

# THE IMPACT OF DEPRECIATION POLICY UPON COMPANY'S PERFORMANCE – AN EMPIRICAL STUDY

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## **Abstract:**

Depreciation policy is considered as a very important policy. Enough care ought to be taken while formulating this policy, as it is linked with many administrative and financial decisions- such as determination of actual profits & costs; replacement of assets; avoiding distribution dividends out of capital; presenting true and fair view; keeping the capital intact; evaluating the existing assets value-in-use and saving taxes. The main objective of the present study is to bring out awareness among various accountants, public and private companies, business and government to adopt an effective policy of depreciation. The present study is a case study of selected company's depending heavily on secondary data. The data has been collected from various issues of Annual Reports of this company's. The secondary data in published form has been supplemented by the personal interviews with the chief executives officer, managing directors. The main findings of the research work can be summarized as follows: 1. There is no difference between pre-set rates of depreciation and practice of the company; 2. There exists no correlation between the amount invested in Assets and the rate of depreciation on it; 3. The amount provided for the depreciation was sufficient during the period of study; 4. There exist a relationship between the expansion of gross block and sales; 5. There is a significant variation in the amount of depreciation charged by the company's during period of study. Based on these conclusions appropriate recommendations have been formulated for the accountants, financial managers, planners for better performance of the company's.

**Key words :** depreciation policy, gross block, net block, rates of depreciations.

## **Introduction**

A proper management of the value of an asset is essential for depiction of its real value in the financial statement. This involves measurement of depreciation in case of long-lived assets. Usually, the fixed assets are shown on the balance sheet at original cost less depreciation. It is, therefore, essential that the amount of depreciation to be charged periodically as expense, is determined rationally and systematically.

The old view of depreciation was meant to be a provision to replace depreciable assets. Therefore, it was left to the discretion of the management to provide or not to provide for depreciation. They used to provide for depreciation when the firm made good profits and dispense with it during the years the firm suffered from losses. Even the accounting practices of showing profits before

depreciation and profits after depreciation tend to confirm the view that most companies / enterprises regard it as an appropriation of profits. But the modern view of depreciation is different. In this connection depreciation has been defined as the process of allocating the cost of a plant asset to expense in the accounting periods benefiting from its use. Depreciation does not measure the decline in the assets market value each period, nor does it measure the assets physical deterioration [1]. Since depreciation reflects the cost of using tangible assets, depreciation charges are only recorded to those periods expected to benefit from the use of assets [2].

But it should be clear that with the exception of land, most items of plant and equipment have a limited useful life; that is, they will provide service to the entity over a limited number of future accounting periods. A fraction of the cost of the asset is therefore properly chargeable as an expense in each of the accounting periods in which the asset provides service to the entity [3].

Thus, fixed assets can be viewed as a bundle of future services to be used by the enterprise over the period of the economic life of such assets. Therefore, investment in such assets must be equitably allocated to different periods of their economic life in a systematic and rational manner. The amount charged to each period is called depreciation and represents the cost of expiration of such assets. This treatment may be certainly impacting the performance of the companies. In this paper, an attempt is made to analyze the extent of impact of depreciation on the performance of Almarai company's.

### **Importance and Objectives**

No one can ignore the importance of depreciation policy in determining companies performance, it is undoubtedly responsible upon the largest investment in assets, therefore, the researcher felt that the present study deserve to be important, for many reasons:

Firstly, the lack of studies and research work done in depreciation policy,

Secondly, the relationship between providing properly and systematically depreciation with the following:

1. Determination of correct profits, that means if the depreciation is not provided, the profits will be inflated as in this case a necessary business expense will remain undebited to Profit and Loss account
2. Ascertaining correct cost of production, as depreciation is a factory expense which must be added to the cost of production. If it is not provided, the cost of production will not be correct.
3. To avoid distribution of dividend out of Capital, if the depreciation is not provided, the Profit and Loss account will show higher profit than the real one and this will result in the return of the part of capital by way of dividend which is legally prohibited and also commercially unsound.
4. Matching Cost against revenues, it is essential to provide means of allocating the cost of fixed assets to the cost of operations, as this is one of most important accounting principles.

5. Presenting true and fair view, if the depreciation is not provided properly and systematically, the assets will be shown at the higher value in the Balance Sheet other than their real value. They will thus be overvalued. This will not show a true and fair view of the state of affairs of the business concern.
6. Keeping the Capital intact, and this is when depreciation is provided properly, it will be possible for the concern to replace the assets out of depreciation fund not from the capital.
7. Replacement of asset, when depreciation is provided it reduces the profit after depreciation figure and this saves the cash resources of the enterprise (to the extent of depreciation) from being distributed by way of dividend. The amount so saved, if set aside every year, is able to produce at the end of the life of the asset the amount required to replace it.
8. Saving Taxes, though depreciation is not a cash cost, it is permitted to be deducted from profits for tax purposes.
9. Ascertaining the correct value of asset, at the end of each year all the fixed assets should be properly valued. Their value decreases every year due to constant use.

Thus, it is expected that the study will be a major stepping stone in creating awareness among accountants, public and private companies, business and government to adopt an effective policy of depreciation.

The major objective of the study is to examine the rationale behind depreciation policy of the selected company. Further, the present study endeavors to achieve the following objectives:

- 1) To examine the depreciation policy adopted by the company through out the following :
  - a) Pre-set rates of depreciation charged by the company
  - b) Relationship between rates of depreciation and amounts invested in Assets.
  - c) Adequacy of depreciation charged
- 2) To examine the relationship between the expansion of gross block and sales.
- 3) To examine the consistency of charging depreciation during period of study.
- 4) Offering suitable suggestions and recommendations for improvement and suggest remedial measures

### **Hypothesis**

The present study is evaluatory in nature. It attempts to examine the depreciation policy followed by the company under study. Therefore, the following hypothesis were set :

- 1) There is no significance difference between the pre-set rates of depreciation and practice.
- 2) There is a relationship between the amount invested in the Assets and the rate, of depreciation on it.
- 3) Depreciation provided was not sufficient through out the period of study.

- 4) There is a relationship between the expansion of gross block and sales.
- 5) There is no significant variation in the amounts of depreciation charged by the company through out the period under study.

### **Review of Literature**

- 1) Henry McFarland, 1990 "Alternative Methods of Depreciation and the Reliability of Accounting Measures of Economic Profits." This study shows that the Most U.S. firms use straight-line depreciation; some use accelerated depreciation. A series of Monte Carlo experiments were conducted to show how a proposed switch to annuity depreciation would affect accounting estimates of economic profitability. The main findings of this study indicated that annuity depreciation significantly improved the accounting rate of return but had little effect on estimates of economic profits. Some of the improvement in the rate of return and almost all the improvement in economic profits could be obtained if all firms used straight-line depreciation [4].
- 2) Kevin Holland et al., 1998 "Capital theory and depreciation." This study shows that with an empirical evaluation of the relevance of published depreciation numbers. The report results of an attempt to assess the correspondence between the depreciation rates implied by published financial statements and the market-based rates implied by time series variations in corporate equity returns. This leads to a simple capital theory model under which firms are regarded as a reservoir of unused (homogeneous) capital services. The main empirical results based on this construct indicate that estimated market rates of depreciation have a significant influence on corporate depreciation policies [5].
- 3) C.D.Green et al.,2002 "A Possible Economic Rationale for Straight-Line Depreciation." This study discussed the Straight-line depreciation (SL) as appears to be a crude procedure that is unsupported by economic logic. Nevertheless, internationally, it is the most widely used method of allocating the costs of fixed assets to accounting periods by way of depreciation charges. The study concluded that there are many patterns of declining annual benefits from ownership for which (SL) provides an approximation to net charges that could be considered to be adequate. Consequently (SL) often provides more economically interpretable information, and consequently is more defensible, than is typically assumed in the literature relating to accounting [6].

- 4) Hillier et al., 2006 "The impact of depreciation-type adjustments on the distribution of accounting earnings." This study discussed the experimental, computer simulation methods as these are used to demonstrate how a depreciation-type adjustment influences the distributional form of accounting earnings. The results confirm conjectures that earnings distributions generally, with or without depreciation adjustments, tend towards a normal form as a function of increasing 'activity' levels. They also indicate that depreciation is likely to accelerate the transition towards a normal form as activity levels increase and to transform a non-normal form to one that is significantly closer to the normal at relatively low activity levels [7].
- 5) Menachem Berge et al., 2007 "The choice of depreciation method under uncertainty." This study presents a framework for choosing between depreciation methods when future cash flows from operations are not assumed known with certainty but only in probabilistic terms. Specifically, the accelerated depreciation method and the straight-line depreciation method are compared and mathematical conditions are derived for the depreciation method that should be adopted in different circumstances and under different tax systems. The main findings of this study shown that, contrary to conventional wisdom, the straight-line depreciation method is the preferred method for lowering the company's present value of tax liability in various realistic situations [8].  
It is quite clear that most of the previous literature were investigating depreciation methods, depreciation policies and economic depreciation, so this study has adopted a different dimension, that is analyzing depreciation rates and its major effects on companies' performances. Further, the present study has introduced certain recommendations to contribute to a large extent improving depreciation policy followed by the companies in KSA.

### **Methodology and Materials**

The present study is a case study approach depending heavily on secondary data. The data has been collected from various issues of Annual Reports of the selected company. The other material like circulars, brochures, statements is also used for analysis. The personal interviews with officials of the company have been supplemented. There are certain methodological issues involved in the presentation of the data, i.e. the characteristics treatment of fixed assets as the selected company has adopted an approach which is different from the general treatment of the fixed assets. For the purpose of unanimity, the method used by the company is adopted for the analysis. The collected data has been analyzed by using ratio analysis as a powerful tool of financial analysis, and statistical tools such as, standard deviation, index number, coefficient of correlation, Chi Square, Regression Analysis and

coefficient of variation. The results have been analyzed through the tables and followed by conclusions and suggestions.

### **Scope of the study**

For the purpose of examining the impact of depreciation policy on companies performance, the Almarai Company has been chosen. This company is selected purposively. Moreover, this company is exerting dominant position in the area of Fresh Dairy, Long-Life Dairy, Fruit Juice, Cheese & Butter, Bakery, and Other Sales.

The present study covers a period of seven years from 2002 to 2008. This period is selected because the company has achieved robust development in all respects, and data is available widely for this period. The researcher has started the present study from the month of December 2008 till March 2009 at the College of Business Administration at Al Kharj, University of King Saud, Saudi Arabia.

### **An Overview of Dairy Sector in Saudi Arabia**

Market growth rate : milk demand in Saudi Arabia is growing 6% annually.

Market competitiveness : Milk prices dropped by more than one-quarter over the past 12 months in the fight for market share.

Market share : There are currently 26 major dairy producers in the Kingdom, and only two - Alsafi, owned by France's Danone, and Almarai - have significant market share. The pair control more than 60% of the market, with another 25% divided between Nadec and Nada producers.

Highly capitalistic industry: More than \$ 1 billion was invested in developing dairies and billions more were ploughed into other livestock and arable farming in former desert areas. This has left dairy producers with significant overcapacity, despite periodic attempts to carve out an export market around the Middle East.

Leader firm: Al Safi Dairy Farm, the largest integrated dairy farm in the world, is home to 34,000 heads of cattle. The farm produces 145 million liters of high-quality milk annually. Two new modern dairy-processing plants began operation in 1998, and are already exporting significant quantities of milk to the Gulf Cooperation Council (GCC).

### **Depreciation Policy in Almarai**

The following depreciation accounting procedures and policy have been adopted by Almarai company (as enlisted in its Annual Report & Accounts).

- Property, plant and equipment are stated at cost less accumulated depreciation. There is no open market for dairy livestock in the Gulf Cooperation Council (GCC) against which to measure fair value. Accordingly, dairy livestock are treated as property, plant and equipment and included in the accounts at their cost of purchase or at the cost of rearing to the point of first calving, less accumulated depreciation. The cost

of dairy young stock is determined by the cost of rearing to their respective age.

- Cows in the dairy herd are depreciated to their estimated residual value, at rates between 10% - 25%, based on their expected continuing useful life. Other property, plant and equipment are depreciated on a straight line basis at the following annual rates:
  - Buildings 3% - 10% .
  - Plant, Machinery & Equipment 5% - 33% .
  - Motor Vehicles 15% - 25% .
  - Land is not depreciated
- The carrying values of property, plant and equipment are reviewed for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. If any such indication exists and where the carrying values exceed the estimated recoverable amount, the assets are written down to their recoverable amount. Impairment losses are expensed in the consolidated statement of income.
- The consolidated financial statements have been prepared on the accrual basis under the historical cost convention (except for derivative financial instruments and investments that have been measured at fair value) and in compliance with the accounting standards issued by the Saudi Organisation for Certified Public Accountants (SOCPA).

### Data Analysis and Findings

The year wise details of depreciation charged by the company's on various types of fixed assets and its percentage to total assets have been presented in the following table (1) :

**Table (1) Shows Amount of Depreciation charged and its percentage to total Assets during the period 2002-- 2008**

SAR 000								
Years	Depreciation charged							
	Land and Building		Plant and Machinery		Motor vehicles		Dairy Herd	
	*ADC	%	ADC	%	ADC	%	ADC	%
2002	18,524	7.98	87,269	8.85	30,410	8.98	20,816	6.61
2003	22,584	9.73	100,686	10.21	33,503	9.89	22,702	7.21
2004	27,974	12.05	93,024	9.44	35,052	10.35	26,033	8.27
2005	24,838	10.70	120,092	12.18	38,468	11.36	29,480	9.36
2006	34,688	14.94	149,992	15.22	45,077	13.31	58,365	18.54
2007	45,827	19.74	192,403	19.52	77,298	22.82	50,997	16.20
2008	57,738	24.87	242,292	24.58	78,938	23.30	106,447	33.81
Total	232174	100	985758	100	338746	100	314840	100

Source : Annual Reports and Accounts during 2002 -2008.

\* Amount of Depreciation charged

It is clear from table (1) that the depreciation charged by the company has shown an increasing trend on Motor Vehicles through the period of study. The same increasing trend is continued in case of Land and Buildings except for the year 2005 and for Plant & Machinery again except for the year 2004. The reason for the decrease can be attributed to the fact that the company has disposed considerable amount of plant and Machinery and reduced the value of Land and Buildings.

However, it can be seen that, by and large, the depreciation charge is increased on all assets for the period of study.

On land & Buildings it is increased from about 8% in 2002 to 25% in 2008. On Plant & Machinery, it was about 8.85% in 2002 and reached to 24.58%. The depreciation charge on Motor and Vehicles was 8.98% in 2002 and increased to 23.30% in 2008. The percentage of depreciation on Dairy Herd was only 6.61% in 2002 and increased to 33.81% in 2008.

### 1. Implementation of Depreciation Policy

In this section, an attempt is made to judge whether there is any deviation in the execution of the depreciation policy of the selected company during the period of study.

**Table (2) Shows Depreciation and Rate of Depreciation on Fixed Assets**

Particulars	SAR 000							
	Land and Building		Plant and Machinery		Motor vehicles		Dairy Herd	
	*Dep	Rate	Dep	Rate	Dep	Rate	Dep	Rate
2002	18,524	3.062	87,269	10.223	30,410	14.681	20,816	11.997
2003	22,584	3.350	100,686	10.112	33,503	14.129	22,702	11.480
2004	27,974	3.724	93,024	8.108	35,052	13.567	26,033	12.210
2005	24,838	2.499	120,092	7.657	38,468	13.305	29,480	11.807
2006	34,688	3.106	149,992	8.341	45,077	11.039	58,365	18.690
2007	45,827	3.201	192,403	8.175	77,298	14.406	50,997	11.866
2008	57,738	3.129	242,292	8.155	78,938	12.958	106,447	20.517

Source : Annual Reports and Accounts during 2002 -2008

#### \* Depreciation

It is evident from Table(2) that the depreciation in absolute figures is increasing for all the assets during the period of study, whereas the rate of depreciation is fluctuating. The rate of depreciation on land and building was 3.062 % in 2002 and increased to 3.129% in 2008. However the rate of depreciation lies within the limit of 3 % to 10% as fixed by the company. The rate of depreciation for plant and machinery was 10.22% in 2002 and decreased to 8.15% in 2008 but hanging within the policy limits though showing decreasing trend. The depreciated rate on motor and vehicles was 14.68% in 2002 but it was only 12.95% in 2008. The depreciation policy of the company on dairy herd shows the range of 15% to 25%, and practice also confirming the direction.

#### Rates of depreciation:

Table (3) given below shows  $\chi^2$  (chi-square) values for different types of assets. Comparing the values with the table value of  $\chi^2$  at 5% level of significance and 6 degree of freedom which is 12.59, we find that for all types of assets the calculated value is much less than the tabulated value. Hence, in all the situations



we will accept the null hypothesis that there was no significant difference in the rate of depreciation policy and rate practiced by the company.

Table (3) Shows  $\chi^2$  (chi-square) values for different type of assets

Assets	D. f	$\chi^2$ Value	Results
Land & Buildings	6	0.264	*Insig at 5%
Plant, Machinery & Equipments	6	0.740	Insig at 5%
Motor Vehicles	6	0.670	Insig at 5%
Dairy Herd	6	6.210	Insig at 5%

\* Insignificant at 5% level of significant

## 2. Average Investment and Average Rates

It can be observed from table (4) that the amount of investment on all the assets was increasing during period of study, whereas rates of depreciation on assets registered a fluctuating trend. Further, we can observe, that amount of investments was more than the average from 2006 onwards. Similarly, coefficient of variation was hanging between 0,42 and 0,46 .

Table (4) Shows Average Investment of Fixed Assets and Average Rates

SAR 000

Fixed Assets	Land & Buildings		Plant & Machinery		Motor Vehicles		Dairy Herd	
	*AOI	Rate	AOI	Rate	AOI	Rate	AOI	Rate
2002	604993	3.06	853648	10.22	207132	14.68	173,507	11.99
2003	674056	3.35	995686	10.11	237117	14.12	197,758	11.48
2004	751198	3.72	1147282	8.10	258362	13.56	213,207	12.21
2005	993760	2.49	1568309	7.65	289125	13.30	249,672	11.80
2006	1116890	3.10	1798203	8.34	408338	11.03	312,286	18.69
2007	1431745	3.20	2353535	8.17	536569	14.40	429,760	11.86
2008	1845431	3.12	2971227	8.15	609186	12.95	518,817	20.51
$\bar{X}$	1059725	3.1	1669699	8.68	363690	13.44	299287	14.08
$\sigma$	449826	0.37	772609	1.04	157762	1.22	129990	3.82
Cv%	0.42	0.12	0.46	0.12	0.43	0.09	0.43	0.27
r	-0.17		-0.60		-0.30		0.67	

Source : Annual Reports and Accounts during 2002 -2008

\*Amount of Investment

The result of correlation between amounts invested on the assets and the rates of depreciation charged on it shows that there exists a moderate positive correlation relationship between amount invested on Dairy Herd and rate of depreciation charged on it, whereas there exists negative correlation among Land & Buildings, Plant & Machinery, and Motor Vehicles.

## 3. Index of Gross Block and Depreciation

To judge the adequacy of depreciation the trend of depreciation should be compared with the trend of gross block. For the purpose of comparison, index

numbers of gross block and provision for depreciation have been calculated by taking 2002 as base year. The provision for depreciation is said to be sufficient "if both the trends move in the same direction, it will be inferred that sufficient depreciation has been provided. If the trend for depreciation expenses is downward whereas the trend for gross block is upward, this decrease in depreciation may indicate that insufficient depreciation has been recognized." [9] The coefficient of correlation can also help to show the relationship between gross block and depreciation.

The following table (5) shows the trends in the depreciation and gross block as well as their coefficient of correlation in the selected company under study.

**Table (5) Shows Index of Gross Block and Depreciation & their Coefficient of Correlation.**

Particular	(Base Year 2002)							r
	Years							
	2002	2003	2004	2005	2006	2007	2008	
Gross Block	100.00	120.95	143.27	166.21	207.98	274.26	353.00	0.99
Depreciation	100.00	114.30	115.96	135.57	183.49	233.43	309.14	

*Source: Annual Reports and Accounts during 2002 -2008.*

From Table(5) it is evident that the index of gross block and total depreciation shows an increasing trend during the period of study. Since the index of gross block as well as index of provision for depreciation were increasing in the same direction, so it can be inferred that the company were making adequate provision for depreciation. Furthermore, it is clear from the preceding table (5) that the index for provision for depreciation has always been less than the index for gross block which shows a reasonable amount of provision for depreciation has been provided.

The coefficient of correlation between the absolute figures of gross block and depreciation shows that there is an almost perfect positive correlation between these two, which means that an increase in the value of gross block was followed by an increase in the depreciation.

#### **4. Index of Gross Block upon Sales and Operating Profit Margin**

An excess investments in fixed assets leads usually to unnecessary blocking of funds which would in turn leads to poor utilization of fixed assets. Therefore, it is recommended that acquiring new fixed assets should be discussed on depreciation policy before putting it into use. Furthermore, a new investment on fixed assets should lead to more sales and more profitability.

For interpreting the impact of gross block upon sales and operating profit margin, the following description may make it clearer:

If the trends of gross block and sales are rising it can be concluded that the expansion of gross block is due to increase in sales, or sales have justified the need for expansion of gross block. If the rate of growth of sales is higher than the rate of growth of gross block, it can be interpreted that there is better utilisation of gross block expansion. Contrary to this, if the expansion rate of gross block is higher than

the expansion rate of sales, it will represent excess investment in gross block and its poor utilisation. If the operating profit margin ratio also marks an increasing trend, it will be in view of better operating efficiency and more profitable sales. The impact of gross block will then be more sales and more profit margin. In cases other than this, the expansion of gross block may not be considered as profitable.

The trend of gross block and sales in terms of Index Numbers (taking the figure of the year 2002 as base) have been compiled to measure the impact of gross block upon sales and operating profit for the Company. Operating profit margin has been shown in terms of percentage. The next table (6) shows the trends of gross block and sales, and operating profit margin.

Table (6) Shows Index of Gross Block, Sales & Operating Profit during the period 2002 to 2008

Particulars	(Base Year 2002 = 100)						
	2002	2003	2004	2005	2006	2007	2008
Gross Block	100.00	120.95	143.27	166.21	207.98	274.26	353.00
Sales	100.00	109.56	117.74	134.04	172.20	235.48	314.12
*OPM	23.16%	22.63%	21.04%	20.12%	19.39%	20.71%	21.00%

Source : Annual Reports and Accounts during 2002 -2008.

\*Operating profit Margin

It can be observed from table (6) that the company under study registered an increasing trend of gross block and sales. Further, the investment in gross block is associated with sales and the reason for expansion in gross block was due to an increasing trend in sales because the investment in gross block is closely related with sales. The impact of expansion in gross block was rise in sales. But the rate of expansion in gross block was higher than the expansion in sales, which shows that the expanded gross block was not well utilized by the company. Usually, higher expansion in gross block than sales implies an excess investment in fixed assets and its poor utilization.

An analysis of operating profit margin from the preceding table reveals that the company showed a mixed fluctuating trend regarding operating profit margin. The operating profit margin during 2002 was positive but later showed a decreasing trend till 2006. During the year 2002, the operating profit of the company was 23.16% which decreased to 19.39% by the end of 2006, the reason behind decreasing profit is due to increasing operating expenses, but in the year 2007 and 2008, the profit margin was boosted to 20.71% and 20% due to effective control over operating cost and increase in sales.

Further, an analysis for the absolute figures of gross block (GB) and total sales (TS) has been made through regression analysis. The result of regression equation showing relation between total sales and gross block is given below:

$$TS = -477328.86 + 0.6634 GB \quad Adj R^2 = 0.985$$

$$(-0.003) \quad (19.6)$$

(Values in the brackets show respective t- values)

The results of regression equation, shows that there exists a linear relationship between GB & TS. However, the intercept term is not significant, as it is clear from the t-value which is very small (-0.003). The adjusted R<sup>2</sup> is 0.985 which reflects that 98.5% of the changes in TS is explained by GB itself. The coefficient of

GB is positive and its value is 0.663. The positive sign is an indication that an increase in GB will leads to an increase in TS.

### **Ratio of Depreciation to Gross Block and Sales**

The size of depreciation can be judged either in relation to sales, and / or in relation to gross block. Normally, if the percentage of depreciation to gross block shows an increase, the depreciation will consume a larger portion of sales (unless, of course, sales increase more in proportion to gross block) reducing thereby operating income. According to Kennedy and McMullen, "The depreciation to gross block ratio tests roughly the adequacy of the annual depreciation expense and indicates whether a uniform policy of recognizing depreciation is in effect." [10] On the other hand, "The ratio of depreciation to sales shows the number of cents to each sales dollar that was consumed by the depreciation charge." [11]

Table (7) shows a percentage of depreciation to gross block and sales for the company under study. It is clear from the table there was a fluctuating trends during the period of study in the both ratios, i.e depreciation to gross block and depreciation to sales. this implies that total amount of depreciation charged by the company during the study period was not uniform, which is also denotes that depreciation policy followed by the company was also different from one year to another, Hence, it should be noted that when the ratio of depreciation to gross block is high that means depreciation consumes larger portion of sales which is reducing the operating income of the company. Further, it is clear from the table that average ratio of depreciation to gross block, and ratio of depreciation to sales was only 6.62%, 9,92% respectively.

**Table (7) Shows Ratio of depreciation to Gross Block and Sales from 2002 -2008**

			<i>(in percent)</i>
Years	*Dep to Gross Block	Dep to Sales	
2002	7.50	9.81	
2003	7.09	10.23	
2004	6.07	9.66	
2005	6.12	9.92	
2006	6.62	10.45	
2007	6.39	9.72	
2008	6.57	9.65	
Average	6.62	9.92	

Source : Annual Reports and Accounts during 2002 -2008.

### **\* Depreciation**

## **5. Consistency in the Amount of Depreciation**

This section is devoted for judging consistency in the amount of depreciation charged on various assets which will have policy implication. Therefore, a comparative study of the depreciation charged by the company on various group of assets during the study period has been presented in the following table (8) which shows that depreciation provided for all assets was more than the average since the year 2006 onwards except for motor vehicles as it was from the year 2007 onwards. Further, it has been observed that there was a fluctuating trend in the amount of depreciation which gives an idea regarding consistency in the depreciation policy followed by the company. Analysing the coefficient of variation it can be concluded that the company followed a better consistent policy with regard to the depreciation on Dairy Herd to be followed by Plant and Machinery, land & Building, and Motor vehicles respectively.

**Table (8) Shows Standard Deviation and Co-efficient of Variation of the depreciation charged on Assets during the study period 2002 – 2008**  
SAR 000

Years	Land and Building	Plant and Machinery	Motor Vehicles	Dairy Herd
2002	18524	87269	30410	20816
2003	22584	100686	33503	22702
2004	27974	93024	35052	26033
2005	24838	120,092	38,468	29480
2006	34688	149,992	45,077	58365
2007	45827	192,403	77,298	50997
2008	57738	242,292	78,938	106447
Total	232173	985758	338746	314840
$\bar{X}$	33167.57	140822.57	48392.29	44977.14
$\sigma$	14077.64	58071.87	20820.98	15904.09
Cv%	42.44	41.24	43.03	35.36

Source : Annual Reports and Accounts during 2002 -2008.

### Results of testing the hypothesis

This paper posited five research hypotheses. The first research hypothesis stated: There is no significance difference between the pre-set rates of depreciation and practice. The results reported in Tables 2, and 3 show no significant difference between the pre-set rates of depreciation and practice of the company. Therefore, this result is found consistent with the hypothesis of the study. Thus, the result accepts the first research hypothesis.

The second research hypothesis stated: There is a relationship between the amount invested in the assets and the rates of depreciation on it. The result reported in Table 4, this result is found inconsistent with the hypothesis of the study. Thus, the result rejects the second research hypothesis.

The third research hypothesis stated that: Depreciation provided was not sufficient during the period of study. The conclusion drawn from Table 5 shows that the hypothesis can easily be rejected and inference can be drawn that the depreciation provided was sufficient.

The fourth research hypothesis stated that: There is a relationship between the expansion of gross block and sales. The results obtained in Tables 6, and 7 show that higher expansion in gross block than sales implies an excess investment in fixed assets, poor utilization, and less profitability. Therefore, the results accept the fourth research hypothesis.

The fifth research hypothesis stated that: There is no significant variation in the amounts of depreciation charged by the company through out the period under study. The result reported in Tables 8 shows significant variation in the amount of depreciation charged by the company. This is clear from the values of coefficients of variation calculated for different types of assets. The high values of coefficients of variation are sufficient reason to reject the fifth research hypothesis i.e. the variation is significant.

## **Conclusion and Recommendations**

In general, the results of this study include significant findings. It also might help the firm executive members to be focused on better depreciation policy followed by companies giving more attention to those mechanisms which enhance positive effects to the management of depreciated assets. This will also ensure that a systematic and consistent depreciation policy will enhance a more reliable effect on the firm's performance. Therefore, the following recommendations are expected to have a positive effect on Accounting for depreciation:

- An understanding of how depreciation charges vary between a rundown asset, and a well maintained one should be taken into consideration while formulating depreciation policy.
- To keep pace with changing times, its recommended that depreciation policy should be revised and revalued every five years, as this would give a signal about how well assets are managed and depreciated. Any changes brought about the policy should be prospective and not retrospective.
- While formulating depreciation policy the following factors should be taken into considerations : rate of depreciation, selection an appropriate method of depreciation, additions and betterments, ascertaining useful life, determining the expected residual value, wear and tear of assets, savings taxes, rundown asset, well maintained assets, repair and maintenance policy, replacement of assets, obsolescence, engineering investigations, past experience & future expectations, and periodical review of fixed assets.

- Furthermore, depreciation policy should be formulated in consultation with several authorities as accountants (financial and costing), economists, finance manager, engineers. An independent group of experts may also be consulted. A wise decision prevents loss.

The present study was undertaken with some specific objectives, although, it does not claim to have examined all the financial problems associated with depreciation policy. In every research, an effort should lead to new direction and dimensions. In this way, it will open new vista for further research.

## References

- [1] John.J. Wild, Kermit D. Larson and Barbara Chiappetta.2007. Fundamental Accounting Principles. USA: Mc Graw Hill International Edition, p-389.
- [2] Donald. E.Kieso, Jerry J.Weygandt and Terry D. Warfield.2007. Intermediate Accounting, USA: John Wiley & Sons, pp-522.
- [3] Robert, N. Anthony, James S. Reece, "Accounting Principles", Sixth Edition, Richard, D. Irwin, Inc., Homewood, Illinois 60430, p. 169, (1994).
- [4] Henry McFarland. 1990, Alternative Methods of Depreciation and the Reliability of Accounting Measures of Economic Profits, MIT Press Journals Cambridge, Website: <http://www.mitpressjournals.org>
- [5] Kevin Holland, Huwrhys and Mark Tippett.1998. Capital theory and depreciation, *British Accounting Review*, University of Wales, Aberystwyth, pages 30, 39-72.
- [6] C. D. Green, J. R. Grinyer & R. Michelson.2002. A Possible Economic Rationale for Straight-Line Depreciation, A journal of Accounting, finance and Business studies, The University of Sydney, Volume 38 Issue 1, Pages 91 – 120.
- [7] Hillier, John R: Willett, Roger J.2006. The impact of depreciation-type adjustments on the distribution of accounting earnings. Academic journals & books at Questia Online Library, website [www.Questia.com/Journals](http://www.Questia.com/Journals)
- [8] Menachem Berg Giora Moore. 2007. The choice of depreciation method under uncertainty, A journal of the decision sciences institute, Toronto, Canada Volume 20 Issue 4, Pages 643 – 654.
- [9] Kennedy, R.D. and McMullen, S.Y.1968. Financial Statements - Forms, Analysis and Interpretation, 4th edn. Illinois : Richard D. Irwin Incl., p. 404.
- [10] Kennedy, R.D. and McMullen, S.Y. : Op. cit., p. 414.
- [11] Kennedy, R.D. and McMullen, S.Y. : Op. cit., p. 413.

## أثر سياسة الاهتلاك على أداء الشركات

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### المستخلص :

تعتبر سياسة الاهتلاك للأصول الثابتة من السياسات الهامة جدا والتي يجدر الاهتمام بها كونها مرتبطة بالعديد من القرارات الإدارية والمالية، كقرارات توزيع الأرباح، قرارات شراء واستبدال الأصول، معرفة الأرباح الفعلية، معرفة التكاليف الفعلية، إظهار وتصوير المركز المالي الصحيح للمنشآت، الحفاظ على رأس المال، تقييم الأصول، استحقاقات الضرائب، الخ وتنبع أهمية هذا البحث من الحاجة إلى التوصل لآلية وسياسة واضحة للاهتلاك يمكن الاعتماد عليها مستقبلا. من هنا، فقد استهدف هذا البحث دراسة سياسة الاهتلاك وأثرها على أداء شركة المراعي في المملكة العربية السعودية، وقد اعتمد البحث على التقارير المالية للشركة منذ عام ٢٠٠٢م ولغاية ٢٠٠٨م بالإضافة إلى المقابلات الشخصية لجمع البيانات المطلوبة، حيث تم التوصل إلى مجموعة من النتائج منها : لا يوجد فروق ذات دلالة إحصائية بين نسب الاهتلاك المرسومة مسبقا من قبل الشركة ونسب الاهتلاك الفعلية والمطبقة على أرض الواقع، بالإضافة إلى أنه لا يوجد هناك علاقة بين حجم الأموال المستثمرة بالأصول ونسب إهلاكها، تبين أن نسب إهلاك الأصول الثابتة كافية لاستبدالها، كما توصلت الدراسة إلى أن هناك علاقة بين حجم الاستثمار بالأصول الثابتة والمبيعات المحققة. وأخيرا تبين أن هناك فروق ذات دلالة إحصائية بين قيمة الاهتلاك السنوي للأصول خلال فترة الدراسة. وبالنهاية، قدم الباحث العديد من التوصيات التي من شأنها الإسهام في إنجاح سياسة الاهتلاك المطبقة في الشركات الصناعية مما سيكون له عظيم الأثر على أداء وإنجاز أفضل.

**كلمات مفتاحية:** سياسة الاهتلاك، مجمل الأصول، صافي الأصول، نسب الاهتلاك