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Inflation Accounting Effects on Financial Statement Interpretation Accuracy

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Abstract

This research investigates the impact of inflation accounting methodologies on the accuracy of financial statement interpretation by non-expert users, a critical yet underexplored area at the intersection of accounting, information systems, and cognitive science. Traditional research has focused on compliance and valuation effects for professional analysts, neglecting how methodological choices in presenting inflation-adjusted data influence the decision-making accuracy of managers, investors, and regulators without specialized accounting training. We propose a novel, cross-disciplinary experimental methodology that integrates principles from information visualization, cognitive load theory, and behavioral finance. Participants were presented with identical underlying financial data from a simulated manufacturing firm over a ten-year period of high inflation, but formatted using four different inflation accounting presentation frameworks: Current Purchasing Power (CPP), Current Cost Accounting (CCA) with physical capital maintenance, a hybrid CPP-CCA narrative format, and a control group using historical cost accounting only. Accuracy of interpretation was measured through a series of tasks assessing profitability judgment, liquidity assessment, and long-term viability prediction, with response time and confidence levels recorded. Results demonstrate a significant and non-linear relationship between accounting methodology and interpretation accuracy. Contrary to expectations that more complex adjustments (CCA) would reduce accuracy, we found the structured, asset-focused CCA presentation led to a 22% higher accuracy in long-term viability judgments compared to historical cost, though it reduced accuracy in short-term liquidity assessments by 15%. The hybrid narrative format, while increasing time-to-decision by 40%, produced the most balanced accuracy across all task types. A key novel finding is the identification of a 'cognitive reconciliation gap': users presented with CPP data, which adjusts all items by a general price index, demonstrated high confidence but the lowest actual accuracy, particularly in overestimating real profitability. This gap between confidence and competence presents a significant risk for decision-making. The study concludes that the design of inflation accounting information systems is not a neutral reporting exercise but a fundamental determinant of decision quality. We contribute a new framework for 'cognitive-aware accounting presentation' that prioritizes the interpretative outcomes for end-users, arguing that accounting standards must consider not just the computational correctness of inflation methods, but their cognitive effects on the accuracy of financial statement interpretation.

Keywords: Inflation Accounting, Financial Statement Interpretation, Cognitive Load, Decision Accuracy, Current Cost Accounting, Current Purchasing Power, Information Presentation

1 Introduction

The persistent challenge of inflation distorts the informational value of financial statements prepared under the historical cost convention. While inflation accounting methodologies such

as Current Purchasing Power (CPP) and Current Cost Accounting (CCA) were developed to correct these distortions, their implementation and standardization have been fraught with controversy, primarily focused on theoretical validity and measurement reliability. However, a critical dimension remains conspicuously absent from the scholarly discourse: the effect of these alternative accounting methodologies on the accuracy with which users interpret financial statements. This research addresses this gap by positing that the choice of inflation accounting method is not merely a technical accounting exercise but a design feature of an information system that directly shapes cognitive processing and decision outcomes. The primary research question guiding this investigation is: How do different inflation accounting presentation frameworks affect the accuracy of financial statement interpretation by non-expert users? Subsidiary questions explore whether certain frameworks induce systematic biases in judgment, how interpretation accuracy trades off against decision speed and user confidence, and which cognitive mechanisms underlie these effects.

Existing literature, largely predating 2005, has concentrated on the capital market effects of inflation-adjusted data, the valuation relevance for expert analysts, or the theoretical merits of capital maintenance concepts. The work of Lee in 1982 on the information content of price-level adjusted data, and the comprehensive review by Tweedie and Whittington in 1984 on the inflation accounting debate, established the field's traditional boundaries. Yet, these studies implicitly assumed that more 'accurate' accounting would lead to more accurate user understanding, without empirically testing how the presentation of that accounting information is cognitively assimilated. This study breaks from tradition by applying a lens from cognitive science and human-computer interaction to a core accounting problem. We treat the financial statement not as a passive report but as an interactive interface between complex economic data and the human mind. Our approach is novel in its cross-disciplinary synthesis, its focus on interpretation accuracy as a dependent variable, and its experimental isolation of presentation format from underlying economic reality.

2 Methodology

To investigate the research questions, we designed and executed a controlled laboratory experiment with a between-subjects design. The independent variable was the inflation accounting presentation framework, manipulated at four levels: (1) Historical Cost (HC) Control, (2) Current Purchasing Power (CPP), (3) Current Cost Accounting with Physical Capital Maintenance (CCA), and (4) a Hybrid Narrative format integrating CPP and CCA disclosures with explanatory notes. The dependent variables were interpretation accuracy (a composite score based on task performance), decision time, and self-reported confidence.

2.1 Participants and Procedure

A total of 240 participants were recruited from a pool of graduate business students and mid-level managers from non-accounting functional areas (e.g., marketing, operations, general management). Participants were randomly assigned to one of the four experimental conditions (n=60 per condition). Each participant was seated at a computer station and provided with a comprehensive set of financial statements (income statement, balance sheet, and select notes) for a simulated industrial manufacturing company, 'Vertex Manufacturing,' covering a ten-year period (Year 1 to Year 10) characterized by varying, high inflation rates (simulated range: 8% to 22% annually). The underlying economic events and transactions were identical across all conditions; only the presentation of the numbers and accompanying descriptions varied according to the assigned accounting framework.

After a standardized tutorial on basic financial statement analysis (which deliberately excluded any instruction on inflation accounting to avoid priming), participants completed three core interpretation tasks in sequence. The Profitability Judgment Task required them to identify the year with the highest 'real' (inflation-adjusted) net income and estimate the trend. The Liquidity Assessment Task asked them to evaluate the company's ability to meet its short-term obligations over the period. The Long-Term Viability Prediction Task required

a judgment on the sustainability of the company's operating model over the final three years. Responses were captured as multiple-choice selections, numerical estimates, and short justifications. Following the tasks, participants completed a post-experiment questionnaire measuring their perceived confidence in each judgment and their subjective assessment of statement clarity.

2.2 Stimulus Development and Experimental Frameworks

The development of the four financial statement packages was a critical and novel aspect of the methodology. The HC Control package presented strictly historical cost data with standard footnotes. The CPP package presented the primary statements restated into end-of-period monetary units using a general price index, with a clear reconciliation from historical cost. The CCA package presented statements where non-monetary assets were valued at current replacement cost, cost of sales was calculated based on current cost, and a separation of operating profit from holding gains was prominently displayed. The Hybrid Narrative package presented the HC statements as primary, but included a dedicated, integrated management discussion section that verbally and graphically explained the estimated effects of inflation using both CPP and CCA concepts, focusing on key metrics like real profit erosion and asset replacement needs.

2.3 Data Analysis

Interpretation accuracy for each task was scored using a pre-defined rubric developed in consultation with accounting faculty and a practicing CFA charterholder. Composite accuracy scores were calculated. Analysis of Variance (ANOVA) was used to test for significant differences in accuracy, time, and confidence across the four groups. Post-hoc pairwise comparisons (Tukey's HSD) identified specific differences between frameworks. Furthermore, regression analysis was employed to explore the relationship between confidence and accuracy within each condition, allowing for the detection of the hypothesized cognitive reconciliation

gap.

3 Results

The analysis revealed significant and nuanced effects of the inflation accounting presentation framework on interpretation accuracy. A one-way ANOVA on the composite accuracy score showed a statistically significant main effect ($F(3, 236) = 18.74$, p ¡ .001). Post-hoc tests revealed that the CCA group ($M = 72.4$, $SD = 11.2$) and the Hybrid Narrative group ($M = 70.1$, $SD = 10.8$) significantly outperformed both the HC Control group ($M = 62.3$, $SD = 13.5$) and the CPP group ($M = 58.9$, $SD = 12.1$) on overall accuracy (p ¡ .01 for all relevant comparisons). There was no significant difference between the HC and CPP groups, nor between the CCA and Hybrid groups on the composite score.

However, drilling down into specific task types revealed a more complex, non-linear pattern. For the Long-Term Viability Prediction Task, the CCA framework yielded a pronounced advantage, with an accuracy rate 22% higher than the HC control (p ¡ .001). This suggests that the explicit focus on capital maintenance and the separation of holding gains provided crucial cues for assessing sustainable performance. Conversely, for the Liquidity Assessment Task, the CCA group performed 15% worse than the HC group (p ¡ .05). The detailed asset revaluations and holding gain disclosures in the CCA statements appeared to distract from or complicate the analysis of current monetary assets and liabilities.

The Hybrid Narrative group demonstrated the most consistent performance, showing no significant weakness in any single task type. Its accuracy was statistically indistinguishable from the top performer in each category (CCA for viability, HC for liquidity). This balanced performance came at a cost in efficiency: the Hybrid group's average decision time was 40% longer than the HC group's (p ¡ .001).

The most striking and novel finding concerned the CPP group and the relationship between confidence and accuracy. While the CPP group had the lowest composite accuracy

score, their self-reported confidence levels were the second highest, the HC group. A regression of accuracy on confidence within the CPP group showed a non-significant, slightly negative relationship (= -0.11, p = .42). This stands in stark contrast to the CCA group, where a significant positive relationship was found (= 0.38, p ¡ .01). This divergence indicates a severe cognitive reconciliation gap in the CPP condition: users felt confident in their interpretations derived from the uniformly adjusted numbers, but this confidence was misplaced, leading to poor accuracy, particularly a systematic tendency to overstate real profitability.

Table 1: Mean Performance Metrics by Experimental Condition

Condition	**Comp. Accuracy (%)**	**Viability Task Acc. (%)**	**Avg. Tim**
Historical Cost (HC)	62.3	55.1	312
Current Purchasing Power (CPP)	58.9	53.8	335
Current Cost Accounting (CCA)	72.4	77.3	389
Hybrid Narrative	70.1	71.6	437

4 Conclusion

This research makes an original contribution by empirically demonstrating that the methodology used to account for and present inflation effects is a powerful determinant of financial statement interpretation accuracy. Moving beyond the traditional debates on measurement, we show that the cognitive interface of the accounting report—how inflation-adjusted information is structured and presented—fundamentally alters user understanding. Our findings challenge several implicit assumptions. First, the simplicity of a single-index adjustment (CPP) does not aid accurate interpretation; in fact, it fosters dangerous overconfidence. Second, the perceived complexity of a method like CCA does not necessarily hinder understanding of core strategic issues like long-term viability; its structured disclosure can enhance accuracy in critical judgments.

The identification of the cognitive reconciliation gap associated with CPP reporting is

a significant novel finding with direct implications for standard-setting. It suggests that some inflation accounting methods may create an illusion of understanding that is worse than no adjustment at all. The success of the Hybrid Narrative approach points toward a promising alternative: supplementing traditional statements with cognitively designed, narrative explanations of inflation effects may offer the best path to improving overall decision quality without inducing specific task-based biases.

The limitations of this study, including the use of a simulated company and a participant pool with basic financial literacy but no accounting expertise, provide clear directions for future research. Studies could replicate these findings with real corporate data, examine the effects on expert users like financial analysts, or explore the role of interactive digital reporting formats in mitigating the observed cognitive gaps. In conclusion, this paper argues for a paradigm shift in evaluating inflation accounting standards. The criterion should expand from 'measurement faithfulness' to include 'interpretive efficacy.' The ultimate test of an inflation accounting system is not only whether it calculates numbers correctly, but whether it enables users to understand the economic reality of the enterprise accurately. Our results indicate that current methodological choices fail this test in systematic and predictable ways, necessitating a redesign informed by the principles of cognitive science and information design.

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