

## **INVENTORY VALUATION: A STUDY OF PRACTICALITY IN INDONESIAN PUBLISHING FIRMS**

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### **Abstract**

*In accounting, inventory is regarded as one of the important factors for the company's assets. At least, the higher the value of inventory, ceteris paribus, boosts the value of the company. This may bring about public image and attract potential investors. However, it may still raise concerns from the public in terms of the real valuation on the company's inventory, not only on the finished products, but also on the raw materials, and the semi-finished products. For publicly-traded firms, inventory valuations are relatively clear as they are bounded by rules and regulations from the government. For private firms, inventory valuations are a bit lenient though they are still bounded by standardized accounting rules and regulations. Hence, it may be interesting to study the actual method of inventory valuations in privately-held firms.*

*This paper attempts to observe and analyze the inventory valuation practices in privately-held publishing companies in Indonesia. It is a common knowledge that publishing firms face relatively unique challenges, whereby their inventory values decline over time.*

*Unstructured interview is used to develop preliminary analysis of inventory valuation practices in several publishing firms. Further methodology used is statistical hypothesis testing. The paper discovered several findings consistent with the author's hypotheses. First, the researched company is usually aware of obsolete inventory, whose value declines overtime. However such companies usually do not adjust its inventory value even after gaining evidence to propose for adjustments. The finding of this paper is also concluded that such phenomenon are due to several factors, such as the practical of business which is common and major under the judgment of company's management.*

**Keywords:** inventory valuation, publishing firms, practical, accounting

### **1. INTRODUCTION**

Profit has long served as a measure of corporate performance. Companies with higher profits are deemed better performer than companies with lower profits. Profit is naturally achieved from generating maximum revenue while exerting minimum costs. It is the aim of most companies to generate as much revenue, while having as low expense figure as possible.

As one account in the firm's balance sheet, inventory plays an important role in helping companies achieve the profit orientation over time. As is common in many business practices, the revenue figure in an income statement is built on inventory turnover and sales. On the other hand, the direct cost figure, a type of expense which directly reduces revenue, is composed of cost of good sold ("COGS"). COGS represents the monetary value of sold inventory. The lower the monetary value, the lower the COGS; and the lower reduction effect it will cause to revenue figure. To the contrary, the higher the monetary value, the higher the COGS will be (and subsequently, the higher reduction effect to revenue figure).

In other words, lower inventory value creates lower COGS, and therefore higher profit figure.

Higher inventory values create higher COGS, and thus a lower profit figure. It is obvious how the monetary value of inventory closely affects direct costs, which in the end affects profit as a measure of company performance. Thus, truthful representation of company performance requires accurate direct costs, which were achieved by having an accurate monetary value for the company's inventory. It is imperative that inventory be valued correctly.

As a general rule, inventory is valued using its historical cost. This historical cost is the exerted cost to produce or to obtain the inventory units. This remains as the monetary value of inventory from the time it was first obtained until it is sold by the company.

Implication arises, however, on instances when a company's actual inventory value falls below its historical cost, as time passes by. When it happens, it is no longer appropriate to value and record inventory at its historical cost. In such instances, PSAK 14 dictates inventory to be measured at either its historical cost or its current market value, whichever is lower. This is referred to as the Lower-of-Cost-or-Market approach ("LOCOM").

The above situation is allegedly most common in publishing companies. Publishers often print titles in anticipation of moderate to high demand. This means that there are risks that printed titles will go unsold if demand turns out to be lower than expected. As newer titles or newer edition of the same titles are printed, unsold titles become obsolete as they are no longer in demand. Their value will fall below their historical cost. Books, which were produced in 2005, will face diminishing demand in the subsequent years. This is simply due to the contents in 2005 were considered less relevant today. Newspapers are facing an even bigger challenge. Today's newspapers are regarded invalid and unreliable on the following day. It poses the main issue that this study attempts to ponder. That is, observing and analyzing inventory valuation in publishing companies.

### **1.1. Research Problem**

Based on the brief introduction above, some noticeable issues include the following; (1) analyzing the obsolete goods, (2) evaluating the method of inventory valuation, and (3) identifying the causes of differences in the value of inventory

### **1.2. Significance of Study**

This study is important for the following reasons; (1) may provide information on inventory valuation and obsolescence costs, (2) may provide information on the effectiveness of the current inventory valuation method, and (3) may provide information on the possible causes of differences in inventory valuation methods.

### **1.3. Scope and Limitation**

The scope and limitation of this study include the following; (1) focus on the inventory valuation and calculations, (2) making a comparison between the current inventory valuation method, which is used by the publishing firms, and LOCOM method, and (3) all data are obtained from two privately-owned publishing firms, PT Percetakan Satu ("PTPS") and PT Percetakan Dua ("PTPD"), during the period of 2007 – 2010.

## **2. LITERATURE REVIEW**

### **2.1. Overview on Accounting and Financial Statements**

From the field in Accounting, it is apparent that recording, classifying and summarizing may be the backbone of accounting works. Weygandt, et al (2005) stated that accounting should

provide reports to stakeholders concerning economic activities and conditions of the organization. Wild, et al (2006) claimed that accounting should provide financial measurements on managerial performance. A simple example may be beneficial. For instance, firm's net income is the outcome of accounting processes. This figure should serve as an input on how management has performed during the pertinent fiscal year. This firm's net income should provide feedbacks on how firm's assets had been managed thus far.

The hard evidence on accounting records and summaries are often shown in the form of financial statement. In particular, balance sheet and income statement should be used to gain insights into the company's financial performance.

## **2.2. Balance Sheet**

As one form of financial statements, balance sheets list firm's assets, liabilities and equity as per specified date (Weygandt, et al, 2005). Balance sheet provides information on the nature and amounts of investment, including outstanding obligations and net resources. These figures are impediment to predict the amount, timing and uncertainty of future cash flow (Kieso, et al, 2007). This is particularly important, given a declining-in-value nature of the publishing company's inventory.

As mentioned, inventory is crucial in generating sales (Wild, et al, 2005). Without the presence of inventory, firms cannot sell and generate earnings to shareholders (Kieso, et al, 2007). Because sales are unpredictable, companies often hold safety stock in the warehouses (Weygandt, et al, 2005). Though the role of safety stock is important to meet uncertain demand, however, such levels of safety stock create obsolescence. This is particularly true when the safety stock is relatively in-excess of the actual public demand, as is the case in publishing companies.

It is the main concern of this paper that this propensity for obsolescence causes a probable misstatement in the recorded monetary value of inventory in the firm's balance sheet. With this in mind, this paper aims to observe and analyze whether recorded inventory in such companies reflects the true value of its inventory, and not merely historical cost.

## **2.3. Income Statement**

This particular financial statement is important for firms to show the level of profitability, value of investment, as well as creditability to public. Also, income statement is deemed important to be used as the basis of cash flow projections into years to come (Kieso, et al, 2007). Since this study focuses on inventory valuation, a particular attention is targeted into COGS, as a way to note the level of expenses resulting from the process of selling firm's inventories. Correct monetary valuation of inventory balance is vital since incorrect inventory valuation brings about probable misstatement of firm's COGS. Misstatements of COGS influence misstatements in net income. This portrays a bigger concern for investors. This stresses further importance in the appropriate valuation of inventory.

## **2.4. Cost Flow Assumption**

In many accounting books, it was clearly indicated that there are two common methods in valuing products; either using actual physical flow costing (with specific identification), or using assumed cost flow methods (FIFO, LIFO, and Average Cost). For the purpose of this study, FIFO is the cost assumption referred to in this study, as a way to compare the ultimate inventory valuation. As the name suggests, FIFO method represents the oldest inventory purchased should be the first sold or used (Alam and Loh, 1998; Eisen, 2007; Kieso, et al,

2007; Pratt, et al, 2000; Weygandt, et al 2005). This method is slightly different from Locom inventory valuation method. If the cost flow assumption method attempts to value COGS in the income statement, Locom attempts re-value the inventory in balance sheet (Ali, et al, 2006; Cook, et al, 2011; Fosbre, et al, 2010).

## **2.5. Locom Method**

As the main topic of study, this paper will make references to Locom. Locom is the GAAP-prescribed method of inventory revaluation. It follows the conservatism principle adopted by most accounting practitioners. Several sources indicated that Locom should be used during declining value of inventory. It becomes more important when the current market price is less than the original costs of obtaining the inventory (Alam and Loh, 1998; Ali, et al, 2006; Kieso, et al, 2005; Weygandt, et al, 2005; Wild, et al, 2005). Hence, Locom concerns on the replacement value of inventory (Alam and Loh, 1998; Ali, et al, 2006). This study endeavors to analyze how Locom is applied in companies prone to decline in inventory value (Ali, et al, 2006).

## **2.6. Conservatism**

The concept of conservatism has its application in most accounting practices (Basu, 1997; Dominicus, 2010; Watts, 2003a; Watts, 2003b), including the PSAK. Conservatism lays down the stance that most accounting practitioners must take in recognizing, measuring, and recording assets, liabilities, revenues, and expenses. Adopting the conservatism means avoiding overstatement of assets and revenues. Locom attempts to lower the inventory value so it will be understated rather than overstated. It violates not the “conservatism” guidance, but the management intentions to gain borrowings and increase in net income.

Several scientific journals have provided support in adopting the conservatism principle. Basu (1997), Dominicus (2010), and Watts (2003a; 2003b) stated that conservative accounting was favorable to investors and shareholders since poor performance immediately reflected in the firm’s financial statements. This is common sense. As firms are performing poorly, the value of their assets decline. This is due to the reduction in revenue. Reciprocally, to the benefit of investors (and detriment to management), conservative accounting tend not to immediately show good performance in financial statements. Increases in assets due to good performance, for example, will not be realized as increases in firm’s earnings. Instead, it will be recognized as unrealized earning until a certain time in the future when it would be justified as earnings. Delaying recognition of earnings means postponing the managerial rewards until the “good performance” is proven and justified (Barron, et al, 2001; Dominicus, 2010). This is beneficial to investors in that investors are spared from committing investment into exaggerated companies, the one without real increases in earnings, and investors face minimal effects of information asymmetry (such as; increase dividends and increase returns due to good performance).

Watts (2003a; 2003b) also supported the use of conservatism. It allows auditors and companies in avoiding potential litigations and/or facing stricter regulations. By following the notion of conservatism, firms avoid overstating assets and revenues. Potential lawsuits on the ground of overstatements are substantially minimized. In the case of auditors, similarly, potential lawsuits arise due to overstatements (Barron, et al, 2001; Watts, 2003a; Watts, 2003b).

## **3. RESEARCH METHOD AND DESIGN**

### **3.1. Overview**

This study relied on primary data, in the forms of direct observation and interviews with personnel at PTPS and PTPD. The secondary data were in the forms of financial data from the publishing firms, and lists of publications, such as; periodicals in the form of journals, economic reviews, and academic textbooks. The required data were gathered from two privately-owned publishing firms in Indonesia, PTPS and PTPD, during the period of 2007-2010.

Out of the total population of hundreds of publications, sampling criteria were set following the categories of “fiction” and “non-fiction”, as well as “popular” publications, and “youthful” publications. The total samples studied in this research were a mere 28 inventory data in the form of titles of publications. On average, within each of the titles, there were 2,160 copies of publications. In other words, in terms of unit, the total sample size in this study was 60,469 copies of publication.

Once the lists of 60,469 copies of publications were obtained, the next step was searching for the current market prices for old books. Finding the current market prices for majority of book titles was relatively simple, by simply mentioning the titles to book-sellers. Nonetheless, there were quite a few book titles, which posed huge difficulty. In such situations, book titles must be accompanied by the actual samples of books. Then, one book-seller tried to estimate the prevailing market price. The estimated market price from one book-seller was compared to the estimated market price from other book-sellers. The market price used in this study represented the average price of those estimated market price from several book-sellers. At the end, it was also necessary to perform a stock-take on those publications since the recent stock-take may not have covered all of the sampled publications.

### **3.2. Research Question and Hypothesis**

As previously stated, the purpose of this study is to evaluate the practical inventory valuation for publishing firms. Having developed understanding of the publishing firms, via observations and preliminary interviews, the following queries were focused in this study; (1) the adequacy of accounting system and managerial proficiency to allow physical identification of obsolete goods, (2) the accuracy of current inventory valuation in publishing firms to represent the correct and reasonable monetary value in accordance to LOCOM, and (3) the underlying cause of major differences between the current inventory valuation and LOCOM’s inventory valuation.

With the above queries, the following propositions are formulated;

- P<sub>1</sub> : The publishing firms face no difficulty in identifying obsolete inventory.
- P<sub>2</sub> : The current inventory valuation used in the publishing firms does not reflect the reasonable value of inventory under LOCOM.
- P<sub>3</sub> : The differences between inventory valuation methods are mainly due to factors other than calculation errors.

## **4. ANALYSIS AND DISCUSSIONS**

### **4.1. Overview on PTPS and PTPD**

PTPS and PTPD are two subsidiaries of the Indonesia’s Publishing Media Group (“PMG”). The initial focus of PMG was targeted into agricultural publications, prior to expanding into other areas of publications, once the readership grew and PMG’s bottom-line swell. The mission is relatively simple. As prescribed by the headquarters, PTPS and PTPD attempt to become the resource center for Indonesian knowledge. In order to maintain uniqueness among subsidiaries, PMG puts emphasis differently for all subsidiaries. Hence, the main

focus for PTPS and PTPD is also slightly different. When one subsidiary focuses on academic-learning-types of publications, other subsidiaries focus on children books, including books for toddlers and pre-schoolers, popular books, and fictions. One subsidiary may focus on popular and high-caliber writers; other subsidiaries may target young and beginner writers. Aside from publishing different areas of books, the core businesses for subsidiaries may also vary from printing to setting-up bookstores around the country.

The strategy for PTPS and PTPD is also relatively simple. PTPS and PTPD attempt to reach the status of resource center for Indonesian knowledge via high volume sales, and low-price publications. This pricing strategy is consistent with what competitors have tried to do so far. This is important to maintain competitiveness while prolonging the existence in the Indonesian publishing sector.

#### 4.2 Descriptive Results

Following a thorough interview with the management team of PTPS, PTPD, and officers of PMG, it was clearly noted that PTPS and PTPD operate using relatively sophisticated accounting software. The use of this accounting software enables the management to conduct the following; (1) units of inventory produced for the current financial year, (2) units of inventory sold during the financial year, (3) per unit cost of production, (4) year of publication, and (5) ending inventory units. During the interview sessions, it was also clearly noted that those features were used as indicators of obsolescence. For example, in 2009, an observation revealed that there were old books, which were printed and published in 2007, but those books were not fully sold in 2009. Based on this finding, the management decided to categorize these books as non-saleable books, mainly due to its trend-related content. Hence, based on the results of interviews and observations, it is safe to conclude that the management faces no difficulty in identifying obsolete inventory.

Having the ability to note the obsolescence is one thing. However, it remains unclear if PTPS and PTPD have satisfactorily adjusted the value of inventory in their records. The second proposition in this study predicts that the current inventory valuation is not fully reflecting the reasonable value of inventory. Based on the observation and analysis of inventory listing, it becomes clear that PTPS and PTPD have not adjusted the value of their inventory. This impacts the bottom-line figure, undoubtedly.

**Table 1: Inventory Differences**

<b>Book Titles</b>	<b>Ending Inventory</b> (2010 in unit)	<b>Value of Inventory</b> (as recorded in balance sheet in Rupiah)	<b>Value of Inventory</b> (as estimated in the market in Rupiah)	<b>Differences in Value of Inventory</b> (Rupiah)
Book Title # 1	2,722	19,054,000	10,888,000	8,166,000
Book Title # 2	2,168	14,417,200	8,238,400	6,178,800
Book Title # 3	1,985	32,305,875	18,460,500	13,845,375
Book Title # 4	1,842	12,571,650	7,183,800	5,387,850
Book Title # 5	2,766	26,138,700	14,936,400	11,202,300
Book Title # 6	1,423	12,451,250	7,115,000	5,336,250
Book Title # 7	2,256	15,002,400	8,572,800	6,429,600
Book Title # 8	427	5,230,750	2,989,000	2,241,750
Book Title # 9	701	8,587,250	4,907,000	3,680,250
Book Title # 10	3,806	33,302,500	19,030,000	14,272,500

**Table 1: Inventory Differences**

<b>Book Titles</b>	<b>Ending Inventory</b> (2010 in unit)	<b>Value of Inventory</b> (as recorded in balance sheet in Rupiah)	<b>Value of Inventory</b> (as estimated in the market in Rupiah)	<b>Differences in Value of Inventory</b> (Rupiah)
Book Title # 11	3,073	29,039,850	16,594,200	12,445,650
Book Title # 12	2,170	22,785,000	13,020,000	9,765,000
Book Title # 13	3,310	31,279,500	17,874,000	13,405,500
Book Title # 14	1,132	11,093,600	6,339,200	4,754,400
Book Title # 15	1,945	22,464,750	12,837,000	9,627,750
Book Title # 16	1,411	13,333,950	7,619,400	5,714,550
Book Title # 17	1,428	14,994,000	8,568,000	6,426,000
Book Title # 18	1,963	18,206,825	10,403,900	7,802,925
Book Title # 19	2,911	31,584,350	18,048,200	13,536,150
Book Title # 20	1,386	16,978,500	9,702,000	7,276,500
Book Title # 21	3,489	37,855,650	21,631,800	16,223,850
Book Title # 22	2,900	31,465,000	17,980,000	13,485,000
Book Title # 23	3,656	36,468,600	20,839,200	15,629,400
Book Title # 24	3,704	32,410,000	18,520,000	13,890,000
Book Title # 25	725	6,851,250	3,915,000	2,936,250
Book Title # 26	1,593	13,938,750	7,965,000	5,973,750
Book Title # 27	1,127	8,875,125	5,071,500	3,803,625
Book Title # 28	2,450	27,440,000	15,680,000	11,760,000
<b>Total</b>	<b>60,469</b>	<b>586,126,275</b>	<b>334,929,300</b>	<b>251,196,975</b>

Source: PTPS and PTPD, 2010, modified

The table show significant difference aggregately by Rp. 251 million. This figure is translated into 43% difference between the recorded value of inventory in the balance sheet and the prevailing market value. Ignoring the significant difference, the risk of overstating the inventory value rises. This significant difference is an evident that the current inventory valuation of PTPS and PTPD do not conform to LOCOM's inventory valuation, as prescribed by PSAK when inventory is declining in value.

Though the total obsolete inventory is large, however, such large quantity of obsolete inventory is categorized into a mere of 28 inventory data. For this reason, statistical testing cannot be performed to really test validity and reliability of the data. Moreover, based on the book of *statistical techniques in business and economics*, statistical testing could only be done if they follow three criteria; the variables follow normal distributions, samples are independent, and the standard deviations are equal (Lind, et al, 2007). The collections of data obtained from PTPS and PTPD reveal that they were abnormal, and dependent with unequal standard deviation.

Having calculated and proven that the current inventory valuation did not reflect the reasonable value of inventory for PTPS and PTPD under LOCOM method, it is now the time to analyze the underlying causes for such differences. In order to learn the plausible causes, in-depth interviews with the management team are conducted.

From the in-depth interviews, this study learns the following explanations;

- For publications whose sales remain well, the value of inventory is calculated based on;

(1) costs of pre-press and printing of those publications, which are averaging about 25% of the selling price, (2) royalty fees, which are averaging about 10% of the selling price, (3) overhead costs for the editor to produce the book, which are averaging about 5% of the selling price. These percentages of costs are amounting to 40% of the selling price.

- For publications, which are no longer saleable, the value of inventory is calculated based on the actual selling price if those publications were sold on discounted prices. The average discounted price is about Rp. 5,000 per unit. Though this may not reflect the true price, it is deemed practical for the management in valuing the level of inventory. The management team does notice that the adjustment on inventory should have been based on the true market price. Nonetheless, getting the true market price poses huge impediments for the management, while incurring unnecessary costs. However, although the amount recorded in the balance sheets of PTPS and PTPD do not reflect the true value of inventory, the management is confident that it is better to understate the inventory, with relatively solid explanations. Also, the management believes that due to the nature of the business, it may be permissible to do so. The story would have been very different if PTPS and PTPD were publicly-traded firms.

Hence, the interview sessions reveal that the current inventory valuation of PTPS and PTPD do not rely on the prevailing market prices. The amounts of inventory recorded on the firms' balance sheets rely on the actual cost price. Following the sales transactions, which are averaging at Rp. 5,000 per unit, PTPS and PTPD record losses on sales. Therefore, it is obvious that the significant difference in inventory valuation of PTPS and PTPD is not due to calculation errors of any personnel. Such significant differences are due to the different method of inventory valuation, as per management objectives. Based on the reasons of practicality, management have decided to value obsolete inventory at a uniform price of Rp. 5,000, regardless of the prevailing prices, as studied and verified in the second-hand market.

## **5. CONCLUSION AND RECOMMENDATION**

### **5.1. Conclusion**

Based on the analysis above, it can be concluded that;

- PTPS and PTPD do not have difficulties in identifying obsolete inventory. The installed accounting software has the ability to reveal such obsolescence.
- PTPS and PTPD do not apply LOCOM method in their inventory valuation. For this reason, the inventory values in the firms' balance sheets do not reflect the reasonable amount of their true inventory level.
- The significant differences in inventory valuation are not due to calculation errors. Rather, such differences are due to management discretion on the basis of practicality.

### **5.2. Recommendations**

The sets of recommendations for PTPS and PTPD can be drawn as follows;

- The management of PTPS and PTPD should adjust the value of the inventory, as per LOCOM-based valuation. This will likely reflect the more reasonable value of inventory.
- The management of PTPS and PTPD should start adopting LOCOM method, particularly when the value of inventory has fallen below historical costs. The adoption of LOCOM into inventory valuation would allow PTPS and PTPD to have better financial statements; truly representing the real value, and free of material misstatements. The benefits of

having better financial statements include; (1) better representation of the firms' financial positions, (2) better foundation for management decisions, (3) more accurate business decision, and (4) able to show truthful representation of financial condition with future earnings-creation capabilities.

- PTPS and PTPD should also develop a better mechanism to detect and note current market value of its inventory. Analytical mechanism in examining changes in public demands and sales patterns, including observing the going-price in the second-hand market.

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