

Financial ratios in energy projects: The case of days sales of inventory

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ABSTRACT

The aim of this study is to explore the Days sales of inventory (DSI) as an indicator for inventory management among energy companies in Saudi Arabia for the period ranging from 2012 to 2019. The results of this study indicate that Aldrees company is ranked the first in terms of managing its inventory in which the average value of the DSI for the period 2013–2019 was 5 days. The second rank in terms of the DSI value for the period 2012–2019 belongs to Bahri company in which the average DSI was 23 days. While the third rank was Petro Rabigh in which the DSI average was 31 days. The results of this study should be useful to policy makers at the company management and other external stakeholders such as investors, auditors and lenders.

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1. Introduction

Supply chain management (SCM) consists of processes such as inventory management. In definition, SCM is the management of all the activities linked to the transfer of products from raw materials to the end-user. It is associated with the choice of resources and supplies, storage, customer service, product scheduling, transfer, inventory management, and order processing (Burgess et al., 2006). Four methods can be used to increase the value of any business unit. They include reduction of circulating capital, revenue increase, increased productivity, and reduced operating costs. For example, an innovation to decrease inventory level can result in the loss of sales level; besides, it is easy to measure the benefits of this innovation. Even so, to achieve long-term growth, there should be an increase in revenue and the managers have to focus on all the four techniques to increase the firm's value (Lambert et al., 2005). Besides, supply chain management (SCM) in cost accounting is regarded as the management tool to improve order, inventory process, and manufacturing. Also, CAS plays a fundamental role in sustaining the supply chain management system (Marota et al., 2017). Inventory management is considered a part of cash management (CIMA, 2002). According to Jarrad (2000), Baumol managed the problem of cash management in 1952 as an inventory management problem whereby he applied methods for optimizing inventory to the drawback of covering cash demands. From the study, it is evident that cash management is a fundamental feature of management function, and its role cannot be overstressed. When organizations understand the concept of efficient cash management and implement it, the success of the business will be realized. Nevertheless, bad or inadequacy of cash management may result in losing cash discount as well as the reputation of the company because of insolvency and non-payment or commitment on due dates; this may lead to shut down of the firm's operations (Abioro, 2013; Tuller, 2008). According to Gallagher (2002), the enactment of a good cash management system will make sure that there is an increase in profits and opportunities, strengthen the balance sheet of the firm, improve the company's confidence, enhance operational efficiency and ensure better control of financial risk.

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Days sales of inventory (DSI) is one of the most fundamental measurements of inventory management. DSI is also described as days' sales of inventory, exhibits the average number of days an organization turns its inventory into sales. Besides, DSI value differs from industry and company. If a company's DSI is low, it signifies two things, that is, the organization has been effectively using its inventory, and the firm has not been storing inventory for the needed request or the organization has been jotting down the inventory's values. Generally, a decline in DSI is an enhancement to working capital, while an increase in DSI signifies deterioration. On the contrary, a high DSI signifies two things: first, the organization has not been able to translate its inventory into sales quickly, and second, the company has not been keeping outdated inventory. Monitoring DSI is associated with various benefits, including (1) Optimization of inventory management – the decisions concerning inventory purchases are made based on how well an organization is tracking its benchmark. (2) Improvement of cash flow – the identification of techniques to lower DSI helps to free up cash, which creates opportunities to invest in other business areas. (3) Exhibit a need for new decisions associated with marketing and pricing – if DSI is higher than preferred, an individual might opt to introduce product bundles, discounts, or other incentives to motivate consumers to purchase more frequently. (4) Reduction of spoilage risk – it is essential to maintain a low DSI if there are seasonal items or perishable goods because longer stay on the shelves increases the chances of inventory dead stock or spoilage. (5) Planning for the future – understanding the fluctuation of DSI over the course of the year because of troughs and seasonal sales can help in the creation of an accurate inventory forecast for the future of a business. (Tradecko, 2020).

The remainder of the paper proceeds as follows. The next section briefly discusses the methodology. The third section highlights the findings of the study. And, the final section discusses the conclusion and implication.

2. Methodology

2.1 Sample selection and data collection

The sample of this study consists of energy listed companies on Saudi Stock Exchange (Tadawul) for the years ranging from 2013 to 2019. We conduct a cross-sectional review of financial reports of the sample 21

2.2 Source of Data and Analysis

This study used secondary data which are collected from the annual reports of the energy companies and the scholarly published papers in the topic of inventory management and supply chain management. Regarding the data analysis, this study used descriptive statistics to analyze the data collected such as frequency and percentage.

3. Findings of the Study

3.1 Descriptive Statistics of the Respondents

Table 1 depicts the inventory in the beginning and ending periods as well as the average inventory and cost of goods sold for Rabigh Refining and Petrochemical Company, Aldrees Petroleum & Transport Services Co., and The National Shipping Company of Saudi Arabia for a 7-year period for each company.

Table 1
Inventory – Beginning, ending and average

Company/Year	Inventory Beginning	Inventory Ending	Average Inventory	Cost of Goods Sold
Petro Rabigh				
2013	3986076000	4110113000	4048094500	50136617000
2014	4110113000	2799397000	3454755000	52511512000
2015	2799397000	2002494000	2400945500	25218530000
2016	2002494000	2258973000	2130733500	24038699000
2017	2258973000	3022322000	2640647500	31514986000
2018	3022322000	3207445000	3114883500	38683150000
2019	3207445000	3404225000	3305835000	32344064000
Aldrees				
2013	23343503	22926894	23135198.5	1795035614
2014	22926894	25112531	24019712.5	1917208451
2015	25112531	29194000	27153265.5	2051147619
2016	29194000	43966932	36580466	3253962439
2017	43966932	38469947	41218439.5	3226761057
2018	38469947	65390031	51929989	4964549082
2019	65390031	72265712	68827871.5	5219529747
Bahri				
2013	223023000	132068000	177545500	2421363000
2014	327490000	223023000	275256500	3170122000
2015	203610000	327490000	265550000	5485511000
2016	240675000	203610000	222142500	4983302000
2017	290759000	240675000	265717000	4911018000
2018	344045000	290759000	317402000	5183278000
2019	411255000	344045000	377650000	5374186000

Table 2 and Fig. 1 show the Days sales of inventory (DSI) for the three companies over a period of 7 years for each company.

Table 2
DSI- Days sales of inventory

Company/Year	DSI (days)	Company/Year	DSI (days)	Company/Year	DSI (days)
Petro Rabigh		Aldrees		Bahri	
2013	29	2013	5	2013	27
2014	24	2014	5	2014	32
2015	35	2015	5	2015	18
2016	32	2016	4	2016	16
2017	31	2017	5	2017	20
2018	29	2018	4	2018	22
2019	37	2019	5	2019	26

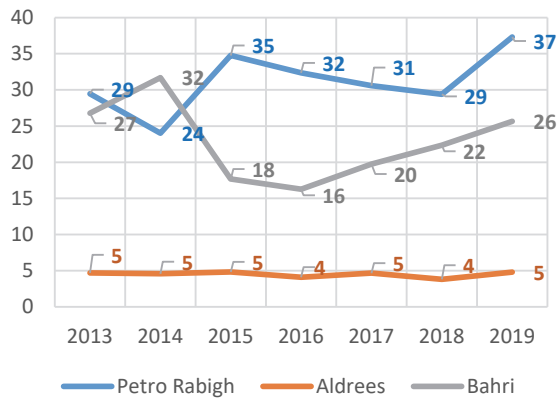


Fig. 1. The trend of DIO between 2013 and 2019

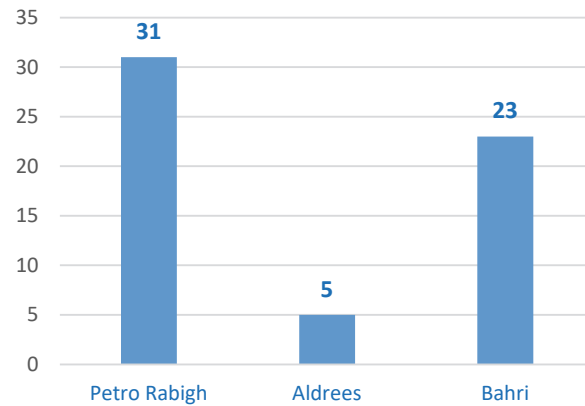


Fig. 2. DIO Mean for the period 2013-2019

As shown by Table 2 and Fig. 1, in general, the lowest values of the DSI across the 7 years are those of Petro Rabigh, followed by Bahri and then Aldrees. As for Petro Rabigh, the lowest value of DSI (29 days) was reported in the years of 2013 and 2018, and the highest value of DSI (37 days) was reported in the year 2019. This indicates to an increase in the DSI value by a 22% as a comparison between the highest and lowest values of DSI. As for Aldrees, the highest DSI value reported during the period ranging from 2013 to 2019 was 5 days in the years of 2013, 2014, 2015, 2017 and 2019. And, the lowest DSI value reported was 4 days in 2016 and 2018. This indicates that the increase in the DSI value for Aldrees company during this period as a comparison between the highest and lowest values of DSI was 20%. In terms of Bahri company, the highest DSI value reported during the period ranging from 2013 to 2019 was 32 days in 2014. And, the lowest DSI value reported during this period was 16 days in 2016. This indicates that the increase in the DSI value during this period of time between the highest and lowest values of DSI was 50%. In general, when the average DSI value is calculated for the 7-year period, it turns out that the lowest DSI value was achieved by Aldrees (5 days), Bahri (23 days), and then Petro Rabigh (31 days) as shown by the following Table 3 and Fig. 2.

Table 3
DSI descriptive statistics

Company/Year	Mean	Minimum	Maximum	St.Dev	Rank
Petro Rabigh	31	24	37	4.271	3
Aldrees	5	4	5	0.388	1
Bahri	23	16	32	5.497	2

As shown by Table 3 and Fig. 2 the lowest mean of days' inventory outstanding DSI was 5 days which was reported by Aldrees company for the considered period 2013-2019. Aldrees's DSI mean is far lower than those of Petro Rabigh 31 days and Bahri (23 days). The DSI mean of Aldrees is lower than Petro Rabigh by 5.2 times (84%) and it is lower than Bahri by 4.6 times (78%). This result indicates that Aldrees company is ranked as the first in terms of inventory management followed by Bahri company as the second rank and then Petro Rabigh is ranked the third. This result refers to the fact that Aldrees company is able to more quickly turn its inventory into sales than Petro Rabigh and Bahri. Therefore, Aldrees company has an efficient strategy in managing its inventory better than Petro Rabigh and Bahri. This result also indicates that Petro Rabigh and Bahri companies are not able to quickly turn their inventory into sales as they are compared with Aldrees. This can be due to poor sales performance or the storing problems. Having too much idle inventory is detrimental to a company as inventory may eventually become obsolete and unsellable. Holding excess inventory also negatively impacts cash flow.

4. Conclusion and implication

This research aims at exploring an essential mensuration of inventory management, that is, Days sales of inventory (DSI). Days sales of inventory (DSI), illustrate the average number of days an organization turns its inventory into sales. The sample of this research comprises organizations in the energy industry, including Bahri and Petro Rabigh Aldrees, for the duration ranging from 2013 to 2019. From the results, descriptive statistics have been used to exhibit that Aldrees is classified as the first company in regards to inventory management, whereby the average DSI value for the period 2013-2019 was five days. In terms of DSI value, Bahri company was ranked second for the period 2012-2019, whereby the average DSI was 23 days. Petro Rabigh was ranked third, with an average DSI value of 31 days.

This research proposes that Bahri and Petro Rabigh firms should enhance their values of DSI by raising sales with better marketing techniques without having to increase the inventory investment, using techniques such as negotiations with the vendor, group and bulk purchases to reduce the input prices, explicit forecasting and planning for their inventories, competitive pricing with the goods, Executing Pareto's 80:20 Principle on the inventory to invest in a better inventory resulting in maximum profits, curb dead and safety inventory using effective forecasting and planning, use of techniques such as EOQ to optimize the level of stock, focusing on the establishment of the advance book to ensure the planning of inventory becomes more efficient, and working on firm's product mix as well as determining the top-selling products (Efinancemanagement, 2020).

There are various notable limitations that the study encountered. One of the limitations was that the number of years and companies undertaken in this study. Future studies should consider a longer time of years and other industries.

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References

- Abioro, M. (2013). The impact of cash management on the performance of manufacturing companies in Nigeria. *Uncertain Supply Chain Management*, 1(3), 177-192.
- Burgess, K., Singh, P. J., & Koroglu, R. (2006). Supply chain management: a structured literature review and implications for future research. *International Journal of Operations & Production Management*, 26(7), 703-729.
- CIMA (2002). Preparing cash budget.
- Efinancemanagement. (2020). Days Inventory Outstanding.
- Gallagher, T. (2000). *Financial Management Principle & Practice*, 2nd ed., New Jersey: Prentice Hall Inc.
- Jarrad, V. T. (2000). *Corporate cash management, excess cash and acquisitions*. New York: Garland Publishing, Inc.
- Lambert, D. M., García-Dastugue, S. J., & Croxton, K. L. (2005). An evaluation of process-oriented supply chain management frameworks. *Journal of Business Logistics*, 26(1), 25-51.
- Marota, R., Ritchi, H., Khasanah, U., & Abadi, R. F. (2017). Material flow cost accounting approach for sustainable supply chain management system. *International Journal of Supply Chain Management*, 6(2), 33-37.
- Mauchi, F. (2011). The effectiveness of cash management policies: a case study of Hunyani flexible products. *International Research Journal*, 2(7), 1299-1305
- Platt, G. (2003). World's best treasury and cash management providers. *Global Finance Journal*, 14(7), 35-40.
- Tradecko. (2020). Inventory days formula – Days inventory outstanding (DIO).
- Tuller, L. W. (2008). *Finance for non-financial managers and small business owners*. 2nded., Canada, Adams Business.



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