

## The Effect of Non-Accounting Factors on Accounting Losses

Tareq Zaki Mashoka \*

### Abstract

The focus of this paper is examining the fundamentals of accounting losses. Specifically, the paper examines the effect of non-accounting factors on accounting losses for listed firms in the ASE. Non-accounting factors such as size, the length of the operating cycle and actual performance are more relevant in valuing loss firms. The paper finds that small size firms, long operating cycles and actual (real) performance explain losses for listed firms in the ASE. The results suggest that these non-accounting factors play a dominant role for valuing firms reporting losses. The paper concludes that investors must recognize the underlying reasons of losses before discarding loss firms as an investment alternative.

**Keywords:** accounting losses, small firms, operating cycle, performance.

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\* قسم المحاسبة، جامعة مؤتة.

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## أثر العوامل الغير محاسبية على الخسائر المحاسبية

طارق زكي مشوقة

### ملخص

تهدف هذه الدراسة الى تفحص خصائص الخسائر المحاسبية من خلال دراسة أثر العوامل الغير محاسبية في الشركات التي تفصح عن خسائر والمدرجة في سوق عمان المالي. العوامل الغير محاسبية مثل حجم الشركة، طول الدورة التشغيلية، والاداء الحقيقي، جميعاً يلعبون الدور الالهم لتقييم الشركات الخاسرة. حيث اظهرت نتائج الدراسة ان الشركات ذات الحجم الصغير، والشركات التي تعاني من طول الدورة التشغيلية، والأداء الفعلي للشركة هم الاسباب الرئيسية لخسائر الشركات المدرجة في سوق عمان المالي. كما توصلت الدراسة الى اهمية تقييم الشركات الخاسرة كفرصة استثمارية من خلال دراسة اسباب الخسائر لمعرفة احتمالية استمرارها في المستقبل.

**الكلمات الدالة:** الخسائر المحاسبية، حجم الشركة، الدورة التشغيلية، الاداء الحقيقي.

## **Introduction:**

Generally, listed companies are valued based on their performance. Naturally, investors are drawn to firms that report profits, and they assess the persistency of these profits. However, they discard firms reporting losses in fear of losing their money. But if losses are related to accounting factors, such as high accruals and high investments in intangible assets, they might consider them as investment opportunities, anticipating that these firms will revert from losses to profits in the near future. However, if the underlying reasons for losses are not related to accounting factors, the market will ignore loss firms in any investment decision. This might result in missing-out on significant returns. Based on that, loss reporting firms are interesting from an investing perspective, because when firms reverse their losses to profits, the market overreacts leading to significant returns (Carpentier et al., 2017).

This paper examines the underlying reasons for loss reporting firms that are listed in the Amman Stock Exchange (ASE). Specifically, the paper examines the effect of small size, long operating cycles and actual performance to explain losses and the probability of reporting losses. The paper forms three main expectations. First, there is a positive relationship between losses and small size firms. Because smaller firms do not have adequate control systems and are not able to compete with larger firms. Second, there is a positive relationship between losses and long operating cycles; the longer the operating cycle, the more difficult it becomes for firms to seize investment opportunities, resulting in lost investments. Third, there is a negative relationship between losses and actual performance. Firms that are achieving their target performance are less likely to report losses.

The paper applies a logit model because the dependent variable is an indicator variable that equals 1 if a firm listed in the ASE reports a loss in any period from 2001 to 2016, and equals 0 otherwise. The sample excludes financial listed firms because of their unique measures of size, operating cycle and real performance. For example, banks operating cycle are measured differently from merchandising and manufacturing companies.

The objectives of this paper is to examine loss firms and study the number of loss reporting companies in the ASE. Additionally, this paper aims to examine the effect of non-accounting factors on the probability of

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reporting losses. Moreover, this paper aims to provide useful insights for investors when valuing loss firms.

### **Literature on accounting losses:**

Studies examined the effect of losses and its relation to various outcomes such as firm value and stock returns. They show that non-earnings information (e.g., book value of equity) becomes more relevant for loss firms compared to profit firms (Joos & Plesko, 2005; Barth et al., 1998; Collins et al., 1997). Book value of equity for loss firms is a strong indicator of firm value (Jiang & Stark, 2013). Moreover, the impact of losses on the earnings response coefficient (ERC) is greater for growth firms but becomes even more significant for firms reversing from a loss in the previous year (Martikainen, 1997). Furthermore, labor size is negatively related to losses since firms reporting a loss or series of losses forces management to reduce labor size in their companies (Pinnuck & Lillis, 2007). Studies find that investors usually assume that losses are transitory even for loss-persistent firms and are surprised when these firms announce negative earnings (Li, 2011). The reason is that the market does not fully incorporate relevant information into the pricing and valuation of loss firms and keeps getting surprised by the items of earnings (Jiang et al., 2016). Therefore, managers provide private incremental information about the persistence of losses by using various means, such as the valuation allowance for deferred tax assets (Dhaliwal et al., 2013). Based on that, many investors examine tax items for loss firms in order to predict the persistence of losses in the future. For example, deferred tax liabilities negatively relate to stock prices in loss firms (Samara, 2014). Consequently, information asymmetry is more significant in loss firms, especially because managers do not sell their private stocks before the announcement of any bad news to avoid any trading allegations (Aier, 2013).

Another group of studies examined the effect of accounting properties on losses. Givoly and Hayn (2000) explain the drastic decrease in ROA through the increase of conservatism reflected by non-operating accruals. The increase of conditional conservatism is the main reason for the increase of the frequency of losses, and the probability of loss reversal declines monotonically as the history of losses extends (Balkrishna et al., 2007).

Investors examine the cash flow and accrual components of losses to assess the likelihood of reversing losses in the future (Joos & Plesko, 2005). The persistence of losses can be defined through value drivers such as non-recurring items, growth strategy and R&D (Darrough & Ye, 2007). The presence and increase in R&D contributes to valuing firms with losses and negative book value (Jan & Ou, 2012). Moreover, the book value of equity becomes more prominent as the recognized intangible assets increases in firms. In other words, high technological firms that invest heavily in research and maintain high development in intangible assets are more likely to report losses; for these firms book value of equity is more significant than reported income (Ciftci & Darrough, 2015). Accordingly, since accounting properties play an important role in losses and persistence of losses, the accounting principles and methods also have a similar role. For example, losses under IFRS are less persistent than losses under US GAAP (Atwood et al., 2011).

Based on the above, both accounting and non-accounting factors systematically explain losses; however the non-accounting factors are more dominant and more useful in explaining losses and the persistence of losses (Klein & Marquerett, 2006). Additionally, when analyzing losses one must keep in mind that the size of the firm attributes to the frequency of losses since smaller firms generally report lower earnings than larger firms (Fama & French, 2004; Fama & French, 2001).

### **Hypothesis:**

Losses can be explained through accounting and non-accounting factors. This paper focuses on the non-accounting factors because past studies have shown that non-accounting factors play a more vital role in explaining losses. Generally, firms report losses due to problems relating to their actual performance. As their performance becomes more efficient, firms generate higher revenues while controlling expenses and limiting waste and downtimes. Therefore, this paper will focus on examining the effect of non-accounting factors in order to explain losses for firms listed in the Amman Stock Exchange (ASE).

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**Small firms (size):**

In comparison, smaller firms are more likely to report losses than larger firms. Because smaller firms face fierce competition coming from large firms and they strive to compete in a limited market share, which results in lower revenues (Fama & French, 2004). Additionally, they are less likely to have adequate control systems on operations which lead to increasing costs. Moreover, and most significantly, small firms do not have the luxury of profiting from economies of scale.

H1: There is a significant positive effect of small size firms on losses.

**Operating cycle:**

The length of the operating cycle plays a major role in determining losses. Firms suffering from lengthy cycles are more likely to report losses. Longer operating cycles takes more time from the point of purchasing raw materials to producing and selling products. Accordingly, the longer the cycle the slower the turnover of sales and the recovery of receivables. This leads to frozen assets resulting in losing demand opportunities (Wang et al. 2014; Dechow, 1994).

H2: There is a significant positive effect of long operating cycles on losses.

**Real (Actual) performance:**

Losses can be explained by the actual performance of a firm. Actual performance relates to the firm's target, which is generating sufficient revenues from their operations to at least cover all expenses and costs. Thus, firms' actual performance will translate into either reporting profits or losses. Accordingly, this paper postulates that there is a negative relationship between actual performance and losses. Actual performance is measured by using two variable; operating cash flows and cash sales. Although operating cash flows and cash sales are accounting measures, they are nonetheless indicators of real (actual) performance and are less subject to management manipulation.

H3: There is a significant negative effect of operating cash flows on losses.

Cash sales is a proxy for real sales, which is the actual performance to generate revenues.

H4: There is a significant negative effect of cash sales on losses.

### **Conservatism:**

Accounting conservatism recognizes losses before they actually occur. However, it is an accounting measure and is used only as a control variable and assumed to be constant. This paper includes conservatism for better examination of the non-accounting variables.

### **Sample, measurement of variables and model:**

The sample consists all non-financial firms listed in Amman Stock Exchange (ASE) with available data from 2001 to 2016. Firms are selected from different sectors to examine losses according to the variables of this study. The selected sample generates 2192 firm-year observations. Financial firms are excluded because of the unique measurement of size, operating cycle and actual performance in these firms; which is substantially different from the measurement of the variables in all other firms.

Losses are measured as an indicator variable and equals (1) if a company reports a loss in any period from the year 2001 to 2016; and (0) otherwise. Consequently, since the dependent variable (losses) is a dummy variable, the model of this paper is a logit model. Small firms are measured as firms with total assets lower than the 25<sup>th</sup> percentile. Small firms are expected to report losses more frequently than large firms. Operating cash flows are measured as depreciation added back to net income after adjusting for changes in working capital items. Cash sales are measured as total sales minus change in receivables since the latter is a proxy for credit sales (Kothari et al., 2016; Dechow et al., 1994):

$$Total\ Sales_{it} = credit\ sales_{it} + cash\ sales_{it}$$

$$cash\ sales_{it} = Total\ Sales_{it} + \Delta\ accounts\ receivables_{it}$$

Cash sales is a measure of actual performance of the company because credit sales are subject to managers' discretion and manipulation.

Following Givoly and Hayn (2000) conservatism is measured as non-operating accruals because they represent gains and losses from non-operating assets, bad debt expenses, write downs and R&D expenses.

$$(NI_{it} - CFO_{it}) - (\Delta AR_{it} + \Delta Inv_{it} + \Delta prepaid_{it} - \Delta AP_{it}) + dep_{it}$$

Where NI is net income, CFO is operating cash flows, AR is change in accounts receivable, Inv is change in inventory, prepaid is change in prepaid expenses, AP is change in accounts payable and dep is depreciation expense. All items are for firm (i) in period (t).

Operating cycle is measured as time needed for selling goods plus time needed to collect cash from receivables, otherwise known as the cash conversion cycle. This variable also measures actual performance of the company.

$$\begin{aligned} \text{operating cycle} &= \text{days sale of goods} + \text{days sales outstanding} \\ &= \left( \text{Avg receivalbes} \times \frac{365}{\text{sales}} \right) + \left( \text{Avg inventories} \times \frac{365}{\text{COGS}} \right) \\ &\quad - \left( \text{Avg purchases} \times \frac{365}{\text{sales}} \right) \end{aligned}$$

To test the non-accounting variables effect on losses, this paper applies the following model. The regression framework is a logit model because the dependent variable (losses) is an indicator variable. The firm-year variables cover the period from 2001 to 2016. The model is applied using cross-sectional data.

$$\text{Loss}_{it} = \alpha_0 + \alpha_1 \text{Small}_{it} + \alpha_2 \text{Oprcycle}_{it} + \alpha_3 \text{CFO}_{it} + \alpha_4 \text{Cash Sales}_{it} + \alpha_5 \text{Consv}_{it} + \varepsilon_{it}$$

where:

*loss<sub>it</sub>*: is an indicator variable and equals 1 if firm (i) reports a loss in period (t), 0 otherwise.

*Small<sub>it</sub>*: The measure for small-size firms, and measured as firms with total assets lower than the 25<sup>th</sup> percentile with the value of 1, large firms above the 25<sup>th</sup> percentile have the value of 0.



***Oprcycle<sub>it</sub>***: is the measure for the length of the operating cycle for firm (i) in period (t). Measured as time needed for selling goods plus time needed to collect cash from receivables and equals 1 if the operating cycle is longer than 365 days, 0 otherwise.

***CFO<sub>it</sub>***: operating cash flow for firm (i) in period (t). It's a measure for actual performance, scaled by total assets.

***Cash Sales<sub>it</sub>***: Cash sales for firm (i) in period (t). It's another measure for actual performance, scaled by total assets.

***Consv<sub>it</sub>***: measured by non-operating accruals; a control variable to measure conservatism for firm (i) in period (t) and assumed to be constant.

### Results

Panel (A) of the following table illustrates the number and percentages of firms reporting losses and profits in each year from 2001 to 2016. The average of loss firms compared to firms reporting profits in all years included in the sample is roughly 34%. The lowest percent is in 2

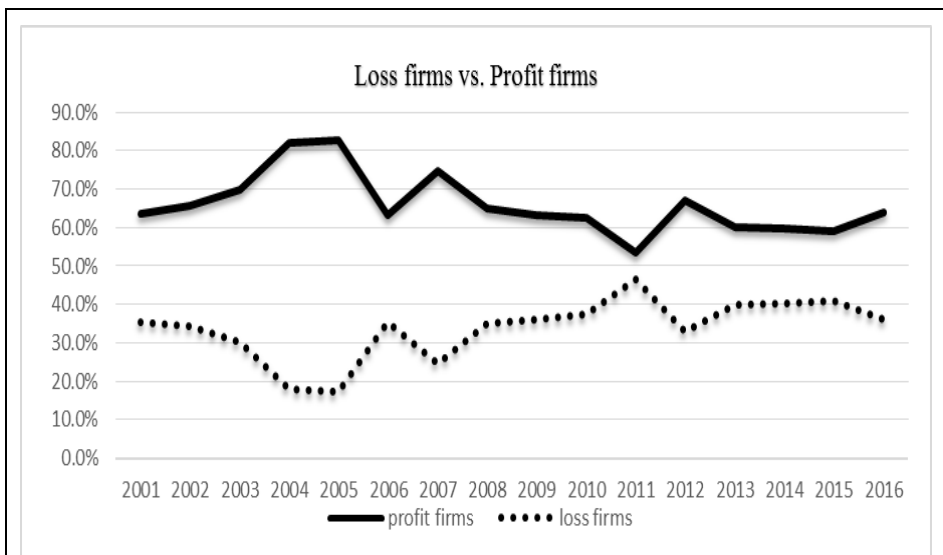
004 and 2005 (17%) and the highest percentage is recorded in 2011 (46.4%).

**Table (1) Panel A: Number and percentage of firms reporting profits vs. losses each year**

year	number of loss firms	% of loss firms	number of profit firms	% of profit firms
2016	42	36.2%	74	63.8%
2015	49	40.8%	71	59.2%
2014	48	40.3%	71	59.7%
2013	49	39.8%	74	60.2%
2012	41	33.1%	83	66.9%
2011	58	46.4%	67	53.6%
2010	47	37.6%	78	62.4%
2009	48	36.1%	84	63.2%

year	number of loss firms	% of loss firms	number of profit firms	% of profit firms
2008	47	35.1%	87	64.9%
2007	32	24.4%	98	74.8%
2006	43	35.2%	77	63.1%
2005	18	17.3%	86	82.7%
2004	18	17.8%	83	82.2%
2003	29	30.2%	67	69.8%
2002	33	34.4%	63	65.6%
2001	33	35.5%	59	63.4%

Panel B: Percentage of loss firms compared to profit firms



These percentages highlights the significance of the increasing number of firms reporting losses each year. Thus, the contribution of this paper is to understand the underlying reasons of losses for the listed companies in the ASE. Panel (B) illustrates the percentage of loss firms compared to firms reporting profits. Notice that the highest year listed firms reported profits is in 2004 and 2005. The average percentage of firms reporting profits in all years is around 66%.

Table (2) displays descriptive results for the main variables of the paper. The mean of operating cycle is around 215 days. This shows that the average operating cycle for listed firms in the ASE is quite lengthy. In other words, on average, firms have approximately 1.6 operating cycles in a given fiscal year, which is considered long cycles. This contributes furthermore in explaining the reasons behind losses. Firms are generating revenues at a pace much slower than occurring costs, which leads to frozen assets (e.g. inventory) and an increase in opportunities costs. Cash sales is larger than operating cash flows, both variables represent actual (real) performance. Non-operating accruals, the measure of conservatism, is negative and relatively small (0.003). Table (3) represents the correlation matrix. The two measures of actual performance are negatively correlated with losses and concurrent with expectations. In different words, the better a firm's performance the lower the probability of reporting losses becomes. The variables Small and oprcycle are correlated with losses but at a lower score than actual performance levels (24% & 20.5% compared to 19% & 18% respectively). Non-operating accruals (the accounting variable) have the lowest correlation with losses. This emphasis further of the importance of non-accounting factors in explaining losses.

<b>Table (2) Descriptive statistics</b>		
<b>Variable</b>	<b>Mean value</b>	<b>St. deviation</b>
Loss <sub>it</sub>	0.289	0.454
Small <sub>it</sub>	0.214	0.410
Opercycle <sub>it</sub>	214.9	170.3
Cfo <sub>it</sub>	0.0442	0.137
Cash sales <sub>it</sub>	0.532	0.479
Consv <sub>it</sub>	-0.003	0.138

**loss<sub>it</sub>**: is an indicator variable and equals 1 if firm (i) reports a loss in period (t), 0 otherwise. Number of loss firms from 2001 to 2016 is 635

**Small<sub>it</sub>**: The measure for small-size firms, and measured as firms with total assets lower than the 25<sup>th</sup> percentile with the value of 1, large firms above the 25<sup>th</sup> percentile have the value of 0.

**Opercycle<sub>it</sub>**: is the measure for the length of the operating cycle for firm (i) in period (t). Measured as time needed for selling goods plus time needed to collect cash from receivables and equals 1 if the operating cycle is longer than 365 days, 0 otherwise. Number of firms with long cycles 188 firms from 2001-2016.

**CFO<sub>it</sub>**: operating cash flow for firm (i) in period (t). It's a measure for actual performance, scaled by total assets.

**Cash Sales<sub>it</sub>**: Cash sales for firm (i) in period (t). Another measure for actual performance, scaled by total assets.

**Consv<sub>it</sub>**: measured by non-operating accruals; a control variable to measure conservatism for firm (i) in period (t) and assumed to be constant.

**Table (3) Correlation matrix**

	<b>Loss<sub>it</sub></b>	<b>Small<sub>it</sub></b>	<b>Opercycle<sub>it</sub></b>	<b>Cfo<sub>it</sub></b>
<b>Loss<sub>it</sub></b>	-			
<b>Small<sub>it</sub></b>	0.19	-		
<b>Opercycle<sub>it</sub></b>	0.18	0.23	-	
<b>Cfo<sub>it</sub></b>	-0.24	-0.085	-0.12	
<b>Cash sales<sub>it</sub></b>	-0.21	-0.045	-0.28	0.165
<b>Consv<sub>it</sub></b>	-0.15	0.008	0.013	-0.35

The following table displays the results for the logit regression model applied to test the hypotheses of this paper. All variables are significant. Non-operating accruals, the measure of conservatism, is also significant but negative. However, conservatism is included in the model as a control variable to limit its effect, which provides a better examination of the non-

accounting factors because they are the focus of this paper. The Pseudo R<sup>2</sup> is 16% (Pseudo R<sup>2</sup> is used in logistic regressions instead of ordinary R<sup>2</sup>).

**Table (4) Results of logistic regression model**

	Coefficient	Std. error	z-value	p-value
Small <sub>it</sub>	0.793	0.161	4.94	0.000
Opercycle <sub>it</sub>	0.415	0.192	2.16	0.031
Cfo <sub>it</sub>	-6.901	0.711	-9.70	0.000
Cash sales <sub>it</sub>	-0.897	0.179	-5.00	0.000
Consv <sub>it</sub>	-0.172	0.714	-8.81	0.000
Constant term (α <sub>0</sub> )	-0.172	0.130	-1.32	0.186

Pseudo R<sup>2</sup> =16%

$$Loss_{it} = \alpha_0 + \alpha_1 Small_{it} + \alpha_2 Opercycle_{it} + \alpha_3 CFO_{it} + \alpha_4 Cash Sales_{it} + \alpha_5 Consv_{it} + \varepsilon_{it}$$

*loss<sub>it</sub>*: is an indicator variable and equals 1 if firm (i) reports a loss in period (t), 0 otherwise.

*Small<sub>it</sub>*: The measure for small-size firms, and measured as firms with total assets lower than the 25<sup>th</sup> percentile with the value of 1, large firms above the 25<sup>th</sup> percentile have the value of 0.

*Opercycle<sub>it</sub>*: is the measure for the length of the operating cycle for firm (i) in period (t). Measured as time needed for selling goods plus time needed to collect cash from receivables and equals 1 if the operating cycle is longer than 365 days, 0 otherwise.

*CFO<sub>it</sub>*: operating cash flow for firm (i) in period (t). It's a measure for actual performance, scaled by total assets.

*Cash Sales<sub>it</sub>*: Cash sales for firm (i) in period (t). It's another measure for actual performance, scaled by total assets.

*Consv<sub>it</sub>*: measured by non-operating accruals; a control variable to measure conservatism for firm (i) in period (t) and assumed to be constant.

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Results of H1: the results show a significant positive effect of small size firms and losses. This result is concurrent with expectations; small size firms report losses more frequently compared to large firms. Small firms compete in smaller markets shares and cannot benefit from economies of scale. Additionally, they lack adequate or mature control systems over their operations and costs. This, along with the inability to generate sufficient revenues, contributes more to the probability of reporting losses.

Results of H2: the results show that as the operating cycle becomes longer, the probability of reporting losses increases as well. Longer operating cycles means that more time is needed to sale goods and collect cash from receivables leading to frozen assets, in the form of frozen cash. Therefore, Firms suffering from lengthy cycles occur higher opportunity costs because of the shortage of cash. These firms miss many demand opportunities in addition to the inability to expand their operations. Firms with lengthy cycles will need much more time to increase in size and will remain smaller than other firms. As result, they are more likely to report losses more frequently.

Results of H3 and H4: both hypothesis test the relationship between actual performance and losses. Actual performance is measured as operating cash flows and cash sales because they are less subject to managers' manipulation. The expectation of this paper is that there is a negative effect of actual performance on losses. Both coefficients of operating cash flows and cash sales are negatively significant (-6.9 and -0.897 respectively). Thus, as firms enhance and improve their actual performance the lower the probability of reporting losses. Moreover, the coefficient of both variables are the largest compared to the other coefficients of the model; meaning that actual performance is the major explanatory factor for losses.

To summarize, the coefficient scores of the variables show that in explaining firms' losses, actual performance (operating cash flows and cash sales) is the main explanatory factor in explaining losses. Size (i.e. small firms) comes in the second place; and finally, the length of the operating cycle has the lowest effect on firms reporting losses. In other words, small size firms that suffer from lengthy operating cycles, but are achieving high performance in their activities, have a higher probability to report profits. Therefore, firms must focus mainly on their operations through applying

enhanced control systems on their costs and diversifying their operations. However, this is not always the case; firms that are smaller than their competitors and suffer from lengthy operating cycles will not have much flexibility to enhance their actual performance. As a result, they will most likely report losses.

### **Conclusion:**

The purpose of this paper is examine the effect of non-accounting factors on losses. Non-accounting factors are paly a more dominant role in explaining losses. Firms reporting losses are considered interesting from a valuation point of view. Investors assess the components of losses and are interested in the reasons that causes losses to assess whether these firms are able to revert their losses. The reason is, if firms revert losses the market then overreacts, and the value of the firm increases substantially (Carpentier et al., 2017; Joos &Plesko, 2005). Consequently, investors will achieve significant returns. Profit reporting firms on the other hand, are valued mainly on their earnings and the components of earnings (i.e. accounting factors). Many studies valued profit firms according to the accrual component of earnings to assess the persistency of earnings in the future. However, for loss firms accounting proprieties, such as accruals, become irrelevant for loss firms (Klein & Marquerett, 2006).

This paper examines the underlying reasons for loss reporting firms. The sample includes all companies listed in the Amman Stock Exchange (excluding financial listed firms). The paper examines the effect of firm size, the length of the operating cycle, and actual performance of firms on the probability of losses. The paper applies a logit model because the dependent variable is an indicator that equals 1 if a firms reports a loss any period from 2001 to 2016, and 0 otherwise. Thus, the model only incorporates loss reporting firms.

Results show that small size firms are more likely to report losses. Small size firms lack adequate control systems and have small market shares which makes them generate lower revenues that is inadequate to cover their costs. Additionally, larger firms benefit from economies of scale, a luxury that is unavailable for smaller firms. Moreover, results show that firms suffering from long operating cycles are more likely to report losses. The reason is because they require longer periods of time from the point of producing and selling goods to the point of collecting from their customer

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resulting in frozen assets and lack of cash. This leads to missing many demand opportunities and the inability of growth and expansion. The results also show that actual performance is the major explanatory factor for losses. Firms that are not functioning as planned and not meeting their performance targets are more likely to report losses. Actually, when comparing the coefficients size of the variables, actual performance, measured by operating cash flows and cash sales, plays a dominant role in explaining losses, much more than size and long operating cycles. Therefore, even for small size firms, with long operating cycles, can report profits if they focus on achieving their target performances. Consequently, when they start reporting persistent profits, they can seize opportunities for growth and become more efficient in managing their operating cycles.

The paper provides useful insights to investors. The market should not discard loss firms when making investment decisions before examining the underlying reasons for losses. Doing so might result in losing profitable investment opportunities. If investors understand the reasons for losses and decide to invest in these firms because they expect a loss revert in the foreseen future, they will accomplish significant returns.

Future research should examine on other non-accounting factors, such as macro and micro economic variables. More specifically, business cycle and macroeconomic productivity. Moreover, future papers could also examine the effect of labor size and the ability to acquire sufficient financing and funds. These factors can shed more light on the underlying reasons of losses.



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