RESEARCH REPORTS

IFRS Adoption on the Individual Financial Statements: A comparison to the Hungarian GAAP

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ABSTRACT   *IFRS has gradually become the global standard for financial reporting. Hungary adopted IFRS for the individual financial reporting of listed entities in 2017. The objective of this paper is to assess the impacts of IFRS adoption on the individual financial statements of Hungarian listed entities. We study this using a statistical methodology composed of two parts, between the Hungarian Accounting Act (HAA) and the IFRS financial statements. We use a sample of 24 companies listed on the Budapest Stock Exchange (BSE). The first part concerning the Gray's comparability index was used to assess the degree of conservatism after IFRS adoption. Results showed neutrality for most of the variables, indicating a limited impact of IFRS adoption. The second part, concerning the Wilcoxon signed-rank test, was tested using a subset of variables for 2015, and the complete set of variables for 2016. The results were inconclusive. The 2016 dataset had statistical significance for more favourable IFRS values in numerous variables. Significant findings include differences in profit, return on equity, and solvency ratio 2 (liability to equity) at a 10% significance level. However, the 2015 dataset had no statistical significance for any of the variables tested. Consequently, we applied the Holm-Bonferroni method on the 2016 results for further robustness, due to the possibility of interdependence in the variables. The results showed no statistical significance, confirming the findings from 2015. This highlights a methodological complexity overlooked by similar studies, which do not consider controlling for false positives in the results with tests such as the Holm-Bonferroni method. To conclude, the absence of statistical significance for 2015 and 2016 strongly implies a limited initial impact of IFRS on individual financial statements in the case of Hungary.*

Keywords: IFRS, Hungary, Continental Accounting Model, Individual Financial Statements, Grays Comparability Index

Introduction

The global financial reporting standard today is considered to be IFRS. Listed entities worldwide increasingly use IFRS in their financial reporting. The goal of this financial reporting harmonisation through IFRS is particularly to increase financial statement comparability for investors. One hallmark event in this process was the EU Commission Regulation No. 1606/2002, which mandated the whole EU to adopt IFRS as the sole reporting standard for the consolidated financial statements of listed entities in 2005.

In line with the gradual implementation of IFRS, research on this topic has also gained popularity. The topic is studied in various areas, such as the impacts of a particular IFRS standard, the value relevance of IFRS statements

to shareholders, or the differences between local GAAP and IFRS. Results are often not straightforward in the literature, which is indicative of the complexity of research on the harmonisation of accounting standards.

In Hungary, the current domestic legislation concerning financial reporting is Act C of 2000 (HAA). Following the EU ruling on IFRS reporting, the consolidated financial statements of companies listed on the Budapest Stock Exchange (BSE) have been prepared in accordance with IFRS since 2005. However, IFRS on consolidated financial statements had already been mandatory for category A listings on the BSE prior to this, and voluntary adoption was also possible before 2005 (World Bank, 2004). In 2017, the BSE required listed entities also to report their individual financial statements in accordance with IFRS. The objective of this research is to assess the impacts of IFRS adoption on the individual financial statements of listed entities on the BSE.

The application of IFRS to individual financial statements is yet to be made mandatory in the EU for listed entities. It is also yet to be made mandatory in most other countries, as the global adoption of IFRS is primarily focused on the consolidated financial reporting of listed entities. It is therefore worth considering its application to individual financial statements and its implications for global accounting harmonisation. We add to the literature from this perspective. HAA and IFRS individual financial statements of the same year were tested for statistically significant increases or decreases post-IFRS adoption using the Wilcoxon signed-rank test. However, unlike prior studies that used a similar methodology, we considered a two-year comparison in our analysis (2015 and 2016). Similarly, as variables selected from financial statements are prone to interdependency, we also employed the Holm-Bonferroni method, which adjusts for family-wise error rate (FWER) on statistically significant variables.

This paper makes several key contributions. First and foremost, this study highlights the importance of utilising tests designed to control for false positives when conducting statistical testing to assess the impacts of IFRS adoption. This is because the variables selected for testing in these studies are prone to interdependence. The balance sheet items are adjusted to the accounting equation, and financial ratios utilise the same items for other ratios, such as return on equity and return on assets, both of which use net income. This makes it challenging to statistically identify the effect of adopting IFRS, as the unexplained variability (noise) of one item affects the other, such as net income, on return on assets and return on equity, for example. The Holm-Bonferroni method, applied to the 2016 financial year results in our study, confirmed our 2015 financial year results. The adoption of IFRS showed no statistically significant difference with HAA over the two years.

Secondly, it provides an argument for the necessity and importance of assessing for differences between local GAAP and IFRS prior to conducting value relevance research. This is because without differences between the two standards, the extent to which IFRS accounts for value relevance is significantly reduced to factors such as investor perception of IFRS rather than on IFRS itself. Similarly, it also argues that direct statistical testing using the Wilcoxon signed-rank test on financial statements of the same year can be more robust than econometric models in the

aspect of cross-research comparison of studies which assess the differences between domestic GAAP and IFRS. The requirement of controlling for external variables in econometric models and the difficulty of choosing an appropriate matched sample, both of which vary across studies, are attributable to this. However, the importance of controlling for false positives (type 1 error) must not be overlooked.

Lastly, this paper presents a methodological rigour that other studies with a similar methodology often overlook. Similar research has considered only one year when assessing for differences between domestic GAAP and IFRS financial statements of the same year. This refers to the preceding year of the first IFRS financial statements, for which both domestic GAAP and IFRS reporting are available, considered the only time period. Examples of this include studies from Finland (Lantto & Sahlström, 2009), Spain (Gastón et al., 2010), Turkey (Terzi et al., 2013), and others. However, by also considering the opening balance sheet of the preceding year, we can extend the time period for balance sheet variables for an additional year, which increases the reliability of overall results. Our results for the two years tested were initially inconclusive, highlighting the need to consider more than one year to draw more robust conclusions.

We believe that researchers in the accounting field will find this study helpful in addressing the issue of IFRS adoption, which is notable for its complexity in various regards. Additionally, European institutions concerned with accounting policy and its implementation, such as the European Commission, would find this a valuable contribution to the literature. Furthermore, Hungarian policymakers, the BSE, and other worldwide regulatory stakeholders, such as the IASB, would also find this study helpful.

Literature Review

IFRS and the Continental model

There are generally two kinds of financial reporting systems in Europe (Nobes, 2011). These are the Anglo-Saxon model and the continental model. They may also be referred to as civil law (code law) countries and common law countries. The continental model is dominant in continental Europe, which has a civil law framework. Various markers distinguish these two systems. Table 1 presents these markers and their differences.

Table 1. Differences between Anglo-Saxon model and Continental model.

	Anglo-Saxon model	*Continental model*
Legislation	Common law	Civil law
Financial Reporting	Shareholder oriented	Stakeholder oriented
Capital Financing	Capital market	Banks
Auditor	Higher demand	Lower demand
Accounting framework	Principle based	Rules based

Note. Based on Ali and Hwang (1999), Callao et al. (2007), Csebfalvi (2012), Kouki (2018), Kwon et al. (2017) and Geiger and Van Der Laan Smith (2010).

The HAA is considered a continental model standard (Takáts, 2014). With the rise in global accounting harmonisation, however, various amendments have been made to make HAA more market-based and similar to the Anglo-Saxon

model (Takáts, 2014). Nevertheless, the preference for rules-based accounting in Hungarian financial reporting is still dominant. This is evident in examples such as the HAA process for recognising intangible assets, which is strictly rule-based (Szekeres & Dienes, 2025). In contrast, IFRS is considered a shareholder-oriented Anglo-Saxon system (Kouki, 2018; Kwon et al., 2017; Rudžionienė et al., 2022).

The difficulty of harmonising HAA with IFRS and with global financial comparability suggests the presence of nuanced differences between HAA and IFRS. Differences could also be further corroborated by the adoption of an Anglo-Saxon system, such as IFRS, which has distinct characteristics from a continental accounting system, such as HAA.

Gastón et al. (2010), however, presents a study where IFRS adoption led to an even greater impact on a country with a domestic Anglo-Saxon system (UK) than a continental model country (Spain). They attributed one reason to differences in the enforcement of IFRS. Similarly, Lantto and Sahlström (2009) considered the extensiveness of the transition to IFRS, legal enforcement, and quality of financial reporting as factors for choosing Finland in assessing differences between IFRS and Finnish GAAP. However, results from Závodný and Procházka (2022) indicate that sharing a similar economic and institutional background does not result in similar informativeness of financial statements in items such as equity, earnings, and book value of cash flows.

Overall, there is a likelihood of obtaining differences between IFRS and a continental GAAP, such as HAA. However, complex external factors influence IFRS compliance in the financial statements and any resulting differences.

IFRS adoption and Direct Statistical Testing

We can categorise research on IFRS adoption into two distinct groups (Callao et al., 2007; Terzi et al., 2013). The first group is research on value relevance. Value relevance refers to the extent to which accounting information explains a firm's share price (Suadiye, 2012). The models applied here are usually the returns model (Easton & Harris, 1991) and the price model (Ohlson, 1995). Considering elements such as dummy variables or a full versus nested model can make these models more robust. Nevertheless, the variables assessed are key variables for shareholders. These are generally the book value of equity, cash flow of operations, and net profit.

Závodný and Procházka's (2022) study on assessing the value relevance of financial statements in the V4 region (Czech Republic, Hungary, Poland, and Slovakia), with a focus on IFRS adoption, used only the returns model. In contrast, Kouki (2018), with a similar objective, considered both the returns model and the price model. Kouki (2018) studied the value relevance in Germany, France, and Belgium and used a dummy variable in the pre-IFRS model to capture the effect of early IFRS adoption. Both studies considered the book value of equity and net profit as variables, with slight variations. Závodný and Procházka (2022) also considered cash flow from operations.

Value relevance research is considered to produce inconsistencies in the overall results (Giuglea, 2023; Závodný & Procházka, 2022). This aspect is also evident in research from the same country. For example, Kouki's (2018) study did not

demonstrate value relevance for equity and net income during the voluntary adoption of IFRS in Germany. The time period considered here for pre-IFRS adoption was from 2000 to 2004. The sample comprised 25 IFRS companies tested for 125 firm-years. On the other hand, Hung and Subramanyam's (2007) study, conducted during the voluntary adoption period of IFRS in Germany, found value relevance for equity but not for net income. The time period considered was between 1998 and 2002. This study comprised 80 IFRS industrial firms.

The second group of the IFRS adoption categorisation is research assessing differences between domestic GAAPs and IFRS, with a focus on the impacts of IFRS adoption. It is a less popular research area compared to value relevance. Assessing differences can be done using various distinct methodologies (Istrate, 2013). Examples include indices such as the H-index and the I-index, as well as econometric models and direct statistical tests. Direct statistical testing and econometric models are more popular methodologies in this field.

Direct statistical tests can be considered a more robust methodology than econometric models in certain aspects. Studies employ it when testing for differences between domestic GAAP and IFRS from the same year, using the same sample. The usual test is the Wilcoxon signed-rank test. As both groups are from the same sample, there is no requirement to factor in other external effects. This eliminates any individual firm-specific factors that could introduce noise into the study from the control group sample. These include aspects such as profitability, firm size, industry, and so forth.

Well-designed econometric models, however, can isolate the impacts of IFRS adoption with a higher inferential power and generalizability. This is because studies such as these consider a broad timeframe, which results in a much larger sample. Econometric models can also make a more thorough contribution by grouping the sample by characteristics to provide further insight. Beke (2011) assessed for differences between HAA and IFRS using a sample of 65 IFRS firms and 260 HAA firms as a control group. The time frame was 2006 as the pre-IFRS year, and 2007 as the post-IFRS year. The objective of the study was to examine the impact of IFRS adoption on the management performance of businesses and whether the level of earnings management is reduced, and value relevance enhanced with IFRS financial statements.

Beke (2011) controlled for firm specifics using six variables. These are size, divided, growth, profitability, liquidity, and leverage. However, the model used in the study did not consider firm fixed effects and year fixed effects. These are used in econometric models to remove external observable and unobservable factors that produce unexplained variability (noise) in the analysis. While firm and year fixed effects are strictly uniform in removal regardless of the study, econometric models have limitations that restrict the effectiveness of cross-research comparison of the results. This contrasts with the direct statistical testing method.

The extent of IFRS compliance and implementation can influence the results of statistical testing. This aspect can diminish the robustness of cross-research comparison. However, econometric models have further limitations. Firstly, the results from these models are highly dependent on the robustness of the control group, which is also likely to vary among studies. Secondly, fixed and firm year

effects do not consider the influence of the removal on the accounting data itself. For example, the fixed year effect removes the impacts of a recession to a considerable degree. This removal does not consider the impact of the recession itself on accounting data individually, such as increased earnings management during the recession.

Consequently, while econometric models are likely to have higher inferential power and a broader research contribution compared to direct statistical testing, they are more limited in the wider aspect of comparing results with those of other studies.

Value Relevance and Direct Statistical Testing

Assessing for differences between domestic GAAP and IFRS can be regarded as a necessary first step before value relevance research. This is because while value relevance research can show changes in the value relevance of financial statements following IFRS adoption, it does not consider whether IFRS adoption has brought any changes to the financial statements itself.

Csebfalvi's (2012) study examined differences between HAA and IFRS. Before testing for value relevance, growth, solvency, and leverage ratios were tested for differences using an econometric model. While IFRS adoption led to higher value relevance, there was an overall reduction in the ratios with IFRS financial statements. This indicates that IFRS adoption brought changes to the financial statements, while shareholders regarded items such as earnings and book value as of higher importance.

It is essential to consider whether adopting IFRS has brings any changes to financial statements. If there are no differences between domestic GAAP and IFRS, the extent to which IFRS contributes to the change in value relevance is difficult to explain. Giuglea (2023) assessed the changes in value relevance between Eastern and Western Europe following the adoption of IFRS. It was concluded that it had a larger effect in Eastern Europe. While IFRS adoption may have contributed to this, if financial statements in Eastern European countries do not show differences following IFRS adoption, the cause of the rise in value relevance is not IFRS itself but rather the change in investors' perception of financial statement information.

Studies assessing differences in financial statements following IFRS adoption consider a wide range of shareholder-specific variables. These fall into two categories: accounting measures and financial ratios, which were the grouping used in Munteanu et al.'s (2014) study. These variables influence the three most common value relevance variables: the book value of equity, cash flow from operations, and net profit. Differences in assets and liabilities for example, can influence the book value of equity. This relates to the interrelated aspect of financial statement data.

Gastón et al.'s (2010) study on differences between IFRS and Spanish GAAP did not observe a difference for equity. However, differences in non-current assets, long-term liabilities, and short-term liabilities were observable. Through the accounting equation for equity, these differences influence the changes in equity, even though equity itself may not differ between the standards. Similarly, profit is dependent on sales revenue, which is considered a variable in some studies. In the case of financial ratios, strong interdependency limits value relevance studies from

testing them. However, financial ratios are for the benefit of investors. This makes it important to consider changes in financial ratios following the adoption of IFRS as well. Furthermore, key ratios such as return on equity, net profit margin, or equity to liability ratio involve value relevance variables. For example, return on equity consist of net profit and equity, both of which are common value relevance variables.

Overall, the lack of research assessing the differences between local GAAP and IFRS is a significant research gap in the field of IFRS adoption. While we can employ direct statistical testing for this purpose, we should consider econometric models in this case. This is because direct statistical testing requires financial statements of the same year under domestic GAAP and IFRS. This is only available on the dates following the adoption of IFRS. In the case of consolidated financial statements for EU countries, this was 2005, which makes it an outdated study compared to recent trends. However, individual financial reporting for listed entities has not been made mandatory in the EU.

Hungary and the Hypotheses development

It was made mandatory for listed entities to begin individual financial reporting under IFRS as of January 1, 2017. The Hungarian Government made this decision in 2015 with Decision No. 1387/2015, and the Hungarian Parliament adopted it in the same year.

This decision is a leap towards making financial reporting more harmonised with IFRS and enhancing global accounting comparability. This is because HAA is considered a more rules-based standard than other EU domestic GAAPs. It is extensive on instructions which other domestic GAAPs regard as directives (Takáts, 2014). Karai (2007) states that the HAA does not resemble the German regulation on which it was initially based, and that its volume considerably exceeded the original. The influence of the communist era's strict, rules-based accounting for state purposes has had a considerable impact on the financial reporting system (Borbély, 2017; Borbély & Evans, 2006). We can therefore argue that this aspect makes the HAA more extreme compared to other EU continental GAAPs. Differences between HAA and IFRS can suggest the extent to which IFRS is different from a highly rule-based continental GAAP, such as HAA. This makes it an area worth researching.

The IFRS Conceptual Framework for Financial Reporting states in Chapter 1 that the general purpose of financial reporting is to provide financial information that is useful to existing and potential investors, lenders, and other creditors (IFRS Foundation, 2018). IFRS has been called shareholder-oriented in various studies. (Demaria & Dufour, 2007; Kwon et al., 2017; Zéghal et al., 2011). It is referred to as shareholder-orientedness because the focus on the financial statements is on providing a more positive outlook of the business, which attracts investors, lenders, and other creditors.

This contrasts with continental systems, which are tax-focused and more inclined towards the state in financial reporting. The difference in the philosophy of financial reporting, including the other characteristics of the Anglo-Saxon system that IFRS shares, suggests that IFRS financial statements have more shareholder-

positive values for the same variables compared to the continental GAAP, such as HAA. Hence, we corroborate the following hypothesis.

H1: IFRS accounting measures and financial ratios are higher than HAA for 2015

H2: IFRS accounting measures and financial ratios are higher than HAA for 2016

Methodology

IFRS 1 requires entities to begin reporting as if it has historically reported under IFRS. Therefore, the first IFRS annual reports must list the previous year's financial performance. (Gaston et al., 2010; Stent et al., 2010). IFRS 1 also requires companies to present the opening statement of financial position, for another further year prior to the effective date of IFRS adoption. Hungary adopted IFRS for the individual financial statements of listed entities in 2017. Consequently, the first individual financial statements prepared under IFRS had the performance for 2016, and the 2015 statement of financial position. This provides the opportunity to conduct direct statistical testing using data from 2016 and 2015 of IFRS with HAA. Listed entities ceased publishing under HAA after adopting IFRS in 2017.

We considered the years 2015 and 2016 as the time period. This is a novel approach that has not been considered in prior literature, which has utilised direct statistical testing on the preceding year only. (Lantto & Sahlström, 2009; Munteanu et al., 2014; Terzi et al., 2013). However, there are studies which consider other aspects. Callao et al. (2007), for example, considered half-year and full-year performance in the 2004 financial reporting year, relating to the differences between Spanish GAAP and IFRS.

Sample

We selected the samples from the listed entities on the Budapest Stock Exchange (BSE). Table 2 lists the basis on which we selected the samples. As we require the 2017 IFRS individual financial statements, listings after 2016 were excluded. Similarly, we excluded banks and insurance companies due to their distinct financial statements. Firms under bankruptcy proceedings were excluded due to their distinct impacts on financial performance. Lastly, firms with a reporting period different from the business year in Hungary, which runs from January 1st to December 31st, were also excluded. The final sample size is 24 companies. The table also lists the TÉAOR 25' sector classification.

Table 2. Final Sample and TÉOAR Classification

	N
Total Listed Equities (2025)	66
Less	
Listings after 2016	(37)
Banks and Insurance companies	(2)
Companies with bankruptcy proceedings	(1)
Companies that adopted IFRS before 2016	(1)
Companies with different financial year	(1)

Final Sample Size	24
TÉOAR SECTOR	*N*
Real Estate Activities	2
Professional, Scientific & Technical Activities	3
Asset Management (holding) & Activities of Financial Conduits	10
Telecommunication & Other Activities	3
Manufacturing	2
Administrative & Support Service Activities	2
Electricity & Others	2
Final Sample Size	24

Note. The classification name Asset Management (holding) & Activities of Financial Conduits is a level four class name. The other classification names are level one, and some sector names have been shortened.

Variables

The variables we considered fall into two groups. These are accounting measures and financial ratios. There are seven variables in each group, totalling fourteen variables. These variables are indicators that shareholders would consider before investing. As the 2015 data could only be sourced from the statement of financial position, we can only consider nine variables. While the variables are categorised in two distinct groups, they are considerably interdependent. Accounting measure items from the statement of financial position are impacted via the accounting equation. For example, an increase in assets brings a corresponding entry to either equity or liabilities. Similarly, financial ratios contain similar items for calculation, such as both return on equity and return on assets, which consider net income in the calculation. Interdependency increases the likelihood of false positives, which makes it difficult to ascertain the impact of IFRS.

We collected the data for the variables manually from publicly available sources. These are the websites of the companies and the archives of BSE. The variables were cross-checked by manually entering the sub-items relating to the variable. For example, line items that make up current liabilities were manually entered and totalled to compare with the original entry. We also manually calculated the financial ratios based on defined formulas. Table 3 presents the formulas used. Some additional adjustments were made for IFRS sales revenue, and certain items that were presented in HAA financial statements but not in IFRS.

Regarding the adjustments made to sales revenue, this is not a practice seen in relevant literature. HAA, similar to other continental accounting model systems, is less flexible and closely tied to taxation (Takáts, 2014). The revenue under IFRS, on the other hand, appeared more flexible among the samples. For example, some firms considered dividend income as part of their sales revenue, while others considered it part of their financial income. There is some variation in how and what companies consider when reporting their sales revenue under IFRS. Therefore, these variations can affect the results from the statistical testing.

Similarly, since what is considered revenue under IFRS is actually part of HAA income listed elsewhere, other than in the revenue line under HAA financial statements, we revalued IFRS revenue in accordance with the HAA reporting structure. This minimises differences in the sample for IFRS revenue, bringing unexplained variability (noise) to the results observed.

The second adjustment relates to HAA. HAA financial statements consider other assets and other liabilities distinctly. Items of prepayments and accrued income, provisions and accruals, and deferred income are considered separate sections in the HAA statements. Under IFRS, these are considered part of the variables we have selected for testing. For example, prepayments and accrued income are classified as current assets under IFRS, but not in HAA, where they are listed separately. These items under HAA need to be allocated from their sections to increase robustness rather than excluding them. We considered first whether the company itself indicated how these items were allocated which some companies present for comparison. In cases where this information was absent, these items were allocated manually, referring to the disclosures provided in the IFRS financial statements.

Table 3. Definitions for Financial Ratios

Financial Ratio	*Formula*
Liquidity ratio (Current ratio)	*Current assets / Current liabilities*
Solvency ratio 1	*Total assets / Total liabilities*
Solvency ratio 2	*Total liabilities / Equity*
Return on equity	*Net profit / Total assets*
Return on assets	*Net proit / Total assets*
Net profit margin	*Net profit / Net sales*
Autonomy ratio	*Equity / Noncurrent liabilities + Equity*

Methodology

The methodology we have used to assess the impacts of IFRS adoption in Hungary is statistical. It is composed of descriptive statistics and inferential statistics. The descriptive statistical part refers to the Gray's comparability index. It is also referred to as comparative index (Istrate, 2013) or relative impact (Gastón et al., 2010). This index is used to assess the degree of conservatism between financial reporting systems. We use the following formula:

1-*((HAA-IFRS)/HAA)*

It calculates a ratio between 0 and 1 of the IFRS value in terms of HAA. A ratio greater than 1 indicates the IFRS value is higher for the same variable, a ratio of 1 indicates no difference, and a ratio less than 1 indicates the IFRS value is lower for the referred variable. We will interpret the results according to Gray›s (1980) criterion. Below 0.95 will be regarded as conservative, between 0.95 and 1.05 as neutrality or no change and greater than 1.05 as optimistic.

The inferential statistics refers to using a direct statistical methodology on the HAA and IFRS financial statements of the same year. The normality of the data set determines the statistical test used. Studies employ various tests to assess normality. Munteanu et al. (2014) analysed a sample of 56 public companies,

utilising the JB test. Rudžionienė et al. (2022) used the Shapiro-Wilk test with a smaller sample of 15 Lithuanian state enterprises. Lantto and Sahlström (2009 assessed normality based on skewness and kurtosis distributions on a sample of 91 Finnish pubic entities. Based on our sample size of 24 companies, we use the Shapiro-Wilk test to assess normality for the 2015 and 2016 financial years. Table 7 in the supplementary section presents the results of the normality test.

All fourteen variables for both years, 2015 and 2016, were non-normal. Therefore, we will use the Wilcoxon signed-rank test to assess for differences between HAA and IFRS. The minimum significance usually considered in studies with a similar methodology is at %10 (Gastón et al., 2010; Munteanu et al., 2014; Rudžionienė et al., 2022; Stent et al., 2010). Some studies consider %5 (Dimitrios et al., 2013; Terzi et al., 2013). We considered %10 because statistically significant variables would also be controlled for type 1 error using the Holm-Bonferroni method.

The possibility of false positives is higher in our variables due to the interdependency of financial data. As a result, we controlled for the occurrence of false positives for any statistically significant variables observed. There are two primary ways of controlling for this, depending on the objective. These are the family-wise error rate (FWER), which is used when the objective is to ensure certainty of results, and the false discovery rate (FDR), used to ensure all possible results are considered. Our objective for controlling was to establish the certainty of any statistically significant results observed. Consequently, we used the Holm-Bonferroni method, which controls FWER.

Results and Discussion

Gray's Comparability Index

Table 4 presents the results of the Gray›s comparability index. The results for 2015 and 2016 are considerably neutral. Both years had similar results for accounting measures. Current assets were conservative under IFRS for both years, while noncurrent liabilities were optimistic or higher under IFRS. This finding opposes the shareholder-oriented nature of IFRS financial reporting, as both results are generally considered adverse to shareholders.

One difference between HAA and IFRS in relation to current assets is that payments to subsidiaries are regarded as a current asset under IFRS. In contrast, for HAA (as of 2016), they are a reduction in equity. This difference did not result in any positive IFRS change to current assets between the two standards. Similarly, regarding noncurrent liabilities, IFRS considers operational leases as a noncurrent liability in some cases, while HAA considers the exact item as an expense. Another difference is deferred taxes, which are recognised under IFRS but not in HAA. These differences, unlike the case for differences in current assets, could have contributed to the higher noncurrent liability value observed for both years.

The results for financial ratios show divergences between those for 2015 and 2016. For 2015, the solvency ratios 1 and 2 were optimistic or higher under IFRS, with no change for 2016. On the other hand, the liquidity ratio for 2016 had a more conservative IFRS value with no change for 2015. In addition, the net profit margin was optimistic or higher under IFRS for 2016. Considering these

findings with the shareholder-oriented nature of IFRS, we observe mixed findings, unlike the case with accounting measures. The findings on solvency ratio 1 and net profit margin suggest increased shareholder-orientedness, while other observations suggest the opposite.

Table 4. Gray's Comparability Index for 2015 and 2016

Accounting Measures	Gray's Index. (2015)	Gray's Index (2016)	2015 & 2016 Increase	Decrease	Equal
Total assets	1.0019	0.9972	14	29	0
Current assets	*0.9303*	*0.9078*	10	29	4
Current liabilities	0.9921	0.9716	11	19	6
Noncurrent liabilities	*1.1671*	*1.0593*	15	11	2
Equity	1.0165	0.9664	20	25	0
Net sales	-	0.9777	2	5	17
Net profit	-	1.0244	8	14	2

Financial ratios	Gray's Index (2015)	Gray's Index (2016)	2015 & 2016 Increase	Decrease	Equal
Liquidity ratio	1.0192	0.9377	18	21	4
Solvency ratio 1	1.0528	1.0386	24	19	0
Solvency ratio 2	1.1131	1.0142	18	24	1
Return on equity	1.0031	1.0010	13	23	7
Return on assets	-	1.0462	9	13	2
Net profit margin	-	1.1120	7	13	4
Autonomy ratio	-	1.0177	9	8	7

*Gray's Index Criteria (Below 0.95 = Conservative, Between 0.95 and 1.05 = Neutrality, Greater than 1.05 = Optimistic)

Wilcoxon signed-rank test
We performed the Wilcoxon signed-rank test on nine variables relating to 2015 and 14 variables relating to 2016. The results were presented in Tables 5 and 6. Results for 2015 did not show any statistically significant differences. However, we observed seven statistically significant variables for 2016. Out of the seven, four items indicated a tendency towards shareholder-orientedness. These were return on equity, net profit margin, net profit and current liabilities. We then employed the Holm-Bonferroni method to control for the probability of a false positive (type 1 error) resulting from variable interdependency. The lowest statistically significant p-value was for current assets, which was first tested. As the p-value of the H-B was lower than the p-value for current assets, all fourteen variables were regarded as having no statistically significant results. Consequently, this confirmed our 2015 results. We could not observe any statistically significant findings for both years, 2015 and 2016, which provided evidence to support our hypotheses of finding differences in accounting measures and financial ratios.

To further increase the robustness of our findings, we considered the differences in how firms adopted IFRS for the individual financial statements. IFRS 1 provides mandatory exceptions and optional exemptions during the first year of its

adoption. Optional exemptions depend on the firm's choice to apply the relevant standard. For instance, four firms of the twenty-four opted to value investments under HAA at carrying value. Our analysis shows that eleven firms did not opt for any exemptions. At the same time, information was not available in the disclosures for six of the firms, which we considered as not opting for exemptions. As a result, a majority of the firms applied the IFRS standards uniformly, which strengthens our finding of no differences.

We further analysed nine studies that used the same direct statistical methodology. There were strong frequencies for some variables. A high frequency of no change in return on assets and liquidity, and higher non-current liabilities, was observed after adopting IFRS. While frequency in the results was generally observable, despite the analysis considering only ten studies, we could not observe a strong shareholder-orientedness resulting from IFRS adoption among the variables. However, none of these studies factored for the risk of type 1 error, which minimises the strength of the findings. Table 8 in the supplementary section presents the analysis.

Table 5. Wilcoxon signed rank test on 2015 financial statements

Accounting measures	Median		P-Value
	HAS	IFRS	
Total assets	2,190,427	1,885,884	0,2122
Current assets	1,361,156	743,969	0.1570
Current liabilities	93,986	105,781	0.3454
Noncurrent liabilities	2,802	3,836	0.8753
Equity	2,344,305	2,141623	01579

Financial ratios	Median		P-Value
	HAS	IFRS	
Liquidity ratio	1.762	1.108	0.9133
Solvency ratio 1	4.214	4.245	0.5461
Solvency ratio 2	0.175	0.210	0.4939
Autonomy ratio	0.903	0.900	0.4326

*Statistical significance set at 10% (Amounts in Hungarian Forint)

Table 6. Wilcoxon signed rank test on 2016 financial statements

Accounting measures	Median		P-Value	H-B
	HAS	IFRS		
Total assets	6,190,430	5,290,351	0.4751	–
Current assets	2,294,871	1,751,374	*0.0143*	0.007
Current liabilities	480,129	421,706	*0.0683*	–
Noncurrent liabilities	159,045	60,756	0.4265	–
Equity	3,680,299	2,647,870	0.7317	–
Net sales	264,996	258,813	*0.0464*	–

Net profit	656	7,472	*0.0520*	-

Financial ratios	Median			
	HAS	IFRS	P-Value	H-B
Liquidity ratio	3.757	2.641	0.7151	-
Solvency ratio 1	5.162	5.114	0.7971	-
Solvency ratio 2	0.239	0.240	*0.0830*	-
Return on equity	0.001	0.008	*0.0386*	-
Return on assets	-0.009	0.004	0.1034	-
Net profit margin	0.019	0.038	*0.0620*	-
Autonomy ratio	0.956	0.991	0.2274	-

Note. Statistical significance set at 10% (Amounts in Hungarian Forint). H-B refers to Holm-Bonferroni method.

Implications

Our results indicate no impact of the initial adoption of IFRS in Hungary, which has a more continental, rules-based accounting system. This suggests that theoretical differences between Anglo-Saxon accounting systems and continental accounting systems are not sufficiently distinct to imply discrepancies in the financial reporting. Similarly, it also indicates that the HAA already portrays financial information that is comparable to IFRS financial statements from other countries, which suggests that investors have high-quality financial reporting from businesses that have not adopted IFRS in Hungary. It is evidence that the trend towards worldwide accounting harmonisation is continuing in domestic GAAPs.

Comparing our findings with those of other countries, Munteanu et al. (2014) presents a study from Romania, in which 56 public companies were tested for differences using the Wilcoxon signed-rank test, and no significant differences were found. However, most research assessing for differences using a direct statistical methodology indicates differences between IFRS and domestic GAAP for numerous variables. There is an aspect of how IFRS has been implemented in financial reporting, which could produce this variation in our results. As our results for 2016 initially indicate seven statistically significant variables, our test using the Holm-Bonferroni method implicates the importance of controlling for false positives in the results to strengthen findings. Similarly, it also implicates considering the additional preceding year available in the transition IFRS balance sheet for statistical testing, as it could bring clarity for any observations.

Regarding the limitations of the study, firstly, the generalizability of the findings is limited to some degree due to the small sample size of 24 companies tested over two years. As data for 2015 could only be sourced from the 2015 balance sheet, we could only test nine variables out of the fourteen considered. The remaining five variables relate to 2016 only. There is also the possibility of errors resulting from manual entry despite cross-checking. Additionally, considering a two-year period could provide insight into the initial impacts of IFRS adoption on individual financial statements. However, changes in the quality of IFRS implementation in later years could impact our findings. Similarly, the recent changes introduced to

IFRS, such as IFRS 15 Revenue from Contracts with Customers, could affect our conclusions, although the HAA has also been amended several times since 2016.

Conclusions

Adoption of IFRS for financial reporting is increasing worldwide. In line with EU Commission Regulation No. 1606/2002, Hungary first adopted IFRS for the consolidated financial statements of listed entities in the BSE in 2005. In 2017, Hungary mandated that listed entities report their individual financial statements under IFRS. We focused on the impact of IFRS adoption on individual financial statements.

Our results relating to the Gray's comparability index indicated limited impact of IFRS adoption for 2016 and 2015. Impacts related to shareholder-orientedness were only observable for the solvency ratio in 2015 and the net profit margin in 2016. Regarding the results of the Wilcoxon signed-rank test, we could not observe any statistically significant results for 2015. However, in the case of 2016, seven statistically significant variables were observed, which, after controlling for the risk of false positives, produced the same results as 2015. These findings imply that the adoption of IFRS had no impact on the individual financial statements in Hungary. Considering this from another aspect, the policy change to require IFRS for the individual financial reporting of listed firms in Hungary did not have any implications for the financial statements.

Further research could include considering amendments made to HAA for further harmonisation with IFRS and global accounting comparability. Similarly, the extent of the compliance and implementation of IFRS throughout the years for Hungarian firms could be considered. These suggest using econometric models that consider more firm years to ascertain whether differences can be observed after the initial period of IFRS adoption for the individual financial statements. Similar studies can also be conducted with other continental domestic GAAPs to gain further insight into IFRS adoption in Europe.

Conflict of Interest statement

The author declares no conflict of interest.

Acknowledgements

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Supplementary material

Table 7. Normality testing for 2015 and 2016

Accounting Figures	HAS		IFRS	
	2015	2016	2015	2016
Total assets	0.0000	0.0000	0.0000	0.0000
Current assets	0.0000	0.0000	0.0000	0.0000
Current liabilities	0.0000	0.0000	0.0000	0.0000
Noncurrent liabilities	0.0000	0.0000	0.0000	0.0000
Equity	0.0000	0.0000	0.0000	0.0000
Net sales	-	0.0000	-	0.0000
Net profit	-	0.0000	-	0.0000

Financial Ratios	HAS		IFRS	
	2015	2016	2015	2016
Liquidity ratio	0.0000	0.0000	0.0000	0.0000
Solvency ratio 1	0.0000	0.0000	0.0000	0.0000
Solvency ratio 2	0.0000	0.0000	0.0000	0.0001
Return on equity	-	0.0411	-	0.0114
Return on assets	-	0.0005	-	0.0039
Net profit margin	-	0.0000	-	0.0000
Autonomy ratio	0.0000	0.0001	0.0000	0.0003

Table 8. Analysis of studies using direct statistical testing

Accounting Measures	IFRS High	IFRS Low	No Change	Mode	No of Studies
Total assets	Spain (1), UK, New Zealand		Spain (2), Romania	60%	5
Current assets		Spain (1), UK	Turkey, Finland, Romania	60%	5
Current liabilities	Spain (1), Finland, UK		Spain (2), Turkey, Romania	50%	6
Noncurrent liabilities	Spain (1), Spain (2), Turkey, Finland, UK		Romania	83%	6
Equity	Turkey	Spain (2), UK, New Zealand	Spain (1), Finland, Romania	43%	7
Net sales		Finland	Romania	50%	2
Net profit	UK, New Zealand	Finland	Spain (1), Romania	40%	5

Financial Ratios	IFRS High	IFRS Low	No Change	Mode	No of Studies
Liquidity ratio	Turkey	Spain (1)	Spain (2), Turkey, Finland, UK, Romania, Lithuania, Czech Repulic	78%	9
Solvency ratio 1		Spain (1), Spain (2), Turkey, UK	Romania, Czech Republic	67%	6
Solvency ratio 2	Spain (1), Spain (2), Turkey, UK	Lithuania	Romania	67%	6
Return on equity	Spain (2), Turkey, Finland, UK		Spain (1), Greece, Romania, Lithuania, Czech Republic	56%	9
Return on assets	Turkey	Spain (2)	Spain (1), Greece, UK, Romania, Lithuania, Czech Republic	75%	8
Net profit margin	Greece		Romania, Lithuania	67%	3
Autonomy ratio			Romania	100%	1

Note. The nine studies used are Gastón et al. (2010) for Spain (1), Callao et al. (2007) for Spain (2), Gastón et al. (2010) for UK, Munteanu et al. (2014) for Romania, Terzi et al. (2013) for Turkey, (Dimitrios et al., 2013) for Greece, Lantto and Sahlström (2009) for Finland, Stent et al. (2010) for New Zealand, Kubickova & Jindrichovska (2012) for Czech Republic, and Rudžionienė et al. (2022).