

THE IMPLEMENTATION OF MARGINAL COST PRICING TO THE DECISION MANAGEMENT

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ABSTRACT

The concept Margnal Cost Pricing (MCP) is particularly relevant when used in the environment of Government company or Badan Usaha Milik Negara (BUMN), especially for companies engaged in the field of community service and has strategic position in national economic growth. Pricing controlled by the government and Parliament or DPR to preserve the stability of the business, avoid inflation and unemployment. Therefore it is important for the ministry of state enterprises to study the application of MCP concept, since relevant research results have shown that the this concept has been widely used by developed countries such as American and European countries, especially in determining the electricity rates, train fare, busfare, ships fare, and public utility rates provided by the government. In an environment of Badan Usaha Milik Negara (BUMN) there were none research result that led to the implementation of this concept due to the following difficulties: (a) the mechanism that is influenced by political considerations, (b) consideration of qualitative decision-makers without using a quantitative basis, (c) lack of dissemination of this concept and its nation-wide application is very limited,(d) there has been no comprehensives studies in the environment of Badan Usaha Milik Negara (BUMN) related to the application of this concept, (d) in adequate financial statements or unadjusted yet since the accounting information is not realistic because of historical based reports, and others. Technically, the application of the MCP concept in the environment of Badan Usaha Milik Negara (BUMN) can be done, however the willingness and commitment of stakeholders are very required. This is where the role of corporate management in the environment of Badan Usaha Milik Negara (BUMN) or the ministry of Badan Usaha Milik Negara (BUMN) as Share holder meeting (RUPS)s as well as annual Share holder meeting (RUPS) meeting (RUPS) board initiate steps that begins with the study to convince the feasibility and benefits of the MCP implementation. The benefits are especially in improving the performance of related Badan Usaha Milik Negara (BUMN), reducing the burden of subsidies, and improving public services. Further more, this paper is expected to inspire the decision makers in the environment of Badan Usaha Milik Negara (BUMN) such asstate electricity company, railway company, Pelni, Damri, Hospitals, Pertamina, Gas, and other public facilities provided by the government.

Keyword : Marginal cost, Marginal revenue, Margin contribution

BACKGROUND

Marginal costpricing (MCP) has long been recognized in many developed countries which are controlled by the state companies or private companies.

Companies that are controlled by the government are related to the lives of the society, as a state enterprise, related to consumer protection, and concerning all actions of a company that are detrimental to the society. The purpose of this MCP concept is especially in the sense of achieving the optimal level if the company makes maximum profit, and getting minimum loss when the company gets loss. Maximum profit or minimum loss does not mean harming the consumer society but it means that the company internally determines certain quantity and price which have optimal results, which means raising or lowering the price (P) that can reduce the profit or increase the loss. The same thing also happens on the determination of the quantity (Q) of the optimal production or sales to increase or reduce the production or sale, that can reduce the profit or increase the loss company. This concept is ideal to be used in environments of Badan Usaha Milik Negara (BUMN) that expand the community service tasks and have become agents of economic development. This is particularly for Badan Usaha Milik Negara (BUMN) which still rely on subsidies that weigh on state finances, or which are expected to become a source of revenue for the Government budget (APBN), and is closely related to social and economic life, so the companies need funds for expansion on an ongoing basis, such as electricity (PLN), rail transport (PJKA), public buses (Damri), sea shipping (Pelni), airflight (Garuda and Merpati), clean water (PDAM), telecommunications (Telkom and Indosat), fuel (Pertamina), gas (PGN), freeway (Binamarga), airport runway (Angkasa Pura), as well as other infrastructure companies. In practice, the companies usually determine its selling price based on the cost price plus a certain amount of profit, and consider external factors and internal factors such as competition advantages which are reflected by the company's value. In case the company has value then the consumers will not take price as their priority, so that kind of companies can set higher prices than the prices of other goods. Unfortunately, not all companies are able to achieve high value and consumers have different income levels. For the people who have middle to lower income, they generally consider the price factor; therefore a company must choose a pricing strategy based on the cost structure.

Marginal cost approach is one of the marginal cost pricing techniques, where the price is set at the optimal level on condition that the marginal cost (MC) equals marginal revenue (MR). In the event that prices are set by the government and Parliament or DPR, the price of the various quantity of sales, the demand curve is horizontal, the MR curve coincides with the price ($MR=P$). MR obtained from the change in total revenue (ΔTR) is divided by the change in quantity (ΔQ) and the result is equal to the price (P). Levels of P and Q are achieved at optimal condition of $MR=MC$, or $MR = P = MC$, so this approach is commonly referred to as the marginal cost pricing (MCP). In other words, marginal cost pricing approach is the price level and quantity achieved at $MR=MC$ as an optimal condition, which results in maximum profit or minimum loss. This approach

applies to the price decision by the company at various markets such as monopoly, monopolistic, perfect competition and oligopoly market. Interm of pricing policy is controlled by the government, particularly in relation to the lives of many people and to the socio economic stability of society, then this approach is highly relevant to the especially the public utilities company such as electricity rates, water rates, telecommunications, and others. This approach can be used by the State Owned Enterprises (Badan Usaha Milik Negara (BUMN)) to control subsidies through pricing that result in the best condition for the consumer and result the lowest subsidies or minimum loss for the companies themselves. For private companies, this approach can be used in pricing strategies that can generate maximum profit. The company's decision to the target of production quantity, sales and price can be treated as the reference for the company to generate maximum profits. Interm of quantity and price realization are smaller or larger, then the maximum profit can not be maximally achieved. The question that arises is that this approach is not often found in the practice of decision-making, both at the state-owned and private companies. This approach is difficult to apply for companies, especially because (a) this approach requires the formulation of marginal cost and marginal revenue; therefore, the information structure of costs, revenue, pricing and demand structure is needed, (b) the price-related decision is not only based on cost structure but also on the company's value judgment, (c) the decision refers to the degree of price competition, (d) a simple approach is considered to be faster, such as "cost plus margin", (e) a more complicated approach is difficult to be understood by the decision maker, (f) the decision for subject by the management in determining the price, and (g) the cost structure reported by the accounting are often not realistic since it is based on historical records, profit management policy, and data manipulation to describe a particular performance that is not relevant to the actual conditions. To implement this MCP the completeness of information is required for more realistic calculation to support the management or decision makers. Based on the above description, the issue that arises is how to implement the concept of MCP in Badan Usaha Milik Negara (BUMN) environment to achieve optimal conditions in terms of the company's operations and customer service.

LITERATURE REVIEW AND RESEARCH HYPOTHESIS

Literature showed that the implementation of marginal cost pricing is commonly found in some countries, including (1) Implementation of Marginal Cost Pricing in Transport-Integrated Conceptual and Applied Model Analysis, which is reported through www.mcicam.net by: European Commission-DGTREN; Fifth Framework 2004, which was reported by Esko Niskanen and Chris Nash, with contributions of partners on March 2, 2004, (2) Marginal Cost Pricing in the American Utilities, reported in Southern Economic Journal; Vol. 33 Issue 3, p.421, 1967 or via www.connection.abcsohost.com (3) Marginal Cost Pricing Implementation Paths to Setting Rail, Air and Water Transport Charges. Reported

by the European Commission, Partners, 28 November 2002 via www.mcicam.net
(4) Marginal Cost Pricing Implementation Paths to Setting Urban and Inter urban Road Transport Charges, reported via www.transport-research.info updated 25 July 2014, (5) Marginal Cost Pricing in Hydro-Thermal Power Industries: Is a Capacity Charge Always Needed? Reported by M. Soledad Arellano and Pablo Serra, the Universidad de Chile, July 2007 and via www.dii.uchile.cl, (6) Marginal Cost Pricing: A Digest of the California experience, reported in Contemporary Economic Policy, June 29, 2007, volume 17, issue 1, page 20-32, and via www.thefreelibrary.com, (7) Marginal Cost Pricing of Air port Runway Capacity, La Guardian Airport New York, reported by Alan Carlin and Rolla Edward Park, 1970, via www.rand.org/papers/p4134.html, and (8) The Marginal Cost Working Group (MCWG) which already has 50 American utilities companies participating in MCGW, reported via www.nera.com, 2014.

In the environment of Badan Usaha Milik Negara (BUMN), this concept should be applied since it has already been proven in many developed countries, especially to pricing decision which are related to public service or in connection with the lives of many people such as electricity rates, transport rates, water rates, gas prices, fuel prices, and others. The goal is to obtain the optimal price that is not detrimental to the public and does not burden the subsidies from Government budget (APBN). As a hypothesis, it is believed that the implementation of the concept is possible to implement by management of the company in Badan Usaha Milik Negara (BUMN) environment since its internal data is available. What is more important is that the ways the management company convince the stakeholders through communication between agencies, accuracy of data, and preparation of the calculation model in which its results can be quantitatively verified that the price set is to produce optimal financial performance.

RESEARCH METHODOLOGY

The concept of MCP recommends pricing policy (P) and quantity (Q) that can be optimally achieved at the balance of marginal revenue (MR) and marginal cost (MC). Optimal conditions are achieved in the form of maximum profit or minimum loss, such as the recommendation of electricity rate in the preparation of Present and Future Financial Management of State Electricity Company (Aminullah Assagaf, 2014: P48-49).

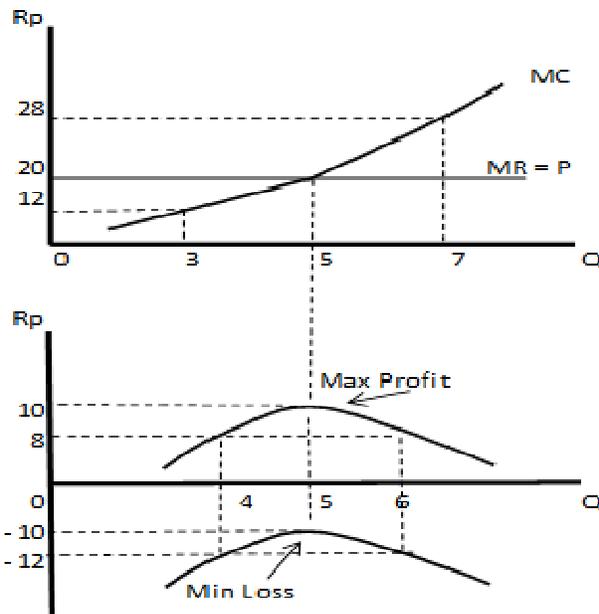
For the implementation of MPC at the Badan Usaha Milik Negara (BUMN) environment, the time series-based secondary data is needed, which are based on the adjusted financial report at a certain period. Cost structure and quantity of data are used in the econometric model sales to obtain in the corresponding cost function as $C = a + bQ^2$. The value of MC is obtained from the derivative of cost function, while MR is obtained from the structure of the selling price and quantity. Further more, based on the balance of $MR = MC$ it is obtained the price state at the best conditions prevailing along the curve of MC. The condition of $MR = P$ as described below is a consequence of price fixing by the

regulator and does not follow the market mechanism as generally occurred in Badan Usaha Milik Negara (BUMN) environment.

The results have showed that the Badan Usaha Milik Negara (BUMN) are still facing difficulties in the implementation of this MCP concept, due to (a) the basis for determining the price which still use numbers based on historical-based financial report so that the reports do not describe realistic conditions, (b) pricing mechanism through technical departments of government and the Parliament or DPR or DPR forward the interests of the political and less attention to the financial aspects and economic optimization, (c) lack of efforts in convincing the stakeholders, (d) few studies or experiences in the country which are related to the implementation of the MCP, and (e) the commitment of management and the company policy which are not supporting yet.

The following is the description of the concept of optimal condition achievement through the balance of $MR=MC$. Cost function $(C) = 40+2Q^2$, marginal cost $(MC) = 4Q$, the price $(P) = 20$, total revenue $(TR) = 20Q$, and marginal revenue $(MR) = 20$, profit $(F) = TR - C = 20Q - 40 - 2Q^2$. If $MR=MC$ is $20 = 4Q$, then $Q = 5$ with a maximum profit of Rp10 is obtained. In the case of Q is smaller or larger than 5, then the profit gained is not as optimal as the profitability calculations described below. Profitability is optimally obtained at $Q = 5$ so that anything that is larger or smaller than that will produce smaller profit, which is Profit $(Q=5) = 10$ (maximum profit), Profit $(Q = 6) = 8$ and Profit $(Q = 4) = 8$ as described below. If the cost function change where the fixed costs increase to 60 or $C = 60+2Q^2$ and the profit $(F) = 20Q - 60 - 2Q^2$. The balance of $MR=MC$ is achieved at position of $Q = 5$, which results minimum loss, therefore it means that the bigger or smaller than that will result a greater loss. Loss $(Q = 5) = -10$ (minimum loss), loss $(Q = 6) = -12$ and Loss $(Q = 4) = -12$ as described above.

Figure 1



In relation to the optimal pricing policy, Evan J. Douglas in his book *Managerial Economic - Analysis and Strategy* (P 423 s/d 427) suggested the balance approach of $MR=MC$ in the calculation model of markup and marginal pricing in the following equation, where; the price elasticity of demand, dP/dQ ; price change, dQ ; changes in the quantity of sales, P ; price, Q ; quantity of sales, and CM ; contribution margin. Markup pricing and marginal pricing are formulated as $P = AVC + X\% (AVC)$ or the equation $P = AVC + CM$ is used. Marginal approach requires $MR = MC$, started from $TR = PQ$, and then proceeded with the calculation of MR and MC . $MR = P + Q (dP/dQ) = P + (QP/P) (dP/dQ) = P(1 + Q/P \cdot dP/dQ) = P(1 + 1/e)$. The conditions of $MR=MC$ that $MC = P(1 + 1/e)$, or the price level $P = MC (E / e + 1)$.

Since MC equals AVC then the equation of the price level above can be $P = AVC (e / e + 1)$. Furthermore, $(e / e + 1) + 1 / (e + 1) = 1$ or $(e / e + 1) = 1 - (1 / (e + 1))$, then the optimal price level in the equation $P = AVC(1 - 1/e + 1)$ or $P = AVC + (-1 / e + 1) AVC$ can be obtained. For example, $e = -5$ then the price set is $P = AVC + (-1 / -5 + 1) AVC$ or $P = AVC + (-1 / -4) AVC$ or $P = AVC + (25\%) AVC$ with make up 25% of AVC . Prices formulated in this model reflect the optimal price mark up which is derived from the balance of $MR=MC$.

RESEARCH AND DISCUSSION

The implementation of MCP is widely used in developed countries, especially by companies associated with public service and which the prices are controlled by the government as a state-owned Enterprises environment; however there has not been a study conducted which its result can lead to its

implementation. Many difficulties are faced by the state enterprises, such as already been explained in the preceding section, that should be overcome, unfortunately the regulator and the decision makers have not willingly realized and committed to the importance of this national regulator. This MCP concept should be nationally implemented in the St MCP concept to optimize the Badan Usaha Milik Negara (BUMN) financial performance, to improve their services to the community, and to reduce the subsidies that burden the Government budget (APBN).

Pricing Mechanism in Badan Usaha Milik Negara (BUMN) Environment

The price fixing in the environment of Badan Usaha Milik Negara (BUMN) is done through (a) the decision of Share holder meeting (RUPS)s, the approval of the government and the Parliament or DPR, (b) management decisions and approval of the Share holder meeting (RUPS)s, and (c) management decisions and approval of the board of commissioners, and (e) management decisions. The mechanism of price fixing by Badan Usaha Milik Negara (BUMN) which are considered as strategic and affect the livelihood of the society is initiated from the management of Badan Usaha Milik Negara (BUMN) to the Minister of Badan Usaha Milik Negara (BUMN) as stakeholder, to be decided in the form of annual Share holder meeting (RUPS)s, then be reviewed by the related department or the minister concerned and be reported to the Coordinating Minister and then decided by the government to be proposed to the parliament.

Having discussed and approved by the parliament, the price fixing proposal is returned to the government and to be followed up into action by the enterprises concerned. In this price fixing process, it requires comprehensive discussion in order to consider all aspects. In contrast to the prevailing price according to the market mechanism, the changes can be applied very rapidly adjusted to the development of industry and macro environment. The model of pricing policy set by the regulator should be more likely offering the implementation of MCP, since the process of price fixing can be discussed and is open to detailed discussion on the calculation mechanism and data used in the model. If necessary, this model can be audited by experts or expert staffs to ensure the accuracy of optimal rate calculation. In favorable conditions, the state enterprises will gain maximum benefit, while at the same time their losses are still subsidized, so that the price set will provide loss at the lowest rate and will result in subsidy burden at its lowest. This optimal condition does not mean to the consumer society, but to set a price in such a certain quantity which can produce the best performance for the state enterprises. This is beneficial for both companies and consumers, since the company policy to set bigger or smaller price and quantity from the MCP simulation results will lead to not maximum profits or not minimum losses.

Selected Case Studies of Badan Usaha Milik Negara (BUMN)

One of the study cases chosen in this study is the national electricity pricing by the Electric Company (PLN) which was established by the stakeholders

of state enterprises (BUMN), the technical department (Minister of ESDM) and the approval of Parliament (DPR). This mechanism is important since electricity service is considered to be strategically related to the life of society at large and affected to the development of business and national industry. The establishment of electricity price fixing in different countries, as well as through the regulators control, is also conducted by supervising the calculation mechanism, data that are used and optimal quantitative models. MCP approach is now used as a technique that is widely used in the calculation of rates of public utilities companies in developed countries. The process of setting rates is mathematically formulated and becomes calculation standard in the price adjustment every time the economic variable changes or the operational cost structure of the company changes. With the adjustment method, the process is more practical, time is relatively short, and the adjustment is gradual or relatively small. Therefore, the process of initial implementation of this approach is needed, through empirical studies and socialization, in order to convince stakeholders

Price and Cost Structure

The price and cost structures of the selected state enterprises can be described by using the time series data of Electric Company (PLN) from 2005 to 2014.

Table 1. The Structure of Tariff and Cost in 2005/2014 (Rp/kWh)

TH	Average Tariff	Operational AC	Surplus (deficit)
2005	591	710	(119)
2006	628	934	(306)
2007	629	920	(290)
2008	653	1245	(592)
2009	670	1005	(335)
2010	699	1012	(313)
2011	714	1178	(464)
2012	728	1181	(453)
2013	818	1178	(360)

Source: Financial report and statistics of Electric Company (PLN)

Price is set much lower than the company operational cost, not including the cost outside the operational cost, Electricity business becomes unattractive to businesses because the rates set are very cheap or result loss. Therefore, the goal is to ease the burden on the public and improve services; however the relatively low rates will cause losses and will reduce services since the market participants are dominated only by Electric Company (PLN) as public utility. Losses occur because people use electricity beyond the normal requirements as explained in the law of demand; the lower the price, the more the product and services are used in the term of quantity. As a result, the Electric Company (PLN) is notable to meet

the needs of both consumers and potential consumers, while other companies but this state company are not interested since it is not worthy for them.

Cheaper price and increased demand result bigger subsidy burden at for the Government budget (APBN), thus in hibiting the development of other sectors and later are detrimental to society in general. For example, the financial fund for other development sectors such as education, health, and other infrastructures are in a weak position since the Government budget (APBN) is only used to subsidy the electricity. For example, based on financial report of the Electric Company (PLN) in 2012 and 2013, the subsidies were Rp 103 trillion and Rp101trillion.

Price Implications on Subsidies

The implication of very cheap price or unadjusted price for several years while the economic variables that affect the cost structure have increased, is incontrollable subsidy burden as reported in *Manajemen Keuangan PLN Masa Kini dan Masa Depan* (Aminullah Assagaf, 2014). When this mechanism is still maintained, then the subsidy burden at the Government budget (APBN), in the near future, will become more severe and even the consumers will feel entitled to the benefit of cheaper electricity rate. This is a very serious implication since the business and industry also enjoy the subsidy given. This can happen because even the government and Parlaiment (DPR) are seem harder to give economic rate to those commercial sectors because considering that their productivity will be troubled, can result inflation and workers termination, even lead to the moving out of the industries to other countries such as Vietnam and Thailand. Besides, the entrepreneurs and the business and industries owners which are sometimes also as members of Parlaiment (DPR), have access to the price adjustments decision making and have strong relationship with the power holder in the government.

This is where the importance of the MCP concept implementation in the environment of Share holder meeting (RUPS)s take place to adjust the amount of subsidy may be adjusted from time to time with the development and changes ineconomic variables that can affect the company's operational cost structure, as well as evaluate the performance of management which is not only service-based but also financial-based as pects. This is because financial report-based performance has some draw backs since the data informed refer to the history of transactions and are not realistic anymore after some periods. This can be even more unrealistic if the management does creative accounting such as management earning, and others which tend to only describe the condition based on targeted condition such as expecting bonus, preparing initial public offering, avoiding the tax burden, and so on.

The Application of MCP in Pricing

By using time series data of electricity company (PLN) from 2005 to2013, the following can be used to calculate the magnitude ofthe cost function parameters by using SPSS software, and further more is used to determine the optimal rates along the MC curve known as MCP. The selection of a cost function

model is considered by the data distribution or scatter diagram, by also considering the determinant coefficient or R^2 adjuster. The cost function used is $C = a + bQ^2$, where the cost C, a as constant, b as directional coefficient and Q is the quantity of kWh sold or electricity consumption. Data of operational cost and quantity of electricity sales (TWh) that are used in the SPSS simulation are:

Table 2. Cost and Selling in 2005-2014

TH	Operational cost (Rp M)	Q (Twh Sales)
2005	76.024	107
2006	105.228	113
2007	111.506	121
2008	160.598	129
2009	135.276	135
2010	149.108	147
2011	185.640	158
2012	203.115	172
2013	220.911	188

Source: financial report and statistic of Electric Company (PLN)

The result of SPSS simulation showed that the cost function was $C = 33533 + 5.656 Q^2$. The parameter of cost function is displayed on the following SPSS table,

Table 3 SPSS Analysis Result

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	33532,960	16029,485		2,092	,075
Q^2	5,656	,732	,948	7,724	,000

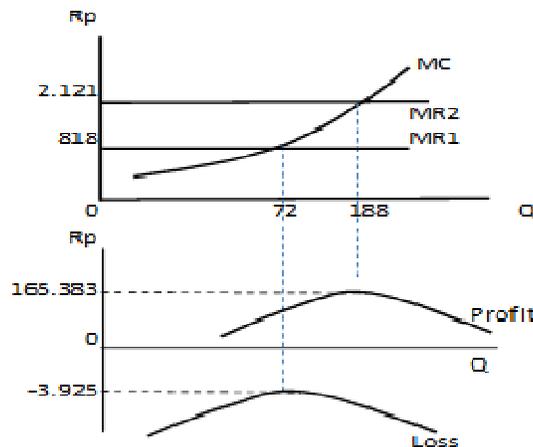
a. Dependent Variable: C

Based on the above cost function, it is obtained that, $MC=11,31Q$. If the actual prices at the last period is at $P = 818$ then $TR = 88 Q$, so it is obtained that, $MR=818$. Optimal condition is achieved at the balance of $MR=MC$, where $MR=P$ so that the MCP is obtained from the equation $P=MC$ which means the $P= 11,31Q$ atau $Q = P/11,31$. If the quantity of sales is amounted to 188 TWh based on the last period realization displayed on the abovetable, then the average rate is $P=11.31 \times 188 = Rp2,121$ per kWh. If the realization of average price is Rp818 per kWh based on the last period realization displayed on the abovetable, then the optimal sales quantity for $Q = 818/11.31 = 72$ TWh. Referring to the actual sales quantity $Q = 188$, the optimal price of Rp 2,121 per kWh, then the optimum profitability is achieved, which is a function of profitability $F = TR-TC$ or $F=$

$2,121Q - 33,533 - 5.656 Q^2$ or $F=(2,121 \times 188) - 33,533 - (5.656 \times 188^2)$, or the maximum profit of $F=165.383$ trillion.

This shows that if the sales quantity is larger or smaller than $Q=188$ then the profit is smaller, such as $Q=180$ profit $F=165.061$, and $Q=200$ profit $F=164.505$ trillion. Based on the price realization $P=818$ with optimal quantity 72 TWh, then the optimal profitability is achieved, which is a function of profitability $F = TR - TC$ or $F=818Q - 33,533 - 5.656Q^2$ or $F=(818 \times 72) - 33,533 - (5.656 \times 72^2)$ or the minimum loss of $F=3,925$ trillion. This shows that if the sales quantity is greater or smaller than $Q=72$ then the loss will be greater, for example, $Q = 60$ loss Rp 4.788 trillion and $Q=80$ loss Rp 4.256 trillion. The realization of sales quantity 188 TWh exceeds the optimal 72 TWh, so that the optimal price of Rp $2,121$ results maximum profit. On the other hand, the realization of the average selling price of Rp 818 per kWh is smaller than the optimal price of Rp $2,121$ per kWh so that the optimal quantity of 72 TWh produces minimum loss. Minimum loss or maximum advantage referred to above are described in the following figure,

Figure 2



If the time series data of 2005 to 2013 is used for the application of the concept of MCP, the description of operational profitability of Electric Company (PLN) that can be obtained is displayed in the following table,

Table 4. MCP (Est TR and C)

n	P (QxMCP)	Q Twh	TR Est	C Est	Profit Est
1	1.211	107	129.579	98.322	31.256
2	1.274	113	143.437	105.251	38.185
3	1.371	121	166.283	116.675	49.609
4	1.459	129	188.284	127.675	60.609
5	1.522	135	204.871	135.969	68.903
6	1.666	147	245.411	156.239	89.173
7	1.783	158	280.919	173.992	106.926
8	1.945	172	334.594	200.830	133.764
9	2.121	188	397.832	232.449	165.383

Source: financial report and statistics of Electric Company (PLN)

Thus, so forth that the concept of MCP can be applied in the short term or applied every time any changes in the economic and financial variables that affect the cost structure of the company's operations.

The Application of MCP through Gradual and Periodic Price Adjustment

The application of MCP is based on the previously agreed calculations by the stakeholders of the company. After this calculation model has already been trusted by the parties, the data have been audited, and have been verified by masters and experts, as well as has been supported by the government and the parliament, this MCP concept can be applied in determining the national electricity rates. Its establishment strategies can be done by considering the adjustment of each quarter or semester, and is initiated by giving socialization to the consumers, for both the calculation techniques and the quantitative models used. Technically it can be applied to describe the optimal rate through discrimination rates but with the average rate equal to MC.

The commitment of company management is consistently required to update its calculations, socialize and convince the parties to adjust the rate needed effectively. The strategy and policy of the company management are required especially in the preparation of the calculations model, the data used, and the communication between departments that play significant role in pricing decisions.

CONCLUSION AND LIMITATION OF THE STUDY

Conclusion

1. The implementation of MCP concept is widely used in developed countries, especially by public companies in pricing electricity rates, water rates, train fare, bus fare, public transport fare, ship rates, and rates of public facilities provided by the government.
2. The MCP concept has not become the focus of national researches or studies, although it has been realized that this concept provides optimal solution for companies, especially Share holder meeting (RUPS).
3. The MCP concept can be used to improve the financial performance of Badan Usaha Milik Negara (BUMN), as well as reduce the amount of subsidies that burden the Government budget (APBN). For instance, the case study of Electric Company (PLN) showed that the company was subsidized for each Rp 103 trillion and Rp 101 trillion in 2012 and 2013.
4. The difficulties faced by the implementation of this MCP concept can basically be overcome if the stakeholders support its implementation. This is where the role of the company management is needed to promote this concept and convince all parties about the MCP concept to be implemented effectively.
5. The implementation of the MCP concept need preparation strategy, covers the preparation of the calculations model, the audit mechanism of the data used, effective communication between relevant institutions and technical implementation of price discrimination system when needed.

Limitation of the Study

This study is limited by the availability of secondary data provided by BUMN. Many state companies which are very relevant with the implementation of the MCP concept, but are facing difficulties in the aspects of the information system limitation which is presented in the form of public information. Therefore, this study is limited to the financial information and statistics of utilization presented by PLN via www.pln.co.id. If there required information was available, then the calculation of rates based on the MCP could have been done by internal state companies. Therefore its implementation would be easier to conduct by each internal state company.

REFERENCES

- Aminullah Assagaf. 2010. *Ekonometrika Terapan – Aplikasi permintaan Tenaga Listrik*. Penerbit Untag Press. Surabaya
- Aminullah Assagaf. 2011. *Manajemen Keuangan – Konsep dan Aplikasi*. Cetakan Pertama. Media Cerdas. Surabaya.
- Aminullah Assagaf. 2013. *Ekonometrika – Aplikasi SPSS*. Penerbit Media Cerdas. Surabaya.

Aminullah Assagaf. 2014. Manajemen Keuangan PLN Masa Kini dan Masa Depan. P65-77 dan P106-117. Zifatama. Surabaya.

Eugene F. Brigham & Phillip R. Daves. 2007. Intermediate Financial Management. Ninth Edition. Prentice Hall. New York

Evan J. Douglas and Scott Callan. 1992. Managerial Economic – Analysis and Strategy. Prentice – Hall International, Inc. Englewood Cliffs. New Jersey.

Jeffrey M. Perloff. 2001. Microeconomics. Second Edition. Penerbit Addison Wesley. New York.

Jey Heizer and Barry Render. 2009. Operation Management. Pearson Education. New Jersey.

Kotler Keller. 2012. Marketing Management. Fourteenth Edition. Pearson Education. New York.

Lawrence J. Gitman and Chad J. Zuercher. 2012. Principles of Managerial Finance. Thirteenth Edition. Pearson Education. New York.

Pauline Weetman. 1999. Financial Management and Accounting – An Introduction. 2nd Edition. Penerbit Financial Time - Prentice Hall. New York.

Rajan Saxena. 2009. Marketing Management. Fourth Edition. McGraw – Hill Education. New York

Wooldridge. 2009. Introductory Econometrics – A Modern Approach. Fourth Edition. South – Western Cengage Learning. USA.

Spyros Makridakis, Steven C. Wheelwright, Rob J. Hyndman. 1998. Forecasting – Method and Application. Third Edition. John Wiley & Sons, Inc. USA.

www.pln.co.id Laporan Keuangan PLN tahun 2005 sampai dengan 2013

www.pln.co.id Statistik PLN tahun 2013

www.mccam.net 2004. Implementation of Marginal Cost Pricing in Transport – Integrated Conceptual and Applied Model Analysis, yang dilaporkan melalui by: European Commission – DG TREN; Fifth Framework. oleh Esko Niskanen and Chris Nash.

www.connection.abcsohost.com. 1967. Marginal Cost Pricing in American Utilities, yang dilaporkan melalui Southern Economic Journal; Vol. 33 Issue 3, p421.

www.mccam.net . 2002. Marginal Cost Pricing Implementation Path to Setting Rail, Air and Water Transportation charges. European Commission.

www.transport-research.info . 2014. Marginal Cost Pricing Implementation Paths to Setting Urban and Interurban Road Transport Charges

www.dii.uchile.cl .2007. Marginal Cost Pricing in Hydro – Thermal Power Industries : Is a Capacity Charge Always Needed ?. M. Soledad Arellano and Pablo Serra, Universidad de Chile.

www.thefreelibrary.com .2007. Marginal Cost Pricing : a digest of the California experience Contemporary Economic Policy. volume 17, issue 1, page 20 – 32.

www.rand.org/papers/p4134.html.1970. Marginal Cost Pricing of Airport Runway Capacity, LaGuardian Airport New York. Alan Carlin dan Rolla Edward Park.

www.nera.com .2014.The Marginal Cost Working Group (MCWG). 50 perusahaan utilities America sebagai participatingMCGW.