

REPORTING AGGRESSIVENESS JUST BEFORE BANKRUPTCY

Abstract

Accounting quality is influenced by factors such as reporting standards and level of reporting aggressiveness. Higher levels of reporting aggressiveness increase the risk for fraudulent reporting (Rachmawati et al, 2023). Accounting principles allow some discretion in reporting, requiring accountants to use their judgment. Expanding the boundaries of this judgment can lead to fraud (Blanco, Dhole & Gul, 2023). Fraud can be an outcome of making conscious decisions, but also by not making them (March & Olsen, 1976). Fraud can also be an outcome of impulse or error (Cooper, Dacin & Palmer, 2013).

A company in financial distress may have motives for aggressive accounting to conceal its poor financial condition. In Finland, if a company's equity is negative, the management of the company must register the loss of share capital in the trade register, making the information publicly available (Limited Liability Companies Act, 2006). The requirement may motivate the management to avoid writing down assets. The management want to avoid the registration of loss of share capital, as it signals financial distress to stakeholders, potentially leading to loss of customers, breach of loan covenants, further financial distress and ultimately bankruptcy.

In private companies, the motivation for financial reporting fraud often stems from the management's desire to retain their jobs or comply with loan covenants (Crawford & Weirich, 2011). According to Elliot & Willingham (1980 as cited in du Toit, 2008) managers also may manipulate financial statements for personal gain.

Previous research has detected "red flags" or indicators of manipulation in financially distressed companies (duToit, 2024). These red flags include related party transactions and high debt (duToit, 2024). A financially distressed company might not write down receivables from related party transactions, even if the owner/manager has no intention of repaying the company.

Overvaluation of assets or receivables, or undervaluation of liabilities, results in unreliable financial statements. These financial statements provide false signals about the company's financial health to various users, including banks, suppliers and other stakeholders, leading to poor decision usefulness.

Previous research has focused on publicly listed companies. In many European countries, SMEs are the backbone of the economy, making it crucial to understand the reliability of financial statements in SMEs. The management of the company is often the owners, creating opportunities for transactions between the company and the management.

The purpose of this paper is to examine how specific red flags affect the reliability of financial statements before bankruptcy. We will study whether overstated related party transactions or subordinated capital loans delayed bankruptcy.

In this paper we will analyse the financial statements of SMEs just before bankruptcy. We choose financial statements from Finnish companies as data because Finnish accounting emphasises historical cost accounting, with conservatism as a key principle. We can therefore expect companies to write down their assets promptly when necessary. When a company goes bankrupt in Finland, the insolvency practitioner may order a forensic audit. Through non-public forensic audit reports we can examine how related party transactions are accounted for and if the company had subordinated capital loans. Forensic auditors also look for any kind of overvalued assets and other signs of false financial statements. We will compare Altman's bankruptcy index

calculated from the original financial statements with the financial statements corrected according to forensic audit findings. Forensic audit reports provide a unique opportunity to get insight into the quality of the financial statements. We will also analyse comments from forensic auditors regarding possible reasons for bankruptcy. We will calculate Altman's Z-score with and without related party transactions to understand their impact on the score.

The reports from the insolvency practitioners are not publicly available. We have access to 40 reports from 40 companies that went bankrupt between 2017 and 2019. This access allows us to study the relationship between bookkeeping and reporting aggressiveness.

Our research will contribute to the understanding of accounting quality and assist standard setters and accounting practitioners. It will also enhance the understanding of potential weaknesses in SME accounting, helping to prevent financial fraud.

Key words: accounting quality, red flags, unreliable financial statements

1. Introduction

In this article we review a selected sample of financial statements from SMEs that have gone bankrupt. These companies have manipulated their financial statements to avoid bankruptcy. Manipulating financial statements is a major concern because a delay in the bankruptcy process or if the possible bankruptcy is not detected by stakeholders in time, it may lead to bigger losses for stakeholders.

This paper shows which items and how the items usually are manipulated in financial statements for companies close to bankruptcy. This paper helps various stakeholders to pay attention to specific items that can be manipulated and be aware of common red flags.

There are well known corporate fraud cases like Enron, WorldCom and others, but corporate fraud is not committed only by large companies. In most European countries, small- and medium sized companies are the backbone of the economy, and it is important that we learn more about reporting aggressiveness and/or corporate fraud in SMEs. Even if one SME might not be able to shake the economy of a country, but losses for individuals, suppliers and banks can be sizeable.

Every year thousands of companies go bankrupt (Finnish Statistics Centre, 2024). Even in a small country as Finland, with about 260.000 limited liability companies, about 3.000 went bankrupt in 2024. This leads to questions such as: 1) what items can be manipulated and 2) will the manipulations influence bankruptcy prediction?

Financial statements must be reliable to be useful for stakeholders. The reliability of financial statements is dependent on the quality of accounting standards but also on the reporting aggressiveness. SMEs do not in many countries have to be audited, so it is even more important for stakeholders to recognize some red flags.

In this paper financial statement fraud is defined as companies attempt to manipulate the financial statement in favour of the company.

2. Accounting quality

Accounting quality is influenced by factors such as reporting standards and level of reporting aggressiveness. Higher levels of reporting aggressiveness increase the risk for fraudulent reporting (Rachmawati et al, 2023). Accounting principles allow some discretion in reporting, requiring accountants to use their judgment. Expanding the boundaries of this judgment can lead to fraud (Blanco, Dhole & Gul, 2023). Fraud can be an outcome of making conscious decisions, but also by not making them (March & Olsen, 1976). Fraud can also be an outcome of impulse or error (Cooper, Dacin & Palmer, 2013).

Accounting quality is often defined through the level of income smoothing, reporting aggressiveness and earnings management but also by the quality of generally accepted accounting principles. Accounting principles establish accounting practices and methods. Accounting principles give some room for freedom in the reporting, i.e. the accountants need to use their judgment when applying accounting principles.

Creative accounting, which can lead to reporting aggressiveness, occurs, when the company management uses the flexibility of accounting standards to manipulate reports for their own benefit (Omurgonulsen & Omurgonulsen, 2009 in Agostini & Favero, 2017). Griffiths (1986 in Agostini & Favero, 2017) finds that creative accounting can be legal. The concept of fair presentation (Jones, 2011 in Agostini & Favero, 2017), on the other side, might not be fulfilled.

We can make a distinction to fraudulent accounting, where the financial statements are deliberately not made by accounting standards. (Arens et al, 2003 in Agostini & Favero, 2017)). Rezaee (2005) study financial statement fraud and defines it as a deliberate attempt to *“deceive or mislead users of financial statements, especially investors and creditors, by preparing and disseminating materially misstated financial statements”*. Rezaee (2005) found in his research that financial statement fraud can include manipulation of financial records, documents, misrepresentations of transactions or other information, misinterpretation of accounting standards, false disclosures or using loopholes in accounting rules. In the COSO framework, fraud is defined as *“any intentional act or omission designed to deceive others, resulting in the victim suffering a loss and/or the perpetrator achieving a gain”* (Cotton, Johnigan & Givarz, 2016).

Financial distress (weak financial condition and poor financial performance) and incentive to commit financial statement fraud have been studied before. In Carcello & Palmrose, 1994, Dechow et al, 1996, Lys & Watts, 1994 in Rezaee (2005) the more financial distress the more incentive to commit financial statement fraud.

A company in financial distress may have motives for aggressive accounting to conceal its poor financial condition. In Finland, if a company's equity is negative, the management of the company must register the loss of share capital in the trade register, making the information publicly available (Finnish Limited Liability Companies Act, 2006). The requirement may motivate the management to avoid writing down assets. The management want to avoid the registration of loss of share capital, as it signals financial distress to stakeholders, potentially leading to loss of customers, breach of loan covenants, further financial distress and ultimately bankruptcy.

The management/owners in private small and medium-sized companies can also have more private motivation. In Crawford & Weirich (2011), the motivation for financial reporting fraud often stemmed from the management's desire to retain their jobs or comply with loan covenants or tax

avoidance. Also, misappropriation of company assets by owners could, according to Crawford & Weirich (2011) be a motive for fraud. According to Elliot & Willingham (1980 as cited in du Toit, 2008) managers also may manipulate financial statements for personal gain.

Agostini & Favero (2017) discussed that the pressure for accounting fraud comes from investors or market analysts in Anglo-Saxon countries. In this article we study Finland, which has continental traditions with banks as financiers, and therefore the pressure may come from not breaking loan covenants. In this study, the companies are private, and do not have to meet analysts' forecasts, but saving their equity might be the target.

One of the principles for preventing fraud, in the COSO framework, is to have a board independent from management (Cotton, Johnigan & Givarz, 2016). In many SMEs, the board and the management are the same persons. This means that the management do not have any other person supervising them. The managers are often also owners, which means that not even the general meeting will hold the management accountable. SMEs are therefore more vulnerable for management fraud. SMEs do not necessarily have internal audit either. Limited liability companies must have external audit if the balance sheet exceed 100.000 €, turnover 200.000 € and three employees (two limits exceeded two subsequent years).

A company in financial distress, may have motives to save their equity to save the company or to save assets by moving the assets outside the company. They might do so through accounting actions (such as not writing down assets) or by real actions (such as selling assets below market value or oversized salaries to related parties).

Overvaluation of assets or receivables, results in unreliable financial statements. These financial statements provide false signals about the company's financial health to various users, including banks, suppliers and other stakeholders, leading to poor decision usefulness.

Related party transactions have been part of high-profile accounting scandals, such as Enron (Ryngaert & Thomas, 2012), but also WorldCom, Subprime Mortgage and Parmalat.

Previous research has detected "red flags" or indicators of manipulation in financially distressed companies (duToit, 2024). These red flags include related party transactions and high debt (duToit, 2024). A financially distressed company might not write down receivables from related party transactions, even if the owner/manager has no intention of repaying the company.

According to Rezaee (2005) revenue frauds are most frequently occurring and accounts payable frauds are least commonly occurring (Rezaee, 2005). Financial fraud may consist of overstating assets or revenues, or understating liabilities or expenses (Rezaee, 2005). In Rezaee's (2005) research, earnings management was the most common method.

Another red flag is high debt. In Finland, a limited liability company can receive or give subordinated loans (Limited Liabilities Act, 2006). A subordinated loan has lower preference, so if the receiver of the loan is in financial distress, it is unlikely that the giver of the loan will receive payment. If red flags are noticed in the financial statement, the risk for unreliable financial statements is higher.

A company that is in-solvent and over-indebted is considered bankrupt (Bankruptcy Act, 2004). If the total equity of a Finnish company is less than a half of its share capital, the management of the company need to register loss of equity in the trade register and the information becomes publicly available (Limited Liability Companies Act, 2006). The management or owners of a SME want to avoid the registration of loss of equity, because this is a clear signal to shareholders that

the company is under financial distress. Signals of financial distress might lead to loss of customers or loan covenants breaking, which lead to more financial distress and finally bankruptcy. Reporting aggressiveness might be one way to avoid registration of loss of share capital.

Companies might overstate assets (Crawford & Weirich, 2011), or not write down assets to avoid costs to save their equity. If the managers and the owners are the same persons, they might lend money (related party transactions) instead of paying salary (reference). They might not write down receivables, even if the owner/manager do not even intend to pay the money back to the company (reference). They might also want to move the money to another company, if they fear the original company to go bankrupt (Box, Gratzner & Lin, 2018, Rotem, 2011).

Companies in financial distress usually also have problems with their liquidity, which means that related party not paying back the receivables is leading towards even less liquidity. According to Crawford & Weirich (2011) lack of cash is one common motive for committing fraud.

In small and medium sized companies (SMEs) the economy of the owners (usually also managers) and the company is closely related. Financial distress in either one of them may trigger financial statements fraud.

In this paper we will analyse the financial statements just before bankruptcy. When a company have gone bankrupt, the insolvency practitioner might order a forensic audit. Through the forensic audit reports we can examine if related party transactions are accounted for and how. The forensic auditors also look for over valuated assets or other signs of the financial statement to be unreliable. We will compare the Altman's bankruptcy index with the original financial statements with the financial statements corrected according to findings in the forensic audit report. We can analyse the relation between false financial statements with the accounting behind it.

This paper investigates the nature of related party transactions in private small and medium-sized firms and if the related party transactions and subordinated loans had an effect of bankruptcy prediction in a code-law country. The companies have gone bankrupt between 2017 and 2019.

The topic is important because false financial statements will mislead users. Over valuation of assets or receivables, including related party transactions, lead to a financial statement that is not reliable. The financial statements give false signals of the financial health of the company to different users, including banks, suppliers and other stakeholders, which leads to poor decision usefulness. Stakeholders will suffer from a company going bankrupt. Crawford & Weirich (2011) find fraud to have significant consequences for companies.

According to the (Association of Certified Fraud Examiners, 2024) 27 % of occupational frauds in Western Europe 2024 was conducted by the owner/executive and 37 % by managers. The median loss of the frauds made by owner/executives were 766,000 \$ and for frauds made by managers 300,000 \$. 62 % of the companies did not recover anything of the losses.

Previous research has concentrated on listed public. In many European countries SMEs are the backbone of the economy, and therefore it is important to understand the reliability of financial statements in SMEs. We study the financial statements made by small and medium-sized enterprises just before they go bankrupt.

The aim of this paper is to test if fraud indicators (red flags) would have helped stakeholders to assess the reliability of the financial statement. We study financial statements for 14 private companies for eight years each. The companies have gone bankrupt, and we have access to the

forensic audit reports. The forensic audit reports are made by independent auditors after the bankruptcy. We can get insight in the weaknesses of the financial statements, and we are able to test if the weaknesses had an effect of the quality of the financial statements. We test the indicators on the financial statements as they are, and if the financial statements would have been corrected, to study the effect of the differences.

Financial statements are public, and the quality of financial statements are dependent of the quality of the accounting behind the financial statement. Financial statements are used by investors, management, banks, tax authorities, suppliers. Learning more about the quality of the financial statements just before bankruptcy, may in the long run help stakeholders cut their losses.

Blanco, Dhole & Gul (2023) studied the relation between financial statement comparability and accounting fraud. Their research show that the poorer the comparability, the greater the risk for accounting fraud. They define accounting fraud as violation of generally accepted accounting principles to mislead stakeholders. In other words, if the financial statement of a company is highly comparable to another companies, but with completely different financial result, this could be noticed by the users (Blanco, Dhole & Gul, 2023). This could also lead to incentive for fraud, because the managers of the firm with weaker financial result, could have incentives to be less weak than its peer.

In this paper related party is defined as the owners of the company, the managers and also group companies. According to SAS No 99 (AICPA in Crawford & Weirich, 2011) a risk factor for financial reporting fraud is significant related party transactions.

Tarighi, Hosseiny, Abbaszadeh, Zimon & Haghighat (2022) investigated financial distress risk and related party transactions, and their impact on financial reporting quality. They use OLS regression and Jones' discretionary accruals model to study the quality of the financial reporting. Their results show that companies in financial distress have lower reporting quality. Managers of the firm get money from the company by taking loans, and they manipulate the financial statements to cover up the loans (Tarighi et al, 2022) Their results also show that ROA and leverage have a negative effect on reporting quality. They study companies in Iran, which have been under economic sanctions the past decade.

Subastian, Widagdo & Setiawan (2021) studied the relation between earnings management and related party transactions in Indonesia and their research show that related party transactions positively and significantly improved the financial result. Family ownership had a stronger relationship between related party transactions and earnings management.

Ryngaert & Thomas (2012) studied if related party transactions were used to expropriate outside shareholders. They found that the volume of related party transactions not significantly was associated with shareholder wealth (operating profitability or Tobin's Q).

Small European companies are typically owned by a small number of shareholders. Owners of the company may have the opportunity to take money or assets from the company. (Gabbioneta, Greenwood, Mazzola & Minoja, 2013)

Bhuiyan & Roudaki (2018) studied the level of related party transactions in financial companies that failed in New Zealand. They also studied the role of auditors in reviewing related party transactions. They find that there are more related party transactions if there are inter-company director relationships, but Big4 auditors restricts the amount.

Mahtani (2022) studied companies from the infrastructure sector, that have filed for bankruptcy and had related party transactions before and during the financial crisis. Mahtani (2022) studied if related party transactions is an indicator of financial distress and developed a model for predicting financial distress. The study uses Altman's financial distress prediction model (Altman, 1968) with logistic regression. Their model with related party transactions showed better results when testing for financial distress than a model without related party transactions.

Fields, Lys & Vincent (2001) have defined accounting choice as any decision that affect financial statements and other statements made by generally accepted accounting standards. Financial statements fraud is an attempt to mislead users of the financial statement (Rezaee, 2005). According to Rezaee (2005) financial statement fraud could include manipulation of records, misrepresentations of transactions, false execution of accounting standards, accounting principles or methods, aggressive accounting techniques or manipulation of accounting practices. Accounting fraud is not the same as accounting errors or earnings management.

du Toit (2008) regard the managers to be responsible for publishing correct financial statements, but they also be the one to have incentives to publish false statements. du Toit (2008) do not consider the auditors to be the only one having responsibility for detecting fraud.

In Crawford & Weirichs (2011) research, in private companies' assets can be either over- or understatement, depending on the situation. Liabilities can also be understated. Crawford & Weirich (2011) also show, that in private companies, a reliable predictor for financial statement fraud is financial distress. The company have lack of cash.

du Toit (2008) have studied accounting items that contains risk for fraud. In this study we will concentrate on related party transactions. For example, Albrecht et al, Elliot & Willingham (1980), Apostolou, Hassell & Webber (2001), Bell & Carcello (2000), Calderon & Green (1994), Ernst & Young (2003), IAASB (2004), Lendez & Korevec (1999), Mitchell (1997), National Commission on Fraudulent Financial Reporting (1987), Razaee (2002) and Robertson (2002) in du Toit (2008) have considered related party transactions as a risk. Also financial distress is seen as a risk.

du Toit (2024) have studied the characteristics of financial statement fraud and have found 16 fraud indicators and one of the 16 is related party transactions. SAS No 99 (AICPA Crawford & Weirich, 2011) have listed characteristics that might lead to opportunities for financial reporting fraud, for example significant related-party transactions, valuation of assets or liabilities that contains subjective judgement or uncertainty, bank accounts in tax havens.

3. Research and methodology

Rational choice theory recognizes the importance of risk and attitudes to risk and has developed agency and game theory in economics (Cooper, Dacin & Palmer, 2013). The third variant of decision-making approaches are garbage can model (Cohen, March & Olsen, 1972, March & Olsen, 1976 in Cooper, Dacin & Palmer, 2013). Garbage can model focus on not making conscious decision and can be a consequence of impulse or error (Cooper, Dacin & Palmer, 2013). In this paper we see the decision not to write down related party transactions as a garbage can model. The reason why the management does not write down assets is to avoid loss of own capital, because the loss of the company's equity needs to be registered and publicly available. The decision not to write down related party transactions is an accounting mechanism that enable fraud.

Riahi-Belkaoui & Picur (2000) developed a framework for fraud in accounting. In this paper we study the quality of financial statements before bankruptcy. The management of the companies find themselves in a situation where there can be *“a lack of fit between values, and norms that confuses the individual”* (Riahi-Belkaoui & Picur, 2000).

The financial statements must be of an adequate level of quality to be useful for different users. A decision (conscious or not) to have overstated assets in the financial statement will lower the quality of the financial statement. It will lower the decision usefulness.

Purpose/aims of the paper The purpose of this paper is to examine how related party transactions and subordinated loans affect the reliability of financial statements before bankruptcy.

We will study the comments made by forensic auditors in the forensic audit reports to find out the quality of the related party transactions. Our purpose is to understand whether related party transactions have affected the quality of the financial statements. The forensic audit reports are a unique possibility to study a company's financial statement with information from a thorough investigation. In other words, we will analyse the interrelations between accounting and financial fraud.

Previous research has focused on publicly listed companies. In many European countries, SMEs are the backbone of the economy, making it crucial to understand the reliability of financial statements in SMEs. The management of the company is often the owners, creating opportunities for transactions between the company and the management.

Large related-party transactions, with overvalued receivables, might affect the reliability of financial statements. Reliability of financial statements are important, especially for companies in financial distress. In bankruptcy situations the lenders, suppliers and the tax authority will suffer from losses. Usefulness is here defined as possibility to predict bankruptcy.

Research questions:

1. Are related party transactions overvalued in financial statements before bankruptcy?
2. Does receivables from related party transactions lead to less useful financial statements?

In this paper we will analyse the financial statements of SMEs just before bankruptcy. We choose financial statements from Finnish companies as data because Finnish accounting emphasises historical cost accounting, with conservatism as a key principle. We can therefore expect companies to write down their assets promptly when necessary. When a company goes bankrupt in Finland, the insolvency practitioner may order a forensic audit. Through forensic audit reports we can examine how related party transactions are accounted for and if the company had subordinated capital loans. Forensic auditors also look for any kind of overvalued assets and other signs of false financial statements. We will compare Altman's bankruptcy index calculated from the original financial statements with the financial statements corrected according to forensic audit findings. We will also analyse comments from forensic auditors regarding possible reasons for bankruptcy. We will calculate Altman's Z-score with and without related party transactions to understand their impact on the score.

The reports from the insolvency practitioners are not publicly available. We have access to 40 reports from 40 companies that went bankrupt between 2017 and 2019. This access allows us to study the relationship between bookkeeping and financial fraud and to analyse the quality of the financial statements in dept.

Our research will contribute to the understanding of accounting quality and assist standard setters and accounting practitioners. It will also enhance the understanding of potential weaknesses in SME accounting, helping to prevent financial fraud.

Insolvency practitioners might order forensic auditors to audit a company that have gone bankrupt. The report from the forensic auditors is used by the insolvency practitioner to understand the transactions behind the financial statement. If transactions can be reversed, the insolvency practitioner will try to collect money to debtors, sometimes in court. The are not publicly available, but we got access to 40 reports for SMEs that have gone bankrupt in 2017, 2018 or 2019 in Finland. A company can be considered bankrupt if it is over indebted and insolvent. Out of these 40 reports, 3 did not contain data from financial statements and are therefore excluded.

We chose two items from the financial statements based on red flags (du Toit E. , 2024). The red flags chosen were related party transactions (in this paper we concentrate on receivables) and financial distress. All the companies chosen have gone bankrupt, the ultimate financial distress. We also chose subordinated loans, a form of loans with high uncertainty. It is in Finland calculated as the company's equity, but because it needs to be paid back some day, it can also be calculated as liability. Subordinated loans have low priority in bankruptcy and will be paid back after all other liabilities.

This is a form of case study. Industry of the companies varied: retail, health care and construction. The case study includes qualitative and quantitative analyses. We analysed the financial statements of the bankrupt companies for all possible available financial statements between 2012 and the bankruptcy. The financial statements are, or should be, publicly available through a website maintained by the Finnish state.

We also analysed the comments made by the forensic auditors. The report from the forensic auditors also has information of possible reasons for bankruptcy and chain of events that have led to bankruptcy. We have analysed the financial statements and calculated Altman's Z-score with and without the related party transactions. All numbers are in euros.

| | Revenue | Total assets | Long term related party receivables | Short term related party receivables | Subordinated loans |
|-------------------|---------------|--------------|-------------------------------------|--------------------------------------|--------------------|
| Median | 483 508,53 | 354 118,00 | 0,00 | 0,00 | 0,00 |
| Stand.dev. | 2 333 454,50 | 864 211,85 | 435 693,34 | 115 493,61 | 260 918,82 |
| Min | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| Max | 12 761 795,94 | 5 029 319,60 | 2 519 286,12 | 418 500,65 | 1 502 449,51 |
| Observ. | 162 | 161 | 96 | 113 | 161 |

17 of the 37 companies have related party receivables. We calculated the ratio between long term and short term related party receivables and total assets (following duToit, 2024). The median is 10 %, but there are companies that 97 % of the total assets are receivables from related parties.

We have also calculated Altman's Z-score for the 17 companies that had related party receivables. If the score is bigger than 2,99 the company is considered to be in a safe zone, 1,23 – 2,99 is a grey zone and under 1,23 red zone. The safe zone is here marked with *italic style* and the red zone with **bold**.

| Company | Year of bankruptcy | bankruptcy - 1 | bankruptcy - 2 | bankruptcy - 3 | bankruptcy - 4 | bankruptcy - 5 | bankruptcy - 6 | bankruptcy - 7 |
|----------------|--------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Company 1 | -120,46 | 1,72 | -0,06 | 6,33 | 6,37 | 7,42 | 11,31 | |
| Company 2 | | 2,59 | 1,52 | 5,45 | 2,90 | 5,74 | 2,77 | |
| Company 3 | 0,89 | | 2,25 | 3,04 | 2,14 | 1,79 | | |
| Company 4 | | 4,77 | 3,03 | 3,84 | | 6,15 | 7,49 | |
| Company 5 | 0,19 | 0,63 | 1,27 | 1,13 | 1,24 | 1,25 | 1,05 | 0,66 |
| Company 6 | | -1,21 | | 0,44 | 2,63 | 0,99 | 1,34 | |
| Company 7 | | -0,05 | 5,79 | 3,18 | 3,26 | 3,32 | 4,15 | 3,99 |
| Company 8 | | -0,57 | 1,80 | 6,73 | 6,93 | 7,12 | | |
| Company 9 | | 1,94 | 2,32 | 3,94 | | 5,96 | 7,22 | |
| Company 10 | -3,19 | -2,49 | -1,64 | 0,72 | 1,75 | 3,57 | 3,23 | |
| Company 11 | -1,12 | 2,91 | 4,14 | 2,12 | | | | |
| Company 12 | 0,59 | 2,40 | 1,59 | 2,23 | 2,16 | 3,87 | 2,08 | |
| Company 13 | | 0,91 | 0,70 | 0,83 | 0,54 | 0,41 | 0,47 | 0,41 |
| Company 14 | -1,62 | 1,62 | 1,07 | | 1,19 | 2,17 | 1,93 | |

Company 1 is in the retail business. The Z-score is in the safe zone until three years before bankruptcy. The company got a high compensation clame from a customer. The company has also paid oversized salaries to related parties. If you exclude the related party receivables from the financial statement, there is only a small change six years before bankruptcy. Salaries to related parties would change the Z-score in the following way:

Company 2 is in the retail business. Company 2 sold its core business. The reason for the bankruptcy is that company 2 gave another company a subordinated loan, that was lost when the other company went bankrupt. The Altman Z-score is in or near the safe zone until two years before bankruptcy.

Company 3 is in the retail business. The Z-score are in the green zone, except the year of bankruptcy. The core business is selling goods from a related party's other company. The related party receivable is according to auditors against the Limited Liability Companies Act. Related party receivable is over 40 % of total assets, and the year of bankruptcy 69 % of total assets. Company 3 has not informed stakeholders about their capital being negative according to the Limited Liability Companies Act.

Company 4 is also in the retail business. Altman's Z-score is in the safe zone. The company had a bad deal with its main supplier. The company gave a related party a loan, even if it was in over debt itself. The related party receivable is 94 % of total assets the year before bankruptcy.

Company 5 is in the health care business. The Z-score show us that the company's financial health has been weak. The company gave a related party a loan, and this loan was a clear reason for why company 5 itself got unable to pay its own debt. According to auditors, company 5 have paid oversized salaries to its owners.

Company 6 is in the construction business and the Z-score is in the grey or red zone. Three years before bankruptcy, the amount of the related party receivable was 81 % of total assets. If the related party receivable is removed from the financial statements, the Z-score is even worse. The tax authorities applied for bankruptcy. The auditors stated that the financial statements did not show the true and fair view of the financial statements. The company have sold its core business to related parties, and it seems that the accounting has not been separated correctly after selling the core business. The company's equity is negative but have been restored with subordinated loan.

Company 7 is also in the construction business. The Z-score is good until the year before bankruptcy. The tax authority has applied for bankruptcy. The company has been dependent of another company, and this has led to the bankruptcy. The financial statements have not given a true and fair view, according to the auditors.

Company 8 is in the retail business. The Z-score has been good up to three years before bankruptcy. The company is not overdebted, but the assets are mostly goodwill and constructions costs. Receivables from related partis have been paid by the company's dividends. The company have paid dividends against the Limited Liability Companies Act.

Company 9 is in the retail business. The company went bankrupt because the agreement with its' main supplier was ended. The Z-score is changing considerably if related party transactions are removed from the financial statements. The company has given subordinated loans to its related parties, and these receivables were 97 % of the total assets. The equity of the company is negative.

Company 10 is in the retail business. It has bad Z-score from three years before bankruptcy. The tax authority filed for bankruptcy. The financial statement, according to auditors, do not give a true and fair view of the financial statements. They have not reported value added tax correctly and have many uncertain transactions with related parties. They have not reported the loss of equity.

Company 11 is in the construction business. It started its business four years before bankruptcy. According to the auditor, the related party receivables are worthless. The company has not either kept its accounts separate from other businesses.

Company 12 is in the construction business. According to auditors, the financial statement does not give a true and fair view of the financial statements, especially because they have a worthless related party receivable in the assets. The receivable is 33 % of total assets. If they would have written the related party receivable down, their equity had been lost. When they gave the related party transaction, the company had already weak ability to pay its debts.

Company 13 is in the retail business and the Z-score has been in the red zone all the 8 years we are examining. This company has worthless receivables in the financial statements. Receivables from related parties are 77 % of total assets. The forensic auditors suspect that the core business have been moved to another company.

Company 14 is in the construction business. The related party receivables are about 10 % of total assets. The accounting behind the financial statements is unclear. There are transactions on the bank account, that maybe is a part of the business, that has been accounted for as related party transactions due to lack of documentation.

To be continued

4. Preliminary results and discussion

The Altman's Z-score is calculated on financial statements. It is a proven method and used widely. If the financial statements aren't reliable, it will affect the reliability of Altman's Z-score and other calculations based on financial statements.

The financial statements contain related party transactions. If they are not granted according to regulation, or written down according to accounting standards, the information given to stakeholders is not reliable and information asymmetry occurs. The quality of the decision making is weakened.

The companies do not write the receivables down, according to the garbage can model, to keep the appearance of a better wealth of the company, or not to report loss of equity. The effect of this is, that the company can survive longer.

The stakeholders might not draw the right conclusions of the financial statements because of related party receivables that are not written down correctly. Stakeholders might lose money because the bankruptcy is delayed, and the prediction of bankruptcy is not possible.

The contribution of this paper is to add to the understanding of related party receivables in SMEs. The managers of the company may move the core business to another company, move money to themselves (oversized salaries) or a related company. Managers of SMEs have the possibility to do so, because they are not as supervised as larger public companies.

The SMEs are the backbone of many countries' economies, and we need to better understand the relationship between accounting and reliability of financial statements. We have analysed financial statements but also reports from forensic auditors to better understand how reliable financial statements, or decision based on such, are.

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