2I05   The Technological Activity of Indonesian State-own Enterprise:

a contribution to its performance

○Wisnu Wihandoko, 渡辺千仞 （東工大社会理工学）

Abstract

Despite its important role in the Indonesian economy, in overall, SOEs fail to report good performance. This paper discusses the SOEs technology activity, and how it influences SOEs' general performance. SOEs investment activity and technology activity reflected from their affiliation, number of product and business unit, are performing significant contribution on production output (revenue) and profit.

I. Introduction

State-own Enterprise (SOE) has been continuing to place a leading role in the development of the Indonesian economy. Given the vast variety of economic sectors that exist, almost every Indonesian requires the service of an SOE. Thus, SOEs, which are owned or controlled either in part or in whole by the government, must develop soundly and provide excellent of service. Most importantly, they must take optimal contribution to the country in the form of taxes, dividends, community development, and finally provide employment opportunities within the community. Despite this, the general perception is that the services SOEs provided are less optimal, as the result of their poor professionalism in the management of SOE, which also leads to their poor performance.

The significant factor impeding performance of SOEs is the government's considerable intervention on the management. For example, concerning the dividend government as the shareholder is capable to request its shares to support the State Budget, while the firm itself needs the profit for business expansion. Therefore, it gives SOEs disadvantage in their long-term investment activity, which influences firm's growth. In the other side, technology, which gives significant contribution into firm's growth, is closely related with firm's long-term investment activity (i.e. R&D investment).

This paper discusses the SOEs technology activity, and how it influences SOEs' general performance.

II. Relationship between SOEs and the Government

Based on the Government regulation, SOEs is divided as follows:

(1) *Persero (State-owned companies)*. In *Persero*, Government has status, duty, and authority of the shareholders. As *Persero*, SOEs acts as a profit-oriented organization have a role to support the economic growth, and to supply high quality and competitive goods and services.

(2) *Perum (Public companies)*. *Perum*'s task is providing quality goods and services with reasonable price, pioneering new business and industry field, and social contribution.

(3) *Perjan (State companies)*. In *Perjan*, Government owns all the capital, and it has role to provide public services.

To maximize the work performance of SOEs, the Government establishes a special Ministry of SOEs in 2001. The main mission of this ministry is to reform the scope of the work culture, strategies, and business management by creating professionalism based on the Good Corporate Government principles in the management of SOEs.

III. Current position and performance of SOEs

162 firms are registered as SOEs (2002), with total asset of Rp 1,029 trillion, covering 30 sectors of business unit, and employ about 790,000 workers. By the year 2002 SOEs derives total profit of Rp 24.6 trillion, raise from Rp 16,5 trillion in 2001.

□ >Rp 1000 billion (with total profit Rp. 9,451 billion)

■ Rp 100 billion up to Rp 1000 billion (with total profit Rp. 5,360 billion)

□ Rp 10 billion up to Rp 100 billion (with total profit Rp. 720 billion)

□ up to Rp 10 billion (with total profit 65 billion)
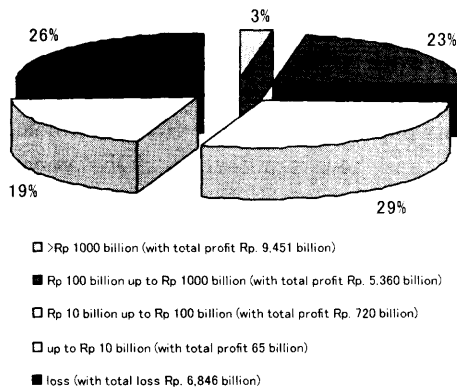
■ loss (with total loss Rp. 6,846 billion)

Fig.1. SOEs' 2002 Profit-Loss Performance Diagram.

However, due to poor management, in year 2001, there are 25 SOEs that is still suffered a total loss of Rp 1,010 million. Fig 1. shows the profit-loss performance diagram of non-financial sector SOEs in year 2002. From 75 non-financial sector SOEs subject to the analysis, only 3% drives profit more than Rp 1 trillion, 23% drives profit range from Rp 100 billion to Rp 1000 billion, 29% drives profit range from Rp 10 billion to Rp 100 billion, and 19% drives profit range from Rp 1 billion to 10 billion. The rest 26% suffer loss totaled Rp 6,846 billion.

Furthermore, the value added produced by SOEs is considered low. In the year 2002, the average of SOEs' return on asset (ROA) is 3.6%, when the minimum 'healthy' firm's ROA is 5%. Fig 2. demonstrates non-financial sector SOEs' ROA performance clustered by the industry sector. SOEs active in Chemical, Energy and Mining, Services, Telecommunication, and Transportation sector have average ROA more than 5%, while Agriculture, Construction, Electronic, Machinary, and Textile and Printing are lower than 5%. Conjointly, for sectors such Construction, Electronic, Machinary, and Textile and Printing, technology has significant influence for industry's output and performance. It generates curiosity on SOEs' technology activity and performance, and how does it influence firm's general performance
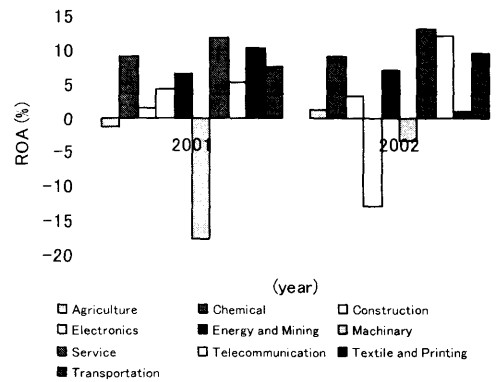

Fig.2. SOEs' Return on Asset Performance

IV. Model and hypotheses

This paper focuses on the non-financial sector SOEs' technology activity, and its relationship with SOEs general performance. At first, the contribution of SOEs investment and technology activity into firm's production output reflected in revenue is examined, applying model 1. Due to the data limitation on SOEs' investment activity, firm's asset and labor, where previous investment activity is embedded on, are included on the model 1. Hypotheses 1 suggests that SOEs investment and technology activity will be positively associated with its production output, reflected in revenue.

Furthermore, model 2 is applied to examine SOEs' technology activity and its contribution to firm's performance reflected in profit. Profit

indicates firm's performance and efficiency more than the revenue does. Hence, for hypotheses 2, technology activity is proposed positively associated with SOEs' performance reflected in profit.

Firms in developing countries grow by effectively exploiting an international pool of existing technology available. Therefore, SOEs technology activity is also shown from their learning activity from other firms. Hence, technology activity is proposed examined from firm's number of affiliated company, product, and business unit.

V. Method

Data used for analysis is obtained from database directory in BUMN online (http://www.bumn-ri.com/directory.html), a website service run by Indonesian Ministry of SOEs' and Investor magazine special edition on SOEs. From 162 SOEs registered, only 96 SOEs data are available. After omitted the SOEs in financial sector industry, data from 75 SOEs is left, subject to the analysis.

For model 1, SOEs 2002 revenue data is used for dependent variable representing SOEs Production output. SOEs 2001 amount of asset, number of employee, and investment are used representing Asset, Labor, and Investment activity as regressors. For regressor Technology activity, data of number of affiliated company, number of product and services produces, and number of business unit run by SOEs are used representing Affiliation, Product, and Business unit variables. In model 1A Technology activity is calculated as accumulation of Affiliation, Product, and Business unit using formula:

$$TECH = AFFL (PROD + BUSS)$$

Firm is available to access spillover technology from their affiliated company. Therefore, technology embedded in product and business unit are multiplied by the number of the affiliation companies.

In model 2, 2002 data on SOEs profit is used for dependent variable SOEs performance output. While Technology activity is examined using the same method with model 1.

Analysis is undergone using Linear Multiple Regression Analysis.

VI. Result

Table 1 reports the construct intercorrelation, and significant correlation between independent variables is not detected.

Table 1 Correlation between variables

Construct	1	2	3	4	5	6	7	8
1. Revenue	1.000							
2. Asset	0.101	1.000						
3. Labor	0.132	0.188	1.000					
4. Investment	0.711	0.318	0.228	1.000				
5. Technology activity	0.368	0.148	0.033	0.383	1.000			
6. Affiliation	0.297	0.237	0.028	0.371	0.867	1.000		
7. Product	0.079	0.111	0.065	0.270	0.483	0.346	1.000	
8. Business unit	0.068	0.109	0.274	0.246	0.229	0.155	0.052	1.000

The regression result of model 1 is reported in Table 2 Model 1A is when Technology activity is treated as accumulation of variables Affiliation, Product, and Business unit. While in model 1B mentioned before variables are treated separately as regressors.

Table 2 Regression model 1–SOEs production output

Model	1A	1B	1C
Asset	−0.436	−0.453	
	(−1.571)	(−1.635)	
Labor	−1.500	3.604	
	(−0.097)	(0.230)	
Investment	21.617 **	23.671 **	22.621 **
	(7.365)	(8.086)	(8.241)
Technology activity	8824.056		
	(1.257)		
Affiliation		190503.006	152728.610
		(1.181)	(−1.682)
Product		−149583.650	−141890.910
		(−1.715)	(−1.453)
Business unit		−363953.400	−344667.890
		(−1.446)	(0.982)
R−square	0.532	0.556	0.538
Adjusted R−square	0.503	0.515	0.511
F value	18.737	13.368	20.366

N = 75, * $p < 0.05$, ** $p < 0.01$ t statistic in parenthesis

The result shows that Investment is the only statistically significant variable, and it is positively associated with dependent variable production output (SOEs revenue in 2002), which is supporting the hypotheses 1. There is no significant different in R-square value whether Affiliation, Product, and Business unit are treated accumulatively as Technology activity or are treated separately as independent variables. Moreover, omitting Asset and Labor variable do not give significant different as well (model 1C).

Analysis result of model 2 is reported in Table 3. Technology activity is positively associated with Profit performance and statistically significant even at 1% level. Moreover, Affiliation is significant, when Affiliation, Product, and Business unit are treated separately. Therefore, hypotheses 2 is supported.

Table 3 Regression model 2-SOEs' profit performance

Model	2A	2B
Technology activity	12790.546 **	
	(6.973)	
Affiliation		226975.968 **
		(4.861)
Product		29514.542
		(1.132)
Business unit		67130.652
		(0.924)
R−square	0.400	0.335
Adjusted R−square	0.392	0.307
F value	48.622	11.924

N = 75, * $p<0.05$, ** $p<0.01$ t statistics in parenthesis

VII. Discussion and conclusion

Analysis results above lead into following conclusion:

(i) Investment activity gives significant contribution to SOEs production output reflected in firm's revenue performance.

(ii) Significant contribution of Technology activity into SOEs' profit performance.

(iii) SOEs activity to affiliate with other companies significantly contributes into its technological performance, which lead into firm's profit performance.

As described in the conclusion, investment activity is significant for SOEs' production output, which leads into satisfying firm's growth. However, due to the regulation, Government reserves the right for 50% of the SOEs' profit as dividend. Therefore, SOEs' investment activity is obstructed. Learning from PT. Telkom. Tbk, a leading telecommunication SOEs, where Government own 51.19% of the shares, allocates Rp 4-5 trillion every year for investment. As the result, PT. Telkom Tbk reports good performance in revenue and growth.

Future works

Explanatory variables in model 2 analysis are not strong enough to explain the dependent variable profit performance. On account of that technology activity is not exclusively limited mentioned variables. Therefore, further analysis applying more explanatory variables and comparison with private companies within the same industries is needed.

References

[1] Ministry of State-own Enterprise Indonesia, *Master plan state owned enterprises,* February, 2002.

[2] Lin Bou-Wen, *Technology transfer as technological learning: a source of competitive advantage for firms with limited R&D resources,* R&D Management **33**, 3, 2003

[3] Primus Dorimulu, *Potret BUMN 2003: wacana GCG menggema, kinerja kedodoran,* Investor Magazine, **86**, September 24-October 7, *2003*

[4] Primus Dorimulu, *Kontribusi BUMN belum memadai,* Investor Magazine, **106**, August 10-23, *2004*

[5] Solow, R.M, *Technical change and the aggregate production function.* Review of Economics and Statistics, **39**, 3, 312-320, *1957*

[6] BUMN Online, *http://www.bumn-ri.com/*

[7] 渡辺千仭・宮崎久美子・勝本雅和、*技術経済論*、日科術連出版、*1998.*