This research tried to identify the real market condition related to unstable of palm cooking oil price whereas Indonesia is the second largest country producing CPO in the world by observing the structure, conduct, and performance of palm cooking oil industry using Structure Conduct Performance (SCP) method. The market structure is identified to know the size of market share and entry barrier in palm cooking oil industry. Afterward, palm cooking oil pricing will be identified to know formation of conduct. To know the relationship between variables indicating structure and industry performance we used econometric analysis using multiple regression analysis, so the factors that affect the performance (affect by the rising of palm cooking oil price) can be identified. The next step is evaluating government policies in stabilizing domestic palm cooking oil. The research results by collecting data from the year 2001-2005 are: there is the domination behavior from some big companies in order to decide the price of palm cooking oil as consequences of Oligopoly market structure (with four largest companies concentration ratio (CR4) is more than 0.4). The average profit margin (PCM/Price Cost Margin) of palm cooking oil industry is more than 0 (between 0.2 – 0.35). It means that company has a power to control the market. And also from the research is known that The government policies to stabilize palm cooking oil price are not effective because the palm cooking price still increases until now. 

Key words: palm cooking oil industry, Structure Conduct Performance, Policy of palm cooking oil industry

1. INTRODUCTION

As the second largest country producing CPO (Crude palm oil) in the world, Indonesia should have had the power to control domestic palm cooking oil price. Even though the government made serious efforts to stabilize the price by establishing policies, such as export tax, as a matter of fact, palm cooking oil price is unstable and keep rising, particularly since Indonesia’s economy crisis in 1998.

Palm oil companies more prioritize their commodities for export than for the domestic’s needs. As the impact the palm cooking oil price is unstable. And the other reason why palm cooking oil price is unstable is the unhealthy of competition in palm cooking oil companies as the consequences of the domination behavior from several big companies in order to establish palm cooking oil price.

The unstable of palm cooking oil made researcher want to identify the real market condition in palm cooking oil industry in Indonesia. from the research will be known whether there is the unhealthy of competition of palm cooking oil companies as the consequences of the domination behavior from several big companies in order to establish the capacity and the price of palm cooking oil or not. This behavior was influenced by the market structure of palm cooking oil industry.

From structure analysis will be known the type of market structure in palm cooking oil industry whether monopoly, oligopoly, or perfect competition. Market structure was influenced by internal factor, such as market concentration and external factor, such as entry barrier and the government policies.
And for observing the structure, conduct, and performance of palm cooking oil industry use Structure Conduct Performance (SCP) paradigm.

And also from this research will be evaluated the impact of government policy in order to stabilize the price and capacity of palm cooking oil. So that will be known factors that influence the unstable price of palm cooking oil and also can be used as the suggestion for government to draft the effective policies, not only will be useful for community and customer but also for the company.

2. THEORETICAL BACKGROUND

2.1 The Structure Conduct Performance Approach

Structure Conduct Performance is a method to analyze certain industrial organization. Industrial organization is a special fraction from economics that describes how a market or an industry is formed into a particular organization and how this organization affects the market's performance.

The Structure Conduct Performance Approach was formulated by an economist from Harvard, Edward S. Mason (1949) together with his colleague that is also his student, Joe S. Basin (1959). Mason and Basin declare that there is a direct and powerful relationship between market structure in an industry (market structure), business activities and behavior of market creators (market conduct), and the industry's performance itself (market performance) [2].

a) The industry's structure

In economics perspective, structure is the supply and demand behavior of products and services which are influenced by: the type of item being produced, producer's quantity and size, customer's quantity and size, product differentiation, and easiness to enter the industry. If barrier to entry the industry is getting bigger, the market structure concentration level is also getting bigger.

• Market Concentration (CR)
  Concentration ratio is the cumulative sum of market share dominated by N amount of companies that have the biggest market share and is also called N Firms ratio.

\[
CR_n = \sum_{i=1}^{n} S_i
\]

b) Entry Barrier

Entry barrier is the obstacle for new players that are willing to enter the industry. One of the projection that can be use to measure this entry barrier is MES (Minimum Efficiency Scale). This variable indicates a condition where increasing the output produced will cause production cost reduction occur in long term. This is the MES calculation [3]:

The numeric value 50% in the function above is not absolute. The value can be greater than 50% if the market structure is in natural monopoly condition.

After recognizing the market structure of an industry especially the market concentration level, the market's characteristic can be identified whether it is monopoly, oligopoly, monopolistic, or perfect competition. A market can be called [4]:

• monopoly if the CR4 (market concentration level of the four biggest companies) value is greater than 70%.
• Oligopoly if the CR4 value is greater than 40% but less than 70%.

b) The Industry's Conduct

Behavior/conduct in industrial economics can be defined by how a company struggles to attain market share. In reverse words, behavior is a reaction pattern and adjustments by companies in an industry to achieve their goals and survive in the competition.

In business cases, each company in an industry has different characteristics of behavior. In this context, behavior can be perceived from several aspects: price behavior, product strategy, research and development, and advertising. An imperfect market competition drives the behavior of an industry towards kolusi. This situation is caused by the fact that the authority of big companies to determine market price is escalating. Especially for the oligopoly
market structure, the reason a company does kolusi is to gain greater profit.

c) The Industry’s Performance

Performance is the result of work which is influenced by the industry's structure and behavior and it is usually indicated by how big is the market share or how big the profit is gained by a company in an industry. One of the projections for performance is profit margin (Price Cost Margin / PCM) [5]. The formulation for Price Cost Margin is:

\[ PCM_j = \frac{VA_j - W_j}{O_j} \]  

\( VA_j \) = added value industry \( j \)  
\( W_j \) = labor cost \( j \)  
\( O_j \) = output industry \( j \)

2.2. Relationship Analysis between Structure, Conduct, and Performance.

The relationship between structure, conduct and performance is complex and has a lot of dependencies. Edward S. Masson once said that if you want to observe events at the market, where the price is high, you have to evaluate its performance first. The performance itself reflects the structure of the industry. So, it can be concluded that if you want to identify whether the market's performance is good or bad, you have to study the market structure that affect the market behavior first. Market structure affects market behavior, and on the other hand, market behavior, with its strategic behavior, can also affect market structure. Thus, market structure and market behavior are interrelated in determining market performance.

The relationship between structure and performance can be identified quantitatively by using econometrics analysis with regression analysis.

3. RESEARCH METHOD

This research will be begun by identify the problems. In this case will be analyzed of the structure, conduct, and performance of palm cooking oil industry in order to identify the real market condition. Identification process will be used Structure Conduct Performance paradigm.

There are several steps to identify the structure, conduct, and performance, such as: Collecting data, Processing data, and analyzing the result from processing data. There are two types of data will be used, which are data secondary and primer. Sources of data secondary are from LPEM, Depperin (Departemen Perindustrian), BPS (Badan Pusat Statistik), etc. And data primer are from interviewing the related side. Data secondary will be used for processing data, and data primer will be used for providing analyze process. For analyzing the structure and performance will be used data secondary from year 2001-2005, and for analyzing conduct will be used data secondary from 2003 January-2008 March.

After identifying the structure, conduct, and performance, will be analyze the relationship between structure and performance in order to identify what variables from structure that influence performance of palm cooking oil industry. According to the SCP theory based on journal [6], performance (with the proxy of Price Cost Margin) are very influenced the variables of structure, which are four largest companies concentration ratio (CR4) and entry barrier (with the proxy of Minimum Efficiency of Scale). From this relations will be known the causes of unstable palm cooking oil price. And finally, will be identified whether there is an unhealthy competition as consequences of the domination behavior from several big companies in order to establish the capacity and the price of palm cooking oil or not. According to the journal, one of the variables that influence performance/profit margin in company is degree of market demand. So this variable will be used as one of variables will be investigated.

Processing data will be conducted using Ordinary Least Square (OLS) for pooled-cross section data. pooled-cross section [7] is used to identify the factors that influence the instability of palm cooking oil price by analyzing the relationship between structure and performance. Basically, this type of data use data that arrange in cross section in several periods.
After identifying the structure, conduct, performance, and the relationship between structure and performance, next step is to evaluate the government policy in order to stabilize the price of palm cooking oil, such as export tax policy, DMO (Domestic Market Obligation), and free of PPN tax.

4. RESULTS AND DISCUSSION

The cooking palm oil CR4 calculation outputs from 2001 until 2005 are shown in Table 1. below.

Table 1. Concentration Level of Palm Cooking Oil industry

<table>
<thead>
<tr>
<th>Year</th>
<th>CR4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>0.51025452</td>
</tr>
<tr>
<td>2002</td>
<td>0.49692734</td>
</tr>
<tr>
<td>2003</td>
<td>0.67455338</td>
</tr>
<tr>
<td>2004</td>
<td>0.46116361</td>
</tr>
<tr>
<td>2005</td>
<td>0.52572336</td>
</tr>
</tbody>
</table>

Based on the calculation result above, it shows that the concentration level of the four largest cooking palm oil companies in Indonesia is significantly high every year, above 40% but below 70%. It means that the market structure of this industry is an oligopoly one.

Calculating how big is barrier to entry this cooking palm oil industry is performed afterward and the results is projected in MES (Minimum Efficiency of Scale). Figure 1. below shows the growth of CR4 and MES value from 2001 until 2005.

Barrier to entry the cooking palm oil industry in Indonesia is relatively high because besides it requires a lot of capital, there are not many participants in the industry (less than 70 companies) contrasting with the CPO, crude palm oil, industry itself that has more than 200 participants, whereas in fact the potential to gain profit from this industry is rather high because cooking palm oil is one of peoples main needs.

After comprehending the market structure, identifying the cooking palm oil industry's behavior is conducted afterwards. An oligopoly market usually affects the price decision by remaining companies. Realizing that behavior, this research tries to figure out how cooking palm oil companies decide their prices. Is it influenced by CPO domestic price, or CPO international price, or maybe both of them. The facts that will be included are cooking palm oil domestic price, CPO domestic price, and CPO international price from January 2003 until March 2008.

The result below shows all factors that affect cooking palm oil domestic price decision by applying monthly data starting from January 2003 until March 2008 using OLS (Ordinary Least Square) regression method in Eviews 4.1.

CPO domestic price variable (CPODOM) is significant by statistics with a = 5%, oppositely CPO international price is not significant by statistics with a = 5% which means that this variable doesn't affect the cooking palm oil domestic price decision.

By scrutinizing the cooking palm oil price decision behavior, thus the variable that influences price decision is CPO domestic price not the international price. So, all this time, the alibi declared by several business units that cooking palm oil price fluctuation is affected by CPO international
price is not true. Everything is just a domestic market game in order to gain greater profit. Furthermore this fact potentially indicates that there is an engagement by certain integrated groups of business units to conquer the market (kolusi) in order to restrict their products distribution and sale.

The next step is identifying the cooking palm oil industry performance which will be projected in PCM (Price Cost Margin). Table 3. Below shows the PCM value of cooking palm oil industry from 2001 until 2005.

<table>
<thead>
<tr>
<th>Year</th>
<th>PCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>0.3211</td>
</tr>
<tr>
<td>2002</td>
<td>0.2209</td>
</tr>
<tr>
<td>2003</td>
<td>0.2920</td>
</tr>
<tr>
<td>2004</td>
<td>0.2449</td>
</tr>
<tr>
<td>2005</td>
<td>0.2676</td>
</tr>
</tbody>
</table>

Cooking palm oil industry PCM value is larger than learner index 0 (0.2 - 0.3). It means that there is market supremacy among cooking palm oil companies especially on big companies.

After identifying the market's structure, behavior and performance, the next step in SCP method is analyzing the relationship among these three variables. This regression analysis uses Eview 4.1 software in presenting the relationship between the dependent variable (performance which is projected in PCM) and the independent variables (CR4, barrier to enter the market which is projected in MES, and the market demand level) using facts from all business units in the cooking palm oil industry from 2001 until 2005. Table 4 below displays the regression analysis result.

### Table 4. Results of the Relationship Analysis between Structure, Conduct, and Performance

<table>
<thead>
<tr>
<th>varibel independen</th>
<th>Koefisien Regresi</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>5,4</td>
<td>0,0001</td>
</tr>
<tr>
<td>CR4</td>
<td>7,16</td>
<td>0,0281</td>
</tr>
</tbody>
</table>

Based on the regression analysis result, the three variables; market concentration of the four largest companies (CR4), barrier to enter the market (MES), and cooking palm oil demand level (DGDROW), are significant by statistics with a = 5%, which means that all of these variables affect the variation level of market performance which is projected in profit level (PCM).

The multiple regression function becomes:

\[
PCM = 548,3 + 7,17CR4 + 26,5MES + 0,73DGDROW3
\]

According to the result of regression analysis, there is more and more evidence of the domination or collusive behavior from several big companies that it was proven from the statement that four largest companies concentration ratio (CR4) influenced performance of palm cooking oil industry (with the proxy of Price cost margin/PCM). We can said that four largest companies have contributed a lot to the profit/performance of palm cooking oil business. It means that fluctuation of palm cooking oil price is one of the impact of the domination/collusive behavior from several big companies. It was supported from price conduct investigation that palm cooking oil price was very influenced of domestic palm oil domestic, not from international palm oil. Besides that, almost several big companies in palm cooking oil are group of palm oil company that supply CPO for palm cooking oil substances, such as: PT. Musim Mas, PT. Inti Benua (are groups of MUSIM MAS Group), PT. Multimas Nabati Asahan, Bukit Kapur Reksa (are group of BUKIT KAPUR REKSA), PT ICO Mas Tunggal, PT. SMART (are group of SIMAR MAS Group), Perusahaan Salim Group, Raja Garuda Mas group, etc.

According to coefficient value result of regression analysis, Minimum efficiency of scale (MES) gives the biggest influence to performance/profit of palm cooking oil industry. It was impacted of the cluster from several companies that cluster their financial capitals in order to decreasing cost. In this
case, there are two cluster, cluster of company groups and cluster of marketing group by several companies, whether they organize it themselves or they outsource one company to handle that.

Degree of market demand variable is also influence the performance of palm cooking oil industry on a positive scale. Besides that, from this variable indicated that the increasing of market demand push quota cartel conduct/behavior. Because the companies realize the increasing of degree market until they know they have a chance to increase their profit. By the output cartel, the quotas production are less than degree of market demand. As the impact, the palm cooking oil will increase then they get more profit.

The government keep trying to stabilize price cooking oil price by way of applying policies, such as export tax (PE) that always been revised and the end of 2007, the government applied Domestic Market Obligation (DMO) policy in order to guarantee the supply of palm cooking oil substances. Unfortunately, these policies is not effective, the price keep unstable. This is the roadmap of policy evaluation that applied by government:

- Progressive export in the end of 1994 (tax between 40% - 75%)

The objective of progressive export is to decrease the CPO export flow to international market and not immediately to restrain crude palm oil/CPO price in domestic market. But it was not doing well, like showed in year 1994-1994, the price kept increase significantly. (can be seen in Table 5.)

- 1997 → CPO Export Prohibition

Decision of Export CPO prohibition was the impact of the increasing of international CPO price that was influenced by ELNINO. It made the change of export commodities from CPO product to PKO (Palm Kernel Oil). and for this products was increase until 50%.

- 1998 and 1999 → Export tax was 40% and 60%

Export prohibition was take off as the consideration from the government that thought the export activity would increase devised but still concerned about domestic needs with large tax until 60%. But it was still not effective, Particularly when the economy crisis was held in Indonesia in 1998, the Companies more prioritize their commodities to export than domestic because they got more profit.

Figure 2 is the development graph of supply and demand degree of Domestic CPO for palm cooking oil substances. we can saw that CPO supply was less than market demand.

Table 5. The development of Palm Cooking Oil and Domestic CPO Price in 1994-1996

<table>
<thead>
<tr>
<th>TAHUN</th>
<th>Rata2 Harga minyak Goreng (000Rp/ton)</th>
<th>Rata2 Harga CPO Domestik (000Rp/ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>1250</td>
<td>988</td>
</tr>
<tr>
<td>1995</td>
<td>1463</td>
<td>1275,2</td>
</tr>
<tr>
<td>1996</td>
<td>1821</td>
<td>1147,9</td>
</tr>
</tbody>
</table>

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Figure 2 is the development graph of supply and demand degree of Domestic CPO for palm cooking oil substances. we can saw that CPO supply was less than market demand.
5. CONCLUSIONS

According to analysis and the objectives of the research, can be concluded:
1. Market structure of palm cooking oil industry in Indonesia is Oligopoly (with four largest companies concentration ration from year 2001-2005 are more than 40%.
2. There is the collusive behavior from some big companies in order to decide the price of palm cooking oil as consequences of oligopoly market structure that can be identified by its performance (With the proxy of PCM value which more than 0).
3. From regression analysis can be identified the factor that very influence the performance is entry barrier. And the equation result from regression analysis is:

   \[\text{PCM} = 548.3 + 7.17\text{CR4} + 26.5\text{MES} + 0.73\text{DGDROW3}\]

4. The impact of policy in order to stabilize palm cooking oil price concerning to upper market (palm oil) of palm cooking oil and palm cooking oil itself can be concluded as:
   - Tax export policy will not effective if the world demand is increasing. The reason is companies more prioritize their commodity to export needs than domestic needs.
   - The government policy that happen directly that is by subsidy and free of PPN 10% only make short impact to palm cooking oil market. Can be shown by the unstable of palm cooking oil that happen immediately.
   - The short impact only in oligopoly structure only become a medium of several big companies to create strong position in order to restrain the supply of palm cooking oil.

6. REFERENCES

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