The effect of prior period adjustments on equity and ROE of companies listed on B3's New Market

El efecto de los ajustes de años anteriores en el patrimonio neto y en el ROE de las empresas listadas en el Nuevo Mercado de B3

O efeito dos ajustes de exercícios anteriores no patrimônio líquido e no ROE de companhias listadas no Novo Mercado da B3

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Abstract

**Purpose:** To analyze the effect of prior period adjustments (PPA) on Equity and on Return on Equity (ROE).

**Methodology:** The Statements of Changes in Equity and the Explanatory Notes of the companies listed on the B3’s New Market, from 2010 to 2019, were researched. To analyze the effects of PPA on equity and ROE, the Wilcoxon test was applied.

**Results:** The majority of the identified PPA pertain to changes in accounting policies, notably related to the application of IFRS 9/CPC 48 and IFRS 15/CPC 47 in 2018. This means that companies chose to recognize the effects of adopting these standards retrospectively, with a cumulative effect on equity, without presenting comparative information (accounting choice). There was a statistically significant difference between the average variations in adjusted and unadjusted equity and return on equity (ROE). In other words, it is observed that changes in accounting policies and/or error corrections influence the analysis of these indicators. It is important to note that PPA should not affect the net income for the current period, suggesting that the effects resulting from changes in accounting policies and errors tend to protect present and/or future results at the expense of past results.

**Contributions of the Study:** The main contribution of the study lies in evaluating changes in the equity that do not necessarily result from operating performance or financing strategies, but arising from changes in accounting criteria or errors, which may affect other equity components.

**Keywords:** Prior Period Adjustments. Changes in accounting policies. Error rectification. Return on Equity. Accounting Choices.

Resumen

**Objetivo:** Analizar el efecto de los ajustes de años anteriores (PPA) sobre el Patrimonio Neto (PN) y el Retorno sobre el Patrimonio Neto (ROE).

**Metodología:** Se investigaron los Estados de Cambios en el Patrimonio Neto (DMPN) y las Notas Explicativas de las empresas listadas en el Nuevo Mercado de B3, de 2010 a 2019. Para analizar los efectos de PPA en PN y ROE, se aplicó la prueba de Wilcoxon.

**Resultados:** La mayoría de los PPA identificados se refieren a cambios en la política contable, en particular relacionados con la aplicación de la NIIF 9/CPC 48 y la NIIF 15/CPC 47, en 2018. Esto significa que las empresas optaron por reconocer los efectos de la adopción de estas normas de forma retrospectiva, con efecto acumulativo en el PN, sin presentación de información comparativa (opción contable). Hubo una diferencia estadísticamente significativa entre los cambios medios en PN y ROE ajustados y no ajustados (con y sin PPA). En otras palabras, se observa que existe una influencia de cambios en las políticas contables y/o corrección de errores en el análisis de estos indicadores. Es importante resaltar que la PPA no debe afectar la utilidad neta del año en curso, sugiriendo que los efectos derivados de cambios en las políticas contables y errores tienden a proteger los resultados presentes y/o futuros en detrimento de los resultados pasados.
Contribuciones del Estudio: El principal aporte del estudio reside en evaluar cambios en el PN que no necesariamente resultan del desempeño operativo o de las estrategias de financiamiento, sino que surgen de cambios en los criterios contables o errores, que pueden afectar otros componentes del patrimonio.


Resumo
Objetivo: Analisar o efeito dos ajustes de exercícios anteriores (PPA) no Patrimônio Líquido (PL) e no Retorno sobre o Patrimônio Líquido (ROE).

Metodologia: Foram pesquisadas as Demonstrações das Mutações do Patrimônio Líquido (DMPL) e as Notas Explicativas das companhias listadas no Novo Mercado da B3, de 2010 a 2019. Para analisar os efeitos dos PPA no PL e no ROE, aplicou-se o teste de Wilcoxon.

Resultados: A maior parte dos PPA identificados referem-se a mudanças de política contábil, notadamente relacionadas à aplicação da IFRS 9/CPC 48 e IFRS 15/CPC 47, em 2018. Isso significa que as companhias escolheram reconhecer os efeitos da adoção dessas normas de forma retrospectiva, com efeito cumulativo no PL, sem a apresentação das informações comparativas (escolha contábil). Houve diferença estatisticamente significativa entre as variações médias do PL e do ROE ajustados e não ajustados (com e sem PPA). Em outras palavras, observa-se que há influência de mudanças de políticas contábeis e/ou retificações de erros na análise desses indicadores. Importante ressaltar que os PPA não devem afetar o resultado líquido do exercício corrente, sugerindo que os efeitos decorrentes de mudanças de políticas contábeis e erros tendem a proteger resultados presentes e/ou futuros em detrimento de resultados passados.

Contribuições do Estudo: A principal contribuição do estudo reside em avaliar alterações no PL que não decorren, necessariamente, do desempenho operacional ou das estratégias de financiamento, mas advindas das mudanças de critérios contábeis ou erros, que podem afetar outros componentes patrimoniais.


1 Introduction

In accordance with Technical Pronouncement CPC 26 (R1) - Presentation of Financial Statements - financial statements aim to generate useful information about the entity's financial position, performance, and cash flows to a wide range of users, supporting them in their economic decision-making (Comitê de Pronunciamentos Contábeis [CPC], 2011). To ensure comparability and reliability of financial information, financial statements are prepared following certain accounting policies and estimates.

Gelbcke, Santos, Iudícibus, and Martins (2018) mention that the Law of Corporations (Law 6,404/76) determines that net profit should not be influenced by effects that do not belong to the current fiscal year. This allows the results of the period, presented in the financial
statements, to be comparable with those of other periods on similar bases. Therefore, consistency in the application of accounting policies is important. However, both accounting policies and estimates can undergo changes, and flexible accounting policies exist.

Due to the dynamic disclosure environment being affected by legal, tax, and regulatory factors, it is not possible to make accounting standards completely uniform (Silva, Martins, & Lemes, 2016). This means that there may be more than one equally valid accounting policy for the accounting of certain economic events, allowing managers to make choices of different accounting policies (accounting choices) to address the same economic phenomenon. Examples include investment properties, which can be subsequently measured at cost or fair value, and different inventory measurement criteria (average cost or first-in, first-out [FIFO]). Thus, companies can change accounting policies voluntarily, aiming to provide more useful and relevant information to users for their decision-making and specific interests, especially stakeholders and shareholders.

Accounting standards also undergo periodic revisions to adapt to the dynamism of the globalized business environment, occasionally leading to changes in accounting policies and/or estimates that entities must adopt mandatorily. Additionally, companies may incur unintentional omissions or errors, sometimes identified only in a period subsequent to when they occurred. All these circumstances may necessitate adjustments to the financial statements that, in some cases, affect not only the current fiscal year but also previous fiscal years presented comparatively (Gelbcke et al., 2018).

Transitional provisions of standards, pronouncements, interpretations, and specific guidance include the form of initial adoption of new criteria (Gelbcke et al., 2018). However, when these transitional provisions are not expressed or when the adoption of a new policy is voluntary, the change must be applied retrospectively. Retrospective application involves the restatement of previous financial statements, as determined by Technical Pronouncement CPC 23 - Accounting Policies, Changes in Accounting Estimates, and Correction of Errors, corresponding to the International Accounting Standard (IAS) 8 - Accounting Policies, Changes in Accounting Estimates, and Errors.

If retrospective application is impracticable, the company is exempt from such practice (CPC, 2009). Impracticability occurs when it is not feasible to determine the cumulative effect on the opening and closing balances of the previous period (Gelbcke et al., 2018). In this case, the resulting adjustment, relating to prior periods to those presented for comparative purposes, is then recorded in the opening balance of each affected equity component of the oldest previous period presented. This adjustment is made against the account of Accumulated Profits or Losses (APL), in Equity (EQ), unless there is a specific different determination. These are called Prior Period Adjustments (PPA), provided for in § 1 of Art. 186 of Law 6,404/76. Gelbcke et al. (2018) add that the Law of Corporations makes it clear that PPA refers only to the effects of changes in accounting policies and correction of errors and should not affect the net result of the current fiscal year.

Changes in accounting policies, as well as error corrections, reflected as PPA, may cause variations in the components of companies' equity and, consequently, in related economic and financial indicators, whether changes in accounting policies result from the adoption of new accounting standards or accounting choices. Previous studies (see Almeida, Costa, Coutinho e Silva, & Laurencel, 2011; Santos, 2012; Acuña, Cruz, Oviedo, Salotti & Martins, 2013; Ali, Akbar, & Ormrod, 2016) have focused on evaluating the effects of adopting the International Financial Reporting Standards (IFRS) and Technical Pronouncements of the Comitê de Pronunciamentos Contábeis (CPC) on profit and equity. Others (see Napier & Stadler, 2020
and Morales-Diaz & Zamora-Ramirez, 2018) have addressed the effects of adopting revised Revenue and Leasing standards, respectively.

The studies by Coltro (2013), Tavares and Carvalho (2018), and Silva and Machado (2020) specifically related to CPC 23 (IAS 8) analyzed the application of this standard and compliance with its informational requirements. Coltro (2013) discussed key points regarding IAS 8, such as changes in estimates, accounting policies, and error corrections. Tavares and Carvalho (2018) examined the application of IAS 8 in Portuguese companies to assess its influence on information quality. Silva and Machado (2020) investigated how companies in Goiás are applying CPC 23.

Almeida et al. (2011) analyzed the existence of significant differences in net profit, equity, and return on equity (ROE) values in 2008 and 2009, comparing the IFRS and BRGAAP accounting models of publicly traded entities in the extraction and processing of natural resources sector. Biglari, Peng, and Azar (2015) examined the relationship between PPA and information asymmetry in companies listed on the Tehran Stock Exchange from 2007 to 2014. Ruberto and Alves (2015) analyzed the qualitative characteristics of informational disclosure in the explanatory notes of major Brazilian companies regarding accounting policies, changes in estimates, and error corrections. Burca, Nicolaescu, and Dragut (2019) discussed the most controversial points of IAS 8, such as the distinction between changes in accounting policies and changes in accounting estimates.

Considering these findings, this study advances in two aspects in the literature. First, it explores the use of PPA for accounting values resulting from changes in accounting policies. The way companies account for PPA generates different information for investors, as Return on Equity (ROE) is affected by these changes. Therefore, the research can contribute to the literature by highlighting how the recognition of PPA can impact company results, a situation that may influence user decisions.

ROE was chosen as it is a key indicator for measuring the efficiency of using equity to generate profits. Moreover, this indicator is affected by the non-recognition of expenses/revenues in the Income Statement (IS) for the period, as well as by the inclusion of PPA directly in equity in the following period. Changes in ROE due to the existence of PPA are relevant to users of accounting information, as it affects the analysis of financial performance and the evaluation of the company's profitability. Furthermore, changes in ROE resulting from PPA are relevant for information comparability, future decision-making, and the evaluation of past performance.

The second point is that no studies were identified in Brazil that analyze how PPA can affect components of equity after the joint implementation of significantly modified standards, such as IFRS 9/CPC 48 – Financial Instruments, IFRS 15/CPC 47 – Revenue from Contracts with Customers, IFRS 16/CPC 06 R2 – Leases. This is because Almeida et al. (2011) considered the transition period from BRGAAP to IFRS. Post-implementation analysis of standards is justified as it allows for a greater/lesser influence on equity and ROE to be observed due to such adjustments. In this sense, this study aims to analyze the effect of Prior Period Adjustments (PPA) on Equity (EQ) and Return on Equity (ROE).

This research is justified by the need to investigate the nature of PPA (changes in accounting policies and/or error corrections) to verify if adjustments are being used in accordance with Law 6,404/76 and the disclosure requirements of CPC 23. The development of the research is also justified by examining the transparency of accounting information and guidance for investment decision-making regarding the effect of PPA in the context of the New Market, given its relevance due to having the highest level of transparency. Additionally, it is possible to assess the behavior of EQ and ROE with and without such adjustments in EQ.
can increase the level of information for users since a change in previous periods can affect user perception and, consequently, the company's performance and decision-making.

The study's contribution lies in evaluating changes in EQ that do not necessarily result from operational performance or financing strategies but arise from changes in accounting criteria or errors, which can affect other equity components, such as inventory, investments, fixed assets, etc. It is emphasized that the results in this study can contribute to users, as when they analyze, for example, ROE, which is one of the most used indicators for profitability analysis (Raza, Ilyas, Rauf, & Qamar, 2012), they need to consider that PPA may have occurred affecting the indicator, as it stems from an accounting policy and not from operations carried out by the company. This becomes even more important when the user does not use primary sources, where they do not know which values were used for the calculation.

2 Literature Review

2.1 Accounting policies, errors, prior period adjustments, change in estimates

The accounting policies are defined in CPC 23 as "the principles, bases, conventions, rules, and specific practices applied by the entity in the preparation and presentation of financial statements" (CPC, 2009, p. 2). Accounting policies are not entirely uniform, and there may be more than one equally valid accounting policy for the same event (Silva et al., 2016; Silva & Martins, 2018). In relation to accounting policies, there may or may not be a preferential recommendation by accounting standards and guidelines (IFRS/CPC), providing an accounting choice of which criteria to use. These criteria in financial statements may be related to measurement, recognition, classification, or presentation (Silva et al., 2016; Silva & Martins, 2018).

Entities can change accounting policies voluntarily or to adapt to requirements in the adoption of accounting standards, aiming to better reflect the economic substance while ensuring the comparability of financial statements. Gelbcke et al. (2018) mention that, according to CPC 23, in the case of a change in accounting policy (accounting criterion, in the language of the law), the entity must restate the comparative financial statements as if the new policy had always been applied (retrospective application), unless it is impracticable. This also applies to the correction of errors.

According to Coltro (2013), errors and omissions are treated in IAS 8 as mathematical errors, errors in the application of accounting policies, lapses, fraud, and misinterpretations of facts. These errors or omissions are often identified only in periods after the publication of financial statements. Therefore, the entity must make the publication retrospectively to provide useful information for users to make their decisions.

Due to retrospective application in the Statement of Changes in Equity (SOCE), the first line will contain the values presented for equity accounts as they were in the previous presentation, without the change in policy and/or without the correction of errors (Gelbcke et al., 2018). Subsequently, the effects of changes in accounting policy and error corrections are presented, which must also be disclosed in explanatory notes (CPC 23, 2009). Therefore, PPA represent values arising from changes in accounting policies or error corrections from a previous period that are not attributed to subsequent events (Coltro, 2013).

Additionally, there may be changes in accounting estimates. The change in accounting estimate is addressed in CPC 23 as "adjustments to the accounting balances of assets or liabilities, or the amounts related to the periodic consumption of assets, resulting from the evaluation of the current situation and the expected future obligations and benefits associated
with assets and liabilities" (CPC, 2009, p. 2). Burca et al. (2019) mention that, after a simple search in IAS and IFRS, more than 150 cases related to accounting estimates were found, as the reasonable uncertainty accepted in the preparation of financial statements allows preparers to use estimates. According to CPC 23, estimates may be required for doubtful settlement credits, obsolescence of inventories, useful life of depreciable assets, fair value of financial assets and liabilities, etc.

According to CPC 23, when there are changes in accounting estimates, these are not treated as error corrections, as they represent new information or innovations (CPC, 2009). Tavares and Carvalho (2018) clarify that IAS 8 stipulates that, in changes to estimates, a prospective treatment must be adopted, and the effects must affect the results of the period in which the circumstances on which the estimate was based change, or the periods of the change and future periods if the change affects both.

IAS 8 underwent a review process at the International Accounting Standards Board (IASB) since March 2018 when the board issued an Exposure Draft. One of the main points of the IAS 8 review concerns the improvement of concepts of accounting policies and estimates. Gelbcke et al. (2018, p. 525) clarify that in the mentioned Exposure Draft, accounting estimates are defined as "judgments and assumptions used in the application of accounting policies resulting from uncertainty in the accounting measurement of certain items in the financial statements." Gelbcke et al. (2018, p. 525) exemplify that "the choice of a valuation technique represents an accounting estimate used in the accounting policy for measuring a certain financial instrument at fair value." According to Gelbcke et al. (2018), in the IASB's view, there are various ways in which, in practice, companies have sought to distinguish these two concepts, impacting comparability between entities, as the accounting treatment provided in IAS 8 for policy changes (retrospective) is different from the treatment of estimates (prospective). The review was concluded by the IASB in February 2022 and addressed only these conceptual aspects, as explained, not affecting any form of accounting treatment.

2.2 Correlated Studies

The equity of entities is generally affected by operational and financing decisions made by managers. Additionally, it can undergo changes resulting from the adoption or revision of accounting standards, which involve changes in accounting policies, either voluntarily or mandatorily (to comply with a specific Pronouncement, Interpretation, or Guidance, for example).

Regarding changes in accounting policies or the occurrence of errors, the provisions of CPC 23 are observed, as seen in section 2.1. In this perspective, Ruberto and Alves (2015) analyzed the qualitative characteristics of information disclosure in explanatory notes regarding accounting policies, changes in estimates, and correction of errors. They selected some requirements of CPC 23 and compared them with information from the reports of the top 10 Brazilian companies, according to Forbes’ classification in 2015. They found that most of the studied companies adequately presented explanatory notes regarding the requirements of CPC 23.

Tavares and Carvalho (2018) analyzed the application of IAS 8 by Portuguese companies listed on Euronext Lisbon from 2008 to 2014. Specifically, they examined the accounting for changes in accounting policies, changes in estimates, and correction of errors, as well as the evaluation of their consequences on financial statements. The authors found that most situations leading to the restatement of financial numbers resulted from changes in
accounting policies (53%). Among accounting policies, changes in accounting standards stood out (63%), followed by voluntary changes in accounting policies (22%), and changes in accounting standards anticipated (15%). Rectification of errors (reasons for restatement) accounted for only 5% of the restatements analyzed in the sample. They concluded that the effects resulting from errors and changes in accounting policies tend to protect present and/or future results at the expense of past results.

In the same vein, Silva and Machado (2020) investigated the application of CPC 23 in 57 entities in the state of Goiás, Brazil, from 2012 to 2016. The results showed that entities have presented their financial reports with a satisfactory level of quality for changes in accounting policies and estimates, as the criteria established in the pronouncement have been met. However, regarding error correction, the result was unsatisfactory because, according to the authors, there is a high number of corrections and a low level of compliance with the disclosures required by CPC 23.

In another perspective, Biglari et al. (2015) investigated whether there is an increase in information asymmetry through PPA. The research sample included 62 companies listed on the Tehran Stock Exchange from 2007 to 2014. The authors concluded that there is no significant relationship between information asymmetry in each period and PPA in the next period. They further emphasized that the level of information asymmetry does not change proportionally to changes in PPA.

Regarding the impacts of adopting accounting standards on equity and net income, some studies were found. Almeida et al. (2011) analyzed the existence of significant differences between the values of net income, equity, and ROE in 2008 and 2009, comparing IFRS and BRGAAP accounting models of publicly traded entities in the extraction and processing of natural resources sector. They also identified which CPCs offered more significant and frequent changes for the occurrence of these differences between accounting values. There were significant differences in the value of equity calculated under CPC/IFRS and BRGAAP standards in both years studied. The main CPCs responsible for these differences were CPC 33 – Employee Benefits, CPC 15 – Business Combination, CPC 29 – Biological Assets, and CPC 27 – Property, Plant, and Equipment, as well as deferred taxes resulting from changes in accounting practices.

Santos (2012) measured and analyzed, in companies listed on Bovespa, the effect caused by the first-phase transition standards to IFRS (CPCs 1 to 14) in the Financial Statements of 2008. The results showed that the most expressive increases in companies' profits were related to the exclusion of transaction costs, premiums on the issuance of securities from the profit calculation, inclusion of tax incentives in the profit, the concept of finance lease, and the prohibition of asset revaluation. On the other hand, the reduction to the recoverable amount of assets led to a decrease in companies' profits. All these changes reflect impacts on financial analysis indicators.

In the same line as the mentioned studies, Acuña et al. (2013) verified how companies that composed IBrX-100 at the end of 2011 were impacted by the transition of standards disclosed in 2008 (first cycle) and 2010 (second cycle) on their equity and net income. The results indicated that, in the first cycle, adjustments directly affected the result of the year, with no significant effects on equity, while in the second cycle, the opposite occurred. The authors concluded that the potential distribution volume of dividends from companies was not significantly affected by the adoption of the standards.

Ali et al. (2016) examined to what extent the change from UK GAAP to IFRS affected companies listed on the Alternative Investment Market (AIM) in the UK. The results demonstrated that the overall impact of IFRS on the profits of companies listed on AIM is lower.
than the impact shown in previous literature on large listed companies. The authors also pointed out that the adoption of IFRS had a smaller effect on the equity of UK GAAP, a result consistent with previous literature on large listed companies.

Regarding the adoption of specific revised standards, there are studies by Morales-Díaz and Zamora-Ramírez (2018), about IFRS 16 (in Brazil, CPC 06 R2, regarding Leases), and Napier and Stadler (2020), who analyzed the impacts of IFRS 15 (in Brazil, CPC 47, related to Revenue). Consistent with previous research, Morales-Díaz and Zamora-Ramírez (2018) found systematic impacts of the adoption of IFRS 16 on key financial ratios of the balance sheet (mainly leverage ratios), to a magnitude that depends on the intensity of operational leasing in the sector in which the entity operates but found no consistent result regarding the effect on profitability ratios. Regarding IFRS 15, Napier and Stadler (2020) concluded that the application of the standard caused accounting, informational, and, to a lesser extent, real effects, and that, except for some sectors, the impact was relatively small on the recognition and measurement of revenues.

As can be seen, studies that analyzed the adoption of a set of accounting standards, both in Brazil and abroad, found impacts on equity and net income of the researched companies. These studies also revealed impacts of the adoption of new standards on accounting indicators. Reinforcing that equity and profitability indicators, notably ROE, can be affected not only by the application of the standards themselves (changes in accounting policies) but also by the way these standards are adopted (transition rules involving retrospective restatement or simplified adoption through adjustments to equity components, with a counterpart in equity components). From the presented context, the hypotheses of this research are formulated:

**H1:** There is a statistically significant difference in equity before and after the incorporation of PPA, whether resulting from changes in accounting policies or error correction.

**H2:** There is a statistically significant difference in ROE calculated before and after the incorporation of PPA, whether resulting from changes in accounting policies or error correction.

### 3 Methodological Procedures

This is a descriptive and documentary research with a quantitative approach. It analyzed the period from 2010 to 2019, chosen to encompass the full adoption of CPCs, excluding potential effects of the pandemic (2020 and 2021). Additionally, it includes subsequent normative revisions after adoption, events that might cause PPA due to changes in accounting policies, notably.

The research sample consists of financial statements from companies listed on the New Market of B3 during the investigated period, which exhibited PPA. The New Market was chosen as the study's scope because it represents a segment with more disclosure requirements and good corporate governance practices (Bergantini, Sella & Bortolon, 2020). This corporate governance segment holds stricter demands for governance, transparency, and shareholder protection. Consequently, it's anticipated that companies within this segment provide more reliable information, suggesting that PPAs were depicted to present better information to users. These factors can contribute to the quality and reliability of the research outcomes. Although the results cannot be generalized to all companies, given that this segment embodies higher corporate governance requirements and accounts for nearly 30% of the total organizations on B3, it becomes relevant for the analysis of PPA.

Companies within the Financial Intermediaries subsector was excluded from the analysis due to the unique nature of their business, which could potentially compromise the comparability of the targeted indicators. To form the sample, consolidated financial statements
were gathered for companies with investments in subsidiaries. For companies without
investments in subsidiaries, individual financial statements were collected. The Statement of
Changes in Equity (SOCE) and explanatory notes were analyzed to verify the existence and
nature of PPA: changes in accounting policies or error corrections.

In total, 1,290 financial statements were collected from the B3 website, corresponding
to each of the companies in their respective years within the sample period, and 1,280 were
examined. The composition of the sample per year is illustrated in Table 1.

Table 1
Research Sample

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<td>New Market B3 Companies</td>
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<td>1</td>
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<td>1</td>
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<td>(=) Companies researched</td>
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<td>122</td>
<td>125</td>
<td>128</td>
<td>129</td>
<td>136</td>
<td>139</td>
<td>140</td>
<td>129</td>
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<td>(-) Companies without PPA</td>
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<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>38</td>
<td>11</td>
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Note: PPA = Prior Periods Adjustments.
Source: Research data.

According to the research data, PPA were found in 63 financial statements from 49
different companies over the studied 10 years. Table 1 shows that 60.3% of PPAs were
identified in the year 2018, with 17.5% in 2019. This could indicate, besides the limited use of
PPA for permissible purposes, that the retrospective application, as per the requirements of CPC
23, was more feasible during the initial 8 years of the standard's implementation. Another
explanation could be that the companies listed on the New Market, between 2010 and 2017, did
not make many changes in accounting policies, even though several new standards and
revisions were implemented during those years.

Afterward, values for Equity (EQ) and Net Income were retrieved, at the end of each
year, from the Economatica® platform to construct Return on Equity (ROE). ROE was
calculated by dividing the net income for the period by the average equity, multiplied by 100
(Corrêa, Assaf Neto, & Lima, 2013).

To analyze the impacts of PPA on EQ and ROE, the average percentage variations of
each were calculated, including and excluding the adjustments. Subsequently, the Wilcoxon
test (at a 95% confidence level) was applied due to the lack of normality in the data, as indicated
by the Kolmogorov-Smirnov test (p-value<0.05). The Wilcoxon test allows the comparison of
the mean value of two paired samples by analyzing the median and serves as a substitute for
the t-test in the absence of data normality (Fávero & Belfiore, 2017).

4 Presentation and Analysis of Results

4.1 Identification of Prior Periods Adjustments

To further understand the occurrence of PPA in more detail, Table 2 presents the
distribution by type of adjustment disclosed in the companies' financial statements during the
period.
Table 2

Main Prior Periods Adjustments

<table>
<thead>
<tr>
<th>Types of adjustments</th>
<th>The amount of PPA</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>Change in accounting policy</td>
<td>47</td>
<td>74.60%</td>
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<tr>
<td>Correction of error</td>
<td>6</td>
<td>9.53%</td>
</tr>
<tr>
<td>Unspecified</td>
<td>10</td>
<td>15.87%</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Note: PPA = Prior Periods Adjustments.

Source: Research data.

Table 2 reveals that in 10 out of 63 cases, companies highlighted the value of PPA in the Statement of Changes in Equity (SOCE) but did not specify the nature of these adjustments in the Explanatory Notes. This circumstance does not align with the findings of Ruberto and Alves (2015) and Silva and Machado (2020), which found that the majority of companies provide clear disclosure about the main PPA, as established in CPC 23.

Please note that it is not possible to assert whether the omission of disclosure refers to non-compliance with CPC 23 requirements or if the information is not relevant from the companies' perspective, as per Technical Guidance OCPC 07 - Disclosure in the General-Purpose Financial Reporting. Companies should only disclose relevant information (CPC, 2014).

The PPA related to the corrections of errors found in the sample include: recognition of non-pertinent revenues; provision for rent expense; impairment; equity pick-up of subsidiaries; contingent assets that should not have been recognized (as per CPC 25 - Provisions, Contingent Liabilities, and Contingent Assets); and adjustment to the acquisition price of subsidiaries.

In accordance with Table 2, the majority of PPA (74.60%) relate to changes in accounting policy. This result is like the findings of Tavares and Carvalho (2018) in Portuguese companies, where 53% of accounting number restatements were related to changes in accounting policies, and only 5% were related to errors. For a better understanding of what these changes in accounting policies entail, Table 3 is presented.

Table 3

Breakdown of PPA related to changes in accounting policies

<table>
<thead>
<tr>
<th>Change in accounting policies</th>
<th>The amount of PPA</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adoption IFRS 9/CPC 48</td>
<td>32</td>
<td>53.33%</td>
</tr>
<tr>
<td>Adoption IFRS 15/CPC 47</td>
<td>17</td>
<td>28.33%</td>
</tr>
<tr>
<td>Adoption IFRS 16/CPC 06 R2</td>
<td>5</td>
<td>8.33%</td>
</tr>
<tr>
<td>Adoption IFRIC 23/ICPC 22</td>
<td>2</td>
<td>3.33%</td>
</tr>
<tr>
<td>Adoption IFRS 11/CPC 19</td>
<td>1</td>
<td>1.67%</td>
</tr>
<tr>
<td>Adoption IAS 40/CPC 28</td>
<td>1</td>
<td>1.67%</td>
</tr>
<tr>
<td>Adoption IFRS 1/CPC 37</td>
<td>1</td>
<td>1.67%</td>
</tr>
<tr>
<td>Adoption IAS 19/CPC 33</td>
<td>1</td>
<td>1.67%</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Source: Research data.

According to Table 3, it is evident that some financial statements presented more than one trigger for PPA. In other words, the same SOCE may have reflected more than one change in accounting policy, as well as error corrections simultaneously. The most recurrent change was the adoption of IFRS 9/CPC 48 - Financial Instruments, which commenced on January 1, 2018. However, one company recorded an adjustment related to the adoption of this standard...
in 2016, and another in 2017, while all other adjustments were made in 2018. According to KPMG (2019), this standard requires more judgment to determine the appropriate measurement basis for assets, as some that were previously measured at amortized cost shifted to fair value measurement. Furthermore, the measurement of impairment losses for financial assets changes from an incurred credit loss model to an expected credit loss model.

The second most frequent change resulted from the adoption of IFRS 15/CPC 47 - Revenue from Contracts with Customers, also effective from January 1, 2018. This standard introduced a five-step model to determine when to recognize revenue and at what amount. Depending on the sector and business model, there might be significant impacts such as changes in operating results, financial position, alterations in the margins of sales contracts and/or service provision throughout the contract, variable compensation programs, and so forth.

The third most prevalent change identified in PPA stemmed from the adoption of IFRS 16/CPC 06 R2 - Leases, effective from January 1, 2019. As explained by Morales-Díaz and Zamora-Ramírez (2018), with IFRS 16, virtually all operating lease contracts are capitalized, impacting key balance sheet indicators, especially leverage. Gelbcke et al. (2018) noted that the effects were particularly notable for lessees, with little impact on lessors.

The transition method when adopting these three pronouncements, specifically, but not excluding transitional provisions from other standards, could lead to PPA. This is because companies are allowed to apply them retrospectively for each previously reported period, as per CPC 23, or retrospectively with the cumulative effect of initially applying the pronouncement recognized at the date of initial application. Therefore, the transition method when adopting new standards is an accounting choice that can result in PPA.

Other changes leading to PPA relate to: IFRIC 23 (ICPC 22) - Uncertainty over Income Tax Treatments, IFRS 1 (CPC 37) - First-Time Adoption of International Financial Reporting Standards, IFRS 11 (CPC 19) - Joint Arrangements, IAS 19 (CPC 33) - Employee Benefits, and IAS 40 (CPC 28) - Investment Property. These occurrences differ from the study by Tavares and Carvalho (2018), undoubtedly due to the researched period, which in the Portuguese study spanned from 2010 to 2014, as well as the institutional context of the markets (Brazil and Portugal).

Additionally, the research data revealed that the account most affected by the impacts of PPA was Retained Earnings with a frequency of 49.2%, followed by Profit Reserves, at 44.4%. Although the explanatory notes helped identify the types of PPA, the amounts appeared in an aggregated form in these accounts in the Statement of Changes in Equity. Only the offsets appeared in more than one account within the same statement, in some cases.

4.2 Analysis of the influence of PPA on Equity and ROE

In Table 4, the distribution by sector of the PPA related to the financial statements of the studied period (2010 to 2019) is depicted.

<table>
<thead>
<tr>
<th>Sector</th>
<th>The amount of PPA</th>
<th>Frequency PPA</th>
<th>Average value of PPA (In thousand Reais)</th>
<th>The average Equity (In thousand Reais)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclical Consumer Goods</td>
<td>19</td>
<td>30.16%</td>
<td>-55,567</td>
<td>2,761,333</td>
</tr>
<tr>
<td>Industrial Goods</td>
<td>13</td>
<td>20.63%</td>
<td>28,228</td>
<td>2,151,992</td>
</tr>
<tr>
<td>Non-cyclical Consumer Goods</td>
<td>9</td>
<td>14.29%</td>
<td>-444,870</td>
<td>11,295,718</td>
</tr>
</tbody>
</table>
is, renegotiated deferred liability (ATMA, 2018). Million in equity and 0.26 million of Income Tax and Social Contribution in the company’s debentures were measured at fair value through profit or loss, resulting in a recognition of 0.5 CPC 48 using the cumulative effect method, applied from 1/1/2018. Due to th

of PPA among the sample. From the explanatory notes, it is evident that the company adopted cumulative effect on equity from 1/1/2019, totaling 1.9 million (JBS, 2019). Earned abroad. Therefore, the company recognized the effects of this retrospectively, with

Furthermore, the company and its subsidiaries did not identify uncertain tax treatments to be recognized in the financial statements, except those to avoid double taxation due to profits earned abroad. Therefore, the company recognized the effects of this retrospectively, with cumulative effect on equity from 1/1/2019, totaling 1.9 million (JBS, 2019).

Regarding PPA, research data reveals that JBS (non-cyclical consumer goods sector) was the company in the sample with the largest negative adjustment to equity during the studied period. According to explanatory notes, the company mentions that the entry into force of ICP 22 - Uncertainty over Income Tax Treatments was the primary reason for these PPA. Furthermore, the company and its subsidiaries did not identify uncertain tax treatments to be recognized in the financial statements, except those to avoid double taxation due to profits earned abroad. Therefore, the company recognized the effects of this retrospectively, with cumulative effect on equity from 1/1/2019, totaling 1.9 million (JBS, 2019).

Operating in the industrial goods sector, Atma S/A, in 2018, presented the highest value of PPA among the sample. From the explanatory notes, it is evident that the company adopted CPC 48 using the cumulative effect method, applied from 1/1/2018. Due to this, renegotiated debentures were measured at fair value through profit or loss, resulting in a recognition of 0.5 million in equity and 0.26 million of Income Tax and Social Contribution in the company's deferred liability (ATMA, 2018).

Notes: *Real estate companies are classified in the financial sector on B3. PPA = Prior Period Adjustments.

Notes: Values in thousands of Reais. Notes: Net Income (NI); Equity (EQ); Prior Period Adjustments (PPA); Net Revenue (NR); Gross Debt (GD); N = 63 observations.

Source: research data.

It’s evident (Table 4) that PPA were more frequent in the cyclical consumer goods, industrial goods, and non-cyclical consumer goods sectors, totaling 65.1% of all identified PPA. Additionally, it’s noticeable that only the industrial goods, financial, and healthcare sectors had positive PPA during the period, affecting equity positively. However, the amount of negative PPA was significantly higher, especially in the non-cyclical consumer goods sector, which, in turn, doesn’t have the highest aggregated equity, trailing behind the communications sector.

Table 5 presents the descriptive statistics of the economic profile of the sample.

**Table 5**

*Descriptive statistics of the economic profile of the sample during the period*

<table>
<thead>
<tr>
<th></th>
<th>Standard deviation</th>
<th>Mean</th>
<th>Coefficient of Variation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI</td>
<td>1,231,760</td>
<td>427,284</td>
<td>288,2766</td>
<td>-4,466,246</td>
<td>6,464,854</td>
</tr>
<tr>
<td>EQ</td>
<td>6,677,994</td>
<td>5,063,600</td>
<td>131,8823</td>
<td>-4,014,370</td>
<td>32,482,049</td>
</tr>
<tr>
<td>PPA</td>
<td>322,927</td>
<td>-79,749</td>
<td>-404,9292</td>
<td>-1,908,796</td>
<td>511,539</td>
</tr>
<tr>
<td>NR</td>
<td>35,654,132</td>
<td>14,420,410</td>
<td>247,2477</td>
<td>5,281</td>
<td>204,523,57</td>
</tr>
<tr>
<td>GD</td>
<td>10,418,007</td>
<td>5,858,072</td>
<td>177,8402</td>
<td>0</td>
<td>56,260,414</td>
</tr>
</tbody>
</table>

Overall, it is observed that the companies in the sample were profitable during the period but carried significant debt. Notably, these are large-scale companies, with an average revenue exceeding 14 billion Reais. The average equity for the sample companies during the period stood at 5 billion Reais, with an average negative PPA of over 79 million Reais.

To evaluate how PPA affects equity (EQ) and Return on Equity (ROE), variations were calculated by company, considering values with and without PPA adjustments as follows: 

\[((\text{Unadjusted EQ} / \text{EQ}) - 1) \times 100; ((\text{Unadjusted ROE} / \text{ROE}) - 1) \times 100\]. From these variations, sector-wise average variations were calculated, obtaining the mean of all variations within each sector.

The average variations of EQ (considering PPA) to EQ (without PPA) and of ROE (considering PPA) to Unadjusted ROE can be observed in Table 6.

### Table 6

**Average variations during the period**

<table>
<thead>
<tr>
<th>Sector</th>
<th>EQ (In thousand Reais)</th>
<th>Unadjusted EQ (In thousand Reais)</th>
<th>Var EQ %</th>
<th>ROE %</th>
<th>ROE unadj %</th>
<th>Var ROE %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclical Consumer Goods</td>
<td>2,151,992</td>
<td>2,123,764</td>
<td>-46.87</td>
<td>1.23</td>
<td>1.35</td>
<td>-0.08</td>
</tr>
<tr>
<td>Industrial Goods</td>
<td>18,363,941</td>
<td>18,580,010</td>
<td>1.25</td>
<td>12.54</td>
<td>12.39</td>
<td>-1.23</td>
</tr>
<tr>
<td>Non-cyclical Consumer Goods</td>
<td>2,761,333</td>
<td>2,816,900</td>
<td>2.57</td>
<td>0.84</td>
<td>1.81</td>
<td>0.71</td>
</tr>
<tr>
<td>Financial*</td>
<td>11,295,718</td>
<td>11,740,588</td>
<td>1.65</td>
<td>-16.79</td>
<td>-17.20</td>
<td>-1.54</td>
</tr>
<tr>
<td>Healthcare</td>
<td>1,780,728</td>
<td>1,704,981</td>
<td>-5.82</td>
<td>-35.35</td>
<td>-33.74</td>
<td>8.82</td>
</tr>
<tr>
<td>Utilities</td>
<td>6,846,776</td>
<td>6,899,969</td>
<td>0.14</td>
<td>21.09</td>
<td>21.02</td>
<td>-0.52</td>
</tr>
<tr>
<td>Oil</td>
<td>4,619,834</td>
<td>4,613,213</td>
<td>-0.32</td>
<td>17.14</td>
<td>17.20</td>
<td>0.33</td>
</tr>
<tr>
<td>Communications</td>
<td>1,057,209</td>
<td>1,062,076</td>
<td>0.46</td>
<td>6.72</td>
<td>6.69</td>
<td>-0.46</td>
</tr>
<tr>
<td>Information Technology</td>
<td>7,945,833</td>
<td>7,964,561</td>
<td>0.87</td>
<td>7.80</td>
<td>7.76</td>
<td>-0.82</td>
</tr>
</tbody>
</table>

Notes: EQ = Equity; Var = Variation; ROE = Return on Equity; Unadj = Unadjusted.

Source: research data.

Among the 9 sectors in the sample, 6 showed a positive variation from Adjusted Equity (affected by PPA) to Unadjusted Equity (without PPA). This indicates that in these sectors, PPA reduced equity, and when excluding their effects, equity increased. However, these variations did not surpass the average of 2.57%, recorded in the cyclical consumer goods sector. Conversely, there was a negative average variation in the industrial goods sector of -46.87%, mostly stemming from PPA of over 511 million accounted for in the initial adoption of IFRS 9/CPC 48 (Financial Instruments standard) in 2018 at Atma S/A. When excluding these adjustments, the equity of said company turned negative (negative variation of 613%). These results illustrate how PPA can impact a company’s equity.

Regarding the Return on Equity (ROE) variation, the financial sector, where companies engage in real estate exploration activities, reached 8.82% on average, being the highest ROE variation compared to Unadjusted ROE in the analyzed sample. This occurred because when excluding PPA, the equity in this sector decreased. Conversely, the largest negative average variation in ROE (-1.54%) was found in the non-cyclical consumer goods sector. It's important to note that Atma S/A was excluded from the ROE analysis since it doesn't make economic sense to calculate a return on negative equity.

PPA refers to the effects of changes in accounting policies and/or error corrections, thus not necessarily arising from operational decisions and financing strategies of companies. These adjustments are made to enable comparability between financial statements presented in the period. In order to assess the statistical significance of the detected variations, the Wilcoxon test results are presented in Table 7, with a confidence level of 95%.
Table 7
Wilcoxon Test for Average Variations in Equity and ROE.

<table>
<thead>
<tr>
<th></th>
<th>EQ - EQ UNADJ</th>
<th>ROE - ROE UNADJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>-3.923</td>
<td>-2.657</td>
</tr>
<tr>
<td>Sig</td>
<td>0.000</td>
<td>0.008</td>
</tr>
<tr>
<td>N</td>
<td>63</td>
<td>63</td>
</tr>
</tbody>
</table>

Notes: EQ = Equity; ROE = Return on Equity; Unadj = Unadjusted.
Source: Research Data.

According to Table 7, the average variation between adjusted Equity (affected by PPA) and unadjusted Equity (free from PPA) is statistically significant at a 95% confidence level for the financial statements of companies listed on New Market of B3, analyzed from 2010 to 2019. Therefore, hypothesis H1 is not rejected, as there is a statistically significant difference between Equity before and after PPA.

Regarding the average variations between adjusted Return on Equity (affected by PPA) and unadjusted Return on Equity (without PPA), there is a statistically significant difference at a 95% confidence level for the financial statements of companies listed on New Market of B3, analyzed from 2010 to 2019. Hence, hypothesis H2 is also not rejected.

In other words, the effect of PPA on Equity and Return on Equity is observed, indicating the influence of changes in accounting policies and/or error corrections in the analysis of these indicators. These results resemble the findings of Almeida et al. (2011), Santos (2012), and Acuña et al. (2013), who studied the adoption of a set of standards and observed effects on Equity and Net Income of the researched companies. However, like the conclusions of Tavares and Carvalho (2018), the effects found in this study concern the effects resulting from changes in accounting policies and error corrections, tending to protect present and/or future results at the expense of past results.

5 Final Considerations

The objective of this study was to analyze the effect of Prior Period Adjustments (PPA) on Equity (EQ) and Return on Equity (ROE). The results revealed a higher frequency of using PPA to recognize the effects of adopting accounting standards retrospectively, with cumulative effect on Equity, without presenting comparative information.

This implies that the sampled companies made changes in accounting policies out of obligation to comply with accounting pronouncements rather than voluntarily, especially in the years 2018 and 2019. However, there is an accounting choice regarding the transition in adopting the new standards, as these may have transitional provisions offering the option to apply them retrospectively, for each previous reporting period presented, as per CPC 23, or retrospectively, with cumulative effect of initially using the recognized pronouncement on the date of initial application.

Overall, the frequency of using PPA for error corrections in the analyzed companies was low. However, in 10 situations, it wasn't possible to identify the origin of PPA, reflecting non-compliance with the disclosure requirements of CPC 23. It's understood that such disclosures are inherently relevant and should not be omitted. For example, given that Brazilian tax legislation confirms that changes in accounting policies will not be taxed, it's essential to clearly disclose what generated PPA in the companies’ financial statements.

Furthermore, it can be concluded from the results that PPA affected the Equity and ROE of companies, either positively or negatively. This is a simplified and legally permitted way to
demonstrate the effects of changes in accounting policies and error corrections when retrospective application for comparative financial statements is impractical, as per CPC 23.

Lastly, it's worth noting that the IASB's review of IAS 8 leads to a reduction in the impracticability threshold in the retrospective application of voluntary changes in accounting policies. The proposed threshold, according to Tavares and Carvalho (2018), involves weighing the cost and benefit associated with the retrospective application of accounting policy changes.

The results of this study allow users of accounting information to conclude that the recognition of PPA can significantly affect ROE values. Therefore, they need to be cautious when making decisions, considering that ROE is one of the most used indicators in decision-making. This caution helps users who use secondary sources to calculate ROE, as they may choose to derive the ratio from the company's own financial statements (primary sources).

Despite the relevance of the New Market segment, both in terms of total companies (almost 30%) and higher transparency levels, the results cannot be generalized to other companies, which is a limitation of the study. Additionally, the study is limited by the low number of PPA in the financial statements of the sample companies. For future studies, it's suggested to expand the sample size and examine how companies are disclosing voluntary changes in accounting policies and the effects of changes in accounting estimates.
References


