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*Ani Stoykova*[1]

# EFFECT OF THE APPLICATION OF IFRS 15: EVIDENCE FROM BULGARIA

*IFRS 15 Revenue from Contracts with Customers is a completely new standard for recognition and evaluation of enterprises' revenue regardless of the industry and type of revenue. The new standard completely replaces current standards related to recognition revenue. The aim of this study is to determine whether the adoption of IFRS 15 has affected Bulgarian companies' revenue and stock prices or not. The period under examination is from 2016 to 2019. The analyzed companies are 16 separate corporate entities from various sectors in Bulgaria. The unit root test, descriptive statistics and paired sample t-test are applied. The results show that IFRS 15 has an influence on the stock prices of the Bulgarian listed companies of the following sectors: manufacturing, wholesale and retail trade, accommodation and food service activities, transportation and storage, real estate activities, construction and the value of stock prices of these companies decrease after standard adoption. IFRS 15 does not have a significant effect on the revenue of the analyzed Bulgarian companies.*
*JEL: M40; M41; G10; C01; C49*

## 1. Introduction

In May 2014, IFRS 15 Revenue from Contracts with Customers was issued. It established a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers. IFRS 15 supersedes the current standards, including IAS 18 Revenue, IAS 11 Construction Contracts, and their related interpretations. It becomes effective on 1 January 2018 in Bulgaria, with retrospective application, and early adoption is permitted. IFRS 15 establishes principles for reporting useful information to users of financial statements about the nature, amount, timing, and uncertainty of revenue and cash flows arising from an entity's contracts with customers. The core principle of IFRS 15 is that an entity recognises revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services.

The purpose of this study is to determine whether the adoption of IFRS 15 has affected Bulgarian companies' revenue and stock prices or not. In particular, this study aims to

[1] *Ani Stoykova, Chief Assistant professor, PhD, Faculty of Economics, Department of "Finance and accounting", South-West University "Neofit Rilski", Bulgaria, e-mail: ani_qankova_st@abv.bg.*

analyze the effects of applying the IFRS 15 in the first two years after its adoption in Bulgaria, namely 2018 and 2019 for Bulgarian publicly listed companies. One of the main tasks is to generalise the effects of changes in the revenue and stock prices of sixteen Bulgarian public companies from different industries related to the IFRS 15 adoption.

In this paper, a short summary of IFRS 15 is presented. In order to analyze the dynamics of revenue and stock prices before and after the adoption of IFRS 15 in Bulgaria, an econometric methodology considering unit root test, descriptive statistics and paired sample t-test is applied. Our findings show that there is a difference between the values of the stock prices of the analyzed Bulgarian companies before and after the standard application and they decrease after IFRS 15 adoption. IFRS 15 does not have a significant effect on the revenue of the Bulgarian listed companies of the following sectors: manufacturing, wholesale and retail trade, accommodation and food service activities, transportation and storage, real estate activities, construction.

Limitations of this research are determined in the following aspects:

*Time range* - this research is restricted in the time interval from 2016- 2019;

*Methodological restrictions* – they are set by the statistical properties of the researched data. The proposed and used methodology does not claim to be the only possible and applicable when inspecting and proving the research thesis of this study.

*Place restrictions* – the analysis and the inspection of the research thesis are concentrated on one country – Bulgaria.

## 2. Literature Review

### *2.1. Summary of IFRS 15*

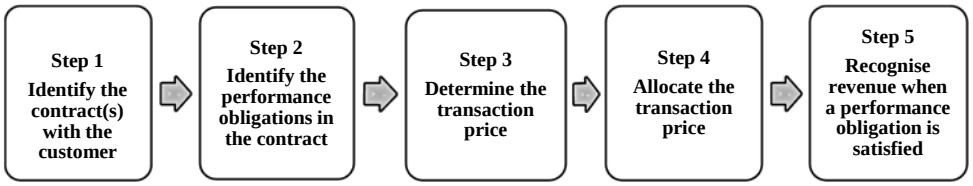
IFRS 15 will improve the comparability of reported revenue over a range of industries, companies and geographical areas globally. The objective of IFRS 15 is to establish principles that an entity shall apply to report useful information to users of financial statements about the nature, amount, timing, and uncertainty of revenue and cash flows arising from a contract with a customer.

The new revenue model would apply to all contracts with customers except leases, insurance contracts, financial instruments, guarantees, and certain non-monetary exchanges. The sale of non-monetary financial assets, such as property, plant and equipment, real estate, or intangible assets will also be subject to some of the requirements of the new model.

IFRS 15 introduces a revenue model in which the core principle is that an entity should recognise revenue to depict the transfer of promised goods or services to the customer in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To recognise revenue, the following five steps should be applied:

Figure 1

Revenue model




***Source:*** *Authors' summaries based on IFRS 15.*

***Step 1: Identify the contract(s) with the customer –*** This means establishing what contracts you have with customers. IFRS15 provides clearer guidance on what to do if a contract is assessed as being unlikely to be collectable and also has specific guidance on contract modifications.

***Step 2: Identify the separate performance obligations in the contract(s) –*** A performance obligation can be summarised as "a promise in a contract with a customer to transfer a good or service to the customer." Key questions here are whether a good or service is "distinct", "integrated", or "homogeneous".

***Step 3: Determine the transaction price –*** The transaction price can be defined as the "amount of consideration to which entity expects to be entitled in exchange for transferring goods or services." It may be affected by factors including variable consideration, financing components, non-cash consideration, and consideration payable to customers.

***Step 4: Allocate the transaction price –*** This means thinking through the "fair value" of the handset and service components and carrying out a relative fair value allocation between the two. For example, the operator might allocate €100 of the total consideration to the handset performance obligation and the rest to the service.

***Step 5: Recognise revenue when (or as) a performance obligation is satisfied –*** Here the operator decides at what point in time control over the good or service transfers to the customer, and when to recognise the relevant revenue. This can either be over time – for example by measuring progress towards complete satisfaction of the performance obligation – or at a specific point in time (Gruss and Miß, 2016).

This five-step revenue recognition approach is completely new and relatively difficult to understand for the users of financial statement. In addition, it is possible that the new standard (IFRS 15) will not be able to balance the various information needs of users, although this is one of the approaches to the development of international accounting standards: „Standard setters may need to decide whether they prefer (1) to balance the different interests on a standard-by-standard basis, (2) to focus on a specific subset of users when developing new standards, or (3) to address only general needs of users and allow preparers to provide additional information tailored to those specific groups of users that are considered most relevant in the particular circumstances (EFRAG, 2014)".

*2.2. Review of main recent research papers*

Numerous papers examine the adoption of IFRS 15 Revenue from contracts with customers and analyze its impact on the accounting information in financial statements or the new approaches on revenue recognition and measurement (Peter Raykov 2018; Khamis 2016; Huefner (2016; Vandenberghe et al. 2019; Tong 2014; Richard 2015).

Aladwan (2019) examines whether the early adoption of IFRS 15 that supersede the IAS 18 concerning revenue recognition has affected Jordanian companies' revenue levels and the value of stock price or not. His paper measures revenue and stock prices pre and post the IFRS 15 implementation. The findings revealed that there is a significant quantitative difference between the arithmetic means for both revenue and stock price pre and post the standard application. Further, the results of the study provided conclusive evidence that IFRS 15 has impacted on accountability and quality of information, that reported in the financial statement for Jordanian mining, construction, and engineering companies.

Van and Coetsee (2020) find that IFRS 15 provides an appropriate framework for the revenue recognition of construction contracts and the application of the guidance is based on the correct interpretation of the rights and obligations in construction contracts, which could create uncertainties in practice.

Ergüden (2020) discusses how the presentations, explanations, and footnotes in IFRS-15 standard have been handled in the disclosures of the public companies' independent audit reports by examining seven public tourism companies with content analysis. As a result of the study, unlike all issues taken place generally in the standard, it has been determined that general issues are included in the footnotes examined.

Vaicekauskas (2020) proves that the first-time adoption of IFRS 15 had no material impact on the financial statements of Lithuanian listed companies and most of the companies surveyed applied the standard using a simplified retrospective modified method and did not pay much attention to the disclosure of the first-time adoption.

Spasić and Arsenijević (2017) analyze the possible challenges in the first and each subsequent application of IFRS 15, ant to point out the need for good knowledge of revenue recognition criteria not only by accountants but also by users of financial statements. The authors also point to some particular challenges in the implementation of certain solutions to the standard. Altaji and Alokdeh (2019) investigate the impact of the IFRS (15) on the quality of accounting information in terms of relevance and faithful representation. To achieve the study objectives, a questionnaire is designed and distributed randomly on the study sample which includes (100) of external auditors of the Big Four audit companies in Jordan using the descriptive-analytical approach. The study hypotheses are tested through the Simple Regression Test and the One Sample T- Test. The study results indicate a statistically significant impact of the implementation of the IFRS 15 on improving the quality of accounting information from the perspective of external auditors at the Big Four audit companies in Jordan.

Yingzhee et al. (2015) make an overview of Malaysian preparers and auditors' perception on IFRS 15. Results of their study revealed that generally Malaysian accountants surveyed are still not ready to adopt IFRS 15 and they perceived that the standard is not easy to be applied

across different business sectors. Al-Tamimi et al. (2019) reach to the conclusion that the lack of experience and know-how in the accounting and administrative staff working in most mobile phone companies exists. The most important recommendations of the research are the need to provide an efficient accounting and administrative staff with sufficient experience and know-how in the methods of recognising revenues generated by mobile phone companies.

Kraft et al. (2020) examine the effects of mandatory IFRS adoption on accounting-based prediction models of CDS spreads for a sample of 292 firms in 16 countries. They find that mean and median absolute percentage prediction errors are larger for both financial and non-financial firms after mandatory IFRS adoption. Authors also find that in the post-adoption period, prediction errors are larger for firms in countries with weaker institutions, such as low levels of property rights and more restrictive access to credit. Plotnikov and Plotnikova (2018) prove that trade payables must be recognised as an object of accounting. It presents a developed model of accounting reflection of the financial and commercial process of transformation of trade payables in revenue from contracts with customers. The authors conclude that changes in the value of an asset transferred to the customer's control should be reflected in other aggregate income and not affect the amount of revenue. Their study proves the need to clarify the subject of accounting by introducing contractual obligations in its definition.

Filipova et al. (2020) focus on issues related to the implementation of the new IFRS 15 Revenue from Contracts with Customers. The most debatable issues regarding the requirements of the new five-step revenue recognition approach are discussed, as well as the conceptual basis of this approach and its relationship with the IFRS Conceptual Framework and the purposes of the general purpose financial statements. On the basis of manually collected empirical data, two samples of Bulgarian enterprises are examined: the first covers nine firms from different industries (listed on the Large taxpayers and insurers list), and the second – the 4 largest Bulgarian mobile operators. Both quantitative and qualitative approaches are used in order to analyze how IFRS 15 is applied in the sample of companies and the effects of its adoption (on equity and financial results) in the first year of its application – 2018 (as well as the comparative period 2017). The results of the study show that IFRS 15 does not have a significant impact on their financial statements and financial results of the enterprise from the first sample. IFRS 15 adoption is important for mobile operators in Bulgaria, but the complexity of its application (at least initially) creates difficulties for the companies.

## 3. Data and Research Methodology

### *3.1. Data*

The objective of this study is to determine whether the adoption of IFRS 15 has affected Bulgarian companies' revenue and stock prices or not. In order to examine the impact of IFRS 15 adoption on revenue and stock prices, the values of the annual sales revenue of the companies and the stock price of each company at the end of every year are used. The data is with annual frequency. The examined period is from 2016 to 2019. The sample contains

16 separate corporate entities from various sectors in Bulgaria: manufacturing, wholesale and retail trade, accommodation and food service activities, transportation and storage, real estate activities, construction. All of the companies included in the sample are public firms that listed their common shares on the Bulgarian stock exchange (BSE). In addition, stock indices SOFIX, BGBX40, BGTR30 are based on the market capitalisation of the issues of common shares of the selected Bulgarian companies. The study data was obtained from individual company annual and quarterly financial reports (only for the fourth quarter of 2019) issued by the Bulgarian Stock Exchange (ASE) for the years from 2016 to 2019. The examined period is separated into two sub-periods: the first period – 2016-2017 before the application of IFRS 15 and the second period – 2018-2019 after the application of IFRS 15.

We examine firms from different sectors - for example: manufacturing, wholesale and retail trade, accommodation and food service activities, transportation and storage, real estate activities, construction. Here we have to make three remarks. First, we have chosen exactly these sixteen firms because all of the necessary accounting information is available for the whole examined period that is from 2016 to 2019. Second, we include in the sample only companies that apply IFRS 15. Third, the analyzed companies are public ones and BSE requires its listed issuers to disclose detailed annual and quarterly financial reports. What is more, the accounting data was collected and processed as of 10.02.2020. Table 1 displays all companies included in the sample. Also, the specific sector and subsector of all examined firms are presented.

Table 1

Sample companies

| № | Company name | Sector | Subsector | Stock index |
|---|---|---|---|---|
| 1. | SOPHARMA TRADING AD-SOFIA | Wholesale and retail trade; repair of motor vehicles and motorcycles | Wholesale trade, except of motor vehicles and motorcycles | BGBX40 BGTR30 |
| 2. | ALBENA AD-ALBENA | Accommodation and food service activities | Food and beverage service activities | SOFIX BGBX40 BGTR30 |
| 3. | ZARNENI HRANI BULGARIA AD-SOFIA | Wholesale trade, except of motor vehicles and motorcycles | Wholesale and retail trade; repair of motor vehicles and motorcycles | BGBX40 |
| 4. | SOPHARMA AD-SOFIA | Manufacturing | Manufacture of basic pharmaceutical products and pharmaceutical preparations | SOFIX BGBX40 BGTR30 |
| 5. | MONBAT AD-SOFIA | Manufacturing | Manufacture of electrical equipment | SOFIX BGBX40 BGTR30 |
| 6. | TCHAIKAPHARMA HIGH QUALITY MEDICINES AD-SOFIA | Manufacturing | Manufacture of basic pharmaceutical products and pharmaceutical preparations | BGBX40 |
| 7. | SPEEDY AD-SOFIA | Transportation and storage | Postal and courier activities | BGBX40 |
| 8. | M+S HYDRAULIC AD-KAZANLAK | Manufacturing | Manufacture of machinery and equipment n.e.c. | BGBX40 BGTR30 |
| 9. | ALCOMET AD-SHUMEN | Manufacturing | Manufacture of basic metals | BGBX40 |

| | | | | |
|---|---|---|---|---|
| 10. | KORADO BULGARIA AD-STRAZHITSA | Manufacturing | Manufacture of fabricated metal products, except machinery and equipment | BGBX40 |
| 11. | HYDRAULIC ELEMENTS AND SYSTEMS AD-YAMBOL | Manufacturing | Manufacture of machinery and equipment n.e.c. | BGBX40 |
| 12. | ODESSOS SHIPREPAIR YARD AD-VARNA | Manufacturing | Repair and installation of machinery and equipment | BGBX40 |
| 13. | NEOCHIM AD-DIMITROVGRAD | Manufacturing | Manufacture of chemicals and chemical products | BGBX40 |
| 14. | YURI GAGARIN PLC-PLOVDIV | Manufacturing | Printing of reproduction of recorded media | BGBX40 |
| 15. | GALATA INVESTMENT COMPANY AD-VARNA | Real estate activities | Real estate activities | BGTR30 |
| 16. | TRACE GROUP HOLD AD-SOFIA | Construction | Civil engineering | BGTR30 |

*Notes: Table1 displays all companies included in the sample and also the specific sector/subsector and the stock index which is based on the market capitalisation of the issues of common shares of the examined firms (to 10.02.2020).*
*Source: Authors' summaries based on https://www.bse-sofia.bg/.*

### *3.2. Panel Unit Root Test: Summary*

The recent literature suggests that panel-based unit root tests have higher power than unit roots tests based on individual time series. We describe the panel unit root test by the following equation:

$$y_t = p_i y_{it-1} + x_{it}\delta_i + \varepsilon_{it} \quad (1)$$

Where i=1,2…N cross- section units, which are observed over periods t=1.2…$T_i$; $x_{it}$- exogenous variables, including fixed effects or individual trends; $p_i$- autoregressive coefficient; $\varepsilon_{it}$- errors, which are assumed to be mututally independent idiosyncratic disturbance.

We may conclude that:

1. If $: p_i \ :< 1, y_i$ is considered to be trend stationary;
2. If $: p_i \ := 1, then\ y_i$ contains a unit root. The null hypothesis assumes a common unit root process.

### *3.3. T-test: paired two sample for means*

The t-Test Paired Two Sample for Means tool performs a paired two-sample Student's t-Test to ascertain if the null hypothesis (means of two populations are equal) can be accepted or rejected. This test does not assume that the variances of both populations are equal. Paired t-tests are typically used to test the means of a population before and after some treatment, i.e. two samples of math scores from students before and after a lesson.

The result of this tool is a calculated t-value. This value can be negative or positive, depending on the data. Assuming that the population means are equal:

- If t < 0, P(T <= t) one-tail is the probability that a value of the t-Statistic would be observed that is more negative than t.
- If t >0, P(T<=t) one tail is the probability that a value of the t-Statistic would be observed that is more positive than t.
- P(T <=t) two tail is the probability that a value of the t-Statistic would be observed that is larger in absolute value than t (https://www.solver.com/t-test-paired-two-sample-means).

## 4. Empirical Results

### *4.1. Unit root test*

Table 2 and Table 3 show the results of the Levin, Lin and Chu test (2002) for the time-series for revenue and stock price. The null hypothesis is that the series has a unit root (non-stationary process). It can be seen from the both tables, that the series are stationary at level for both periods. We can reject the null hypothesis and suggest that data is stationary at level for the first period (before IFRS 15 adoption) and for the second period (after IFRS 15 adoption).

Table 2

Group unit root test: Summary for the first period 2016-2017 before the adoption of IFRS 15

| Method | Statistic | Prob. | Cross-sections | Obs |
|---|---|---|---|---|
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t** | -4.10965 | 0.0000 | 4 | 57 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin W-stat | -4.79838 | 0.0000 | 4 | 57 |
| ADF - Fisher Chi-square | 35.3062 | 0.0000 | 4 | 57 |
| PP - Fisher Chi-square | 64.1920 | 0.0000 | 4 | 60 |

*Source: Authors' calculations.*

Table 3

Group unit root test: Summary for the second period 2018-2019 after the adoption of IFRS 15

| Method | Statistic | Prob. | Cross-sections | Obs |
|---|---|---|---|---|
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t** | -5.69535 | 0.0000 | 4 | 58 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin W-stat | -5.69026 | 0.0000 | 4 | 58 |
| ADF – Fisher Chi-square | 41.8063 | 0.0000 | 4 | 58 |
| PP – Fisher Chi-square | 75.4241 | 0.0000 | 4 | 60 |

*Source: Authors' calculations.*

### *4.2. Descriptive statistics*

Table 4 and Table 5 show the descriptive statistics of the examined variables – stock prices and revenue. Table 4 presents that the mean is positive for stock prices before and after IFRS 15 application. The mean of stock prices before the standard adoption is 22,05222, and this value varies between the minimum value of 0,364 and the maximum value of 95. Otherwise, the mean of stock prices after the standard application is 16,76956, and this value is between a minimum value of 0,22, and the maximum value of 87,5. Considering these results, we can conclude that the mean value of stock prices decreases with -5,28266 (-31,51%) after IFRS 15 adoption. This reduction in the value of the stock price is due to the new standard and its new moments. Additionally, for both periods, stock prices are positively skewed, indicating a higher probability of large increases in these series than decreases. The kurtosis values of stock prices before and after the standard adoption are larger than the value of the normal distribution (the kurtosis of the normal distribution is 3), indicating that big shocks are more likely to be present for these variables. The departure from normality is confirmed by the Jarque-Bera test statistics for stock prices for both periods and the null hypothesis of normality at the 5% level for these two variables can be rejected.

Table 4

Descriptive Statistics for the stock prices before and after IFRS 15 adoption

| | STOCK_PRICE_BEFORE | STOCK_PRICE_AFTER |
|---|---|---|
| Mean | 22,05222 | 16,76956 |
| Median | 7,7695 | 7,075 |
| Maximum | 95 | 87,5 |
| Minimum | 0,364 | 0,22 |
| Std. Dev. | 27,0179 | 21,85318 |
| Skewness | 1,386967 | 1,844683 |
| Kurtosis | 3,771002 | 5,564071 |
| Jarque-Bera | 11,0522 | 26,91451 |
| Probability | 0,003981 | 0,000001 |
| Sum | 705,671 | 536,626 |
| Sum Sq. Dev. | 22628,98 | 14804,4 |
| Observations | 32 | 32 |

*Source: Authors' calculations.*

On the other hand, Table 5 presents the results for the revenue before and after the standard adoption. The mean is positive for revenue for both periods. The mean of revenue before the standard adoption is 156540,5 and this value is between the minimum value of 150 and the maximum value of 680781. On the other hand, the mean of revenue after the new standard application is 172549,9, and this value is between a minimum value of 151 and the maximum value of 792574. Considering these results, we can conclude that the mean value of revenue increases with 16009,4 (9,28%) after IFRS 15 adoption. In addition, revenue is positively skewed, indicating a higher probability of large increases in these series than decreases before and after the new standard adoption. The kurtosis values of revenue are larger than the value of the normal distribution (the kurtosis of the normal distribution is 3) for both periods, indicating that big shocks are more likely to be present for these variables. The departure

from normality is confirmed by the Jarque-Bera test statistics for revenue for both periods and the null hypothesis of normality at the 5% level for these two variables can be rejected.

These empirical results prove that IFRS 15 does not have a significant effect on the reported sales revenue of the Bulgarian companies from the following sectors: manufacturing, wholesale and retail trade, accommodation and food service activities, transportation, and storage, real estate activities, construction. Thus, an assumption can be made that the companies of sectors mention above are not significantly affected by the new standard. Consequently, these results reconfirm the results obtained of PwC (PwC, 2015). The analyzes made by PwC (PwC, 2015) show that industries that will be affected the most by the new standard are: telecommunications, technology, energy, media and entertainment, construction, IT, automotive, real estate, pharmaceuticals, and healthcare. In our sample, there are only a few companies of these industries and they are affected by IFRS 15 to the certain level. In particular, IFRS 15 affects the stock prices of examined Bulgarian companies.

Table 5

Descriptive Statistics for the revenue for the first period before and after IFRS 15 adoption

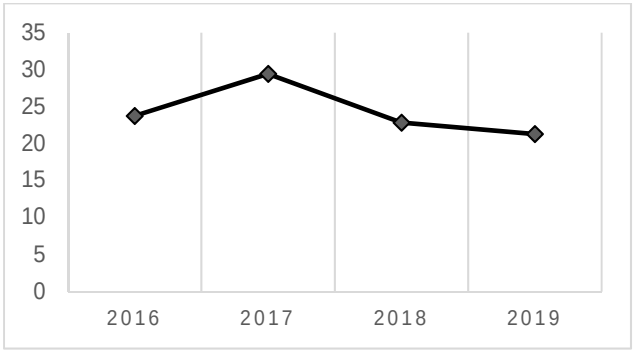
| | REVENUE_BEFORE (000) | REVENUE_AFTER (000) |
|---|---|---|
| Mean | 156540,5 | 172549,9 |
| Median | 102550,5 | 108565,5 |
| Maximum | 680781 | 792574 |
| Minimum | 150 | 151 |
| Std. Dev. | 168415,7 | 191308,2 |
| Skewness | 1,650984 | 1,889613 |
| Kurtosis | 5,39724 | 6,426979 |
| Jarque-Bera | 22,19968 | 34,70232 |
| Probability | 0,000015 | 0 |
| Sum | 5009296 | 5521598 |
| Sum Sq. Dev. | 8,79E+11 | 1,13E+12 |
| Observations | 32 | 32 |

*Source: Authors' calculations.*

In order to examine the effect of IFRS 15 Revenue from Contracts with Customers on revenue and stock price for the analyzed companies, the average (arithmetic mean) revenue and stock price are calculated. Figure 2 represents the dynamics of the average stock price and the average stock price of the examined companies for 2016-2019. Figure 2 shows that the values of the stock price decrease after the IFRS 15 Revenue from Contracts with Customers inclusion. We can suppose that the new standard has an impact on the values of the stock price of the Bulgarian listed companies on the Bulgarian stock exchange. Consequently, we can make a conclusion that there is a significant difference in the value of stock prices before and after IFRS 15 Revenue from Contracts with Customers application.

Figure 2

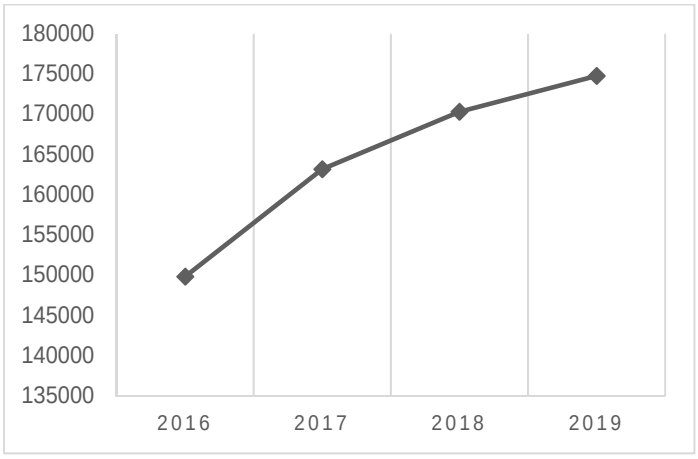
Dynamics of the average stock price of the examined companies for 2016-2019




*Source: Authors' summarisation.*

Figure 3

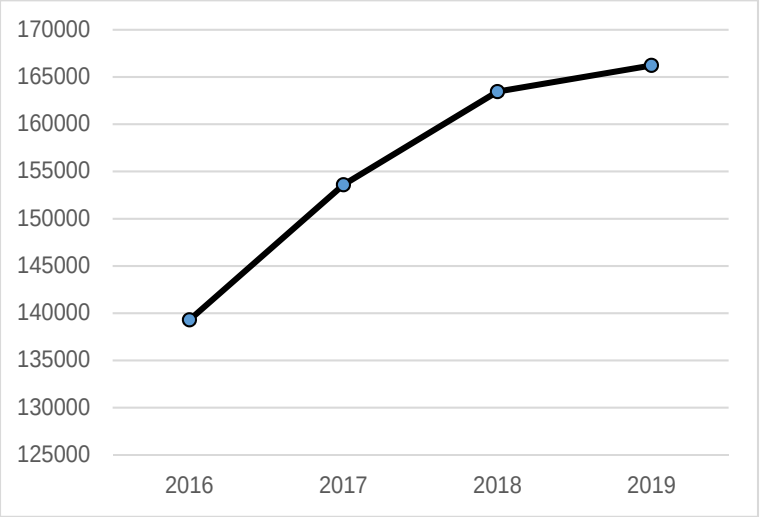
Dynamics of the average revenue of examined companies for 2016-2019 (000)




*Source: Authors' summarisation.*

Figure 3 represents the dynamics of the average revenue of the examined companies for 2016-2019. IFRS 15 Revenue from Contracts with Customers has an impact on the accountability and quality of information that reported in the financial statement for examined Bulgarian companies. The value of revenue of the examined Bulgarian companies slightly increases after the new standard application, but these companies are not significantly affected by the new standard. We can assume that it is due mainly to the increase in some products and raw materials as water and electricity or because of the use of new smart technologies. This leads to an increase in the total operating expenses of these companies after IFRS 15 adoption.

Figure 4
Dynamics of the total operation expenses of examined companies for 2016-2019 (000)




*Source: Authors' summarisation.*

Our findings for stock price reconfirm the analysis made by Aladwan (2019). Aladwan (2019) measures revenue and stock prices pre and post IFRS 15 Revenue from Contracts with Customers implementation and his results show that there is a significant difference in the value of revenue and stock prices before and after the new standard inclusion.

### *4.3. Paired Samples Test*

Table 6 shows the results of a test of means differences between and stock prices before and after IFRS 15 adoption. Considering these results, we can conclude that the stock price mean is 22,07221875 before the standard adoption and the mean is 16,7695625 after the IFRS 15 application. As well as, we register a decrease of the mean value of stock prices with (-32%) after 2018. Therefore, we can resume that IFRS 15 has a negative impact on the stock prices of the examined Bulgarian companies. In addition, P (T<=t) two tail (0,008944068) gives the probability that the value of the t-Statistic (2,789601268) is larger than the Critical t value (2,039513446). Since the p–value is less than 0.05, we reject the null hypothesis that there is no significant difference in the means of stock prices before and after the IFRS adoption. Thus, we can make a conclusion that, there is a significant difference in the value of stock prices before and after the new standard adoption.

Table 6

t-Test: Paired Two Sample for Means for stock prices

| | STOCK_PRICE_BEFORE | STOCK_PRICE_AFTER |
|---|---|---|
| Mean | 22,07221875 | 16,7695625 |
| Variance | 729,2728919 | 477,561361 |
| Observations | 32 | 32 |
| Pearson Correlation | 0,92452428 | |
| Hypothesized Mean Difference | 0 | |
| df | 31 | |
| t Stat | 2,789601268 | |
| P(T<=t) one-tail | 0,004472034 | |
| t Critical one-tail | 1,695518783 | |
| P(T<=t) two-tail | 0,008944068 | |
| t Critical two-tail | 2,039513446 | |

*Source: Authors' calculations.*

Table 7 presents the results of a paired t-test for differences between revenue before and after the IFRS 15 application. We can assume that the revenue mean is 156540,5 before the standard adoption and the mean is 172549,9375 after the IFRS 15 application. Consequently, we register an increase of the mean value of revenue with (9,27%) after IFRS 15 adoption. IFRS 15 does not have a significant effect on the revenue of the examined Bulgarian companies. In addition, P (T<=t) two tail (0,003670647) gives the probability that the absolute value of the t-Statistic (-2,869440716) is larger than the absolute Critical t value (2,039513446). Since the p–value is less than 0.05, the null hypothesis that there is no significant difference in the means of stock prices before and after the IFRS adoption is rejected.

Table 7

t-Test: Paired Two Sample for Means for revenue

| | REVENUE_BEFORE | REVENUE_AFTER |
|---|---|---|
| Mean | 156540,5 | 172549,9375 |
| Variance | 28363857028 | 36598809644 |
| Observations | 32 | 32 |
| Pearson Correlation | 0,992674461 | |
| Hypothesized Mean Difference | 0 | |
| df | 31 | |
| t Stat | -2,869440716 | |
| P(T<=t) one-tail | 0,003670647 | |
| t Critical one-tail | 1,695518783 | |
| P(T<=t) two-tail | 0,007341295 | |
| t Critical two-tail | 2,039513446 | |

*Source: Authors' calculations.*

## 5. Conclusions and Discussions

This paper contributes to prior literature in several ways. First of all, the research explores the effects of the adoption of IFRS 15 on the Bulgarian companies' revenue and stock prices which has not been studied to a large extent. Secondly, the prior researches on the effects of changes in the companies' revenue and stock prices have concentrated on other counties, whereas our research is focused on Bulgaria. To our knowledge this is one of a few papers which examines the impact of IFRS 15 adoption on the information in financial statement in Bulgaria.

The aim of this research is to determine whether the adoption of IFRS 15 has affected Bulgarian companies' revenue and stock prices or not. The examined period is from 2016 to 2019. The sample contains 16 separate corporate entities from various sectors in Bulgaria. The unit root test, descriptive statistics and paired sample t-test are applied. The empirical results prove that IFRS 15 does not have a significant effect on the reported sales revenue of the Bulgarian companies from the following sectors: manufacturing, wholesale and retail trade, accommodation and food service activities, transportation, and storage, real estate activities, construction. Thus, an assumption can be made that the companies of sectors mention above are not significantly affected by the new standard. These results reconfirm the results obtained by PwC (2015) and Filipova et al. (2020).

IFRS 15 affects the stock prices of examined Bulgarian companies. It should be noted here that only the first two reporting periods after the new standard adoption have been examined, and it is possible that companies have not yet assessed the impact of the IFRS 15 on their contracts with customers. In addition, the results obtained can be considered by users of the financial statements as an indication that the Bulgarian public companies included in the sample are not able to capture and reflect any changes connected to the new standard adoption and they do not carefully analyze the impact of IFRS 15 on their revenue.

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