The relationship between asset sizes of TFRS and BOBIFRS firms and sectoral economic growth: A panel data analysis for Türkiye

TFRS ve BOBİFRS'ye tabi şirketlerin varlık büyüklükleri ile sektörel ekonomik büyüme arasındaki ilişki: Türkiye için bir panel veri analizi

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Abstract

Economic growth theories generally explain long-run growth through capital accumulation, productivity gains, technological progress, and the strength of institutional structures. Within this framework, the neoclassical approach emphasises capital accumulation and efficiency, endogenous growth models emphasise knowledge production and innovation, and institutional economics emphasises governance quality and the effectiveness of incentive mechanisms. These perspectives show that sustained growth arises from the interaction among productive investment, continuous technological and organisational learning, and institutions that shape economic behaviour. In this context, companies are obliged to adopt international financial reporting standards to build more robust institutional frameworks, improving transparency, accountability, and the credibility of financial data. Reducing information asymmetries lowers funding costs, deepens investment channels, and supports firms' long-term, productivity-oriented, and R&D-based strategies. At the macro level, improved trust in financial information facilitates more efficient resource allocation. Thus, compliance with such reporting standards reinforces the key mechanisms emphasised by growth theories, capital accumulation, innovation, and productivity, thereby contributing to sustainable economic expansion. This paper investigates the relationship between the asset sizes of companies subject to TFRS and BOBİFRS and economic growth across six sectors from 2018 to 2023. The results show that firms applying TFRS contribute more strongly to economic growth than BOBİFRS.

Keywords: TFRS, BOBIFRS, Economic Growth

Jel Codes: G30, M41, L25

Öz

Ekonomik büyüme teorileri genellikle uzun vadeli büyümeyi, sermaye birikimi, üretkenlik artışları, teknolojik ilerleme ve kurumsal yapıların gücü aracılığıyla açıklar. Bu çerçevede, neoklasik yaklaşım sermaye birikimi ve verimliliği, içsel büyüme modelleri bilgi üretimi ve inovasyonu, kurumsal ekonomi ise yönetişim kalitesini ve teşvik mekanizmalarının etkinliğini vurgular. Bu bakış açıları, sürdürülebilir büyümenin üretken yatırım, sürekli teknolojik ve örgütsel öğrenme ve ekonomik davranışı şekillendiren kurumların etkileşiminden kaynaklandığını göstermektedir. Bu bağlamda, uluslararası finansal raporlama standartlarını uygulamak zorunda olan şirketler daha güçlü kurumsal yapılar geliştirerek şeffaflığı, hesap verebilirliği ve finansal bilgilerin güvenilirliğini artırmaktadır. Azaltılmış bilgi asimetrileri sermaye maliyetini düşürür, yatırım kanallarını derinleştirir ve firmaların uzun vadeli, üretkenlik odaklı ve Ar-Ge tabanlı stratejilerini destekler. Makro düzeyde, finansal bilgilere olan güvenin artması daha verimli kaynak tahsisini kolaylaştırır. Dolayısıyla, bu tür raporlama standartlarına uyum, büyüme teorilerinin vurguladığı sermaye birikimi, yenilikçilik ve üretkenlik gibi temel mekanizmaları güçlendirerek sürdürülebilir ekonomik genişlemeye katkıda bulunur. Bu çalışmada, TFRS ve BOBİFRS'ye tabi şirketlerin aktif büyüklükleri ile altı sektördeki ekonomik büyüme arasındaki ilişki 2018-2023 yılları arasında analiz edilmiştir. Sonuçlar, TFRS uygulayan şirketlerin BOBİFRS'ye göre ekonomik büyümeye daha güçlü katkıda bulunduğunu göstermektedir.

Anahtar Kelimeler: TFRS, BOBİFRS, Ekonomik Büyüme

JEL Kodları: G30, M41, L25

Introduction

The fundamental catalysts of economic growth, as identified in the growth literature, are dynamic and continually evolving. Factors such as capital accumulation, labour productivity, specialisation, knowledge creation, technological advancement, research and development (R&D) investment, and improvements in corporate governance have been highlighted as key determinants across various growth theories. These variables are transmitted to the broader economy through firms that produce domestically. Therefore, firm-level characteristics, including organisational structure, size, institutional quality, and transparency, play a crucial role in economic growth. Financial reporting standards have emerged as a key institutional factor influencing firm behaviour in this context. Theoretically, it is argued that firms adhering to comprehensive reporting standards enhance transparency, reduce information asymmetry, and improve access to capital, thereby supporting long-term investment, R&D, and productivity growth.

For developing countries, direct capital investments play a crucial part in fostering economic growth. International capital investments make a substantial contribution to national income by supporting capital accumulation, enhancing production capacity, and fostering overall economic development (Şahin, 2015). Developing countries require foreign investment to mobilise the resources necessary for economic growth, which, in turn, increases demand for high-quality financial information. In Türkiye, businesses must produce transparent, reliable, and high-quality financial information to access financial resources. Moreover, firms are required to present internationally recognised and credible financial information to their foreign customers and investors (Alp & Üstündağ, 2009, p. 680). Rather than applying different accounting standards across countries, establishing a common accounting system enables investors to assess the financial performance of firms operating in different countries on a comparable basis (Ball, 2006). The implementation of "International Financial Reporting Standards" (IFRS) has enhanced the reliability and quality of firms' financial statements (Özcan, 2016, p. 78). Accordingly, adopting IFRS increases the comparability, quality, and transparency of financial statements, thereby contributing to improvements in overall financial reporting (Oğuzhan et al., 2016). With the development of the global economy, the application of "International Accounting Standards" (IAS) has gradually evolved into a common accounting language worldwide. In line with this trend, Türkiye has adopted international practices, including IAS and the "Turkish Financial Reporting Standards" (TFRS). Entities generally subject to TFRS include those with publicly traded capital market instruments, as well as banks, insurance companies, reinsurance companies, and pension companies. In addition, the financial reporting standards for medium and large-sized companies (BOBİFRS) have been in effect since January 1, 2018. BOBİFRS is mandatory for entities subject to an independent audit that have not chosen to apply TFRS, either on a compulsory or voluntary basis.

The purpose of this research is to compare the impact of companies adopting TFRS and BOBİFRS on economic growth in Türkiye. The primary motivation is to compare the sectoral effects on economic growth of firms reporting under internationally recognised standards with those complying with simplified local standards. An overview of the current literature indicates that the sectoral contribution of TFRS-compliant and BOBİFRS-compliant companies to economic growth has not yet been adequately examined. Accordingly, this study seeks to address this gap and provide an original contribution to the literature.

Literature review

The literature includes numerous studies examining the links among accounting standards, economic growth, and financial development. Akışık (2013) used the GMM approach to analyse 51 developed and developing countries during 1997–2009 and found that accounting regulations have a strong and significant effect on economic growth. Similarly, Dinçer (2012) investigated the factors influencing the adoption of IAS in less developed and developing countries, revealing that countries with higher levels of education and stronger economic growth implement these standards more widely. Studies directly addressing the role of IFRS adoption on economic growth also occupy an important place in the literature. Özcan (2016), using panel data analysis for the period 2005–2015, compared countries that adopted IFRS with those that did not and concluded that the transition to IFRS positively affects economic growth. Elhamma (2023), examining 30 developing countries, found that adopting IFRS positively affects economic growth, although this effect weakened during the COVID-19 crisis. In contrast, Abdullaeva et al. (2023), focusing on the Commonwealth of Independent States, identified differences in economic growth between IFRS-adopting and non-adopting countries but reported a negative, non-statistically significant relationship between IFRS adoption and GDP per capita. The literature also indicates that the effects of IFRS on economic growth may vary across countries and time

periods. Mujalli et al. (2024), in their study of the Gulf Cooperation Council countries, found that IFRS adoption initially increases economic growth but ultimately reduces it. Similarly, Ghouma et al. (2024), analysing European countries, reported no statistically significant positive link between IFRS adoption and economic growth. Yürekli (2024) developed IFRS scores and demonstrated a positive relationship between IFRS implementation and economic and financial development, suggesting that IFRS adoption yields favourable macroeconomic outcomes. Several studies have examined the relationship between firm size and the economic implications of accounting standards. Albiol and Stel (2015) investigated the impact of micro, medium, and large-sized firms on economic growth in EU countries and showed that their contributions vary across income levels. Focusing on Türkiye, Öztürk et al. (2018) analysed the differences between IFRS and BOBİFRS and found that financial statements prepared under BOBİFRS exhibit limitations in terms of fair value reporting. Moyo and Mpofu (2024) examined the determinants of IFRS adoption among SMEs in Zimbabwe and identified accounting expertise, legal structure, user needs, and outsourcing of accounting services as key factors. Finally, Kausar and Park (2024), using a generalised difference-in-differences approach across 32 countries, found that total earnings are more predictive of subsequent GDP growth in countries adopting IFRS than in non-adopting countries. Overall, the literature suggests that IFRS and related accounting standards play an important role in economic growth, financial development, and reporting quality; however, the magnitude and direction of these effects vary across countries, time periods, and implementation frameworks.

Design of the model

The model presented in this paper is shown in Figure 1. Companies subject to TFRS were expected to contribute more to economic growth than companies subject to BOBİFRS.
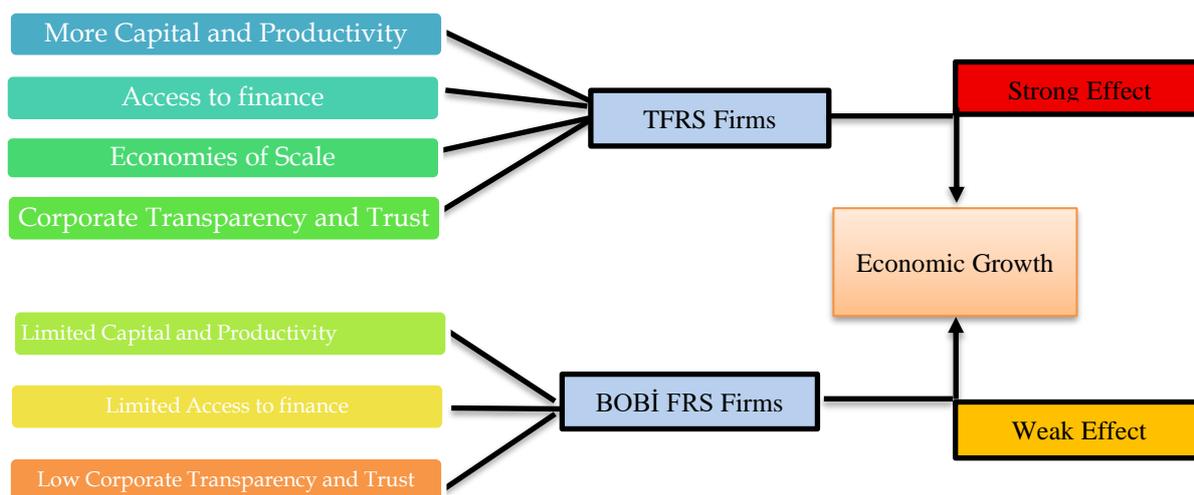
Figure 1: Research Model

Source: Developed by authors.

Methodology and data

This study aims to examine the relationship between the asset sizes of companies subject to TFRS and BOBİFRS and economic growth across the manufacturing, agriculture, forestry and fishing, real estate activities, construction, information and communication, and financial and insurance activities sectors. In this context, data on the total asset sizes of companies subject to TFRS and BOBİ FRS, as well as on economic growth, were obtained for six sectors between 2018 and 2023. Company data were obtained from Kamu Gözetim Kurumu, and economic growth data from TÜİK. The data set obtained in the study conformed to the definition of a micro panel. Since both the cross-sectional (N=6) and time (T=6) dimensions were limited, the application of panel unit root tests did not yield statistically significant results. In the panel data literature, unit root and non-stationarity issues primarily concern panels in which both N and T are large (Baltagi, 2008: 273). Therefore, it is acceptable to assume that the variables were stationary in short-term panel data (Gujarati & Porter, 2009; Yerdelen Tatoğlu, 2013). For this reason, the variables were treated as stationary in the analysis, and the model was estimated using the most appropriate specification among the classical, fixed-effects, and random-effects models. The panel equation analysed in the study was expressed as follows:

$$lngdp_{it} = \beta_0 + \beta_1 lntfrs_{it} + \beta_2 lnbobifrs + \varepsilon_{it} \qquad (1)$$

In the equation, lngdp represented economic growth, lntfrs the asset size of TFRS firms, and lnbobifrs the asset size of BOBİFRS firms. Additionally, β_0: the constant term, ε: the error term, i: denotes the six sectors and t: represents the time effect. Descriptive statistics for the variables were presented in Table 1.

Table 1: Descriptive Statistics

Variables	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
lngdp	19.893	0.950	18.360	22.369	0.607	2.956
lntfrs	13.907	1.480	11.543	16.864	0.238	2.091
lnbobifrs	11.364	1.760	8.671	16.023	0.752	3.056

Source: Authors' calculations.

When the descriptive statistics were examined, the lngdp variable, which represented sectoral economic size, had a mean of 19.89 and a standard deviation of 0.95, with values ranging from 18.36 to 22.37. The lntfrs variable, representing the total asset size of companies subject to TFRS, ranged from 11.54 to 16.86, with a mean of 13.91 and a standard deviation of 1.48. The lnbobifrs variable, which represented the asset size of companies subject to BOBİFRS, had a mean of 11.36, a standard deviation of 1.76, and a range of 8.67 to 16.02. When skewness and kurtosis were examined, all variables were slightly right-skewed and generally close to normal. This indicated that the data were balanced at the sectoral level.

Empirical results

First, the existence of time and unit effects in the model was examined. The F-test, Score test, and Breusch–Pagan LM test for time effects, as well as the LR test for unit effects, were used. The test results were presented in Table 2.

Table 2: Tests for the Classical Model and the Two-Way Effects Model

Testing the Classical Model	F-Test	Score Test	Breusch-Pagan LM Test
Unit effect (p-value)	0.000	0.000	0.000
Testing the Two-Way Model		LR Test	
Time effect (p-value)		0.272	

Source: Authors' calculations.

According to the test results, the model included unit effects but not time effects. Therefore, the classical and two-way models were not suitable for the analysis. The Hausman test was used to select between fixed and random effects, and the results were presented in Table 3.

Table 3: Hausman Test

Variables	(b)	(B)	Difference (b-B)	Std. Dev.
lntfrs	0.052	0.696	-0.173	0.036
lnbobifrs	0.216	0.106	0.109	0.026
	$\chi^2(2)=22.86^{***}$		**Sig.**=0.000	

χ^2: Chi-square test statistic (degrees of freedom are given in parentheses).

Source: Authors' calculations.

The Hausman test results indicate that the fixed-effects approach should be preferred. This finding indicates that the unobserved individual heterogeneity is not random, and therefore, the fixed-effects model provides more consistent and reliable estimates for the analysis. After this stage, the estimation was carried out using the fixed-effects model. For the model to be considered valid, the error terms must exhibit no cross-sectional correlation, heteroscedasticity, or autocorrelation. For this reason, the Pesaran (2004) and Friedman (1937) tests were employed to assess cross-sectional dependence, the Baltagi-Wu (1999) LBI and Bhargava et al. (1982) Durbin–Watson tests were used to detect autocorrelation, and finally the Greene (2000) Modified Wald test was applied to examine heteroscedasticity.

Table 4: Diagnostic Tests for the Fixed-Effects Model

	Pesaran Test		Friedman Test	
Cross-sectional independence	**CD statistics**	**Sig.**	$\chi^2(5)$	**Sig.**
	1.954^{*}	0.050	9.619^{*}	0.086
	Modified Durbin–Watson		Baltagi–Wu LBI	
Autocorrelation	2.011		2.349	
	Modified Wald Test			
Heteroskedasticity	$\chi^2(6)$		**Sig.**	
	35.09^{***}		0.000	

* $p<0.10$; ** $p<0.05$; *** $p<0.01$.

Table 4 presents the diagnostic test results for the fixed-effects model. The Pesaran CD test (CD=1.954, p=0.050) and the Friedman test (χ^2 (5)=9.619, p=0.086) indicate weak evidence of cross-sectional dependence, suggesting only a very weak correlation among units. Autocorrelation tests indicate no serial correlation: the Modified Durbin–Watson statistic is 2.011, and the Baltagi–Wu LBI is 2.349. However, the Modified Wald test for heteroskedasticity (χ^2(6)=35.09, p<0.01) is highly significant, indicating heteroskedasticity in the model. Due to violations of the standard assumptions, the fixed-effects model was employed, and the Driscoll–Kraay estimator was used, which delivers standard errors that are consistent with heteroskedasticity, autocorrelation, and cross-sectional dependence. This approach ensures more reliable inference even in the presence of deviations from the observed assumption. The results were presented in Table 5.

Table 5: Driscoll–Kraay Results

Dependent Variable (lngdp)	Drisc/Kraay Coef.	std. err.	t	P>t	[95% conf. interval]
lntfrs	0.696***	0.045	15.46	0.000	0.580 0.812
lnbobifrs	0.106**	0.033	3.17	0.025	0.020 0.193
cons	8.995***	0.272	32.99	0.000	8.294 9.696

* p <0.10;** p <0.05;*** p <0.01. **Source:** Authors' calculations.

The findings obtained with Driscoll–Kraay standard errors indicate that both businesses subject to TFRS and those operating under BOBİFRS exert a statistically significant influence on sectoral economic growth. The coefficient of the lntfrs variable, which represents the asset size of companies subject to TFRS, was 0.696. This value indicates that a 1% increase in the asset size of TFRS companies is associated with approximately a 0.70% increase in sectoral economic growth. The coefficient of the lnbobifrs variable, which represents the asset size of enterprises within the scope of BOBİFRS, was 0.106. This indicates that a 1% increase in the asset size of BOBİFRS enterprises is associated with approximately a 0.11% increase in sectoral economic growth. The results show that, overall, both groups of enterprises contribute to economic growth; however, the impact of businesses covered by TFRS is considerably stronger.

Table 6: Robustness Check Results

Dependent Variable (lngdp)	Drisc/Kraay Coef.	std. err.	t	P>t	[95% conf. interval]
lntfrs	0.595***	0.070	8.57	0.001	0.400-0.791
L1.lnbobifrs	0.327**	0.103	3.18	0.034	0.041-0.613
cons	8.065***	0.163	49.19	0.000	7.610-8.520

* p <0.10;** p <0.05;*** p <0.01. maximum lag: 2 **Source:** Authors' calculations.

Table 6 presents the results of the robustness check performed using the Driscoll–Kraay fixed effects estimator. In this context, the model was re-estimated under a mixed lag structure. The current period of lntfrs and a one-period lag of lnbobifrs were included in the model. The findings show that the results obtained in the basic model are preserved in terms of sign and statistical significance.

Conclusion

This study examines the impact of firms subject to TFRS and BOBİFRS on economic growth across six sectors using panel data. As two distinct financial reporting frameworks applied in Türkiye, TFRS and BOBİFRS provide valuable micro-level insights into corporate structures and their macroeconomic implications. Firms subject to TFRS generally operate under independent audit requirements, regulatory supervision, and enhanced disclosure obligations, which necessitate higher standards of transparency, reliability, and comparability in financial reporting. These firms prepare financial statements based on fair value measurement and comprehensive disclosure practices in line with international standards, thereby requiring advanced internal control systems, effective risk management, and disciplined reporting structures. The empirical results of this study suggest that the positive impact of TFRS-regulated firms on sectoral economic growth is approximately 7 times greater than that of BOBİFRS-regulated firms. This result aligns with earlier empirical evidence suggesting that higher-quality accounting and reporting frameworks are associated with stronger economic performance. Akışık (2013) and Özcan (2016) find that accounting regulations and IFRS adoption positively affect economic growth, supporting the view that transparent and comparable financial information enhances capital allocation efficiency and productivity. Similarly, Elhamma (2023) documents a positive relationship between IFRS adoption and economic growth in developing countries, though the effect weakens during economic crises. From a theoretical perspective, these findings are consistent with classical growth theory, which accounts for economic growth via capital accumulation, labour, and productivity. Smith's (1776) emphasis on capital accumulation and the division of labour implies that large-scale enterprises can generate productivity gains and stimulate economic growth more effectively. Firms subject to TFRS typically exhibit higher capital intensity, easier

access to finance, economies of scale, and stronger corporate governance structures. These characteristics enable them to contribute more substantially to sectoral growth, in line with classical arguments and with the empirical evidence provided by Albiol and Stel (2015), who emphasise the critical role of firm size in growth dynamics. From the standpoint of economic growth, neoclassical growth theory holds that it is primarily determined by capital accumulation, labour input, and technological progress (Solow, 1956; Swan, 1956). In this context, TFRS-regulated firms appear to contribute more effectively to economic growth by managing technological investments more efficiently through greater transparency and strict compliance with financial reporting standards. This result agrees with Yürekli (2024), who reports a positive relationship between IFRS implementation, economic development, and financial development indicators. However, the findings partially contrast with those of Mujalli et al. (2024), who show that while IFRS adoption promotes short-term growth in GCC countries, it may exert a negative effect in the long run, suggesting that the growth effects of international standards may vary across institutional maturity and economic structures. According to endogenous growth theories, sustainable economic growth depends not only on capital accumulation but also on technological innovation, knowledge spillovers, and human capital formation (Romer, 1986, 1990; Lucas, 1988). In this respect, large and institutionalised firms subject to TFRS support long-term sectoral growth by enhancing productivity, facilitating technological diffusion, and promoting innovation through R&D activities and technology adoption. These findings align with Romer's knowledge-based growth model and Lucas's emphasis on human capital accumulation. Supporting this argument, Kausar and Park (2024) show that firm-level earnings in IFRS adopting countries have stronger predictive power for future GDP growth, highlighting the informational role of high-quality financial reporting in growth processes. From an institutional economics perspective, the results also corroborate the arguments of Kuznets (1966), North (1990) and Acemoglu et al. (2005), who underline the role of institutional quality and governance structures as the foundation of long-term economic growth. In this framework, TFRS applications can be regarded as components of institutional infrastructure, as they enhance transparency, accountability, and credibility in financial reporting. By strengthening investor confidence and facilitating capital flows, such standards contribute positively to economic growth. The results of this study support the institutional economics proposition that improvements in institutional quality accelerate economic growth, as evidenced by the stronger growth contribution of TFRS-regulated firms compared to BOBİ FRS-regulated firms. Nevertheless, while TFRS-regulated firms constitute the primary drivers of economic growth in Türkiye, firms subject to BOBİFRS play a crucial complementary role in ensuring that growth is more broadly distributed across sectors and regions. Due to their numerical dominance and geographical dispersion, BOBİFRS firms contribute to inclusive growth, even though their individual growth impact is relatively limited. This evidence aligns with Öztürk et al. (2018), who argue that although BOBİFRS offers simplified reporting advantages, it may be insufficient to produce high-quality, decision-useful financial information. Accordingly, BOBİFRS-regulated firms may consider transitioning to TFRS to enhance their contribution to economic growth and improve corporate transparency. This transition process should involve aligning accounting systems with TFRS requirements, providing targeted training for finance and accounting personnel, implementing gradual compliance and pilot applications, strengthening internal control and audit mechanisms, improving stakeholder communication, and effectively utilising technological infrastructure. Such measures would enhance institutional capacity and reporting quality, enabling BOBİFRS firms to play a stronger role in supporting sustainable and inclusive economic growth. Future research could additionally investigate the sectoral and regional growth effects of TFRS and BOBİFRS. regulated firms. In addition, examine the long-term macroeconomic consequences of transition processes and analyse institutional and technical barriers to standard adoption.

Author Contributions:

Idea/Concept/Design: **S.Ö., C.D.** Data Collection and/or Processing: **S.Ö., C.D.** Analysis and/or Interpretation: **S.Ö., C.D.** Literature Review: **S.Ö., C.D.,** Writing the Article: **S.Ö., C.D., Critical** Review: **S.Ö., C.D.**, Approval: **S.Ö., C.D.**

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