

Building Economic Sustainability of the Energy Sector: How Purchasing Performance and Material Inventory Performance Influence Sustainable Economic Levels Moderated by Fiscal Term

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Abstract: - This research investigates the relationship between purchasing performance and material inventory performance with the fiscal term as a moderating variable on sustainable economic levels in Indonesia's upstream oil and gas industry. Data were collected over five years (2017-2021) from 26 Production Sharing Contract Contractors (PSCC) in Indonesia during the preliminary Plan of Development (POD) phase. This research uses Structural Equation Modeling (SEM). The results showed that purchasing performance significantly affects sustainable economic levels, and material inventory performance has no significant effect on sustainable economic levels. Fiscal term moderation on the influence of purchasing arrangements on sustainable economic levels has a significant impact. In contrast, fiscal term moderation on the influence of material inventory performance on sustainable economic levels has an insignificant effect. This research provides a comprehensive framework by explaining the influence of purchasing performance and material inventory performance with the fiscal term moderating variable on sustainable economic levels as a novelty in this research.

Key-Words: - Purchasing Performance; Material Inventory Performance; Sustainable Economic Levels; Upstream Oil And Gas Industry; Economics; Development; Energy Sector.

Received: May 18, 2023. Revised: December 13, 2023. Accepted: February 9, 2024. Published: April 15, 2024.

1 Introduction

The dynamics of Indonesia's fossil industry are primarily influenced by fluctuations in crude oil prices, [1], [2], [3], efforts to improve oil and gas recovery, [4], the use of outdated production facilities, [5], and carbon neutralization initiatives, [6]. Consequently, these factors have adversely affected the petroleum field economics of Production Sharing Contract (PSC) Contractors in Indonesia's fossil industry, [7], [8]. PSC Contractors have encountered an inflexible fiscal term, [9], and rising capital and operating costs, [10], [11], negatively impacting petroleum field economics. Cost optimization is one of the most crucial survival strategies for successful modern businesses, [12]. Effective and efficient supply chain management

forms the backbone of every cost optimization effort [13].

Based on the SCM concept, purchasing and inventory management is essential in creating effective and efficient cost management, considering that the spending budget managed by the purchasing and inventory function is enormous, [14], [15]. For this reason, the performance of the purchasing and inventory functions is a variable that directly influences the company's Sustainable Economic Levels. The explanation above forms the basis and logic of thinking in this research, with the main focus on the cost aspects in upstream oil and gas business activities that contribute to the economic level of the field. Performance management of purchasing and material inventory is

the most significant contribution to cost management in the upstream oil and gas industry, so purchasing Performance and material inventory performance become exogenous variables. These exogenous variables will be studied for their influence on the company's Sustainable Economic Levels, in this case, the Sustainable Economic Levels of upstream oil and gas business projects, which is an endogenous variable. The flow of the relationship between performance variables for purchasing and material inventory to the project economic level variable, moderated by the fiscal term variable, as is the concept of economic rent.

The use of the fiscal term as a moderating variable is because the fiscal period is an indicator that shows the portion of the revenue, especially oil and gas revenue sharing and tax incentives. The character of investors will generally make maximum efforts to obtain benefits from their investments, in line with the Fiscal Stimulus theory, [16]. This concept is the background to the fiscal term used as moderation in this research. A fiscal term plays a pivotal role in attracting investors, ensuring fair income distribution, and achieving a balance between costs in the fossil industry, [17]. It encompasses the principles, regulations, and taxes that govern oil and gas exploration, production, and distribution. Practitioners and academics recognize that purchasing gives firms a competitive edge, [18]. Extensive research has been conducted to enhance purchasing management, which subsequently improves business performance, including studies by, [19], [20].

In this research, there is a void in the relationship between purchasing performance variables, material inventory performance, and sustainable economic levels, especially in Indonesia's upstream oil and gas industry. For this reason, research is needed to fill the gaps in question and empirically prove the research variables in the Indonesian upstream oil and gas industry to be more suitable for application in related decision-making. This research was conducted to fill this gap by analyzing the relationship between purchasing and material inventory performance variables with the fiscal term moderating variable on sustainable economic levels.

2 Literature Review

In this section, we will explain the research variable theory used and the relationships between variables found in several previous studies, which are then used as a basis for formulating hypotheses.

2.1 Purchasing Performance

Modern companies view purchasing management as strategic, [21], due to its essential part in SCM activities. Organizations must procure goods and services from vendors to sustain their operations, called purchasing management. Companies frequently integrate purchasing strategies into their overall strategic goals to enhance performance, [22]. Procurement methods need to be more adaptable to unforeseen changes, [23]. The nature of purchasing in the fossil industry is analogous to other sectors. Over 70% of the total budget allocated in 2021 will be given to goods and services needed in the same year, underscoring the pivotal role of the purchasing function in the oil and gas industry, [24].

In a broader context, purchasing plays a crucial role in a company's success by contributing to organizational strategic decision-making, particularly in upstream oil and gas activities, especially those related to purchasing Performance and Sustainable Economic Levels, [25], [26]. The significance and contribution of purchasing to business strategy and Performance have been subjects of extensive debate in the purchasing literature, [27]. However, empirical research has shown a significant correlation between purchasing performance and firm performance, [28], leading to increased profitability and corporate value, [29], [30]. The efficiency and effectiveness of purchasing departments are often used as benchmarks for evaluating purchasing performance, [31], [32].

Performance encompasses the successful execution of tasks by the organization. Consequently, a company or organization's purchasing function must efficiently fulfill its duties to maximize overall performance. Improving purchasing performance can benefit the organization, leading to increased profits and value through approaches such as lean principles, [33], integrated strategies and collaboration, [34], and cost-oriented tactics. Efficiency and effectiveness have been central performance metrics for decades, [35], and they are relevant for evaluating purchasing performance due to their emphasis on both efficiency and effectiveness, [36], [37].

2.2 Material Inventory Performance

[38], explained that Material Inventory Management plays a vital role in the continuity and growth of an organization's business. This means that effective and efficient management of inventory materials will create a competitive advantage for the company's sustainability and increase company value. Material Inventory Management, like Purchasing Management, is part of SCM activities.

However, the financial aspect is also very attached, considering that Material Inventory/inventory consists of raw materials, work-in-process products, and finished products, which is an asset for the company that will be reported in the company's financial statements. Even though it is treated as an asset, it will provide more benefits or added value for the company at the end of the activity. For example, in manufacturing activities, inventory materials cannot provide added value if they are still stored in the warehouse as stock/supplies or raw materials or in the work-in-process stage. Still, if they have become finished materials/finished products, they will have added value for the company.

Scope of Material Inventory Management activities, namely managing replenishment lead time, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space, quality management, replenishment, returns and defective goods, and demand forecasting. The essence is to plan, implement, and control the flow and storage of goods effectively and efficiently. [39] define Inventory Management as "a continuous process of planning, organizing and controlling inventory aimed at minimizing investment in inventory while balancing supply and demand."

Balancing supply and demand for inventory materials to achieve optimal inventory levels is full of challenges, and this is an ongoing process considering that business needs are very dynamic and react to the environment. Management of inventory materials will directly or indirectly affect the profitability of an organization; for this reason, it is essential to manage it, considering that special efforts are needed to balance operational needs. This is important because if there is no balance between supplies and needs, in the sense that if there is more inventory to meet needs, it will result in excess material, while the opposite will result in unavailability of inventory materials which ultimately has an impact on operational activities.

In response to this, currently, there is a lot of research or studies on how to balance supply and demand so that it is at an optimal level, and this is related to company performance and the creation of added value. Due to the importance of material inventory management, since the mid-1990s, there has been a large increase in the annual number of inventory management articles. Previous research explains in his book that many research studies have been carried out to improve material inventory

performance management, which will ultimately improve company performance.

2.3 Sustainable Economic Levels

[39], explains that in the upstream oil and gas industry, many factors influence decisions on drilling and development activities and allocating capital across the company's portfolio, [40]. Investors should strive to maximize profits, but financial strength and shareholders (banks, [41], fund managers, etc.) may require a company to pursue 'growth' (reserve volume) or diversify its operations. Many contractors use oil prices to determine drilling decisions by calculating the potential oil and gas that can be produced. High oil prices stimulate drilling decisions because the economic structure will be more favorable. Still, conversely, when prices fall, companies tend to limit some of their exploration activities. If prices remain low long enough, companies will plug high-cost wells, delay development activities, and postpone high-risk businesses so that when making investment decisions in capital-intensive and high-risk industries such as upstream oil and gas, [42], it is generally based on a full-cycle project economic analysis (life-cycle), expected long-term prices, [43], portfolio decision making, [44], and strategic reasoning.

[45], explain that maintaining the economic level, as described previously, is very much influenced by two aspects, namely increasing revenue and cost efficiency. However, along the way, many contractors will face challenges that need to be met both from internal and external aspects, such as competitiveness, oil and gas prices, government policies, technological advances, business management, human and financial resources, the environment, and other aspects. In this research, the economic level of an oil and gas field will be examined based on sustainable elements that are linked to business or business performance, [46]. The word sustainable used in this research has an essential meaning or is translated literally or lexically, meaning that it is a word that is interpreted with the meaning of the primary word.

The approach that will be taken in this research is related to the Sustainable Economic Levels following the concept of "Sustainable Growth", [47]. The sustainable growth rate (sustainable growth rate) defines sustainable growth as the percentage increase in annual sales consistent with established financial policies, (target debt to equity ratio, target dividend payout ratio, target profit margin, target ratio of total assets to net sales). The Sustainable Growth Rate is the movement of the

margin of profit on sales or earnings per share from one period to another.

2.4 Fiscal Term

The concept of economic rent is the basis for implementing fiscal policy by each host country's government to prepare fiscal terms. This is based on the, [48], explanation that economic rent is synonymous with excess profit or surplus, so the host country's government tries to get as much economic rent as possible through various levies, taxes, royalties, and bonuses. Modern fiscal policy theory is developed by, [49], stating that the aim of fiscal policy is as a tool for economic stabilization carried out by each country, but fiscal policy can also be used to distribute income and to reallocate resources in a way desired by the government as the host country. [50], explained that petroleum contracts can be divided into four main types; concessions, joint operating agreements (JOA), service contracts, and production sharing agreements (PSA).

Along with the differences in contract types, this will also have an impact on the fiscal terms that will be offered by the Government as the owner of the work area. Each type of contract will apply different fiscal terms, while the components of the fiscal terms applied to this type of contract, [51], are generally as follows:

- a. Equity Share
- b. Taxes
- c. First Tranche Petroleum (FTP)
- d. Domestic Market Obligations (DMO)
- e. Depreciation
- f. Other incentives
- g. Bonuses (Signature, Production)

2.5 The Relationship between Variables

Furthermore, the relationship between research variables can be explained through the following explanation:

2.5.1 The Effect of Purchasing Performance on Sustainable Economic Levels

The business world in every type of industry is currently facing dynamics in line with changes in the external environment in particular, this is a challenge for every company to answer these challenges so that the company's profitability or the company's economic level can be maintained, [52]. The contribution of effective, efficient, and optimal procurement performance is needed for every company, so it is believed that the role of procurement performance can influence the company's financial performance or the economic

level of a business. This has been proven empirically from research conducted by, [53], showing that procurement performance greatly influences profitability in Manufacturing Companies in Uganda.

This is also in line with research conducted by, [54], [55], [56], show that the implementation of sustainable purchasing influences company performance through purchasing performance (cost side) and competitive advantage (revenue side) from a developing country perspective, as well as the main antecedents for savings and strategic purchasing performance. This effect is further strengthened by purchasing integration. Research conducted also shows purchasing knowledge becomes very valuable when combined with other functional processes through purchasing integration. This causal chain is also supported through a general knowledge-based theory view. Based on the description above, a research hypothesis is built, namely:

H1: Purchasing Performance Influences the Sustainable Economic Levels.

2.5.2 The Effect of Purchasing Performance on Material Inventory Performance

The influence of performance on Material Inventory is believed to have an important role in the company's financial performance, with good performance having a healthy impact on the company's cash flow in particular and company performance in general. This effect has been proven by, [57], who showed the results of their research that the mediating role of inventory in obtaining financial performance benefits is generally related to lean production, so based on a combined analysis of surveys and secondary data, the influence of lean production on financial performance was found to be partly mediated by inventory leanness. Based on the description above, a research hypothesis is built, namely:

H2: Material Inventory Performance Influences the Sustainable Economic Level

2.5.3 The Fiscal Term as Moderating Variable on the Relationship of Purchasing Performance and Material Inventory Performance on Sustainable Economic Levels

Research on Fiscal Term moderation on the relationship between Purchasing Performance and Sustainable Economic Levels and the relationship between Material Inventory Performance has never been studied before, which is one of the novelties in this research, with the research hypothesis:

H3: Fiscal Term as a moderating variable on the influence of Purchasing Performance on Sustainable Economic Levels

H4: Fiscal Term as a moderating variable on the influence of Material Inventory Performance on Sustainable Economic Levels

Based on the explanation above, the conceptual framework of this research can be drawn in Figure 1.

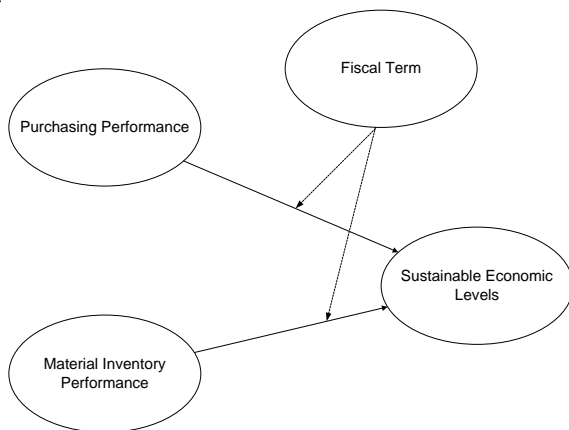


Fig. 1: Conceptual Framework

3 Methodology

This research employs explanatory research with a quantitative approach. This study is examined using SEM WarpPLS. The location research was carried out in the upstream oil and gas industry in Indonesia, especially in companies both Indonesian and foreign legal entities, which have contracted with SKK Migas on behalf of the Indonesian Government and have carried out oil and gas production activities in Indonesia during the 2017 - 2021 research period. This research is based on data obtained by these companies, in the form of factual data which is secondary data, [58].

The population limits in this study refer to the following criteria:

- 1) Companies operating in the upstream oil and gas industry (both IOC and NOC);
- 2) Production Sharing Contract Contractors that have contracted with SKK Migas (in this case representing the Indonesian government) use a type of cooperation contract, to carry out exploration and exploitation activities in Indonesia's sovereign territory hereinafter referred to as PSCC; And
- 3) PSCC which is at the POD I stage and has carried out oil and gas production activities during the 2017-2021 research period.

Based on the criteria above, there were 26 PSCCs selected as the research population. This

research uses observation data (n samples) whose number is N= 26 PSCC. All members of the population were sampled, and saturated samples were drawn so that n = N = 26. Time series data were observed from 2017 to 2021 (t= 5 years) and cross-sectional data, namely in 26 PSCC so that the unit of analysis in this study is in the form of pooled data $t \times n = 5 \times 26 = 130$.

4 Results and Discussion

4.1 Indicator Loading for Each Variable

At this stage, significant indicators from the results of the exploratory analysis of the initial indicators will be used to carry out a re-exploratory analysis. This is done to identify indicators that have negative weights, only indicators that have a positive weight can be used. Generally, indicators that have a negative weight can potentially provide results that are not by theory or rationality. For this reason, indicators that have negative weights are removed from the model, to facilitate interpretation of the relationships between variables. Next, an exploratory analysis of indicators that only have positive weights is carried out again. The outer loading of each indicator is shown in Table 1.

Table 1. Outer Loading for Each Variable

Variable	Indicator	Weight	P-value	Conclusion
Purchasing Performance (X1)	X1.1	0.508	<0.001	Significant
	X1.2	0.508	<0.001	Significant
Material Inventory Performance (X2)	X2.1	0.624	<0.001	Significant
	X2.2	0.624	<0.001	Significant
Fiscal Term (X3)	X3.1	0.351	<0.001	Significant
	X3.2	0.269	<0.001	Significant
	X3.3	0.333	<0.001	Significant
	X3.4	0.373	<0.001	Significant
Sustainable Economic Levels (Y2)	Y1.1	0.411	<0.001	Significant
	Y1.2	0.457	<0.001	Significant
	Y1.3	0.488	<0.001	Significant

As a result of the indicator exploration at this stage, it was found that all indicators had a

significant and positive weight, namely the variables:

- 1) Purchasing Performance (X1) has two indicators, namely the Ratio of Annual Expense to Revenue (X1.1) and Cost Efficiency (X1.2).
- 2) Material Inventory Performance (X2) has two indicators, namely INVDA (Number of days inventory) (X1.1) and Ratio of Inventory to Revenue (X2.2).
- 3) Fiscal Term (X3) There are four indicators, namely Equity Share (X3.1), FTP (X3.2), DMO (X3.3), and Tax (X3.4).
- 4) Sustainable Economic Levels (Y2) has three indicators, namely Sustainable IRR (Y2.1), Sustainable NPV (Y2.2), and Sustainable R/C (Y2.3).

Based on the results, all indicators have significant and positive weights so that these indicators can be used as indicators that can form variables in this research. The next stage, namely the indicator model resulting from the exploration, is used to test the hypotheses using the SEM WarpPLS approach.

4.2 Goodness of Fit of Structural Models

The stage after carrying out the exploratory analysis of indicators is the stage of testing the suitability of the statistical model for the data to be studied. If the Goodness of Fit of the structural model is met, the model resulting from the analysis can be used for hypothesis testing. [59], explained that in carrying out the Goodness of Fit model there are 10 Model Fit measures and Quality Indices in the WarpPLS analysis to measure the quality of the structural model. Interpretation of the results of hypothesis testing can be done if the model's Goodness of Fit has been met. The Goodness of Fit model in this research is presented in Table 2.

Based on the results above, it shows that the model is fit, namely that all model fit and quality indices are met. There are also two Fit Models/Quality Indexes that have ideal conditions, namely Average block VIF and Average full collinearity VIF. Thus, the model is said to be good and can be used to test hypotheses and explain the phenomenon being studied.

Apart from testing the feasibility of the model based on SEM-PLS analysis using WarpPLS as explained above, on this occasion the feasibility test of the research model can also be proven by looking at the analysis of the multivariate coefficient of determination expressed using the Predictive Relevance Method (Stone-Geisser's Q2 test) or Q-Square.

Table 2. Model Fit and Quality Indices

No.	Model Fit Measures and Quality Indices	Value	Result	Fit Criteria
1	Average path coefficient	APC=0.265, P<0.001	Significant	P < 0.05
2	Average R-squared	ARS=0.215, P=0.003	Significant	P < 0.05
3	Average adjusted R-squared	AARS = 0.197, P=0.04	Significant	P < 0.05
4	Average block VIF	AVIF= 1.213	Ideal	Acceptable if AVIF ≤ 5 Ideally ≤ 3.3
5	Average full collinearity VIF	AFVIF =1.920	Ideal	Acceptable if AVIF ≤ 5 Ideally ≤ 3.3
6	Tenenhaus GoF	GoF= 0.409	Large	Small ≥ 0.1
				Medium ≥ 0.25
				Large ≥ 0.36
7	Sympson's paradox ratio	SPR=0.807	Acceptable	Acceptable if ≥ 0.7 Ideally = 1
8	R-squared contribution ratio	RSCR= 0.981	Acceptable	Acceptable if ≥ 0.9 Ideally = 1
9	Statistical suppression ratio	SSR=1.000	Acceptable	Acceptable if ≥ 0.7
10	Nonlinear bivariate causality direction ratio	NLBC DR=1.000	Acceptable	Acceptable if ≥ 0.7

Q-square is a measure of how well the observations made provide results for the research model, or the testing process carried out to show how well the observation values are produced using the Q-square value, [60]. The criteria for the strength and weakness of the model are measured based on the Q-square predictive relevance value which ranges from 0 (zero) to one, [61]. The closer to 0 the Q-Square predictive relevance value indicates that the research model is getting weaker, conversely the further away from 0 (zero), and the closer it is to the value of 1 (one), it means the research model is getting better. The Q-square value

can be formulated using the formula formulated by, [62]:

$$Q^2 = 1 - (1 - R_1^2) (1 - R_2^2) \dots (1 - R_n^2)$$

R_1^2 , R_2^2 to R_n^2 are the R-Square values of endogenous variables in the model.

In this study, the R-Square obtained R_1^2 is 0.31 and R_2^2 is 0.12, so Q^2 is 0.393. [63], explains that a Q-Square value of more than 0 means the model has a predictive relevance value. The calculation results show a predictive-relevance value of 0.393 or 39.28%, meaning that this value indicates that the diversity of data that the model can explain is 39.28% or in other words, 39.28% of the information contained in the data can be explained by the model.

4.3 The Results of Research Hypothesis Testing

The next stage in this research is hypothesis testing which is carried out using SEM-PLS analysis with the WarpPLS application. The results of hypothesis testing obtain the direct influence path coefficient (structural model) and p-value.

The path coefficient value functions to:

- a. Presents the degree of strength and weakness of influence between variables or one variable on another variable. The greater the path coefficient value indicates the stronger the influence of a variable on other variables.
- b. Shows the direction of influence between variables by presenting a positive or negative sign.

The following is an explanation of the sign in question:

- a. The positive sign on the path coefficient indicates that the direction of influence between variables is in the same direction, if the greater the value of a variable, the greater the value of the variable being influenced.
- b. Meanwhile, the negative sign on the path coefficient indicates the opposite direction of influence between variables. If the value of one variable is greater, the value of the other variable that is influenced will be smaller.

The p-value obtained from the results of this SEM PLS analysis is used as a decision rule in hypothesis testing, namely whether or not there is a significant influence of one variable on other variables. If the p-value < 0.05 (alpha 5%), then it can be said that the influence of one variable on other variables is significant, [64]. Table 3 shows

the results of testing research hypotheses using the SEM WarpPLS method.

Table 3. The Results of Research Hypotheses Testing

Independent Variable	Dependent Variable	Path Coefficient	P-value	Conclusion
Purchasing Performance	Sustainable Economic Levels	- 0.201	< 0.001	Significant
Material Inventory Performance	Sustainable Economic Levels	0.132	0.059	Not Significant
Moderating Effect (Fiscal Term)				
Purchasing Performance *Fiscal Term (Moderated)	Sustainable Economic Levels	- 0.269	< 0.001	Significant
Material Inventory Performance *Fiscal Term (Moderated)	Sustainable Economic Levels	0.148	0.040	Significant

Notes: Significant-level on $\alpha = 5\%$; * = Not significant effect

The findings reveal that:

- 1) The influence of the Purchasing Performance variable on the Sustainable Economic Levels is declared significant, this can be seen from the p-value being smaller than α (0.05), so the first hypothesis of this research is accepted. The path coefficient has a negative effect. Bearing in mind that the Purchasing Performance variable uses indicators based on cost aspects if there is an improvement effort on the Purchasing Performance variable, this will also have an impact on improving the economy on the Sustainable Economic Levels variable, and vice versa if there is an increase in costs. then this will have an impact on reducing the economic level. There is an increase in performance in the purchasing function, in this case, there are cost savings in the company's production operations, this will affect the economic level of the project, meaning there will be an increase in company performance. By the Supply Chain Management (SCM) concept, the improvement efforts that will be carried out by the purchasing function will affect the subsequent supply chain and also the company's performance, especially in the

financial aspect. The findings in this research strengthen the main theories used to support the hypothesis regarding the variables in question, as follows:

- a. The Purchasing Performance variable is one of the foundations of the strategic management concept for the procurement management concept, namely Transaction Cost Economic theory, [65], which explains that company strategic decision-making, especially regarding purchasing performance, considers cost aspects effectively and efficiently, to create improvements in company financial performance.
 - b. Sustainable Economic level variables have a theoretical basis which is one of the foundations of the strategic management concept for the project economic level concept, namely Profit-Maximizing and Competition-Based theory, [66], which explains that the main purpose of the existence of business organizations is to maximize profits in the long term and develop sustainable competitive advantages over competitive competitors in external markets.
- 2) The effect of the Material Inventory Performance variable on the Sustainable Economic Levels is declared to have an insignificant effect, this can be seen from the p-value being greater than α (0.05), so the second hypothesis of this research is rejected. The path coefficient has a positive effect. The Material Inventory Performance variable does not have a significant effect on the sustainable economic level, the most likely cause of this is:
- a. According to the research data, it shows that the Material Inventory Performance variable which is represented by the Inventory to Revenue Ratio indicator, and the Sustainable Economic Levels variable which is represented by the Sustainable NPV indicator do not have very different movement patterns or trends from 2017 to 2021.
 - b. Referring to empirical studies from previous research, the results show that the influence of inventory management on company performance is greatly influenced by the amount of revenue, meaning that if the revenue value is very

large compared to the inventory value, the impact of inventory management has no significant influence on the company's financial performance. This is supported by previous research that inventory management does not affect the company's financial performance, especially in industries that have the character of material inventory rather than being the main raw material/raw material for the products produced by the company and companies whose business is or the business is in the service sector so that the inventory material is used as inventory material.

The findings in this study do not strengthen the main theories used to support the hypothesis regarding the variables in question, as follows:

- a. The Material Inventory Performance variable has a main theoretical basis which is the foundation for the material inventory management concept, Inventory Theory, [67], is theoretical basis for the material inventory concept in the material inventory performance variable, which explains that minimizing costs associated with maintenance Inventory will have an impact on organizational performance, especially financial aspects, and also in meeting customer demand.
 - b. The Sustainable Economic Levels variable has a theoretical basis which is one of the foundations of the strategic management concept for the project economic level concept, namely Profit-Maximizing and Competition-Based theory which explains that the main purpose of the existence of business organizations is to maximize profits in the long term and develop sustainable competitive advantages over competitive competitors in external markets, [68].
- 3) The effect of the Fiscal Term as a moderator on the influence of Purchasing Performance on Sustainable Economic Levels is declared significant, this can be seen from the p-value being smaller than α (0.05), so the third hypothesis of this research is accepted. If the path coefficient has a negative sign, it is said that there is a relationship in the opposite direction. The Fiscal Term variable as moderation has a strong influence on the relationship between the Purchasing Performance variable and the Sustainable Economic Levels. This can be explained further

that the Fiscal Term is a tool in the form of a policy used by the Government to stabilize a country's economy. Generally, the government in preparing fiscal policy hopes to obtain maximum revenue by preparing a fiscal policy that reflects this. On the other hand, PSCC as an investor wants an attractive Fiscal Term to improve its economy, such as a maximum profit-sharing percentage or tax exemptions. An attractive Fiscal Term for PSCC will influence work patterns which will improve their performance, including Purchasing Performance which uses indicators based on cost aspects. If there are efforts to improve Purchasing Performance, moderated by Fiscal Term, it will have a significant effect on improving economics in the Sustainable Economic Levels.

- 4) The influence of the Fiscal Term as a moderating variable on the influence of Material Inventory Performance on the Sustainable Economic Levels is declared significant, this can be seen from the p-value being smaller than α (0.05), so it is said to be significant, so the fourth hypothesis of this research is acceptable. If the path coefficient has a positive sign, it is said that there is a unidirectional relationship. The Fiscal Term variable as moderation has a strong influence on the relationship between the Material Inventory Performance variable and the Sustainable Economic Levels. This can be further explained that the Fiscal Term is an important component that is taken into account in making decisions to invest in the upstream oil and gas industry. The implication is that the Fiscal Term is not just a passive variable but actively contributes to decision-making processes, especially in the context of investments in the upstream oil and gas sector. It suggests that stakeholders or decision-makers should take the Fiscal Term into serious consideration when evaluating investments in this industry.

4.4 Limitations

In this research, we would like to highlight some limitations that need to be considered for a better understanding of the research findings. These limitations are:

- 1) The results of the SEM-PLS data analysis indicate that Material Inventory Performance has an insignificant relationship with Sustainable Economic Levels. This variable utilizes indicators based on cost and revenue

aspects, but future researchers may consider using indicators related to service level aspects. It is hoped that by utilizing data from other aspects, more comprehensive results can be obtained for the Material Inventory Performance.

- 2) Furthermore, it should be noted that this study indirectly uses oil and gas price data as an indicator to assess the influence of prices over time on purchasing performance and material inventory management to maintain field economics. Subsequent researchers may consider using indicators related to oil and natural gas prices directly about purchasing performance and material inventory management to better preserve field economics.
- 3) All the questionnaires were selected from Indonesia's upstream oil industry. Therefore, the results of this study can be generalized if the observed research objects have similar characteristics and can be considered homogenous.

4.5 Implications

The findings of this research are expected to provide practical contributions to the Government of Indonesia, Contractual Cooperation Contractors (Investors), and other stakeholders. These research findings can serve as valuable input for decision-making processes aimed at maintaining or improving the economic viability of an oil and gas field and increasing investments in the upstream oil and gas industry in Indonesia. The practical contributions of this research are as follows:

- 1) Given the significant influence of Purchasing Performance on Material Inventory Performance and Sustainable Economic Levels in the upstream oil and gas industry in Indonesia, the results of this research are crucial for SKK Migas and Contractors in formulating Supply Chain Management (SCM)-related policies in upstream oil and gas operations to sustain economic viability. With the right policies in place, this will ultimately benefit the Indonesian government and the nation as a whole by maximizing returns and ensuring the sustainability of upstream oil and gas industry activities.
- 2) The moderating effect of Fiscal Terms on the relationship between Purchasing Performance, Material Inventory Performance, and Sustainable Economic Levels is significant. Therefore, the Indonesian government, especially in formulating Fiscal Terms offered to investors for managing upstream work areas,

should consider that attractive Fiscal Terms for contractors can impact the improvement of economic viability in upstream oil and gas field development projects through purchasing performance.

- 3) The Indonesian government continues its efforts to increase production to 1 million barrels per day and 12 billion standard cubic feet per day of gas by 2030, requiring support from all parties, especially operators. Based on the profiles of the three PSCCs, which are part of the research sample, it is evident that their performance, particularly in SCM, is average. While PSCCs have autonomy in procurement management and budgeting, some areas need improvement in implementation. Therefore, the government needs to introduce new policies to create a conducive environment for PSCC to make efforts to enhance their performance, especially in production, supported by effective and efficient SCM activities.
- 4) The results of this research can serve as a reference for SKK Migas and Contractors in implementing Strategic Operation Management in the management of the upstream oil and gas industry. This involves long-term planning, adherence to good engineering practices, meeting established targets, evaluating implementation to analyze areas that do not meet expectations or targets, and continuous improvement in all aspects of production operations.
- 5) This research can serve as a reference for practitioners, particularly in the field of SCM in the Indonesian upstream oil and gas industry. It is hoped that this research will contribute to the literature of practitioners focused on SCM.

5 Conclusion

In conclusion, this study shows that:

- 1) Purchasing Performance significantly affects Sustainable Economic Levels with a negative effect. Decreasing costs in Purchasing Performance increases Sustainable Economic Levels. This supports Transaction Cost Economic theory and Cost Leadership Strategic theory as the foundations of procurement management concepts in corporate strategy.
- 2) Material Inventory Performance does not significantly affect Sustainable Economic Levels with a positive effect. Changes in costs in Material Inventory Performance do not affect Sustainable Economic Levels. This finding does not support Inventory Theory and Profit-Maximizing and Competition-Based theory as the foundations of inventory management and Sustainable Economics Level concepts.
- 3) Fiscal-term moderation on Purchasing Performance has a significant effect with a negative effect. Increasing Fiscal Terms strengthens the relationship between Purchasing Performance and Sustainable Economic Levels. This supports Transaction Cost Economic theory, Cost Leadership Strategic theory, and modern fiscal policy theories.
- 4) Fiscal Term moderation on Material Inventory Performance does not have a significant effect. Increasing Fiscal Terms does not affect the relationship between Material Inventory Performance and Sustainable Economic Levels. This finding does not support Inventory Theory, Profit-Maximizing and Competition-Based theory, and modern fiscal policy theories.

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Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

All authors were involved in the conception and design, or analysis and interpretation of the data; the drafting of the paper, revising it critically for intellectual content; and the final approval of the version to be published; and that all authors agree to be accountable for all aspects of the work.

Sources of Funding for Research Presented in a Scientific Article or Scientific Article Itself

No funding was received for conducting this study.

Conflict of Interest

The authors have no conflicts of interest to declare.

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