
**STATE-OWNED ENTERPRISES AND NON-STATE-OWNED
ENTERPRISES: PERFORMANCE COMPARISON BY INDUSTRIAL
SECTOR**

Arum Kusumaningdyah Adiati¹, Purnama Siddi², Bambang Sutopo³

¹Faculty of Economics and Business, Universitas Sebelas Maret,

Jl. Ir. Sutami 36A, Surakarta 57126, Indonesia

²Faculty of Economics, Universitas Islam Batik Surakarta,

Jl. Agus Salim No. 10, Surakarta 57147, Indonesia

³Corresponding Author: Faculty of Economics and Business, Universitas Sebelas Maret,

Jl. Ir. Sutami 36A, Surakarta 57126, Indonesia

Abstract

A total of 20 State-Owned Enterprises (SOEs) in Indonesia have currently listed their shares of less than 50 percent on the Indonesia Stock Exchange (IDX) to raise additional capital to expand their business. These SOEs must be able to compete with non-SOEs in similar industries on the Stock Exchange. This study examines whether these SOEs have performance that outperforms Non-SOEs. The findings of this study reveal that, in general, SOEs have higher performance compared to Non-SOEs. However, the results of performance comparisons between each SOE and Non-SOE performance for each industry subsector indicate that there are variations in SOE performance. Some SOEs are superior compared to Non-SOEs, SOEs that have comparable performance with Non-SOEs, and SOEs with lower performance compared to Non-SOEs. These findings suggest that the results of performance comparisons between SOEs and Non-SOEs as a basis for making decisions relating to SOEs need to be based on the results of comparisons between each SOE and Non-SOEs rather than being based on the results of comparison of SOEs with Non-SOEs in general.

Keywords: state-owned enterprises (SOEs), non-state-owned enterprises (Non-SOEs), performance, Indonesia Stock Exchange (IDX).

1. INTRODUCTION

State-Owned Enterprises (SOEs), which are limited liability companies, can conduct an initial public offering or sell shares to other parties to improve the firm's performance and value, increase the benefits for the country and society, and expand community ownership of shares [1]. In recent years there have been 20 state-owned companies that have listed their shares on the Indonesia Stock Exchange (IDX). Some of these SOEs such as PT. Bukit Asam (Persero) Tbk

[PTBA], PT. Semen Indonesia (Persero) [SMGR] Tbk, PT. Telekomunikasi Indonesia (Persero) Tbk [TLKM] can generate profits. Contrary to that, other SOEs such as PT. Krakatau Steel (Persero) Tbk [KRAS], PT. Indofarma (Persero) Tbk [INAF], PT. Garuda Indonesia (Persero) Tbk. [GIAA] suffered losses.

Previous studies examined the performance of SOEs listed on the IDX and provided various findings, for example, there was a positive relationship between the quality of governance and operating performance [2], SOE financial performance was better after privatization [3], there is a positive relationship between CSR disclosure and financial performance [4], shares that perform relatively well are shares in the Pharmacy and Construction Sector [5], and there is a positive relationship between firm size and capital structure and financial performance [6]. These studies examine SOEs without comparing them to Non-SOEs. Another study by Herdjiono [7] comparing SOEs with Non-SOEs found that for SOEs the value of the firm was influenced by the audit committee while for Non-SOEs the value of the company was affected by institutional ownership.

These studies have contributed to the research literature on SOEs. However, there are research gaps on SOE performance, among others, studies on the performance of each SOE listed on the Indonesia Stock Exchange by comparing it with Non-SOE performance in each industry subsector, and SOE performance studies in several financial aspects. This study contributes to the research literature on SOEs in the following ways. First, this study compares each SOE with its counterpart of Non-SOEs in the same industry subsector. Second, this study compares SOEs and Non-SOEs in their ability to generate profits and operating cash flow, corporate value, debt financing, and market capitalization. Third, this study uses a relatively longer observation period.

2. LITERATURE REVIEW

2.1 Regulation on State-Owned Enterprises

In Law No. 19 of 2003, State-Owned Enterprises, hereinafter referred to as SOEs, (in Indonesian known as Badan Usaha Milik Negara, abbreviated as BUMN) are business entities whose capital is wholly or partly owned by the state through direct participation from separated state assets [1].

According to the Law, SOEs consist of two types, namely state-owned public companies (in Indonesian known as Perusahaan Umum, abbreviated as Perum) and SOEs in the form of limited liability companies (or Perusahaan Perseroan, abbreviated as Persero). State-Owned Public Company is a state-owned enterprise whose entire capital is owned by the state and is not divided into shares, aiming at the public benefit in the form of providing high-quality goods and/or services and at the same time pursuing profits based on the principles of company management.

Persero is a state-owned company in the form of a limited liability company (in Indonesian known as a Perseroan Terbatas, abbreviated as PT) whose capital is divided into shares which are all or at least 51% (fifty-one percent) of shares owned by the Republic of Indonesia whose main purpose is to pursue profit. Concerning Persero, all provisions and principles that apply to limited liability companies apply as stipulated in Law Number 1 of 1995 which is replaced by Law Number 40 of 2007 concerning Limited Liability Companies. In this Law, a Limited Liability Company, (in Indonesian known as the Perseroan Terbatas or Perseroan) is a legal

entity which is a capital alliance, established based on an agreement, conducts business activities with authorized capital which is entirely divided into shares and meets the requirements stipulated in this law and its implementing regulations [8], [9].

A corporation whose capital and the number of shareholders meet certain criteria or a corporation that conducts a public offering following the laws and regulations in the capital market is called a publicly listed company (in Indonesian known as a Perseroan Terbatas (Persero) Terbuka, abbreviated as PT Tbk.). Thus, SOEs in the form of limited liability companies and their shares listed on a stock exchange can be identified by the name of the company. For example, PT Aneka Tambang (Persero) Tbk is a limited liability company (PT) and is a state-owned company (Persero) whose shares are listed on the stock exchange (Tbk).

Law 19 of 2003 also regulates the privatization of the sale of shares of the Persero, either partially or wholly, to other parties to improve the performance and value of the company, increase benefits for the state and society, and expand ownership of shares by the public. Privatization is carried out with the intention to (a) expand public ownership of the Persero, (b) increase efficiency and productivity of the company, (c) create a financial structure and good/strong financial management, (d) create a healthy and competitive industrial structure, (e) create a company that is competitive and globally oriented, (f) fosters a business climate, macroeconomic, and market capacity. Also, the privatization was carried out to increase the performance and added value of the company and increasing the participation of the public in the ownership of the Persero's shares. The Persero that can be privatized must at least meet the criteria, namely the industry/business sector is competitive or the industry/business sector whose elements of technology are rapidly changing. Even so, there are state-owned companies which cannot be privatized, namely (a) Persero whose business is based on statutory provisions and may only be managed by SOEs, (b) Persero engaged in business sectors related to national defense and security, (c) Persero operating in certain sectors which the government is given a specific task to carry out certain activities related to the interests of the community, (d) Persero operating in the field of natural resource business expressly based on statutory provisions prohibited from being privatized. Further provisions regarding the procedure for privatization are regulated by Government Regulation No. 33 of 2005 amended by Government Regulation No. 59 of 2009 concerning Procedures for Privatization [10], [11].

The Indonesia Stock Exchange (IDX) determines the requirements for companies that will issue shares on the IDX. Requirements relating to accounting and finance include that for the main board, the company must have operating income for more than 1 year and have an audited financial report for a minimum of 3 years with unqualified opinion for at least 2 years, while for the development board, the company may suffer losses but based on projections the company must generate operating profit and net profit at the end of the second year since listing and have a minimum audited financial statement of 12 months with unqualified opinion for at least 1 year.

In recent years, as many as 20 SOE have held initial public offering and listed their shares on the IDX. The SOEs are classified into 6 sectors including Mining Sector (3 companies), Basic Industry and Chemicals (3 companies), Consumer Goods Industry (2 companies), Property, Real Estate and Building Construction (4 companies), in the Infrastructure Sector, Utilities & Transportation (4 companies), and the Finance Sector (4 companies).

2.2 Previous Studies

Wang, Zhang, & Wang [12] states that SOEs face a trade-off problem between maximizing income and minimizing unemployment. The results of their study in China indicate that SOEs are more productive but less profitable. This is in line with the views of Alexius & Cisneros Örnberg [13] who questioned whether SOEs might be able to achieve the dual mission that must be carried out. In Indonesia, SOEs that aim to provide general benefits of providing high-quality goods and/or services and at the same time aim to obtain profits are state-owned public companies (Perum). These SOEs operate with capital that is wholly owned by the state and not divided into shares. Meanwhile, SOEs type of Limited Liability Company, including SOEs that have privatized or whose shares are listed on the stock exchange, has the main objective of pursuing profits [1]. The aim of prioritizing profit might be to avoid multiple goals. The SOEs that carry out privatization are not only aimed at pursuing profits but also increasing company performance and value [8], [9].

Several previous studies reported the benefits of privatization. For example, Christensen [14] found that divested companies in Ghana operate in competitive markets and can reduce government subsidies. Bozec & Breton [15] reports that SOEs in Canada have improved financial performance after privatization. The findings of the Garnaut, Song, & Yao [16] in China show that privatization has increased profitability even though it did not increase investment and labor productivity because these companies prioritized cost savings rather than business expansion.

However, there are factors that determine the performance of SOEs. For example, SOEs prefer governance that is determined for external interests and is not in accordance with the demands of internal governance responsibilities that should be adhered to [17]. The performance of SOEs managed by executives is influenced by the premium careers of those executives who are still active in government agencies that can oversee the performance evaluation process. However, a gap occurs when the executive has retired, which causes a decrease in the lobby's executive ability [18]. The innovation performance of wind power companies is influenced by industry policies and their mixes [19]. Besides, political interference has a strong negative impact on SOE efficiency [20]. Liu [21] found profitable SOEs are modernized SOEs that have a well-designed ownership structure and incentive system as well as an effective control system and good management transparency.

The literature review shows gaps to examine the performance of SOEs in general and for each SOE. Comparisons need to be made in several aspects of financial performance, each of which has been widely used in previous studies, which include the ability to generate profits [22], [23], the ability to generate operating cash flow [24], the value of the company either proxied with Tobin's Q [23], [25]–[27] or with Price-to-Book Value of Equity, PBV [28], [29], debt financing as measured by debt-to-asset ratio, DAR [25], [30], and market capitalization [31]. The ability to generate profits measured by return on asset, ROA and the ability to generate operating cash flow as measured by operating cash flow, CFO are both used because they are complementary. Profit reflects the performance in a period but is influenced by accounting policies while operating cash flow under certain conditions less reflects the performance in a period but is not influenced by accounting policies. Tobin's Q reflects the company's overall value but is more influenced by the debt ratio policy than PBV. Debt financing is chosen because it can have an

impact on the four types of performance mentioned above. Market capitalization indicates the potential ability of SOEs to compete with Non-SOEs.

The literature review leads to the following research questions.

- Are SOEs listed on the Indonesian Stock Exchange in general superior to Non-SOEs in terms of profitability, ability to generate operating cash flow, market value, debt financing, and market capitalization?
- Does each SOE have a higher performance than the Non-SOE performance in each of the same industry sub-sectors in terms of profitability, ability to generate operating cash flow, market value, debt financing, and market capitalization?

3. METHOD

The variables of this study are as follows. PROFIT = net income divided by total assets; CFO = operating cash flow divided by total assets; Q = company value measured by Tobin's Q ((market value of equity + book value of liabilities) / book value of total assets); PBV = price-to-book value of equity; DAR = debt-to-asset ratio (total liabilities / total assets), which reflects the ratio of debt financing; MARKETCAP = stock market capitalization in trillion rupiahs, which reflects the size of the company; SOE = State-Owned Enterprise, which is a dummy variable coded 1 for SOE and 0 for Non-SOE.

This study uses the Mann Whitney U Test to find out whether there are differences between the mean rank of PROFIT, CFO, Q, PBV, DAR, and MARKETCAP which are classified as SOEs and those that are classified as Non-SOEs. The Mann Whitney U tests:

H₀: mean rank of the PROFIT, CFO, Q, PBV, DAR, and MARKETCAP from the subsample of SOEs = mean rank of the PROFIT, CFO, Q, PBV, DAR, and MARKETCAP from the subsample of Non-SOEs

H_A: mean rank of the PROFIT, CFO, Q, PBV, DAR, and MARKETCAP from the subsample of SOEs > mean rank of the PROFIT, CFO, Q, PBV, DAR, and MARKETCAP from the subsample of Non-SOEs

H_{A'}: mean rank of the PROFIT, CFO, Q, PBV, DAR, and MARKETCAP from the subsample of SOEs < mean rank of the PROFIT, CFO, Q, PBV, DAR, and MARKETCAP from the subsample of Non-SOEs

Financial data for the measurement of these variables are from financial statements tabulated by The Institute of Capital Market Indonesia (TICMI) with an observation period from 2007 to 2017. The types of companies that are included in State-Owned Enterprises (SOEs) are determined from the Ministry of SOEs website and Fact Book for related years. The sample selection uses the following criteria: (1) the availability of financial statements that end on December 31 for 12 months each year, and (2) the availability of data for the measurement of all research variables. Table 1 presents a list of SOEs and their industrial sectors and industrial subsectors.

Table 1: List of SOEs and their industrial sectors and industrial subsectors

No.	Code	Name	Sector	Subsector
1	PTBA	PT. Bukit Asam (Persero) Tbk.	2 Mining	2.1 Coal Mining
2	ANTM	PT. Aneka Tambang (Persero) Tbk.	2 Mining	2.3 Metal and Mineral Mining
3	TINS	PT. Timah (Persero) Tbk.	2 Mining	2.3 Metal and Mineral Mining
4	SMBR	PT. Semen Baturaja (Persero) Tbk.	3 Basic Industry and Chemicals	3.1 Cement
5	SMGR	PT. Semen Indonesia (Persero) Tbk.	3 Basic Industry and Chemicals	3.1 Cement
6	KRAS	PT. Krakatau Steel (Persero) Tbk.	3 Basic Industry and Chemicals	3.3 Metal and Allied Products
7	INAF	PT. Indofarma (Persero) Tbk.	5 Consumer Goods Industry	5.3 Pharmaceuticals
8	KAEF	PT. Kimia Farma Tbk.	5 Consumer Goods Industry	5.3 Pharmaceuticals
9	ADHI	PT. Adhi Karya (Persero) Tbk.	6 Property, Real Estate, and Building Construction	6.2 Building Construction
10	PTPP	PT. PP (Persero) Tbk.	6 Property, Real Estate, and Building Construction	6.2 Building Construction
11	WIKA	PT. Wijaya Karya (Persero) Tbk.	6 Property, Real Estate, and Building Construction	6.2 Building Construction
12	WSKT	PT. Waskita Karya (Persero) Tbk.	6 Property, Real Estate, and Building Construction	6.2 Building Construction
13	PGAS	PT. Perusahaan Gas Negara	7 Infrastructure, Utilities,	7.1 Energy

		(Persero) Tbk.	& Transportation	
14	JSMR	PT. Jasa Marga (Persero) Tbk.	7 Infrastructure, Utilities, & Transportation	7.2 Toll Road, Airport, Harbor and Allied Products
15	TLKM	PT. Telekomunikasi Indonesia (Persero) Tbk.	7 Infrastructure, Utilities, & Transportation	7.3 Telecommunication
16	GIAA	PT. Garuda Indonesia (Persero) Tbk.	7 Infrastructure, Utilities, & Transportation	7.4 Transportation
17	BBNI	PT. Bank Negara Indonesia (Persero) Tbk.	8 Finance	8.1 Bank
18	BBRI	PT. Bank Rakyat Indonesia (Persero) Tbk.	8 Finance	8.1 Bank
19	BBTN	PT. Bank Tabungan Negara (Persero) Tbk.	8 Finance	8.1 Bank
20	BMRI	PT. Bank Mandiri (Persero) Tbk.	8 Finance	8.1 Bank

4. RESULTS

4.1 Descriptive Statistics

Descriptive statistics for the full sample and samples classified by SOE and Non-SOE (but not classified by sector or subsector) are presented in Table 2. All variables (PROFIT, CFO, Q, PBV, and MARKETCAP) for SOEs have a mean value which is greater than that of Non-SOEs. Based on the results of the t-test for equality of means (table not presented), the differences are significant at the 1 percent level for PROFIT, Q, and MARKETCAP and at a 5 percent level for CFO, while for PBV and DAR the mean difference is not significant. This reveals that in general SOEs can outperform Non-SOEs.

Descriptive statistical results by sector and subsector are not presented for efficient paper presentation. The results of direct performance comparisons are carried out using the Mann-Whitney Test presented in the following sections.

Table 2: Descriptive Statistics

Variable	Minimum	Maximum	Mean	Std. Deviation
Full Sample (N = 1363)				
PROFIT	-.384	1.852	.039	.114
CFO	-.861	.799	.059	.115
Q	.101	13.066	1.432	1.200
PBV	.000	135.489	2.204	4.986
DAR	.004	.986	.585	.259
MARKETCAP	.000	534.545	14.988	44.898
Non-SOE (N = 1166)				
PROFIT	-.384	1.852	.035	.118
CFO	-.861	.799	.056	.115
Q	.101	11.113	1.387	1.138
PBV	.000	135.489	2.142	5.203
DAR	.004	.986	.584	.264
MARKETCAP	.000	534.545	8.546	29.193
SOE (N = 197)				
PROFIT	-.180	.426	.066	.083
CFO	-.230	.478	.076	.113
Q	.383	13.066	1.698	1.493
PBV	.002	35.742	2.570	3.417
DAR	.071	.923	.589	.229
MARKETCAP	.011	447.552	53.114	85.058

4.2 Performance Comparison between SOEs and Non-SOEs

A comparison between the performance of SOEs and Non-SOEs is carried out for all industrial sectors and grouped by the industry sector. Comparisons for all industry sectors are presented at the beginning, followed by comparisons based on industry sectors. Because there are as many as 20 SOEs in 6 industrial sectors, the discussion is presented based on 6 industrial sectors, namely Sector 2 (Mining), Sector 3 (Basic Industry and Chemicals), Sector 5 (Consumer Goods Industry), Sector 6 (Property, Real Estate, and Building Construction), Sector 7 (Infrastructure, Utilities & Transportation), and Sector 8 (Finance).

4.2.1 All Sectors

Table 3 presents the results of the Mann-Whitney Test to compare the performance of SOEs and Non-SOEs for all Industrial Sectors. These results indicate that SOEs are superior compared to Non-SOEs in financial performance which includes PROFIT and CFO. This is shown by the mean rank of PROFIT, Q, and PBV of SOEs which are higher than that of Non-SOEs with Z significant at 1 percent level except for CFO with a significance level of 10 percent. SOEs also outperformed Non-SOEs in market performance as measured by Tobin's Q and PBV. Besides, SOE's market capitalization (MARKETCAP) is greater than that of the Non-SOE market capitalization.

In contrast to these results, SOE debt financing (DAR) is no different than Non-SOEs DAR. In general, SOEs outperform Non-SOEs in financial performance and market performance and market capitalization, but SOEs are no different from Non-SOEs in debt financing.

Table 3: Mann-Whitney Test results for all industrial sectors

<i>Variable</i>	<i>Mean Rank</i>		<i>Z</i>	<i>Asymp. Sig.</i>
	<i>Non-SOE</i>	<i>SOE</i>		
PROFIT	653.51	850.63	-6.501	0.000
CFO	674.60	725.80	-1.689	0.091
Q	659.20	816.93	-5.202	0.000
PBV	659.70	814.01	-5.089	0.000
DAR	682.63	678.28	-0.143	0.886
MARKETCAP	621.23	1041.68	-13.867	0.000
N	1166	197		

4.2.2 Mining (Sector 2)

The results of the Mann-Whitney Test for the Mining Sector (Sector 2) are presented in Table 4. There are 3 SOEs in Sector 3, namely PTBA in Subsector 2.1 (Coal Mining), ANTM and TINS in Subsector 2.3 (Metal and Mineral Mining). There are variations in the results of the analysis. PTBA as an SOE can outperform Non-SOEs, both in financial performance (PROFIT and CFO) and market performance as measured by Q. This is shown by the mean rank of PROFIT and CFO of SOE which is higher than that of Non-SOES with Z significant at 1 percent level except for Q with a significance level of 5 percent. PTBA is a larger company compared to Non-SOEs in Subsector 2.1.

These results are consistent with results for all sectors of the industry (Table 3) except that PTBA uses greater debt financing (DAR) than Non-SOEs. ANTM and TINS in the Metal and Mineral Mining Subsector have similar performance with Non-SOEs, except that both ANTM and TINS are larger SOEs than Non-SOEs.

Table 4: Mann-Whitney Test results for industry sector 2 (Mining)

<i>Variable</i>	<i>Mean Rank</i>		<i>Z</i>	<i>Asymp. Sig.</i>
	<i>Non-SOE</i>	<i>SOE</i>		
Subsector 2.1. Coal Mining				
	Non-PTBA	PTBA		
PROFIT	84.48	148.73	-4.049	0.000

CFO	85.33	136.00	-3.193	0.001
Q	86.18	123.27	-2.338	0.019
PBV	86.90	112.55	-1.617	0.106
DAR	90.62	56.64	-2.142	0.032
MARKETCAP	85.16	138.64	-3.371	0.001
N	165	11		
Subsector 2.3. Metal and Mineral Mining				
	Non-ANTM	ANTM		
PROFIT	28.88	34.91	-1.05	0.293
CFO	29.33	32.91	-0.62	0.533
Q	31.48	23.55	-1.38	0.167
PBV	31.67	22.73	-1.56	0.119
DAR	29.88	30.55	-0.12	0.907
MARKETCAP	26.71	44.36	-3.08	0.002
N	48	11		
	Non-TINS	TINS		
PROFIT	27.98	38.82	-1.89	0.059
CFO	29.54	32.00	-0.43	0.669
Q	30.04	29.82	-0.04	0.969
PBV	30.33	28.55	-0.31	0.755
DAR	29.40	32.64	-0.56	0.572
MARKETCAP	27.35	41.55	-2.47	0.013
N	48	11		
PTBA = PT. Bukit Asam (Persero) Tbk.; ANTM = PT. Aneka Tambang (Persero) Tbk.; TINS = PT. Timah (Persero) Tbk.				

4.2.3 Basic Industry and Chemicals (Sector 3)

Table 5 presents the results of the Mann-Whitney Test for Industry Sector 3 (Basic Industry and Chemicals). There are 3 SOEs that are classified in this industry, namely SMBR and SMGR in Subsector 3.1 (Cement) and KRAS in Subsector 3.3 (Metal and Allied Products). SMBR and SMGR which are included in the same industrial sub-sector do not have the same performance. SMGR can outperform Non-SOEs in PROFIT and CFO (the mean rank of PROFIT and CFO of SOEs is higher than that of Non-SOEs with Z significant at 1 percent level) while SMBR does not. Besides, SMGR has a greater MARKETCAP compared to Non-SOEs while SMBR is not, but SMBR has lower DAR than Non-SOEs.

KRAS is a BUMN that has a larger market capitalization compared to Non-BUMNs in the same subsector as KRAS. However, KRAS experienced lower performance than Non-KRAS as indicated by a lower mean rank with a significant Z less than 1 percent. Other KRAS performance components, CRO, Q, PBV have the equivalent of performance with Non-KRAS performance. KRAS debt financing is also comparable to that of Non-KRAS.

Table 5: The results of the Mann-Whitney test for industry sector 3 (Basic Industry and Chemicals)

Variable	Mean Rank		Z	Asymp. Sig.
	Non-SOE	SOE		
Sector 3 (Basic Industry and Chemicals) - Subsector 3.1 (Cement)				
	Non-SMBR	SMBR		
PROFIT	17.14	16.20	0.841	0.865
CFO	17.79	12.60	0.269	0.290
Q	16.79	18.20	0.763	0.789
PBV	17.04	16.80	0.960	0.981
DAR	18.68	7.60	0.018	0.016
MARKETCAP	18.00	11.40	0.160	0.173
N	28	5		
	Non-SMGR	SMGR		
PROFIT	16.71	28.36	-2.871	0.004
CFO	16.79	28.18	-2.809	0.005
Q	18.79	23.09	-1.061	0.289

PBV	18.89	22.82	-0.967	0.333
DAR	21.39	16.45	-1.217	0.224
MARKETCAP	17.61	26.09	-2.091	0.037
N	28	11		
Sector 3 (Basic Industry and Chemicals) - Subsector 3.3 (Metal and Allied Products)				
	Non-KRAS	KRAS		
PROFIT	78.38	33.38	-2.833	0.005
CFO	76.54	66.38	-0.640	0.522
Q	76.52	66.75	-0.615	0.539
PBV	76.29	70.88	-0.341	0.733
DAR	75.97	76.63	-0.042	0.967
MARKETCAP	72.03	146.88	-4.710	0.000
N	143	8		
SMBR = PT. Semen Baturaja (Persero) Tbk.; SMGR = PT. Semen Indonesia (Persero) Tbk.; KRAS = PT. Krakatau Steel (Persero) Tbk.				

4.2.4 Consumer Goods Industry (Sector 5)

Mann-Whitney Test Results for the Consumer Goods Industry Sector are presented in Table 6. The SOEs that are included in this sector are INAF and KAEF. Both are classified in the Pharmaceutical Subsector. These two SOEs can be surpassed by Non-SOEs, especially in PROFIT and CFO. This is indicated by the mean rank of PROFIT and CFO of INAF and of KAEF which are lower than that of the Non-INAF and Non-KAEF companies with Z significant at the 1 percent level.

Debt financing (DAR) INAF and KAEF is greater than Non-SOEs. Both SOEs have market values (Q and PBV) and market capitalization (MARKETCAP) which are no different from those of their non-SOE counterparts.

Table 6: Mann-Whitney Test results for sector 5 (Consumer Goods Industry)

<i>Variable</i>	<i>Mean Rank</i>		<i>Z</i>	<i>Asymp. Sig.</i>
	<i>Non-SOE</i>	<i>SOE</i>		
Sector 5 (Consumer Goods Industry) - Subsector 5.3 (Pharmaceuticals)				
	Non-INAF	INAF		
PROFIT	50.33	10.82	-4.700	0.000
CFO	49.04	20.09	-3.443	0.001
Q	46.10	41.18	-0.585	0.558
PBV	46.33	39.55	-0.807	0.420
DAR	41.42	74.82	-3.973	0.000
MARKETCAP	45.70	44.09	-0.191	0.848
N	79	11		
	Non-KAEF	KAEF		
PROFIT	48.23	25.91	-2.655	0.008
CFO	48.04	27.27	-2.470	0.014
Q	45.62	44.64	-0.117	0.907
PBV	45.65	44.46	-0.142	0.887
DAR	41.99	70.73	-3.418	0.001
MARKETCAP	44.38	53.55	-1.091	0.275
N	79	11		
INAF = PT. Indofarma (Persero) Tbk; KAEF = PT. Kimia Farma Tbk.				

4.2.5 Property, Real Estate, and Building Construction (Sector 6)

Table 7 presents the results of the Mann-Whitney Test for the Property, Real Estate and Building Construction Sectors. Four SOEs (ADHI, PTPP, WIKA, WSKT) are included in the

Building Construction Subsector (Subsector 6.2). These four SOEs have lower PROFIT and have higher debt financing (DAR) and MARKETCAP compared to Non-SOEs. This is indicated by the mean rank of PROFIT ADHI, PTPP, WIKA, and WSKT which is lower than that of the Non-SOE companies with Z significant at the level of 1 percent for ADHI, 5 percent for PTPP, and 10 for WIKA and WSKT. These SOEs have CFO, Q, and PBV that are not different from those of Non-SOEs.

Table 7: Mann-Whitney Test results for sector 6 (Property, Real Estate, and Building Construction)

Variable	Mean Rank		Z	Asymp. Sig.
	Non-SOE	SOE		
Sector 6 (Property, Real Estate, and Building Construction) - Subsector 6.2 (Building Construction)				
	Non-ADHI	ADHI		
PROFIT	39.17	18.73	-3.019	0.003
CFO	37.57	27.45	-1.494	0.135
Q	36.70	32.18	-0.667	0.505
PBV	36.30	34.36	-0.286	0.775
DAR	30.53	65.82	-5.212	0.000
MARKETCAP	34.57	43.82	-1.367	0.172
N	60	11		
	Non-PTPP	PTPP		
PROFIT	36.32	20.88	-2.075	0.038
CFO	34.87	31.75	-0.419	0.675
Q	33.95	38.63	-0.628	0.530
PBV	33.45	42.38	-1.199	0.230
DAR	30.85	61.88	-4.169	0.000
MARKETCAP	31.80	54.75	-3.084	0.002

N	60	8		
	Non-WIKA	WIKA		
PROFIT	37.77	26.36	-1.684	0.092
CFO	35.33	39.64	-0.636	0.525
Q	35.22	40.27	-0.747	0.455
PBV	34.68	43.18	-1.255	0.209
DAR	31.28	61.73	-4.497	0.000
MARKETCAP	32.82	53.36	-3.035	0.002
N	60	11		
	Non-WSKT	WSKT		
PROFIT	34.83	20.17	-1.784	0.074
CFO	34.97	18.83	-1.963	0.050
Q	33.13	37.17	-0.491	0.624
PBV	32.75	41.00	-1.004	0.316
DAR	30.57	62.83	-3.926	0.000
MARKETCAP	30.75	61.00	-3.680	0.000
N	60	6		

ADHI = PT. Adhi Karya (Persero) Tbk.; PTPP = PT. PP (Persero) Tbk.; WIKA = PT. Wijaya Karya (Persero) Tbk.; WSKT = PT. Waskita Karya (Persero) Tbk.

4.2.6 Infrastructure, Utilities & Transportation (Sector 7)

As presented in Table 8, there are four SOEs (PGAS, JSRM, TLKM, and GIAA) which are classified in Sector 7 (Infrastructure, Utilities & Transportation). Each SOE is in a different sub-sector. PGAS classified as Subsector 7.1 (Energy) and TLKM in Subsector 7.3 (Telecommunication) have similar performance. The results of the Mann-Whitney Test presented in Table 8 indicate that these two SOEs outperformed Non-SOEs in PROFIT, CFO, Q, and PBV and had a greater MARKETCAP compared to Non-SOEs. The difference is that PGAS uses debt financing (DAR) which is greater than that of Non-SOEs while TLKM has a lower DAR than Non-SOEs.

Table 8: Mann-Whitney Test Results for sector 7 (Infrastructure, Utilities & Transportation)

Variable	Mean Rank		Z	Asymp. Sig.
	Non-SOE	SOE		
Sector 7 (Infrastructure, Utilities & Transportation) - Subsector 7.1 (Energy)				
	Non-PGAS	PGAS		
PROFIT	13.18	24.64	-3.208	0.001
CFO	12.82	25.36	-3.513	0.000
Q	14.59	21.82	-2.024	0.043
PBV	14.45	22.09	-2.139	0.032
DAR	14.00	23.00	-2.521	0.012
MARKETCAP	11.59	27.82	-4.548	0.000
N	22	11		
Sector 7 (Infrastructure, Utilities & Transportation) - Subsector 7.2 (Toll Road, Airport, Harbor and Allied Products)				
	Non-JSMR	JSMR		
PROFIT	17.00	17.00	0.000	1.000
CFO	17.59	15.82	-0.496	0.620
Q	15.50	20.00	-1.260	0.208
PBV	14.68	21.64	-1.948	0.051
DAR	12.73	25.55	-3.590	0.000
MARKETCAP	12.59	25.82	-3.705	0.000
N	22	11		
Sector 7 (Infrastructure, Utilities & Transportation) - Subsector 7.3 (Telecommunication)				
	Non-TLKM	TLKM		

PROFIT	24.58	53.64	-5.061	0.000
CFO	25.02	51.73	-4.652	0.000
Q	26.56	45.00	-3.211	0.001
PBV	26.83	43.82	-2.958	0.003
DAR	33.04	16.73	-2.842	0.004
MARKETCAP	24.96	52.00	-4.710	0.000
N	48	11		
Sector 7 (Infrastructure, Utilities & Transportation) - Subsector 7.4 (Transportation)				
	Non-GIAA	GIAA		
PROFIT	113.00	97.14	-0.637	0.524
CFO	113.12	93.29	-0.797	0.425
Q	112.25	120.14	-0.317	0.751
PBV	112.49	112.86	-0.015	0.988
DAR	110.67	169.29	-2.355	0.019
MARKETCAP	109.16	216.00	-4.293	0.000
N	217	7		
PGAS = PT. Perusahaan Gas Negara (Persero) Tbk.; JSMR = PT. Jasa Marga (Persero) Tbk.; TLKM = PT. Telekomunikasi Indonesia (Persero) Tbk.; GIAA = PT. Garuda Indonesia (Persero) Tbk.				

Two other SOEs in Sector 7 (Infrastructure, Utilities & Transportation) are JSMR in Subsector 7.2 (Toll Road, Airport, Harbor and Allied Products) and GIAA in Subsector 7.4 (Transportation). Unlike PGAS in Subsector 7.1 (Energy) and TLKM which belong to Subsector 7.3 (Telecommunication), JSMR and GIAA are not able to outperform Non-SOEs in PROFIT, CFO, Q, and PBV as counterparts except JSMR which has a higher PBV even though only at a 10 percent significance level. JSMR and GIAA also have higher MARKETCAP compared to Non-SOEs but they also have higher DAR.

4.2.7 Finance (Sector 8)

Table 9 shows that BBNI, BBRI, BBTN, and BMRI are 4 SOEs in Sector 8 (Finance) -

Subsector 8.1 (Bank). Although in the same industrial sub-sector, the performance of each state-owned bank was not the same when compared to the performance of Non-SOE banks. The results of comparisons between state-owned banks and non-state-owned banks presented in Table 9 show that 3 banks consisting of BBNI, BBRI, and BMRI are state-owned banks that have higher mean ranks with Z values significant at the 1 percent level. This indicates that the three SOE banks can outperform Non-SOE banks in terms of PROFIT.

In the case of CFO, all state-owned banks are no different from non-state-owned banks. From the aspect of firm value proxied by Q and PBV, BBRI and BMRI also have higher mean ranks with Z values significant at the level of 1 percent for BBRI and 5 percent for BMRI. These results indicate that BBRI and BMRI can outperform Non-SOE banks in firm value.

Table 9: Mann-Whitney Test Results for Sector 8 (Finance)

Variable	Mean Rank		Z	Asymp. Sig.
	NON-SOE	SOE		
Sector 8 (Finance) - Subsector 8.1 (Bank)				
	Non-BBNI	BBNI		
PROFIT	170.53	248.00	-2.535	0.011
CFO	172.67	183.00	-0.338	0.735
Q	172.59	185.45	-0.421	0.674
PBV	172.33	193.45	-0.691	0.489
DAR	173.54	156.55	-0.556	0.578
MARKETCAP	168.72	303.00	-4.394	0.000
N	334	11		
	Non-BBRI	BBRI		
PROFIT	167.99	325.18	-5.143	0.000
CFO	171.64	214.36	-1.398	0.162
Q	169.90	267.27	-3.186	0.001
PBV	169.86	268.36	-3.223	0.001

DAR	172.16	198.45	-0.860	0.390
MARKETCAP	168.07	322.55	-5.054	0.000
N	334	11		
	Non-BBTN	BBTN		
PROFIT	171.38	195.11	-0.709	0.479
CFO	172.69	146.56	-0.780	0.435
Q	172.16	166.11	-0.181	0.857
PBV	171.83	178.33	-0.194	0.846
DAR	169.63	259.78	-2.691	0.007
MARKETCAP	169.37	269.78	-2.998	0.003
N	334	9		
	Non-BMRI	BMRI		
PROFIT	169.23	287.55	-3.871	0.000
CFO	171.87	207.18	-1.155	0.248
Q	171.01	233.55	-2.046	0.041
PBV	170.63	244.91	-2.430	0.015
DAR	173.31	163.64	-0.316	0.752
MARKETCAP	168.12	321.18	-5.008	0.000
N	334	11		
BBNI = PT. Bank Negara Indonesia (Persero) Tbk.; BBRI = PT. Bank Rakyat Indonesia (Persero) Tbk.; BBTN = PT. Bank Tabungan Negara (Persero) Tbk.; BMRI = PT. Bank Mandiri (Persero) Tbk.				

In the case of DAR, the difference in mean rank for all state-owned banks compared to Non-SOE banks except BBTN are not significant. This could be due to the tendency of all banks to follow the capital ratio requirements. The uniqueness of BBTN in terms of DAR with a higher mean rank compared to Non-SOE banks indicates that the loan funds provided by BBTN to customers are greater than Non-SOE banks. The mean rank differences of MARKETCAP of all state-owned banks are significant at the 1 percent level which indicates that all state-owned banks have a greater market capitalization than non-state-owned banks.

In general, BBRI and BMRI are 2 banks that have the highest relative ability to outperform Non-SOE banks. Then BBNI is ranked next, and BBTN is a state-owned bank that has financial performance and market performance that is relatively equivalent to Non-SOE banks.

5. CONCLUSIONS

This study found that SOEs are generally superior to non-SOEs. However, further findings show that SOEs in each sector or subsector have unequal performance. In fact, every SOE in one industry sub-sector can have different performance when compared to Non-SOEs. The findings of this study indicate that the performance of SOEs, when compared to Non-SOEs, can be grouped into several categories. First, SOEs that have higher performance compared to Non-SOEs in various types of performance measures. These SOEs include PGAS, TLKM, and PTBA. They outperformed Non-SOEs in the ability to generate profits, the ability to generate operating cash flow, and the firm value measured by Q and PBV except PTBA, the firm value measured only by Q. These three SOEs have a greater market capitalization compared to Non-SOEs. The difference is that PGAS uses higher debt financing while TLKM and PTBA have lower debt financing compared to Non-SOEs.

Second, SOEs that can generate higher profits than Non-SOEs but are not accompanied by the ability to generate operating cash flow. These SOEs include SMGR, BBNI, BBRI, and BMRI. The last two SOEs also have a higher market value compared to Non-SOEs. All these SOEs have a larger market capitalization than Non-SOEs and have debt financing equivalent to Non-SOEs.

Third, SOEs can generate profits or the ability to generate operating cash flow that is comparable to Non-SOEs and with the firm value that tends to be equivalent to Non-SOEs. These SOEs include ANTM, TINS, SMBR, WIKA, JSMR, GIAA, and BBTN. Almost all these SOEs except SMBR have a greater capitalization than Non-SOEs. WIKA, JSMR, GIAA, and BBTN have larger debt financing than Non-SOEs, SMBR has smaller debt financing, while ANTM has debt financing equivalent to Non-SOEs.

Fourth, SOEs can generate lower profits and operating cash flow compared to Non-SOEs (INAF, KAEF, and WSKT) or have the ability to generate only lower profits with Non-SOEs (KRAS, ADHI, and PTPP). The firm values of the six SOEs are equivalent to those of Non-SOEs. Three SOE (KRAS, PTPP, and WSKT) have a larger market capitalization compared to Non-SOE (INFA, KAEF, and ADHI) while the other 3 SOE have market capitalizations that are equivalent to Non-SOE. In terms of debt financing, INAF, KAEF, ADHI, and WSKT use debt financing that is greater than that of Non-SOEs, while KRAS has debt financing that is similar to Non-SOEs.

There are several limitations in this study that need to be considered in interpreting the results.

Measurement of research variables relating to accounting figures does not consider the quality of information used. The low quality of information can affect the accuracy of variable measurements. Besides, this study compares the average performance of SOEs with the performance of Non-SOEs during the observation period and does not examine the performance trends of each SOE so that SOEs experiencing an increasing or decreasing trend are treated equally as long as the average ratings of the SOEs are the same. Future studies can follow up on the results of this study by considering these limitations. Further studies can also examine the factors that cause variations in the performance of SOEs.

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