



Deferred tax treatment in agricultural SMEs: An approach based on international accounting standards

Tratamiento del impuesto diferido en PYMES del sector agrícola: una aproximación desde la normativa contable internacional

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Abstract

Deferred tax was an accounting category that significantly impacted the financial structure of companies, serving as a mechanism for controlling income tax. Improper treatment (particularly under Section 29 of the IFRS for SMEs) could distort financial information and expose organizations to legal sanctions. The purpose of this study was to analyze how commercial companies in the agricultural sector in Colombia managed deferred taxes, identifying the characteristics of these companies, the events that gave rise to deferred taxes in this sector, and the degree of preparation of the companies to control and record them by the International Financial Reporting Standards for SMEs and the tax regulations in force in Colombia. The methodology applied was a systematic literature review, structured into six stages: formulation of research questions, selection of sources, identification of relevant documents, quality assessment, data extraction, and final analysis. Among the most relevant findings was the complexity of measuring income tax, a recurring challenge in several Latin American countries. In this context, tax reconciliation played a crucial role, alongside the principles of tax equity and progressivity, by providing a solid foundation for the proper recognition and accounting of deferred tax assets and liabilities. It was concluded that companies in the agricultural sector needed to continuously review and adjust their accounting policies, as the appropriate treatment of deferred tax not only ensured regulatory compliance but also enhanced the transparency and reliability of financial information.

Keywords: International financial reporting standards (IFRS); tax reconciliation; tax accounting; systematic literature review; tax provisions; accounting information; financial reporting quality.

Resumen

El impuesto diferido es una categoría contable que incide significativamente en la estructura financiera de las empresas, al actuar como un mecanismo para el control del impuesto sobre la renta. Su incorrecto tratamiento, especialmente en el marco de la Sección 29 de las NIIF para las PYMES, puede generar distorsiones en la información financiera y exponer a las organizaciones a sanciones legales. Este estudio tuvo como objetivo analizar cómo las empresas comerciales del sector agrícola en Colombia manejan el impuesto diferido, identificando las características de estas empresas, los hechos que originan el impuesto diferido en este sector y el grado de preparación de las empresas para realizar su control y registro de acuerdo con las Normas Internacionales de Información Financiera para las PYMES y la normativa fiscal vigente en Colombia. La metodología empleada consistió en una revisión sistemática de literatura, estructurada en seis etapas: formulación de preguntas de investigación, selección de fuentes, identificación de documentos relevantes, evaluación de calidad, extracción de datos y análisis final. Entre los hallazgos más relevantes se destaca la complejidad en la medición del impuesto a las ganancias, una dificultad común en diversos países latinoamericanos. En este contexto, la conciliación fiscal adquiere un papel clave, junto con los principios de equidad y progresividad tributaria, al proporcionar una base sólida para el reconocimiento y registro del impuesto diferido. Se concluye que las empresas del sector agrícola deben mantener una revisión y ajuste continuo de sus políticas contables, ya que el tratamiento adecuado del impuesto diferido no solo garantiza el cumplimiento normativo, sino que también fortalece la transparencia y confiabilidad de la información financiera.

Palabras clave: Normas internacionales de información financiera (NIIF); conciliación fiscal; contabilidad tributaria; revisión sistemática de literatura; provisión fiscal; información contable; medición financiera.

INTRODUCTION

Since the enactment of Law 1314 of 2009, Colombia has undertaken a process of convergence towards international financial reporting standards, resulting in substantial transformations in the accounting systems of companies. This regulation established the legal framework for the mandatory adoption of the International Financial Reporting Standards (IFRS), a requirement that implied adapting local accounting practices to global technical criteria regarding the recognition, measurement, presentation, and disclosure of financial information (*Congreso de la República de Colombia, 2009*).

One of the most sensitive aspects within this transition has been the treatment of deferred tax. Although this concept already existed under national accounting regulations, its application under Section 29 of the IFRS for SMEs requires a more rigorous technical interpretation, which has generated significant challenges in accounting practice. This situation has had particularly noticeable effects in sectors such as agriculture, where many SMEs do not have solid accounting structures or clarity on the tax and financial implications of this type of tax.

In this context, the purpose of this research was to analyze how commercial companies in the agricultural sector in Colombia manage deferred tax, identifying the characteristics of these companies, the events that give rise to deferred tax in this sector and the degree of preparation of the companies to control and record it in accordance with the International Financial Reporting Standards for SMEs and the tax regulations in force in Colombia. Through a systematic review of the literature, we aim to contribute to the technical and regulatory understanding of this concept, providing insights to enhance its practical application in accordance with international standards.

This paper is organized into five sections. First, it presents the state of the art, compiling and analyzing previous studies on deferred tax and its application in similar contexts. Second, the methodology used for the systematic review is described. The third section presents the results obtained, followed by a critical discussion of the challenges and current practices. Finally, conclusions and recommendations are presented for companies in the agricultural sector, aiming to facilitate more accurate accounting management and alignment with current regulations.

LITERATURE REVIEW

Importance of deferred tax calculation in business enterprises

The calculation of deferred tax is fundamental for commercial companies, as it significantly contributes to understanding their actual financial situation and facilitates informed decision-making in the development of their economic activities. The correct determination of this tax is crucial, since it involves asset and liability items that present complex particularities and must be treated with attention

(Castaño & Cataño, 2021). The difficulty lies in the fact that, in order to carry out this calculation properly, various elements must be considered, such as temporary differences between accounting and tax effects, which can have a direct impact on the future tax burden.

Regulatory framework applicable to deferred taxes

The analysis of deferred taxes must be performed within the current legal framework, which has been structured through various laws and decrees issued by the Congress of the Republic and the President of the Republic. These documents regulate both the International Financial Reporting Standards and the national tax regulations. In particular, Law 1314 of 2009, which regulates accounting standards in Colombia, establishes a technical framework that companies must follow to ensure the correct presentation of their financial statements (Congreso de la República de Colombia, 2009). This law has been a pillar in the convergence process towards IFRS, establishing that companies must prepare their accounting reports by these international standards, which include the treatment of deferred tax.

Decree 3022 of 2013, which regulates IFRS for SMEs, also specifically addresses the treatment of deferred tax in its section 29, "Income Tax". This decree mandates the recording of deferred tax and requires companies to adhere to international guidelines for calculating and presenting this tax in their financial statements (Ministerio de Comercio, Industria y Turismo, 2013). Despite the obligation, many companies still struggle to apply these principles correctly, which may result in adverse tax consequences.

Deferred tax and its relation to financial information

Deferred tax is a key accounting category that aims to ensure a fair presentation of a company's financial position while adhering to the principle of prudence in accounting. This tax is directly related to temporary differences between tax income and expenses and those recognized in the financial statements. While the objective of financial reporting is to reflect the entity's economic situation fairly, taxation aims to contribute to the fulfillment of tax obligations and the financing of the state budget (Wasan & Mulchandani, 2019).

It is essential to recognize that the objectives of taxation and financial reporting differ. While accounting reporting seeks to provide an accurate and faithful representation for external users, taxation is geared towards raising funds for the government. This difference can lead to distortions if the timing differences between the two systems are not adequately managed. In this sense, the proper management of deferred tax is crucial to avoid overstating financial results and to ensure that companies do not face tax penalties for misinterpreting their tax position.

The role of the public accountant in agricultural sector companies

The agricultural sector, a pillar of the national economy in many countries, including Colombia, faces unique accounting challenges, particularly due to the seasonal and often volatile nature of its revenues. In this context, the public accountant plays a crucial role in managing financial information, ensuring that the reports presented to partners or shareholders are accurate, complete, and free from material errors (Castaño & Cataño, 2021). In addition, the accountant must ensure that the accounting treatment of deferred tax is carried out in accordance with international regulations, thus avoiding distortions in the financial results that may compromise the transparency and reliability of the information.

Proper tax planning and effective deferred tax management are crucial tools for minimizing the tax burden and enhancing the financial health of agricultural companies. The implementation of a comprehensive tax planning scheme not only allows companies to minimize their tax base but also facilitates the management of the tax implications of temporary differences (Castaño & Cataño, 2021). In this sense, companies should be aware of the importance of having well-structured accounting policies that not only comply with tax requirements but also enhance their financial transparency and accountability.

METHODOLOGY

The systematic literature review enables the identification of thematic advances and the generation of structured and validated knowledge from previous studies (Cooper & Schindler, 2008). This article analyzes the treatment of deferred taxes in companies of the Colombian agricultural sector, integrating the compilation, evaluation, and synthesis of relevant research.

Priority was given to identifying recent sources and theoretical and methodological frameworks on deferred tax under IFRS for SMEs, particularly Section 29 (International Accounting Standards Board, 2015), which focuses on its accounting application in agricultural companies.



Figure 1. Systematic literature review mapping process
Source: adapted from researcher's bulletin figure No.18 (Universidad de Sevilla, 2020)

This process included six stages: (1) formulation of research questions, (2) document search, (3) selection by title and abstract, (4) quality assessment, (5) data extraction, and (6) analysis.

Research questions

Q1: What administrative, financial, and accounting characteristics affect the calculation and recording of deferred tax in Colombian agricultural companies?

Q2: What economic events give rise to deferred tax in this sector, according to current regulations?

Q3: How prepared are these companies to apply the corresponding accounting and tax regulations?.

Sources and search

The search was based on key and related terms, as detailed in **Table 1**:

Table 1.

Key and related terms

Key terms	Related
Enterprise	Small to medium-sized enterprises
Deferred tax	Income tax, Deferred tax assets, Deferred tax liability, Temporary differences
Meat products trade	Accounting record, Accounting control

Source: Author elaboration

Academic databases were consulted (**Table 2**)

Table 2.

Database used

Main term	Database
Enterprise, Deferred tax, Agricultural sector	Scopus, ScienceDirect, DOAJ

Source: Author elaboration

Table 3 presents the resulting search string of the main terms, along with their related terms.

*Table 3.**Search string applied*

Main term	Search string
Enterprise, Deferred tax, Agricultural sector	("Enterprise" OR "Small to medium-sized enterprises") AND ("Deferred tax" OR "Income tax" OR "Deferred tax assets" OR "Deferred tax liability" OR "Temporary differences" OR "accounting policies") AND ("agricultural sector" OR "Accounting record" OR "Accounting control" OR "agricultural accounting" OR "modern management")

Source: Author elaboration

Selection and processing of results

Inclusion Criteria

Inclusion criteria (Table 4) considered thematic relevance, language, type of document, and year of publication (2019-2023):

*Table 4.**Inclusion criteria*

Criterio	Valor asignado
Año	2019–2023
Tipo de documento	Artículos, libros, capítulos
Sub-área	Negocios, administración, contabilidad
Lenguaje	Español, inglés

Source: Author elaboration

Exclusion criteria

Studies without thematic relevance, lacking a straightforward research question, and without a methodological design, or outside the Colombian agricultural context. A total of 183 papers were identified. After applying the exclusion criteria, 77 were passed to quality evaluation.

Quality assessment

Quality assessment ensures that the selected studies are relevant and methodologically sound (Booth et al., 2016). The design, sample, and analytical techniques of each paper were assessed, excluding those with a risk of bias or low rigor (Liberati et al., 2009; Petticrew & Roberts, 2008). (See Table 5)

*Table 5.**Search, selection, and quality assessment process*

Main term	Results	Duplicates	Preselection	Final evaluation	Database
Enterprise, Deferred tax, Meat products trade	183	0	77	53	Scopus, ScienceDirect, DOAJ

Source: Author elaboration

Data extraction

Data extraction was based on predefined templates, ensuring consistency and relevance (Liberati et al., 2009; Booth et al., 2016). Only information relevant to the research questions and key variables of the study was extracted.

Categories of analysis and research questions

- Administrative, financial, and accounting characteristics: analyze how the organizational structure influences the deferred tax.
- Generating economic events: identify transactions (revaluations, depreciation) that give rise to temporary differences.
- Degree of preparation: evaluates regulatory compliance and technical capacity for the recording and control of deferred taxes.

Summary of results

The synthesis organizes and presents the findings in terms of the research questions (Liberati et al., 2009; Booth et al., 2016). This structuring improves the understanding of the phenomenon by identifying patterns and gaps in knowledge. According to Fuentealba-Torres, et al. (2021), this process ensures representativeness and facilitates replicability.

The review was organized into three key categories, allowing us to respond effectively to the set objectives. In addition, the analysis was based on the critical review theory (Pope et al., 2007), which ensures coherence and interpretability of the results.

RESULTS*Characteristics of commercial enterprises in the agricultural sector*

To begin with, it is worth noting that the agricultural sector has distinct characteristics that entail specific risks and challenges. For example, agricultural producers incur high costs to acquire the necessary inputs for their activity, but the market price of the resulting product is relatively low. Additionally, agricultural product marketers often have limited capital, which necessitates efficient management to achieve profitability and sustainability. It is also worth noting

that agricultural product storage warehouses generate substantial profits for their owners throughout the production and distribution process.

New conceptual approaches to developing social capital indicators in the agricultural sector, particularly at the meso and micro levels, are emerging that take into account the specific characteristics of the industry. These approaches are determined by various factors that influence their formation, and the results derived from their use. In turn, they reflect the main components of social capital: innovation (through norms), relational social capital (based on trust), and structural social capital (related to social networks). (Prokopchuk & Gorbachova, 2018)

The late eighteenth and early nineteenth centuries witnessed increasing competition for capital among joint stock companies, fueled by and in turn fueling the Industrial Revolution (Hógartaigh, 2020). Businesses in the agricultural sector are often family-owned and have limited resources, placing personal capital at risk. Therefore, partnerships are considered to minimize this risk without compromising the social function of the business.

The government has offered favorable conditions, including tax advantages and low interest rates, to stimulate productivity. For this reason, most manufacturing companies have used more debt financing due to low interest rates (Soheilrad et al., 2017). In the case of the agricultural sector, the government has implemented additional tax incentives, including income tax exemptions and VAT relief, to encourage investment and enhance competitiveness.

Additionally, tax deductions have been established for companies that invest in agricultural technology and innovation, which contributes to improved productivity in agricultural production (Ministerio de Agricultura y Desarrollo Rural, 2022). However, despite these tax advantages, the inefficient use of subsidies and their inadequate targeting remain significant barriers to the sector's development. Often, these subsidies fail to reach the smallest producers or those who need them most, thereby limiting their ability to invest and grow. This hinders the evolution of the agricultural sector, as the subsidies do not translate into a tangible impact on its productivity and competitiveness.

Thus, the main production inputs in the modern economy have evolved away from the traditional reliance on property, plant, and equipment to focus on intangible assets such as brands, knowledge, and innovative technologies. This transformation is relevant because information about intangible assets has become crucial for current and potential capital providers, who base their resource allocation decisions on the perception and value of such assets (Grüber, 2014). In this context, financial analysts have started to pay more attention to these intangibles, given their significant impact on a company's value and growth prospects. (Moro Visconti, 2019).

For agricultural companies, this phenomenon is not foreign; the creation of strong brands and technological innovation has become key differentiation strategies in the market, improving not only competitiveness but also the trust and perceived

value of their products. According to the [Munteanu report \(2024\)](#), agricultural brands that convey quality and trust generate greater consumer loyalty, which in turn contributes to significant added value in local and international markets.

[Mukoviz et al. \(2022\)](#) state that transaction costs are an institutional economic category that influences decisions and relationships within the agricultural value chain. Thus, transaction costs focus on how these costs affect the activities of agricultural producers and their influence on the growth of parallel economic processes within agribusinesses.

It was possible to identify the most successful clusters and companies in the agricultural sector. Based on the results obtained, it can be concluded that the future development of the agricultural sector can be predicted by analyzing the performance of 37 companies ([Horak & Suler, 2021](#)). These results suggest that the key factors for success in this sector include the adoption of innovative technologies, efficient resource management, and strengthening business networks. Furthermore, the analyses indicate that companies that have successfully maintained a differentiation strategy, such as establishing strong brands and adopting sustainable practices, are more likely to grow and prosper in increasingly competitive markets.

The presence of regional clusters has also proven to be a determining factor, as it allows companies to access shared knowledge and economies of scale that optimize production and distribution. These findings provide a solid basis for public policies and investors to focus their efforts on areas with greater potential for growth and profitability, thereby strengthening the competitiveness of the agricultural sector at both national and international levels.

A comparative review of annual business reports revealed that, over time, companies that reported on expected development, environmental protection, and research and development did not increase the quality or quantity of information disclosed; that is, companies consistently disclosed the same data in the listed categories from 2015 to 2019. Additionally, it was found that four companies failed to disclose information on expected development, environmental protection, or research and development in their annual business reports. ([Srebro et al., 2021](#))

It can be considered that companies in the agricultural sector, by their very nature, must manage good manufacturing practices and contribute to the protection of the environment, since natural resources are exhaustible and reforestation and the use of renewable energy sources, among others, are a necessity and an obligation.

Events giving rise to deferred taxes in commercial companies in the agricultural sector

Companies in the agricultural sector are called upon to constantly review, update and adjust their accounting policies (standard + procedure) since they must be in line with the changes in the tax framework in force in the country, otherwise they

are exposed to possible non-compliance that may result in penalties and onerous fines in the short, medium and/or long term.

The tax authority issues normative-legal bases of taxes and fees. In this case, the taxpayer shall cite the procedure for calculating, submitting, and paying the established taxes, as well as the relevant regulatory legal documents necessary for their inclusion in the account. (Dusmuratov & Boltaev, 2021)

The challenges identified in the accounting and tax area are numerous, as the issuance of Decree 1314 of 2009 has led to a convergence process that has compelled all taxpayers to develop new strategies to adapt to the changes and manage their financial information and assurance systems in accordance with international standards.

A fundamental aspect is tax education and tax culture, since they play a key role in tax compliance and the regulation of tax systems. According to Torgler (2007), tax culture has a direct impact on taxpayers' willingness to comply with their tax obligations. Positive perceptions of tax fairness, combined with a clear understanding of the social benefits derived from paying taxes, encourage citizens to participate voluntarily in the tax system. Furthermore, the author suggests that educational systems that promote these values can significantly reduce tax evasion levels.

In this sense, tax education not only provides the necessary knowledge about tax obligations but also contributes to the creation of a culture of accountability that reinforces voluntary compliance. Corruption, one of the most persistent problems in the tax systems of many countries, can also be mitigated by transparency in education and by policies that promote accountability (Alm & Torgler, 2006). A tax system perceived as fair and transparent tends to foster greater social acceptance, thereby reducing inappropriate and evasive behavior by taxpayers.

According to Hillman (2004) and Aghion (2016), governments that invest in tax education and public awareness of the negative effects of tax evasion and corruption achieve greater effectiveness in tax collection and a more equitable distribution of public resources. Thus, it is established that, through the use of strategic instruments such as educational campaigns and transparency measures, it is possible to reduce tax evasion gaps and corruption behaviors that negatively affect the tax system.

Another aspect to mention is high costs; when a company incurs high costs, it generates lower profits and pays lower taxes (Teplická & Seňová, 2020). Undoubtedly, within the agricultural sector, the FIFO method is one of the most widely used inventory valuation systems, as this industry primarily works with perishable products that require efficient rotation to avoid losses. Its proper application depends on the correct management of turnover, which can have a direct impact on the results for the period and on the company's financial indicators.

Thus, the leading indicators used to evaluate the financial stability of an agricultural enterprise are the availability of net working capital, the autonomy coefficient, the maneuverability coefficient, the ratio of own and borrowed funds,

the net working capital provision coefficient, the financing index, the financial stability coefficient (Krasnostanova et al., 2022). It is worth noting that companies in the agricultural sector can be evaluated financially, accounting-wise, and tax-wise to assess their long-term sustainability. It is expected that their dynamics and behavior have affinity and coherence with the payment of their taxes, levies, and rates.

Taxpayers in the agricultural sector must make an important effort to organize their financial and tax information, since accounting is an integral system, which requires that the figures be reasonable, coherent and supported as required by law; likewise, success in business decision making and tax compliance lies in the quality of the figures and indicators that are handled, especially those that measure the profitability of the business.

Chebeň et al. (2021) found a significant rate of dependence between the variables evaluated in all groups during the period reviewed. Specifically, they highlighted the strong relationship between total income and taxable income, as well as between total income and corporate income tax. These relationships are fundamental to determining the accounting result in double-entry accounting, which accurately reflects the economic flows of an entity based on its income and expenses.

On the other hand, the work of Nerudova and Krchniva (2016) concluded that the proportion of profitability explained by the factors defined in the Draft Directive on a common consolidated corporate tax base can vary significantly across different economic sectors. In particular, it was observed that the difference between sectors can exceed 30%, and in some agricultural subsectors, the difference can amount to as much as 40%. This finding underscores the importance of knowing the specific figures for each sector, particularly in the agricultural field, as they directly impact the way taxes are calculated and managed in this sector.

Addressing the issue of accounting and tax bases is a priority when considering the international accounting standards horizon, specifically the scope of IAS 12, commonly referred to as Income Tax. Determining the accounting and tax bases of assets and liabilities, making the comparison obtaining the difference and qualifying it in the degree of temporary or definitive (i.e. that does not generate deferred tax) and calculating the deferred tax based on the temporary difference and the tax rate applicable in the year of reversal seems something simple. However, in truth, it is not, especially if the work is done profoundly and truthfully with sufficient disclosures. (García Restrepo, 2017)

Taxable or accrued accounting income (income from fair value measurement of assets or liabilities, etc.) and taxable income (related, for example, to income from cash and credit sales) determine that not all accounting income recorded by the application of IFRS meets the tax definition of income. Traditionally, from a tax perspective, accounting income has been considered either taxable or exempt income (Paredes & Deás Albuérne, 2019). This means that commercial companies in the agricultural sector must understand that the calculation of deferred tax involves

an orderly and systematic process that must be carefully followed to determine accounting and taxable income reasonably and objectively. Furthermore, this process must be carried out by accounting principles and considering the potential impact of the international standard on it.

Income tax is a significant source of government revenue that is influenced by numerous economic, social, and political factors, the degree of influence of which varies depending on the intensity of the relationship between these variables (Mihóková et al., 2015). As for Colombia, it can be said that this tax is one of the central pillars of the country's fiscal and tax structure, as it represents a significant source of income dedicated to the country's social, cultural, and economic development.

Among the deductions used to establish the net taxable income in Colombia is depreciation, a variable that plays a leading role in terms of deferred tax. Therefore, each company must clearly and concisely stipulate its policies, processes, and methods for measuring, recognizing, and disclosing depreciation.

The use of the method proposed by Filatov (2014) aims to form a depreciation policy that reduces uncertainty in decision-making related to the development of business organizations. In this context, the article focuses on identifying the optimal strategies for calculating depreciation by comparative analysis of traditional linear methods and the methods proposed by the author. In particular, a new approach to calculating the variation in depreciation policy is introduced, based on the use of linear, step, and correction coefficients. This method enables companies to adjust the depreciation fund reasonably in response to market conditions, ensuring a more appropriate distribution of costs in line with the economic situation.

On the other hand, in terms of policy implications for transition economies, it is worth noting that economic growth should be encouraged while simultaneously improving the efficiency of tax agencies. Lyulyov et al. (2021) note that a key measure in these types of economies is to reform the tax system, with a focus on increasing the share of indirect taxes. In addition, studies suggest that an increase in the shadow economy can diminish development expectations in transition economies. For this reason, the government must work to rebuild taxpayers' confidence in the tax system, which has historically been perceived as inequitable, thus encouraging tax evasion practices.

Degree of preparation for the control and recording of deferred tax assets and liabilities

First of all, it is necessary to consider that there are methods and indicators to determine the value of a company such as EVA and EBITDA, where the current financial situation of the company and the capacity to generate future flows are taken into account, it is also important to take into account the recognition and positioning in the market.

To estimate the value of a company's assets, a list of assets provided to the appraiser by the accounting records is generally used, as all of a company's assets and liabilities must be recorded in these records. To accurately determine a company's value, it is essential to utilize reliable information about the company's financial situation, as disclosed in its financial records. It is worth noting that accounting tools are insufficient to disclose all the economic benefits and financial liabilities of an enterprise. Accounting standards do not regulate the reflection of individual facts of an enterprise's economic activities in accounting. That is why it is advisable to consider informal assets and liabilities to determine the value of an enterprise more reliably (Shchepotiev & Fedorova, 2022).

In such an evaluation, both the expected cash flows and the discount rate applied (cost of capital) are of utmost importance. In the calculation of an appropriate discount rate, when an asset is less marketable or non-marketable, financial theory and practice recommend increasing the discount rate (and the corresponding decrease in fair values) by the so-called discount for "lack of marketability or liquidity" (Brealey et al., 2014; Hitchner, 2011; Martins et al., 2023). To establish the value of a company, considering the cash flows it may generate, a discount rate is used to account for the time value of money. It is recommended that this rate take into account the economic variables of the sector to which the company belongs.

Auditing plays a crucial role in providing an adequate level of assurance on the performance and value of agricultural enterprises, including those in Colombia. The application of advanced methodological tools, such as fuzzy logic, has been scientifically supported for risk assessment in the audit process. This approach allows the incorporation of qualitative factors that affect audit risks and the uncertainty faced by the auditor when evaluating these factors (Sysoieva et al., 2021). Agricultural companies, presenting unique characteristics, require a risk assessment tailored to their specific needs. Thus, in line with International Standards on Auditing, a prospective rather than a reactive approach should be adopted to ensure the correct verification of the calculation and recording of deferred tax in the Colombian agricultural sector.

IFRS 3 defines a business combination as an operation in which a company acquires control of one or more businesses, a situation that may arise in companies in the agricultural sector.

It is also important to understand how to account for goodwill arising from business combinations, which has proven to be one of the most contentious topics in the standardization, preparation, and audit of financial reporting. Given its controversial nature and recent debates about the incorrect accounting for goodwill by bankrupt companies, standard setters are currently reconsidering existing recognition, measurement, and disclosure requirements (Durocher & Georgiou, 2022). This issue requires special attention in terms of identifying the sources of resources and returns for each business.

As a result of an investigation of the formation and preparation of a mutual fund of agricultural cooperatives, some recommendations are justified in theoretical and practical aspects; Criteria have been developed for the effectiveness of cooperative development, such as the participation of local youth in the activities of the cooperative; improving financial and economic indicators of the village due to the development of the range of activities; revival and development of local traditions and customs for the production of national products, goods and services; preserving and increasing the natural resources of the village (Teplická & Seňová, 2020). The figure of cooperativism can be key to the development of enterprises in the agricultural sector and their projection on a larger scale, as this type of enterprise contributes to achieving food security in the country.

There are specific standards for measuring the value of biological assets held by companies in the agricultural sector, which can impact the economic and financial value of these companies. Among the standards related to the recognition and measurement of biological assets is International Accounting Standard No. 41, which applies to Group 1 companies. For Group 2 companies, the relevant standard is Section 34 of the IFRS for SMEs, specifically related to special activities.

Recent research has highlighted the growing interest in the quality of information in the reporting of biological assets, particularly in relation to their value and the methodologies proposed for measuring them. De Lima Oliveira & Hiroshi Nakao (2021) highlight that value relevance is a central issue in this context, along with the determinants that influence disclosure by entities. In addition, studies such as those by Xie et al. (2020) indicate that the development of information intermediaries in the capital market can increase the value relevance of biological assets, facilitating the sustainability of agricultural companies, especially in emerging markets that lack strict regulations and other adequate infrastructures.

It is relevant to note that companies in the agricultural sector should carefully evaluate their indebtedness capacity and explore financing alternatives, relying on government policies and aid oriented to the growth of the sector. In this context, Davydov et al. (2018) conducted a comprehensive analysis of credit institutions, evaluating the validity and completeness of the assumptions that underpin their financial stability. This analysis highlights the impact of risk management, the quality of management, and the availability of transparent and reliable information—fundamental elements that ensure bank customers and investors trust these organizations and deposit their funds.

On the other hand, the main objective of the research by Adamenko et al. (2021) focuses on the industrialization of the agricultural system, considering the information support necessary to ensure sustainable development in two key areas: information support for reproduction and management processes, and support for the measurement and diagnosis of these processes.

This approach involves examining provisions related to the theory of sustainable development, the methodological foundations for monitoring and controlling the

agricultural process, and a quantitative analysis of industrial and economic events in this sector. The industrialization of various processes within the agricultural sector has the potential to make it more agile and effective, as long as quality is maintained and neither sustainable development nor the human resources involved are compromised.

Unlike developed markets, emerging markets, such as the Colombian economy, have been the subject of study due to their particularities and growth potential. The agricultural sector, in particular, plays a crucial role in the economies of these countries and is considered a key driver of their international consolidation. Countries with emerging economies, such as Colombia, have an agricultural sector with considerable potential for growth and expansion, which could contribute significantly to improving their global competitiveness ([Comisión Económica para América Latina y el Caribe - CEPAL, 2021](#)).

This growth depends not only on agricultural productivity, but also on the proper implementation of International Financial Reporting Standards, which, being globally applicable, impact the financial reporting of companies in different countries, such as Ecuador, and require precise control in the calculation and recording of deferred taxes ([Chávez Cruz et al., 2020](#)).

Likewise, the high requirement for measuring income tax is not exclusive to developed markets, but is also a concern in Latin American countries. According to [Murillo Yate et al. \(2022\)](#), the complexity of measuring deferred tax in Latin America, and especially in Colombia, has increased due to the evolution of tax regulations and their alignment with IFRS, which requires companies to adopt more rigorous accounting practices.

In this context, the internal planning of agricultural companies must be aligned with the country's economic reality to avoid improper practices, such as the manipulation of financial information. Otherwise, they face unacceptable risks, such as legal sanctions and reputational damage, which can compromise the long-term sustainability of the companies. ([Chávez, 2018](#))

During economic turbulence, companies are under pressure, which prompts them to turn to the accounts department in an attempt to control frustration by adjusting financial information to the desired level. When management observes that the target level cannot be managed from the initial planning, they result in enacting the figure in income. This type of management practice, which involves adjusting accounting records, is known as income leveling. When other conditions are identical, management generally prefers smoothed income to genuine income that fluctuates wildly. Smoothed income enables companies to avoid capital market discounts, which can have undesirable consequences for stakeholders. ([Ma & Zhang, 2021](#))

[Akhmetshin et al. \(2018\)](#) through institutional analysis, identified several inconsistencies in the regulatory framework and accounting institutions of related institutions, which indicates non-compliance in accounting practice of the principle

of substance over form, between the recognition in accounting and tax accounting of the transfer of ownership of assets and liabilities, as well as differences in the registration of investment real estate in the financial statements in accordance with IFRS institutions and Russian national standards. It is noted that although there are specific rules for the accounting recognition of economic events, there may be interests far from compliance with the standard; to avoid this situation, the need for sound tax planning is emphasized. (Akhmetshin et al., 2018)

Consequently, new strategic directions have emerged, especially for managerial accounting. Management accounting and alignment with strategy can improve performance (Sugahara et al., 2017). The accounting policy of agribusiness subjects should be formed based on agency theory, which requires satisfying the interests of users who employ such information, and the theory of the firm, which emphasizes the reliability of information.

The factors influencing the formation of the accounting policy of agricultural business subjects are the following: chosen view towards the accounting policy; the details of the activities of agricultural business subjects; possibilities to choose between the accounting methods provided for in the accounting standards; the demands of investors for financial information so that investors can make correct and timely management and investment decisions. (Stonciuviene et al., 2016)

The relationship between management control systems (MCS) and strategy has received considerable attention in the management control literature. However, contingency theory-based approaches have traditionally dominated this line of research, with little specific attention paid to how MCS and strategy can be integrated in organizations operating in highly institutionalized environments. (Tucker & Parker, 2015)

Accounting in companies of any economic sector and especially in companies of the agricultural sector is called to create value opportunities and to focus on truly transcendental issues, that is, the management of assets of all types including biological assets, a reasonable level of financing, adequate purchase and sale policies and of course a timely and accurate recording of income tax. The accountant, in his role of supporting the financial management of a company, must be proactive for a prospective approach to the company that allows it to adjust to changes in the environment with a certain degree of ease.

Edwards (2013) emphasizes the importance of understanding the legal, social, and economic context in which accounting changes occur, highlighting the conflicts that arise between providers and users of accounting statements. This study concludes with an analysis of the roles played by accounting professionals, highlighting how these have evolved and how the position of accountants in society has been strengthened through the activities carried out by professional institutions.

In a review of forest accounting, Hogg & Jöbstl (2008) conclude that, with continued internationalization and harmonization, the coming years will bring an increased focus on this discipline. The challenges in this field focus on increasing

the application of research in practice, as well as developing new methods and solutions. Among the key research areas that stand out are: first, the recognition of forest assets and their value fluctuations in financial and cost accounting; second, the integration of performance measures for non-market benefits; and finally, the expansion and improvement of sustainability reporting.

In this sense, agricultural accounting, with a focus on environmental protection, opens up new business opportunities. This approach not only promotes sustainability but also enables companies in the sector to reap a range of economic benefits while contributing to the preservation of natural resources.

DISCUSSION

The cost of the products generated by the farmer also varies according to the market situation. To solve the problem, it is suggested that the farmer implement elements of International Financial Reporting Standards in his farm business accounting. IFRS provides a truer and more objective representation of business transactions, and therefore, is more appropriate and timely for management reporting. For example, under IFRS, companies must show their inventories taking into account the probability of their realization and the degree of their suitability for production.

At the same time, according to the financial statements, the company's statement of financial position also shows the company's assets that do not generate the company's income. The adaptation of management accounting to international standards enables the use of standardized software in companies. Unified approaches to data collection and standardization of management reporting forms enable the analysis of the company's activities not only for its management, but also for its investors and creditors (Yekimov et al., 2021). Commercial enterprises in the agricultural sector face a variable that notoriously affects their market performance, namely the volatility of agricultural inventory prices, both for inputs and for agricultural consumer products that comprise the basic family basket.

Depending on the possibility of multiple production of agricultural products and additional biological assets, there are biological assets for consumption and biological carrier assets. Consumption of biological assets - biological assets that can give one-time agricultural products, after which they end their existence: there are annual crops (wheat, corn, sunflower, barley, etc.); trees grown for timber, etc.

Biological asset carriers: biological assets that can repeatedly provide agricultural products or additional biological assets: vineyards - for grapes; gardens - for fruit harvesting; forest trees, from which timber is obtained without cutting down the trees themselves, etc. (Hryshchuk et al., 2022). To establish adequate profit margins in the production and marketing of agricultural products, it is necessary to consider both single-crop and multi-crop options. Questions constantly arise about

the consistency of tax and financial accounting indicators, as the results disclosed according to tax accounting data deviate considerably from the actual financial results of the company's activities, as reported according to financial accounting data (Shygun & Chystova, 2022). Since there is such a difference between accounting and tax, it is through the tax reconciliation process that we resolve this divergence. As this expense was subtracted when calculating the accounting profit, to cancel its effect, we must add it in the tax reconciliation as a reconciling item (off-accounting). (Chávez, 2020)

It is here that the tax reconciliation plays a crucial role, as it identifies and supports the differences generated when applying accounting rules and those dictated by the tax statute. This is intended to prevent irregularities in the accounting that may affect the taxpayer when making a correct calculation, presentation, and payment of taxes.

A localized issue for the Colombian case is the tax readjustments and it has two variants: from the point of view that the asset will be fully depreciated and at the end of its useful life it is simply destroyed or not, consideration is received when it is transferred, in this case the tax readjustment has no meaning either for accounting or tax purposes, therefore it does not generate deferred tax.

Now, if the asset is sold at any time during its useful life, in this case the tax readjustment is susceptible to become a tax cost, and therefore, impacts the net income; in this case the tax readjustment becomes what some writers usually call "permanent differences that are temporary" and, therefore, deferred tax must be generated, but consulting the principle of prudence. (García Restrepo, 2017)

With the implementation of IFRS, it is expected that the deferred tax item will have a significant impact, although it was previously present in local accounting standards. It should be noted, however, that in the previous accounting standard, the recognition and measurement of deferred tax was made under the income approach, based on the identification and analysis of temporary differences. In contrast, the international standard, as is known, uses an approach based on the temporary differences of assets and liabilities, whereby its effects may be of greater depth and duration during the term in which such differences are maintained.

With the new technical frameworks, a more precise measurement of this item's behavior is essential (Castaño Ríos et al., 2020). For this reason, it is necessary to go deeper into the management that the companies of the sector under study are applying to the issue of tax adjustments on account of deferred tax, since depending on the type of adjustment, it will generate a notorious impact on the basis for the calculation of the tax, which will have to be considered and analyzed in detail.

Differences in profitability are not only caused by fundamental value-adding operations, but also by various alterable aspects, which are typical subjects of managerial decisions or elements of national economic policy. These include managerial decisions on staffing, investment, or financing issues, as well as national levels of wages, interest, and taxes. (Beyer & Hinke, 2020)

The multifaceted nature of long-term investments and their accounting support define the relevance and novelty of this research. In this study, our objective is to develop methodological tools for long-term investment accounting in agricultural enterprises (Shirobokov et al., 2021). Agricultural companies, as well as commercial companies in various economic sectors, must also make decisions on issues related to investment, financing, payroll, taxes, among others, which require an in-depth analysis that takes into account the impact on the company's value and the deferred tax to be generated.

In closing, it should be noted that the agricultural sector in Colombia (and in many parts of the world) continues to face several problems associated with the production and marketing of agricultural products in the cities, where the multiple chains of intermediaries and the high volatility of market prices do not allow stabilizing its activity in the short and medium term. Nevertheless, the efforts of the State and the unions to transform agriculture in Colombia are important, but not sufficient; actions should focus on managing the financial and productive rigidities faced by farmers, as well as tax planning that does not affect their liquidity; it is clear that they alone do not have sufficient response capacity to enter into more modern value chains; they require cooperation and associativity among themselves, the unions and the State.

CONCLUSIONS

The correct application of deferred tax enables significant benefits to be achieved for both companies and the broader economic environment. First, when organizations prepare and present high-quality financial information, they can make better economic decisions and facilitate access to domestic and international investment. Secondly, the calculation of income tax begins with the accounting result, implying that, as long as the accounting rules are correctly applied and there is regulatory clarity in tax matters, the tax results generated will also be accurate. (Paredes & Deás Albuerne, 2019)

In the agricultural sector, tax equity and progressivity are based on financial statements prepared by current accounting standards, supported by sound accounting policies that provide a reliable measurement and recording basis. The analysis confirms that, although the recognition of deferred tax is not a recent issue, the adoption of International Financial Reporting Standards has necessitated greater attention to its accounting, tax, and financial implications.

However, the normative and methodological development of deferred tax has been approached in a technical and specialized manner, limiting its understanding outside the accounting field (Castaño & Cataño, 2021). This situation highlights the need for greater pedagogical and accessible dissemination to other areas of knowledge.

The deferred tax can also indirectly contribute to social development in areas such as education, infrastructure, and technology. The promotion of digital tools developed by new generations could optimize accounting management and improve tax compliance. (Chingay Coyago, 2023)

From a legal perspective, tax legislation encompasses provisions that may require different accounting treatments, generating temporary differences that eventually equalize, thereby eliminating the deferred tax balance (Rincón et al., 2019). In the agricultural sector, assets such as biological assets, machinery, or land generate significant temporary differences in accounting. The variation between the useful lives under IFRS and those established for tax purposes, as well as the valuation of land or the treatment of financial leases, are factors that significantly impact the calculation of deferred tax.

Therefore, strategies such as outsourcing, periodic review of accounting estimates, or adopting common standards could mitigate their impact and enhance financial planning. (Castaño & Cataño, 2021)

It is essential to bear in mind that financial statements serve as the basis for compliance with tax obligations. IFRS regulates this issue through IAS 12 for large companies and Section 29 for SMEs (Chávez Cruz et al., 2020). The proper application of these standards impacts not only accounting results but also cash flows and decision-making in the short, medium, and long term. (Castaño & Cataño, 2021)

Additionally, the regulation of managerial accounting practices enhances the transparency and credibility of professional practice (Rajeevan, 2019). In the context of digital transformation, evaluating the most suitable accounting software is crucial for streamlining processes related to deferred tax (Zemlyakova et al., 2023).

However, there are institutional challenges: state accounting control may restrict innovation in public-private partnerships (Ahmad et al., 2021), while barriers between accounting and economic thinking limit the development of integrated approaches (Napier, 1996). Therefore, it is necessary to foster synergies between business, academia, and the public sector to build shared knowledge that strengthens deferred tax management at all levels.

Limitations of the study and future lines of research

This work primarily focused on the accounting, regulatory, and conceptual analysis of deferred tax in the agricultural sector, and therefore does not directly address the perception of users of financial information or the broader social impact of its implementation. As future lines of research, it is suggested that interdisciplinary studies be deepened to integrate approaches from economics, law, technology, and public management. It would also be valuable to explore the role of digitalization in automating deferred tax calculation, as well as to make comparisons between

productive sectors and across countries to identify best practices in different regulatory contexts.

CREDIT AUTHORSHIP CONTRIBUTION STATEMENT

Burbano-Ruano: research, visualization, methodology, conceptualization, data collection, data analysis, and draft writing. Pantoja-Ruano: research, conceptualization, methodology, original writing, and editing. Córdoba-Martínez: conceptualization, writing, supervision, editing and final review.

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DECLARATION OF COMPETING INTEREST

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