BALANCE SHEET RULES AND THEIR INFLUENCE ON BUSINESS PERFORMANCE – AN EMPIRICAL STUDY

Marta Nosková¹; Petra Taušl Procházková²; Eva Jelínková³
University of West Bohemia, Faculty of Economics,
Department of Business Administration and Management,
Univerzitní 22, 306 14 Plzeň, Czech Republic
e-mail: ¹mnosk@kpm.zcu.cz; ²pprochaz@kpm.zcu.cz; ³jelinkov@kpm.zcu.cz

Abstract
The study aims to examine in detail the impact of compliance with balance sheet rules on business performance. To examine this premise, data from small and micro businesses in the Czech Republic (total number 2,537) were statistically tested using t-test and Mann-Whitney U test. Particular attention was paid to the value of the return on equity indicator (as a business performance indicator), and the changes in this value between the business groups that comply and those that do not comply with these rules. The results suggest that the positive effect of balance sheet rule compliance on business performance cannot be confirmed, nor the predominant compliance among businesses was proven. Thus, the discussion of whether the balance sheet rules need regularly appear in the current business economics literature should be open. The results are presented and discussed in this paper, together with their limitations.

Keywords
Balance sheet rules; Business performance; Business performance measurement; Impact.

Introduction
Balance sheet rules are understood as a well-known part of the business economy theory. They present recommendations on how to manage balance and stability in financing. Such recommendations are still common in German-speaking countries, as well as in the Czech Republic or Slovakia. By following these rules, businesses should achieve long-term financial stability due to the specific structure of assets and liabilities. Balance sheet rules are commonly understood as one of the tools for financial analysis. Financial analysis is conducted mainly to obtain information about a company’s financial management and, thus, to support the stabilization of the company’s financial health. Financial analysis results can influence companies’ financial strategies and, thus, their business competitiveness. Despite its importance, limited attention is paid to the compliance of business sheet rules within companies’ financial strategies. As López Salazar et al. [1] argue, financial analysis and its parts represent basic features that support company strategy. However, they point out that little attention has been paid to micro and small companies. They argue that micro and small businesses use a limited scope of financial information to make decisions, and the priority is often given to operating activities, not to developing financial plans. Nonetheless, the importance of financial decisions is clear, and its management contributes to the failure or growth of a company.

The concept of balance sheet rules originates from German-speaking countries [2], [3], [4], [5] and is related to streams in the business economy known as ‘Betriebswirtschaftslehre’. As such, logically, these recommendations are still very common in the business economy and
management theory in Central and Eastern Europe (e.g., Germany, Czech Republic, and Slovakia). However, how updated the balance sheet rules in the current business economy and management are and whether it is possible to provide empirical evidence of their relation to business performance management remain unanswered. To support this research topic, only two papers (in English with no timespan limitation) that focus on balance sheet rule(s) were found in the research database Web of Science [6], [7] and one paper (same searching criteria) was found in database Scopus [8]. The lack of available research papers could be considered as a limitation for our research interest. On the other hand, this fact supports our assumption that the relation between business performance management and balance sheet rules approach should be a topic of research interest.

The remainder of this paper is organized as follows. The first section provides a theoretical background on the issue of each balance sheet rule, as well as business performance. This section aims to focus on the insufficiently covered research area of balance sheet rules to justify the following empirical research and formulate the research question. The next section describes the methodological approach that was used, followed by the empirical section, in which data on micro and small businesses are statistically tested to answer the given research question. Then the results and limitations are discussed in relation to the presented data.

1 Theoretical Background

As mentioned above, balance sheet rules are considered a guide for the general financing of businesses, and their application allows the maintenance of financial stability [9]. They provide a guideline for businesses to remain financially healthy for long-term periods, secured in terms of liquidity, and thus profitable. To achieve these aims, balance sheet rules recommend maintaining an appropriate level of financial indicators in the financial and capital structures of businesses.

While several balance sheet rules exist, this study focuses on the three most-mentioned rules in the literature (e.g. [10], [11], [12]): the golden balance sheet rule, risk equalization rule, and pari rule. In addition, we consider these three rules as the ones that are most connected with business performance, which is discussed in the text below.

1.1 Balance Sheet Rules

The golden balance sheet rule (1R) is considered one of the best-known rules (e.g. [13], [12]), and it represents a basic recommendation for financial and capital structures. Essentially, the golden balance sheet rule is based on the unification of maturity dates in financing; thus, the financing period is coordinated according to the capital commitment period [14]. According to this rule, fixed assets and a part of the current assets should be financed using internal capital (equity) and long-term debts, current assets, subsequently, from short-term debts/liabilities. In other words, long-term assets should be financed using a balanced ratio of equity and long-term debt. Short-term assets should be financed, according to this rule, using the short-term available capital [15], [16]. The consistency in the assets and liabilities’ side of the balance sheet is an essential parameter for the assessment of business creditworthiness and rating; hence, it is an important part of the strategic financial planning of businesses.

The golden balance sheet rule primarily assesses maturity dates, but not the type of financing: equity or debt [16]. Having 100%, or slightly higher, long-term passives (equity and long-term debts) and fixed assets shares is considered the optimal situation. In the literature, this indicator is known as the degree of capitalization; in German, it is known as Anlagedeckungsrad II [15], [17], [10]. The existing literature (e.g. [12]) stated that the optimal capitalization degree level is 1.0. As such, by reaching this optimal level, the net
working capital is zero. This rule can also be measured using the net working capital or working capital ratio [18].

Based on the level of the golden balance sheet rule compliance, three approaches to financing a company are identified: conservative, aggressive, and moderate. A conservative approach to financing entails using long-term capital to finance not only long-term assets but also short-term assets, which means that companies tend to use mostly long-term finance sources to finance their daily operations. On the other hand, an aggressive method of financing entails using short-term sources of financing for both short-term and long-term assets. This may lead to illiquidity. A moderate approach lies in the middle between aggressive and conservative approaches, with the suggestion that short-term finance sources should be used to finance fluctuating current assets. Likewise, long-term finance sources should be used to finance permanent current assets [19], [20], [13].

Further, to address the question of the type of financing, the risk equalization rule (2R) is used. This rule considers the risk position of businesses and deals with capital structure and splitting of passives into equity and debt/liabilities [21], [16], [22]. In principle, with higher involvement of debt, business profitability increases. On the other hand, bankruptcy risk also increases. Thus, a higher level of equity provides business independence and creditworthiness [16]. For the stability and sustainability of businesses, it is recommended that equity and debt be split equally, or with a higher proportion of equity [23], [11]. This recommendation leads to better creditworthiness in companies, while the effect of financial leverage is not effective. Over the decades, changes in the level of measured values have been noted; currently, the proportion of 1:2 is considered better for firm profitability [24], [25].

The third rule is called the pari rule (3R), and it serves as an additional rule to the above-mentioned rules. It is connected with the bankruptcy law and the consequence of covering losses called ‘pari passu’. The ‘pari passu’ provides the basic principle applicable in bankruptcy law. According to this principle, creditors who belong to the same group, according to the hierarchy of claims, should be treated in the same manner [26]. The pari rule is important, especially in situations where companies apply for additional debt financing. The pari rule recommends that a company should use as much equity as it can invest in fixed assets, ideally less, to create space for long-term debt financing [11]. The company should maintain the so-called healthy debt; meaning, it uses debt capital to an acceptable extent. If the company becomes bankrupt, then all liabilities are satisfied from the equity, namely, the state, banks, creditors, and subsequently, the owners. This is why financing by equity poses a far greater risk for business owners than that by debt capital.

While these rules are based on relatively old literature [2], [3] and were not updated or empirically tested in the last decades, they still regularly appear in the current literature on business economics [17], [18], [10], [19], [16], [13], [22]. Further, these are still considered suitable indicators of business profitability [15] and one of the main principles of financial management in businesses [27]. Particularly, the golden balance sheet rule is still considered to guarantee or prevent liquidity problems and payment difficulties [16].

As for the current empirical testing (as well as the current theoretical approach), only a few scientific papers (see Introduction) currently deal with balance sheet rules; thus, a significant research gap was identified. However, to support the importance of balanced sheet rules compliance, it was decided to focus further on research in areas that are related to individual rules.

Regarding the first golden balanced rule, there are currently many papers related to the research on business financial structure and the optimal level of net working capital in relation to corporate profitability [28], [29], [30], [31], [32]. Particularly, regarding the topic of net
working capital, managing it and attaining its optimal level in relation to firm profitability has become a popular research subject in recent years [33], [34], [35], [36], [37] [38], [39].

Deloof [37] and Howorth and Westhead [39] stated that the optimal level of working capital maximizes business value and significantly improves corporate profitability. Jacková [30] states that financial structure, as well as its optimal level, is involved in achieving stability, prosperity, and overall efficiency of companies. Having a working management team plays a significant role in the overall corporate strategy of maximizing firm value and profitability [28], [29], [32], and it is considered a key part of the overall business strategy to create shareholder value. The optimal ratio between current assets and debts, which is an important part of the financial planning of up-to-date businesses [33], [40], indicates the existence of an optimal level of working capital which improves business performance.

The findings by Baños-Caballero et al. [34], [35] proved that an optimal level of working capital investments, which maximizes business value and profitability, exists. Non-compliance with this optimal level has a negative effect on value creation and causes a decrease in profitability. Firm managers should aim to maintain the optimal level as much as possible and avoid any deviations from it that could destroy firm value. The authors find an inverted U-shaped relationship between working capital and firm performance, which implies that an optimal level of investment in working capital balances the costs and benefits of investments in working capital and leads to the maximization of firm value.

Aktas et al. [33] excluded the possibility that better performance is driven by increasing firm risk, following the adoption of the aggressive working capital policy. This finding is also supported by Nazir and Afza [41], who found a negative relationship between the aggressiveness of working capital policies and profitability. Overall, these studies find that the value of working capital and, thus, compliance with the golden balance sheet rule (1R) should have a positive impact on business performance.

In addition, the topic of optimal capital structure and its positive impact on company performance is not new in the scientific literature. Dvouletý and Blažková [42] proved that higher use of debts in the capital structure lowers a firm’s productivity (measured by the total factor productivity [TFP] indicator) as well as its negative equity. Spitsin et al. [31] demonstrated that effective management of capital structure could increase the profitability of companies by 16–22%. Their results indicate that a U-shaped relationship exists between company performance and capital structure, with an optimal level of borrowed capital in proportion to total assets/liabilities. In addition, Azhagaiah and Gavoury [43] prove that capital structure has a significant influence on companies’ profitability.

Maintaining financial and capital structure is important, especially for small companies, because they are generally associated with a higher proportion of current assets (in comparison to large firms), less liquidity, volatile cash flows, and a reliance on short-term debt [39], [44]. It is also recommended that smaller firms should adopt formal working capital management routines to reduce the probability of business closure, as well as to enhance business performance.

Overall, these studies find that the capital structure and, thus, the compliance of the risk equalization rule (2R) and the pari rule (3R) (which represents the combination of 1R and 2R) should have a positive impact on business performance.

1.2 Business Performance and its Measurement

It can be logically assumed that company managers can influence their company’s performance through their own decisions. The broad performance management topic deals
with this issue. As Cokins [45, p. 75] states, ‘performance management is not a process; rather it is the integration of multiple methodologies, such as customer relationship management, strategy maps, balanced scorecards, and lean/Six Sigma quality management’. Clearly, whether performance management consists of these different methods cannot be easily measured; therefore, it is measured using many methods, which mostly depend on the specific needs of individual businesses.

Traditionally, indicators such as effectiveness (actual output / expected output), efficiency (resources expected to be consumed / resources actually consumed), and productivity (output / input) are used for business performance measurement [46].

Historically, financial indicators have been predominant, which led Kaplan and Norton [47] to propose a balanced scorecard methodology. In business performance literature, this predominance is still valid, which was confirmed using a systematic review of the research on family business performance by Williams [48], who found that 84% of the examined research used financial data only to measure performance. The form of indicators differs; some studies use the absolute form, such as Sales, Income, Turnover, Costs, Profit, Assets, Fixed Capital, and Investments, among others. (e.g. [49], [50], [51]). Others use relative forms, such as Return on Assets (ROA), Return on Equity (ROE), Return on Sales (ROS) [52], [53], [54] or market-based forms, such as Tobin’s Q or QRATIO [55], [56]. This is also confirmed by Williams [48] (2018), who states that the seven indicators most frequently used in business performance studies (from studies on family businesses published in peer-reviewed journals, from 1980 through 2015) are ROA, Sales, Profit, Tobin’s Q, ROE, Return on Investment (ROI), and ROS.

In this study, business performance is measured using ROE as the ratio of the enterprise’s net profit to capital invested by the owner.

\[
ROE = \frac{EBT}{Equity}
\]  

This is because, although the business’s ability to appreciate the capital of owners is very important in businesses, in small and micro businesses, it is essential because, very often, owners also manage their businesses. Thus, they can indirectly influence the value of this indicator with their own decisions. Preliminary research was also conducted, and other indicators such as ROA, ROS, and IN99 were used; however, the study results are similar.

### 1.3 Research Objective

Findings from the above-mentioned literature review support the theory of balance sheet rules and an optimal level of debt, liabilities, and capital structure. At this optimal level, a balance is achieved between risk and efficiency in businesses. In the literature review, many articles have dealt with the topic of net working capital and capital structure separately, but no study connects these two financial management topics or attempts to examine their impact on business performance.

In response to the positive effects on business performance, balance sheet rules theory, as well as the empirical proof that an optimal level of net working capital and optimal capital structure exist, it raises the question of whether compliance with the balance sheet rules can positively affect business performance.

Thus, this study focuses on conducting investigations to obtain such empirical evidence. Using empirical data, this study aims to explore the possible effect of compliance with the balance sheet rules on business performance for micro and small businesses in the Czech
Republic. By conducting empirical research, this study’s main benefit is that it examines whether the optimal level stated by each balance sheet rule has some justification in business reality.

Based on the theory presented in the previous sections, the following research question was formulated:

Q: Does compliance with the balance sheet rules positively affect business performance of micro and small enterprises?

One of the assumptions made in this study is that financial stability should logically lead to higher business performance; thus, we do not consider any significant difference between long-term financial balance/stability and business performance.

2 Research Methodology

2.1 Statistical Methods of Research

Proving the relationship between selected factors and business performance is a very difficult task, which is limited by the existing methods. Largely, these types of studies aim to prove the correlation between different quantities. However, researchers must consider that the proven correlation does not automatically imply causation.

The indicators derived from individual balanced rules are shown in Tab. 1.

Tab. 1: Indicators developed to assess the ability of businesses to follow the balance sheet rules

<table>
<thead>
<tr>
<th>Rule</th>
<th>Indicator</th>
<th>Recommended value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1R</td>
<td>(equity + long term debt) / fixed assets</td>
<td>0.8-1.2</td>
</tr>
<tr>
<td>2R</td>
<td>equity / total liabilities</td>
<td>0.4-0.6</td>
</tr>
<tr>
<td>3R</td>
<td>fixed assets / equity</td>
<td>&gt;1</td>
</tr>
</tbody>
</table>

Source: Own

From the nature of the compiled indicators, (regarding balanced rules) it is obvious that the correlation analysis cannot be processed because its results would not be meaningful. This is because the ‘best values’ are not the highest or the lowest, but those falling within a certain range. Thus, the authors decided to divide all the companies into different categories, depending on how successful they were at complying with the balanced rules. These categories are as follows.

Category A: Enterprises that comply with all three rules
Category B: Enterprises that comply with at least 2 rules
Category C: Enterprises that comply with at least 1 rule
Category D: Enterprises that comply with just 1 rule

First, basic descriptive statistics (min, max, median, and average) were calculated. Data were tested for normality using the Shapiro-Wilk test, which showed that the data were not normally distributed. However, parametric statistics could be used because the sample size is large enough not to distort the results [57].

As such, to answer the research question, each category was analyzed using t-tests (unpaired two-sample t-tests) together with descriptive statistics.

T-tests should reveal whether the differences between the ROE values of two groups of enterprises (that comply and do not comply with the rules) within each category are significant. However, the data did not fulfill the assumption of homogeneity of variance; thus,
the results could be distorted. Therefore, the non-parametric equivalent of the t-test (Mann-Whitney U test) was used as well. All calculations were conducted using the program STATISTICA 12 StatSoft CR, s. r. o.

2.2 Data

To examine the relationship between balance sheet rules compliance and business performance, the dataset for this study is based on 2,537 businesses. All data were collected from the Database Albertina – Gold edition (Bisnode, 2018). The original aim was to examine the entire dataset of micro and small businesses in the Czech Republic (middle and large businesses were excluded because of their higher probability of cash pool financing, which would distort the results). Unfortunately, there were approximately 10,000 such business entities in the Czech Republic, which could not be analyzed due to technical issues. Thus, only one region (the Pilsen region) was selected and tested to answer the research question. The resulting 2,537 entities represent the whole population of micro and small businesses in the Pilsen region; however, in this study, they are considered a random selection of the entire population of micro and small businesses in the Czech Republic.

From the original dataset of 2,537 businesses data for approximately 100 businesses were deleted because of error values of ROE. Further, the data for 745 businesses, whose fixed assets had a value of 0, were also deleted (as this made it impossible to calculate the first and third indicators of the balance sheet rules). In addition, 10 businesses were excluded because of their extreme ROE values (above 1,000% and less than 1,000%). Finally, 1,682 enterprises were included in the analysis.

3 Research Results

Tab. 2 shows the descriptive statistics of the ROE and rule indicators, as well as their recommended values (median and average can provide interesting information when compared to recommended values).

<table>
<thead>
<tr>
<th></th>
<th>Max</th>
<th>Min</th>
<th>Median</th>
<th>Average</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>776.470</td>
<td>−781.400</td>
<td>18.325</td>
<td>29.449</td>
<td></td>
</tr>
<tr>
<td>1R</td>
<td>41,737.000</td>
<td>0.008</td>
<td>2.156</td>
<td>38.041</td>
<td>0.8–1.2</td>
</tr>
<tr>
<td>2R</td>
<td>1.321</td>
<td>0.002</td>
<td>0.534</td>
<td>0.526</td>
<td>0.4–0.6</td>
</tr>
<tr>
<td>3R</td>
<td>126.976</td>
<td>0.000</td>
<td>0.555</td>
<td>1.793</td>
<td>&gt;1</td>
</tr>
</tbody>
</table>

Source: Own processing of [58]

However, from this table, it is not possible to assess how businesses successfully comply with these rules, and simple data filtering had to be done. The results for each category are as follows:

Category A: 53 businesses comply with all three rules (1,629 do not).
Category B: 274 businesses comply with at least two rules (1,435 do not).
Category C: 832 businesses comply with at least one rule (850 do not).
Category D: 249 businesses comply with the first rule, 336 comply with the second rule, and 546 comply with the third rule.

It is obvious that most businesses do not successfully comply with the rules. Only 53 companies (out of 1,682) comply with all three rules, and less than half comply with at least one. More detailed results are presented in Tab. 3, which shows additional descriptive
statistics of the ROE values for the groups of businesses, according to their ability to comply with the rules.

**Tab. 3:** Descriptive statistics of ROE divided into categories A, B, and C (n = 1,682, small and micro-businesses in the Pilsen region, 2018)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Comply</td>
<td>Do not comply</td>
<td>Comply</td>
</tr>
<tr>
<td>Number</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>14.75</td>
<td><strong>29.93</strong></td>
<td>18.06</td>
</tr>
<tr>
<td>Median</td>
<td>7.58</td>
<td><strong>18.66</strong></td>
<td>15.70</td>
</tr>
<tr>
<td>Max</td>
<td>72.29</td>
<td>776.47</td>
<td>355.00</td>
</tr>
</tbody>
</table>

*Source: Own processing of [58]*

In Tab. 3 the higher median and average ROE values (within each group) are marked in bold. Contrary to the expected results, in two cases, ROE is higher in the group of businesses that do not comply with the rules. Although this low value of ROE could be attributed to the very low number of cases (and their statistical insignificance), if the rules could positively affect business performance, the ROE values would be much higher in this group and not the opposite. Only the third group (C: businesses that comply with at least one rule) had higher average and median ROE values in the group that complied. Thus, this could indicate the possible influence of balance sheet rules on business performance. To answer the research question, further calculations were performed.

Additionally, it is interesting to examine which rule is the most often followed. Out of 1,682 businesses, 32% (546 in total) comply with the third rule. The most important rule, the golden rule, is followed in the least cases (only 15% of all businesses). In Tab. 4, descriptive statistics of ROE for businesses that comply with individual rules (Category D) are shown. The largest ROE, in terms of median and average, was found in businesses that comply with the third rule.

**Tab. 4:** Descriptive statistics of ROE for businesses that comply with the rules (Category D), according to recommended values for 1R, 2R, and 3R (n = 1,682, small and micro-businesses in Pilsen region, 2018)

<table>
<thead>
<tr>
<th></th>
<th>1R</th>
<th>2R</th>
<th>3R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>249</td>
<td>336</td>
<td>546</td>
</tr>
<tr>
<td>ROE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>17.60</td>
<td>29.24</td>
<td>31.59</td>
</tr>
<tr>
<td>Median</td>
<td>13.85</td>
<td>18.02</td>
<td>21.53</td>
</tr>
<tr>
<td>Min</td>
<td>-507.56</td>
<td>-88.00</td>
<td>-781.40</td>
</tr>
<tr>
<td>Max</td>
<td>355.00</td>
<td>706.93</td>
<td>776.47</td>
</tr>
</tbody>
</table>

*Source: Own processing of [58]*

Subsequently, a t-test was performed, and the results are presented in Tab. 5 (group of businesses that follow the rules is marked as F, and the opposite is marked as DF). Unfortunately, the assumption of homogeneity of variance was not met (see the right part of Tab. 5); thus, the assumptions of this statistical test are violated, and its results cannot be used. (It is clear that the results would not support the possible positive effect of balance sheet rules on business.)
**Tab. 5: T-test results (n = 1,682, small and micro businesses in Pilsen region, 2018)**

<table>
<thead>
<tr>
<th>Var.</th>
<th>Mean (F)</th>
<th>Mean (DF)</th>
<th>t</th>
<th>d.f.</th>
<th>p</th>
<th>Valid N (F)</th>
<th>Valid N (DF)</th>
<th>Levene</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>14.75</td>
<td>29.93</td>
<td>-1.37</td>
<td>1.680</td>
<td>0.17</td>
<td>53</td>
<td>1.629</td>
<td>5.64</td>
<td>0.02</td>
</tr>
<tr>
<td>B</td>
<td>18.06</td>
<td>31.40</td>
<td>-2.44</td>
<td>1.680</td>
<td>0.01</td>
<td>247</td>
<td>1.435</td>
<td>0.85</td>
<td>0.36</td>
</tr>
<tr>
<td>C</td>
<td>31.49</td>
<td>27.45</td>
<td>1.04</td>
<td>1.680</td>
<td>0.30</td>
<td>832</td>
<td>850</td>
<td>51.24</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*Source: Own processing of [58]*

The next logical step was to use the non-parametric equivalent of the unpaired two-sample *t*-test, which is the Mann-Whitney *U* test. The results are presented in Tab. 6. According to the results, the null hypothesis (‘the distributions of both populations are equal’) is rejected in groups A and B (at the significance level *α* = 0.05), which indicates that the ROE values of these groups of businesses differ. This could support the premise of the positive effect of balance sheet rules on business performance; however, from Tab. 3, it is clear that the median of these categories is higher in both cases in the group of businesses that do not follow the rules. This would indicate opposite results than expected. In addition, the *U* test revealed equal distributions of both populations (F and DF) were found in group C (*p*-value > 0.05), which can be interpreted as follows: values of ROE are not significantly different within each group (although median values suggest otherwise, see Tab. 3).

**Tab. 6: Mann-Whitney U test results (n=1,682, small and micro businesses in Pilsen region, 2018)**

<table>
<thead>
<tr>
<th>Var.</th>
<th>Rank Sum (F)</th>
<th>Rank Sum (DF)</th>
<th>U</th>
<th>Z</th>
<th>p-value</th>
<th>Valid N (F)</th>
<th>Valid N (DF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>33,975</td>
<td>1,381,428</td>
<td>32,544</td>
<td>-3.053</td>
<td>0.002</td>
<td>53</td>
<td>1.629</td>
</tr>
<tr>
<td>B</td>
<td>191,257</td>
<td>1,224,146</td>
<td>160,629</td>
<td>-2.353</td>
<td>0.019</td>
<td>247</td>
<td>1.435</td>
</tr>
<tr>
<td>C</td>
<td>711,496</td>
<td>703,907</td>
<td>342,232</td>
<td>1.141</td>
<td>0.254</td>
<td>832</td>
<td>850</td>
</tr>
</tbody>
</table>

*Source: Own processing of [58]*

Thus, from the presented results (especially in Tab. 3 and Tab. 6), it is clear that there is no evidence that the balance sheet rules positively affect the business performance of micro and small businesses. In contrast, the results (for categories A and B) confirm that the group that does not follow the rules has better performance. In addition, when the rules were examined in more detail using descriptive statistics (Tab. 4), it was found, that rules are not mostly followed. In most cases (32%), businesses follow the third rule. Out of these three rules, the third is also the rule which fulfillment is related to the highest average value of ROE. Thus, based on the results of this study, partly due to the small share of the businesses, that do follow the rules, it cannot be proven that the balance sheet rules positively affect the business performance of micro and small businesses, and the research question cannot be answered positively.

**Conclusion**

This study focuses on the practical usefulness of balance sheet rules. It aimed to prove the positive effect of balanced sheet rule compliance on business performance, using empirical data. Real data for micro and small businesses from the Pilsen region in the Czech Republic (total number 2,537) were tested using statistical methods (mainly Mann-Whitney *U* test). However, this positive effect was not proven (median and average ROE values for the groups of businesses that comply with at least two rules were lower than those who do not comply with them, this difference was proven by Mann-Whitney *U* test), and neither was the predominant compliance among businesses. The research question “Does compliance with the
balance sheet rules positively affect the business performance of micro and small enterprises?” cannot be answered positively. Thus, the empirical testing indicates that balance sheet rules need not regularly appear in the current business economics literature. However, future research, for example, using data from different regions, years, and industries, is necessary to prove this statement further.

This study also presented a very important finding: there is a significant research gap in the topic of balanced sheet rules. Relatively many scientific sources from the time of the topic’s origin can be found (solely German-language sources); however, since then, there are almost none, and these rules are simply used by authors of business economics literature without any changes. Only a few studies dealing directly with balance sheet rules can be found in the current scientific literature, despite the fact that similar topics (such as working capital or capital structure) are often dealt with in research studies.

There are some limitations to this study. First, to determine whether this result is generally valid for all types of companies, it would be advisable to conduct this research on larger companies (assuming that it would be possible to exclude companies financed by cash pooling). In addition, it would be interesting to compare the results of this analysis performed on different industries (to check for any differences in results). The second limitation may result from the selected business performance indicator (ROE), because different results could be expected when choosing different indicators. However, preliminary research was conducted to test other suitable indicators (ROA, ROS, and IN99), and the results of this analysis were similar. Third, similar to other studies examining business performance factors, this study also cannot assume that correlation implies causation. Thus, even if the results indicate that those businesses that follow the rules have higher ROE values, it cannot be assumed that this is the only responsible factor. Otherwise, in this study, the low ROE values of the businesses that follow the rules could be caused by other factors. In fact, ROE values are affected by various factors that cannot be effectively controlled by researchers (for example, the obvious ones are efficient production processes, marketing, and management; others include luck and coincidence), and it is almost impossible to assess the influence of a single selected one—balanced sheet rule compliance. However, we believe that if there is a significant substantial influence of this particular factor, the result of this analysis would at least suggest it and not otherwise.

Acknowledgements

This paper was created within the project SGS-2021-017 Innovative and sustainable approaches and methods in business, projects and processes.

Literature


---

BILANČNÍ PRAVIDLA A JEJICH VLIV NA VÝKONNOST PODNIKU – EMPIRICKÁ STUDIE

Studie si klade za cíl podrobně prozkoumat, zda má dodržování bilančních pravidel vliv na výkonnost podniku. Pro ověření tohoto předpokladu byla statisticky testována data za malé a mikropodniky v ČR (celkový počet 2 537), a to pomocí t-testu a Mann-Whitneyho U testu. Zvláštní pozornost byla věnována ukazateli rentability vlastního kapitálu (jako ukazateli výkonnosti podniku) a změnám jeho hodnoty mezi skupinami podniků, které pravidla dodržují, a těmi, které tato pravidla nedodržují. Výsledky naznačují, že pozitivní vliv dodržování bilančních pravidel na výkonnost podniku nelze potvrdit, stejně jako nelze pozorovat jejich dodržování ve větším měřítku. Bylo by tedy vhodné otevřít diskusi o tom, zda je potřeba, aby se bilanční pravidla pravidelně objevovala v současné literatuře podnikové ekonomiky. Zmíněné výsledky jsou zobrazeny a diskutovány v tomto článku spolu s omezeními výzkumu.

BILANZREGELN UND IHR EINFLUSS AUF DEN UNTERNEHMENSERFOLG – EMPIRISCHE STUDIE


ZASADY BILANSOWE I ICH Wpływ NA WYNIKI PRZEDSIĘBIORSTWA – BADANIA EMPIRYCZNE

Celem badań jest szczegółowe zbadanie wpływu przestrzegania zasad bilansowych na wyniki przedsiębiorstw. Aby zbadać tę tezę, dane z małych i mikroprzedsiębiorstw w Czechach (łączna liczba 2 537) przeanalizowano statystycznie za pomocą testu t i testu U Mann-Whitneya. Szczególną uwagę poświęcono wskaźnikowi rentowności kapitału własnego (jako wskaźnikowi efektywności przedsiębiorstwa) oraz zmianom jego wartości pomiędzy grupami przedsiębiorstw, które przestrzegają zasad a tymi, które ich nie przestrzegają. Wyniki sugerują, że nie można potwierdzić pozytywnego wpływu przestrzegania zasad bilansowych na wyniki przedsiębiorstw, tak samo jak nie można zauważyć ich przestrzegania w większej skali. Warto by więc otworzyć dyskusję, czy jest konieczne, by zasady bilansowe regularnie pojawiały się we współczesnej literaturze ekonomiki przedsiębiorstw. W niniejszym artykule zostały przedstawione i omówione wskazane wyniki, a także elementy ograniczające badania.