profits can be transferred into countries with lower corporate income tax. To counteract the possibility of companies moving taxable profits into countries with low or no taxation by applying an artificially high interest rate, the arm’s length principle aims should provide guidance on this matter. The interest rate should be comparable to what two independent parties would agree on.

The arm’s length principle is found in Chapter 14 of the Swedish Income Tax Act (Inkomstskattelagen). If, for example, the interest rate deviates from an interest rate that would otherwise have been set between two unrelated parties, the rule called *Korrigeringsregeln* gives STA the right to make adjustments. *Korrigeringsregeln* is only applicable on cross-border transactions (Skatteverket [2010]). Basically, the rule states that if profits turn out to be lower than if the parties were unrelated, the profit should be adjusted upwards. However, OECD Transfer Pricing Guidelines only serve as a basis for interpretation and are not very specific in this area, neither is the Swedish tax law. Instead, inferior courts should primarily obey precedent that has been established by courts higher up in the hierarchy of their jurisdiction. In the area of interest rate on internal loans, the so called *Diligentia* case, ruled by the Supreme Administrative Court, has received more attention than other cases (RÅ [2010]).

¹ Also to prevent double taxation

2.2.2 Arm's length interest

In order to decide whether the interest on shareholder loans is set at arm's length, one should decide what factors to take into consideration. There are several factors that complicate the issue when it comes to deciding the interest rate; whether the interest rate is fixed or variable, the duration of the loan, the structure and subordination of the loan etcetera (Berk and DeMarzo [2007]). One important aspect is the credit worthiness of the companies involved and how to deal with implicit support. Implicit support implies that a subsidiary would expect financial support from its parent company. The fact that a parent company has an interest in saving its subsidiary from financial distress increases credit worthiness of the subsidiary. Hence there is a lower risk of bankruptcy and, therefore, the interest rate at which it can receive a loan will be lower as well. In the *Diligentia* case, the Supreme Administrative court tested whether interest rate at arm's length should be influenced by the fact that the creditor and debtor were related parties (RÅ [2010]). This particular case concerned an intra-Sweden transaction and the court found that due to the fact that the creditor had insight and control over the debtor, the credit risk was lower, thereby also the interest rate should have been lower. The company was not allowed to make full deductions for their interest costs, as the court ruled the interest rate to be too high. Although it has been unclear whether the same principles should apply for cross-border transactions, after the court ruled the *Diligentia* case in June 2010, STA has claimed that this was the case. This stood in contrast to one way of interpreting the separate entity approach, namely that one should disregard any interest rate adjustments due to implicit support. In other words, each entity in a group should be recognised as a separate legal entity without the influence of each other. In the particular case of *Diligentia*, the arm's length interest rate was influenced by the fact that both companies were related. The way of adjusting the interest rate because of the implicit support is another way of applying the separate entity approach.² Although there has not been any clear cut interpretation of the OECD Transfer Pricing Guidelines, the Swedish tax authority has used the *Diligentia* case in order to show that interest on internal loans should be set at a lower rate than external loans because of the insight and control a parent company have in relation to its subsidiary (STA 2012), a stand point that has been criticised and tried in several court cases with contradictory outcomes (again, see Note 2).

² In the *Attendo* case, different interpretations of the OECD guidelines, and thus different judgments, were made. In the first case, the Administrative Court ruled in favour of the Swedish Tax Agency whereas in the second case, the court ruled in favour of the company. However, in the second case, the court referred to the separate entity approach explaining that each company in a group should be treated on a stand-alone basis. Further on it stated that the way in which the Swedish Tax Agency used intra-group transactions as basis for comparison constitutes a violation of the OECD guidelines.

2.3 Private equity's response to critique against shareholder loans

The Swedish Tax Agency has been investigating the occurrence of tax avoidance among private equity firms. In one report, that succeeded other similar STA reports and findings, (Skatteverket, [2012]) STA scrutinised companies within the welfare sector plus pharmacies and claimed that few of the investigated companies paid any corporate taxes, much due to the utilisation of shareholder loans. Jonsson [2005] points out the fact that many large buyout auctions have in fact become internal rate of return auctions, where the private equity firm which can accept the lowest rate of return will win. Minimising taxes increase the return of the investment for the private equity fund investor and thus their competitiveness. Therefore, tax planning has become an integral part of the transaction structure. since shareholder loans create tax deductible interest expenses.

Private equity firms have, however, defended themselves in media from the criticism against the industry and advocated the importance and role that private equity firms play in today's market economy. For example, Gabriel Urwitz, founder of Segulah, a Swedish private equity firm, published an article in a Swedish newspaper where he argued for the importance of private equity in today's economy (Urwitz [2011]). He stressed the role of managing money for institutional investors and adding value through active management. Further on, when commenting on the tax matters, he stated that no one likes paying more taxes than necessary. According to him, debt structures that limit tax expenses, such as shareholder loans, should be expected since they are legal. Urwitz further claimed that private equity owned companies, on the contrary, have limited opportunities to make tax deductions since all portfolio companies are isolated to protect other investments, if one company should experience financial distress.

After the Swedish Television aired a documentary about Carema Care, a subsidiary to Ambea owned by KKR and Triton, the debate around private equity increased in intensity (Sveriges Television [2011]). The documentary portrayed how the management was, supposedly, chasing bonuses, while the quality of the care was lacking. In that same period, Swedish newspapers reported that Ambea was utilising advanced tax planning, using shareholder loans with high interest rates to erase deferred tax liabilities. The holding company was situated in Luxemburg and did not pay any taxes on the interest income (Lundell [2011]).

2.4 Restrictions on shareholder loans after January 2013

In order to address the issue of tax avoidance using shareholder loans, STA called for immediate actions (Skatteverket [2012]). They pointed out that the combination of a deregulated market and ineffective legislation has made Sweden a country where taxes can easily be avoided. Therefore, they suggested that all interest costs on shareholder loans within a group should not be tax deductible.

In March 2012, the Minister of Finance, Anders Borg, presented a proposal for new tax legislation (Finansdepartementet [2012]). The new law would restrict companies from avoiding taxes by transferring profits through internal interest charges to holding companies into countries with low or no taxes on interest income. Thereby, it would also prohibit companies from deducting interest charges on shareholder loans, making it harder to avoid taxation. Interest charge deductions will be prohibited if the lender is situated in a country outside the EU/EES with lower corporate tax than Sweden and without any bilateral tax agreements. In November 2012, the new Swedish tax limitation regime was adopted by the Parliament (Sveriges Riksdag [2012]). The new rules, effective from January 2013, that were adopted along with a tax cut (from 26.3% to 22%), implied that generally all interest on loans from affiliated companies were no longer tax deductible. Deductions were, however, still allowed if, for example, the debt is incurred for business reasons and the interest income is subjected to a tax rate of 10% or more.

These rules were being adopted at the same time as this thesis was written. Because of that, the legal practice tied to our topic, that is internal (group) loans in cross-border transactions, was experiencing a shift in focus. Before January 2013, the focus in legal disputes was to evaluate whether the interest rate on group loans was set at arm's length (see 2.2). The reason behind this was that the tax legislation gave companies the right to deduct the interest on all loans from their profits. By applying a high interest rate, more of the profits could be transferred into countries with preferably lower taxation (see 2.3 and 2.5 on how this is utilised in tax planning). Therefore, by that time, the allowed interest rate was carefully scrutinised by the Swedish Tax Agency. However, after January 2013, the interest deduction limitation regime will cover all affiliated companies (Sveriges Riksdag [2012]). Although these types of transactions will become more restricted, they will still be relevant in knowing how to correctly set the arm's length interest.

2.5 Buyout structure

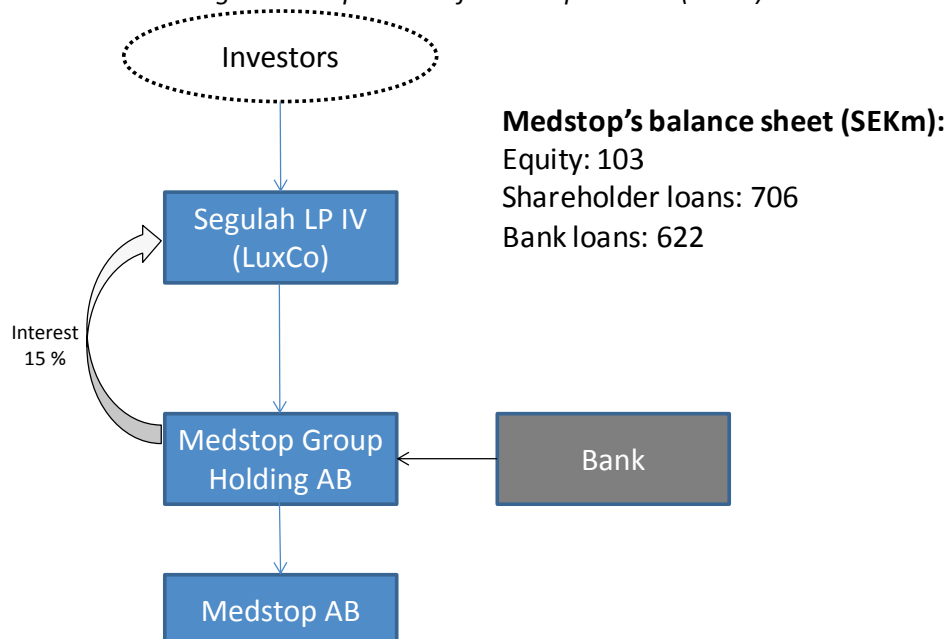
When private equity firms acquire companies, they tend to do so using one or several holding companies in order to optimise the financial structure in the transaction. A holding company is a company that is created for the sole purpose of acquiring and owning a company. This is called a buyout structure.

In Figure 1, we illustrate an example of a buyout structure where a private equity firm acquires a company through a holding company. The example used is the Segulah's acquisition of Medstop in 2010. Medstop is a Swedish pharmacy chain that was acquired from the Swedish government. This is the same example used by STA, when illustrating the tax implications of shareholder loans (Skatteverket [2012]). Segulah financed the acquisition with SEK 622 million in external debt

financing, SEK 103 million in equity and SEK 706 million in shareholder loans. The annual percentage rate on the shareholder loans is 15 percent, according to our findings.

The investors invest the funds in a company in Luxembourg (Segulah LP IV) which, in turn, acquire the operating company (Medstop AB) through a Swedish holding company (Medstop Group Holding AB). The holding company is financed with debt provided by an external financial institution, shareholder loans and equity which are provided by Segulah LP IV. The Swedish holding company is charged interest on the shareholder loans, but instead of paying the interest, the interest expense is capitalised in the outstanding loan balance. This means that the interest cost is tax deductible, which lowers the corporate tax paid but has no other cash flow implications. Thus, if the shareholder loan is SEK 706 million in year one, in year two the outstanding shareholder loan will be SEK 812 million; SEK 706 million in principal from the previous year and SEK 106 million in capitalised interest.

Figure 1. Buyout structure – Segulah’s acquisition of Medstop in 2010 (SEKm)



Source: Medstop Group Holding AB annual report 2011

2.6 Research questions and hypotheses

2.6.1 How common are shareholder loans in private equity owned companies?

According to the public debate, shareholder loans in private equity owned companies constitute a significant problem which is supposed to cost the Swedish tax payers billions of SEK (Skatteverket [2012]). However, no academic research has been done in order to determine how common shareholder loans are in Sweden.

Jonsson [2005] states that structured auction processes (a structured auction process is a structured sales process where many private equity funds acquire companies) become rate of return auctions. The fund that accepts the lowest expected rate of return, and thus the highest acquisition price, wins. This would imply that if one fund uses shareholder loans to gain tax benefits, all other funds would have to use shareholder loans as well, in order to maintain competitiveness in structured auction processes.

2.6.2 How high is the interest rate on shareholder loans in private equity owned companies?

In the legal cases against Diligentia, STA argues that the interest rates on shareholder loans were not set to market terms because a shareholder has access to more information about the company than outside lenders and should, therefore, require a lower rate of return (RÅ [2010]). Following the logic of STA, regular equity should then be considered as less risky than debt. On the contrary, we would like to argue that shareholder loans should be considered as riskier than mezzanine financing, since shareholder loans are subordinate to the mezzanine loans. Furthermore, both basic financial theory and research conclude that the rate of return on equity has been, and should be, higher than debt financing. Mezzanine loans have an average interest spread to LIBOR of 9.5 percent according to Axelson, Strömberg, Jenkinson and Weisbach [2012].

2.6.3 What is the total value impact of shareholder loans in private equity owned companies?

In the long-run, following the logic of Jonsson [2005] (previously described in 2.6.1 and 2.6.2), if tax deduction on interest from shareholder loans was prohibited, one would not expect to see any change in returns of private equity funds. Instead, we would expect the valuation of acquired companies to decrease. For companies currently owned by private equity funds, there would, however, be an impact on returns, since these logically have been bought with the assumption that the shareholder loans generate tax benefits. Therefore, it is relevant to study how large the value impact of tax shield generated by tax deductions from the interest expense on shareholder loans in private equity owned companies is.

3 Method

3.1 Data collection

3.1.1 Identifying Swedish private equity owned companies

We selected 22 private equity funds firms that invested in Swedish companies. The selected firms had a closed-end fund structure and at least SEK 1 billion in total committed capital from investors in order to have sufficient resources to fund an investment organisation, as well as the costs involved with setting up a foreign holding company structure.

The dataset is, thereby, limited to Swedish companies that were owned by the selected 22 private equity firms as of 2012-08-01, or that had been divested by any of the 22 private equity funds between 2011-01-01 and 2012-08-01. The reason for limiting our dataset to this period is that the data service Retriever,³ which was used to obtain the annual reports, only stores annual reports from active companies and the holding companies used in private equity acquisitions are generally terminated following a divestment.

If a particular company was divested between 2011-01-01 and 2012-08-01 to another selected private equity firm, the company is only included once in the dataset. Holdings were identified, primarily using Mergermarket,⁴ but, as an additional check, we also investigated the news feeds on all selected private equity firm's homepages.

Once a private equity owned company was identified, Retriever ownership data was used to find the Swedish holding company of the group.

3.1.2 Extracting data from the annual reports

The relevant annual reports were downloaded from Retriever in order to extract the data necessary to perform the analysis.

In order to identify if the acquisition for each company was financed with shareholder loans, the initial funding structure was extracted from the first annual report following the acquisition. In some cases, this is a difficult process, since not all companies openly disclose if shareholder loans are

³ Retriever is an information service that provides financial and ownership information on Swedish companies. For more information, visit www.retriever.se.

⁴ Mergermarket is an information service that provides information on mergers and acquisitions, as well as reports on all holdings for PE firms. For more information visit www.mergermarket.com.

present. In many cases, it was clearly stated in the annual reports or the notes to the financial statements that some of the long term liabilities were loans to shareholders. Below are two examples where shareholder loans were easily identified; RE education's annual report (the holding Company of the education group Power Planning Systems, acquired by Riverside in October 2011) and the annual report for SD Holding (the holding company for Sveba Dahlén, the Swedish manufacturer of baking ovens, acquired by Litorina Kapital in November 2011).

Figure 2. Data sample from RE Education's annual report 2011-10-31

Långfristiga skulder	
Skulder till kreditinstitut	100 000
Skulder till koncernföretag	143 571
Summa långfristiga skulder	243 571

Source: 2011-10-31 annual report for RE education.

Figure 3. Data sample from SD Holding's annual report 2011-11-30

Långfristiga skulder	18
Ägarlån	117 295
Skulder till kreditinstitut	<u>122 220</u>
	239 515

Source: 2011-10-31 annual report for RE education.

In some cases, the owners of the liabilities are not clearly stated and it can, thus, be difficult to determine whether the outstanding loan is a shareholder loan or another interest bearing liability. Below is an example from the annual report of Eatwell solution (the holding company for the Swedish food distributor Northtrade, acquired by Procuritas in 2007). In this example, it is not clearly stated in the balance sheet that shareholder loans are present, but one can suspect that this is the case since the outstanding shareholder equity is only 10 percent of the total deal financing. After examining several factors as outlined below, we determined that the SEK 50.6 million of other loans were, most likely, shareholder loans.

Figure 3. Data samples from the 2007 and 2008 annual reports for Eatwell solutions

2007 annual report, the first annual report following the acquisition for Eatwell solutions

EGET KAPITAL OCH SKULDER

Eget kapital

Bundet eget kapital

Aktiekapital

Fritt eget kapital

Fria reserver

Erhållna aktieägartillskott

Årets resultat

Summa eget kapital

Avsättningar

Skatter

Summa avsättningar

Långfristiga skulder

Checkräkningskredit

Skulder till kreditinstitut

Övriga långfristiga skulder

Summa långfristiga skulder

9

10

11

Company has SEK 15 million in Equity when acquired

And company has SEK 148 million in Debt

Other long term debt with repayment after five years that are not to credit institutions is most likely shareholder loans.

Not 11 Långfristiga skulder

Amortering inom 1 år

Amortering inom 2 till 5 år

Amortering efter 5 år

Koncernen
2007-06-30

12 000 000

48 000 000

50 662 171

110 662 171

Not 12 Checkräkningskredit

Beviljad checkräkningskredit uppgår

Koncernen
2007-06-30

42 773 050

2008 annual report, the second annual report following the acquisition for Eatwell solutions

Långfristiga skulder

Checkräkningskredit

Skulder till kreditinstitut

Övriga skulder

Summa långfristiga skulder

12

13

2008

2007

24 583 660 37 138 627

48 000 000 60 000 000

58 258 954 50 662 171

130 842 614 147 800 798

Interest on the shareholder loan has been capitalized with SEK 7,6 million which represents an annual interest rate of 15 percent.

Source: 2007-06-30 and 2008-06-30 annual reports for Eatwell Solutions AB.

Even though our investigation process is thorough, there could potentially be some misclassifications in the data, where both companies that actually use shareholder loans are incorrectly classified as not having shareholder loans or vice versa. Still, we believe that these potential errors should not have a significant impact on the outcome of this study, since the data sample is large.

All collected company information was then stored in an Excel database.

3.2 Calculating the interest rate

As far as we have been able to observe, neither the interest rate nor the interest cost on the shareholder loans are reported in the annual reports. Therefore, we have calculated the interest cost by backing out the capitalised interest from the shareholder loan balances. As we were collecting our dataset, we did not identify any case where the interest costs on the shareholder loans were paid out, instead of being capitalised in the outstanding balance of the loan. If the interest was paid out, this would have been identifiable in the cash flow statement.

$$SHL_t = SHL_{t-1} * (1 + r_{SHL})$$

$$INTCOST_t = SHL_t - SHL_{t-1}$$

Whereas SHL_t is the shareholder loans in period t, $INTCOST_t$ is the interest cost on the shareholder loans in period t and r_{SHL} is the interest rate on the shareholder loans.

In order to compare interest rates we use Annual Percentage Rates. Annual Percentage Rate is calculated as:

$$r_{SHL_t} = \frac{INTCOST_t}{SHL_t}$$

3.3 Time limitations

As far as we have been able to observe, interest rates on shareholder loans can both be set at a fixed rate and be tied to or dependent on some interest index, such as LIBOR or STIBOR. Therefore, we limit the research of the interest rate on shareholder loans to a short and recent period, namely the years 2010 and 2011. In order to use our data as input for calculating the value of the tax benefits from using shareholder loans, and for the results to be consistent, a short and recent period seems more relevant to us.

3.4 Missing values

Some companies did not have sufficient reporting available to enable us to extract the necessary data for the analyses. We identified the following reasons why data was missing:

- No annual report for the fiscal year was available when the study was performed. A majority of all companies acquired in 2012 had not yet provided their first annual report to the Swedish Companies Registration Office ("Bolagsverket").

- There were unclassified liabilities in the balance sheet that resembled shareholder loans, but we could not find sufficient evidence stating that this was the case.
- The company had repaid or issued new shareholder loans during the relevant fiscal period, thus making our method for calculating interest rate obsolete.

3.5 Framework for calculating value of the tax shield on shareholder loans

3.5.1 Methods used in previous research

There has been some research into the value of tax shields generated by leverage in management buyouts (MBO) from the stock exchange by Kaplan [1989]. Kaplan looks at 76 management buyouts of publicly held companies in the period 1980 to 1986 and finds support for the hypothesis that tax benefits are an important source of wealth gains in management buyouts.

In order to calculate the value of the tax benefits, Kaplan develops two frameworks using different underlying assumptions called “MAXDEBT” and “REPAYDEBT”. Kaplan then examines how personal taxes affect the outcome and tax benefits are presented in relation to the bid premium ($\frac{TAXBENEFIT}{BIDPREMIUM}$). Kaplan finds that as a median result, 21.0 to 142.6 percent of bid premiums can be explained by the value from tax benefits, depending on which framework is used and to which extent personal taxes are included in the calculation.

Kaplan can observe the amount of DEBT used to finance the acquisition (*DEBT*) since all deals are public to private, and deal financing is presented in public transaction filings. Kaplan uses the assumption that the interest rate on the leverage used to finance the buyouts (*INTERESTRATE*) is 12.5 percent and that this interest rate is an appropriate discount rate for estimating the value of the tax benefits. As base case he assumes a corporate tax rate of 46.3 percent, but also includes results with 30 and 15 percent corporate tax rate.

In the MAXDEBT framework, Kaplan assumes that the level debt used to finance the buyout is constantly going forward into perpetuity. For each company in the data set, Kaplan then values the tax benefits using the following calculation:

$$\frac{TAXBENEFIT}{BIDPREMIUM} = \frac{TAXRATE * \frac{DEBT}{INTERESTRATE}}{BIDPREMIUM}$$

In the REPAYDEBT framework, Kaplan assumes that the principal of the debt used to finance the buyout is repaid over 8 years. The interest payments over this period are then multiplied with the tax

rate and discounted at the discount rate. The present value of the tax benefits are then divided by the bid premium for each transaction.

$$\frac{TAXBENEFIT}{BIDPREMIUM} = \frac{\sum \frac{INTERESTRATE * (DEBT - t * \frac{DEBT}{t})}{(1 + INTERESTRATE)^t}}{BIDPREMIUM}$$

3.5.2 Adapted framework for examining the value of tax benefits from shareholder loans

In order to calculate the value of the tax shield in private equity owned companies with shareholder loans, we use a modified version of the REPAYDEBT framework used by Kaplan. Several adaptations to the framework and underlying assumptions have to be made, since shareholder loans differ from other debt used to finance a leveraged buyout.

The interest on the shareholder loans is capitalised in the debt principal, rather than paid out like interest on external debt financing. This implies that the principal is growing, rather than being repaid as in the REPAYDEBT used by Kaplan and then repaid when the investment is exited. Furthermore Kaplan assumes that the interest rate is equal to the discount rate for the outstanding debt.

Kaplan presents the results in relation to the bid premium, but since there are only a limited number of public to private transactions in Sweden we cannot limit our study to those types of deals. Instead, the results below will be presented in relation to total expected returns on the investment.

Since the interest expensed is capitalised in the outstanding shareholder loan balance, we modelled the shareholder loan balance going forward using:

$$SHL_t = SHL_0 * (1 + r_{SHL})^t$$

Where SHL is the shareholder balance and r_{SHL} is the APR on the shareholder loan.

The interest cost on the shareholder loan in each period is:

$$INTCOST_t = SHL_0 * (1 + r_{SHL})^{t-1} * r_{SHL}$$

For each period, the accumulated interest cost is calculated as:

$$ACCINTCOST_t = \sum_0^t SHL_0 * (1 + r_{SHL})^{t-1} * r_{SHL}$$

The tax shield for each period is calculated as:

$$TAXSHIELD_t = SHL_0 * (1 + r_{SHL})^{t-1} * r_{SHL} * TAXRATE$$

where $TAXRATE$ is the tax rate on corporate earnings.

The accumulated tax shield is calculated as:

$$ACCTAXSHIELD_t = \sum_0^t SHL_0 * (1 + r_{SHL})^{t-1} * r_{SHL} * TAXRATE$$

The total return in each period is calculated as:

$$TOTALRETURN_t = TEQUITY_0 * (1 + CAR)^t - TEQUITY_0$$

where $TEQUITY_0$ is the total funding by shareholders (both common equity and shareholder loans) and CAR is the cumulative average return to shareholders.

The value of the tax shield as part of total returns is calculated as:

$$TS/TOT_t = \frac{ACCTAXSHIELD_t}{TOTALRETURN_t}$$

The cumulative average return excluding tax shield on shareholder loans is calculated as:

$$CAR_t^{exlTS} = [(TEQUITY_0 * (1 + CAR)^t - ACCTAXSHIELD_t) / TEQUITY_0]^{(1/t)} - 1$$

It is important to note that our calculations do not take into account that shareholder loans may be repaid or converted to equity prior to exit. Moreover, in some cases the company will not be able to utilise the full tax deductions. This is because profits are either generated in foreign subsidiaries and are thus subject to taxation in some other country, or because the company might not make large enough profits. Furthermore, if the company has a large proportion of shareholder loans to equity and generates losses, the company will at some point eliminate all equity in the company and be forced to convert the shareholder loans in order to maintain solvency. We have observed several instances in our dataset where loss making companies were converting shareholder loans into equity.

4 Data

4.1 Data sources

The annual reports were downloaded from Retriever, a web service that index annual reports from the Swedish Companies Registration Office (“Bolagsverket”) and make them available through search functions. Retriever stores all annual reports for active companies for the last ten years.

All data has been extracted from scanned versions of the annual reports sent to the Swedish Companies Registration Office. All limited liability companies in Sweden (“Aktiebolag”) are required to make their annual reports available to the public through the Swedish Companies Registration Office the latest seven months following the reporting date.

All annual reports should consist of a director’s report, income statement, balance sheet, notes to the financial statements and an audit report. Larger companies also have to include a cash flow statement. In general, parent companies have to establish a consolidated statement for all group companies. The consolidated financial statements have to be included in the annual report sent to the Swedish Companies Registration Office. If the parent company is in turn a subsidiary, the Company does not have to consolidate financial statements if the ultimate parent of the group consolidates all financial statements according to the Swedish Annual Accounts Act (“Årsredovisningslagen”).

4.2 Data composition

The dataset is comprised of observations for a total of 143 private equity owned companies. The dataset includes the following key variables:

- **Company name**, the name of the operating company in question.
- **PE House**, which states which private equity firm is managing the fund that currently owns the company.
- **Acquisition year**, which states what year the private equity fund acquired the Company.
- **Shareholder loans Yes/No/n.a.**, a variable that states if the original funding structure included any shareholder loans. If the variable has been labeled “Yes”, the company’s original funding structure had shareholder loans. If “No”, no shareholder loans were present, and if “n.a.”, no data is available for this period and company.
- **Revenues 2009/2010/2011**, the total reported revenues for the company in the fiscal year.
- **Shareholder loans 2009/2010/2011**, the total shareholder loans as reported at year end.

Since many companies that were acquired in 2003, 2004 and 2005 had been divested, the number of companies included in this research acquired during those years is less than the actual numbers.

Table 2. Shareholder loan observations - Dataset overview

Dataset overview		Number of companies									
PE House	Total	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Litorina	17	0	0	2	2	3	3	1	2	2	2
Priveq	14	1	0	0	3	1	3	0	2	1	3
Accent	14	0	0	0	1	2	3	0	3	5	0
Altor	14	0	0	1	4	1	2	2	1	3	0
Procuritas	6	0	1	0	1	0	1	1	1	1	0
Segulah	14	0	0	1	3	2	2	2	3	1	0
EQT	12	0	0	2	2	1	2	0	2	2	1
IK	2	0	0	0	0	1	0	0	1	0	0
Nordic Capital	10	0	3	0	3	2	0	0	1	0	1
Polaris Equity	5	0	0	2	0	1	0	1	0	0	1
Riverside	1	0	0	0	0	0	0	0	0	1	0
Odin	1	0	0	0	0	1	0	0	0	0	0
Axcel	4	0	0	0	0	1	1	1	1	0	0
HgCapital	1	0	0	0	0	0	0	0	1	0	0
Argan Capital	2	0	0	0	1	0	1	0	0	0	0
Valedo Partners	9	0	0	0	0	0	3	1	1	1	3
Cinven	2	0	0	0	1	1	0	0	0	0	0
CapMan	3	1	0	0	1	0	0	0	1	0	0
CVC	1	0	0	0	0	0	0	0	0	0	1
Triton	5	0	0	0	1	0	0	1	2	1	0
FSN Capital	4	0	0	0	1	0	0	2	1	0	0
Intera Equity Partners	1	0	0	0	0	0	0	0	1	0	0
Vitruvian Partners	1	0	0	0	0	0	0	0	0	1	0
Sum Total	143	2	4	8	24	17	21	12	24	19	12

The complete dataset includes 143 companies. Shareholder loans were identified in 79 of these companies. However, interest rates could only be extracted from a limited number of these 79 companies. A summary of the interest data is presented in Table 2. As can be seen, 38 interest rates were observed in 2010 and 27 interest rates were observed in 2011. There are several reasons why no interest rate observation is available for certain companies in 2010 and 2011.

For companies acquired in 2010, 2011 or 2012, there is, in general, not sufficient data available to calculate the interest rate on the shareholder loans. In some cases, even though shareholder loans were present at the time of the acquisition, these have been converted to equity prior to 2010 or 2011. In a few other cases, the owners have increased the shareholder loans in 2010 or 2011 in order to either finance additional add-on acquisitions or because the company needs more capital to run its operations. In other cases, data is missing in 2011 because of companies being divested.

Table 3. Interest rate observation - Dataset overview

Dataset overview	Number of interest observations		
PE House	2010	2011	Total
Litorina	8	6	14
Priveq	2	1	3
Accent	4	1	5
Altor	4	5	9
Procuritas	1	2	3
Segulah	5	2	7
EQT	2	2	4
IK	2	1	3
Nordic Capital	4	2	6
Polaris Equity	0	0	0
Riverside	0	0	0
Odin	0	0	0
Axcel	2	1	3
HgCapital	1	0	1
Argan Capital	1	1	2
Valedo Partners	0	0	0
Cinven	1	2	3
CapMan	0	0	0
CVC	0	0	0
Triton	1	1	2
FSN Capital	0	0	0
Intera Equity Partners	0	0	0
Vitruvian Partners	0	0	0
Sum Total	38	27	65

As can be seen in Table 3, the data set is comprised of many well-known Swedish companies acquired between 2003 and 2012. Some of the companies are funded partly or fully by the public sector, including; Academedia, Medstop, Apoteket Hjärtat, Vårdapoteket, Olivia Assistans, Aleris, Attendo, Capio, Pysslingen, John Bauer, Power Planning Systems (PPS) and Akademikliniken.

The private equity firm Valedo Partners ("Valedo") uses a different fund setup where all holdings are owned by a Swedish parent company which, in turn, is funded by bank loans, shareholder loans and equity. For this reason, Valedo has been excluded from the analysis and all data entries have been classified as "n.a.".

Table 4. Observed companies - Dataset overview

Fund	Company	Acquisition year	Shareholder		Fund	Company	Acquisition year	Shareholder	
			Loans?					Loans?	
Litorina	Ateljé Margaretha	2005	Yes		Segulah	Almondy	2008	No	
Litorina	Cederroth	2008	Yes		Segulah	Kemtyl	2007	Yes	
Litorina	Eton	2012	n.a.		Segulah	St Eriks	2009	No	
Litorina	Euroflorist	2007	Yes		Segulah	PMC Group	2005	No	
Litorina	Fiskarhedenvillan	2012	n.a.		Segulah	Exotic snacks	2007	Yes	
Litorina	Grolls	2010	Yes		Segulah	NEA Gruppen AB	2006	Yes	
Litorina	Walvision	2010	Yes		Segulah	Joy Shop AB	2006	No	
Litorina	Nordic heat & vent	2005	Yes		Segulah	Isaberg Rapid	2006	Yes	
Litorina	Pahlén	2007	Yes		EQT	AcadeMedia	2010	No	
Litorina	Pelly	2006	n.a.		EQT	Anticimex	2012	n.a.	
Litorina	SKT	2011	Yes		EQT	Atos Medical	2011	No	
Litorina	Sveba Dahlén	2011	Yes		EQT	Dometic Group	2011	Yes	
Litorina	mySafety	2007	Yes		EQT	Gambro	2006	No	
Litorina	Semantix	2009	Yes		EQT	Granngården	2008	n.a.	
Litorina	Textilia	2008	Yes		EQT	Munksjö AB	2005	Yes	
Litorina	Tolerans	2006	Yes		EQT	Scandic	2007	No	
Litorina	Coromatic	2008	No		EQT	Swedegas	2010	Yes	
Priveq	Boomerang	2006	No		EQT	TitanX	2008	Yes	
Priveq	Byggpartner	2006	No		EQT	Aleris	2005	n.a.	
Priveq	Duri	2012	n.a.		EQT	Lundhags	2006	No	
Priveq	El-Björn	2011	Yes		IK	Episerver	2010	Yes	
Priveq	Medi-plast	2010	No		IK	Attendo	2007	Yes	
Priveq	Menfice	2006	No		Nordic Capital	Permobil	2006	Yes	
Priveq	Office Management	2012	n.a.		Nordic Capital	FinnvedenBulten	2004	Yes	
Priveq	Ostnor	2003	No		Nordic Capital	Bufab	2004	Yes	
Priveq	SanSac	2008	No		Nordic Capital	Nefab	2007	Yes	
Priveq	Silex	2008	No		Nordic Capital	Capio	2006	Yes	
Priveq	Smoke Free Systems	2012	Yes		Nordic Capital	Aditro	2004	n.a.	
Priveq	Unisport	2008	No		Nordic Capital	Menigo	2006	No	
Priveq	Vårdapoteket	2010	Yes		Nordic Capital	Thule	2007	No	
Priveq	Sydtotal	2007	No		Nordic Capital	Munters	2010	Yes	
Accent	Convara	2011	Yes		Polaris Equity	ORC Group	2012	n.a.	
Accent	ÅR Carton	2011	No		Polaris Equity	Skånska Byggarvaror	2012	n.a.	
Accent	Hoist	2011	Yes		Polaris Equity	Jetpak	2005	No	
Accent	Autotube	2011	Yes		Polaris Equity	AddPro	2005	No	
Accent	Hööks	2011	n.a.		Polaris Equity	Fiskarhedenvillan	2007	No	
Accent	Troax	2010	Yes		Riverside	Pysslingen	2009	No	
Accent	Aviator	2010	Yes		Odin	PPS Power Planning S	2011	Yes	
Accent	Bergteamet	2010	Yes		Axcel	Heatex	2007	No	
Accent	NSS	2008	Yes		Axcel	Driconeq	2007	Yes	
Accent	Candyking	2008	Yes		Axcel	John Bauer	2008	Yes	
Accent	Mont Blanc	2008	Yes		Axcel	LGT	2009	Yes	
Accent	Crem International	2007	Yes		HgCapital	Nordic Waterproofing	2010	No	
Accent	Scandbook	2006	No		Argan Capital	Frösunda LSS	2010	Yes	
Accent	INR	2007	Yes		Argan Capital	Humana	2008	Yes	
Altor	Åkers Group	2008	Yes		Valedo Partners	Gas Control Equipment	2006	Yes	
Altor	CTEK	2011	Yes		Valedo Partners	Akademikliniken	2011	n.a.	
Altor	Apoteket Hjärtat	2010	Yes		Valedo Partners	Oscar Jacobsson	2008	n.a.	
Altor	Byggmax	2006	Yes		Valedo Partners	Cambio Healthcare	2012	n.a.	
Altor	Piab	2006	Yes		Valedo Partners	Aditro Logistics	2012	n.a.	
Altor	Dustin	2006	Yes		Valedo Partners	Evidensia Djursjukvård	2012	n.a.	
Altor	Relacom	2005	Yes		Valedo Partners	Perten	2010	n.a.	
Altor	Nimbus	2006	Yes		Valedo Partners	INOM	2009	n.a.	
Altor	Papyrus	2008	Yes		Valedo Partners	Broadcast Text	2008	n.a.	
Altor	Qmatic	2007	No		Cinven	Bindomatic	2008	n.a.	
Altor	Carnegie	2009	No		Cinven	Coor	2007	Yes	
Altor	Max Matthisen	2009	No		CapMan	Ahlsell	2006	Yes	
Altor	ONE	2011	Yes		CapMan	Ljunghäll	2003	No	
Altor	Älö	2011	Yes		CapMan	MQ	2006	No	
Procuritas	Däckia	2009	Yes		CVC	Vanna	2010	No	
Procuritas	North trade	2006	Yes		Triton	Ahlsell	2012	n.a.	
Procuritas	Olivia assistans	2008	No		Triton	Bravda	2006	Yes	
Procuritas	Waterjet Entreprenad	2010	Yes		Triton	Ambea	2010	Yes	
Procuritas	Perimeter Protection	2011	Yes		Triton	AB Gustaf Kähr	2011	Yes	
Procuritas	Aniterm AB	2004	Yes		Triton	Polygon AB	2010	Yes	
Segulah	CCS Healthcare	2011	Yes		FSN Capital	Inflight Service Europé .	2009	Yes	
Segulah	Balco	2010	Yes		FSN Capital	Vindora	2010	n.a.	
Segulah	Scan Coin	2010	Yes		FSN Capital	Tactel	2009	No	
Segulah	eTRAVELi	2010	Yes		FSN Capital	Green	2009	No	
Segulah	Medstop	2009	Yes		FSN Capital	Aura Light	2006	No	
					Intera Equity Partners	Polarica	2010	Yes	
					Vitruvan Partners	Flexpay	2011	No	

5 Results

5.1 Presence of shareholder loans in private equity owned Swedish companies

In Table 5, we summarise the number of Swedish private equity owned companies financed by shareholder loans. In the “Yes” column, the number of companies with shareholder loans in the original funding structure is presented. In the “No” column, the number of companies without shareholder loans in the original funding structure is presented. Presented in the “n.a.” column is the number of companies where no reporting was available or the reporting was insufficient to determine the capital structure of the company.

Out of the 143 observed private equity owned companies, 79 used shareholder loans as part of the original financing. 41 did not use shareholder loans and 23 companies did not present sufficient data or have any reporting available at the time of this study. This means that 66 percent of all observed companies with sufficient data had shareholder loans as part of their financing.

Of all observed private equity firms, Litorina had the most holdings in Sweden, a total of 17, and also the most companies with shareholder loans.

It is actually surprising that all private equity owned companies are not using shareholder loans, since it is beneficial from a taxation point of view and private equity funds have incentives to maximise returns (see Section 2).

One observation is that some of the Nordic funds like CapMan, Polaris, Odin and FSN Capital did not use shareholder loans in any of their Swedish investments (see Table 3 in our dataset). This could be because similar tax deductions are not allowed in other Nordic countries and their fund setup is thus not optimised to benefit from shareholder loans.

Another observation is that some companies in the financial sector, like Carnegie and Max Matthiessen, which are owned by Altor, are not financed with shareholder loans. This is probably because shareholder’s equity is needed to maintain solvency ratios that are required by financial regulators. Furthermore, Priveq, one of the smallest private equity firms in terms of fund size, does not seem to have used shareholder loans prior to 2012 (except for a syndicated deal, Vårdapoteket, which Priveq owns in partnership with Investor). The reason for this could be that investments made in 2012 are made through Priveq’s new fund Priveq IV and earlier investments are made by the funds

Priveq I to III which did not have a fund structure with a foreign investment company and thus did not gain tax benefits from using shareholder loans.

It is important to note that the results could have been affected by the method used to gather information about the presence of shareholder loans. There are 23 observations where we could not determine if shareholder loans were present or not. If shareholder loans were present or were not present in all these cases, could change our findings significantly. It is also possible that, as discussed in the method section, some manual error in the methods used to gather data could affect the results.

Table 5. Number of companies with shareholder loans per PE house.

PE House	No. Companies w. or wo. SH loans				Percentage				
	Yes	No	n.a.	Total	Yes	No	n.a.	Yes (excl n.a.)	No (excl n.a.)
Litorina	13	1	3	17	76%	6%	18%	93%	7%
Priveq	3	9	2	14	21%	64%	14%	25%	75%
Accent	11	2	1	14	79%	14%	7%	85%	15%
Altor	11	3	0	14	79%	21%	0%	79%	21%
Procuritas	5	1	0	6	83%	17%	0%	83%	17%
Segulah	9	5	0	14	64%	36%	0%	64%	36%
EQT	4	5	3	12	33%	42%	25%	44%	56%
IK	2	0	0	2	100%	0%	0%	100%	0%
Nordic Capital	6	2	2	10	60%	20%	20%	75%	25%
Polaris Equity	0	4	1	5	0%	80%	20%	0%	100%
Riverside	1	0	0	1	100%	0%	0%	100%	0%
Odin	0	1	0	1	0%	100%	0%	0%	100%
Axcel	3	1	0	4	75%	25%	0%	75%	25%
HgCapital	1	0	0	1	100%	0%	0%	100%	0%
Argan Capital	2	0	0	2	100%	0%	0%	100%	0%
Valedo Partners	0	0	9	9	0%	0%	100%	0%	0%
Cinven	2	0	0	2	100%	0%	0%	100%	0%
CapMan	0	3	0	3	0%	100%	0%	0%	100%
CVC	0	0	1	1	0%	0%	100%	0%	0%
Triton	5	0	0	5	100%	0%	0%	100%	0%
FSN Capital	0	3	1	4	0%	75%	25%	0%	100%
Intera Equity Partners	1	0	0	1	100%	0%	0%	100%	0%
Vitruvian Partners	0	1	0	1	0%	100%	0%	0%	100%
Sum total	79	41	23	143	55%	29%	16%	66%	34%

The percentage of companies that used shareholder loans were higher among companies acquired in 2010 and 2011, compared to companies acquired in 2007 and 2008. At the time when the study was conducted, only one of the companies acquired in 2012 had published any annual accounts. Thus, no conclusions can be made regarding the presence of shareholder loans in companies acquired during 2012. While 82 percent of all companies acquired in 2011 and 2010 had shareholder loans, only 59 percent of all companies acquired in 2008 and 65 percent of all companies acquired in 2007 used shareholder loans as part of their original capital structure (see Table 6).

Because of our data selection process, where we only selected companies owned by identified private equity funds in a certain period (described in further detail in Section 3), the dataset does not include all companies acquired by private equity firms prior to 2011. This could cause some selection

bias if companies that either have shareholder loans or companies that do not have shareholder loans are divested earlier than other private equity owned companies.

Because of the financial crisis, few transactions were completed during 2009; that year can, therefore, not be considered representative.

Table 6. Number of companies with shareholder loans per acquisition year.

Acquisition year	No. Companies w. or wo. SH loans				Percentage				
	Yes	No	n.a.	Total	Yes	No	n.a.	Yes (exl n.a.)	No (exl n.a.)
2012	1	0	11	12	8%	0%	92%	100%	0%
2011	14	3	2	19	74%	16%	11%	82%	18%
2010	18	4	2	24	75%	17%	8%	82%	18%
2009	5	6	1	12	42%	50%	8%	45%	55%
2008	10	7	4	21	48%	33%	19%	59%	41%
2007	11	6	0	17	65%	35%	0%	65%	35%
2006	13	10	1	24	54%	42%	4%	57%	43%
2005	4	3	1	8	50%	38%	13%	57%	43%
2004	3	0	1	4	75%	0%	25%	100%	0%
2003	0	2	0	2	0%	100%	0%	0%	100%
Sum total	79	41	23	143	55%	29%	16%	66%	34%

In order to determine if the change in the proportion of companies that use shareholder loans that were acquired in 2007 and 2008 compared with companies acquired in 2010 and 2011 is statistically significant, we performed a T-test.

The T-test concludes that 2011 is larger than 2008 with a t-value of 1.79, which is barely significant within a 5 percent significance level. On a larger data sample, 2011 and 2010 against 2008 and 2007, the t-value is 1.90, which means that the change is significant within a 3.6 percent significance level (see Table 7).

Table 7. T-test on changes over the years.

T-test	2011 vs 2008	2011 and 2010 vs 2008 and 2007
N	19	42
t-value	1,74	1,90
p	4,9%	3,6%

5.2 Interest rate on shareholder loans in private equity owned companies

In Table 8, the summarised results of our analysis of the interest rate on shareholder loans can be found. The interest cost was, as stated in Chapter 3, based on the opening and closing balance of the shareholder loans. This can only be done in cases where the company in question has not emitted new shareholder loans, repaid existing shareholder loans or converted shareholder loans to equity.

The average interest rate in 2010 was 9.2 percent and the average interest rate in 2011 was 10.8 percent. The average interest rate for both periods was 10.0 percent. The maximum interest rate was 16.7 percent in both 2010 and 2011 (see Table 8).

Axcel has shareholder loans in the investments in Driconeq and John Bauer. The loan in Driconeq seems unusual. It is small compared to the total transaction funding (SEK 25 million to SEK 400 million), and the calculated interest rate is low and varies in different time periods. We have not been able to identify the reason to this.

The calculated interest rate in 2010 for the company Isaberg Rapid, which was owned by Segulah, seems unusually low at 4.4 percent. We have not been able to find any explanation for this.

In 2010 our calculated interest rate for Attendo, which is owned by Industri Kapital (IK), is 10.6 percent. This is lower than the actual interest rate that is stated in the annual report (which is very rare) of 15 percent. In 2011 the calculated interest rate for Attendo is 15 percent which is in line with the actual interest rate stated in the annual report. We have been able to find one plausible explanation for why the calculated interest rate in 2010 is wrong. Attendo increased the outstanding share capital with SEK 108 million. This could have been done by converting share holder loans to equity (although the source of the new share capital is not stated in the annual report). The calculated interest on the shareholder loans in Attendo in 2010 is SEK 276 million. If you add the new share capital the total potential interest amount is SEK 385 which is conclusive with a 15 percent interest rate on the shareholder loans. If the practise of converting small portions of shareholder loans to equity is common, this could have the impact that our calculated interest rates are too low.

As can be seen in Table 8, there is a large variation in the interest rate on shareholder loans for different private equity firms but also between different companies owned by the same firms. In Aviator, owned by Accent Equity, the annualised interest on the shareholder loans is 13.5 percent, while the interest rate on the shareholder loans in Candyking, owned by the same fund, is only 9.0 percent.

There may be several explanations for the varying interest rates. One explanation could be that the varying interest rates reflect different financial risks in different companies. If this is true, companies with higher operational risks and higher leverage should have higher interest rates on their shareholder loans. Varying interest rates could also reflect varying market rates at the time of the acquisition. Furthermore, the varying rates could represent an uncertainty in the market on how to correctly price internal loans or measurement errors due to the method used to calculate the interest rate. Another explanation could be that the lack of clear-cut legislation (see Section 2.2) creates uncertainty about how internal loans should be priced.

In order to further validate our results we have compared seven findings about interest rates on shareholder loans with sources with insight into these transactions. Out of these seven data points, the observed interest rate was correct for six observations and wrong for one observation. For confidentiality reasons, we cannot display the name of the companies examined.

Table 8. Interest rate on shareholder loans per PE House.

Annualized interest rate	2010			2011			2010/2011
PE House	Avg	Max	Min	Avg	Max	Min	Avg
Litorina	8,5%	10,1%	6,0%	8,8%	10,0%	7,1%	8,6%
Priveq	5,0%	5,0%	5,0%	8,4%	11,8%	5,0%	6,7%
Accent	4,1%	4,1%	4,1%	10,3%	13,5%	9,0%	7,2%
Altor	8,8%	9,4%	8,0%	9,7%	10,2%	9,1%	9,3%
Procuritas	6,0%	7,3%	4,7%	15,0%	15,0%	15,0%	10,5%
Segulah	9,7%	15,0%	4,5%	13,5%	15,1%	10,3%	11,6%
EQT	6,7%	7,5%	5,9%	10,2%	11,5%	8,8%	8,4%
IK	10,6%	10,6%	10,6%	11,4%	14,9%	8,0%	11,0%
Nordic Capital	11,9%	12,0%	11,8%	10,1%	12,1%	8,0%	11,0%
Polaris Equity	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Riverside	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Odin	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Axcel	0,6%	0,6%	0,6%	3,6%	5,2%	1,9%	2,1%
HgCapital	n.a.	n.a.	n.a.	8,5%	8,5%	8,5%	8,5%
Argan Capital	11,4%	11,4%	11,4%	10,1%	10,1%	10,1%	10,8%
Valedo Partners	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cinven	15,9%	16,7%	15,0%	16,7%	16,7%	16,7%	16,3%
CapMan	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
CVC	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Triton	12,0%	12,0%	12,0%	7,6%	7,6%	7,6%	9,8%
FSN Capital	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Intera Equity Partners	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Vitruvian Partners	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sum total	9,2%	16,7%	0,6%	10,6%	16,7%	1,9%	9,9%

5.3 Value impact of the tax shield generated by shareholder loans

5.3.1 Value impact of tax shield analysed with our frame work

We analyse the proportion of total return that can be explained by shareholder loans by using the methods outlined in Section 3.5. As input for the CAR, we use the findings by Phalippou and Gottschalg [2009], that private equity funds have an average internal rate of return of 19.0 percent. As input for the interest rate on shareholder loans (R_{shl}), we use our own findings from Section 5.2, where we found that the average interest rate on shareholder loans was 10.0 percent. The percentage of debt and equity used was based on the average capital structure in private equity transactions, according to the findings by Axelson, Strömberg, Jenkinson and Weisbach [2012].

Calculations and results can be found in Table 9. All values are stated as fractions of the total equity value in the acquisition. In the below explanations to the table, we have used year seven as an example in order to explain the dynamics in different variables.

- In row 1, the shareholder loan balance is illustrated. The shareholder loan grows over time with the capitalised interest rate. After seven years of capitalising interest at 10 percent, the shareholder loans are almost twice as large as when the company was acquired.
- In row 2, the interest cost on the shareholder loans is presented. The interest cost is 10 percent of the previous year's shareholder loan balance. In year seven, the total interest expense is 13.3 percent of the total original equity contribution.
- In row 3, the total tax shield for the relevant period is presented. The tax shield is calculated as the interest cost times the tax rate of 26.3 percent. In year seven, the total value of the tax shield was 3.5 percent of the total original equity contribution.
- In row 4, the accumulated tax savings from the shareholder loans is presented. This is the sum of all tax savings from previous years. In year seven, the total value of all accumulated tax shields is 18.7 percent of the total original equity contribution.
- In row 5, the total accumulated return is presented. The total return is the accumulated total return at the specific year. In year seven, the total accumulated return is 2.379 times the original investment. This means that if no cash flow has been distributed to the owners of the company the total equity contribution should be worth approximately 3.4 times as much as when the company was acquired.
- In row 6, the percentage of the total return that has been generated by the shareholder loans is presented. In year seven, the total accumulated return generated is 237.9 percent and the total accumulated tax shield is 18.7 percent. Thus the tax shield from the shareholder loans has generated 7.9 percent ($\frac{18.7\%}{237.9\%} = 7.9\%$) of the total return. As also can be seen in row 6, the share of total returns that can be explained by tax shields on shareholder loans vary depending on the holding period. According to Strömberg and Kaplan [2009], the median holding period is 6.82 years. This implies that the total returns generated by the tax shields on the shareholder loans should be 8 percent on average.

We find that the impact of tax shield from shareholder loans to total returns is diminishing. This is because total returns are calculated using a CAR of 19 percent, regardless of the holding period, and the shareholder loans are capitalised with an interest rate of 10 percent.

Excluding tax shield on shareholder loans, the CAR of the investment would be 19 percent after a 6.82 year holding period.

In Table 9, a sensitivity analysis on how different inputs affect the value is presented. The interest rate on the shareholder loans has the largest value impact. Increasing the interest rate with 5 percent almost doubles the value impact.

Table 9. Impact of shareholder loans on total returns to Private Equity

Input variables	Comments	
r_{shl}	10,0%	The average interest rate on shareholder loans according to our data
TAXRATE	26,3%	The corporate tax rate in Sweden when this paper was written
CAR_t	19,0%	Average return of private equity funds
$SHL_0/TEQUITY_0$	75,0%	An assumed ratio of shareholder loans to total equity

Row	Output variables	Holding period (no years)											
		0	1	2	3	4	5	6	7	8	9	10	
1	SHL _t	0,750	0,825	0,908	0,998	1,098	1,208	1,329	1,462	1,608	1,768	1,945	
2	INTCOST _t	0,000	0,075	0,083	0,091	0,100	0,110	0,121	0,133	0,146	0,161	0,177	
3	TAXSHIELD _t	0,000	0,020	0,022	0,024	0,026	0,029	0,032	0,035	0,038	0,042	0,047	
4	ACCTAXSHIELD _t	0,000	0,020	0,041	0,065	0,092	0,120	0,152	0,187	0,226	0,268	0,314	
5	TOTALRETURN _t	0,000	0,190	0,416	0,685	1,005	1,386	1,840	2,379	3,021	3,785	4,695	
6	ACCTAXSHIELD/TOTALRET _t	n.a.	0,104	0,100	0,095	0,091	0,087	0,083	0,079	0,075	0,071	0,067	

Sensitivity analysis - Impact on IRR with different inputs

r_{shl}	CAR		
	10%	15%	20%
5%	0,085	0,048	0,031
10%	0,197	0,113	0,072
15%	0,345	0,197	0,127

5.3.2 Testing the results with an adapted APV model

In order to test our findings from our frame work, we use an adjusted present value (APV) valuation model to value a fictional company ("the company") with SEK 100 million in revenues. Since private equity companies own their investments for a limited period of time, the terminal value is determined using a fixed multiple instead of using a terminal value formula. The growth in revenues (g_{revenue}), net working capital (NWC % of sales) and EXIT multiple are adjusted using the excel solver to match an initial enterprise value of SEK 100 million with a required return on total equity of 19 percent since that is the return on equity used in previous calculations. The company has constant EBITDA and EBIT margins of 10 and 8 percent respectively, the debt repayment is set at 10 years and the interest on external debt (r_{debt}) is set at 5 percent. External debt is assumed to be 4 times EBITDA or SEK 40 million and the ratio of shareholder loans to total equity is set to the same ratio as in our previous calculations (75 percent). The return on the total unlevered asset is calculated using a return on equity of 19 percent (from the average return on private equity investments) and the interest rate on debt of 5 percent. The total unlevered required return on the company ($r_{\text{EVunlevered}}$) is 13.4 percent. The explicit forecast period is set to seven years in order to match the average holding period for a private equity firm.

Table 10. APV assumptions

Assumptions	SEKm
r_{shl}	10%
g_{revenue}	11,5%
EBITDA _{margin}	10,0%
EBIT _{margin}	8,0%
NWC % of sales	36,1%
CAPEX % of sales	2,0%
TAXRATE	26,3%
Repayment rate	10year
r_{debt}	5,0%
EXIT multiple	8,4x
$r_{\text{TOTALEQUITY}}$	19,0%
$r_{\text{EVunlevered}}$	13,4%
Debt	40,0
Equity	15,0
Shareholder loans	45,0
Total equity	60,0
Total enterprise value	100,0

The free cash flow of the company is forecasted for the explicit seven year period. At the end of the period the company is valued with a multiple. The cash flows and terminal value is discounted with the return requirement for the unlevered company ($r_{\text{EVunlevered}}$). In addition, the tax shield for the

external debt and the shareholder loans is forecasted for the explicit seven year period and then discounted in order to find the net present value of the tax shields. The tax shield generated by external debt is discounted using the interest rate on external debt (r_{debt}) and the tax shield generated by the shareholder loans is discounted using the interest rate on the shareholder loans (r_{shl}).

Cash taxes on EBIT are calculated as EBIT multiplied by the tax rate (TAXRATE) of 26.3 percent.

Table 11. APV calculations

SEKm	Forecast period							
Cash flow forecast	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Revenue	100,0	111,5	124,4	138,8	154,8	172,6	192,5	214,8
EBITDA	10,0	11,2	12,4	13,9	15,5	17,3	19,3	21,5
EBIT	8,0	8,9	10,0	11,1	12,4	13,8	15,4	17,2
Cash tax on EBIT	n.a.	-2,3	-2,6	-2,9	-3,3	-3,6	-4,1	-4,5
Change in NWC	n.a.	-4,2	-4,6	-5,2	-5,8	-6,4	-7,2	-8,0
CAPEX	n.a.	-2,2	-2,5	-2,8	-3,1	-3,5	-3,9	-4,3
Free cash flow	n.a.	2,4	2,7	3,0	3,3	3,7	4,2	4,6

SEKm	Forecast period							
Debt schedule	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
External debt								
Debt OB	0	40	36	32	28	24	20	16
Repayment	n.a.	-4	-4	-4	-4	-4	-4	-4
Interest	n.a.	-2	-1,8	-1,6	-1,4	-1,2	-1	-0,8
TAXSHIELD _{debt}	n.a.	0,5	0,5	0,4	0,4	0,3	0,3	0,2
Debt CB	40	36	32	28	24	20	16	12
Shareholder loans								
Shareholder loans OB	n.a.	45,0	49,5	54,5	59,9	65,9	72,5	79,7
INTCOST _t	n.a.	-4,5	-5,0	-5,4	-6,0	-6,6	-7,2	-8,0
TAXSHIELD _t	n.a.	1,2	1,3	1,4	1,6	1,7	1,9	2,1
Shareholder loans CB	45	49,5	54,5	59,9	65,9	72,5	79,7	87,7
Financial cash flows								
Cash flow after financing	n.a.	-1,9	-1,3	-0,7	-0,1	0,6	1,3	2,2
Net taxes paid	n.a.	-0,6	-0,8	-1,1	-1,3	-1,6	-1,9	-2,2
Cash	0	-1,9	-3,2	-4,0	-4,1	-3,5	-2,2	0,0
Net debt	40,0	37,9	35,2	32,0	28,1	23,5	18,2	12,0

SEKm	Forecast period							
Valuation	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Free cash flow	n.a.	2,4	2,7	3,0	3,3	3,7	4,2	4,6
Discounted present value of operations	89,1	98,6	109,2	120,8	133,6	147,8	163,5	180,7
Discounted present value of tax shield								
TAXSHIELD _{debt}	n.a.	0,5	0,5	0,4	0,4	0,3	0,3	0,2
Present value	2,4	2,0	1,6	1,3	0,9	0,7	0,5	0,2
TAXSHIELD _{shl}	n.a.	1,2	1,3	1,4	1,6	1,7	1,9	2,1
Present value	8,5	8,2	7,7	7,0	6,2	5,0	3,6	2,1

The total value of unlevered operations is SEK 89.1 million, the value of the tax shield on external debt is SEK 2.4 million and the value of the tax shield on the shareholder loans is SEK 8.5 million. This

means that 8.5 percent of the value of a company acquired by a private equity fund is generated by the tax shield on the shareholder loans. This is in line with the findings in our model where we find that tax shields on shareholder loans generate 7.9 percent of the total returns to private equity.

In our example, the total tax savings from using shareholder loans during the holding period is SEK 11.2 million which is almost half of total cash taxes on EBIT.

Table 12. APV valuation results

Valuation results	SEKm
Total value	100,0
Value of operations	89,1
Value of taxshield from debt	2,4
Value of taxshield from shareholder loans	8,5
Sum total cash taxes on EBIT	23,3
Sum total net taxes paid	9,5
Taxes avoided through debt	2,6
Taxes avoided through shareholder loans	11,2

Conclusions

6.1 Conclusions to research questions

6.1.1 How common are shareholder loans in private equity owned companies?

We conclude in our research that shareholder loans are present in the majority of all acquisitions made by private equity in Sweden. We can also conclude that the presence of shareholder loans has increased in the last few years. One reason for this could be that credit markets have contracted in line with the reasoning in Axelsson, Strömberg, Jenkinson and Weisbach [2012]. Less favourable credit markets mean that transactions are financed with less external debt. A higher proportion of total equity financing implies that the tax benefits from using shareholder loans are larger. The explanation could also follow in line with the reasoning in Section 2.6 that if some funds start using their shareholder loans as part of the capital structure, all other funds have to follow in order to maintain competitiveness. This would be a necessity in accordance with the “rate of return auctions” phenomena according to Jonsson [2005]. Another possibility is that we have a selection bias, since some companies acquired in the earlier years in our study have been divested, while few or none of the companies acquired in 2010 or 2011 have. If, for some reason, companies with shareholder loans are divested earlier, this could explain why more companies acquired in 2010 and 2011 are using shareholder loans than the ones acquired in previous years. Another, more likely explanation is that shareholder loans have become more common, since the tax benefits have become more widely known in the investment community.

6.1.2 What is the total value impact of shareholder loans in private equity owned companies?

Kaplan [1989] found that the tax shield can explain between 4 and 40 percent of all value created in management buyouts from the stock exchange. According to Strömberg and Kaplan [2009], the value created by tax shield in later years is lower because less leverage has been used in transactions, and the corporate tax rate is lower than during the 1980s. The Swedish corporate tax rate is 26.3 percent, compared to the 46.3 percent tax rate during the 80s in the US. Strömberg and Kaplan state that it is hard to estimate how much value is created through increased leverage due to tax shields, since personal taxes affect the calculations. Furthermore, it is hard to estimate to what extent the debt is amortised as or to what extent the losses can be used to reduce the taxes paid.

Using the framework stated in Section 3.5, we find that 7.9 percent of the returns are generated by tax shield from shareholder loans in the average private equity owned company that use shareholder loans as part of their financing. This confirms our hypothesis that shareholder loans have a significant impact on returns. It is however important to note that the results vary significantly, depending on the input variables. In our calculation presented in Section 5.2 we use 19 percent CAR on the average private equity fund. If the fund generates returns of 15 percent, the value of the tax shield generated by the shareholder loans is instead 11.3 percent. The interest rate on the shareholder loans is also an important factor that determines how large of an impact the shareholder loans have on total return to equity. As observed in Section 5.2, interest rates on shareholder loans vary significantly between different private equity owned companies. With interest rates of 15 percent, the impact on total returns to equity is 12.7 percent. This is. However. a hypothetical scenario where the company generates sufficient profits to utilise the full tax deduction on the interest expenses. If this is not the case, the interest will generate tax loss carry forwards that may or may not be used in the future. The loss carry forward has of course a lower market value than the current outstanding balance, since it will generate greater cash flows at some point in the future. Our results should therefore serve as a theoretical upper bound to the benefits generated by shareholder loans and not definitive facts.

6.2 Suggestions for further research

This research is a first step of non-biased research to shareholder loans in private equity owned companies. There are many areas in which this research could be improved and further developed. One relevant research question is if Swedish private equity is more profitable than private equity in countries where interest on shareholder loans is a non-deductible expense? If private equity is more profitable in countries where shareholder loans are allowed, compared to countries where they are not, this would indicate that the findings of Jonsson [2005], as previously described, are incorrect.

Furthermore, the scope of this research is limited. A qualitative research into why private equity funds use shareholder loans and how they decide to set the interest rates on these loans, could add value to this research and provide some explanations to the questions this research leaves unanswered.

Another way this research could be further developed would be to extract the full capital structure of private equity owned companies and use the same framework, as set in Chapter 3, in order to conclude how much of the return is generated by tax shields on all debt, not just debt on shareholder loans.

It could also be of interest to determine if companies acquired in structured auction processes tend to generate higher or lower returns than bilateral transactions for the acquiring private equity fund.

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