

COMPARATIVE STUDY OF STRAIGHT LINE METHOD, DOUBLE DECLINING BALANCE METHOD, AND SUM OF THE YEARS DIGIT METHOD IN FIXED ASSETS OF PT. MORO DJOYO GAS

Yely Sulistyawati, Hery Suprayitno

Fakultas Ekonomi, Universitas Islam Balitar

Email; yelysulis64@gmail.com, herysuprayitno@unisbablitar.ac.id

ABSTRACT

PT. Moro Djoyo Gas is a company engaged in the trade of 3kg LPG gas. In carrying out its company's operational activities cannot be separated from the use of various equipment and vehicles included in fixed assets. Therefore, there needs to be a permanent management of fixed assets so it can be utilized according to company needs. The purpose of this study is to determine the depreciation of fixed assets used by PT. Moro Djoyo gas, to find out the profits obtained by using other depreciation methods, as well as comparing, recommending, and giving reasons for the appropriate depreciation method for PT. Moro Djoyo Gas. The research method used is qualitative with comparative analysis techniques. The results of the study stated that the percentage method used by the company was less effective. PT. Moro Djoyo Gas should use the double declining balance method, which its profit will remain relatively constant each year.

Key Words : Fixed Assets, Straight Line Method, Double Declining Balance Method, Sum of the Years Digit Method

1. INTRODUCTION

The company was founded to get the maximum profit which aims to maintain the survival of the company. A company must have a goal in order to survive in the long term. In general, companies have a goal; one of them is to achieve maximum profits with the long-term sustainability of the company. With the existence of fixed assets aimed at expediting activities in the company. Fixed activities generally have a useful life of one year or more, but over time the useful life of the assets to be given to the company will experience depreciation.

Assets have a greatly effect of the income statement on depreciation expense items in a balance sheet. The amount of depreciation is determined by the acquisition price, residual value, and economic life. From there, the depreciation expense can be calculated annually. The allocation of depreciation costs is an important problem and must be faced by the company, because it will affect the profitability and other financial statements made by the company in a certain period.

Based on the statement of SAK (2012: 340) fixed assets are assets owned by the company, used in the company's operations, with the hope that it can be used for more than one period. According to Gunadi in tax accounting (2005: 48) the acquisition of fixed assets can be done in several ways, such as purchasing in cash or credit, exchanging with other assets, grants or gifts, and surrender because the contract period has been completed.

The company recognizes all of the assets as fixed assets if they meet the criteria. Fixed assets are one of the balance sheet items in addition to current assets, long-term investments, and other assets. Fixed assets have a significant value for the balance sheet, that's why fixed assets are a very important role. Company goals can be implemented well if the company is also well managed. The economic value of fixed assets will decline due to damage, obsolescence, maintenance, and can affect an important role in company activity.

PT. Moro Djoyo Gas is one of the 3kg LPG gas agent companies owned by individuals. This company has several fixed assets that are used in operational activities and provide benefits for the company in a relatively long period of time. The company's fixed assets include, buildings, vehicles, equipment, office inventory. Fixed assets owned by the company have characteristics including physical form, have a significant price value.

2. RESEARCH METHOD

This research uses qualitative research methods with a comparative approach. The method used to compare several methods in the last three years. In addition, this research also uses the case study method, in addition to comparing some depreciation of fixed assets, also providing appropriate recommendations for depreciation of fixed assets, and provides a reason related to it.

This research takes data at PT. Moro Djoyo Gas addressed at Jalan Raya Talun No. 22 Talun District, Blitar Regency, East Java Province. The subject in this study was a compressive study of straight-line methods, double declining method, and sum of the years digit method, while for the object in this study was one of the LPG agent companies PT. Moro Djoyo Gas located in Talun District, Blitar Regency.

The research data collection technique was conducted by direct observation to PT. Moro Djoyo Gas. It was done to obtain accurate and relevant data. It was also conducted by interviewing the founder and owner of PT. Moro Djoyo Gas by giving some questions about the depreciation of fixed assets in the company, with the aim to exchange information and provide an idea through the question and answer.

3. RESULT

PT. Moro Djoyo Gas is one of the companies engaged in the subsidized and quite developed 3 kg LPG agent in Talun District. It is located on Jalan Talun Timur No. 22, Talun District, Blitar Regency. The responsible person and owner of PT. Moro Djoyo Gas is Mrs. Sulistyorini, she has been managing the LPG gas trading business since 2010. In carrying out the company's operational activities, PT. Moro Djoyo Gas has several fixed assets including buildings, vehicles, office inventory and equipment.

PT. Moro Djoyo Gas has several fixed assets which are still in good condition, because the fixed assets are one of the main supports in the company's operational activities. In addition, daily activities within the company also always require fixed assets in it. The following are the classes and types of fixed assets that exist at PT. Moro Djoyo Gas:

Table 1
 PT. Moro Djoyo Gas Fixed Assets Data

Account's Name	Lifespan of Assets	2017	
		Acquisition Cost	Residual Value
Building	20	Rp 1.200.000.000	Rp 450.000.000
Vehicles	8	Rp 1.051.000.000	Rp 262.750.000
Office Inventory	5	Rp 115.000.000	Rp 25.000.000

Equipment	5	Rp 95.000.000	Rp 15.000.000
Total		Rp 2.461.000.000	Rp 752.750.000

1. Depreciation Method Used PT. Moro Djoyo Gas

PT. Moro Djoyo Gas determines the depreciation method by the name of the percentage method, this method is done by setting the amount of depreciation rates in accordance with the useful life of the fixed assets. Depreciation rate of 5% for a useful life of 20 years, 12.5% for an useful life of 8 years and 20% for an useful life of 5 year benefit. Here are the results of the calculation:

Account Name	Lifespan of Assets	2017		Percentage	Shrinkage		
		Acquisition Cost	Residual Value		2017	2018	2019
Building	20	Rp 1.200.000.000	Rp 450.000.000	5%	Rp 60.000.000	Rp 60.000.000	Rp 60.000.000
Vehicle	8	Rp 1.051.000.000	Rp 262.750.000	12,5%	Rp 131.375.000	Rp 131.375.000	Rp 131.375.000
Office Inventory	5	Rp 115.000.000	Rp 25.000.000	20%	Rp 23.000.000	Rp 23.000.000	Rp 23.000.000
Equipment	5	Rp 95.000.000	Rp 15.000.000	20%	Rp 19.000.000	Rp 19.000.000	Rp 19.000.000
Total		Rp 2.461.000.000	Rp 752.750.000		Rp 233.375.000	Rp 233.375.000	Rp 233.375.000

2. Comparison of the Method Used by PT. Moro Djoyo Gas with other Depreciation Methods

a. Straight Declining Method

Account Name	Lifespan of Assets	2017		Shrinkage		
		Acquisition Cost	Residual Value	2017	2018	2019
Building	20	Rp 1.200.000.000	Rp 450.000.000	Rp 37.500.000	Rp 37.500.000	Rp 37.500.000
Vehicle	8	Rp 1.051.000.000	Rp 262.750.000	Rp 98.531.250	Rp 98.531.250	Rp 98.531.250
Office Inventory	5	Rp 115.000.000	Rp 25.000.000	Rp 18.000.000	Rp 18.000.000	Rp 18.000.000
Equipment	5	Rp 95.000.000	Rp 15.000.000	Rp 16.000.000	Rp 16.000.000	Rp 16.000.000
Total		Rp 2.461.000.000	Rp 752.750.000	Rp 170.031.250	Rp 170.031.250	Rp 170.031.250

Formula:

$$\text{Depreciation} = \frac{100\%}{n} \times (\text{HP} - \text{NS})$$

b. Double Declining Balance Method

Account Name	Lifespan of Assets	2017		Shrinkage		
		Acquisition Cost	Residual Value	2017	2018	2019
Building	20	Rp 1.200.000.000	Rp 450.000.000	Rp 120.000.000	Rp 108.000.000	Rp 97.200.000
Vehicle	8	Rp 1.051.000.000	Rp 262.750.000	Rp 262.750.000	Rp 197.062.500	Rp 131.375.000
Office Inventory	5	Rp 115.000.000	Rp 25.000.000	Rp 46.000.000	Rp 27.600.000	Rp 16.560.000
Equipment	5	Rp 95.000.000	Rp 15.000.000	Rp 38.000.000	Rp 22.800.000	Rp 13.680.000
Total		Rp 2.461.000.000	Rp 752.750.000	Rp 466.750.000	Rp 355.462.500	Rp 258.815.000

Formula:

$$\text{Depreciation rate} = \frac{100}{\text{Economic age}} \times 2$$

$$\text{Depreciation} = \text{Rates} \times \text{Book Value}$$

c. Sum of the Years Digit Method

Account Name	Lifespan of Assets	2017		Shrinkage		
		Acquisition Cost	Residual Value	2017	2018	2019
Building	20	Rp 1.200.000.000	Rp 450.000.000	Rp 71.428.571	Rp 67.857.143	Rp 64.285.714
Vehicle	8	Rp 1.051.000.000	Rp 262.750.000	Rp 175.166.667	Rp 153.270.833	Rp 131.375.000
Office Inventory	5	Rp 115.000.000	Rp 25.000.000	Rp 30.000.000	Rp 24.000.000	Rp 18.000.000
Equipment	5	Rp 95.000.000	Rp 15.000.000	Rp 26.666.667	Rp 21.333.333	Rp 16.000.000
Total		Rp 2.461.000.000	Rp 752.750.000	Rp 303.261.905	Rp 266.461.310	Rp 229.660.714

Formula:

$$\text{Depreciation} = \frac{\text{Remaining life of the Assets}}{\text{Rates}} \times (\text{HP} - \text{NS})$$

4. DISCUSSION

Depreciation is an accounting system that aims to allocate other values of assets over their economic life in a rational manner. Calculation of fixed assets at PT. Moro Djoyo Gas uses depreciation using the percentage method, by determining the amount of depreciation rates in accordance with the useful life of the assets. 5% for the useful life of 20 years, 12.5% for the useful life of 8 years, and 20% for the useful life of the assets of 5 years. Based on calculations in the results of the study obtained a large depreciation using the percentage method in 2017 as Rp. 233,375,000, in 2018 as Rp. 233,375,000 and in 2019 as Rp. 233,375,000. The results of calculations using the percentage method from 2017 to 2019 the amount of depreciation is same.

Based on the percentage depreciation method used by PT. Moro Djoyo Gas has been categorized correctly. But the analysis of depreciation of fixed assets used by PT. Moro Djoyo Gas with other depreciation methods needs to be done. With the aim to find out the most appropriate method for depreciation of fixed assets in the company. In addition, to provide recommendations for depreciation methods which appropriate for the company.

The straight-line method is the most commonly used method in Indonesia. The results of calculations using the straight-line depreciation method in 2017 as Rp. 170,031,150, in 2018 as Rp. 170,031,150, and in 2019 as Rp. 170,031,150. By using the straight-line method the calculation results are fixed every year and the magnitude is the same between 2017 and 2019.

Depreciation using the percentage method used by PT. Moro Djoyo Gas and the straight line method are relatively same. The difference lies in the amount of depreciation each year. It happens because the depreciation method of the acquisition cost of fixed

assets is not reduced by the residual value or estimated value at the end of the year period of the fixed asset.

The double declining balance method is depreciating fixed assets by multiplying depreciation rates by the book value of assets. The nominal depreciation every year is definitely not the same because in the method of double declining balance decreases the amount of the book value of assets every year always decreases, so the cost of depreciation costs also decreases every year. Like the calculation of depreciation of fixed assets at PT. Moro Djoyo Gas in 2017 the depreciation as Rp. 466,750,000, in 2018 as Rp. 355,462,250, and in 2019 as Rp. 258,815,000. Based on the calculation above, it can be concluded that the magnitude of depreciation at the beginning of the year is very large and will decline every year.

The sum of the years digit method is an accelerated depreciation method because in this method the depreciation rates are based on fractions and the numerator is the year of use of the remaining assets since the beginning of this year and the denominator is the number of years from the first year to the end use year. The results of the depreciation calculation using the method of the number of years in 2017 as Rp. 303,261,905, in 2018 as Rp. 266,461,310 and in 2019 as Rp. 229,660,714. based on the calculation above it can be concluded that the sum of the years digit method produces a large depreciation expense at the beginning of the year, and decreases at the end of the year with a constant difference unlike the depreciation on the double declining balance method.

Some of the depreciation methods above have advantages and disadvantages. According to researchers the method of depreciation using the percentage method as applied by PT. Moro Djoyo Gas is not right, because the residual value is not calculated by the company. Therefore the researcher draws the conclusion that the most appropriate method is used by PT. Moro Djoyo Gas is a straight-line method, in addition to calculating the residual value of this straight-line method will produce relatively constant profits each year, besides that the calculation method is also very easy, it can be done through Excel and has been widely used by companies in Indonesia.

5. CONCLUSION

Based on research conducted at PT. Moro Djoyo Gas researchers can draw conclusions if the percentage depreciation method used by the company is not appropriate because in the calculation the method does not take into account residual values. For this reason, the researcher recommends the appropriate depreciation method for the company, which is the straight-line method. It is recommended because in the straight-line method the residual value is calculated, the annual profit is relatively constant, and the depreciation method is common in Indonesian companies, the calculation can easily be done through Excel without having to install special applications.

6. SUGGESTION

Researchers provide a suggestion to PT. Moro Djoyo Gas to pay more attention to the application of depreciation methods applied. The percentage depreciation method is not appropriate if done in a company, because it will have an impact on the profits to be obtained by the company and its application must be in accordance with Indonesian SAK.

In addition, there must also be clear rules regarding the accounting treatment of fixed assets depreciation, if there is an error in determining the amount of depreciation costs, it will also have an impact on profitability at PT. Moro Djoyo Gas.

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REFERENCES

- Baridwan, Zaki. 2010. *Sistem Akuntansi Penyusunan Prosedur dan Metode*. (ed.5). Yogyakarta : BPPE
- Ikatan Akuntan Indonesia (IAI). 2011. *Standar Akuntansi Keuangan (No. 16 Paragraf 5)*. Jakarta: Salemba Empat
- Sugiyono. 2010. *Metode Penelitian Pendidikan Pendekatan Kuantitatif, kualitatif, dan R&D*. Bandung: Alfabeta
- Suardjono. 2014. *Teori Akuntansi (Perekayasaan Pelaporan Keuangan) Edisi Ketiga*. Yogyakarta: BPPE.
- Tulus T.H. Tambunan, 2011. *Perekonomian Indonesia: Kaian Teoritis dan Analisis Empiris*. Bogor: Ghalia Indonesia.
- Kieso, Donald E., Weygandt, Jery J., Warfield, Terry D. 2011. *Intermediate Accounting*. Volume 1. IFRS Edition. John Wiley and Sons.
- Samuel Mairuhu, Jantje J. Tinangon. 2014. *Analisis Penerapan Metode Penyusutan Aktiva Tetap Dan Implikasinya Terhadap Laba Perusahaan Pada Perum Bulog Divre Sulut dan Gorontalo*. EMBA. Vol. 2 No. 4: 404-412
- Dina Satriani, Asep Saifudin. 2020. *Perbandingan Penggunaan Straight Line Method Dan Double Declining Balance Method Pada Aset PT. Delimas Lestari Jaya*. Vol 6. No 1: 2356-5209
- Dian Indah Sari. 2018. *Analisis Depresiasi Aktiva Tetap Metode Garis Lurus dan Jumlah Angka Tahun PT Adira Dinamika*. Jurnal Moneter. Vol 5 No. 1: 2355-2700
- Wico Jontarudi Tarigan. 2019. *Analisis Penerapan Metode Penyusutan Aktiva Tetap dan Pengaruhnya Terhadap Laba Perusahaan pada PT. Jhonson & Jhonson*. Jurnal Acc USI. Vol. 1. No. 1: 2620-5815
- Linda Arisanty Razak, Qalbi Istiqamah, dkk. 2019. *Analisis Perhitungan Penyusutan Aset Tetap Menurut Standar Akuntansi Keuangan dan Peraturan Perpajakan Pada PT. Gowa Makassar Tourism Tbk*. Tangible Journal, Vol. 4. No. 1: 2656-4505

- Surti Milarisa, Aji Rizki Awaliyah. 2017. *Analisis Penerapan Metode Penyusutan Aktiva Tetap dan Dampaknya Terhadap Laba Perusahaan Pada PT. Kartika Samudra Adijaya di Tanjung Redeb*. Accountia, Vol. 1. No. 2:76-91
- Alfrianti Palungan, Ahmad Tomu. 2017. *Analisis Perbandingan Metode Penyusutan Aktiva Tetap Pada PT. Uno Ritel Papua*. Jurnal Ulet, Vol II. No. 1:2579-7336
- Ajeng Citralarasati Mardjani, Lintje Kalangi, Robert Lambey. 2015. *Perhitungan Penyusutan Aset Tetap Menurut Standar Akuntansi Keuangan dan Peraturan Perpajakan Pengaruhnya Terhadap Laporan Keuangan Pada PT. Hutama Karya Manado*. Jurnal EMBA, Vol. 3. No. 1: 1024-1033
- Mistika Oktaviani, Indira Shinta Dewi. 2015. *Analisis Perhitungan Penyusutan Aktiva Tetap Berwujud dan Pengaruhnya Terhadap Laba Rugi PT. Wira Dinamika Pratama*. Jurnal Ilmiah, Vol. 8. No. 1:84-91
- Yohana Dini Sunyatama, Sutjipto Ngumar. 2017. *Analaisis Beban Penyusutan Aset Tetap dalam Undang-Undang Perpajakan Atas PPh Badan*. Jurnal Ilmu dan Riset Akuntansi. Vo. 6. No. 5:2460-0585
- Sumarsan, Thomas. 2013. *Perpajakan Indonesia: Edisi 3*. Jakarta : PT.Indeks
- Suardjono. 2014. *Teori Akuntansi (Perekayasaan Pelaporan Keuangan) Edisi Ketiga*. Yogyakarta: BPFE.
- Tulus T.H. Tambunan, 2011. *Perekonomian Indonesia: Kaian Teoritis dan Analisis Empiris*. Bogor: Ghalia Indonesia.