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Inventory and Financial Performance Selected Publicly Listed Manufacturing Indonesian and German Companies

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ABSTRACT

Inventory management is a fundamental supply chain management phase that affects the country's economy. The **purpose** of the study is to determine the effectiveness of inventory management and its impact on the financial performance in the factoring industry, as it has become one of the leading sectors in boosting the development of the national economy. Descriptive and quantitative **methods** were used, which mainly relied on financial data for 2013–2017 on the selected publicly listed manufacturing companies in Indonesia and Germany based on the LQ45 and DAX stock index, respectively. Several software programs (Microsoft Excel, SPSS, and AMOS) were used for solving the inventory-financial performance and value analysis based on Structural Equation Modeling. The **results** of the study confirm that inventory performance significantly influences financial performance, as the p-value is below 5%. Inventory performance has an explanatory power of 30.6% for financial performance. An increase in inventory performance will increase financial performance as well. Each indicator has an explanatory power of DSI (101.2%), INVTO (96.4%), FGI (63.3%), WIP (58.3%), and RMI (51.7%) towards inventory performance, which will increase performance as well. For financial performance, each indicator has an explanatory power of ROIC (97.0%); ROE (85.1%); ROA (76.9%); GR (46.7%); PM (5.6%), and OM (5.3%) towards financial performance, which will also contribute to improved efficiency.

***Keywords*:** inventory; financial performance; public listed; manufacturing companies

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INTRODUCTION

Supply chain management has been introduced since the era of mass customization. A network is formed by collaborating on facilities, inventory, transportation, information, sourcing, and pricing while providing high flexibility and proper relationship to the customer's demand. Supply chain management aims to ensure a high level of product availability that generates value for the customer while keeping process costs low [1]. To align decision phases with business strategy, an organization should understand the market served by analyzing the quantity, response time, variety, service level, price, and product innovation rate. Then, define the organization's core competencies, especially in multiple supply chains since they will have different requirements. An organization should be able to determine its supply chain capabilities in 6 significant areas: facilities, inventory, transportation, information, sourcing, and pricing [1, 2].

As the market becomes more competitive than ever, a plethora of people coming from different sectors, such as education and industries, are captivated by the term inventory management, mainly its practices in organizations such as satisfying the customer and how they can maintain their position in the market [3]. Inventory has become one of the primary sources of revenue generation and consecutive earnings for the company because

it represents valuable assets that most businesses acquire. Inventory management is a fundamental phase in supply chain management as it influences the country's economic performance [4]. Thus, industrial economists must study market behavior and its changes in supply and demand. In addition, the ability of consumers and suppliers to replace over time and the assurance the marketplaces have on price to allocate goods regulate the market operation [5]. Inventory is associated with a company's production and distribution processes [6, 7], where certain factors affect the inventory systems used. The excellent knowledge and availability of new methods, the level of protectionism, the rate of inflation, the bold international competition, the changes in political system and technology, and the growing consumer expectations are examples of the external factors impacting inventory management [8]. Managing inventories at the right time in the correct quantity is necessary because recent studies have shown that most of the total funds performed are tied up in current assets, of which inventory is the most compelling component in the manufacturing industry. Better inventory management could alter what is perceived as idle resources to economic value by delivering capital productively and disregarding additional investments [3].

Indonesia's economic outlook brought about changes in inventories in Indonesia, as shown by the World Bank. Considering the recent financial performance due to the growth of private and government consumption with more than 240 million residents, Indonesia has become an investment target for many overseas companies[9]. Seeing Germany as the 4th most significant investor in Indonesia and the most influential trading partner of Europe, Indonesia and Germany have agreed to boost cooperation in the economic sector, as confirmed by the Ministry of Foreign Affairs of the Republic of Indonesia and German Foreign Minister in the Asia Pacific Business Conference.[1] German economic outlook resembles robust business investments, prudent financial management, and past fundamental reforms,[2] which all affect the manufacturing industry's inventories.[3] The German economy is driven by extensive, varied, innovative manufacturing and technology-oriented industry developments.

This study will analyze deeper how strong inventory performance as represented by raw material ("RMI"), work-in-process ("WIP"), finished goods ("FGI"), inventory turnover ("INVTO"), and days sales of inventory ("DSI") will impact the financial health as represented by gross profit margin ("GR"), operating margin ("OM"), net profit margin ("PM"), return on asset ("ROA"), return on equity ("ROE"), and return on invested capital ("ROIC") based on selected publicly-listed manufacturing companies in Indonesia and Germany during 2013–2017. The selection of data comes from selected publicly listed manufacturing companies in Indonesia and Germany because, in the initial analysis of the comparison chart of contribution to GDP, during 2013–2017, Indonesia's position was almost the same as Germany's, which contributes about 20% to GDP.[4] This is also done as a comparison so that Indonesia can be juxtaposed with a country that has long been known as an industrial and manufacturing country. So that Indonesia's position can also be seen in the development and progress in the manufacturing sector, both domestically and internationally.

DATA AND METHODOLOGY

A. Data Set

This study uses secondary data as the data collection method. The secondary data consists of information discussed in the literature review. The data is obtained from selected publicly-listed manufacturing companies in Indonesia and Germany listed by the LQ45 and DAX stock index,

[1] Indonesia, Germany Increase Economic Cooperation. URL: https://en.tempo.co/read/news/2018/09/15/056921677/Indonesia-Germany-Increase-Economic-Cooperation, 2018 (accessed on 01.11.2022).

[2] International Monetary Fund Staff. Germany's Economic Outlook in Six Charts. URL: https://www.imf.org/en/News/Articles/2018/07/03/na070318-germanys-economic-outlook-in-six-charts, 2018 (accessed on 01.11.2022).

[3] Organization for Economic Co-operation and Development. Germany — Economic Forecast Summary (November 2018). URL: http://www.oecd.org/economy/germany-economic-forecast-summary.htm, 2018 (accessed on 01.11.2022).

[4] Organization for Economic Co-operation and Development. Germany — Economic Forecast Summary (November 2018). URL: http://www.oecd.org/economy/germany-economic-forecast-summary.htm, 2018 (accessed on 01.11.2022).

respectively.[5] The calculation for descriptive-quantitative research, which aims to describe or identify the characteristics of variables in given situations and support various aspects of the existing phenomena using references, such as academic textbooks, journals, and other articles on previous studies on manufacturing firm performance analysis, to describe, explain, and validate research findings [10].

The study will analyze inventory performance and financial performance for each data. Inventory valuation significantly impacts reported profit levels since it relates to the cost of goods sold. Inventory is crucial in the component of a current ratio, where existing assets are divided by current liabilities [11].

The population of this study is 618 publicly listed Indonesian companies based on the Indonesia Stock Exchange as of October 2018[6] and 523 companies listed in the Frankfurt Stock Exchange as categorized by Prime Standard, General Standard, and Scale as of October 2018.[7] According to the Frankfurt Stock Exchange, a Regulated Market or General Standard is an EU-regulated market under the Securities Trading Act.

This is where the abbreviation LQ, which represents liquid, comes from. Firms must fulfill the criteria to be eligible to be included in the LQ45 index. 30 selected German blue-chip stocks were traded on the Frankfurt Stock Exchange using free float shares in the index calculation for equities. It measures the German economy and is a reference point for various financial products. The DAX index is calculated as price indices to record pure price performance, performance indices to reinvest all dividends completely, and net return indices to reinstate the net divided. They are also subject to a quarterly basis based on the "Fast Entry" (the company has an equal or better rank than 25 in DAX for both criteria) and "Fast Exit" (the company is below 45 in DAX for either measure of free-float market capitalization or order book volume in terms of ranking) rules, with a stricter barrier than for the regular reviews.

B. Methodology

The starting point for developing financial performance is problem identification, where the background details of the topic are discussed up to conclusions and recommendations, where the results will then be presented and analyzed thoroughly. The research will be conducted in three segments: data collection, analysis, and conclusion. In the first segment of the study, quantitative data will be collected from Bloomberg Terminal, financial statements, and annual reports provided by selected publicly listed manufacturing companies in Indonesia and Germany. The next segment covers the analysis of data collected in the first segment. The inventory performance sub-variables are RMI, WIP, FGI, INVTO, and DSI. The quantitative data will be used from selected publicly listed manufacturing companies in Indonesia and Germany to calculate PM, GR, OM, ROA, ROE, and ROIC, all representing financial performance.

Inventory performance follows several equations for RMI, WIP, FGI, INVTO, and DSI. Inventory turnover is calculated by dividing the cost of goods sold by the amount of inventory. The financial health of an organization could be determined by performing a rudimentary analysis with either horizontal, vertical, or ratio analysis, then forming basic conclusions about its financial health [7, 12–14]. The financial performance measurement follows several equations for GR, OM, PM, ROA, ROE, and ROIC of selected publicly listed manufacturing companies in Indonesia and Germany.

Several software (Microsoft Excel, SPSS, and AMOS) statistical programs will be used to solve the inventory-financial performance problem and help calculate the correlation value. The number of samples for this study will be calculated using an online sample size calculator from *Raosoft, Inc.*,[8] to measure the sample size needed [15, 16].

[5] The data retrieved from the Bloomberg Terminal database. URL: official websites such as www.idx.co.id and www.deutsche-boerse.com, financial statements, and annual reports during 2013–2017 (accessed on 01.11.2022).

[6] Indonesia Stock Exchange. List of Stocks. URL: https://www.idx.co.id/data-pasar/data-saham/daftar-saham/., 2018 (accessed on 01.11.2022).

[7] Deutsche Börse. Listed Companies. Retrieved from Deutsche Börse Cash Market. URL: https://www.deutsche-boerse-cash-market.com/dbcm-en/instruments-statistics/statistics/listes-companies, 2018 (accessed on 01.11.2022).

[8] The calculation data using online software official websites. URL: http://www.raosoft.com/samplesize.html (accessed on 01.11.2022).

Table 1

Revised Sample Data Allowed to Run in AMOS

Sample	Number of Companies	Sample	Number of Companies	Sampling Method
Publicly listed companies on Indonesia Stock Exchange	618	Publicly listed companies on Frankfurt Stock Exchange	523	Clustered
Grouped by the central board	308	Grouped by Prime Standard	322	Clustered
Listed in LQ45 Stock Index for highest liquidity	45	Listed in DAX Stock Index for most increased liquidity	30	Stratified
Complete data to support the study.	12	Exclusive data to support the analysis.	12	Stratified

Source: Premier Data.

This study uses probability sampling due to the presence of calculations and consideration of probability [17]. The software AMOS is used as the sampling method for this study. A minimum sample of 120 data is allowed in AMOS [18, 19]. *Table 1* below outlines the sampling method. Clustered sampling will be applied as it refers to the members of the population being selected randomly from naturally appearing in groups, or "clustered" and stratified sampling will be employed in this study.

Validity testing also measures whether the data gathered can be used in the research. It identifies whether the study's relationship can be depicted from the data using the second approach. Valid data is one where the connection to be measured is significant. The one used in this study will be the KMO & Bartlett's Test using SPSS software with a test chart. Valid data is one where the relationship to be quantified is significant[17, 20, 25].

Cronbach's Alpha in SPSS is one of the approaches to measuring data reliability. Reliability is the degree to which measurements and results using a research instrument are consistent and yield low errors. If the value of Cronbach's Alpha > 0.50, then it is reliable; if the value of Cronbach's Alpha < 0.50, then it is not reliable [17–19].

RESULTS AND DISCUSSION

This section will discuss several keys to financial performance, followed by an Industry Overview, Process Data Testing using AMOS and SPSS Software, Interpretation of Path Analysis, and Managerial Decisions/Implications.

A. Industry Overview

A. 1. Indonesian Manufacturing Industry

Indonesia ranks 4 out of 15 countries worldwide whose manufacturing sector's contribution to GDP is more than 10% [6]. The Central Statistics Agency of Indonesia recorded that non-oil and gas exports from the processing industry from January to November 2017 increased to 14.25% compared to 2016. In the first semester of 2017, the exports of non-oil and gas processing industries reached 59.78 bln USD compared to 54.32 bln USD in 2016, an increase of 10.05%.[9] The positive performance of the national manufacturing industry was recorded by Indonesia's Purchasing Manager Index from 48.6 in July to 50.7 in August 2017, as released by Nikkei and Markit. In the Q3 of 2017, the most contributing industry to Indonesia's GDP, with almost 18%, was the non-oil and gas processing industry, with a growth of 5.49%, higher than the economic growth of 5.06%. *Fig. 1* shows that the value of the manufacturing sector's contribution to GDP is around 20%, which is still above the average value in the world at 16%. Indonesia's position is still below the average value of East Asia and Pacific countries.[10]

[9] Badan Pusat Statistik. Pertumbuhan Produksi Industri Manufaktur Besar dan Sedang Triwulan IV Tahun 2017 Naik Sebesar 5,15 persen dan Pertumbuhan Produksi Industri Manufaktur Mikro dan Kecil Triwulan IV-2017 Naik Sebesar 4,59 persen. URL: https://www.bps.go.id/pressrelease/2018/02/01/1479/ (accessed on 01.11.2022).

[10] World Bank Group. GDP Growth (Annua l%). URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=EG., 2019 (accessed on 01.11.2022).

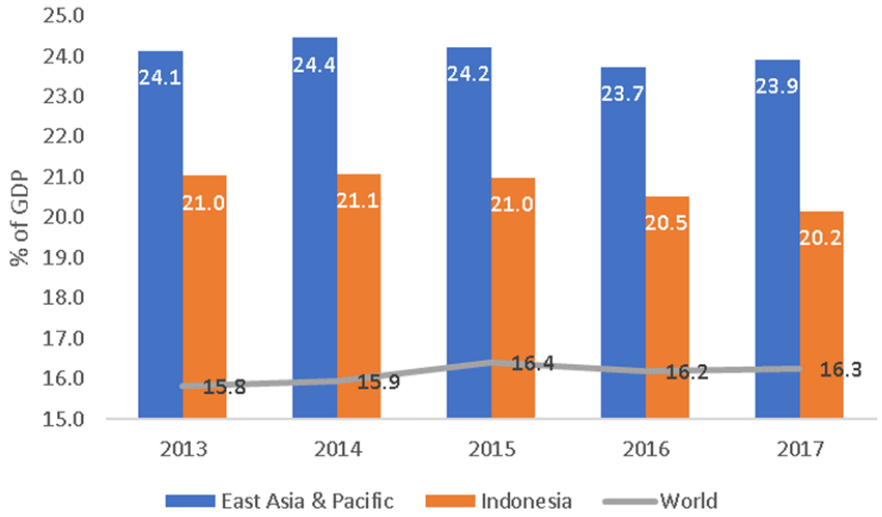

Fig. 1. **Indonesian Manufacturing Sector Contribution to GDP**

Source: World Bank Group.

A. 2. German Manufacturing Industry

The manufacturing sector became the most critical sector, accounting for almost 80% of total production in Germany. Since 1979, industrial production in Germany has averaged 1.5%, where some output decreased, namely consumer to –4.1%, capital to –1.8%, intermediate goods –1.0%, energy production dropped by 3.1%, and construction activity dropped to 1.7%.[11] The share of industry in gross value added contributed to 23%, making it the highest among the G7 countries (Canada, France, Italy, Japan, U.K, and the U.S.A.). Manufacturing sector contribution to German GDP is shown in *Fig. 2.* that the value of the German manufacturing sector's contribution to GDP is around 20%, which is still above the average value in the world at 16%. Germany's position is also above the average value of Europe, Central Asia and High-Income countries by around 13–15%. In 2016, almost 50% of Germany's GDP was represented by the exports of goods and services, mainly manufactured goods from high-quality, high-value-added sectors like Machinery and Transportation.[12] The manufacturing industry contributed 23.4% to Germany's gross value, 12.7% to France, and 10.1% to the UK. The highest contributing industry was the automotive industry, with 425 billion euros out of 1,893 billion euros in the turnover of manufacturing companies in 2017. According to the data and information services business, IHS Markit, Germany PMI is based on five individual indexes: New Orders (30%), Output (25%), Employment (20%), Suppliers' Delivery Times (15%), and Stock of Items Purchased (10%) that were taken from a survey of 500 industrial firms and fell by 0.3% in December 2018 to 51.5%. It was because of the poor expansion in the manufacturing sector since 2016, the decline in new orders, and the accumulation of finished goods stocks and backlogs of work. Also, the recent news about Brexit, trade frictions, and the fall-off in the automotive industry impacted business confidence in Germany.[13]

B. Process Data Testing using AMOS and SPSS Software

B 1. Descriptive Analysis

From the evaluation data, the inventory performance indicators significantly influence the financial performance of the selected publicly listed manufacturing companies in Indonesia and

[11] Trading Economics. Germany DAX 30 Stock Market Index. URL: https://tradingeconomics.com/germany/stock-market., 2018 (accessed on 01.11.2022).

[12] Global Manufacturing & Industrialisation Summit. The Future of Manufacturing — Germany, PricewaterhouseCoopers, LLP. 2018.

[13] Focus Economics. Industry in Germany. Economic Forecasts from the World's Leading Economists. URL: https://www.focus-economics.com/country-indicator/germany/industry. 2019 (accessed on 01.11.2022).

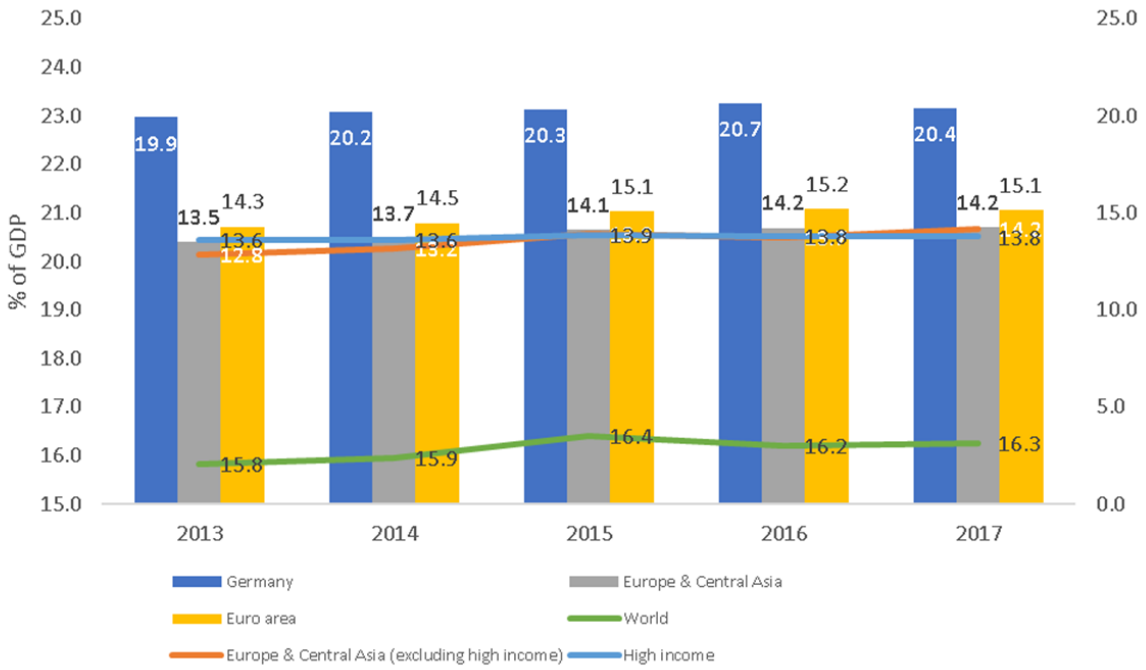

Fig. 2. **German Manufacturing Sector Contribution to GDP**

Source: World Bank Group.

Germany based on the LQ45 and DAX stock index, respectively. The inventory performance indicators that significantly influence financial performance from study data will be tested, and every variable must be examined to determine their reliability and validity. A list of variables will be listed in *Table 2* and *Table 3* below.

There are 11 observed variables in financial performance prediction. However, other variables must be considered when calculating with AMOS. Those other variables are the degree of error in which each observed variable will have some degree of error. The degree of error represents the external factors that may affect the value of that variable, which will not be discussed in this study. A model is created using the AMOS software to better understand where each variable is placed.

The result of AMOS is measured by the Goodness of Fit Model to determine whether the expected values of the model's variables fit well with observed variables. The Goodness of Fit Criteria being calculated is GFI, AGFI, RMSEA, and TLI.

B 2. Reliability and Validity Testing

Determining the study's information, validity and reliability are crucial because, along the process, some information might suggest that it parallels or contradicts each other. This would create complexity for the researcher in finding the answers, whether the information is generally applicable, and captures the intended phenomenon. The data should be put into the SPSS software to process its reliability with Cronbach's Alpha to measure the internal consistency. In *Table 4* below, the result of Cronbach's Alpha is .756 or 75.6%,[14] which means the data is reliable [19, 21].

The validity test is done using the SPSS software program with KMO and Bartlett's Test method to measure the adequacy of sampling thoroughly and measures sampling adequacy for each indicator shown in *Table 5* [22].

Based on the KMO and Bartlett's Test table above, the KMO value obtained from the study was 0.680 or 68.0%. By comparing the KMO and Bartlett's Test size table, the results obtained indicate that the KMO value of the research results is included in the excellent category because they it is in the range of 0.60–0.69 [23].

[14] Institute for Digital Research and Education. What Does Cronbach's Alpha Mean. URL: https://stats.idre.ucla.edu/spss/faq/what-does-cronbachs-alpha-mean/, 2019 (accessed on 01.11.2022).

Table 2

Descriptive Analysis

	N	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
DSI	120	72.43	4.101	44.922	2,018.028	.949	.221	.700	.438
RMI	120	16.09	1.348	14.770	218.158	1.791	.221	4.588	.438
WIP	120	7.74	1.087	11.907	141.770	3.002	.221	9.761	.438
FGI	120	35.99	2.278	24.951	622.551	1.162	.221	1.263	.438
INVTO	120	70.79	3.927	43.023	1,851.009	.800	.221	.137	.438
GR	120	.3091	.01438	.15752	.025	.690	.221	-.418	.438
PM	120	.0794	.00399	.04372	.002	.607	.221	1.021	.438
OM	120	.2343	.11780	1.29042	1.665	10.927	.221	119.591	.438
ROA	120	2.2753	.26756	2.93102	8.591	.955	.221	.073	.438
ROE	120	6.6060	1.01121	11.07723	122.705	.669	.221	15.506	.438
ROIC	120	4.5563	.57269	6.27345	39.356	2.498	.221	12.070	.438
Valid N (listwise)	120								

Source: Premier Data.

Table 3

List of Variables Used for Financial Performance

Variables for Inventory Performance	Variables for Financial Performance
RMI, WIP, FGI, INVTO, and DSI	GR, PM, OM, ROA, ROE, and ROIC

Source: Premier Data.

The result of the data analysis using AMOS in *Table 6* shows that the GFI is 0.771. In this study, the RMSEA shows 0.198, and according to Hooper, Coughlan, and Mullen (2008), the measurement model is valid when the RMSEA value is lower than 1 [10]. Another indicator to test the model's fitness is the TLI, which in this study is 0.736 or 73.6%. The TLI value states the degree of compatibility of the model. According to some research [24, 25] the measurement model is marginally fit as it is close to 95%.

The structure of the model needs to be tested to ensure that each exogenous variable indeed affects its endogenous variables. The exogenous variables include RMI, WIP, FGI, INVTO, DSI GR, PM, OM, ROA, ROE, and ROIC. On the other hand, endogenous variables are inventory performance and financial performance. Every variable is accompanied by a degree of error next to it, representing external factors that influence the value of that variable.

As shown by *Table 7* above, it can be stated that there is a fundamental relationship between the exogenous variables and endogenous variables, as no negative numbers are indicated. In addition, this can be seen by looking at the P value, especially with ***, which means that the relationship between variables is significant. Inventory performance has 30.6% explanatory power toward financial performance. The relationship is substantial because the p-value is still below 5%. However, PM and OM sub-variables have a p-value of more than 5%, meaning they are insignificant.

C. Interpretation Of Path Analysis

The final step in testing inventory and financial performance is analyzing the path diagram created from processing data using AMOS software. The figure below indicates the overall model used in testing inventory and financial performance, including inventory performance formed by five

Table 4

Reliability Test

Case Processing Summary			
		N	%
Cases	Valid	120	100,0
	Excluded	0	,0
	Total	120	100,0
a. Listwise deletion based on all variables in the procedure.			

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,756	,820	11

Source: Premier Data.

Table 5

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**,680**
Bartlett's Test of Sphericity	Approx. Chi-Square	992,437
	df	55
	Sig.	,000

Source: Premier Data.

Table 6

Data Analysis Result

Model	RMR	GFI	AGFI	TLI rho2
Default model	13.050	**.771**	**.649**	**.736**
Saturated model	.000	1.000		
Independence model	272.339	.400	.280	.000
Model	**RMSEA**	**LO 90**	**HI 90**	**PCLOSE**
Default model	0.198	.175	.223	.000
Independence model	.386	.366	.407	.000

Source: Premier Data.

exogenous variables and financial performance created by six exogenous variables. *Table 8* below shows that inventory performance indicators are RMI, WIP, FGI, INVTO, and DSI. These five indicator variables correlate with inventory performance.

The value in *Table 7* proves that DSI has the highest correlation value towards inventory performance, which is 101.2%, compared to the other indicator variables. When the variable of inventory performance is increased by 1, the DSI will increase by 101.2%, or in other words, the DSI has 101.2% explanatory power towards financial performance. The variation of DSI that can influence the inventory performance of selected publicly listed manufacturing

Table 7

Standardized Regression Weights

			Estimate	S.E.	C.R.	P
FinPerf	<—	InvPerf	,001	,000	2,943	,003
INVTO	<—	InvPerf	1,000			
FGI	<—	InvPerf	,381	,043	8,826	***
WIP	<—	InvPerf	,167	,021	7,787	***
RMI	<—	InvPerf	,184	,028	6,607	***
DSI	<—	InvPerf	1,095	,029	38,154	***
GR	<—	FinPerf	1,000			
PM	<—	FinPerf	,034	,056	,598	,550
OM	<—	FinPerf	,926	1,655	,559	,576
ROA	<—	FinPerf	30,657	5,968	5,137	***
ROE	<—	FinPerf	128,327	24,064	5,333	***
ROIC	<—	FinPerf	82,768	15,178	5,453	***

Source: Premier Data.

companies in Indonesia and Germany is 102.41%. In comparison, RMI is considered to have the weakest correlation value with inventory performance. The hen variable of financial performance is increased by 1. Thus, the RMI will only increase by 51.7%, or in other words, RMI only has 51.7% explanatory power towards inventory performance. Theoretically, DSI informs how fast companies can sell products to generate a more considerable profit measured in an average number of days. The lower the number compared to the industry average the more productive the company is in managing its inventory and generating income [25, 26].

The value in *Table 9* proves that ROIC has the highest correlation value towards financial performance, 97.0%, compared to the other indicator variables. When the variable of economic performance is increased by 1, the ROIC will increase by 97.0%, or, in other words, the ROIC has 97.0% explanatory power towards financial performance. The variation of ROIC that can influence the financial performance of selected publicly listed manufacturing companies in Indonesia and Germany is 94.09%. At the same time, OM is considered to have the weakest correlation value with financial performance. When the variable of economic performance is increased by 1, the OM will only increase by 5.3%, or, in other words, the OM only has 5.3% explanatory power towards financial performance.

There is a significant influence between inventory and financial performance. This is because inventory performance has 30.6% explanatory power towards financial performance on the selected publicly listed manufacturing companies in Indonesia and Germany based on the LQ45 and DAX stock index, respectively. The correlational level falls under the low positive (negative) correlation category, as shown in the table below. Since the number in the estimate column is positive, a direct relationship is established between inventory performance and financial performance. As inventory performance increases, so does financial performance by about 30%.

Furthermore, the p-value is 0.3%, which means that the relationship between inventory performance and financial performance is significant as the p-value is below 5%. The circle shapes with "e" symbols represent a degree of error representing unobserved external factors that can influence the variable, as shown in *Fig. 3* below.

Table 8

Inventory Performance Indicator Correlation Value

			Standard Regression Weights (R)	Standard Multiple Correlation Value (R squared)
DSI	<—-	InvPerf	1.012	102.41%
INVTO	<—-	InvPerf	0.964	92.93%
FGI	<—-	InvPerf	0.633	40.07%
WIP	<—-	InvPerf	0.583	33.99%
RMI	<—-	InvPerf	0.517	26.73%

Source: Premier Data.

Table 9

Financial Performance Indicator Correlation Value

Indicator	Standard Regression Weights (R)	Standard Multiple Correlation Value (R squared)
ROIC	0.97	94.09%
ROE	0.851	72.42%
ROA	0.769	59.14%
GR	0.467	21.81%
PM	0.056	0.31%
OM	0.053	0.28%

Source: Premier Data.

D. Managerial Decisions / Implications

There are several findings from other studies that conclude inventory performance influences financial performance. For example, indicate the positive relationship between inventory management and financial performance variables in some selected manufacturing companies in Mogadishu. Discovering the inventory management practices used in manufacturing companies and examining the relationship between inventory management and financial performance in manufacturing companies have been the study's objectives [4, 7, 20, 27].

This research found a positive correlation between inventory management practices and the financial performance of sugar manufacturing companies in Kenya. Also, the relationship between financial and inventory performance with its discrete inventory components, such as RMI, WIP, and FGI of manufacturing firms in India. The researchers categorized the inventory into three significant categories: RMI, WIP, and FGI. The researchers found that FGI is negatively associated with financial performance, while RMI and WIP did not show any impact on gross profit margin adjusted with sales [9, 12].

There is a moderately positive relationship between FGI and ROA because some researchers believe that ROA is closely correlated with inventories [28]. Therefore, the easiest way to relate FGI to ROA is by clicking FGI to asset turnover ratio and ROS. Firstly, the asset turnover ratio is an indicator of efficiency or productivity. It means that the higher the asset turnover ratio, the more sales the company generates per unit asset. Secondly, ROA can also be related to inventories through ROS ("Return on Sales"). It has also been observed that inventory management practices are correlated. ROS has a strong positive correlation with strategic supplier partnerships. Strategic supplier partnerships are essential for firms when picking suppliers who will become their business partners to supply their products. The strength of the correlation differs between inventory types. RMI has the highest correlation

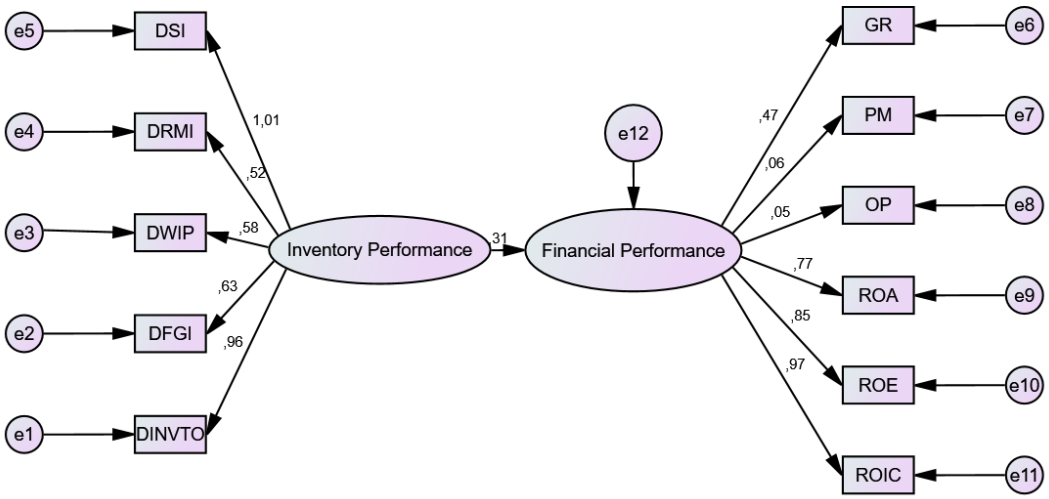

Fig. 3. **SEM Research Model**

Source: Premier Data.

with all financial performance measures, but WIP has a higher correlation only with gross profit, while FGI is highly correlated with operating profit measures.

This result also proves that effective and efficient inventory cost management, including the cost of FGI inventories, would lead to higher profitability, as the entire profitability of firms is tied to the volume of products sold, which has a direct relationship with the quality of the product. The correlation between inventory turnover and GR lies in the item called COGS. Inventory turnover is used to make better pricing and production decisions, leverage promotions to move excess inventory, and schedule new inventories. In the income statement, inventory appears under the COGS account. An overall decrease in inventory cost results in lower COGS because less is spent on rent, insurance, theft, spoilage, utilities, and other things. COGS is considered a crucial metric on the financial statement as it is subtracted from a company's sales to get its gross profit; therefore, as the COGS decreases, the gross profit will increase. Thus, since companies intend to drive profitability, sales growth could increase inventory turnover because the firms will have lower inventory levels to start and end a period, lowering the carrying cost.

CONCLUDING REMARKS

Inventory performance significantly influences financial performance as the p-value below 5% ensures that each exogenous variable affects its endogenous variables. The exogenous variables include RMI, WIP, FGI, INVTO, DSI GR, PM, OM, ROA, ROE, and ROIC, calculated to find Standardized Regression Weights. Inventory performance has an explanatory power of 30.6% toward financial performance. Since the relationship is positive, an increase in inventory performance will increase financial performance as well. DSI has an explanatory power of 101.2%; INVTO has an explanatory power of 96.4%; FGI has an explanatory power of 63.3%; WIP has an explanatory power of 58.3%, and RMI has an explanatory power of 51.7% towards inventory performance. The increased value in DSI, INVTO, FGI, WIP, and RMI will also affect inventory performance.

ROIC has an explanatory power of 97.0%; ROE has an explanatory power of 85.1%; ROA has an explanatory power of 76.9%; GR has an explanatory power of 46.7%; PM has an explanatory power of 5.6%, and OM has an explanatory power of 5.3% towards financial performance. The increased value in ROIC, ROE, ROA, GR, PM, and OM will also improve financial performance.

The results support the supply chain management literature's claim that inventory performance significantly influences financial performance as measured by profitability ratios since this study is based on correlations and does not prove causality between the variables of inventory performance and financial performance. This study is limited to

data available in public databases. The conclusions of this study should not be generalized beyond its scope. Data are gathered as a single entity and do not account for the complexity of firms that perform in more than one manufacturing facility.

Financial performance and inventory performance measures and results in this study should be interpreted accordingly. However, prior literature studies have documented many positive turnarounds in manufacturing companies because the higher the level of inventories preserved by a firm, the lower its rate of return. In addition, companies should have effective and efficient operations by optimizing the inventory level to generate better income.

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S. Irdiana — critical analysis of literature, interpretation of research results.
I. Moridu — collection of statistical data.
E. Susanti — results presentation in the form of tables and graphs.
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