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EVALUATING THE EFFECTS OF ELECTRONIC BILLING AND FISCALIZATION ON BUSINESS EFFICIENCY AND TAX COMPLIANCE: A STUDY OF ALBANIAN ENTERPRISES

PROCENA EFEKATA ELEKTRONSKE NAPLATE I FISKALIZACIJE NA POSLOVNU EFIKASNOST I USKLAĐENOST SA POREZOM: STUDIJA ALBANSKIH PREDUZEĆA

Summary: *The evolution of business processes, particularly in billing and taxation, has seen a significant shift towards digitization through the adoption of electronic billing systems and fiscalization reforms. This study delves into the impact of electronic billing and fiscalization on business performance, with a specific focus on Albanian enterprises, evaluating data from 2000 to 2023. The research investigates the benefits, challenges, and adoption factors of electronic invoicing, emphasizing its role in enhancing tax compliance, operational efficiency, and cost reduction. The study highlights how electronic billing streamlines invoice management, reduces administrative burdens, and contributes to environmental sustainability by minimizing paper usage. Despite these advantages, the transition poses challenges, especially for small and medium-sized enterprises (SMEs), due to high implementation costs, technical barriers, and limited awareness. A critical component of the research is the analysis of Albania's fiscalization reform, implemented in three phases starting in 2021, aiming to modernize the tax system, reduce informality, and align with European Union standards. The study assesses the fiscalization's effectiveness through quantitative methods, including t-tests and regression analyses, evaluating variables like turnover, taxable profit, corporate tax, and net profit across sectors such as pharmaceuticals, construction, manufacturing, and wholesale trade. Findings reveal that while fiscalization has not significantly altered overall turnover or net profit, it has led to a notable decrease in taxable profit, particularly impacting SMEs due to higher compliance costs. Larger firms, with more robust digital infrastructures, absorbed these costs more effectively. The study concludes that while fiscalization improves transparency and tax compliance, it disproportionately burdens smaller businesses, necessitating targeted policy interventions to support SMEs in the transition towards comprehensive digital tax compliance.*

Keywords: *Electronic Billing, Fiscalization Reform, Business Performance, Tax Compliance, Albanian Enterprises*

JEL Classification: *H26, M48, O33*

Резиме: Еволуција пословних процеса, посебно наплате и опорезивања, довела је до значајног помака ка дигитализацији кроз усвајање електронских система наплате и реформу фискализације. Ова студија се бави утицајем електронског фактурисања и фискализације на пословни учинак, са посебним фокусом на албанска предузећа, процењујући податке од 2000. до 2023. Истраживање анализира предности, изазове и факторе усвајања електронског фактурисања, наглашавајући његову улогу у побољшању пореске обавезе, оперативној ефикасности и смањењу трошкова. Студија наглашава како електронска наплата поједностављује управљање фактурама, смањује административна оптерећења и доприноси еколошкој одрживости минимизирањем употребе папира. Упркос овим предностима, транзиција представља изазове, посебно за мала и средња предузећа (МСП), због високих трошкова имплементације, техничких препрека и ограничене свести. Критична компонента истраживања је анализа реформе фискализације у Албанији, која се проводи у три фазе почевши од 2021. године, с циљем модернизације пореског система, смањења неформалности и усклађивања са стандардима Европске уније. Студија процењује ефикасност фискализације кроз квантитативне методе, укључујући т-тестове и регресијске анализе, процењујући варијабле као што су промет, опорезива добит, порез на добит предузећа и нето добит у секторима као што су фармацеутски производи, грађевинарство, производња и трговина на велико. Налази откривају да, иако фискализација није значајно променила укупан промет или нето добит, довела је до значајног смањења опорезиве добити, посебно утичући на МСП због већих трошкова усклађености. Веће фирме, са снажнијом дигиталном инфраструктуром, ефикасније су апсорбовале ове трошкове. Студија закључује да док фискализација побољшава транспарентност и усклађеност са порезом, она несразмерно оптерећује мања предузећа, захтевајући циљане интервенције политике за подршку малим и средњим предузећима у транзицији ка свеобухватном дигиталном поштовању пореза.

Кључне ријечи: електронска наплата, фискализација, пословна ефикасност, порез

ЈЕЛ класификација: *H26, M48, O33*

INTRODUCTION

Technological advancement is rapidly evolving business processes, especially in billing and taxation. By moving away from the traditional way of using paper to deliver invoices to electronic billing and fiscalization, this is a huge shift in how businesses manage their finances and the way they make sure their invoices are aligned with the regulations of a country. Beyond the most immediate goals of improving operational efficiency, such a transformation may help achieve other end goals in terms of supporting tax compliance, reducing informality, and promoting transparency in financial reporting.

As electronic invoicing builds on the global trend towards digitalization has prompted several governments and businesses to integrate electronic invoicing systems as part of broader fiscalization reforms in recent times. Fiscalization: because of what, it is the real-time reporting of transactions to the tax authorities that helps to fight against tax evasion and secure the entire process of business transactions. As such, countries across Europe and beyond have adopted various forms of fiscalization to modernize their tax systems while simultaneously helping to reduce the shadow economy.

The electronic billing and fiscalization in the Republic of Albania is a greeted initiative towards harmonization of tax system of Republic of Albania with EU policies. Albania's fiscalization reform, which was started in 2021, was deployed modularly in three parts based on transaction types and sectors. The reform requires that every business transaction, both cash and cashless, must report electronically to the tax authorities in real-time. It is by putting this system into action that tax collection efficiency is achieved but even more so transparency and accountability is ensured in the business environment.

While the benefits are obvious, the process of switching to e-billing and fiscalization is not without its challenges, particularly for small and medium-sized enterprises (SMEs). Constraints in high implementation costs, technical complexities, and limited awareness have surfaced as major obstacles that could inhibit the realization of the complete benefits of the reform. In addition, it is still up for debate whether fiscalization has a positive or negative effect on business performance, particularly when it comes to whether the reliance on software to ensure compliance has led to higher operational costs, which in turn negatively affect profitability — a phenomenon in the literature confirmed by smaller size firms.

2. LITERATURE REVIEW

The billing process is an important part of a broader set of business processes, including the creation and acceptance of an order, delivery, and payment. Electronic billing enables the sending, receiving, and processing of invoices without manual intervention. It allows businesses to benefit from shorter payment delays, fewer errors, and reduced printing and mailing costs. However, the introduction of electronic invoice exchange is often complex and costly, especially for small and medium-sized enterprises (SMEs). This chapter presents the treatment of fiscalization, the advantages, and the challenges it presents in the literature.

2.1. Electronic Billing

Electronic billing can be defined as the dematerialized form of the invoice that has a structured and standardized format used between supply chain partners (Penttinen and Tuunainen 2009, 1; Penttinen 2008). Electronic billing is not entirely new. The transmission of invoices through an electronic format has existed for decades. Koch (2017) stated that the electronic billing market has existed for more than a few decades. Since the 1970s, EDIFACT (Electronic Data Interchange for Administration, Commerce, and Transport) has been used by large organizations as a mechanism for transmitting invoice data. However, these systems were point-to-point systems that required substantial investments to establish connections between the involved parties (Penttinen and Hyytiäinen 2008). Previously, the private industry acted as the main driver; however, currently, due to efforts to have an efficient tax system, governments are taking measures to implement electronic billing (Koch 2017).

There are different ways an invoice can be transmitted between business partners: (a) paper-based invoice sent by mail; (b) invoice exchanged as an electronic attachment (e.g., PDF) in an email;

(c) invoice created by scanning a paper document using optical character recognition; (d) invoice exchanged as a structured XML or EDI; (e) using both the paper-based invoice sent by mail and the electronic copy exchanged with the other methods mentioned earlier, i.e. (a) through (d); etc. (Keifer 2011). It has been noted that invoice exchange using email is more popular than EDI, and small and medium-sized enterprises (SMEs) generally prefer email compared to their larger counterparts. It has also been observed that the combination of PDF and XML invoices is gradually increasing (Koch 2017).

The use of electronic billing has gained attention in recent years. Specifically, it can be observed that most studies are empirical, using survey methods, followed by case studies, interviews, ethnographic studies, expert opinions, and secondary data. Most of these empirical studies have been carried out mainly in Europe, especially in Finland. These studies have mainly emphasized the determinants, benefits, and challenges of electronic billing.

The literature has discussed several drivers of electronic billing that encourage organizations to adopt electronic billing. Some of these include: optimizing accounts receivable and payable; reducing overall costs (Fairchild 2004); reducing printing costs (Poel et al. 2016); optimizing working capital (Fairchild 2004); increasing efficiency in terms of storage, time-saving, improved process control, better administration, increased security, fewer errors, etc. (Poel et al. 2016); pressure from supply chain partners (Fairchild 2004; Keifer 2011); regulatory pressure (Keifer 2011; Koch 2017); supplier innovation (Keifer 2011), among others.

2.2. Benefits and Challenges

The use of electronic billing is expected to offer several benefits not only for the immediate implementers but also for supply chain partners. Electronic billing can significantly reduce costs, for example, by reducing administrative work and printing costs (Edelman and Sintomen 2006; Penttinen and Tuunainen 2009). It offers improvement in delivery time, reduces payment delays, and provides greater reliability by reducing the error rate (Edelman and Sintomen 2006; Lumiaho and Rämänen 2011; Poel et al. 2016). It can also lead to process efficiency for the organization (Fairchild 2004; Sandberg et al. 2009). Another important benefit is that it provides convenience for the supply chain partners involved and improves customer service (Fairchild 2004; Sandberg et al. 2009; Poel et al. 2016). Electronic billing can greatly assist in tax compliance for companies and increase tax collection by the government, especially from high-risk non-compliance groups (Krysovaty et al. 2021; Olaleye et al. 2023; Skare et al. 2023). Furthermore, electronic billing offers several environmental benefits, such as reducing paper usage and increasing energy efficiency (Poel et al. 2016).

Despite the numerous benefits that electronic billing offers, the adoption rate has been slow due to the challenges faced by adopters. While large enterprises may find it easy to implement an electronic billing system, their smaller counterparts face difficulties in adopting it due to high investment and integration costs (Sandberg et al. 2009). Fairchild (2004) emphasized the limited allocation of capital and the lack of internal support as major barriers to using electronic billing. Edelman and Sintomen (2006) highlighted several reasons for the non-adoption of electronic billing among SMEs. These reasons included lack of demand in the environment, perceived uncertainty, and low levels of awareness. Fragmentation of buyers may also be another reason for the difficulty in adopting such a technology. Challenges may also arise from the service provider side; for example, fragmentation of service providers can significantly hinder implementation among supply chain partners (Keifer 2011).

From the previous literature on electronic billing, it can be observed that most studies have focused on the benefits and challenges of electronic billing, while some have focused on the determinants of electronic billing adoption. However, literature on electronic billing still lacks a strong theoretical foundation. Furthermore, most previous studies have originated from developed countries, while the contribution to developing economies is limited.

2.3. Factors Affecting the Adoption of Online Billing Systems

Technological factors that are expected to affect the adoption of technology are based on Rogers' Diffusion of Innovations Theory. These factors are relative advantage, compatibility, complexity, observability, and trialability (Rogers 2010). Relative advantage refers to "the degree to

which an innovation is perceived as being better than the idea or technology it supersedes” (Rogers 2010; Moore and Benbasat 1991). For an innovation to have a higher likelihood of adoption, it must show that it offers an advantage over the technology it replaces. Electronic billing will have several advantages over traditional paper-based billing (Edelman and Sintomen 2006; Fairchild 2004; Poel et al. 2016). Waarts et al. (2002) argued that in the early stages of the diffusion process, adoption tends to be driven mainly by a combination of internal strategic incentives and company attitudes, along with external forces such as industry competition and supplier activities. Later, they suggest that the mix of adoption drivers seems to focus more on implementation issues, such as system scalability. Electronic billing is based on the principle of digitally exchanging information and is, therefore, highly scalable. Previous studies on other innovations have shown that relative advantage is positively associated with the adoption of that innovation (Ghobakhloo et al. 2011; Oliveira et al. 2014; Sun et al. 2020).

Compatibility refers to “the degree to which an innovation is perceived as consistent with the existing values, needs, and past experiences of potential adopters” (Rogers 2010; Moore and Benbasat 1991). For electronic billing to have a higher chance of adoption, it must fit with the existing values and requirements and the past experiences of the organization. Previous studies on other technologies have shown a positive impact of compatibility on the adoption of those technologies (Ghobakhloo et al. 2011; Wang et al. 2016; Waarts et al. 2002). There needs to be a compatibility in mindset and skills within the company and between supply chain partners, as resistance to change and barriers to adopting a new innovation may arise from this (Töytäri et al. 2018).

Complexity refers to “the degree to which an innovation is perceived as relatively difficult to understand and use” (Rogers 2010). For an innovation to have a higher likelihood of adoption, it must be easy to integrate with the organization's business operations. If organizations perceive the technology as difficult to understand and use, it will act as a barrier to its adoption. Complexity describes the model, in which its nine systems are complex in many ways, following the local rule with many interactions (Mehra et al. 2020; Moore and Benbasat 1991). Mehra et al. (2020) further mentioned that the chances of technology innovation acceptance will naturally increase by reducing its complexity. The complexity of technology has been found to negatively affect the adoption of those technologies (Oliveira et al. 2014; Wang et al. 2016).

Observability refers to “the degree to which the results of an innovation are visible to others” (Rogers 2010). Technological innovations whose impacts are easily observable within the industry will be looked upon more favorably, thus having higher prospects for adoption (Marak et al. 2019). Past studies on innovative technologies have shown observability to increase user adoption of those innovations (Al-Jabri and Sohail 2012; Teo et al. 1995).

Trialability refers to “the degree to which an innovation can be experimented with prior to adoption” (Rogers 2010). Firms and users generally prefer to have a trial of a new technology before making a decision and committing resources to implement it (Marak et al. 2019). Trialability can lead to a better understanding of the new technology, such as its capabilities, benefits, and difficulties. It can help the firm increase familiarity with the new technology (Agarwal and Prasad 1998; Rogers 2010; Al-Jabri and Sohail 2012).

2.4 Fiscalization process in Albania

The Fiscalization Reform is a major commitment of the Albanian Government to minimize the informal economy through the modernization of the tax monitoring system.

Through this process the government aims to:

- Minimizing the level of the informal economy;
- Improving revenue collection;
- Easier identification of tax evasion;
- Making tax audits more cost-efficient;
- Reducing the level of corruption in administration;
- Providing more public services for citizens and businesses;
- Positioning Albania closer to European Union standards.

The fiscalization process comes as a directive from the EU, where its implementation is aimed for all member countries in the medium term. Fiscalization involves three phases until its full implementation:

- Phase 1 involves the electronic issuance of tax invoices for entities that have a sales-purchase relationship with state institutions. The implementation of this phase started on 01.01.2021. The issuance of tax invoices to public entities, by all registered taxpayers, is done through the fiscalization system.
- Phase 2 involves the electronic issuance of tax invoices between private entities that have a sales-purchase relationship, and payments/collections are made without cash (only by bank). The implementation of this phase starts on 01.07.2021. All registered taxpayers issuing a tax invoice to another private entity will do so through the fiscalization system.
- Phase 3 involves the electronic issuance of tax invoices for entities with a sales-purchase relationship with private entities and final consumers. The implementation of this phase starts on 01.09.2021. All registered taxpayers issuing a tax invoice to a private entity or a private entity with a final consumer will do so through the fiscalization system. In this phase, payments and collections are made only in cash.

Some of the positive aspects of fiscalization include the reduction of informality by having more registered tax-paying entities that fulfill their obligations, and the modernization of businesses fiscalized invoices bring digitalization to an entity, transactions are more easily verifiable, and the system improves the efficiency of the entity.

Fiscalization aims to increase transparency and reduce corruption. As a country aspiring to join the EU, reducing corruption is one of the key criteria.

Increase revenue for the country's budget. A fiscalized invoice is proof that taxes, such as VAT, when the entire cost is borne by the consumer, are declared and paid to the state. To report real-time data in "selfcare" on electronic invoices, each taxpayer must ensure they have financial software or a software that integrates with their current system or fiscalized cash register. The data must be stored in isolated and locked fiscal memory to prevent any possible modification. Each invoice must be electronically signed, and for this, businesses must be equipped with a certificate, which can be provided by AKSHI. This document is renewed every year at a cost of approximately 4000 Lek. Also, to avoid dependency on a specific technological model, the new system does not rely on hardware or software, but on open standards that provide access via the internet. Fiscalization is software-based and can be easily implemented by all taxpayers. In the long term, this significantly reduces business costs.

2.5 Costs and Issues

The cost of fiscalization varies depending on the type of activity. For new cash registers suitable for fiscalization requirements, the cost ranges from 230-275 euros, for existing fiscal registers 138 euros, and for software solutions 130-200 euros. As with any new program, fiscalization faced difficulties during its implementation. The platform was slow and faced constant blockages during declaration periods.

Small taxpayers and those from rural areas did not have the infrastructure necessary to successfully complete the fiscalization process. The platform did not allow the issuance of credit notes for invoices issued before the fiscalization period. There were occasional issues with the monthly reports and transactions, and not always was the information provided in real-time. The fiscalization process is very important in our country, as it increases business transparency and helps the government fight tax evasion, as it is easily verifiable for tax fraud and failure to declare fiscal invoices. This makes it easier to involve businesses in the informal economy, and all controls are focused on these businesses that do not declare fiscal invoices.

The fiscalization process in the EU started earlier than in our country. Primarily around 2016, countries like France and Germany implemented this process. In France, the main requirement is to have a POS certified by the state, where the invoice data cannot be modified. In France, fiscalization started in 2017 with the preservation of complete data in a chronological and unmodifiable manner, and in 2018, new control rules were implemented.

Germany set the goal for full implementation by 31 December 2022. Serbia, a neighboring country, started in December 2020 and aimed to complete it by the end of this year. Austria began in 2016, with the basic focus on data preservation in each POS. Bulgaria started in 2018 and established new rules for fiscal devices with necessary elements like "QR CODE." Slovenia began fiscalization in

2016, with new laws for all taxpayers except government bodies. Italy introduced fiscal laws to avoid violations with changes to data declarations through automatic reporting. In 2021, the government implemented electronic invoicing, and fiscalization is now done in real-time. Albanian businesses, now with existing fiscal devices (after spending resources on upgrading them) and new software (which led to market liberalization), can issue fiscal invoices that are registered directly in the central server of the General Directorate of Taxes. However, even though this may have eased tax control or cross-checking of information, problems with evasion should not be considered fully resolved, and fiscalization has presented a range of other issues.

3. METHODOLOGY

The secondary data used in this study have been gathered from the National Business Center (QKB), focusing on economic units operating in the main cities of Albania. The objective of this data collection is to refine the scope of the research and ensure a more targeted analysis. The selection of business entities is based on two key criteria:

- Geographical Location – The businesses must cover the trade centers.
- Continuity Principle – Only businesses that have been operational since before 2017 and continue their activities up to 2024 have been considered. Firms that have submitted declarations of suspension or liquidation to QKB have been excluded from the study.

This approach ensures that only long-standing and active businesses are included, allowing for a more reliable analysis of financial trends, operational performance, and market stability over a substantial period. The study primarily focuses on the financial performance of the selected businesses, using the following key indicators:

- Total Turnover– The overall revenue generated by the business.
- Earning Before Taxes (EBT)– The profit reported before taxation.
- Corporate Income Tax– The tax imposed on the company's earnings.
- Net Profit– The profit remaining after all expenses, including taxes, have been deducted.

By examining these financial variables, the study aims to provide a comprehensive overview of business performance and identify key factors influencing profitability across different sectors.

Out of a total of 223 businesses selected the study includes firms from a diverse range of industries, ensuring a balanced representation. The businesses are distributed across the following economic sectors:

- Manufacturing– Includes companies involved in the production of goods.
- Wholesale Trade – Businesses engaged in bulk sales and distribution.
- Construction– Firms specializing in residential, commercial, and infrastructural development.
- Pharmaceutical Sector– Companies operating in the medical and healthcare industry.

The pharmaceutical sector has been analyzed separately due to its unique market dynamics and regulatory environment. This distinction helps in drawing clearer comparisons between general commercial enterprises and those within the specialized healthcare industry.

To examine the financial data and extract meaningful insights, the study applies various statistical techniques using SPSS 20, a software widely used for social sciences and business analytics. The following methods have been employed: Descriptive Analysis, Comparison of Group Means, Correlation Analysis, Regression Analysis.

4. RESEARCH FINDINGS

4.1 Descriptive Analysis

From the data analyzed, we have processed the following statistical measures, providing insights into industry averages in terms of turnover, standard deviation, and additional information on the distribution of this variable.

Table 1 - Descriptive Data for Net Sales, in mln ALL

Annual Turnover	Wholesale Trade	Pharmaceutical	Construction	Manufacturing
Mean	57,272,095	2,088,903,926	119,550,240	77,119,398
Median	20,818,419	1,841,995,696	59,483,716	39,694,820
Std. Deviation	61,030,772	1,357,524,257	139,967,714	120,379,363
Minimum	2,611,632	393,964,182	9,129,535	3,363,333
Maximum	184,832,893	4,554,198,750	498,889,679	493,272,793
Range	182,221,261	4,160,234,568	489,760,144	489,909,460
Skewness	0.883	0.501	1.679	2.627
Kurtosis	-0.956	-0.725	1.740	6.015

Source: Author's calculations

Pharmaceutical companies exhibit the highest average annual turnover, with approximately 2 billion ALL in yearly revenue. They are followed by construction and manufacturing firms, while wholesale trade companies report an average annual turnover of approximately 57 million ALL.

Table 2 - Descriptive Data for EBT, in mln ALL

Taxable Profit	Wholesale Trade	Pharmaceutical	Construction	Manufacturing
Mean	2,278,615	206,117,647	12,269,682	2,843,421
Median	883,813	190,189,342	5,970,819	1,370,198
Std. Deviation	3,025,782	95,066,424	15,117,258	4,953,984
Minimum	-328,118	44,733,277	463,597	-7,410,840
Maximum	10,284,257	372,445,998	64,426,207	17,645,912
Range	10,612,375	327,712,721	63,962,610	25,056,752
Skewness	1.633	0.078	1.985	1.528
Kurtosis	1.504	-1.062	4.289	2.899

Source: Author's calculations

Similarly, pharmaceutical companies report the highest taxable profit, followed by construction and manufacturing firms. Wholesale trade companies exhibit taxable profit levels similar to manufacturing businesses.

Table 3 - Descriptive Data for Corporate Income Tax, in mln ALL

Corporate Income Tax	Wholesale Trade	Pharmaceutical	Construction	Manufacturing
Mean	342,325	33,412,616	1,885,579	462,191
Median	132,572	31,284,035	895,623	153,329
Std. Deviation	462,135	17,034,216	2,314,299	755,063
Minimum	-	6,709,992	-	-
Maximum	1,560,258	65,331,193	9,696,940	2,850,562
Skewness	1.637	0.387	1.843	2.201
Kurtosis	1.487	-0.717	3.657	4.126

Source: Author's calculations

The largest corporate taxpayers are pharmaceutical companies, which, despite their small number in the market, contribute an average of 33 million ALL per year in corporate tax.

Table 4 - Descriptive Data for Net Profit

Net Profit	Wholesale Trade	Pharmaceutical	Construction	Manufacturing
Mean	1,956,644	172,705,031	10,367,610	2,545,710
Median	751,241	158,905,307	5,075,196	1,009,328
Std. Deviation	2,546,999	78,358,274	12,844,830	4,008,393
Minimum	-	38,023,285	-187,905	-3,408,916
Maximum	8,723,999	307,114,805	54,729,267	14,806,637
Skewness	1.655	0.033	1.998	1.774
Kurtosis	1.553	-1.096	4.330	2.990

Source: Author's calculations

Once again, pharmaceutical firms lead with the highest net profits, followed by construction and wholesale trade companies. Manufacturing businesses report the lowest net profits.

4.2 Comparative Analysis

Studies suggest that new technological implementations, such as an online invoicing system, may lead to positive outcomes for invoice management and tax compliance. However, these changes can also introduce short-term challenges, affecting sales and operations.

To examine this effect, a t-test was conducted to determine whether there were statistically significant differences in sales before and after the implementation of fiscalization. Given that fiscalization represents an intervention (shock) in financial operations, the independent samples t-test was used.

Table 5- Independent sample test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Total turnover	Equal variances assumed	-.185	22	.855	-4697709.417
	Equal variances not assumed	-.185	21.794	.855	-4697709.417
EBT	Equal variances assumed	-.207	22	.838	-261797.667
	Equal variances not assumed	-.207	21.645	.838	-261797.667
Corporate Income tax	Equal variances assumed	-.311	22	.759	-59789.083
	Equal variances not assumed	-.311	21.786	.759	-59789.083
Net Profit	Equal variances assumed	-.229	22	.821	-242716.000
	Equal variances not assumed	-.229	21.685	.821	-242716.000

Source: Author's calculations

The t-test results indicate no statistically significant differences in annual turnover, taxable profit, or net profit before and after fiscalization. Since p-values > 0.05, we fail to reject the null hypothesis, indicating that the average sales remain the same before and after fiscalization when considering all units together.

Further sectoral analysis suggests that certain industries may be more sensitive to fiscalization's impact than others.

Table 6- Statistics t-test in pharmaceutical sector

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Total turnover	Equal variances assumed	-.155	15	.879	-105834397
EBT	Equal variances assumed	-.492	15	.630	-23289180
Corporate Income tax	Equal variances assumed	-.516	15	.613	-4375149
Net Profit	Equal variances assumed	-.485	15	.635	-18914030

Source: Author's calculations

The analysis of the generated data reveals that fiscalization has had no statistically significant impact on the declaration of turnover or EBT within the pharmaceutical sector.

Table 7- Statistics for t-test for construction sector

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Loëer	Upper
Total turnover	Equal variances ssumed	-1.172	35	.249	-54497872	46512335	-148922933	39927188
EBT	Equal variances ssumed	-.980	35	.334	-4893669	4991110	-15026163	5238823
Corporate Income Tax	Equal variances ssumed	-.788	35	.436	-605554	768184	-2165050	953942
Net Profit	Equal variances ssumed	-1.021	35	.314	-4324982	4235828	-12924171	4274207

Source: Author's calculations

The analysis of the generated data indicates that fiscalization has not led to any statistically significant change in the declaration of turnover, taxable profit, or net profit in the construction sector.

Table 8- Statistics for t-test in manufacturing sector

		t-test for Equality of Means				
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Total Turnover	Equal variances assumed	-.147	43	.884	-5345997	36304936
EBT	Equal variances assumed	-.637	43	.527	-947750	1487431
Corporate Income Tax	Equal variances assumed	-.432	43	.668	-98155	227282
Net Profit	Equal variances assumed	-.425	43	.673	-512336	1206659

Source: Author's calculations

The analysis of the generated data indicates that fiscalization has not resulted in any statistically significant change in the declaration of turnover or taxable profit in the manufacturing sector.

Various studies suggest that the impact of implementing a new technological tool, such as the online invoicing system, may vary for businesses operating at different levels of annual turnover. For this reason we separated the entities in two groups, depending on the turnover, below 100 mln All and above 100 mln ALL. From the statistics in table 9 and table 10, since $p\text{-value} > 0.05$, we can conclude that fiscalization has had no significant impact on the turnover or profit of businesses, regardless of whether their annual turnover is above or below 100 million ALL.

Table 9 - t-Test Statistics before and after fiscalization for units operating below 100 Million ALL

		t-test for Equality of Means				
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Total Turnover	Equal variances assumed	-.086	31	.932	-749737.287	8701548
EBT	Equal variances assumed	.244	31	.809	196825.540	806114
Corporate Income Tax	Equal variances assumed	.638	31	.528	74437.478	116737
Net Profit	Equal variances assumed	.077	31	.939	55027.548	710120.641

Source: Author's calculations

Table 10 - t-Test Statistics Before and After Fiscalization for Units Operating Above 100 Million ALL

		t-test for Equality of Means				
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Total Turnover	Equal variances assumed	-.300	48	.765	-102174954	340234094
EBT	Equal variances assumed	-.457	48	.650	-13932794	30492821
Corporate Income Tax	Equal variances assumed	-.465	48	.644	-2363202	5086069
Net Profit	Equal variances assumed	-.455	48	.651	-11569592	25440638

Source: Author's calculations

4.3 Regression Analysis

The comparative analysis revealed that there was no statistically significant change in turnover or taxable profit before and after fiscalization. To measure the extent to which the implementation of an online invoicing system and the associated costs have impacted business performance, a regression analysis was conducted.

The general regression equation used:

$$\text{Net Profit} = \beta \times \text{Turnover} + \text{Constant}$$

A change in the Beta coefficient indicates an impact on the profit margin. If the coefficient decreases, it suggests an increase in costs due to fiscalization, whereas an increase in Beta indicates that the fiscalization system has positively impacted profitability.

R-squared = 0.768, indicating that 76.8% of the variability in net profit is explained by annual turnover. A high correlation exists between turnover and net profit, suggesting that turnover is a strong predictor of profitability.

Table 11 - Regression Statistics for model 1, coefficients before and after fiscalization

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.879	0.772	0.768	29,182,916.957		
Model	Unstandardized Coefficients (B)		Std. Error	Standardized Coefficients (Beta)	t	Sig.
Before Fiscalization	(Constant) 3,042,342.593		4,092,733.714	-	0.743	0.460
	Turnover 0.066		0.005	0.879	14.019	0.000
After Fiscalization	(Constant) 4,876,441.343		4,520,358.332	-	1.079	0.285
	Turnover 0.067		0.005	0.879	14.499	0.000

Source: Author's calculations

Before and after fiscalization, Beta remains constant at 0.879, indicating that the relationship between turnover and net profit did not change significantly. The p-value (Sig.) is 0.000, meaning the relationship between turnover and net profit is statistically significant. However, only a minor change (0.001) in net sales was observed before and after fiscalization, suggesting that fiscalization had a negligible impact on profitability.

The second regression is performed on estimating how much turnover affected EBT. R-squared = 0.765, meaning 76.5% of the changes in EBT can be explained by turnover. Fiscalization expenses have a slightly stronger effect on taxable profit than on net profit.

Table 12 - Regression Statistics for Model 2, coefficients before and after fiscalization

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.875	0.765	0.761	35,360,346.563		
Model	Unstandardized Coefficients (B)		Std. Error	Standardized Coefficients (Beta)	t	Sig.
Before Fiscalization	(Constant) 3,544,021.336		4,959,082.148	-	0.715	0.478
	Turnover 0.079		0.006	0.875	13.758	0.000
After Fiscalization	(Constant) 5,858,825.671		5,575,611.214	-	1.051	0.297
	Turnover 0.080		0.006	0.871	13.991	0.000

Source: Author's calculations

A slight decrease in Beta (0.004) after fiscalization indicates that taxable profit as a percentage of turnover declined by 0.4%, which is statistically significant. The negative effect of fiscalization is more pronounced in EBT than in net profit.

As we mentioned before not just industry change but the size of the entities can be an indicator to evaluate what effect visualization has. For this purpose we tried the regression for entities with turnover less than 100 mln ALL. The results indicate that fiscalization has a greater impact on small businesses, as taxable profit declined by 1.8% after fiscalization.

Table 13 - Regression statistics for businesses with turnover below 100 million all, coefficients before and after fiscalization

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.491	0.241	0.216	5,323,954.581		
Model		Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
Before Fiscalization		(Constant) - 315,280.006	924,070.953	-	-0.341	0.735
		Turnover 0.070	0.023	0.491	3.087	0.004
After Fiscalization		(Constant) 541,014.380	689,444.441	-	0.785	0.438
		Turnover 0.052	0.016	0.485	3.138	0.004

Source: Author's calculations

The drop in Beta from 0.070 to 0.052 confirms a statistically significant decrease in EBT.

Table 14 - Regression statistics for businesses with turnover over 100 million all, coefficients before and after fiscalization

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.844	0.712	0.699	81,071,734.712		
Model	Unstandardized Coefficients (B)		Std. Error	Standardized Coefficients (Beta)	t	Sig.
Before Fiscalization	(Constant) 9,250,290.645		12,654,783.847	-	0.731	0.473
	Turnover 0.076		0.010	0.844	7.376	0.000
After Fiscalization	(Constant) 14,314,191.662		13,971,046.498	-	1.025	0.316
	Turnover 0.076		0.010	0.838	7.522	0.000

Source: Author's calculations

Fiscalization had a lesser impact on large businesses, with a 0.6% decline in taxable profit margins. However, this decline is still statistically significant at a 95% confidence level.

Main findings of the study include that fiscalization did not significantly impact overall turnover, suggesting that digital tax reporting does not inherently drive revenue growth.

There was a statistically significant decline (0.4%) in taxable profit, particularly for SMEs where the decline reached 1.8%.

These findings are in accordance with Fairchild (2004) and Sandberg et al. (2009) who found that businesses implementing electronic invoicing systems initially experience increased administrative costs, which may offset revenue benefits. Oliveira et al. (2014) highlighted that while digital tax compliance improves record-keeping and audit transparency, it does not directly stimulate business growth unless accompanied by broader digital transformation. Ghobakhloo et al. (2011) emphasized that larger firms tend to absorb fiscalization costs more easily, while smaller businesses struggle due to resource constraints, aligning with this study's finding that fiscalization disproportionately affects SMEs.

On the other hand small businesses (turnover < 100 million ALL) experienced a larger reduction in EBT (1.8%) than larger businesses (0.6%). This suggests higher compliance costs and adaptation challenges for SMEs.

Edelman and Sintonen (2006) found that SMEs often face greater financial burdens when adapting to regulatory changes, particularly in industries with low levels of prior digitalization. Keifer (2011) and Koch (2017) both suggested that government-mandated digital tax systems impose disproportionately high costs on smaller firms, as they may lack the technical infrastructure or financial resources to integrate new systems efficiently. Gounaris and Koritos (2012) demonstrated that regulatory-induced technological changes can create competitive imbalances, favoring larger firms that can better afford compliance costs a key takeaway from this study

CONCLUSION

Based on the analysis and data provided from the tests we can conclude that:

1. Fiscalization has a minimal impact on net profit but affects taxable profit

While net profit remained largely unchanged before and after fiscalization (Beta = 0.879 in both cases), EBT saw a statistically significant decline (0.4% decrease). This suggests that the overall profitability of businesses remained stable, indicating that companies were able to adjust costs or operational efficiency to absorb the effects of fiscalization.

Second, the decline in EBT likely reflects higher compliance costs, potentially due to additional administrative expenses, software costs, or operational adjustments.

Fiscalization might have influenced accounting practices, leading businesses to optimize declared expenses to offset taxable income.

2. Small businesses are more affected by fiscalization than larger firms

Businesses with turnover below 100 million ALL experienced a 1.8% drop in taxable profit margins post-fiscalization. This is three times higher than the decline seen in businesses with turnover above 100 million ALL (0.6%).

The greater impact on smaller businesses suggests that SMEs struggle more with compliance costs, as they may lack specialized accounting resources to efficiently manage fiscalization requirements. Larger firms can spread the additional costs over a higher revenue base, making fiscalization relatively less burdensome for them. Policy implications: Fiscalization policies should consider tiered compliance structures, offering subsidies or support to SMEs to mitigate these financial burdens.

3. Fiscalization's impact varies by business sector

While the data does not explicitly break down industries, prior studies suggest that sectors with lower digital adoption rates (such as construction or wholesale trade) may experience greater difficulties in adopting electronic invoicing systems. Pharmaceutical and large retail businesses are more likely to already have digital infrastructure, reducing adaptation costs. Construction, manufacturing, and small wholesale firms may have been forced to upgrade systems, incurring higher upfront costs. Future research could segment businesses by industry to further analyze how fiscalization affects profitability across different sectors.

4. Fiscalization does not stimulate revenue growth

One potential expectation of fiscalization was that increased transparency and automation would drive higher business performance over time. However, the data suggests that turnover remained statistically unchanged before and after fiscalization, indicating that fiscalization alone did not drive business growth. This contradicts the assumption that electronic invoicing and tax compliance automation directly lead to increased revenue. Businesses might not yet be fully utilizing the efficiency benefits of fiscalization. Increased compliance costs may offset any process efficiencies, especially in the short term. A longer observation period might be needed to assess whether fiscalization has any delayed positive effects on growth.

5. Potential long-term effects: competitive advantages for early adopters

While short-term effects of fiscalization show cost increases, in the long run, businesses that adapt early might gain a competitive advantage: Automated invoicing could lead to faster payments and improved cash flow. Compliance with electronic tax reporting could reduce audit risks and improve financial stability. Businesses investing in advanced digital accounting tools may enhance efficiency and gain a market advantage over competitors that are slower to adopt.

Encouraging businesses to embrace digital transformation beyond just tax compliance (e.g., through ERP systems, AI-driven accounting) could help them leverage fiscalization for long-term efficiency gains.

In the long run, businesses that effectively integrate digital invoicing systems may experience operational efficiencies, but fiscalization alone does not inherently drive revenue growth. For fiscalization to become a catalyst for digital transformation and economic development, support mechanisms must be implemented to reduce its financial strain, particularly on SMEs.

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