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Analysis of the Impact of PP&E Two Subsequent Measurement Models on Enterprise Financial Reporting and Financial Performance

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Abstract: Measurement based on PP&E has been controversial in accounting in recent years. This paper analyzes the contributions and risks of two subsequent measurement models of PP&E to the financial reporting and performance of enterprises. It also explores the relationship between the two models. This study aims to provide a reference for companies in the selection of subsequent measurement model of PP&E. According to previous research, the cost model provides more timely and understandable information for financial reporting and reduces the cost of preparing reports. It also improves the objectivity and verifiability of financial performance. However, the cost model may not show the true value of a company's PP&E. The revaluation model provides more relevant information for financial reporting and reduces information asymmetry. It also positively affects the company's future financial performance. However, revaluation models are highly subjective, susceptible to bias manipulation, and can lead to misleading information due to value reversal. The relationship between the two models can be explained as a slow evolution from the cost model to the revaluation model, but not a complete replacement.

Keywords: PP&E, the cost model, the revaluation model, financial report, financial performance

1. Introduction

1.1. Background

Property, plant, and equipment (PP&E) also called fixed assets are assets used for the production or supply of goods and services, for administrative purposes, or rental to others [1]. Measurement of PP&E has run into several arguments in accounting for several decades [2]. The problem is how to evaluate the two measurement models. One of the main points that need to be discussed is the affectations of the cost model and revaluation model for PP&E on the quality of financial reporting and financial performance in business accounting. Both two measurement models have contributions and risks for companies' financial reporting and performance. Also, these two models have a connection to a certain extent.

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1.2. Related Research

1.2.1. PP&E

According to IAS16, a fixed asset is an asset whose future economic benefits are likely to flow to the entity and whose cost can be measured reliably [3]. There are two different ways of measuring PP&E after its initial recognition as an asset allowed by IAS16 --- the 'cost model' and the 'revaluation model'.

1.2.2. The Cost Model and Historical Cost

Based on IAS16-30, the cost model is a model that uses the cost of PP&E less any accumulated depreciation and any accumulated impairment to do PP&E's subsequent measurement [1].

Historical cost provides monetary information about assets, liabilities, and related income and expenses [1]. Still, it does not reflect changes in value, except to the extent that those changes relate to impairment of an asset or a liability becoming onerous [1].

In conceptual framework 6.69 to 6.71, it can be found that historical cost is a simpler and cheaper way to measure finance information than measuring current value [4].

However, historical cost may reduce the usability of financial reporting as it only reflects the value of assets at the date of the transaction [1].

1.2.3. Revaluation Model and Fair Value

By IAS16-31, the revaluation model is a model that uses the fair value of PP&E at the date of the revaluation less any accumulated depreciation and any accumulated impairment to do PP&E's subsequent measurement [1]. The IFRS13-9 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date [5].

Fair value can enhance transparency, reliability, and relevance of financial reporting and measurement of financial performance [6].

However, conceptual framework 6-74 said that valuation techniques can be expensive and complex, and fair value inputs can be subjective and difficult to validate, which can reduce the usability of the information provided in financial reports [4].

1.2.4. Financial Reporting and Financial Performance

The IASB in its 2018 Conceptual Framework for Financial Reporting identified historical cost, fair value, value in use of assets, value of performance of liabilities, and current cost as the measurement bases for financial reporting [7]. PPE involves historical cost and fair value in two value measurement models. Also, PPE is a large percentage of total assets, so for many companies, the decision of which PPE measurement model to choose can have a huge impact on financial reporting and financial performance [7].

To improve the usability and quality of both financial reporting and financial performance, depend on conceptual frameworks 2.4 and 2.20, if you want financial information to be useful, it must be relevant and faithfully represent what it purports to represent and usefulness of financial information is enhanced if it is comparable, verifiable, timely and understandable [4].

2. Cost model and Revaluation Model Analyzing

At present, the valuation methods for PP&E include two types, which have different advantages and limitations, as shown in Table 1.

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Table 1: Comparison of Cost model and Revaluation model

		The cost model	The revaluation model
Contributions	For Financial Reporting	● Timeliness and cost-efficient ● More understandable	● More relevant market price ● Reducing information asymmetry
	For Financial Performance	● Objectivity and verifiability	● Positive impact
Risks		● Not showing the true value of a company's PP&E -- Misleading	● Subjectivity and the potential for manipulation bias ● Reversal of value -- Misleading

2.1. The Cost Model's Contributions

2.1.1. For Financial Reporting

First, using a cost model can improve the timeliness of financial reporting. Because historical cost does not require reference to market values, it is not subject to any future changes [2]. Therefore, when using the cost model for subsequent measurement of PP&E, companies do not have to spend lots of time and financial resources to estimate the fair value. Thus, using the cost model to prepare financial reports can be more cost-efficient and time-efficient than the revaluation model.

Second, historical cost helps to produce more understandable financial reports. Due to the simplicity of historical cost, users can easily understand financial reports even if they do not have any financial knowledge base [2]. This also indirectly improves the quality of financial reporting, as one of the requirements of financial reporting is understandable.

2.1.2. For Financial Performance

Using the cost model improves the objectivity and verifiability of financial performance. Some industries consider historical cost to be a more appropriate measure because it better reflects the economic substance of the transaction [2]. Since historical cost records original payments, their amounts can be verified through original invoices. At the same time, historical cost provides a more stable basis compared to fair value's projection of the future [7]. This means that the cost model provides more objective information. Compared with the revaluation method, the cost method makes the financial data of PP&E not subject to subjective adjustment, objective, and verifiable.

2.2. Cost Model's Risks

The information about changes in the value of PP&E is important to users of financial performance and financial reports. However, the cost model measure of PP&E does not show the true value of a company's PP&E. It records all assets at the price at the date of acquisition. As historical cost at the time of purchase may differ significantly from the current or future market value of the PP&E, the cost model may help companies disguise information about the health of their financial performance [8]. For example, in times of inflation leading to inflated profits [2]. These may make the information presented in the financial data misleading.

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2.3. Revaluation Model's Contributions

2.3.1. For financial reporting

Fair value provides more relevant market price information than historical cost for financial reporting. Some previous theories have argued that fair value is superior to historical cost in the subsequent measurement of PP&E. They argued that fair value presents a more realistic measure of profit and provides more meaningful data for financial statements [7]. Because it is based on specific time and market conditions [8]. Fair value reacts to current market fluctuations by changing the value of assets and liabilities [2]. In other words, fair value provides the company with ongoing financial information that is closely related to the current market, including information on current market conditions and forecasts, whereas historical cost reflects only outdated market information. Consequently, the revaluation model contributes to the relevance and timeliness of financial reporting information.

In addition, IASB emphasizes "decision usefulness" as the general purpose of financial reporting, and therefore financial reports should be effective in enabling external users to assess financial information such as company performance. This means the information provided in financial reports should minimize information asymmetry within and outside the company to effectively assess financial performance [9]. A survey of the annual financial statements of 286 listed companies from large EU economies found that the ratio of market to book value is significantly and negatively correlated with a company's choice of fair value [8]. It suggests that firms' choice of fair value to measure PP&E effectively reduces information asymmetry.

2.3.2. For Financial Performance

The change in the performance of fixed assets after revaluation may have an impact lasting more than one year [10]. Meanwhile, future performance is one of how a firm's current performance is reflected [11]. Therefore, the research of this paper is directed towards the impact of asset revaluation on future financial performance.

The revaluation of PP&E is an important factor in properly measuring the financial performance of a company [3]. When a company's PP&E is not properly revalued, it may affect the company's long-term sustainability and therefore its financial performance [3]. A study found a significant positive correlation between the revaluation of fixed assets of Indonesian firms and the change in operating income in the following year after the revaluation [10]. Hence, PP&E revaluation positively impacts the company's future financial performance.

2.4. Revaluation Model's Risks

By revaluing assets, the company seeks to provide positive signals about future performance [10]. Nevertheless, Lopes and Walker's findings in 2012 indicated that asset revaluation is negatively correlated with future business performance [12]. The study held by Abbas et al. in 2019, showed that revaluation has negatively impacted the future business performance of the firms in the cement industry of Pakistan [13].

Critics of the revaluation model have mainly focused on its subjectivity and the potential for manipulation and bias. Most countries have extremely liquid financial markets but few liquid markets for non-financial assets [14]. Under a normally liquid market, fair value is uncontroversial as an estimate of the value of exiting the market, but under an illiquid market, estimation of fair value involves projections of future cash flows and the choice of an appropriate discount rate, these depend on assumptions made by the management [2]. This results in estimates of fair value that are highly subjective and subject to a greater risk of manipulation. Considering the range of valuations, fair value is not always considered reliable and unbiased [9]. Also, management may have a management

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bias that results in unreliable estimates [2]. If fair value estimates are not reliable, the likelihood of misstatements in financial statements prepared using fair value measurements is higher. This also has the potential to mask deliberate miscalculation and projection of figures.

Moreover, PP&E may have a reversal of value in the future. The PPE market can be volatile regularly, which means that fair value estimates also need to be reassessed, creating volatility in PPE's fair value [2]. However, there are also moments when the market returns to stability, when everything reverses in value back to its previous normal level, making both reported losses and gains appear temporary [2]. That the information provided by fair value at that time may be misleading.

3. Comparison and Relationship Between Two Models

The evolution of PP&E's subsequent measurement models can be described as a gradual process from a cost model to a revaluation model [9].

On the one hand, the cost model won't be instantly replaced by the revaluation model. historical cost is undoubtedly traditional, but given that this model is still used in practice, it is also not obsolete [7]. As a result of a study, cost modeling is dominant in Serbia [7]. This situation can be explained by the fact that unreliable market inputs are not sufficient to estimate reliable fair values, company motivation is not sufficient to engage external experts to estimate fair values and business policy objectives, etc [7]. And the use of the asset revaluation model in PP&E measurement is still rare in practice. The survey held by Esen and Perek, found that only 18 of the top 100 BIST companies at the end of 2014 had used revaluation models for some of their tangible fixed assets, of these 16 said they worked with experts to determine fair value, and 11 gave how they determined fair value [15]. This may be because the measurement of fair value will be more expensive than the historical cost due to the need to hire outside experts. Similarly, Hladika et al. investigated the financial statements of 500 listed companies in Croatia from 2014 to 2018, and the study found that only an average of 8.8% of them used the revaluation model to measure PP&E [14]. In addition, the volatility of fair value and performance under the revaluation model will generally be higher than under the historical cost model, which is not favorable to some companies that prefer stable amounts in their financial reports [7].

On the other hand, the deletion of the word "unbiased" from the conceptual framework could indicate that the conceptual framework's standards are tilting in favor of the revaluation model. A major objection to the revaluation method is that it is perceived to be more subjective and easier to manipulate than the cost method. However, this opposition has diminished following a change in the description of the conceptual framework [9].

In reality, it does not mean the revaluation model is technically superior to the cost model. Instead, the revaluation model should be seen as a response to financial reporting problems previously didn't encountered [16]. The revaluation model requires a more extensive and in-depth analysis of the method and assumptions used to determine the value recognized in the financial statements than the cost model [2]. Therefore, the evolution of the cost model to the revaluation model has been long and gradual.

There are several key points in the long evolution from cost models to revaluation models that will drive the process. As mentioned earlier, the changes made by the IASB in the conceptual framework indicate that international organizations are intentionally promoting the evolution of the cost model to the revaluation model. This will subconsciously weaken the negative perception of revaluation models. Therefore, it can be considered as the first critical point in the evolution process. From this, it can be deduced that the key point in advancing the change will occur when the accounting policies and conceptual framework associated with the revaluation model are modified to weaken or limit the risks of the revaluation model.

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The revaluation model will not completely replace the cost model in the future. After analyzing the revaluation model, the risks of the revaluation model cannot be completely avoided and cannot completely replace the advantages of the cost model, such as objectivity. Therefore, it can be concluded that although the use of revaluation models will be widely used in various industries in the future, industries that pursue strong objectivity may choose the cost model.

4. Conclusion

This paper's research direction is how the cost model and revaluation model of PP&E affect financial reporting and performance in business accounting. According to this study, both two models have contributions and risks for companies' financial reporting and performance. The cost model improves the timeliness and understandability of financial reporting and the objectivity and verifiability of financial performance. But it cannot show the true value of PP&E. The revaluation model provides more relevant financial information and reduces information asymmetry for financial reporting, which has a positive impact on the company's financial performance. But it may be more subjective and easier to manipulate. And PP&E subsequent measurement models' evolution is a gradual process from a cost model to a revaluation model, but not a complete replacement. All analysis above only used the method of literature review and did not collect first-hand data for analysis, which may result in differences between the research results and the actual situation. Furthermore, it only focuses on the affections of two measurement models of PP&E on financial reporting and performance but does not discuss the improvement methods to avoid the risks mentioned above. Here this paper suggests that one of the future study orientations can be finding ways to reduce the subjectivity of the revaluation model to provide misleading financial information. Accounting practice can try to dig into the possibility of reducing bias and maneuverability of PP&E's measurement by prudential regulation.

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