ANALYSIS ON CONCENTRATION AND EFFICIENCY OF MEAT PROCESSING INDUSTRY IN INDONESIA

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ABSTRACT

The purpose of the study is to find out correlation between industrial concentration and efficiency as well as variables that affect concentration and efficiency of meatprocessing industry in Indonesia. The data used are the result of the 1999-2013 annual survey for big and medium-scale industry by Indonesian Central Bureau of Statistics. In order to estimate efficiency value, Data Envelopment Analysis-Malmquist (DEA-Malmquist) and input-oriented Variable Return to Scale (VRS)model are used.On the second stage, the equation is estimated using the Three Stage Least Square(3SLS) regression. The findings show that industrial concentration is 61.8%including tight oligopoly and industrial efficiency is 95.9% (inefficience) that is within the Increasing Return to Scale (IRC) condition. Concentration and efficiency are affecting each other. Efficiency has negative influence towards concentration. Colusion has positive significant influence towards concentration. Concentration is significantly lower after the implementation of anti monopoly and meat import quotasregulation. Colusion, industrial concentration and import intensity have positive significant influence towards efficiency. Monopoly is significantly lower after the implementation of anti monopoly regulation and the implementation of meat import quotas does not have any influence towards industrial efficiency.

Keywords: *Concentration, efficiency, collusion, regulation, Data Envelopment Analysis (DEA), Three Stage Least Square(3SLS).*

1. INTRODUCTION

Processing industry including meat processing industry is one type of industry that has significant influence towards the national economy. Meat processing industry is one type of food industries that has significant influence towards economy (Lambert, 1994; Ali, 2007; Knudson, et al.,2010; Ali and Pappa, 2011).In Indonesia, it was established in 1942 and becomes the future of the national industry as it has promising market in the future. Studies conducted in the last decades focus on performance of processing industry in Indonesia by analyzing growth of efficiency and productivity(see: Aswicahyono, 1998; Basri, 2001; Margono and Sharma, 2006; Ikhsan, 2007; Probowo dan Cabanda, 2011; Setiawan, 2013; serta Ndari and Permono, 2014).

There are some studies about Indonesian processing industry that focus on efficiency, productivity, industrial concentration, colusion and regulation. Bird (1999); Kuncoro (2007) and Indonesian Bank (2008)reprted that between 1975-2006 majority of meat processing industry in Indonesia has relatively high concentration (higher than 60%) in oligopoly market structure. Higher concentration results in higher market forces but unfortunately it may cause higher possibility for colusion. Industry with high concentration generally encounters high entry barrier and has low technical efficiency (Bain,1956 as cited in Martin,1999;Kuncoro, 2007; Setiawan, et al, 2012).

Capital intensity is an entry barrier that may block potential to enter the industry. Higher capital intensity means higher concentration (Martin, 1999). Zainalabidin (2015) states that capital intensity has positive influence towards meat processing industry concentration. Different finding is reported by Singh (2011) that capital intensity has negative influence towards industrial concentration and other variables such as import intensity, market intensity, vertical integration and economic scale play important role to develop industrial market structure in post-liberalization era.

Ikhsan (2007) explains that in general technical efficiency and economic scale have negative contribution towards processing industry between 1988 to 2000.Similar thing is reported by Probowo and Cabanda (2011) that between 2000 and 2005, the national processing industry faces negative technical efficiency growth. Different finding is reported by Saputra (2011) that between 1990-2001 processing industrial subsector in general has positive efficiency. National Development Agency (2010) also reports positive technical efficiency growth between 2000-2007. Ndari and Permono (2014) reported that between 2000 to 2004 the national meat processing industry has positive efficiency and technical change as well as negative efficiency change. Between 2005 to 2009, the subsector has positive efficiency and negative technical change.

Policy, regulation and government policy can affect industrial structure and performance. According to Pradiptyo (1996), government policy has significant role to create oligopolistic/ monopoly industrial structure. Arnoldet al. (2008) found out that in industrial level, there is inefficient allocation of resources in companies located in the countries of which regulations do not lean towards the market. Regulations can also be violated by certain people to strengthen their position and gain control of companies towards market (Setiawan, 2013).

There are some policies established by the government that may affect industrial performance such as the 1999 Decree number 5 about the prohibition of monopoly and unhealthy market competition as well as the Ministry of Agriculture's Decree number59/Permentan/ HK.060/8/2007 on beef import quotas. Target of those policies is to develop healthier market competition and decreasing amount of imported beef and meat so that Indonesia can only import at most 10% of the national beef consumption. As the consequence, meat used for consumption and raw material for particular industry is limited.

Some other countries have also conducted studies to analyze efficiency of meatprocessing industry. In USA, Lambert (1994) revealed that chicken-processing industry grows more than meat-processing industry and there is inefficiency in employee input and raw materials. Xia and Buccola (2002) also describe that increasing capital has relative development towards employees and raw materials for processing industry in the United Statesjuga . In India, Ali (2007) reported that between 1980 to 2003, there is inefficiency in terms of capital input and employees as well as low growth of productivity.

Goncharuk (2009)revealed that there is efficiency growth in Ukraine as the effect of decreasing use of capital and employees input. Keramidou et al.,(2011) describe that there was inefficient use of capital and employees input in meatprocessing industry in Greece between 1994 and 2007. In Spain, Kapelko, et al.,(2012)mention there is technical efficiency growth and scale efficiency. Yodfiatfinda et al.(2012) argue that the biggest contributor towards the growth in Malaysian food processing industry is technical efficiency.

The basis of the study is Structure- Conduct -Performance (SCP) paradigm that involves correlational identification between industrial structure and performance (Bain, 1951).The model is developed based on Martin (1999)and Carlton and Perlof(2005) who develop framework for industrial organizationby making very simple causal influence with linear model that influences structure, behavior and performance suitable with the real-life situation as well as revealing the growth of industrial development due to role of the government in market development. Several previous studies are Maudos (1998); Gumbou and Moudos (2000); Ollinger, et al.,(2005); Byeongyong, et al., (2005); and Setiawan, et al., 2012a); Setiawan, M., (2013), among others.

Industrial performance in the study used Farrel's model of estimation (1957) with microeconomics approach. Farrell (1957) divides corporate efficiency into two components, technical and allocative efficiency. Both components are then combined with economic efficiency. Sengupta (1995) andCoelli et al., (2005) divide efficiency into three components namely Allocative Efficiency (AE), Economic Efficiency (EE) and Technical Efficiency (TE).

Related to the elaboration, purpose of the study is to analyze correlation between industrial concentration and efficiency and some factors affecting concentration and efficiency of meat processing industry in Indonesia between 1990 to 2013.

2. RESEARCH METHOD

Data

Data used in the study are secondary data about Indonesian meat processing based on the result of the 1990-2013 annual survey for big and medium-scale industry by Indonesian Central Bureau of Statistics using the 2009 *KBLI* category of which code is 10130.The data consist of input and output value (Indonesian Central Bureau of Statistics, 2015).

Concentration Ratio **(CR)** refers to market power measured using ratio of production from 4 biggest companies(CR4) towards total production of meatprocessing in Indonesia.

*Colusion*refers to active correlationof company in the industry to gain input, decrease output and increase price in order to get normal demand and supply law.Colusion value is estimated based on the Clarke et al., (1984) and Demsetz (1973)'s degree of colusion model represented by the following equation:

$$\frac{\Pi}{R} = \frac{\alpha}{\eta} + \frac{(1-\alpha)}{\eta} H \qquad 0 \le \alpha \le 1 \text{ and} \partial\alpha/\partial H > 0 \quad \text{................................(1)}$$

where Π refers to profit, R refers to revenue, Π/R refers to profit revenue ratio or profit rate and finally H is Herfindahl Index (HI) that refers to total of market share squared by number of companies in one industry. As an addition, α refers to degree of colusion and η refers to elasticity of demand towards change of price. The higher α (the closer it is to 1) is the more profitable an industry is (the closer it is to monopoly profit that is indicated by colusion. The lowest α score is, the lower possibility colusion takes place. The calculation goes with assumption that elasticity of demand is unitary. Unitary elastic demand takes place if change of demand equals to change of price. Unitary elasticity demand coefficient equals to one (η = 1), which means 1% increase of price is followed by 1& decrease of demand and vice versa.

Import Intensity refers to national imported beef volumein one year.

*Regulation*or rules issued by government related to monopoly that us the 1999 Decree number 5 as the first regulation (RAM), regulations related to export and import of meat and its products as well as regulations that set a limit for or decrease import quotas namely *Peraturan Menteri Pertanian Nomor 59/Permentan/HK.060/8/2007*as the second regulation (RKID). The influence of regulation is analyzed using regulation dummy. Year after the regulations is implemented equals to 1 and year before the implementation of the regulation equals to 0.

Efficiency refers to level of input utilization to get output suitable with optimum resources. It can be seen based on technical efficiency and allocative efficiency. In order to estimate efficiency, Banker, Charnes and Cooper (1981)'s method is used since the method has added DEA measurement method for variable return to scale (VRS) case.The model distinguishes pure technical efficiency and scale efficiency as well as

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identifies whether the result of the scale is increasing, decreasing or constant. As the effect, linear CRS assumption should be changed by increasing $N\,1\,'\lambda = 1$. Therefore, input-oriented DEA VRS is as follow:

TE vrs $_{\theta,\lambda}$ = min θ
st– yi + Y$\lambda \geq 0$
θxi -X$\lambda \geq 0$
$N1'\lambda = 1$ $\qquad$ $\lambda \geq 0$..(2)

where $N\,1$ equals to N x 1 vector from 1.θ refers toinputof technical efficiency below VRS, which is $0 \leq \theta \leq 1$. Similar to the previous cases, when θ equals to one, the company is within frontier, while λ vector is$N$ x 1, the measurement that defines linear combination of company from nth company.

$\qquad$ ***Capital Intensity Ratio (CIR)*** refers to total assets turnover, which is turnover of all assets of the company based on the capital and divided by production cost (Setiawan et al.,(2012b, 2013); Ullah et al., (2013); Keramidou et al., (2010)).

Method of Analysis

$\qquad$ Model of equation in meat processing industry in Indonesia is the development of emphirical models by Banker and Natarajan (2008), Keramidou et al.,(2010), Keramidou et al., (2011a, 2011b), Johnson and Kuosmanen (2012), Ohlan (2013), Cummins and Xie (2013) and Setiawan et al., (2012b and 2013). Therefore, the model of equation in the study is as follow:

$CR4_t = c_{10} + c_{11}\,Colusion_t + c_{12}\,Eff_t + c_{13}\,CIR_t + c_{14}\,RAM_t + c_{15}\,RKID_t + e_{1,t}$..........................(2.3)
$Eff_t \quad = c_{30} + c_{31}\,CR4_t + c_{32}\,Colusion_t + c_{33}\,Impor_t + c_{34}\,RAM_t + c_{35}\,RKID_t + e_{3,t}$..................(2.4**)**

$\qquad$ For model of equation simultaneous with overidentified condition of the equation, Three Stage Least Square (3SLS) with AR (2) model as error corrector is used to estimate the parameter.

3. FINDINGS AND DISCUSSION

Description of Variable

$\qquad$ The statistical description of variables can be explained as in Table 1.

Table1.Statistical Description of Variables between 1990 to 2013

Variable	Average	Std. Deviation	Minimum	Maximum
Concentration (CR4)	0.6246	0.1085	0.4433	0.8111
Colusion (Colusion)	0.2617	0.1268	0.0649	0.4867
Efficiency (Eff)	0.9569	0.0405	0.8543	1
Capital Intencity Ratio (CIR)	0.5648	0.3941	0.2070	2.0185
Import Intencity (Import)	1.47 e+07	4.43e+07	0.1903	2.13e+08

Sources: the Researchers

Concentration

$\qquad$ National concentration of four largest company (CR4) in meatprocessing industry between 1990 to 2013 is 62.46% and therefore, it is categorized as tight oligopoly (Jaya, 2008). High industrial concentration is suitable with studies conducted by Bird (1999) and Setiawan (2013). Such condition is the result of 24.26% of Minimun Efficiency of Scale (MES). When percentage of MES is higher than 10%, there is high entry barrier; in big-scale economy it is going to be more difficult for new company to get into the industry (Bank of Indonesia, 2008).

$\qquad$ Meatprocessing industry has natural characteristics, capital and production intensive. It can be seen vaed on the percentage of Capital Intensity Ratio towards production that is 56.48%. Huge capital needed for production results in difficulty for new corporation to enter the industry.

$\qquad$ High barrier for both MES and CIR scores becomes the reason why new company encounters a lot of difficulties to get into the industry. Average number of companies in the industry within the duration of the study is 24 units or there is 11.3% growth per year. High entry barrier and few companies within the industry results in high industrial concentration. It is in line with Bird's (1999) study.

Table2. Average of Industrial Concentration, Minimum Efficiency of Scale (MES), Capital Intensity Ratio (CIR) and Business Unit between 1990 to 2013

1990-2013	CR4 (%)	MES (%)	CIR (%)	Observation (Unit)
Average	62.46	24.65	43.98	24.00

Sources: The Researchers

Efficiency

Change in efficiency, either technical efficiency or scale efficiency is development of productivity elaborated in Total Factor Productivity (TFP). It is in line with Kumbhakar and Lovell (2000)'s conceptand used empirically by Coelli et al. (2005) who divided TFP into 3 (three) components namely change in technology, technical efficiency, and scale of efficiency (economic scale).

Table 3. Average Efficiency of Meatprocessing Industry between 1990 to 2013

1990-2013	Efficiency (%)			IRS	CRS	DRS
	CRS	VRS	Scale	Unit	Unit	Unit
Rata-Rata	89,38	95,69	93,36	18	1	5

Legend:

  Scale = *Scale Efficiency* = crs/vrs   IRS   = *Increasing Return to Scale*

  CRS = *Constant Return to Scale*   DRS = *Decreasing Return to Scale*

  VRS = *Variable Return to Scale*   *Tech* = Technology

  Δ   = Change/ Growth

Source: The Researchers

Based on Table 3, it can be seen that average efficiency of meatprocessing industry in Indonesia between 1990 to 2013 with CRS model is 89.38% which means 10.62% of input can still be optimized with the assumption that all companies are operated within optimum scale. Based on VRS model, the average is 95.69% which means there is 4.3% inefficiency with the assumption that companies do not operate within optimum scale due to xome existing obstacles. Furthermore, average efficiency scale of93.36% (less than 100%) means the industry is within inefficiency scale.

Possible cause is the fact that meatprocessing industry involves various technology in the process of production so that engine and electronic devices heavily influence increasing production of the industry. Other factors that increase productivity of the industry are supply and demand of processed meat. In terms of change in efficiency, it can be seen that the companies have yet been able to operate within their optimum capacity. They adopt "learning by doing" concept when they involve technology in their productions. As an addition, economic environment that causes inflation and fluctuation for the national currency also influences selection of input of which source is imported goods.

Analysis of the Findings

Based on the output of Table 4, it can be concluded that collusion has positive signbificant influence towards concentration(CR4).It is in line with the findings of Nurdianto (2004)'s study that collusion has positive influence towards development of industrial concentration. Collusion also has significant, positive correlation towards efficiency (Eff).It happens since collusion is not the trigger that develops high concentration in the industry; when collusion becomes the trigger that develops high industrial concentration, it can be inferred that collusion will decrease efficiency. The collusion does not actually happen in meat processing industry that is in line with the findings of Nurdianto (2004)'s study.

Table 4. Regression Results

Exogenous Variable	Endogenous Variable					
	CR4			Efficiency		
	Coef	t-Stat	Prob.	Coef	t-Stat	Prob.
C	1.324	5.383	*	1.113	1.896	*
CR4				-0.268	-3077	*
Collusion	0.362	4.635	*	0.232	2.157	*
Efficiency	-0.835	-3403	*			
CIR	0.166	3.283	*			
Import				-3.39E-10	-1.645	*
RAM	-0.101	-2201	*	-0.069	-3440	*
RKID	-0.135	-2198	*	-0.002	-0.184	
AR1	1.335	6.924	*			
AR2	-0.881	-4219	*	-0.373	-1629	
R-squared	0.749			0.555		
Adjusted R-squared	0.624			0.377		
Mean dependent var	0,618			0.959		
S.D dependent var	0.111			0,041		
S.E. of regression	0.068			0.033		
Durbin-Watson stat	2.071			2.135		
Mean dependent var	0.618			0.959		
S.D. dependent var	0.111			0.041		
Sum squared resid	0.065			0.016		

Source: The Researchers

Based on estimated value of the variables in Table 4, it can be seen that average concentration that is obtained from the concentration of four largest companies (CR4) is 61.8% and the standard deviation is11.1%. According to (2008), concentration of the industry can be categorized as tight oligopoly. Bain (1956) as cited in Zainalabidin, et al., (2015) states that concentration of the industry is categorized as moderate since there is a little difference in goods produced by different companies in the industry. The companies are able to decide quality and price without affecting the whole market. High concentration affects efficiency of the industry. Average efficiency of 95,9% and the standard deviation of 4.1% mean efficiency is still below 100 and there is 4.1% inefficiency with the assumption that company does not operate within the optimum scale due to existing problems. Implications of negative growth of efficiency or below 100% means need to improve human resource's skills so that they can adapt to the rapid growth of technology.

Based on the result of regression, it can be obtained that efficiency (Eff)has significant negative influence towards concentration (CR4)and so does concentration (CR4) towards efficiency (Eff). It is in line with Byeongyong and Weiss (2005)who explain that efficiency has negative influence towards CR4; it means efficient company allocates resources and has wide market coverage so it will have lower production efficiency compared to its competitors and causes increasing concentration. Company that operates within high industrial concentration does not have any pressure to increase its technical efficiency. It shows negative correlation between concentration and efficiency because high concentration is considered as barriers for company to have competition. Gumbau and Moudos (2002) as well asSetiawan (2013) argue that in competitive company there is negative correlation between concentration towards efficiency; it means huge market a company has causes inefficient allocation of resources and will increase price flexibility where increasing price will be much faster than decreasing price. It is in line with the statement that companies operated within high industrial concentration do not have any pressure to increase their technical efficiency.

Collusion has positive significant influence topwards CR4 and efficiency (Eff). Collusion happens because huge companies in the industry work together only when they look for raw materials but they never work together in terms of production and making decision about price. Scarcity of raw materials causes more

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barriers to get to the industry that eventually increases concentration. Similar finding is elaborated by Nurdianto (2004) but Bain (1956) stated in Kuncoro (2007), Sawyer (1991) and Church and Ware (2000) have different hypothesis. Collusion does not actually happen because collusion index of meat processing industry is 0.32 (32%) indicating that the collusion is categorized as low (lower than 0.5 or 50%). When an industry has high concentration, companies within the industry will practice collusion in order to get higher profit and sacrifice consumer's need. As a conclusion, the theory suitable for Indonesian meat processing industry is Market Power Theory. It happens because the government has established imported meat quotas in 2007 so that limited input of raw materials encourages companies to work together and established organizations such as National Meat Processor Association Indonesia (NAMPA Indonesia).

Collusion has positive significant influence towards efficiency. It happens since collusion in meat processing industry is vague. The collusion does not decide price and production instead it facilitates companies within the industry to obtain raw materials with competitive prices and means of technology to aid production. Being a member of the associations results in earning meat quotas in competitive, fair prices and exchange of information especially one related to machinery and the latest technology in the industry as well as availability of meat as raw materials in order to increase efficiency in production and use company resources.

CIR has positive significant influence towards CR4.Regression coefficient for CIR is0.1615 (positive); it means one point increase of CIR will be followed by 0.1615 point increase of CR4 and at the opposite, one point decrease of CIR will be followed by 0.1615 point decrease of CR4. It is in line with the hypothesis that CIR has influence towards concentration so the higher CIR in the industry, the higher concentration the national meat processing industry has. When there a company shoukd prepare high amount of capital to get into an industry, new competitor will be more reluctant to get involved in the industry that will cause high industrial concentration. It is line with Waldman and Jensen (1998). It also happens because meatprocessing industry is a capital intensive industry so that companies that have huge capital will likely dominate production and the market .

CIR be a barrier for new companies to get into the industry . Capital Intensity Ratio is the company's efforts in the use of all of its assets to generate sales . Higher Capital Intensity Ratio (CIR) means more efficient use of the asset. The value of the average Capital Intensity Ration during the is 0.56 or about 56% of the capital required for production. The high value of Capital Intensity Ration will reduce profit margins so that the industry is less productive or less efficient because it inhibits new companies to enter the industry and will encourage high concentration of the industry. The findings are in line with those of Setiawan (2013).

Import has negative significant influence towards efficiency (Eff). It is in line with the hypothesis and findings of studies conducted by Parameswaran (2002), Goldar (2002) andUllah et al., (2013).It is due to increasing demand for imported meat that will affect the price of imported beef in the exporter countries . Importing meat is conducted to meet the demand from hotels, restaurants , caterer, household , and industry. Huge amount of imported meat for catering and household will result in shortage of imported meat for the industry. Importedmeat limitation will cause competition for the quota of imported meat.It may cause increasing price for imported meat. In addition , imported meat is also highly sensitive to changes in the exchange rate so that changes in exchange rates will also affect the price of imported meat itself.

Price of imported meat will result in high local meat and high price of imported meat from the importer will also have contribution in increasing price of imported meat(Ilham, 1998; Pakpahan, 2012). Another possibility is that intensity of variation meat more particularly trimming mear dominantly used for industrial purpose is heavily influenced by import quotas so that it cannot meet utility of meatprocessing industry between 1990 to 2013 of 75.7%. Such condition may reduce efficiency of the national meatprocessing industry in Indonesia.

There is significant negative change of concentration (**CR4)**once the anti-monopoly regulation (**RAM)**is established. Similar thing works for efficiency (**Eff**) that has significant and negative influence. The findings are in line with those of Setiawan, et al*.,* (2012). The establishment of the 1999 Regulations number 5 aims at preventing both monopoly and collusion in the industry. It happens because ever since the anti-monopoly regulation was established in 1999, the national economy had yet been stabilized as the effect of the 1997 economic crisis. As the effect, many companies did not produce their products up to their capacity due to high operational cost and price of raw materials. The effect of the phenomenon is inefficiency.

Once it was established, the Imported Meat Quota Regulation (**RKID)**has negative significant influence towards **CR4**, while it does not have any influence towards efficiency (**Eff)**.It is different from findings of studies conducted by Pradiptyo (1996), and Bird (1999). These results are different because the imported quotas regulation imposed by the Indonesian government affects the availability of meat consumption and large enterprises that use imported meat. After the government set limitationfor imports of meat , the concentration is decreasing significantly but the difference was not significant to the decrease of efficiencymeaning that producers of meat processing experience difficulties in obtaining raw materials to meet the production capacity. The decrease in production by large companies provide medium-sized companies the opportunity to increase production so that the concentration of the industry reduces. For medium-sized companies that use local meat as raw materials can still maintain a fixed level of output by making efficiency in during operations. When inefficiency takes place, input in terms of profit will decrease too (Marhendra., 2014).No significant difference in terms of efficiency after the regulations have been established may happen due to the realization of the import which do not conform to the import quota that has been set. Realization of the import is in fact greater than the quota so that the needs of the industry can still be met despite of some increase in terms of price.

4. CONCLUSIONS AND SUGGESTIONS

Conclusion

Based on the analyses, it can be concluded that the concentration of the national meat processing and meat preserving industry between 1990 to 2013 is 61.8%. The concentration increases due to increase in collusion and Capital Intensity Ratio (CIR*),*while efficiency will reduce concentration. Once anti-monopoly and imported meat quotas regulations have been established, there is significant change in concentration.

Furthermore, the average efficiency of meat processing and meat preserving industry in Indonesia between 1990-2013 is 95.9% (efficiency is lower than 100%) that means there is 4.1% of inefficiency with the assumption that company does not operate within optimum scale due to some obstacles. Low efficiency causes high concentration and intensity of imprted meat. Efficiency will increase through cooperative work (collusion) by transfer of technology between companies. Efficiency is getting lower after the implementation of anti-monopoly and meat imported quotas regulations.

Suggestions

It is suggested that the efficiency of meat processing and meat preserving industry in Indonesia can still be increased by improving management, training for employees especially those responsible for production and selecting raw materials with competitive prices. High dependency of the national meat processing industry for imported meat and imported goods may become issues once the currency rate of Rupiahs against US\$ is getting weaker. Thus it is expected that the government encourage the industry that still uses imported meat as raw materials to export their products in order to give added value for the the trade balance and also to prepare infrastructure for the livestock industry and slaughterhouses to be able to provide raw materials and goods specifically for industrial processing and preservation of meat in the country.

Moreover, the government should decrease industrial concentration in order to create healthy competition that will lead to increasing efficiency of the national meat processing and meat preserving Industry in Indonesia. One of the methods is implementation of the market -friendly regulations. Regulation that limits household consumption for household should be established so that it is expected that the national industry will grow. As an addition, the government should also apply the regulations specific to the importation of industrial raw materials in accordance with the capacity of the industry so that efficiency can be increased until the the national livestock industry can provide the needs of the industry.

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