ANALYZING MONOPOLY CONDITION OF FIXED WIRE LINE INDUSTRY IN INDONESIA

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ABSTRACT
The wide use of cellular and wireless phone, as a result of the growing development in ICT, has had a major contribution to the decrease of the fixed wire line industry’s growth in Indonesia. Thus, this research studied the structure, conduct, performance and the monopoly system of the fixed wire line industry in Indonesia so as to get a more comprehensive observation over the cited industry. The major secondary data used in this research was taken from the major player in the industry (Telkom) for its control over 99% of the market. The study shows that the fixed wire line industry is concentrated over one major player. This market power initially came from the government protection. However, after the liberalization of telecommunication, it has come as the natural one. Using the Porter framework, it is found that the power belongs to the lack of industry rivalry, the huge entry barrier, and the weakness of buyer and seller bargaining power, while the biggest threat comes from the product substitution. The monopoly analysis shows that as a result of the price regulation’s implementation, the game tool left for the monopolist has come only from the price discrimination. The regulation has also directed to the poor performance of this industry compared with the cellular one in competitive market. However, as the government takes part as a major shareholder in the monopolist, the social expenses of the industry were lower than that of the cellular.
Key words: Structure Conduct Performance

1. INTRODUCTION
With the growing development of ICT (Information and Communication Technology) in the last decade, the international commitment to hold an open, transparent and widely spread telecommunication industry all over the world has come into reality. So far, based on PP No. 52/2000, 9th article, the ICT implementation in Indonesia has been divided into fixed line (that consists of fixed wire line and nircable) and mobile (cellular).

The high demand of mobility and a rapid and accurate access to the latest information nowadays has changed the Indonesian preference from a conventional means of communication (fixed wire line) into nircable and cellular. Thus, it caused a significant decrease on the fixed wire line industry’s growth. However, the slow growth of the industry still can be optimized through the implementation of appropriate ICT regulations since the Indonesian teledensity was still lower than that of the other ASEAN countries.

So as to facilitate the formulation of cited regulation and to give a more comprehensive observation over the fixed wireline industry, this research will study about the Indonesian fixed wire line industry using SCP (structure conduct performance) paradigm and monopoly theory in the microeconomics.

PROBLEMS

Based on the description about the latest situation of the telecommunication industry in Indonesia, especially the fixed wire line industry, this research will observe and map the structure, conduct and performance of the industry using SCP paradigm. Then, the output will be used to analyze the monopoly condition within the industry compared with the current monopoly
theory and the effect of the ICT regulation implemented by Indonesian government.

Thus, the study hopefully will benefit the government—as an additional consideration in formulating an appropriate regulation to optimize the fixed wire line industry’s growth—and the current or potential player in the industry—in formulating the best strategies so as to get a better position and more profits.

2. RESEARCH METHOD

Structure, conduct and performance of the industry will be identify and measured using the SCP paradigm. Then the SCP output will be used to analyze the monopoly system within the industry compared with the current monopoly theory and the the effect of the ICT regulation implemented by Indonesian government.

The major secondary data used in this research came from PT Telkom and also from related research institutions such as BPS and BPPT. The data period is 2000 – 2007.

The study started with an overview of the telecommunication industry in international, regional (ASEAN) and national scope, and the fixed wire line industry profile in Indonesia. Next, the quantitative variables for SCP paradigm and monopoly system were calculated. After analyzing the relationship of the output, the next step was qualitative analysis of the monopoly system and the effect of the government regulation in fixed wire line industry.

Details about the research’s methodologies are given below:

3.1. Overview of The Telecommunication Industry

Before identifying and calculating the quantitative variables in SCP paradigm, using data from Telkom, BPS, BPPT and related research institutions at first, this study gives an overview of the telecommunication industry so as to have a better understanding about the industry trend, especially for the fixed wire line industry.

The overview includes the technology, transmission media, application of telecommunication technology and the common problems in telecommunication industry. It also discusses the growth trend for each telecommunication segment in international, regional and national scope. This is aimed to observe the comparison of each segment’s growth.

This stage also gives details about the fixed wire line industry such as the market growth, customer segmentation, profit contribution, the teledensity and spread rate in all over Indonesia.

3.2. Identifying The Industry Structure

After the telecommunication industry overview, the next step is identifying and calculating the quantitative variables of the industry structure. The quantitative variables are HHI nad CR2 (concentration ratio of two biggest company within fixed wire line industry). Both ratios are commonly used to measure the distribution and concentration rate of the companies in fixed wire line industry. By that, the company’s market power in the industry revealed. Below are the formulas to calculate the HHI and CR2:

\[ \text{CR}_m = \sum_{i=1}^{m} s_i \]

\[ HHI = \frac{\sum_{i=1}^{m} s_i^2}{N^2} \]

a) Concentration Ratio

If we sort the company market share in descending order, the first company having the biggest market share, the second company having the second largest market share and so on, the concentration ratio from m companies (CRm) is the sum of market share from m biggest companies:

\[ \text{CH}_m = \sum_{i=1}^{m} s_i \]

b) Herfindahl-Hirschman Index (HHI)

\[ HHI = \sum_{i=1}^{m} s_i^2 \]

After that, the qualitative variables in the structure industry will also be discussed in this stage, such as types of products, the total and size of the seller and buyer distributions, the differentiation rate and entry barriers.

3.3. Identifying The Industry Conduct

After analyzing the industry structure, the next step is identifying the industry conduct, including the quantitative data such as fixed wire line and the proportion of marketing expenses to sales, and the qualitative data like pricing strategy, market...
coordination, advertising activities, and research and development. The fixed wire line pricing strategy to discover the price discrimination conduct while the marketing expenses to sales proportion is used to find out how the marketing expenses affect the product or service sales.

3.4. Measuring The Industry Performance

After the industry structure and conduct were identified, the next step is measuring the fixed wire line industry performance. The performance is measured using financial ratios, productivity rate and operational rate. The financial ratio includes profitability ratio includes return on asset (ROA) dan net profit margin, asset utilization ratio (by using total asset turnover) and leverage ratio (that using debt ratio). This research also uses expenses to revenue ratio to explore the efficiency rate of cost spending. Meanwhile, productivity rate is measured by comparing the total pulse production with the total employees and the operational rate is calculated by comparing the total phone line with the total employees.

3.5. Identifying The Porter’s Five Forces

After discovering the industry structure, conduct and performance, this research also identifies the Porter’s Five Forces in fixed wire line industry. The 5 forces are the industry rivalry, supplier and buyer bargaining power; threaten from substitution or complementary products or services and entry barrier. Then a comprehensive analysis of the fixed wire line industry competition and forces will be given using the previous results.

3.6. Identifying Monopoly Condition

The analysis of the monopoly condition in this research is focused on discovering the relationship between the structure, conduct and performance previously identified and measured, and revealing the background of the monopoly emergence in the fixed wire line industry, the price discrimination conducted by the monopolist and the regulation effects on the industry.

In this stage, the welfare cost is calculated with the welfare economics approach. The formula is given below:

\[
\text{Welfare Costs} = \pi A - T + \frac{1}{2} (\pi + A) = \frac{2}{3} (\pi + A) - T
\]

Where:
- \(\pi\) = Producer profits
- \(A\) = Advertising expenses
- \(T\) = Tax

By knowing the welfare cost, we can observe how much the social loss that the society suffered from, in relation with the conduct done by the monopolist.

4. RESULT AND DISCUSSION

4.1. Fixed Wire Line’s Industry Structure

The calculation for HHI and CR2 in fixed wire line industry shows that the value for both variables is close to 100%. This means that the fixed wire line industry in Indonesia is highly concentrated and that market power is held under one major player, Telkom.

Meanwhile, the qualitative variables analysis for the industry structure are given below:

1) Type of Product or Service
The product in fixed wire line industry is the fixed line connection through cable unit (SST). The SST construction takes more time and cost compared with that of the nircable.

2) The Total and Size of The Player In Industry
In Indonesia, there are only 3 players in the fixed wire line industry. Telkom is the one with the most market share among them that can provide national service.

3) The Total and Size of The Buyer In Industry

![Figure 1. Comparison Between HHI and CR2 Value](image)
The fixed wire line market share covers almost every province in Indonesia.

4) Product Differentiation
The fixed wire line services has no significant differentiation with the nircable and cellular ones.

5) Entry Barrier
This industry has a high sunk cost used in fixed asset. The huge entry barrier comes from the economic of scale and the production efficiency scale.

From the cited analysis, it is shown that, in overall, the qualitative variables have significant impacts on the industry concentration.

4.2. Fixed Wire Line's Conduct
The analysis of the industry conduct covers:

a) Pricing Strategy
With a huge market share, Telkom –as the monopolist– has been conducting the price discrimination. It’s been done by differentiating the phone rate based on the market segment, time line and the call distance.

b) The Marketing Expense
Besides the pricing strategy, this research also analyzes the company conduct from its marketing expenses. Figure 2 below shows the comparison of the marketing expenses’s proportion from fixed wire line segment (in non competitive market) Telkom’s cellular segment (in competitive market). This is to show the conduct differentiation from a different market type. The cellular segment, so as chosen for this segment, has been long introduced in Indonesia so that its historical data was more stable. Besides, it has a different market type with the fixed wire line industry.

From the above picture, it is shown that the marketing expenses for the fixed wire line segment was always lower than that of the cellular. The marketing expenses used here was a projection based on the segment profit contribution to the total profit of Telkom. Nevertheless, the reality showed that the marketing expenses for the fixed wire line segment was smaller than the calculation result in this research. This is because of the fixed-wire phone has become a substantial need for most of the society. Thus, it didn’t require a high cost in promoting the product or services, The marketing expenses was mainly used in educating the consument of the latest Telkom’s policies, code adjustment, phone rate charges, etc.

4.3. Fixed Wire Line’s Performance
The performance measurement in this research, using the financial ratios, productivity rate and operational rate, can be summarized as follows:

a) Financial Ratios For Cable and Cellular Segment of Telkom
To map the cable and cellular segment’s performance, the financial indicators used are debt ratio, net profit margin, return on asset, total asset turnover, net income and expenses to sales proportion.

- Debt Ratio: The shareholder risk in cable segment was higher than that of the cellular.
- Net Profit Margin: Telkom’s profit from cellular segment was twice as big as the cable’s. Thus, the cable segment is less profitable for Telkom than that of the cellular one.
- Return on Asset (ROA): The cellular’s profitability rate was higher than the cable’s.
- Total Asset Turnover: The assets’s efficiency rate for the cellular segment was higher than that of the cable.
- Net Income: Net profit from cellular segment still grew each year while the cable’s showed a fluctuative pattern.
- Expenses to Sales Proportion: The expenses use in cellular segment was more efficient than that of the cable.
In summary, the financial performance of the cable segment was poorer than that of the cellular one.

b) Productivity Ratio

Figure 3 below depicts the productivity performance growth of the cable segment from year 2002 – 2007, indicated as the ratio between the SST cable produced and the total number of Telkom’s employees.

![Figure 3. Productivity Performance of Cable Segment](image)

In summary, from the Porter's Five Forces analysis, the competitive power in fixed wire line industry comes from the poor industry rivalry, the huge entry barrier, and the weak supplier and buyer bargaining power. While the biggest threaten for this industry comes from the existence of substitution product and services.

5.4.5 The Fixed Wire Line Industry’s Monopoly System Comparison

The monopoly system analysis covers the background, the relationship between structure, conduct and performance of the industry and the welfare costs.

1. Background of The Monopoly Emergence In Fixed Wire Line Industry

The monopoly system in fixed wire line industry initially caused by government regulation which focused on the telecommunication line spread in Indonesia majorly using the fixed wire pjiene. Based on *Telecommunication Act* No.3/1989, the government stated that the private sector participation in Indonesian telecommunication industry was enabled only through the cooperation with Telkom or Indosat. Besides that, the government also gave the license of telecommunication services for local and interlocal connection to Telkom in PP No. 25/1991 and PP No. 8/1993. And then, to enlarge the telecommunication line area in Indonesia, in Menhub No. KM 39/1993, Telkom was allowed to arrange the operational cooperation scheme (KSO) with the KSO partner within the Telkom's regional division area. This scheme was started in 1996. It’s clear that from the beginning, the Indonesia telecommunication industry development has been directed to the cable (fixed wire line). And during the economic crisis in year 1997 – 1998, Telkom's KSO partners di some areas were bangkrupt. Therefore, Telkom finally
acquired its KSO partner, except KSO in VII Division.

Indirectly, the economic crisis that knocked down Indonesia in 1998 has been one of the enabler of the natural monopoly existence in fixed wire line industry. Liberalisation in telecommunication sector that has been determined by Indonesian government through UU No.36/1999—that emphasizes the prohibition for the incompetitive competition and monopoly existence—can not change the competition pattern in fixed wire line industry in Indonesia. Especially since the structure analysis stated before shows that there is a huge entry barrier in this industry. But nowadays, fixed wire line industry in Indonesia faces tight competition from cellular and nircable segments.

2. Relationship of The Fixed Wire Line Industry’s Structure, Conduct and Performance

With its huge market share, Telkom has the power to apply the price discrimination policy for the access and acable phone rate. The cable phone customer's have no bargaining power affecting its pricing policy. By that, Telkom eventually has the full control in setting its desired margin maximally.

However, the government has anticipated the malpractice of Telkom’s market power with the phone rate regulation for all telecommunication operators in Indonesia. Thus, Telkom was unable to set a high phone rate which incurs high loss for the consumers. Besides, the government regulation instructing a steady growth of fixed wire line development maximum 5% from Telkom’s development plan, has left only a narrow allowance for Telkom to influence its output price by varying the output number. So, as a monopolist, Telkom was unable to influence its output number and price due to the government’s tight policies. Based on this condition, Telkom’s strategy to optimize its profit form the cable segment was done by improving its process efficiency and introducing more innovative services such as instant internet access and provides high bandwidth capacity.

Compared with the current monopoly theory which stated that the monopolist can influence its output price, the Telkom condition wasn’t fit best with the expected monopoly conduct.

The government tight policies and prohibitions might be the major cause of the fixed wireline industry’s poor performance compared with the cellular one. The other cause might come from the weak competition level within the industry so that the incentives to apply the process efficiency and innovation were unattractive. This condition matched best with the monopoly theory which stated that a highly concentrated industry will cause a poor performance of the players compared with that of cellular’s in competitive market.

3. Welfare Cost

One of the monopolist characteristic is its premium price, much higher than its marginal cost. From the consumer’s point of view, this is considered unfavorable. In welfare economics, it is stated that in equilibrium state, of one party get a better of, there must be another party getting a worse of. This loss is called as the welfare cost that is calculated from the producer’s profit. It shows the monopoly inefficiency in relation with the premium price above the marginal cost. The welfare cost for the cable and cellular segments is shown in Figure 5 below.

From the above picture, we can observe that the welfare cost for the cellular segment increase overtime while the cable segment’s had a decreasing tendency until 2006, though it went up again in 2007. This condition shows that even the cellular segment is in the competitive market, the fact said that it caused more social loss to the consumers than the cable one did.
5. CONCLUSION

Based on the former analysis, the research can be summarized as follows:

1) Empirically, the fixed wire line industry in Indonesia has a monopoly structure. The causes are the high industry concentration indicated with the HHI and CR2 values close to 100% for the last three years (2004-2006) and the huge entry barrier.

2) Telkom’s conduct as the monopolist shows in its price discrimination policy based on the market segment, call duration, and call distance. Meanwhile, with its huge market power, the advertising expenses in fixed wire line industry can be minimized.

3) Telkom’s financial performance for cable segment is poorer than that of the cellular one. This is due to the strong competition from nircable and cellular segments and the weak competition level within the industry. Nevertheless, from 2002 – 2007, the fixed wire line industry’s productivity tends to increase though its operational performance decreasing.

4) Initially, the existence of monopoly power in fixed wire line industry in Indonesia is due to government protection. But, during the economic crisis in year 1997-1998, this monopoly source turned into the natural one. And the liberalization of telecommunication industry in Indonesia can’t change the industry structure, though it can affect its performance, especially the financial one.

6. REFERENCES


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