



Lisbon School
of Economics
& Management
Universidade de Lisboa

MASTER ACCOUNTING

MASTER'S FINAL WORK DISSERTATION

**MARKET IMPACT OF EU DIRECTIVE 2013/34/EU ON
GOODWILL ACCOUNTING: EVIDENCE FROM EUROPEAN
LISTED COMPANIES**

INÊS APOLINÁRIO SOARES

FEBRUARY - 2026



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FEBRUARY - 2026

DEDICATED TO THE BRIGHTEST STAR

MY GRANDMOTHER ROSA

GLOSSARY

CGUs – Cash-Generating Units

DiD – Difference-in-Difference

EBI – Earnings Before Income

EU – European Union

IAS – International Accounting Standards

IASB – International Accounting Standards Board

IFRS – International Financial Reporting Standards

MBV – Market-Book Value

PSM – Propensity Score Matching

ROA – Return on Assets

SME – Small and Medium Enterprises

ABSTRACT, KEYWORDS AND JEL CODES

This dissertation examines the market valuations' effects of the reintroduction of goodwill amortisation under EU Accounting Directive 2013/34/EU, in contrast to the impairment model adopted by the IFRS. The coexistence of two distinct goodwill accounting treatment may compromise consistency and comparability of financial reporting, which would affect the accounting harmonisation established (Ruiz-Lamas & Peón, 2023). In specific, it investigates whether the market value of businesses reporting goodwill reduces with the reinstatement of amortisation in the European Union. Above that, it also examines if the implementation of the EU Directive improves valuation stability. Consequently, it supports Sustainable Development Goal 16.6 – developing efficient, accountable, and transparent institutions at all levels.

Hence, with the aim of identifying the impact of the legislation's implementation, a Difference-in-Difference (DiD) approach is used to compare EU listed companies that recognise goodwill with those that did not between 2012 and 2020. With the application of the Propensity Score Matching (PSM) approach based on firm size and leverage, a balanced sample of 222 firms was produced, evenly split between goodwill-recognising and not-recognising firms, addressing possible selection bias.

The empirical findings reveal that companies that record goodwill differ substantially from those that do not, as they are larger in size, more profitable and more leveraged. This suggests that goodwill recognition is linked to particular economic traits. The results also demonstrate a relative rise in the market-to-book ratio of firms with goodwill, after the adoption of the Accounting Directive. This outcome deviates from earlier predictions and suggests that investors may perceive goodwill amortisation as a method that enhances credibility or/and reduced financial reporting's uncertainty. Nevertheless, it is not possible to create an association between the Directive and valuation volatility, since volatility-related coefficients are not significant. In addition, robustness tests verify that the findings are consistent.

KEYWORDS: Goodwill; Harmonization; Amortisation; Impairment; Market Value; Financial Reporting

JEL CODES: M41; M48; L25; O52

RESUMO, PALAVRAS-CHAVE AND CÓDIGOS JEL

Esta dissertação examina os efeitos nos valores de mercado da reintrodução da amortização do goodwill ao abrigo da Diretiva Contabilística 2013/34/EU da UE, discordante com o modelo de imparidade adotado pelas IFRS. A coexistência destes dois métodos pode comprometer a consistência e a comparabilidade da informação financeira, o que afetaria a harmonização contabilística estabelecida (Ruiz-Lamas & Peón, 2023). Especificamente, pretende-se investigar se o valor de mercado das empresas que reportam goodwill diminui com a reinstalação da amortização. Além disso, tenciona-se também analisar se a implementação da Diretiva melhora a estabilidade do valor de mercado. Consequentemente, este projeto contribui para o objetivo de Desenvolvimento Sustentável 16.6 – desenvolver instituições eficientes, responsáveis e transparentes a todos os níveis.

Assim, com o objetivo de identificar o impacto da implementação da legislação, o modelo Diferença-em-Diferenças (DiD) é usado para comparar empresas cotadas na UE que reportaram goodwill com aquelas que não o fizeram entre 2012 e 2020. Com a aplicação da abordagem de Propensity Score Matching (PSM), foi produzida uma amostra equilibrada de 222 empresas, dividida igualmente entre empresas que reconhecem goodwill e as que não o fazem.

Os resultados revelam que as empresas que reportam goodwill diferem substancialmente das que não o fazem, sugerindo que o reconhecimento do goodwill está associado a características económicas específicas. Os resultados também demonstram um aumento relativo do rácio Market-to-Book das empresas com goodwill após a adoção da Diretiva. Esta conclusão desvia-se das expectativas e sugere que os investidores podem percecionar a amortização como um método que aumenta a credibilidade ou reduz a incerteza da informação financeira. No entanto, não é possível criar uma associação entre a Diretiva e a volatilidade das valorizações, já que os coeficientes relacionados com a volatilidade não são significativos. Adicionalmente, os testes de robustez realizados verificam que os principais resultados da dissertação são consistentes .

PALAVRAS-CHAVE: Goodwill; Harmonização; Amortização; Imparidade; Valor de Mercado; Informação Financeira

CÓDIGOS JEL: M41; M48; L25; O52

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ACKNOWLEDGMENTS

This dissertation represents the conclusion of my academic journey. Without the guidance, support and encouragement of those who accompanied me along this long way, it would not be possible.

First, I would like to express my sincere my gratitude to my supervisor, Professor Doctor Pedro Filipe Moreira Brites de Almeida Fernandes, for his constant availability, guidance and feedback and, especially, for motivating me when I needed the most.

A special thank you goes towards my family for always being there for me, offering unconditional support throughout every stage of this journey. To my mother, the first person to believe in me and encourage me to start this journey. Thank you for always listening to my dreams and doing everything in your power to help me achieve them and for reminding me that life is not as serious as I believe it is. Without your unconditional love, patience and sacrifice, none of this would have been possible. To my boyfriend, Gonçalo, for being my right-hand throughout these years. Thank you for always offering your shoulder when I needed it, for always saying the right thing, for motivating me, and for patiently listening to all of my doubts and concerns throughout this process. To my sister, Sofia, for all your patience all these years and for taking care of me. I am grateful to be able to share this academic experience with you by my side. To my grandfather, António, for always being in the first line to applaud me in every achievement. Thank you for always going above and beyond in your role as a grandfather. Finally, for all of their unconditional love and support, even on the other side of the ocean, I want to extent my gratitude to my aunt Xana, my cousin Ema and my uncle Ângelo.

I would like to thank all of my friends for making this academic journey more enjoyable, especially Matilde, Mariana, Diana and Caroline.

Finally, I would also like to express my sincere appreciation for the support provided by the Rodrigo Guimarães Institute, in specific by Rita Borges Silveira Botelho, which was fundamental to the completion of this academic journey.

1. INTRODUCTION

Over the past twenty years, multiple social and economic developments have had a substantial impact on the operations of the global market and the economic viability of businesses term (Cagle, 2019). As a result of the reinforcement of global interconnection and the removal of trade barriers, companies were offered new opportunities for growth and profitability (Agarwal, 2023). These new possibilities led to economics of scale, increased knowledge and know-how and strengthen competitiveness (Katsikeas, 2018). Yet it also resulted in some challenges, such as cultural disparities, legal and regulatory requirements, currency fluctuations risks and trade policy changes risks (Sinta et al., 2023). Subsequently, it was pertinent to create a reliable environment where investors have access to more relevant information – Cottier et al., 2012 (cited by Cagle, 2019) – and to create a comparable, comprehensive and trustworthy “language of business” (Diaconu, 2007). In response, the International Accounting Standards Board (IASB) developed a variety of International Accounting Standards (IAS). In particular, the harmonisation of the international harmonisation of goodwill accounting has resulted in the approval of IFRS 3 – Business Combinations, IAS 36 – Impairment of Assets and IAS 38 – Intangible Assets (Martínez & Rubio, 2018).

The IFRS 3 and a related amended version of IAS 36 were issued in 2004, and their aim is to regulate the application of goodwill and other assets impairment tests annually (Ruiz-Lamas & Peón, 2023). The transition from the previously used systematic amortisation method to the impairment-only approach was based on the belief that the second approach is more rigorous and practical, offering investors more insightful information (IFRS, 2020). Moreover, the generalisation of impairment tests was also based on the argument that goodwill does not consistently lose value – a topic that is brought up to criticise the systematic amortisation approach (Carvalho et al., 2016).

Despite the international efforts to promote goodwill accountability harmonisation, it has been compromised by the European Parliament and the IASB (Martínez & Rubio, 2018). This is because, in contrast with the International Accounting Standards that promotes the use of the impairment approach, the EU Accounting Directive 2013/34/EU (established in 2013) advises non-listed companies and any other companies that, voluntarily, choose not to use IAS/IFRS, to carry goodwill as an asset amortising it over a period of five to ten years. Still, impairments should be performed if the value of goodwill is permanently diminished. The key objective of

this Directive is to strengthen the EU's economic government, improve the functioning of the single market, reduce businesses' regulatory burden and to bring about long-term stability to companies (European Parliament & Council of the European Union, 2013).

With the reintroduction of amortisation in the European Union, the effectiveness of the impairment test was questioned, leading the IASB to rethink its use. The board concluded that impairment tests may not be as comprehensive as it had initially anticipated: they are not recognised on a timely basis, their value is limited (often only confirmatory), and they are expensive and difficult to administer. Hence, the board acknowledged the limitations of both goodwill accounting models: on the one hand, it is difficult to estimate the useful life of goodwill and the pattern in which it diminishes in the amortisation model, and, on the other hand, an impairment test cannot be used to test goodwill directly, making the process more difficult (IFRS, 2020). Nevertheless, after analysing the two approaches, it concluded that, instead of reintroducing amortisation, it only should enhance disclosure requirements for business combinations and improving impairment testing criteria under IAS 36, while keeping the impairment-only model for goodwill (Ruiz-Lamas & Peón, 2023).

Martínez and Rubio (2018) stated that several scholars, including Larrán et al. (2000), Navarro (2004), Callao et al. (2007), Chalmers et al. (2011) and Hamberg et al. (2011), concluded that the application of a specific valuation method of goodwill has economic consequences for companies, including on the quality and comparability of the information that enterprises convey and on the accurate assessment of future cash flows. Therefore, having a choice of accounting treatment enables businesses to act independently in their own best interests, possibly affecting the usefulness and faithfulness of the financial information transmitted by companies.

Although the variety of articles on the topic, academic research still did not reach a consensus regarding the effect on accounting quality of the two methods (Hulzen et al., 2011). Having a dual regulatory framework, which allows businesses to choose between the amortisation and the impairment models, leads to differences in accounting figures and financial ratios between the two groups (Martínez et al., 2022). Above that, according to Al Jifri and Citron (2009), the goodwill information reported in the notes and in the balance sheet of a company are relevant to the market valuation (cited by Li et al., 2010), suggesting that the coexistence of two distinct systems may compromise the uniformity and comparability necessary for efficient market valuation (Martínez et al., 2022).

The decision between amortisation and impairment testing has a big impact on comparability and transparency, as goodwill influence a company's profitability and balance sheet. Therefore, since there is an ongoing debate on how goodwill should be treated in accounting, the objective of this dissertation is to assess whether the amortisation model decreases value relevance compared to impairment, by comparing the period before and after the Accounting EU Directive's implementation. Hence, the research question for this dissertation is "how the reintroduction of goodwill amortisation under the EU Directive 2013/34/EU has influenced the market valuation of European companies".

Two key theories underpin the conceptual foundation of this research: the Public Interest Theory and the Prudence Principle. The first argues that regulation exists to correct market failures and protect the public by aiming at improving the quality, comparability and usefulness of financial information for users. The second supports that prudence / caution is necessary when making decisions in the face of uncertainty to avoid overstating assets and income and understating losses and liabilities. Both IFRS and the EU Accounting Directive 2013/34/EU emphasize procedures to ensure a true and fair value of accounts (Cagle, 2019).

This dissertation examines the impact of EU Accounting Directive 2013/34/EU on firm valuation and its volatility using a sample of listed companies from all EU Member States from 2012 to 2020. Following Ruiz-Lamas and Peón (2022)'s methodology, this analysis employs difference-in-differences model, to compare firms that reported goodwill against firms that did not report it. To mitigate possible selection bias, Propensity Score Matching based on firm size and leverage was used, with the objective to develop a balanced sample that allows for a more reliable analysis of the effects of the regulatory change. Hence, the final sample comprises 222 enterprises: 111 of which reported goodwill and 111 of which did not.

Therefore, this dissertation will contribute to the existing literature by offering empirical data on the effects of the reintroduction of goodwill amortisation treatment on companies' market value. It also provides distinctive and insightful information that might be pertinent to the ongoing discussions on the optimal method for the subsequent measurement of goodwill. Above that, using a broader geographical sample enables more comprehensive and broadly applicable findings than most of the literature that uses a one-country sample – such as, for example, Ruiz-Lamas and Peón (2023), Martínez and Rubio (2018) and Chalmers et al. (2011). Furthermore, by analysing how different accounting procedures impact market value and offering policymakers new perceptions on the topic, this study supports Sustainable

Development Goal 16.6, which calls for the creation of efficient, accountable, and transparent institutions at all levels.

The findings from this study indicate that firms recognising goodwill are structurally different from non-recognising firms and experienced, as they are systematically larger, more profitable, more leveraged, and more highly valued by the market than firms without goodwill. Above that, contrary to predictions set by the literature review, a relative increase in market-to-book value once Directive 2013/34/EU was implemented. And valuation annually volatility was not considerably impacted by the Directive, as the results were not statistically significant and the explanatory power of the model is considered limited. Above that, robustness tests were performed to support these main conclusions. Hence, since similar outcomes were gathered using different samples and using a narrower time horizon, it was confirmed the stability and consistency of the results.

The remaining of this dissertation is organized in four different sections. The background of goodwill accounting in the European Union, relevant literature and the basis of the study's hypothesis is given in Section 2. In Section 3, the methodology is outlined, including the sample and research model. Section 4 presents the data analysis of this dissertation, including a descriptive statistics analysis, other key tests and, also, discusses the results considering the existing literature. Finally, Section 5 concludes with key findings, possible limitations of the study and suggestions for future research on the topic.

2. LITERATURE REVIEW

Goodwill has been defined by the IASB as “ an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognised ” (IFRS 3, Appendix A: Defined terms). This definition is based on the idea that an entire business unit is worth more than its net assets fair value. Hence, when the buyer is willing to pay more than the sum of all revalued individual assets less the sum of all revalued individual liabilities, goodwill arises. This can happen because of synergies such as excellent employees, strong managerial skills, market power, a valuable customer or supplier base, a good name and a reputation (Sander, 2024). In other words, goodwill is the present value of the future stream of higher earnings from the acquired company (Qasim et al., 2013). Upon recognition as an asset, goodwill shall be allocated to cash-generating units (CGUs) of the acquiring entity (Ferramosca & Allegrini, 2021), since it cannot be sold separately from the company (Chen & Moehrle, 2015). The IAS 36 describes CGUs as the smallest identifiable asset class that produces cash inflows that are primarily independent from cash inflows from other groups of assets (IAS 36, Paragraph 6).

According to Godfrey and Koy (2001), investors place a greater value on reported goodwill than on any other balance sheet item, including identifiable intangible assets (cited by Chalmers et al., 2011). Consequently, previous literature demonstrate that reported goodwill assets and equity market values are positively correlated (Huber & McClure, 2025). Therefore, goodwill accounting treatment has become a major concern for financial report preparers and for accounting regulators (Qasim et al., 2013), as it could have significant implications for the company’s future earnings and change an acquirer’s willingness to pay (Huber & McClure, 2025).

2.1. Background of Goodwill Accounting in the European Union

Until 2004, the IASB adopted the amortisation model for goodwill, with a useful life of no more than twenty years. Nevertheless, with the implementation of IFRS 3 and IAS 36, goodwill amortisation was no longer considered, as each recognised goodwill must undergo a yearly impairment test, regardless of whether there is any sign of impairment (Sander, 2024). This alteration was based on the thought that impairment tests offer investors more useful information (IFRS, 2020). Yet, it is appropriate to have in account that IFRS 3 and IAS 36 have different insights on how recognise goodwill.

Under IFRS 3, goodwill is recorded as a residual value, arising when the purchase price of a business combination exceeds the fair value of the identifiable net assets acquired. This nature of goodwill reflects the future financial gains that cannot be individually identifiable nor separately recognisable (Qasim et al., 2013). In contrast, IAS 36 recognises goodwill as an intangible asset with an indefinite useful life, where, in case of signs of impairment, the company should record an impairment loss if the recoverable amount (which is equal to the superior value between the selling price minus selling costs and the value in use) is less than the carrying value (Karampinis & Hevas, 2014).

Since 2005, European companies are required to comply with the IFRS (Hulzen et al., 2011). However, this harmony between the IASB and the European Parliament was damaged with the implementation of the Directive 2013/34/EU. The purpose of this legislation is to establish a set of rules that respect the principles of proportionality and subsidiarity, ensuring that administrative costs are proportional with the advantages they provide, especially for Small and Medium Enterprises (SME) (European Parliament & Council of the European Union, 2013). According to Deac (2014), by lowering the complexity of mandatory disclosures, it is estimated that the Directive results in a €1.6 billion of yearly cost savings (cited by Gläserová et al., 2017).

Consequently, the Directive seeks to promote legal reporting harmonization, advance financial comparability, facilitate international investment and increase the public trust in financial and management reports within the EU. It includes a variety of subjects, such as the classification of firms, accounting principles and measurement bases, formats and content of financial statements disclosure requirements and exemptions, non-financial reporting obligations and much more (Cagle, 2019). The exceptions of the new legislation apply to consolidated financial statements of firms that issued securities in an EU regulated secondary market (debt securities and equity instruments), which maintain the application of the IAS/IFRS, as well as for non-listed companies that voluntarily decide to use the IAS/IFRS in their consolidated annual accounts (Ruiz-Lamas & Peón, 2023).

With the adoption of the Directive 2013/34/EU, the accounting treatment of goodwill changed in the EU: now, it must be amortised over its useful economic life, for companies that choose to do so – Article 12 (European Parliament, & Council of the European Union, 2013). The Member States are required to determine the useful life of goodwill, which ranges from five to ten years, in situations where it cannot be accurately assessed. Above that, impairments

tests are permitted if the value of goodwill is permanently diminished, because of, for example, poor business performance or loss key customers. Yet, it is not acceptable to reverse goodwill impairment losses, even if the reasons for the adjustment no longer apply (European Parliament, & Council of the European Union, 2013). A transitional provision allowed firms, in 2016, to amortise goodwill against reserves on a straight-line basis over ten years from the date of the initial recognition of goodwill (Martínez & Rubio, 2018).

All guidelines set in the Directive must be integrated into each Member State's national law by 20 July 2015, or, at the latest, by 2016 (Gläserová et al., 2017). As a result, a dual regulatory framework concerning goodwill accounting has been established, since European-listed and non-listed European companies have the option to choose between IFRS and Directive 2013/34/EU. This can compromise the accounting data comparability and does not address the negative points of either of the two models (Martínez et al., 2022). Above that, while the European Directive seeks to promote uniformity and standardize practices within the European Union, the complexities and different responses it generates could make the path to global accounting harmonization more difficult (Ruiz-Lamas & Peón, 2023).

The debate surrounding the various accounting models intensifies when it comes to Small and Medium-sized Enterprises. This is because, since 2009, the IFRS for SMEs allows them to amortise goodwill over its estimated useful life, with a maximum amortisation period of ten years, creating a conceptual inconsistency within the IFRS framework itself. This decision was based on auditor feedback, that claimed that the requirement to calculate the annual recoverable amount of goodwill in accordance with IFRSs was too difficult for SMEs given the expertise, complexity and costs involved (Chalmers et al., 2011). Likewise, the Directive 2013/34/EU also tried to make accounting and reporting procedures simpler to SMEs, so that they may focus on their main business operations (European Parliament, & Council of the European Union, 2013).

2.2. Goodwill Accounting Methods Analysis

According to Chen and Moehrle (2015), the frequent changes in goodwill treatment are associated with three main questions: what are the likely future economic benefits, how significant are they and how long will they sustain. So, in response, there are three general approaches to address goodwill: immediate write-off, impairment-only and amortisation (Sander, 2024). The first option is uncommon, since it distorts the relationship between investment and profits by overstanding performance and understating invested assets after

significant acquisitions (Chen & Moehrle, 2015). The other two are the focus of several studies, including Ferramosca and Allegrini (2021), Hulzen et al. (2011), Rubio et al. (2021) and Ruiz-Lamas and Peón (2023). Yet, the academia still not reach a consensus, as, according to Martínez et al. (2022), there are authors that support systematic amortisation with a periodic impairment test (Li & Sloan, 2017), while others advocated for impairment alone (Chalmers et al., 2011; Cheng et al., 2018; Johnson, et al., 2021). Also, Hamber and Beisland (2014) argue that both models must be used simultaneously, because their findings suggest that impairment tests are only significant when carried out with amortisation (cited by Martínez et al., 2022). As a result, to be able to make comparisons between the two models, it is essential to understand the broader implications of each approach, including their underlying assumptions, their rational and positive and negative points.

2.2.1 Impairment-Only Method Analysis

Montgomery (1912) states that an impairment-only approach views goodwill as a permanent asset that can only be impacted by impairment and is not consumed over time. Hence, any amortisation or failure to recognise goodwill undervalues the economic value of the company, from a shareholders' perspective (cited by Sander, 2024). An impairment write-off is only required when the goodwill's recoverable amount is lower than its carrying amount (IAS 36, Paragraph 104). Chen and Moehrle (2015) concluded that goodwill impairment is caused by three economic factors: overpayment for the acquisition (Li et al., 2011), overpriced shares of the acquiring firm (Gu & Lev, 2011) and acquirer's investment opportunities (Godfrey & Koy, 2009).

The main argument for adopting the impairment-only approach for goodwill is that, under this methodology, recognised goodwill is more likely to represent the underlying economic characteristics of businesses (Martínez & Rubio, 2018). This is because, consistent with Conigliaro and Rudman's (2002) study, when evaluating for goodwill impairment, firms must consider relevant aspects beyond their control. These factors include significant changes in the legal and business environment, any potential regulatory action or assessment, possible market competition, important customers and employees and any expectation that a reporting unit may be disposed of (quoted by Chalmers et al., 2011). Additionally, this method enhances the decision-making value and quality of the financial statements, as it provides new and potentially valuable information for decision-makers that is not available within the amortisation model. This reflects that the impairment shown in the income statements reflects

changes in management's forecasts of earnings from acquired intangible assets (Li et al., 2010). Hence, the IFRS's adopted model allows business to have more flexibility, as losses are only recorded when certain events business-related show that their value has decreased. This implies that the likelihood of identifying an impairment may either rise or fall, depending on a firm's economic circumstances. In contrast, under the amortisation method, the magnitude of the expense would be the same even if circumstances indicated an improvement (Martínez et al., 2022).

Nevertheless, the mostly discussed argument against the impairment-only approach is regarding the idea that managerial incentives and traits influence goodwill impairment (Ruiz-Lamas & Peón, 2022). This is because, impairment-only model enables for accounting discretion, since it requires managers to make important accounting decisions, including: identifying of cash-generating units, allocating subsequent goodwill to these units and estimating the units' recoverable amount (Qasim et al., 2013). According to Rubio et al. (2021), this discretion can be exploited opportunistically due to firm's private incentives (AbuGhazaleh et al., 2011; Francis et al., 1996; Giner & Pardo, 2015) or used to reflect economic reality and to signal private information (Bens et al., 2011; Hirschey & Richardson, 2002; Lee, 2011). Consequently, Ferramosca and Allegrini (2021) conclude that most of the CEOs prefer goodwill impairment testing than amortisation. Above that, Glaum et al. (2018) concluded that impairment decisions are influenced on managers' reputational costs. So, new CEOs who are less involved in prior acquisitions and face lower reputational costs are more likely to write-off acquired goodwill than established CEOs (cited by Sander, 2024).

Because of this, impairment-only approach usually leads to inflated goodwill balances, since reporting companies barely recognise any impairment losses. As a result, this model has lower leverage and higher return on equity and return on assets (Martínez et al., 2022). Additionally, losses may be recognized later and become more difficult, as impairment test is based on cash-generating unit rather than the actual asset, which is the method used when an asset does not produce primarily independent cash inflows, but instead works together with other assets to generate future cash flows (IFRS, 2020). Bagna et al., (2023) stated that managerial manipulation can also result in delayed or non-existent impairment. According to Esma (2013), a significant number of companies failed to comply with IAS 36 disclosure requirements and those that did so tended to use highly imprecise and ambiguous definitions (cited by Carvalho et al., 2016).

An additional relevant argument in resistance to impairment-only approach is that it leads to shielding. Shielding occurs when, despite a decline in goodwill, there is no impairment, since a decrease in the company's recoverable amount is attributed to unrecognized headroom rather than acquired goodwill (IASB, 2020). Headroom represents any unrecognised value, including unrecognised individual assets, that arises from differences between carrying amounts and recoverable amounts of recognised assets other than goodwill and internally generated goodwill (Sander, 2024). This problem could be solved by replacing the impairment test with a headroom approach, which allocates a reduction in the recoverable amount to the unrecognised headroom. Yet the IASB decided to keep the impairment test (IASB, 2020). In addition, the board argues that impairment-only can also replace acquired goodwill with internally generated goodwill, as acquired goodwill is continually consumed through the ongoing operations to maintain a company's reputation and competitiveness, generating, consequently, new goodwill internally – instead of maintaining it (IASB, 2020). This should also be considered in the amortisation model discussion, because the lower annual amortization charge, the larger the probability of this replacement to occur (Sander, 2024).

Overall, according to Martínez and Rubio (2018), different literature highlights the ambiguity and subjectivity that result from the need to make a lot of assumptions due to the unclear application of concepts (Beatty & Weber, 2006; Lapointe, 2006; Wines et al., 2007; Cordazzo, 2008; Jahmani et al., 2010; AbuGhazaleh et al., 2011; Ji, 2013; Swanson et al., 2013), and from the lack of knowledge on the main theories that are the basis of the impairment test (Carlin et al., 2010; Calvo, 2011; Carlin & Finch, 2011; Biancone, 2012; Camodeca et al., 2013; D'Alauro, 2013; Glaum et al., 2013; Guthrie & Pang, 2013; Izzo et al., 2013; Carvalho et al., 2016). Consequently, users are not able to easily judge whether the assumptions and estimates behind the financial information are trustworthy (Carvalho et al., 2016). Moreover, impairment tests tend to be expensive, raising the question of whether the new information's benefits justify its costs (Chen & Moehrle, 2015)

2.2.2 Amortisation Method Analysis

The amortisation approach is related to a revenue-expense view (also known as the dynamic view), which emphasises that revenue and costs shall match to calculate the net income. Thus, goodwill must be amortised to balance the difference between the consideration paid and the acquired company's net assets with future revenue. In this perspective, an impairment-only model is inappropriate, since it does not connect the capitalised cost of the

acquired goodwill to future revenue (Sander, 2024). Goodwill is, therefore, treated as an economic asset with expected future value, like inventory and property, plant and equipment (Chen & Moehrle, 2015). As a result, this method is regarded as a straightforward mechanism that directly targets acquired goodwill and it is easier and less expensive to apply than impairment tests. So, the IASB concluded that the reintroduction of amortisation could reduce some pressure on the impairments tests (IASB, 2020).

Some stakeholders argue that amortisation is required to hold management more effectively accountable for goodwill due to different reasons. First, it would show that the acquisition is not successful, if it does not generate economic benefits greater than its cost. Second, since an impairment-only model does not identify goodwill consumption separately, all reductions in the carrying amount of goodwill are considered impairment losses, including those brought on by goodwill consumption. Third, it prevents internally generated goodwill from being implicitly recognized, replacing it by acquired goodwill that has been consumed. Additionally, it also may relieve some concerns related with overstated acquired goodwill, since its carrying amount is reduced annually (Rubio et al., 2021).

Nevertheless, IASB (2005), quoted by Chalmers et al. (2011), stated that the goodwill's useful life and the pattern in which it decreases in value are generally unpredictable. This is because, according to Henning and Shawn (2003), the choice of amortisation life is strategic, since it forecasts future earnings, expected growth and future stock performance (cited by Chen and Moehrle, 2015). Therefore, management overoptimism may also impact goodwill's useful life, resulting in reduced annual amortisation and overestimation of yearly net income. With this, the revenue-expense view's purpose of accurately estimating periodic income is not met. Above that, the amortisation model is also criticised for not considering that goodwill may have an indefinite useful life, if the company is regarded as a going concern (Qasim et al., 2013).

Above that, the amortisation model does not provide useful information to investors, since the amortisation cost is considered an arbitrary estimation of goodwill consumption (Chalmers et al., 2011) that does not reflect the underlying financial position of the firm (Hulzen et al., 2011). So, goodwill amortisation is seen by the market as a bookkeeping procedure that generates irrelevant information (Li et al., 2010). In fact, Jennings et al. (2001) stated that it does not contain useful information for assessing share prices.

2.3. Impact of Goodwill Accounting Methods on Market Value & Hypotheses Development

The IASB acknowledged that both goodwill accounting treatment have limitations: while no impairment test can assess goodwill directly, it is difficult to estimate the useful life of goodwill and the patterns in which it diminishes under amortisation (IFRS, 2020). Hence, non-preparers (such as auditing firms and standard setters) are more likely to support the amortisation model, as it is simpler, more objective and easier to audit. Yet, preparers / managers are inclined to prefer an impairment approach, since it gives more flexibility in determining when to recognise a loss (Qasim et al., 2013). In response to the European Directive, the Board decided to continue using the impairment-only model and not reintroducing amortisation (IFRS, 2020), believing that it reflects better the underlying economic value of goodwill (Chalmers et al., 2011)

Goodwill is considered an element of a company's market value, although it cannot be achieved separately unless the entire company is transferred (European Group of Valuers' Associations, 2020). Hence, having a dual goodwill accounting system can compromise the company's market value, because preparers handle each model differently. Under the amortisation method, goodwill depreciates at a fixed rate, regardless of its actual economic value (which may cause reported amount to differ from reality), while under the impairment model, companies are required to test annually for impairment, leading to more accurate recognition of decreases in value and more timely information (Hulzen et al., 2011).

The market reacts differently depending on the accounting method used for goodwill. When impairment model is used, investors consider reported goodwill impairment as new relevant information (Li et al., 2010). Nevertheless, investors are only concerned by impairment losses when they are reported by companies that hold a considerable amount of goodwill in comparison to tangible book value (Bagna et al., 2023). In fact, they react negatively when goodwill impairment is announced, which may significantly lower market value. An impairment charge may cause a decrease in market value larger than the loss itself, as it carries negative expectation about future earnings that go beyond the value of goodwill (Li et al., 2010). This effect may lead to greater fluctuations in market value in the impairment model, comparing with the amortisation approach.

In contrast, systematic goodwill amortisation is considered irrelevant to market valuation, because it does not generate significant investor reactions (Li et al., 2010). Jennings et al (2001)

concluded that goodwill amortisation “simply adds noise”, since the net income’s value to investors remains the same if amortisation is excluded in the computations. When IFRS 3 was implemented in Sweeden, investors tended to respond positively to the removal of amortisation. This reaction appears to have been driven by an overemphasis on net income, which rose when no amortisation was recorded, as well as by the perception that amortisation is meaningless because it is only an account allocation of a previous acquisition (Hamberg et al., 2011).

Overall, Churky and Chewning (2003)’s conclusions imply that the impairment model might, in fact, reflect higher performance and growth expectations, which would raise firm’s market values. The European Business Valuation Standards (EBVS) define market value as an estimated amount at which a business would be exchanged on the valuation date, between a seller and a buyer, where both parties must act independently, knowledgeably, prudently and without being under pressure (European Group of Valuers’ Associations, 2020). Yet the amortisation approach might not fairly represent a business's economic potential. Therefore, to understand the impact of the EU Accounting Directive 2013/34/EU on market value, two hypotheses were developed. *H1* investigates if the reintroduction of amortisation influences market value of companies that reported goodwill, while *H2* assesses whether it enhances valuation stability. These hypotheses aim to evaluate the EU Directive’s economic effects and compare the relevance of amortisation versus impairment.

H1: After the adoption of the EU Accounting Directive 2013/34/EU, the market-to-book value (MBV) of listed companies with positive goodwill decreased.

H2: The absolute year-to-year change in MBV decreased after the adoption of the EU Accounting Directive 2013/34/EU.

3. METHODOLOGY

To explore the stated hypothesis, the methodology defined by Ruiz-Lamas and Peón (2022) was used as a reference framework, since our purpose of measuring how the EU Accounting Directive affected the market value of listed companies aligns with theirs. The authors studied the effects of goodwill amortisation's reintroduction in 2016, in Spain. They concluded that it led to a clear reduction in total goodwill and, consequently, in average goodwill per company and the share of goodwill over total assets. Moreover, the total of systematic amortisation and impairment recognized following the regulation change was significantly higher than the annual impairment recognized before 2016. But their finding does not necessarily prove that the systematic amortisation model is a better model than the impairment, as the larger goodwill values under the impairment technique can be attributable to intangible assets that are not recorded on the balance sheet. Above that, there is evidence that investors continued to overvalue firms with inflated goodwill balances also after 2016 with the amortisation method, suggesting that the effects of the impairment method were still persistent.

The statistical analysis for this study was performed on StataSE 19, a tool intended to use by research scholars, as it allows managing, adjusting and arranging large sets of data (Kothari, 2015). And, the statistical model used in this study was based on the Difference-in-Differences (DiD) model, since, it is capable of comparing the fluctuation on the market book value for the two groups examined: a treatment group, which includes companies with goodwill in at least one year between 2012 and 2020, and a control group, with companies with no goodwill reported (Ruiz-Lamas & Peón, 2022)¹. Difference-in-Differences (DiD) is a widely used research strategy for estimating the causal effects of policy interventions, since it compares outcomes over two time periods and two subgroups: a pre-intervention period in which no units are treated and a post-intervention in which treatment is applied to a subset of units (treatment

¹ In addition to DiD's calculation, the ANOVA model was also performed, as a descriptive tool for examining mean differences between groups and time periods, as well as characterising the structure of variation in data (Kim, 2014). Yet, its findings were not considered valid, since the test's underlying assumptions were not fully met. Specifically, the essential requirement for variance homogeneity was violated (Emerson, 2022). As a result, statistical inferences drawn from the ANOVA may be biased or unreliable. Accordingly, it is not possible to reach conclusive findings concerning this model.

group), while the remaining observation are considered a control group (Callaway & Sant'Anna, 2020).

There are three key assumptions underlying DiD designs (Rothbard et al., 2024). The first one, consistency, requires a clearly defined intervention, such that the post-treatment outcomes reflect what would happen without any regulatory change. Above that, positivity means that the observation should not be structurally assigned to the treated or control group. Finally, the parallel trend assumption states that, in the absence of treatment, treated and control groups would have had the same long-term outcomes. Hereby, DiD approach offers a straightforward and intuitive design capable for controlling for time-invariant unobserved heterogeneity, however it strongly relies on the parallel trends assumption, it is susceptible to serial correlation and it may be influenced by poor control group selection or compositional changes over time (Fredriksson & Oliveira, 2019).

Thereby, two regression models were developed for addressing each formulated hypothesis (see Appendix A). For *H1*, the market book value, MBV_{it} , defined by the market value of equity over the book value of equity, is associated with two dummies variables: D_i , which assumes a value of 1 for firms with positive goodwill at some point between 2012 and 2020 and 0 otherwise, and T_t , which has a value of 0 if it is prior to the regulatory change and 1 following it (Ruiz-Lamas & Peón, 2022). It is considered an enterprise has positive goodwill when it reports a known value in its financial statements for a given fiscal year. So, the notation “it” designate that the variables are observed over time (t) for different firms (i). Additionally, for *H2*, volatility is defined as a variable's degree of unpredictability across time and is widely used to quantify instability in observed results (Martens & Van Dijk, 2007). Thus, to capture short-term instability in market valuation, the annually volatility of MBV_{it} , $vol(MBV_{it})$, is assessed as the absolute year-to-year change in MBV, computed by the difference MBV in year t and its value in year $t-1$. This variable measures the magnitude of annual fluctuation in market valuation and captures short-run instability. This specification was adopted since, unlike relative or logarithmic measures, it keeps a well-defined observations for all firm-year, allowing the analysis to retain the full sample of firms. At last, ω_{it} is an error term.

The control variables were introduced to ensure that the estimated effects reflect the real consequences of the adoption of the EU Accounting Directive 2013/34/EU rather than unrelated firm attributes. Hereby, the variable $Log(assets)$, measured as the natural logarithm of total assets at year-end, is included to account the weight of the firm's size (Ruiz-Lamas &

Peón, 2022). Additionally, since more profitable firms are less likely to face conditions that lead to goodwill impairment, the effect of profitability was considered in the model through the variable *ROA*, being defined as Earnings Before Interest (EBI) over total assets (Chalmers et al., 2011). The variable *Leverage*, computed as total debt divided by total assets, captures the role of financial structure, as highly leveraged firms may avoid significant goodwill write-downs (Chalmers et al., 2011). Finally, the *Country* is controlled to capture institutional differences affecting enforcement and reporting practices (Glaum et al., 2018) and *Sector* is observed to account for industry-specific economic conditions that may impact goodwill and market-related measured (Rubio et al., 2021).

$$(1) MBV_{it} = \gamma_0 + \gamma_1 D_i + \gamma_2 T_t + \gamma_3 D_i T_t + \sum \beta_x Control_{it} + \omega_{it}$$

$$(2) vol(MBV_{it}) = \gamma_0 + \gamma_1 D_i + \gamma_2 T_t + \gamma_3 D_i T_t + \sum \beta_x Control_{it} + \omega_{it}$$

For both hypotheses, it is expected that the coefficient of interest (γ_3) will be negative (Ruiz-Lamas & Peón, 2022). This is because, a negative γ_3 suggests that companies with positive goodwill had a greater decline in market-to-book value (MBV), following the implementation of EU Accounting Directive 2013/34/EU than businesses without goodwill. Furthermore, $\gamma_3 < \gamma_2$ imply that the effects of the adoption of the European directive are more evident for companies who has goodwill than for those that do not.

Alin (2010) emphasises that multicollinearity diagnostics must be performed after the model has been conceptually established. The author defines multicollinearity as the presence of near-linear dependence between two or more explanatory variables, describing it as a data issue. The main consequence of multicollinearity is the inflation of the variances of coefficient estimates, leading to large standard error, unstable coefficient and unreliable inference. Therefore, with the aim of analysing the presence of multicollinearity among the previous explanatory variables, a correlation matrix was conducted for the model's baseline (Table I). The magnitudes of the pairwise correlations range from negligible to weak correlation, since the absolute magnitude lies between 0,01 and 0,36 (Schober et al., 2018). So, the correlation matrix demonstrates little evidence of significant multicollinearity among the explanatory variables. This suggests the empirical results are stable and reliable indicating that linear dependence between regressors is unlikely to affect the estimated regression coefficients.

Thereby, the sample was composed by listed enterprises from all twenty-seven Member States of the European Union, covering the period from 2012 until 2020. This timeframe was

selected since it captures the years immediately preceding and following the implementation of the EU Accounting Directive 2013/34/EU. As Member States were required to adopt the Directive into their national laws by that year, 2016 is regarded as the transition year (Gláserová et al., 2017). In addition, the emphasis on listed companies guarantees the availability of directly observable market values through stock exchange prices, unlike non-listed companies whose market valuation must be estimated and is, therefore, less precise.

TABLE I: CORRELATION MATRIX

	SectorID	CountryID	Leverage	ROA	Log(Assets)
SectorsID	1				
CountryID	0,11	1			
Leverage	-0,36	0,05	1		
ROA	0,18	0,01	-0,12	1	
Log(Assets)	-0,07	-0,02	0,35	0,06	1

Source: Author's own calculations based on Orbis data.

With the aim of comparing goodwill recognition methods and, as a result, comprehend how the EU Directive affects market value, the sample was further split into two distinct two subgroups: companies reporting goodwill in at least one year during the 2012-2020 (Treatment Group) and companies that never reported goodwill during the studied timescale (Control Group). The preliminary sample extracted from the ORBIS database included 9 391 enterprises, per year: 9 279 from the control group and 112 from the treatment group. This pronounced imbalance between the two subgroups in terms of size would rise comparability bias, since differences in gathered outcomes might reflect firm characteristics, not the accounting rule itself. As a result, to construct a more comparable sample, the Propensity Score Matching (PSM) was used.

According to Wang (2021), the Propensity Score Matching (PSM) is a statistical model widely used in observational studies to estimate causal effects when treatment assignment is not randomized. The author stated that one of the main advantages of this model is its relative simplicity when compared to other matching methodologies (Wang, 2021). Nevertheless, it does have certain limitations, such as the potential loss of sample size and an increased dependence on the correct specifications of the propensity score model. Its main objective is to minimize selection bias by creating comparable treatment and control groups on observed characteristics. Firm size – defined by the variable *Log(Assets)* – and *Leverage* were used as

matching covariates, as they are key firm-level characteristics that are expected to influence goodwill the probability of reporting goodwill subject to impairment or amortisation and, hence, the financial results. As for the remaining control variables, they were excluded from the matching procedure, since they are closely related to treatment itself than acting as pre-treatment firm characteristics. This is because the variables *Country* and *Sectors* reflect structural elements that directly influence the accounting treatment applied to goodwill (for example, the regulatory environment) and the variable *ROA* is affected by goodwill accounting treatment.

With this, PSM involves matching treated and control observations that show comparable probabilities of receiving the treatment based on covariates (the propensity score). Specifically, the average propensity score for treated firms is approximately 0,435, while the average propensity score for control firms is close to 0,007 (Table II). This indicates that enterprises reporting goodwill subjected to relevant goodwill treatment differ systematically from other firms in terms of pre-regulation characteristics. At the same time, as seen in Table II, the lowest and maximum propensity scores overlap between the two subgroups, proving that some non-treated firms exhibit characteristics similar to those of treated firms. Yet only a small portion can be considered comparable to treatment firms, since most control firms have extremely low propensity scores.

TABLE II: PROPENSITY SCORES - COMPARISON BETWEEN TREATMENT GROUP AND CONTROL GROUP

	Average	Stand. Dev.	Minimum	Maximum
<i>Treatment Group</i>	0,435	0,384	0,000	1
<i>Control Group</i>	0,007	0,033	0,000	1

Source: Author's own calculations based on Orbis data.

Finally, nearest-neighbour matching was used to create a control group that is similar to the treated firms based on the calculated propensity scores. According to Bai (2011), this approach pairs each firm in the high-expectation group with the firm in the low-expectation group with the closest propensity score. Hence, it is considered as the most straightforward and convenient, among other matching approaches (Bai, 2011). As a result, the final matched sample consists of 111 treated firms and 111 control firms that are like them before the introduction of the EU Accounting Directive, allowing for a more credible evaluation of the treatment impact (Table III). So, for *H1*, there are 1 998 observations and, for *H2*, there are

only 1 776 observations. This difference of 222 observations occurs because the volatility cannot be computed for the initial sample year (2012), as there is no previous information to calculate it.

TABLE III: MATCHING PROCEDURE - INITIAL AND FINAL SAMPLES

	Initial Sample	Final Sample
<i>Treatment Group</i>	112	111
<i>Control Group</i>	9 279	111
<i>Total</i>	9 391	222

Source: Author's own calculations based on Orbis data.

4. RESULTS & DISCUSSION

4.1. Descriptive Analysis

The present section provides a descriptive analysis of the data, with a focus on summarising the key characteristics of the variables included in this study. Descriptive analysis is considered a relevant first step for a research process, as it reviews the data's key characteristics and provides a basic overview of the sample (Fulk, 2023).

An overview of the sample's geographical and sectorial characteristics helps to contextualize the study and reveals possible concentration trends. Hence, an examination of the geographical distribution of enterprises within the sample reveals a highly uneven pattern (Table IV). This is because there is a strong concentration of companies in a limited number of nations, such as France (13,96%), Germany (12,16%) and Italy (11,26%). Spain, Finland, and Denmark all give 4,95%, while Greece contributes 4,50%, indicating substantially higher participation than other countries. In contrast, other nations are just weakly represented, including Estonia (0,91%), Hungary (0,90%), Slovakia (0,45%) and Slovenia (0,45%). Additionally, the industrial composition of the sample is also uneven (Table V), since the dataset is dominated by Banking, Insurance and Financial Services firms, accounting for 57,66% of total observations. Business Services is the second-largest sector (9.91%), followed by Industrial, Electric, and Electronic Machinery and Property Services, which represents for 4.50% of the sample. The remaining sectors stands for less than 3%, with several contributing less than 1%, showing a significant sectorial imbalance.

Above that, descriptive statistics summarize the main characteristics of the data, providing an initial overview of the variables and supporting the interpretation of subsequent analyses. Upon analysing Table VI, it is possible to recognise that there are pronounced structural differences between firms that recognize goodwill (Treatment Group) and firms that do not (Control Group), implying that goodwill recognition is associated with distinct economic characteristics. In specific, firms that declared goodwill are considered systematically larger than firms that do not, because the mean of $\log(\text{Assets})$ is larger in the first group than in the second (6.18% and 6,55%, respectively). Therefore, firms that recognise goodwill demonstrate higher operating profits, since the average Return on Assets within the treatment group is 12%, compared to 3% from the control groups. Additionally, the capital structure also differs significantly across the two groups. Firm with goodwill exhibit a mean

leverage ratio of 18%, which is substantially higher than the 3% observed for firm without goodwill, suggesting that goodwill-recognizing firms rely more heavily on debt financing.

TABLE IV: DESCRIPTIVE ANALYSIS - OBSERVATIONS BY COUNTRY

	Observations	%
<i>Observations by Country</i>		
Austria	4	1,80%
Belgium	7	3,15%
Bulgaria	5	2,25%
Croatia	5	2,25%
Czech Republic	3	1,35%
Denmark	11	4,95%
Estonia	2	0,90%
Faroe Islands (Denmark)	1	0,45%
Finland	11	4,95%
France	31	13,96%
Germany	27	12,16%
Greece	10	4,50%
Hungary	2	0,90%
Ireland	5	2,25%
Italy	25	11,26%
Lithuania	1	0,45%
Malta	3	1,35%
Netherlands	7	3,15%
Poland	22	9,90%
Portugal	5	2,25%
Romania	5	2,25%
Slovakia	1	0,45%
Slovenia	1	0,45%
Spain	11	4,95%
Sweden	17	7,66%
<i>Total</i>	222	100%

Source: Author's own calculations based on Orbis data.

TABLE V: DESCRIPTIVE ANALYSIS - OBSERVATIONS BY SECTORS

	Observations	%
<i>Observations by Sectors</i>		
Banking, Insurance & Financial Services	128	57,66%
Business Services	22	9,91%
Chemicals, Petroleum, Rubber & Plastic	4	1,80%
Communications	2	0,90%
Construction	2	0,90%
Industrial, Electric & Electronic Machinery	10	4,50%
Leather, Stone, Clay & Glass Products	1	0,45%
Metals & Metal Products	4	1,80%
Mining & Extraction	5	2,25%
Miscellaneous Manufacturing	1	0,45%
Property Services	10	4,50%
Retail	3	1,35%
Textiles & Clothing Manufacturing	6	2,70%
Transport Manufacturing	6	2,70%
Travel, Personal & Leisure	4	1,80%
Utilities	8	3,60%
Waste Management & Treatment	1	0,45%
Wholesale	4	1,80%
Wood, Furniture & Paper Manufacturing	1	0,45%
<i>Total</i>	<i>222</i>	<i>100%</i>

Source: Author's own calculations based on Orbis data.

The descriptive statistics shown in Table VII reveal little differences in business characteristics before and after the implementation of the Accounting Directive, implying that the regulatory change is associated with small shifts in the firm size, performance, capital structure and goodwill amount. Prior to the implementation of the EU Directive, companies had a higher mean Market Capitalisation of 7 864€, compared to 6 323€ before the adoption. Consequently, Market to Book ratio also improved, following the Directive (increased from 0,05% to 0,06%). Goodwill levels were substantially higher in the pre-Directive period, since the mean in that period was 461 582€, but in the following period was only 437 366€. This trend is aligned with the literature which stated that the impairment approach to recognise goodwill, associated with the period before the EU Directive implementation, leads to higher goodwill balances (Martínez et al., 2022). Additionally, firms appear to not report significant changes in their size and leverage levels, as their means pre-implementation were 6.8% and 7%, and post-implementation were 6.71% and 7%, respectively. Yet, their profitability reduced,

with a decrease in the mean of ROA from 14% to 11%, consistent with Churky and Chewing (2003)'s finding that the impairment model may reflect higher performance and growth expectations.

TABLE VI: DESCRIPTIVE ANALYSIS – SUMMARY STATISTICS OF MAIN VARIABLES
BETWEEN TREATMENT AND CONTROL GROUP

<i>Variables</i>	Market Capitalisation	MBV	Goodwill	Log(Assets)	ROA	Leverage
<i>Control Group</i>						
Mean	7 841€	0,01%	0€	6,18%	3%	3%
Standard Deviation	20 312€	0,03%	0€	1,70%	89%	8%
Minimum	0€	0	0€	0%	-1%	0%
Maximum	147 813€	0,33%	0€	9,02%	37%	68%
<i>Treatment Group</i>						
Mean	6 179€	0,01%	901 638€	6,55%	12%	7%
Standard Deviation	12 519€	0,02%	3 004 833€	2,20%	6%	12%
Minimum	0€	-0,10%	0€	0%	0%	0%
Maximum	88 410€	0,03%	27 500 000€	9,40%	43%	79%

Source: Author's own calculations based on Orbis data.

TABLE VII: DESCRIPTIVE ANALYSIS – SUMMARY STATISTICS OF MAIN VARIABLES PRE
AND POS DIRECTIVE'S IMPLEMENTATION

<i>Variables</i>	Market Capitalisation	MBV	Goodwill	Log(Assets)	ROA	Leverage
<i>Pre-Implementation</i>						
Mean	6 323€	0,05%	461 581€	6,18%	14%	7%
Standard Deviation	15 702€	0,12%	2 261 587€	1,70%	7%	12%
Minimum	0€	0%	0€	0%	-1%	0%
Maximum	118 298€	2,55%	275 000 000€	9,32%	37%	70%
<i>Post-Implementation</i>						
Mean	7 864€	0,06%	437 366€	6,71%	11%	7%
Standard Deviation	18 236€	0,12%	2 054 626€	1,43%	7%	15%
Minimum	0€	0%	0€	0%	0%	0%
Maximum	147 814€	11,3%	258 000 000€	9,40%	37%	70%

Source: Author's own calculations based on Orbis data.

4.2. Difference-in-Difference Analysis

As stated previously, a Difference-in-Differences (DiD) approach was used to estimate the treatment effect by comparing treated and control groups before and after the intervention. Prior to estimating the model, the underlying assumptions of the DiD model described by

Rothbard et al. (2014) were analysed, to ensure the validity of the approach. The first one, consistency, is met in the present study, since the treatment is clearly defined as the application of goodwill amortisation under Directive 2013/34/EU, comparing two distinct periods. The positivity assumption is satisfied, because treated and control firms exhibit overlapping characteristics, as it is possible to see in the minimum and maximum statistics of explaining variables (Table VII). Finally, the most essential assumption, the parallel trends, appears to be validated through Figure 1. It shows that, before the regulatory implementation, in 2016, the treatment and control groups' market-to-book values exhibit almost parallel patterns, as both displayed upward trajectories. The treatment group showed a higher slope than the control group's, but, until 2016, both groups show comparable directional shifts. In fact, both experienced a decline in the MBV in 2014, indicating a shared time effect. Following the intervention, while the control group saw their MBV stabilize, the treatment group experienced a sustained increase in MBV (with a significant decrease in 2018).

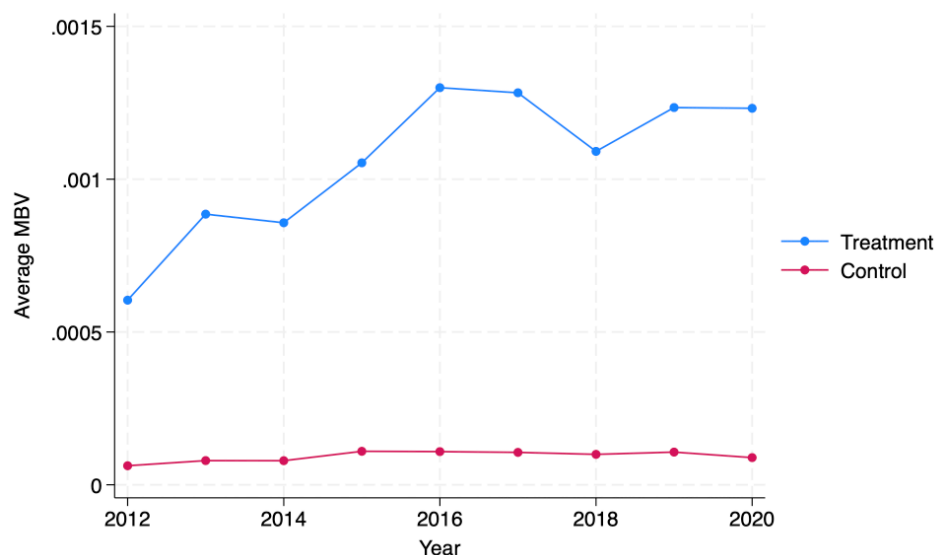


FIGURE 1: Evolution of Average MBV for Treated and Control Companies

The first hypothesis developed analyses whether the introduction of the EU Accounting Directive 2013/34/EU affects company's market book value. Table VIII exhibits the findings from *H1*. The regression model used is statistically significant ($p\text{-value} < 5\%$) and accounted for 18% of the variation in MBV ($R^2 = 0.18$). In line with the descriptive analysis, the positive and significant treatment dummy's (D_i) coefficient indicates that firms in the treatment group reported higher MBV, pointing to structural differences between the two groups, while the time dummy (T_t) is not statistically significant, which indicates that there is no common time effect

affecting all enterprise, underlying the parallel trends requirement of the DiD method. Hence, it is not possible to conclude that the requirement $\gamma_3 < \gamma_2$ is met.

With regard of the tested control variables, *logAssets* reveal a positive and significant association with MBV, suggesting that larger firms tend to be highly valued by the market, whereas *ROA* is negatively and significantly related, implying that investors place less weight on current profitability when forming valuation decisions, as they may believe that more profitable firms have lower growth expectations. The variables *Country* and *Sectors* are both significant, conforming the presence of cross-country and industry-specific valuation differences. In contrast, the control variable *Leverage* does not display a significant effect (p-value > 5%).

Most importantly, the Difference-in-Differences interaction term ($D_i T_t$) is positive and significant at a 5% level, evidencing that firms with reported goodwill experienced an increase in market-to-book value relative to the control firms after the Directive's implementation. The expectations outlined in *H1* were based on previous literature that indicated that reintroducing goodwill amortisation could diminish companies' MBV (Churky & Chewning, 2003; Hamberg et al., 2011; and Ruiz-Lamas & Peón, 2022). Despite the theoretical rationale supporting the hypothesis, the empirical analysis does not confirm the projected effect. This could be explained by the model's limited explanatory power, as it accounts for only 18% of the variation in MBV, suggesting that other unobserved factors contributed to firm's valuation.

The second hypothesis focuses at whether the implementation of the Accounting Directive reduced the absolute year-to-year shift in the MBV of enterprises. As shown in Table XI, despite a low R-squared of 4%, meaning that the model only explains 4% of MBV's annually variation, the model is statistically significant. Similar to the findings of *H1*, the time dummy (T_t) is not statistically significant, demonstrating the lack of a general post-adoption effect on valuation variability across firms and not satisfying, again, the $\gamma_3 < \gamma_2$ requirement. Also, the treatment dummy (D_i) is positive and significant, indicating that treated firms exhibit higher baseline variability in market-to-book values. Moreover, the control variables display limited explanatory power, since the only variables that are statistically significant are *Country* and *Sectors*. This forms the idea that unobserved firm-specific and market-wide factors are the primary cause of short-term changes in MBV rather than accounting-related features. The lack of statistical significance in the DiD interaction term ($D_i T_t$) indicates that there was no statistically significant change in the variability of enterprises between the two groups

following the implementation of the EU Accounting Directive 2013/34/EU. Consequently, due to the lack of significance, *H2* cannot be empirically confirmed.

TABLE VIII: DIFFERENCE-IN-DIFFERENCE ANALYSIS – RESULTS FROM HYPOTHESIS 1

	Coefficient	Robust Std. Err.	P-Value	95% Cof. Interval	
Di	0,072	0,008	0,000	0,057	0,086
Tt	-0,000	0,002	0,906	-0,004	0,004
DiTt	0,023	0,010	0,019	0,004	0,043
logAssets	0,004	0,001	0,000	0,002	0,006
ROA	-0,036	0,009	0,000	-0,054	-0,018
Leverage	-0,024	0,030	0,428	-0,083	0,035
Country	0,002	0,000	0,000	0,001	0,003
Sector	-0,002	0,000	0,000	-0,003	-0,002
Constant	-0,024	0,009	0,007	-0,042	-0,007
Model Statistics					
P-Value	0,00				
R ²	17,8%				

Source: Author's own calculations based on Orbis data.

TABLE IX: DIFFERENCE-IN-DIFFERENCE ANALYSIS – RESULTS FROM HYPOTHESIS 2

	Coefficient	Robust Std. Err.	P-Value	95% Cof. Interval	
Di	0,027	0,007	0,000	0,014	0,040
Tt	-0,000	0,000	0,469	-0,003	0,001
DiTt	0,005	0,008	0,531	-0,011	0,022
logAssets	-0,000	0,001	0,345	-0,003	0,001
ROA	-0,005	0,003	0,093	-0,013	0,000
Leverage	-0,002	0,017	0,428	-0,056	0,010
Country	0,000	0,000	0,049	0,000	0,000
Sector	-0,000	0,000	0,000	-0,000	0,000
Constant	0,001	0,009	0,265	-0,007	0,027
Model Statistics					
P-Value	0,00				
R ²	3,52%				

Source: Author's own calculations based on Orbis data.

Overall, following the implementation of Directive 2013/34/EU, the results demonstrate a relative increase in MBV of companies that reported goodwill. The positive DiD effect suggests that investors can perceive goodwill amortisation as improving credibility or lowering reporting uncertainty, which is opposite to the expectations. However, it is important to

consider that the model only explains 18% of the MBV's variation, meaning that other factors beyond the Directive's implementation may be contributing to this increase. In addition, the insignificant DiD interaction, for $H2$, suggests that the Directive did not affect the year-to-year variability of MBV.

4.3. Robustness Tests

With the aim of evaluating the primary findings' robustness, two more tests were carried out. The first one analyses if the results are affected by the sample selection criteria used in the present study, by performing the same regression model from the initial sample. In addition, to assess whether the results are dependent on the selected timeline, a different time horizon was selected. When taken as a whole, these additional tests seek to indorse that the results are stable and reliable across various samples and temporal parameters, while also demonstrating the reliability and robustness of the methodology used.

Hence, in the first additional test, the sample used includes all available observations prior to the application of the Propensity Score Matching technique. By re-estimating the same model on the original samples and comparing the results, this test assesses how sensitive the results are to sample selection and data refinement (Table X). For $H1$, the regression findings using the original and final samples are largely consistent. The DiD coefficient ($D_i T_t$) is positive and statistically significant in both specifications. Yet greater explanatory power is shown by the final sample's regression (as it has a higher R-squared value), suggesting that the refined sample improves the explanatory capacity of the model. With regards to $H2$, similar conclusion may be seen in the regression findings on the initial and final data, since, although both models are statistically significant (p-value < 1%) , the hypothesis cannot be empirically validated, as the coefficient $D_i T_t$ is not significant in either the initial sample or the final one.

As a second robustness test, the same analysis was carried out using a different time horizon to analyse if the outcomes are affected by the duration of the observation window. With this, instead of using a timescale from 2012 until 2020, a shorter period varying from 2014 – 2018 was used (Table XI), as it is closer to the Directive's implementation. The main differences between the two analyses, for the $H1$, arises in the interaction term $D_i T_t$, as the coefficient using the period 2014 – 2018 is not statistically significant. This implies that the effect of the implementation of the Accounting Directive on market valuation appears over time and only becomes observable when a longer post-treatment period is considered. In addition,

it is still not possible to make plausible conclusions as regard to the second hypothesis, since the coefficient D_iT_i is not significant using both timescales.

TABLE X: ROBUSTNESS TESTS – RESULTS USING INITIAL SAMPLE

	Coefficient	Robust Std. Err.	P-Value	95% Cof. Interval	
<i>For H1</i>					
Di	0,085	0,008	0,000	0,069	0,100
Tt	-0,000	0,000	0,115	-0,000	0,000
DiTt	0,026	0,010	0,008	0,007	0,005
logAssets	0,000	0,000	0,000	-0,000	0,000
ROA	0,000	0,000	0,379	-0000	0,000
Leverage	0,071	0,024	0,004	0,023	0,119
Country	0,000	0,000	0,010	0,000	0,000
Sector	-0,000	0,000	0,000	-0,000	-0,000
Constant	-0,000	0,000	0,553	-0,000	-0,000
<i>Model Statistics</i>					
P-Value	0,00				
R ²	12,72%				
<i>For H2</i>					
Di	0,032	0,007	0,000	0,018	0,040
Tt	0,000	0,000	0,089	-0,000	0,000
DiTt	0,004	0,008	0,663	-0,013	0,020
logAssets	0,001	0,000	0,003	0,000	0,000
ROA	0,004	0,000	0,069	0,000	0,000
Leverage	0,008	0,017	0,632	-0,025	0,042
Country	0,008	0,000	0,172	-0,000	0,000
Sector	-0,000	0,000	0,001	-0,000	-0,000
Constant	0,000	0,000	0,596	-0,000	0,000
<i>Model Statistics</i>					
P-Value	0,00				
R ²	2,81%				

Source: Author's own calculations based on Orbis data.

TABLE XI: ROBUSTNESS TESTS – RESULTS USING DIFFERENT TIMESCALE (2014 – 2018)

	Coefficient	Robust Std. Err.	P-Value	95% Cof. Interval	
For H1					
Di	0,100	0,012	0,000	0,076	0,125
Tt	-0,000	0,000	0,335	-0,000	0,000
DiTt	0,011	0,014	0,412	-0,015	0,038
logAssets	0,003	0,000	0,000	0,000	0,000
ROA	0,000	0,000	0,829	-0,000	0,000
Leverage	0,055	0,035	0,118	-0,014	0,125
Country	0,000	0,000	0,098	0,000	-0,000
Sector	-0,000	0,000	0,000	-0,000	-0,000
Constant	0,000	0,000	0,965	-0,000	0,000
Model Statistics					
P-Value	0,00				
R ²	20,26%				
For H2					
Di	0,034	0,009	0,000	0,016	0,053
Tt	0,000	0,000	0,184	-0,000	0,000
DiTt	0,007	0,013	0,615	-0,019	0,032
logAssets	0,000	0,000	0,062	-0,000	0,000
ROA	0,000	0,000	0,312	-0,000	0,000
Leverage	-0,002	0,025	0,943	-0,052	0,048
Country	0,000	0,000	0,612	-0,000	0,000
Sector	-0,000	0,000	0,019	-0,000	-0,000
Constant	0,000	0,000	0,465	-0,000	0,000
Model Statistics					
P-Value	0,00				
R ²	3,65%				

Source: Author's own calculations based on Orbis data.

	Coefficient	Robust Std. Err.	P-Value	95% Cof. Interval	
<i>For H1</i>					
Di	0.100	0,012	0.000	0,076	0,125
Tt	-0.000	0,000	0.335	-0,000	0,000
DiTt	0.011	0,014	0.412	-0,015	0,038
logAssets	0.000	0,000	0.000	0,002	0,000
ROA	0.000	0,000	0.829	-0,007	0,000
Leverage	0.055	0,035	0.118	-0,014	0,125
Country	0.000	0,000	0.098	0,000	-0,000
Sector	-0.000	0,000	0.000	-0,000	-0,000
Constant	0.000	0,000	0.965	-0,000	0,000
<i>Model Statistics</i>					
P-Value	0.00				
R ²	20.26%				
<i>For H2</i>					
Di	0,034	0,009	0.000	0,016	0,053
Tt	0,001	0,000	0.184	-0,009	0,004
DiTt	0,007	0,013	0.615	-0,019	0,032
logAssets	0,001	0,000	0.062	-0,000	0,000
ROA	0,001	0,000	0.312	-0,000	0,000
Leverage	-0.002	0,025	0.943	-0,052	0,048
Country	0,003	0,000	0.612	-0,000	0,000
Sector	-0,003	0,000	0.019	-0,000	-0,000
Constant	0,001	0,000	0.465	-0,000	0,000
<i>Model Statistics</i>					
P-Value	0.00				
R ²	3.65%				

Thus, the stability and validity of the main findings is generally supported by the robustness tests performed. For *H1*, results are consistent when the model is re-estimated using the original (pre-matching) sample, since the DiD coefficient is still positive and significant. The lack of a substantial interaction term in any of the specifications for *H2* demonstrates the legislation had no material impact on the MBV's variations.

5. CONCLUSION

This dissertation focuses on the different accounting treatments of goodwill under IFRS and the EU Accounting Directive 2013/34/EU. While the IASB framework – established through IFRS 3, IAS 36 and IAS 38 – adopts an impairment-only approach to goodwill (Martínez & Rubio, 2018), the EU Accounting Directive requires the amortisation of goodwill over its useful life or over a period between five and ten years when it cannot be estimated, for non-listed companies or listed companies that, voluntary, decided to not adopt IFRS (European Parliament & Council of the European Union, 2013). Although the Directive implemented in 2013 aims to reduce administrative burdens and respect proportionality (particularly for SMEs), the coexistence of these two models may jeopardize the comparability and consistency of financial reporting, impacting the broader objective of international accounting harmonisation (Ruiz-Lamas & Peón, 2023).

As a result, the comparison between IFRS and the EU Directive ultimately centres on the ongoing debate surrounding amortisation and impairment in goodwill accounting. The impairment approach is supported by the idea that it better reflects the underlying economic characteristics of businesses (Martínez & Rubio, 2018) and enhances the decision-usefulness of financial statements, as this method provides new and valuable information (Li et al., 2010). Yet, it has been criticised for allowing significant managerial discretion by letting manager to identify cash-generating units and estimate the recoverable amount, increasing the risk of earning management (Ruiz-Lamas & Peón, 2022), delaying loss recognition (IFRS, 2020), and creating shielding effects (Sander, 2024). Empirical evidence also suggests that the model may lead to inflated goodwill balances and improved accounting ratios due to limited impairment recognition (Martínez et al., 2022). In contrast, the amortisation model is considered simpler, less costly and potentially more effective in enhancing managerial accountability (IFRS, 2020). Nevertheless, it has been disregarded for depending on arbitrary estimation for useful life and for offering no informational value (Chalmers et al., 2011). Above that, Churky and Chewing (2003) implied that the impairment model may actually represent increased expectations for performance and growth, which would increase the firm's market value, while goodwill amortisation is considered irrelevant to market valuation, as it does not generate significant investor reactions (Li et al., 2010).

With this, this study turns to the economic effects of these varied accounting procedures. Specifically, it looks at the effects of goodwill amortisation being reinstated in the EU and

evaluates its impact on MBV. To address this objective, two hypotheses were developed: the first investigates whether the market value of businesses reporting goodwill is impacted by the reinstatement of amortisation, while the second looks at whether it improves valuation stability.

Hence, to identify the effects of the regulatory change, a Difference-in-Differences (DiD) model is employed, comparing EU listed firms that reported goodwill with those that did not, with a timescale from 2012 to 2020. The methodological framework was built based on Ruiz-Lamas and Peón (2022)'s previous work, which analyse the reintroduction of amortisation in Spain, providing a reference for assessing the Directive's broader impact at the European level. To mitigate selection bias, Propensity Score Matching (PSM) based on firm size and leverage is applied, resulting in a balanced sample of 222 firms, of which 111 reported goodwill and 111 did not.

The empirical findings indicate that firms that recognize goodwill are structurally different from those that do not, indicating that goodwill recognition is linked to specific economic characteristics. Goodwill-recognizing firms are consistently larger, more profitable and more leveraged than non-recognizing firms. Above that, it was possible to conclude that the adoption of Directive 2013/34/EU is linked to a relative increase in the market-to-book ratio of goodwill-recognizing firms, which is not what was predicted based on earlier research. This suggests that investors may view the goodwill amortisation as a mechanism that increases confidence or lowers uncertainty. This finding may challenge the argument that the impairment-only model necessarily provides superior value-relevant information. Above that, the Directive does not seem to have had a big impact on annual valuation volatility, since the volatility-related coefficients are not statistically significant, and the model's overall explanatory power is still constrained. Therefore, it not plausible to conclude about the volatility of MBV. These findings are further supported by robustness tests, since when different sample specifications and shorter time horizons are used, the conclusion gathered remain the same, increasing confidence in the validity of the study's conclusions regarding the economic effects of the Directive.

Overall, this dissertation contributes to the existing literature by providing empirical evidence on the effects of the reintroduction of goodwill amortisation on firm's market value. By comparing companies applying IFRS and those following the EU Accounting Directive across multiple countries, it offers broader and more generalizable insights than prior single-country research – for example, Ruiz-Lamas and Peón (2023), Martínez and Rubio (2018) and Chalmers et al. (2011), contributing to the ongoing debate on the appropriate subsequent

measurement of goodwill. Nevertheless, the present study presents some limitations. As the study relies on causal inference, the associations made may not fully capture causal relationships (Gow et al., 2016). Specially, the indicator MBV are influenced by various external factors beyond goodwill accounting treatment. Above that, the data availability is also a constraint of this dissertation, as it included a limited number of enterprises.

Future research should examine through a case study, following the reintroduction of goodwill amortisation, the behaviour of companies that voluntarily apply IFRS and compare them with those that adopt the amortisation approach, to assess differences in financial reporting outcomes and market valuation effects. It would also be interesting to extend the post-implementation period used in the present study to assess whether the observed effects on market valuation persist over time. In particular, including the COVID-19 period (2020 – 2022) may provide additional insight, as it would allow to evaluate whether goodwill accounting regimes exhibit distinct behaviour during times of economic instability.

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APPENDICES

APPENDIX A: Variables Definition

	Definition
<i>Market Book Value - MBV_{it}</i>	Market Value of Equity / Book Value of Equity
<i>Volatility of MBV</i> <i>Vol(MBV_{it})</i>	$MBV_t - MBV_{t-1}$
<i>Treatment Variable - D_i</i>	Dummy Variable that equals 1 if the company reported goodwill in, at least, one year during 2012 – 2020 and 0 otherwise
<i>Time Variable - T_t</i>	Dummy Variable that equals 1 if the year is after the directive implementation (2016) and 0 otherwise
<i>Log(Assets)</i>	Natural Logarithm of Total Assets at year-end
<i>Return on Assets - ROA</i>	Earnings Before Interest (EBI) / Total Assets
<i>Leverage</i>	Total Debt / Total Assets
<i>Country</i>	EU Country
<i>Sector</i>	Sector Classification