Comparative Analysis of Cost Flow Assumptions and the Merchandise Inventory Recording System at UD Agung Pratama

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ABSTRACT

This study aims to analyze the comparison of calculations between the assumption of cost flows and the system of recording merchandise inventory in UD Agung Pratama. This study uses quantitative and descriptive methods to analyze merchandise inventory data from 2019–2020. This research analysis technique uses FIFO and average methods through periodic and perpetual inventory system analysis. The results of this study prove that the calculation of inventory using the FIFO method, both in the periodic and perpetual systems, produces a higher net profit value when compared to the calculation using the average method in both the periodic and perpetual systems. The calculation results of the FIFO method show the lowest value of cost of goods sold and the highest value of final inventory. Therefore, the calculation of inventory in UD Agung Pratama is expected to use the FIFO method, and the inventory system uses a perpetual system because it shows accurate and detailed inventory values.

Keywords: Cost Flow Assumption, Merchandise Inventory, Recording System

INTRODUCTION

Inventory is a supporting component of the company in achieving company goals. The existence of inventory can be said to be an asset that has a considerable value in the company because inventory is a company's current assets that can affect the company's asset position, liabilities, and equity. Inventory is a necessary component in a company's operational activities as a source of income for an entity. Therefore, proper inventory management must be carried out for effectiveness and efficiency in the company's operational activities. On the other hand, good inventory management will cause smoothness in the company's operations. If the management is carried out

incorrectly, it will have an impact on the emergence of several problems that will later be faced by the company in carrying out operational activities, and this can allow the company to experience the risk of loss. Determining the right inventory calculation method used by the company is something that needs to be considered for the management of the company.

According to Rudianto (2018), there are two inventory recording systems, namely the periodic system (physical method) and the perpetual system. The periodic system records at the time of physical calculation of inventory or when stock-taking is carried out. The perpetual system keeps an up-to-date record of any changes or sales and purchase activities that result in changes in inventory value. The assumption of cost flows can be used in calculating the inventory of an entity. Cost flow assumptions are methods that can be used to measure or assess a company's inventory. According to Martani et al. (2016), inventory calculations can use the assumption of cost flows that can be selected according to the needs of the company. There are three assumptions of cost flows, namely: the special identification method, the FIFO method (First-In, First-Out) and the average method (Weighted Average).

According to Martani et al. (2016), the specific identification method specifically identifies the inventory sold with each type of inventory. The special identification method is usually used by entities with little stock of inventory and have high selling prices, such as jewelry or gems, antiques, luxury cars, and so on. Therefore, a trading entity that does not fall under the criteria of a company that has little inventory with a high selling value in calculating its inventory chooses between the FIFO and average methods. According to Rudianto (2018), the FIFO method states that the incoming inventory will first be issued, used, or sold first, and then later the final inventory will only leave the goods owned from the purchase or the last production. According to Rudianto (2018), the weighted average method states that the inventory sold or used and the remaining inventory are assessed using the average price, so that the value of the cost of goods sold and the final inventory value are generated based on the average price. Companies that can apply the right cost flow assumptions can increase the effectiveness and efficiency of operational activities, and cost flow

assumptions can be used as a means of internal control of the company to aim to get the profit desired by the company.

Aisyania (2020) conducted research on the use of inventory assessment and recording methods in CV Hubbul Hidayah Group Palembang. This study concluded that a good recording system uses a perpetual inventory system because it makes it easier for companies to carry out inspections. Inventory valuation can use the FIFO method because it produces a small cost of goods sold value compared to using the average method. In contrast to the research conducted by Sari (2018) in analyzing the calculation of inventory valuation using the FIFO and average methods in PT Harapan. The results of this study advise companies to use the average method because it shows the lowest cost of goods sold but the highest final inventory value, so as to produce the highest net profit value compared to using the FIFO method. The difference between the previous research and this study is that the object of this study is a type of business entity (namely UD). This research does not focus on the inventory method alone but also uses a recording system and also compares the profit obtained from the calculation of this inventory.

Accounting records in UD Agung Pratama is still done simply, including the recording of its supplies. Recording and calculation of inventory in UD Agung Pratama is still simple. This causes various problems, one of which is damage to merchandise due to goods being stored for a long time, causing ineffectiveness and efficiency for UD Agung Pratama said it hampered sales activities and suffered losses. The problems faced result in inventory records not reflecting the actual state of inventory and often cause a difference between the goods in the warehouse and the recording, so that it greatly affects the calculation of profits that the company will later obtain. UD Agung Pratama is not included in the criteria for a business that sells inventory in a small amount and has a high selling value so that in calculating inventory you can choose to use the FIFO or average method. Based on the description above, the formulation of the problem in this study is how to compare the calculation of the assumption of cost flows with the system of recording merchandise inventory in UD Agung Pratama. The purpose of this study is to analyze the comparison between the calculation of cost flow

assumptions and the system of recording merchandise inventory in the UD Agung Pratama.

RESEARCH METHODOLOGY

The study was conducted in UD Agung Pratama. This company is an industry engaged in housebuilding materials such as tiles and adobe. UD Agung Pratama obtained its supplies from suppliers and then resold them. The data sources used are secondary data in the form of initial merchandise inventory data, supplier merchandise inventory, and goods sales data. The data collection methods in this study are documentation and interviews. Data analysis techniques consist of library studies, collecting data and information and documentation data obtained from UD Agung Pratama in the form of recording inventory, purchases, sales, and cash expenditures. This type of research is a type of quantitative descriptive research. Data analysis techniques are: literature studies; processing data and calculating using the FIFO method and the average method, comparing the two methods using profit and loss calculations; and concluding research results.

RESULTS AND DISCUSSION

Analysis Results

The results of calculating the cost of goods sold using the FIFO method and the average method with the periodic and perpetual inventory system in 2019 and 2020 are as follows:

Table 1

Results of the Calculation of the Cost of Goods Sold by UD Agung Pratama in 2019

Month	The Calculation of the Cost of Goods Sold in 2019			
	Periodic		Perpetual	
	FIFO	**Average**	**FIFO**	**Average**
January	IDR 37.660.000	IDR 38.202.567	IDR 37.660.000	IDR 37.663.556
February	IDR 31.809.500	IDR 30.617.061	IDR 31.809.500	IDR 31.585.183

Month								
March	IDR	28.623.500	IDR	29.338.752	IDR	28.623.500	IDR	28.920.247
April	IDR	14.814.000	IDR	14.789.221	IDR	14.814.000	IDR	14.773.495
Mei	IDR	3.132.000	IDR	3.277.172	IDR	3.132.000	IDR	3.262.248
June	IDR	25.221.000	IDR	25.600.813	IDR	25.221.000	IDR	25.975.816
July	IDR	47.753.000	IDR	46.854.425	IDR	47.753.000	IDR	46.820.421
August	IDR	29.370.600	IDR	29.614.086	IDR	29.370.600	IDR	29.380.424
September	IDR	25.861.800	IDR	25.655.994	IDR	25.861.800	IDR	25.782.631
October	IDR	17.170.000	IDR	17.311.103	IDR	17.170.000	IDR	17.217.653
November	IDR	26.703.600	IDR	28.685.361	IDR	26.703.600	IDR	26.736.804
December	IDR	9.979.200	IDR	9.254.784	IDR	9.979.200	IDR	10.049.233
Total	**IDR 298.098.200**		**IDR299.201.338**		**IDR 298.098.200**		**IDR 298.167.710**	

Table 2

Results of the Calculation of the Cost of Goods Sold by UD Agung Pratama in 2020

Month	The Calculation of the Cost of Goods Sold in 2020			
	Periodic		Perpetual	
	FIFO	Average	FIFO	Average
January	IDR 19.543.800	IDR 18.423.799	IDR 19.543.800	IDR 19.227.890
February	IDR 7.660.000	IDR 7.333.113	IDR 7.660.000	IDR 7.569.173
March	IDR 22.947.700	IDR 23.408.607	IDR 22.947.700	IDR 23.271.201
April	IDR 16.212.300	IDR 16.988.392	IDR 16.212.300	IDR 16.865.144
Mei	IDR 26.092.200	IDR 25.792.621	IDR 26.092.200	IDR 25.636.466
June	IDR 25.605.800	IDR 24.987.067	IDR 25.605.800	IDR 25.044.962
July	IDR 11.152.000	IDR 10.621.545	IDR 11.152.000	IDR 10.935.671
August	IDR 13.969.800	IDR 14.211.776	IDR 13.969.800	IDR 13.963.877
September	IDR 37.590.600	IDR 38.463.560	IDR 37.590.600	IDR 38.425.506
October	IDR 13.708.200	IDR 12.485.766	IDR 13.708.200	IDR 13.175.522
November	IDR 29.871.000	IDR 31.079.678	IDR 29.871.000	IDR 30.162.229
December	IDR 14.692.400	IDR 14.412.711	IDR 14.692.400	IDR 14.735.445
Total	**IDR 239.045.800**	**IDR 238.208.636**	**IDR 239.045.800**	**IDR 239.013.085**

The following are the results of the final inventory value of tiles by UD Agung Pratama in 2019 and 2020.

Table 3

Final Inventory Value of Tiles by UD Agung Pratama in 2019

Month	Unit	Periodic System		Perpetual System	
		FIFO	**Average**	**FIFO**	**Average**
January	5,260	IDR10,520,000	IDR 9,977,433	IDR 10,520,000	IDR 10,516,444
February	8,065	IDR 13,710,500	IDR 14,360,372	IDR 13,710,500	IDR 13,931,262
March	11,715	IDR 21,087,000	IDR 21,021,620	IDR 21,087,000	IDR 21,011,014
April	13,485	IDR 24,273,000	IDR 24,232,399	IDR 24,273,000	IDR 24,237,520
Mei	21,745	IDR 41,141,000	IDR 40,955,227	IDR 41,141,000	IDR 40,975,271
June	17,960	IDR 33,920,000	IDR 33,354,414	IDR 33,920,000	IDR 32,999,455
July	12,315	IDR 22,167,000	IDR 22,499,990	IDR 22,167,000	IDR 22,179,034
August	5,998	IDR 10,796,400	IDR 10,885,904	IDR 10,796,400	IDR 10,798,611
September	11,138	IDR 18,934,600	IDR 19,229,910	IDR 18,934,600	IDR 19,015,980
October	11,038	IDR 18,764,600	IDR 18,918,807	IDR 18,764,600	IDR 18,798,327
November	5,330	IDR 11,561,000	IDR 9,733,446	IDR 11,561,000	IDR 11,561,524
December	5,719	IDR 12,581,800	IDR 11,478,662	IDR 12,581,800	IDR 12,512,290
Total		**IDR 239,456,900**	**IDR 236,648,184**	**IDR 239,456,900**	**IDR238,536,732**

Source: Processed Data (2022)

Table 4

Final Inventory Value of Tiles by UD Agung Pratama in 2020

Month	Unit	Periodic System		Perpetual System	
		FIFO	**Average**	**FIFO**	*Average*
January	6,519	IDR 13,038,000	IDR 13,054,863	IDR 13,038,000	IDR 13,284,400
February	7,689	IDR 14,378,000	IDR 14,721,751	IDR 14,378,000	IDR 14,715,227
March	9,959	IDR 18,430,300	IDR 18,313,144	IDR 18,430,300	IDR 18,444,026
April	11,109	IDR 22,218,000	IDR 21,324,751	IDR 22,218,000	IDR 21,578,882

Month	Qty							
Mei	13,239	IDR	27,125,800	IDR	26,532,130	IDR	27,125,800	IDR	26,942,416
June	10,760	IDR	21,520,000	IDR	21,545,063	IDR	21,520,000	IDR	21,897,454
July	15,184	IDR	28,368,000	IDR	28,923,518	IDR	28,368,000	IDR	28,961,783
August	12,999	IDR	25,398,200	IDR	25,711,743	IDR	25,398,200	IDR	25,997,906
September	4,458	IDR	9,807,600	IDR	9,248,182	IDR	9,807,600	IDR	9,572,400
October	7,833	IDR	14,099,400	IDR	14,762,416	IDR	14,099,400	IDR	14,396,878
November	6,238	IDR	12,228,400	IDR	11,682,738	IDR	12,228,400	IDR	12,234,650
December	3,768	IDR	7,536,000	IDR	7,270,026	IDR	7,536,000	IDR	7,499,205
Total		**IDR214,147,700**		**IDR**	**213,090,325**	**IDR214,147,700**		**IDR215,525,226**

The results of the calculation of comparative profit and loss in 2019.

Table 5

The Results of Comparative Profit and Loss Calculation Per Month in 2019

Month	Comparative Profit and Loss Calculation in 2019							
	Periodic				Perpetual			
	FIFO		Average		FIFO		Average	
January	IDR	13,870,000	IDR	13,327,433	IDR	13,870,000	IDR	13,866,444
February	IDR	10,977,500	IDR	12,169,939	IDR	10,977,500	IDR	11,201,817
March	IDR	11,803,500	IDR	11,088,248	IDR	11,803,500	IDR	11,506,753
April	IDR	1,310,000	IDR	1,334,779	IDR	1,310,000	IDR	1,350,505
Mei	IDR	1,449,000	IDR	1,303,828	IDR	1,449,000	IDR	1,318,752
June	IDR	7,504,000	IDR	7,124,187	IDR	7,504,000	IDR	6,749,184
July	IDR	20,271,000	IDR	21,169,575	IDR	20,271,000	IDR	21,203,579
August	IDR	10,716,200	IDR	10,472,714	IDR	10,716,200	IDR	10,706,376
September	IDR	10,070,200	IDR	10,276,006	IDR	10,070,200	IDR	10,149,369
October	IDR	4,501,900	IDR	4,360,797	IDR	4,501,900	IDR	4,454,247

November	IDR	11,821,200	IDR	9,839,439	IDR	11,821,200	IDR	11,787,996
December	IDR	2,981,800	IDR	3,706,216	IDR	2,981,800	IDR	2,911,767
Total	**IDR**	**107,276,300**	**IDR**	**106,173,162**	**IDR**	**107,276,300**	**IDR**	**107,206,790**

Table 6

The Results of Comparative Profit and Loss Calculation Per Month in 2020

	Comparative Profit and Loss Calculation in 2020							
Month	**Periodic**				**Perpetual**			
	FIFO		**Average**		**FIFO**		**Average**	
January	IDR	7,238,700	IDR	8,358,701	IDR	7,238,700	IDR	7,554,610
February	IDR	2,899,000	IDR	3,225,887	IDR	2,899,000	IDR	2,989,827
March	IDR	7,022,300	IDR	6,561,393	IDR	7,022,300	IDR	6,698,799
April	IDR	2,078,700	IDR	1,302,608	IDR	2,078,700	IDR	1,425,856
Mei	IDR	4,173,900	IDR	4,473,479	IDR	4,173,900	IDR	4,629,634
June	IDR	3,318,300	IDR	3,937,033	IDR	3,318,300	IDR	3,879,138
July	IDR	4,129,000	IDR	4,659,455	IDR	4,129,000	IDR	4,345,329
August	IDR	6,246,600	IDR	6,004,624	IDR	6,246,600	IDR	6,252,523
September	IDR	9,693,800	IDR	8,820,840	IDR	9,693,800	IDR	8,858,894
October	IDR	4,924,600	IDR	6,147,034	IDR	4,924,600	IDR	5,457,278
November	IDR	11,347,400	IDR	10,138,722	IDR	11,347,400	IDR	11,056,171
December	IDR	6,315,200	IDR	6,594,889	IDR	6,315,200	IDR	6,272,155
Total	**IDR**	**69,387,500**	**IDR**	**70,224,664**	**IDR**	**69,387,500**	**IDR**	**69,420,215**

Discussion

Based on the results of the analysis that has been carried out, the value of the cost of goods sold for each method is different. This is because it is influenced by differences in the final values of different methods of inventory. However, the value of the cost of goods sold by the FIFO method, both periodic and perpetual methods, shows the same value. This is because there is a match between the prices used, unlike using the average method where it produces different values because the cost of inventory is calculated using the average cost per unit and produces a nominal that is not round. The highest cost of goods sold occurred in 2019 at IDR 299,201,338 using the average method with a periodic system, while the lowest occurred in 2020 at IDR 238,208,636. The difference in cost of goods sold between the highest and lowest values was IDR 60,992,702.

The final inventory value in each method's inventory card calculation also produces a different value, but the final unit generated by each method remains the same. This difference in the value of the final inventory is influenced by the value of the cost of goods purchased and sold. The FIFO method using both the periodic and perpetual systems produces a higher inventory value than using the periodic average method or perpetual. This is because the average method requires calculating the cost of inventory by evenly calculating the purchase price and sales price as the cost of each unit by dividing the value of the cost of ready-to-sell units by the number of units available for sale.

The calculation of the income statement generates net profit every month with a few nominal ups and downs that are not too large. This is because it is influenced by insignificant changes in the value of the cost of goods purchased. It's just that other factors also affect the results of the net profit value, which varies every month because the amount of sales, the amount of initial inventory, and inventory ultimately affect the calculation of profit and loss. The highest net profit occurred in 2019 using the FIFO method of IDR 107,276,300. The value of this net profit was IDR 37,051,636 less than the highest profit in 2020 using the Periodic Average method of IDR 70,224,664. The decline in the value of net profit in 2020 here was influenced by the Covid-19 pandemic

that attacked various sectors in Indonesia, and this had an impact on reducing sales in UD Agung Pratama.

Based on the discussion that has been described above, the results of this study are supported by research by Lestari, Subagyo, & Limantara (2019), which shows that using the FIFO method is more profitable for companies because the cost of goods sold is lower than using the Periodic and Perpetual Average methods, so as to produce a higher profit value than using the Periodic and Perpetual Average methods. The results of this study are also in line with research conducted by Susanti, Wisnubroto, & Parwati (2018), which shows that greater profits are obtained with the result of low cost of goods sold, namely by using the FIFO method. The FIFO method is considered to be profitable for the company because it shows a greater net profit value compared to using the LIFO and average methods. This is also the case in this study. If the final inventory value is higher and the cost of goods sold is lower, it will show a higher profit value.

CONCLUSION

Based on the results of research that has been carried out by researchers, it can be concluded that the calculation of inventory using FIFO and average with periodic and perpetual inventory systems shows different values. This difference is influenced by the difference in the results of the final inventory value and the cost of goods sold for each method. However, specifically FIFO using periodic and perpetual uses, produces the same value because there is a similarity between the cost value and also income when issuing or selling inventory, where the cost of goods purchased by the first incoming inventory will be used as the cost of goods sold for the first outgoing inventory.

Researchers used three value comparisons between the FIFO method using the periodic and perpetual systems; the average using the periodic system; and the average using the perpetual system. The comparison here is the result of the cost of goods sold, the final value of inventory, and by using these two calculation results, the results of calculating the net profit of each method are obtained. It is known that from the results of the calculation of net profit for 2019 and 2020 using these methods shows results that

alternate between the FIFO method and the periodic average, which for 2019 the highest net profit is the FIFO method and the lowest the average method. The year 2020 showed the periodic average method resulted in the highest and lowest net profit for the FIFO method. It is known that the higher the value of the final inventory, the lower the cost of goods sold. If the cost of goods sold shows the lowest value, it will result in the highest value of profit being obtained and vice versa. Therefore, the FIFO method, either with a periodic or perpetual inventory system, can be an option for UD Agung Pratama as a method of valuation of merchandise inventory because in 2019 it showed the highest final inventory value, the lowest cost of goods sold, and the highest net profit.

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