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Model calculation of the impact of IFRS 16 on financial indicators of companies in transport

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Abstract: The study examines the impacts of applying the IFRS 16 standard on operating expenses (OPEX) and other key financial indicators within the Czech transport company environment. The PRISMA 2020 method and visualization using VOSviewer software were used for the literature search. The empirical part is based on data from a major transport company, with over 600 thousand records analyzed, of which 4,105 relevant leasing contracts remained after validation. Five accounting scenarios were compared based on the developed model. The results show that applying IFRS 16 leads to a 4.2% reduction in OPEX, an increase in EBITDA and an increase in long-term assets and liabilities. The study provides evidence of significant accounting and economic differences between the national standard and the IFRS solution and underlines the need to take them into account in management financial decision-making.

1 Introduction

The area of accounting reporting for leasing contracts has undergone fundamental changes in recent years, which significantly affect the presentation of companies' financial positions. These changes are primarily based on the implementation of the international accounting standard IFRS 16 – Leases, which entered into force in 2019. The standard brings a significant adjustment in the approach to lease reporting, especially from the perspective of lessees, who are now obliged to recognize most leasing contracts as part of assets and liabilities on the balance sheet. This has a significant impact on key financial indicators that are commonly used to assess the performance and financial stability of companies.

The changes affect not only the multinational environment. Similar trends are also evident within the framework of national accounting regulations, where there is gradual harmonization with international rules. In this context, it is becoming increasingly important to analyze and quantify the impacts of these changes on specific types of business entities.

This article focuses on a model assessment of the impacts of applying IFRS 16 on selected financial indicators of companies that use leasing to finance heavy trucks. The analysis is based on an extensive dataset provided by a specialized leasing company, which ensures a high degree of relevance and applicability of the results to the real market environment. The aim of this study is to create a model that demonstrates how applying IFRS 16 would be reflected in financial statements and subsequently affect key financial indicators for investors, creditors or company management.

2 Literature review

European countries' national legislation does not have a uniform approach to reporting leasing. For example, the legislation of the Czech Republic (primarily Act 563/1991 Coll., on accounting and Decree 500/2002 Coll. – hereinafter referred to as the Czech legislation or CZ Leg.) regulates leasing in a way that reflects legal ownership - i.e. the lessor reports the owned leased asset on its balance sheet and depreciates it. [1] The lessee reports the asset only off-balance sheet and accounts for the leasing payments as expenses, continuously for the duration of the contract. In terms of the type of contracts, this is done in practice in the same way for all three forms of leasing: financial, operational and reverse, the purpose of which is to improve liquidity for companies while maintaining use of the asset [2].

Fundamental changes in the accounting reporting of leases were introduced by the international standard IFRS 16, valid since 2019. This standard also unified the approach to financial and operating leases for the lessee (except for short-

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term or insignificant leases), however unlike the previous regulation in the Czech Republic, the lessee must report the right of use of the asset and the corresponding lease liability on its balance sheet. The right of use is subsequently depreciated, while the liability is gradually reduced by the paid instalments. For the lessor, the rules remain similar - in the case of a financial lease, the lessor reports a long-term receivable and interest income, in the case of an operating lease, the asset remains on its balance sheet and is depreciated as standard.

Due to the different accounting treatment of leasing under IFRS 16 compared to individual national regulations, it is important to examine how these differences will affect the reported financial indicators of companies. This difference is particularly significant for companies that use leasing extensively to finance assets with high acquisition values, such as heavy trucks. The application of IFRS 16 can have a significant impact on the balance sheet and income statement, thereby affecting key indicators of indebtedness, profitability or liquidity. A model analysis of these impacts is therefore necessary for a correct assessment of companies' financial positions and their comparability across different accounting systems.

To determine whether this research gap was covered, studies containing the terms leasing, IFRS, financial indicators were analyzed from the scientific databases Web of Science and Scopus. After removing duplicate and irrelevant records, 23 articles were available. Below is the distribution over time with the local relevance of individual titles.

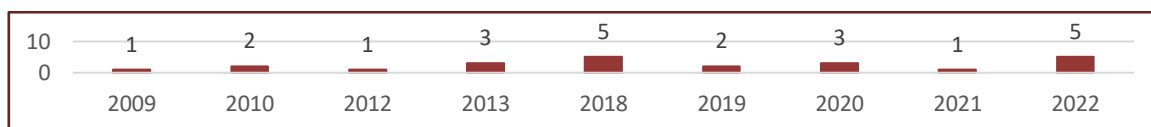


Figure 1 Layout of identified articles in years
Source: own research (2024)

The increase in publications in 2018 was due to the application of IFRS 16 – Leases standard beginning in 2019. Subsequently, the number of publications decreased. In 2022, there was a further increase.

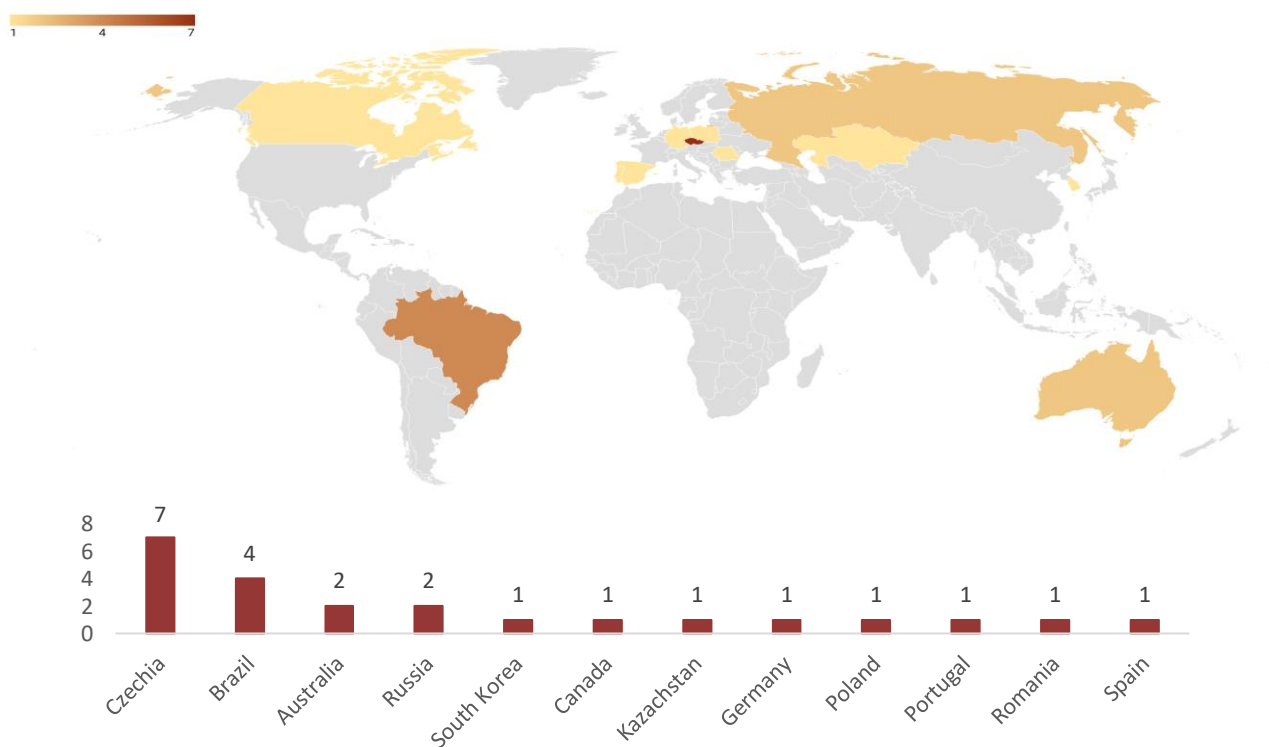


Figure 2 Map and number of published identified articles
Source: own research (2024)

The largest number of records was identified in the Czech Republic, which may have been due primarily to the need to address this different concept. Figure 2 shows the conceptual coherence of the analyzed studies.

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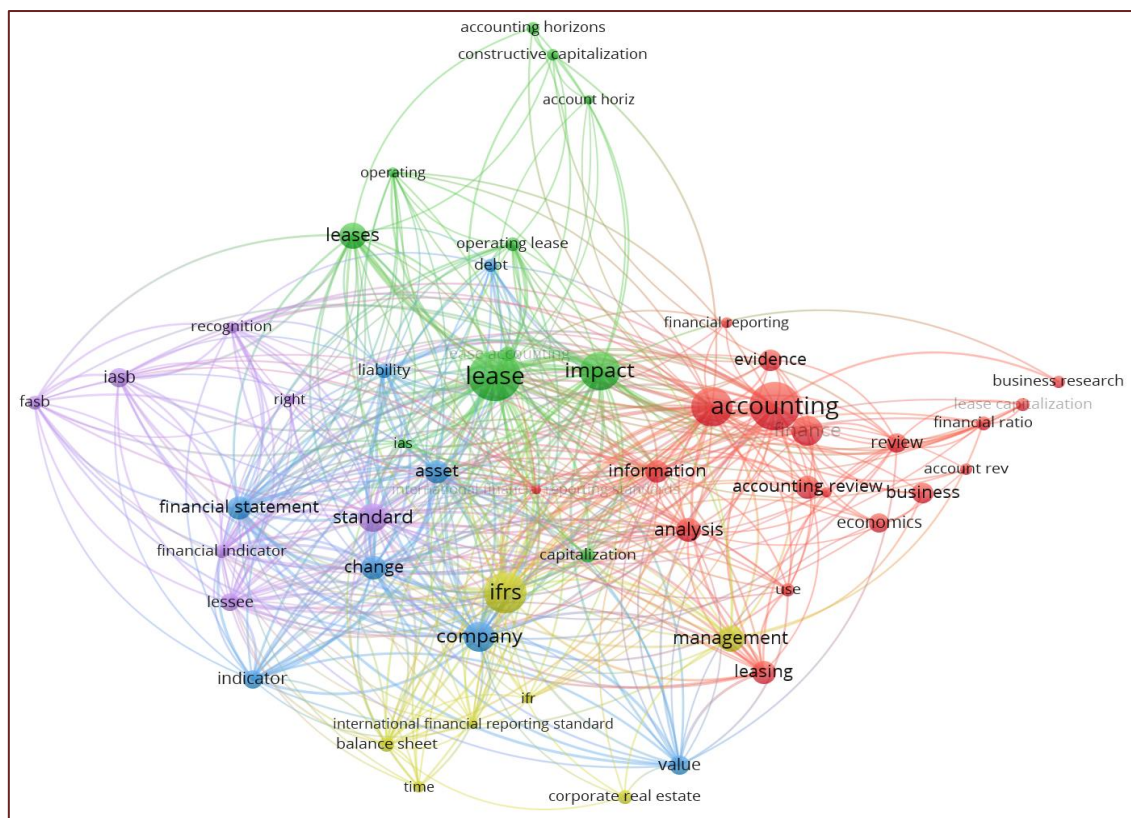


Figure 3 Visualization of identified articles after selection
Source: own research using VOSviewer (2024)

The main terms are categorized by color – lease and related terms are marked in green, in the red field the main term accounting is grouped with other words such as economics, evidence, financial reporting. In the purple part the word standard is colored with IASB, FASB or financial indicators. Similarly, in blue the word company is surrounded by other terms such as liabilities, assets, value or debt. This display confirms the selection of the correct studies to verify the research gap.

Heywood [3] examined the impact of IFRS 16 on the Australian real estate market by comparing statements from 2016 and 2019, finding an increase in tenant assets of \$128–397, leading to an increase in total assets of 2.5–7.7%. Similarly, Levanti [4] analyzed the financial statements of the 15 largest Romanian credit institutions and the impact of IFRS 16 on net assets. Sedláček [5] examined the expected increase in assets and liabilities of Czech industrial companies and pointed out the need for a new interpretation of financial indicators. Svoboda [6] theoretically compared IAS 17 and IFRS 16 and predicted the main differences.

Choi [7] analyzed companies in South Korea and found that large companies deliberately reduced profits to mitigate the negative impacts on profitability and debt ratios even before the transition to IFRS 16. Similarly, Zuniga [8] examined the approach of Chilean companies and confirmed not only the effort to influence results by releasing accumulated profits, but also an increase in share capital to improve debt ratios.

In Brazil, more extensive quantitative modelling has been conducted. De Batista [9] and Colares [10] showed with a set of companies that the application of IFRS 16 led to an increase in the balance sheet total, a decrease in revenues and changes in profitability indicators. Lima [11] followed up with a similar study in Portugal, Sokolova [12] in Russia, with both works documenting the impacts on the balance sheet, income statement and financial indicators. These conclusions were also confirmed by da Silva [13] and Rodrigues [14], who noted that the previous standard did not express economic reality correctly, thus refuting the opinion of the German author Fülbiér [15], who, after his empirical research on the perception of operating leases in German companies, claimed that the change was not necessary. Giner and Pardo [16] analyzed Spanish companies and found that investors reflect operating leases as liabilities, similar to bank loans.

In Kazakhstan, the impacts of the standard were modelled qualitatively [17]. In Europe, Bohušová [18] focused on retail chains and found that the application of IFRS 16 led to an increase in assets by 37%, liabilities by 55% and a slight decrease in equity. Durocher [19] analyzed the opinion of Canadian bankers, who welcomed the capitalization of leases for a better assessment of creditworthiness. Dmitrieva [20] compared leasing and credit for the purchase of real estate and preferred credit financing.

Svoboda [21] modelled the impacts of the IASB and FASB harmonization and showed that IFRS 16 changes the time distribution of costs, which affects the profitability of assets. Luty [22] tested the reliability of data using Benford's law and found that the introduction of IFRS 16 did not disrupt it for leasing companies. Dlasková [23] compared IFRS and Czech regulatory reports for construction companies and demonstrated that the accounting framework used significantly affects the Z-score results. Gláserová [24] summarized the differences between the Czech and international leasing regulations, emphasizing the lower capitalization in the Czech Republic. Beranová [25] focused on the EVA indicator and stated that different accounting systems make its international comparison difficult.

The analysis of the above studies confirmed the need for current, empirical, quantitative research in the Czech environment and at the same time demonstrated the possibility of comparison with international sources, as several studies already exist abroad. At the same time, it can be concluded from the above that the model using the principles of IFRS 16 will lead to a reduction in operating costs (OPEX), thus to an increase in operating profit, and further to an increase in financial costs, so it can be assumed that the total cost reduction will be around 18%, as presented in the study by Dlasková and Cipovová [23].

3 Methodology

The PRISMA 2020 method was used for the analysis of scientific outputs during the research work. The VOSviewer program was used for visualization, which works on the relational principle between the number of occurrences of a certain expression, subsequently the found links between individual words are also depicted and relational groups marked with different colors are created.

As part of the research, data were obtained from Scania Czech Republic, s.r.o. (hereinafter referred to as the distributor) and from the leasing company Scania Finance Czech Republic, s.r.o. (hereinafter referred to as the leasing company). A total of three source documents were obtained. The first consisted of invoices issued by the distributor company. The second and third sources were obtained from the leasing company. One file contained a list of all leasing contracts. The second file contained information on instalment schedules and payments made. First, sources from the distributor company were processed, which provided information on all issued invoices for the period from 2014 to September 2023. There were 46,214 records in total. The data obtained from the distributor company were processed for the purpose of conducting the research. Duplicate records were removed as were records where the complete necessary information of the distributor was missing were removed. A total of 5,550 records from the distributor company were identified and obtained for the research.

As a second source, we were able to obtain a list of all leasing contracts from the leasing company from 2014 to July 2023. There were 11,497 records in total. Thanks to the identification of relevant vehicles and obtaining their VIN (first step = processing the distributor company's resources), both sources were linked using MS Excel functions. The resulting number of identified contracts was 4,760 records. In this source, it was also possible to obtain the system identification number for the identified contracts.

The third source obtained as part of the research was a list of lease payments made from the leasing company. The detailed information for each payment also included the contract identification number. Thanks to this element, both sources could be linked using MS Excel functions and only relevant data could be obtained for this part of the research. The original number of records in the lease payment file was 427,318 records. After linking, a total of 169,701 records were identified for further processing in the research.

The final step in processing the input data was to eliminate leasing contracts that had error values or durations longer than 72 months. The final analyzed number that was included in the research was 4,105 records.

Data on the cost of loans presented in Table No. 1 were obtained from the ARAD system managed by the Czech National Bank (ČNB) in the loans section under the indicator "Total costs of loans to non-financial corporations in the Czech Republic expressed by the cost of borrowing indicator in percentages".

Table 1 Loan costs in the Czech Republic (in %)

Year	Cost of borrowing	Source date
2014	2,33 %	31. 12. 2013
2015	2,23 %	31. 12. 2014
2016	1,91 %	31. 12. 2015
2017	1,97 %	31. 12. 2016
2018	2,38 %	31. 12. 2017
2019	3,43 %	31. 12. 2018
2020	3,72 %	31. 12. 2019
2021	2,16 %	31. 12. 2020
2022	4,77 %	31. 12. 2021

Source: ARAD [26]

The percentages given were used to calculate the cost of the loan in the case of using external capital. Table 2 shows the values of the cost of equity.

Table 2 Cost of equity used in years

Year	Field	No. of companies	Cost of Equity (%)	Source
2014	Transportation	44	8,92	Report 1/14
2014	Trucking	21	9,44	Report 1/14
2014 Total	Total	65	9,09	
2015	Transportation	42	9,71	Report 1/15
2015	Trucking	20	8,67	Report 1/15
2015 Total	Total	62	9,37	
2016	Transportation	38	10,45	Report 1/16
2016	Trucking	26	8,41	Report 1/16
2016 Total	Total	64	9,62	
2017	Transportation	39	9,65	Report 1/17
2017	Trucking	23	8,26	Report 1/17
2017 Total	Total	62	9,13	
2018	Transportation	38	9,71	Report 1/18
2018	Trucking	28	7,47	Report 1/18
2018 Total	Total	66	8,76	
2019	Transportation	40	9,20	Report 1/19
2019	Trucking	30	9,77	Report 1/19
2019 Total	Total	70	9,44	
2020	Transportation	37	7,66	Report 1/20
2020	Trucking	26	8,59	Report 1/20
2020 Total	Total	63	8,04	
2021	Transportation	36	5,77	Report 1/21
2021	Trucking	27	6,84	Report 1/21
2021 Total	Total	63	6,23	
2022	Transportation	36	6,24	Report 1/22
2022	Trucking	31	7,14	Report 1/22
2022 Total	Total	67	6,66	

Source: DAMODARAN [27]

According to the above methodology, data were obtained for the European market and companies operating in the transportation and trucking categories. For the final use of the percentage of cost of equity (orange lines for each year), the calculation of the weighted arithmetic average of both above-mentioned areas is used. The decisive factor for using of a specific percentage of cost of equity is the year of sale of the truck, or the year of the start of the leasing contract.

Subsequently, the resulting research model was created. It considers individual scenarios. These are:

1) Accounting according to the rules of the Czech Commercial Code in the case of Leasing acquisition

In the Czech Republic, regular monthly leasing payments are directly charged to operating expenses. At the same time, if an advance payment is made at the beginning of the leasing contract, accrual accounting principles are followed. For this reason, the following formula is applied in the first scenario of the resulting model (1):

$$CZ\ Leg. = \sum_{t=1}^n \left(\frac{A}{n} + s_t \right) \quad (1)$$

Where: A advance payment,
 n number of monthly lease payments,
 s_t amount of regular monthly payment at time t ,
 t individual months of the leasing contract.

The total sum of leasing instalments and the advance payment paid is the total value of the leasing contract according to the rules of the Czech Commercial Code.

2) Modelling the calculation according to the Czech Commercial Code in the case of leasing with the application of the cost of equity to the value of the advance payment

The second scenario is based on the first scenario of accounting according to the rules of the Czech Accounting Standards, where the cost of equity will be added to the amount of the advance payment using the future value method. These economic costs are not accounted for, but this factor is decisive for the decision-making of the owners and management of the company when determining the optimal capital structure. In this scenario, the following formula is used (2):

$$CZ\ Leg. + CoE = \sum_{t=1}^n \left(\left(\frac{A}{n} + s_t \right) + \left[\frac{A}{n} * \left(1 + \frac{CoE}{12} \right)^t \right] - \left(\frac{A}{n} \right) \right) \quad (2)$$

The variables are the same as in the first scenario, with an additional variable: CoE - Cost of Equity.

The entire portion of the future aliquot value of the advance payment in each month is reduced by the difference of the monthly value of the advance payment. This value is then added to the original calculation of the monthly cost according to the CZ Leg.

3) Accounting according to the rules of the Czech Commercial Code in the case of purchasing vehicles from own resources

The third scenario models a situation where the acquisition of vehicles would be carried out only from the company's own capital and at the same time there would be actual accounting according to the Czech Accounting Standards. In this case, the acquired asset would be capitalized into the company's assets, which would subsequently be depreciated. The calculation in the resulting model was performed according to the following formula (3):

$$Own\ Capital = \sum_{t=1}^n \frac{(max.60) \cdot PC}{60} \quad (3)$$

Where: PC purchase price of a truck/vehicle,
n number of monthly payments of a theoretical leasing contract,
t individual months of the theoretical leasing contract.

In this scenario, a leasing contract is not considered, as there is a direct purchase from own resources. Monthly costs represent the monthly depreciation value (the model includes leasing contracts with a maximum length of 60 months). The total costs in this scenario are the sum of monthly depreciations over the theoretical leasing contract period.

4) Accounting according to the rules of the Czech Accounting Standards in the case of purchasing vehicles from own resources with the application of the cost of equity

In the fourth scenario, the second and third scenarios are combined. The model will calculate the future value of the invested funds from own resources (as in the third scenario). Its aliquot monthly value will be increased by the cost of equity in the same way as in the second scenario. However, in this scenario, this applies to the total acquisition price. In the resulting research model, the following formula is used (4):

$$Own\ Capital + CoE = \sum_{t=1}^n \frac{(max.60) \cdot PC}{60} * \left[\left(1 + \frac{CoE}{60} \right)^t \right] \quad (4)$$

The variables used in this scenario correspond to the explanations in the scenarios above.

The combination of approaches results in modelling economic costs (not just accounting costs) that reflect monthly depreciation and equity costs due to acquisition from own resources.

5) Accounting according to the rules of IFRS 16

In the case of accounting for leasing contracts according to IFRS 16, leasing contracts are reflected on the lessee's side in the company's non-current assets and are depreciated at the same time. The total lease value is essentially the net present value of future lease payments using the relevant interest rate.

A simplifying condition of the research is the assumption that there are no other circumstances reducing or increasing balance sheet items (final redemption, incentives, etc.). According to the IFRS 16 methodology, the research model is based on the following formula for determining the net present value of a leasing contract (5):

$$NPV\ (IFRS\ 16) = A + \sum_{t=1}^n \frac{s_t}{\left(1 + \frac{i}{12} \right)^{t-1}} \quad (5)$$

The individual variables in the formula used have already been explained in previous scenarios. In addition, the following variable is used here: i – interest rate.

The capitalized net present value of future lease payments is then used to calculate the monthly depreciation that is charged over the term of the lease contract. The following formula is used to calculate it (6):

$$\text{Depreciation (IFRS 16)} = \sum_{t=1}^n \frac{NPV (IFRS 16)_t}{n} \quad (6)$$

Depreciation is charged evenly to the company's operating expenses.

According to IFRS 16, a reduction in the long-term lease liability and financial interest expense are charged monthly. The following formula was used to determine the interest expense in the resulting research model (7):

$$\text{Interest (IFRS 16)} = \sum_{t=1}^n CF_t - NPV (IFRS 16)_t \quad (7)$$

Where: NPV (IFRS 16) NPV of future leasing payments,
CF cash flow of the leasing contract (monthly),
n number of monthly lease payments,
t individual months of the leasing contract.

Interest expense is the difference between the physical funds paid in a given month and the calculated NPV leasing payment for each month.

4 Results and discussion

4.1 Research assumptions

Figures 4 and 5 show descriptive statistics of the final analyzed data sample.

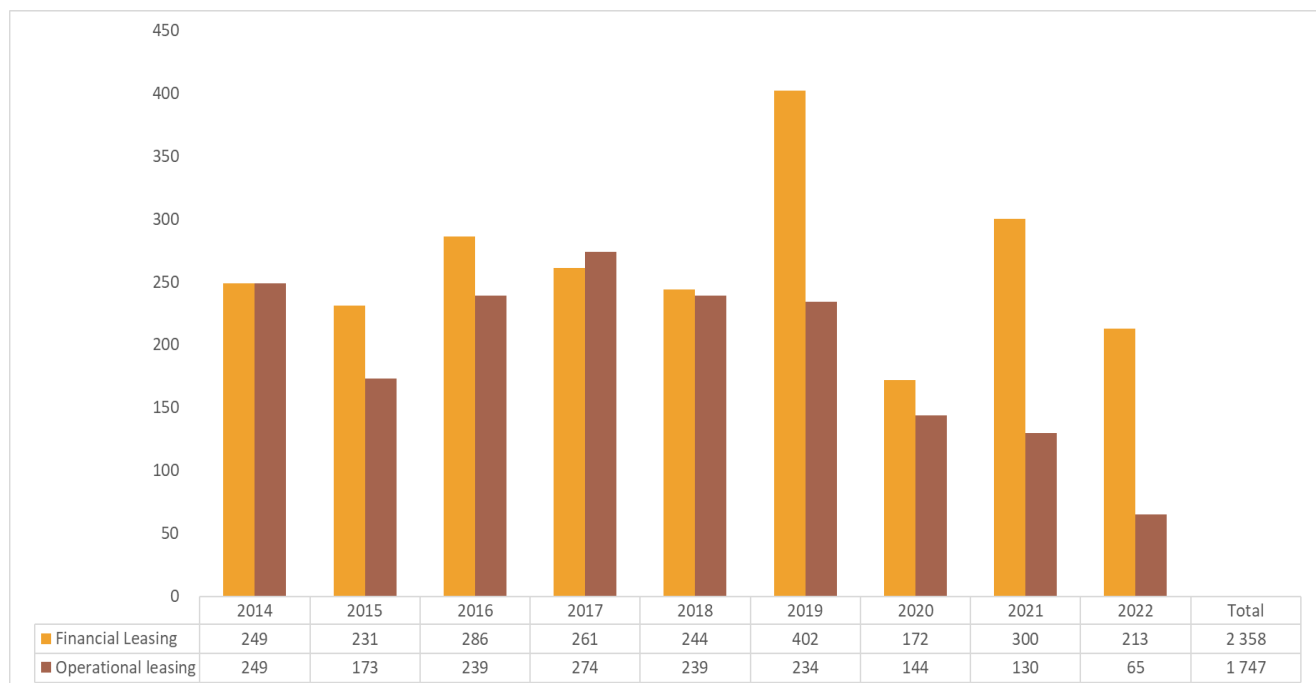


Figure 4 Number of leasing contracts by type in years
Source: own research (2024)

Figure 4 shows that in the period from 2014 to 2022, the year with the highest number of concluded leasing contracts was 2019, when a total of 636 new contracts were concluded. Conversely, a strong drop of -50% can be seen immediately in 2020 due to the already mentioned unfavourable market situation (COVID-19). At the same time, the entire graph also shows the distribution of contracts into individual types of leasing contracts into financial and operational.

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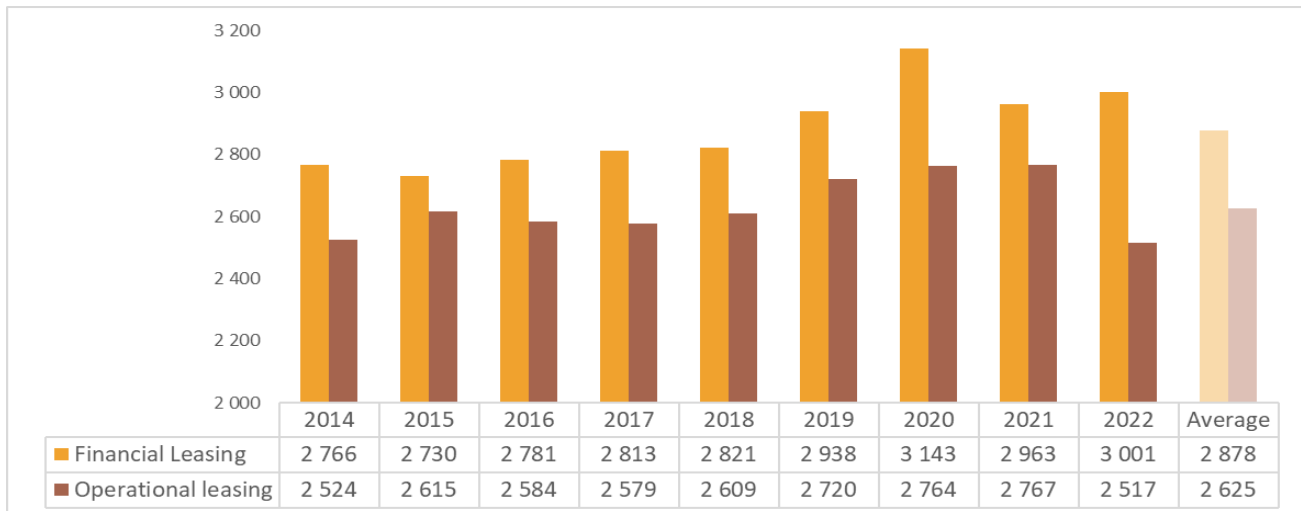


Figure 5 Average selling price of vehicles financed by leasing in years in thousand CZK
Source: own research (2024)

The average selling prices of vehicles financed by the leasing company are shown in Figure 5 in thousands of CZK. Again, there is a division into individual types of leasing (OL/FL). Both types of leasing contracts have experienced different developments in the prices of the underlying assets over the years. In 2015, a decrease in the price of FL vehicles was recorded, but on the other hand, vehicles on OL became more expensive. In combination with the information from Figure 4, possible dependencies or mutually influencing variables can be identified. For example, for OL, an increase of 3.6% in the average selling price of a vehicle was recorded between 2014 and 2015. However, at the same time, there was a decrease in the number of concluded contracts by -31%. In the following years, vehicles financed by OL partially decreased in price or maintained their average price level, until in 2018 they reached approximately the same average selling price as in 2015. In the case of concluded operational leasing contracts, strong increases were recorded in 2016 and 2017.

This example illustrates the fact that there is likely to be a strong correlation between the number of contracts concluded and the average selling price of the underlying asset. However, it is also necessary to consider market developments, market share, etc.

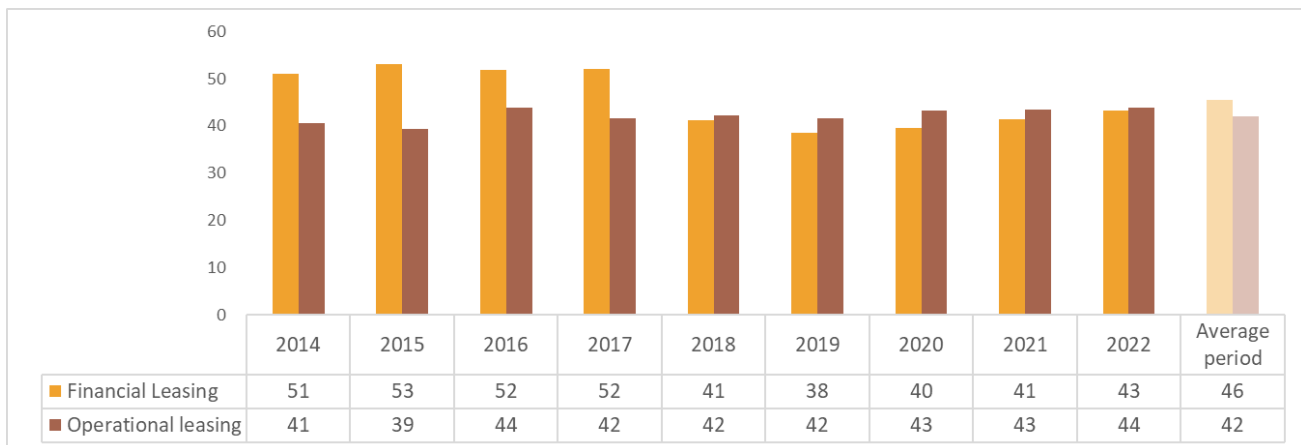


Figure 6 Average length of leasing contract by leasing type and year
Source: own research (2024)

Figure 6 shows a different development in the first years of observation, when the differences between the average number of months of leasing contracts were significantly different between the individual types. In contrast, in recent years the differences between FL and OL have been decreasing, when, on the contrary, the financial leasing product is closed for a smaller number of months than OL in some years.

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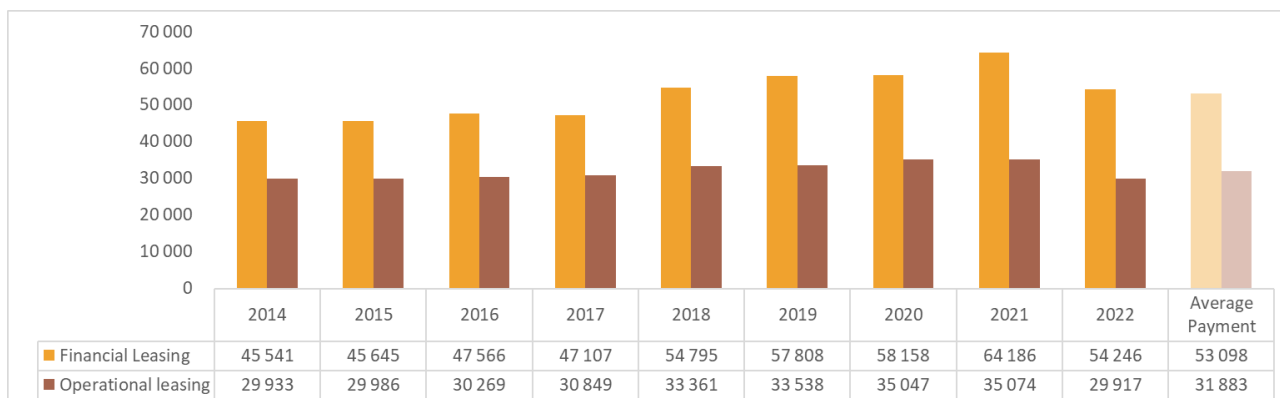


Figure 7 Average monthly leasing payment by leasing type in CZK
Source: own research (2024)

For operating leasing, a relatively stable value can be seen in Figure 7 in the first years of observation. Subsequently, a more significant increase in 2018 and then price increases every year except 2022, where a strong decrease is recorded. For financial leasing, an annual increase is noticeable, in addition to a significant increase in 2018 and a strong decrease in 2022.

4.2 Research model

The results of the research model are presented in the following text using so-called waterfall graphs (all values are given in thousand CZK) and comments. In the first case, the overall research results for leasing contracts without a down payment, i.e. without an increased first instalment, are presented in figure 8:

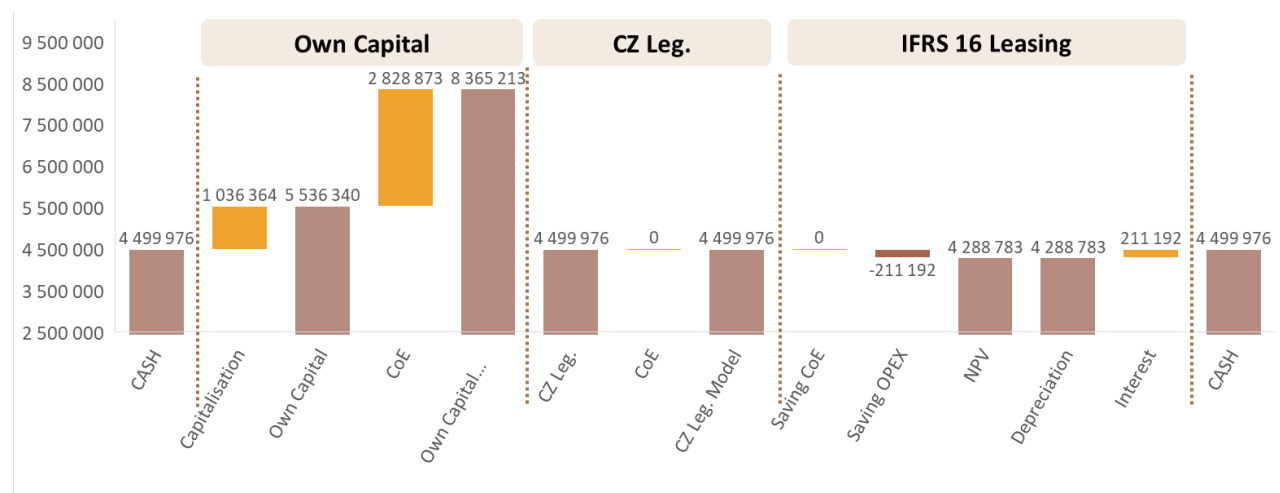


Figure 8 Total effect of research scenarios on sample data without advance payments (waterfalls)
Source: own research (2024)

In the monitored period from 2014 to 2022, the volume of lease payments paid in the identified research sample of cases where the down payment was not paid at the beginning of the contract amounted to 4,499,976 thousand CZK (i.e. almost 4.5 billion CZK). This research sample represents a total of 2,731 observations.

Looking at the middle part of Figure 8 dedicated to Czech Accounting Principles reporting, due to the absence of an advance payment, the value in the Czech Accounting Principles and Czech Accounting Principles Model scenario is the same as the value of the lease payments physically paid. The CoE column in the Czech Accounting Principles Leasing section represents the scenario and costs reflecting the cost of equity, which is not there because there was no advance payment.

In the case of research modelling of a scenario where the volume of vehicles would be purchased from own resources, a significant increase in the depreciation charged to the operating costs of companies is already visible, amounting to 5,536,340 thousand CZK. The difference compared to the physically paid leasing payments in the model is 1,036,364 thousand CZK. The visualization of this effect was presented in Figure No. 8 by the column "capitalization".

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When purchasing vehicles from the company's own resources, the model always calculates monthly depreciation based on the entire purchase price of the vehicle (for the distributor company, it is the selling price). The amount of monthly depreciation is always 1/60 of the purchase price of the vehicle. Subsequently, the number of months of depreciation is always considered only for the duration of the theoretical (source) leasing contract.

Since it is not possible to reflect the expected residual value of the vehicles after the end of their leasing contracts in the model, the entire value of the underlying asset is capitalized in the model, and therefore the regular monthly depreciation reflected in the company's operating costs is increased.

When including the cost of equity in the scenario of purchasing a vehicle from own resources, these economic costs amount to 2,828,873 thousand CZK. Therefore, the scenario reflecting the cost of equity (Own Capital Model) reaches 8,365,213 thousand CZK.

Conversely, the lowest capitalized values in all scenarios in the absence of an advance payment is the scenario of reporting leasing according to the IFRS 16 standard. Its value reached 4,288,783 thousand CZK in the entire set. At the same time, savings in operating costs were identified in the amount 211,192 thousand CZK in financial interest costs. Therefore, the profits of companies (using leasing without an advance payment) at the EBIT level in the monitored period would increase by this value.

The overall results of the research on leasing contracts where an advance payment was made at the beginning are presented in Figure 9. The total analyzed sample of leasing contracts was 1,374.

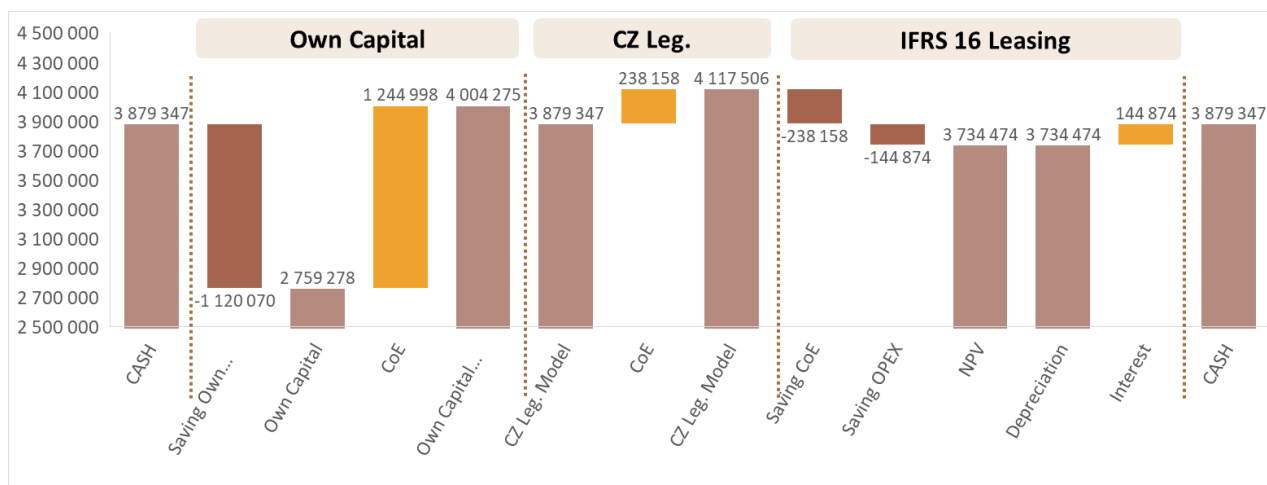


Figure 9 Total effect of research scenarios on sample data with advance payment in CZK (waterfall)

Source: own research (2024)

The total volume of realized financial flows from leasing contracts that included an advance payment was 3,879,347 thousand CZK in the monitored period from 2014 to 2022. The presented data shows a significant difference in the "Own Capital" scenario, when the vehicle is purchased from the company's own resources. The savings, which are quantified here at 1,120,070 thousand CZK, can be considered very significant. The source data were analyzed and checked in this context, and it was found that in these cases the margin for the leasing company increases significantly in contracts that include an advance payment and therefore significantly higher costs for the use of external capital. This significant difference compared to the model where there is no advance payment could be the subject of further scientific research.

However, it would be possible to interpret this difference as a factor where a higher down payment rate is a tool to reduce credit risk for the leasing company for clients whose credit risk would be outside the acceptable limit without such a down payment rate. In such a case, the leasing contract would not be implemented at all. However, after the down payment is paid, the credit risk factors are significantly lower and external financing in the form of leasing is possible. However, the risk premium in the calculation of the leasing payment is significantly higher than in contracts without a down payment. Due to these influences described above, it would be possible to interpret the significantly higher difference between the Cash value and the scenario of purchasing a vehicle from the company's own resources in the research model.

If the cost of equity is included in the "Own Capital" scenario, the value of these economic costs is at the level of 1,244,998 thousand CZK, and the "Own Capital Model" scenario reaches a value of 4,004,275 thousand CZK.

The middle section in the waterfall charts is dedicated to the results of leasing reporting according to the Czech Accounting Standards. The first column in this section expresses the actual accounting recognition of leasing payments according to the Czech Accounting Standards rules. This scenario corresponds to the value of made leasing payments. This is followed by the CoE column expressing the nominal value of the economic costs for the use of equity when paying

the advance payment (238,158 thousand CZK). The last column labeled "CZ Leg. Model" is subsequently the sum of the previous two columns and expresses the value of the physically recorded costs of leasing payments in accounting + an increase by the economic costs for the use of own resources (4,117,506 thousand CZK).

Again, the lowest value of operating costs of a leasing contract is achieved by the reporting scenario according to the rules of the IFRS 16 standard (except for the already mentioned "Own Capital" variant). The saving of operating costs in the amount of financial cost interest in this data set is 144,874 thousand CZK. By this value, companies would achieve a better profit result at the EBIT level.

5 Discussion

One of the biggest differences in the application of IFRS 16 is the change in the financial reporting of leasing contracts on the lessee's side. Operating costs are not fully recognized in the amount of leasing payments, but rather in the form of depreciation of the right of use and financial interest costs. For this reason, there is a significant reduction in total operating costs and a proportional increase in profit at the EBITDA level (as already pointed out by Svoboda [21] or Bohušová [18]). Table 3 below quantifies the differences resulting from the application of IFRS 16. The Czech and IFRS columns are the sum of operating costs (or OPEX) and depreciation. The expressed difference represents the value of financial interest arising from the capitalization of leasing contracts.

Table 3 Values and changes in OPEX + depreciation reported in different adjustments in years (in CZK)

Year	CZ Leg.	IFRS 16	Difference in CZK	Difference in %
2014	98 986 811	94 893 008	4 093 803	4.1
2015	345 683 592	331 555 967	14 127 625	4.1
2016	581 085 515	558 570 441	22 515 073	3.9
2017	777 965 187	748 459 509	29 505 679	3.8
2018	901 245 762	866 870 737	34 375 025	3.8
2019	1 117 803 873	1 073 811 069	43 992 804	3.9
2020	1 092 329 209	1 046 256 839	46 072 370	4.2
2021	1 081 933 129	1 035 348 526	46 584 603	4.3
2022	975 920 352	931 457 175	44 463 177	4.6
2023	658 353 288	626 602 078	31 751 210	4.8
2024	494 266 032	470 917 790	23 348 242	4.7
2025	231 227 018	217 685 238	13 541 781	5.9
2026	22 523 089	20 828 575	1 694 514	7.5
Total	8 379 322 858	8 023 256 951	356 065 907	4.2

Source: own research (2024)

Table 3 presents the results of the research, which is based on the calculation of individual modelled research scenarios (see above). The values are applied to the total data sample, which was identified as the research sample. The distribution of values into individual years in the above table is according to the modelled values based on the initial start date of leasing financing. For this reason, the table also shows future values, as the research sample included leasing contracts that had a contract start date in 2022, but their duration could be calculated into future months based on the research methodology.

The total value divided into individual years corresponds to the sum of the two results presented above in the waterfall charts No. 6 and 7. In the column according to the Czech Commercial Code, it is the sum of the value of leasing contracts without advance payments from chart No. 6 in the amount of 4,499,976 TCZK and from chart No. 7 in the amount of 3,879,347 TCZK. The sum of these two values gives the resulting total sum from table No. 3 in the amount of 8,379,322 TCZK for the Czech Commercial Code accounting scenario. The sum for the IFRS 16 accounting scenario is obtained in the same way.

From the above, it follows that changing the value of the sum of OPEX and depreciation reported financially according to Czech Accounting Standards to the new IFRS 16 standard would cause value change of an average of 4.2%.

The reduction of the company's operating costs in the OPEX classification will occur due to the depreciation of the net present value of future lease payments of the underlying asset, rather than the reporting of the entire value of the lease payments made in the company's operating costs. The IFRS 16 standard therefore considers the time value of money compared to the principles according to the Czech Accounting Standards. In the monitored research sample, this change would mean a reduction of the companies' operating costs (OPEX) by 4.2% totaling approx. 356,066 thousand CZK.

At the same time, the research sample presented:

- growth in EBITDA profit by 8,379,323 thousand CZK,
- growth in EBIT profit by 356,066 thousand CZK (increase by 4.2%),

- decrease in financial result by 356,066 thousand CZK (by 4.2%),
- increase in non-current assets (capitalisation of the right of use) by 8,023,257 thousand CZK,
- increase in long-term liabilities (recognition of lease liability) by 8,023,257 thousand CZK.

The increase in non-current assets by the total value of the net present value of future lease payments will occur due to the capitalization of the leasing contract and thus the recognition of the right of use in the company's assets.

Analogously, the company's liabilities will increase by recognizing a long-term lease liability in the amount of the net present value of future lease payments.

The increase in EBITDA of CZK 8,379,323 thousand is due to the change in the classification of leasing payments from operating expenses (vehicle rental) to depreciation (right of use in assets). For this reason, regular monthly payments will not be charged to the company's expenses, and therefore the EBITDA profit level will be higher by the entire value of the payments made. At the same time, depreciation of the capitalized right of use will be charged to the EBIT profit level, thereby increasing it by the difference between the individual treatments, i.e. by an increase of 4.2%.

Bohušová [18] quantified in her work a positive change in the level of EBIT profit of a median of +2.5%. However, compared to the research sample in this work, she noted the volatility of this percentage in individual companies. The maximum value of the increase in the value of EBIT was 13.29% and the minimum was an increase of 0.09%. In the average annual values for the entire research sample in this presented work, the maximum value is 7.5% and the minimum is an improvement in the level of EBIT of 3.8%.

Another author [16] focused on Spanish listed companies and used regression models to monitor the change in the application of IFRS 16 to financial indicators but did not provide specific values or percentage changes in his study. Similarly, another author [17] analyzed and described the changes by comparing the differences between local adjustments and the new IFRS 16 standard but did not provide specific values or percentage differences in the value of operating costs, assets, liabilities or different levels of profit in her study. Subsequently, other authors mainly reported the percentage effect on the change (increase) in the balance sheet total after the application of IFRS 16 or in their studies only generally described the principles and changes that the new IFRS 16 standard will introduce.

The presented results do not agree with the authors Dlaskova and Cipovova [23], who present a total cost reduction of 18%, therefore the formulated assumption was not fulfilled. The reason may be that the study of these authors focused on assessing the creditworthiness of companies when applying all IFRS together. Therefore, the influence of only IFRS 16 cannot be excluded from these results.

6 Conclusions

The research results show that the transition from Czech Accounting Standards to IFRS 16 has a measurable impact on the cost structure and other key financial indicators of the monitored companies. The most significant impact was the reduction in operating costs (OPEX) by an average of 4.2%, which corresponds to approximately CZK 356 million, and the simultaneous increase in EBITDA by more than CZK 8.3 billion. This resulted in an increase in EBIT by 4.2% and a simultaneous increase in long-term assets and liabilities by more than CZK 8 billion due to the capitalization of leasing contracts. The change in reporting therefore leads to an improvement in profitability at the EBITDA and EBIT levels, but with a negative impact on the financial result due to the increase in interest costs. The results are consistent with some foreign studies but differ from the conclusions of Dlasková and Cipovová [23], which may be due to a different methodology. The research thus provides a specific quantification of the impacts of IFRS 16 in the Czech environment, which has been missing to date.

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