HOW DOES HALAL FOOD ON YOUR PLATE PUNCH INDONESIA'S ECONOMY?

SEPIRING MAKANAN HALAL DAN PENINGKATAN EKONOMI INDONESIA

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ABSTRAK

Penelitian ini bertujuan menganalisa kontribusi sektor industri makanan halal terhadap perekonomian Indonesia. Penelitian ini menggunakan pendekatan analisis Input-Output, dengan data sektor industri olahan makanan yang berasal dari tabel Input-Output Badan Pusat Statistik (BPS) 2010. Sesuai dengan Standarisasi Fatwa Halal Majelis Ulama Indonesia Nomor 4 Tahun 2003, riset ini menggunakan variabel teknis berupa sektor industri makanan yang mengeluarkan sektor non-halal berupa minuman beralkohol. Berdasarkan analisis I-O diketahui bahwa sektor industri makanan halal berkontribusi kepada perekonomian Indonesia melalui multiplier. Sektor primer dari indutri makanan halal adalah sub sektor minyak hewani dan nabati yang akan meningkatkan output seluruh sektor perekonomian sebesar Rp 1,5 Triliun. Sedangkan dari sisi pendapatan masyarakat sub sektor unggulan industry makanan halal adalah minuman tidak beralkohol dengan tingkat income multiplier Rp 0,193. Dapat disimpulkan bahwa sektor industri makanan halal di Indonesia memiliki potensi yang lebih kuat dari sisi produksi dibandingkan dengan pendapatan masyarakat.

Kata Kunci: Industri Halal, Makanan Halal, Input-Output, Analisis Multiplier, Indonesia.

ABSTRACT

This research's objective is to analyze the contribution of halal food industry sector towards the economy of Indonesia. This research uses Input-Output analysis approach, using the data of processed food industry sector originated from the Input-Output table released by The Central Bureau of Statistics (BPS) in 2010. Corresponds with Fatwah of Indonesian Ulema Council on Halal Standardization number 4, year 2013, this research uses technical variable in the form of food industry sector which excludes the non-halal sector that is alcoholic beverages. Based on the I-O analysis, it is known that halal food industry sector is contributing to Indonesia's economic growth through multiplier. Primary sector from halal food industry is subsector of animal and vegetable oil which will increase the whole output of economic sectors as much as 1,5 trillion Rupiah. Wherein from the perspective of national income, leading subsector of halal food industry is non-alcoholic beverages with the increase of income multiplier as much as 0,193 trillion Rupiah. From the findings, it can be concluded that halal food industry sector in Indonesia has a more significant potential, production-wise, compare to the national income.

Keywords: Halal Industry, Halal Food, Input-Output, Multiplier analysis, Indonesia.

I. INTRODUCTION

Halal Food Industry in Current Economy

Every day, there are a couple of halal foods served on your plate, whether

they are home-cooked meals or restaurant-bought. Unconsciously, turns out that if the worth of these plates of halal foods are calculated it would sum up a rather huge amount of contribution towards the economy. Indonesia in accounted as the country with highest level of spending over halal foods which reach up to $173 billion in 2019. That number exceeded the ones in Turk with $135 billion, Pakistan with $119 billion, and Egypt with $89 billion (Standard, 2019). The high number of spending on halal foods comes from the number of Muslim population in Indonesia which reach up to 209,2 million souls (Religious, 2010). Besides, the pandemic that has been going on in the world cannot be underestimated. Not only it affects the health, but it also affects the economy of the world, Indonesia is no exception. As an impact of pandemic Covid-19, export value of Indonesia – China decreased as much as 12,07% in January 2020, wherein the value of Indonesian export is contracted to 2,71% (Indonesia, 2020). This is one among many impacts of Covid-19 towards the trade between Indonesia and China.

Interestingly, though the impact in economic sector is relatively bad, but there is a new trend arouse from this circumstances in which the people started to have increasing awareness towards the importance of consuming halal foods (Prasidya, 2020). Thus, the sector of food industry is named as one of a number of sector that actually received a positive impact from the pandemic (The Ministry of Finance, 2020). From 17 sectors which support the economy in Indonesia, some are affected negatively, yet there are also quite a number of sectors which are affected positively. One of which is the food industry sector. This Covid-19 pandemic has become an epiphany to everyone to raise more awareness into the food they consume daily. The World Health Organization (WHO) issued a specific appeal on what kind of foods that are not recommended to be consumed in order to avoid the risk of being sick during the pandemic. Take the suggestion of cutting down on consuming alcohol, for instance. This kind of suggestion is in fact in line with Islamic principle not to consume anything that comes from flesh of pork, dead animals, blood, and anything which contains intoxicating substances (Q.S Al-Baqarah: 168).

Halal foods that are served on your table are also supported by certain infrastructure in form of halal certification bodies which is Indonesian Ulema Council (MUI Majelis Ulama Indonesia in Bahasa) and laws of halal product assurance (Law of Republic of Indonesia number 33 of 2014 on Halal Product Assurance, 2014). Reinforcement to support halal industry is also presented in form of institution, Indonesia owns a National Committee for Islamic Economy and Finance (KNEKS Komite Nasional Ekonomi dan Keuangan Syariah in Bahasa) which aims to accelerate the development of halal industry in Indonesia (Presidential decree

number 28/2020 on National Committee for Islamic Economy and Finance, n.d.). Furthermore, Indonesia also build a Modern Halal Valley which planned to be the center of business incubation, research, laboratory as well as port to support halal industry in Indonesia. These instruments are the components which support the development of halal food industry in Indonesia.

Empirically, it is proven that several countries are using food industry sector as key sector to support their economy. This sector is categorized as labor intensive sector which will attract a large number of labor and also produces goods to be exported. Moreover, food industry also has solid forward linkage with agriculture sector, thus the countries which are agriculture-based have tendency to push the development of food industry sector. Thailand, for instance, has designed a program to ensure that there is significant economic contribution from the food industry sector (Lekuthai, 2007) towards the country's economy since 1961. Similar with Brunei, although it is widely known that their economy is very much supported by the production of natural gas, however, in line with the country's objective, Brunei is also trying other alternatives to support their economy and eventually involving the halal food industry sector (Oh, Youri, Hamir, Ak, Shah, 2018).

In the end, it can be concluded that the food industry is a potentially promising sector for the country's economy. The moment of Covid-19 as a

variable shock on economic sectors in Indonesia is in fact arising the fact that food industry sector is one of the sector affected positively. Therefore, the assumption about how does halal food on your plate can be valued as economic contribution to the country's economy might be pretty accurate. On that account, this research will analyze more about the contribution of halal food industry towards the economy of Indonesia using the Input-Output analysis. This research is opened by explaining the background of the importance of studying halal food industry using Input-Output analysis. Then, the second section will explain about the conceptual framework which is built based on any relevant theories and literatures with the research. The third section will cover methodology used in this research to find out the quantity of contribution from halal food industry sector to Indonesia's economy. And the last section will discuss the findings of this research as well as the recommendations based on the result of this research.

Using similar analysis tool and object in the study of food industry sector, the research conducted by (Lekuthai, 2007) concluded that there is a strong backward linkage between food industry sectors with agriculture sector. Contribution wise, although food industry sector has yet to become the key in Thailand's economy, however the food industry produces the highest net foreign exchange (NFE). This is acquired from the

quantity of high export and low import. Besides contribution from the NFE, food industry sector is also able to absorb more quantity of labor compared to other sectors.

Other study conducted in European Union within 1989-2002 by (Knuuttila et al., 2007) confirmed that there is increasing number of imported input, in form of the growth of demand in domestic services industry. However, in the opposite, value added from food industry is decreasing.

A study by (Nurrachmi, 2018) explained the current condition of the development of halal food industry globally. The study concluded that market share of halal food in developed country is bigger than the one in developing country, despite the smaller portion of Muslim population in the developed country compare to the one in developing country. This study used the approach of literature review analysis.

This research is narrowing segmentation of food industry research conducted by (Lekuthai, 2007) into halal food. The study by (Knuuttila et al., 2007) becomes the base argument in support towards food industry sector. This research uses alternate research method other than the one already used by (Nurrachmi, 2018) which was literature review into input-output approach.

Objective

Based on the statement of problem: there is a potential of halal food industry in Indonesia; the empirical study on halal food industry sector as a country's economic support; as well as other kind of support such as regulation and infrastructure by the government of Indonesia. This research aims to analyze the contribution of halal food industry sector towards Indonesia's economy using input-output analysis. This research also uses a multiplier analysis to explain more details about the contributions of halal food industry towards the income and output in Indonesia.

II. THEORY AND HYPOTHESIS DEVELOPMENT

Theory of Production

Nicholsson (2007) explained that production function is a mathematical function which shows a relation between the inputs used to produce with the output in certain level. Systematically, production function can be expressed as where Q is production output, K is capital, L is the number of labor, and R is resources, while T is technology used in the production process. This equation of production function illustrates the output from a number of inputs which consists of capital, labor, resources, and technology. Production function in a firm means describing technically the production process which combine the production inputs as efficient and possible that will also enable the use of a combination choices of inputs. In economic theory, production is explained using two kinds of approaches, which are:

1. Production using one input (labor)

Sukirno (2013) explained that production is a relation between the quantity of goods produced or services with the quantity of certain labor. Basic analysis which apply in production analysis is other production factor such as capital, land, and technology in a constant state (ceteris paribus). Based on that assumptions, can be said that the independent variable is production factor in form of labor.

2. Production using two inputs (labor and capital)

The isoquant curve shows a combination of two kinds of different production inputs yielding the same output. The isoquant curve has several characteristics which are: has a negative slope; the position of the curve shows that the more it gets to the right means also more quantity of the output being produced; and that the isoquant curve never intersect with other isoquant curve and is convex towards the origin point (Munir, 2008).

Pindyck (2001) explained that a company in its production process always uses two production inputs with two variations. Labor and capital as inputs used in the production process, then the isoquant shows the combination scale used to yield optimal output. If it was to illustrate the model of input-output in an econometrics model, therefore the main production input is used as endogenous

variable, whilst the latter demand becomes the exogenous variable.

Input Output Theory

Nazara (2005) and Muryani (2017) explained the analysis of input-output as the tool to analyze general equilibrium. The equilibrium of input and output shows the transaction between economic agents as a whole. The main focus in input and output analysis is in the production side. Other than that, in the input-output analysis on the technology used in the production process has a significant impact towards the use of intermediate inputs.

According to The Central Bureau of Statistics (2015), the data served in input-output table is detail information about input and output of sectoral economic which is able to show the linkage between sectors in economic activity. In accordance with the assumption used, input-output is a static and open model. The input-output table serves information about trades that are occurring between economic sectors in form of percentage and matrix, thus one can obtain information about the allocation of output produced by certain sector to fulfill the sector's intermediate and final demand.

Some of the function of input-output table are: view the composition of supplying and using goods and services particularly in analyzing sectoral needs, and the chance of import substitution in certain commodity. Then, deciding which sector's effect is more dominant towards

the economic growth and which sector is sensitive towards it. After that, estimating the effect of final demand towards the output, value added, import, tax revenue, as well as job size in various production sectors. Lastly, projecting and evaluating macro economy variable (CBS, 2015).

Leontief Input-Output Model

In I-O model based on trades in economic sector. In the following is the formula which construct the identity of I-O model (Rose & Miernyk, 1989)

$$X_i = X_{i1} + X_{i2} + \cdots + X_{in} + Y_i (i = 1 \ldots n) \quad (1)$$

Three assumptions:

1. Every commodity is provided by single production sector

2. Every sector input corresponds with sector output

$$X_{ij} = \propto_{ij} X_j \quad (2)$$

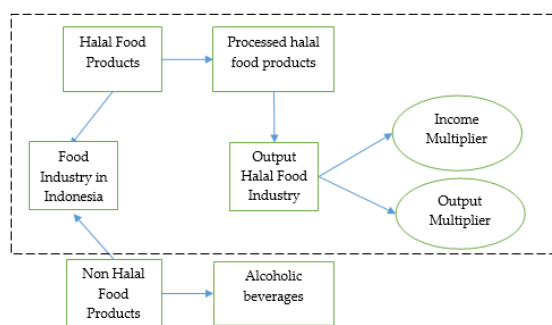There are no external economy and diseconomy.

Conceptual Framework

Figure 1.
Conceptual Framework of Input Output Analysis on Halal Food Industry

III. RESEARCH METHOD

This research uses secondary data originated from the publication of input-output table by The Central Bureau of Statistics (BPS) in 2010. In IO table from The BPS, there are three categories which are: total transaction at consumer's price, total transaction at base price, and total transaction at domestic price. Among the three kinds of IO table based on these prices, this research uses IO table total transaction at domestic price (Statistik, 2010). This is because that this research is not inserting import variable in the intermediate input goods and the total. In the input-output table of Indonesia in 2010 it is known that there are 17 economic sector classifications, this research uses the third sector which is processing industry which includes food industry sector. To analyze halal food industry sector by the sector code of 53-74, this research conducts an insightful data using the methodology of separating halal food product from non-halal food product in GIEI (Standard, 2019), by excluding food industry sector which consists of prohibited elements in Islam according to (Q.S Al-Baqarah: 168) and Fatwah of Halal Standardization of The Indonesian Ulema Council number 4 year 2003 by excluding alcoholic beverages with sector code of 73 from research analysis.

This research is conducted under quantitative approach using the input-output model analysis. Input-output model is used to determine the linkage of subsector halal food industry and to measure the effect of change when the whole subsector of non-halal food is cut off from the equation. This analysis will also produce multiplier index for national income and output. The proportion between halal food subsector inputs originated from other subsector is called

as Intermediate Input Coefficient which is obtained by the formula:

$$\alpha_{ij} = \frac{x_{ij}}{x_j} \tag{3}$$

$$x_{ij} = \alpha_{ij} + x_j \tag{4}$$

Where is input coefficient, while is input multiplier sector from other subsector.

1. Analysis of Output Multiplier

In order to analyze the impact of changes in subsector input of halal food towards its output, therefore input-output model is used by using the supply side approach. In this analysis, the main input is made as exogenous factor meaning that the change in main input will affect the growth of aggregate both sectoral or total. The equation used to calculate the value of input coefficient is:

$$\alpha_{ij} = \frac{z_{ij}}{x_j} \tag{5}$$

Then it is lowered and get the following result:

$$X' = V(I - A) - 1 \tag{6}$$

Where X is vector line; is matrix inverse output; V is vector from final demand. If the input is notated (a), thus the output change is caused by the result from the change of (a) is as follow:

$$\Delta X' = a\Delta (I - A) - 1 \tag{7}$$

2. Analysis of Income Multiplier

The value of income multiplier shows the contribution of subsector which changes the amount of household income. This income is formed because of the change on the halal food subsector input. The first thing to do is by calculating the matrix coefficient of income, using the following equation:

$$n_1 = \frac{w_i}{x_j} \tag{8}$$

Where describes coefficient of income; is the total of sectoral income; is the total of sectoral output. If the coefficient of income is known, thus the change in income can be calculated by using the following equation:

$$\Delta W_i = n1 X_j \tag{9}$$

Where is income multiplier; n1 is coefficient of income; and is sectoral output multiplier.

IV. RESULTS AND ANALYSIS

The analysis of multiplier is the main analysis which can be conducted by using input-output model. Multiplier index is used to find out the effect of a change in primary input towards the economy's output/ output multiplier and household income/ income multiplier and labor absorption/employment multiplier on foods and beverages sector. As for this research, we are not really paying attention to the employment multiplier but instead we're focusing on the multiplier output in aggregate and to the income multiplier as well. In data section, it has explained that this research is using halal food sector in the I-O food category, which excludes alcoholic beverages (073) from the research's analysis. The criteria of multiplier index that is seen as contributing economically is >1. This research will then explain the multiplier by top three ranking to show the primary subsector, secondary subsector, and tarsier subsector.

Table 1.
Ranking of Halal Food Industry Subsector in Indonesia

Rank	Output Multiplier	Income Multiplier
1	Animal Oil and Vegetable Oil	Non-Alcoholic Beverages

2	Other Foods	Meat Processing and Preservation
3	Chocolate and Confectionery	Dried Fish and Salted Fish
4	Noodle, Macaroni and the kind	Animal Oil and Vegetable Oil
5	Non-Alcoholic Beverages	Chocolate and Confectionery
6	Milk-Based Foods and Beverages	Processed Soybean
7	Bread, Biscuit, and the kinds	Slaughtered of Livestock
8	Sugar	Processed Tea
9	Wheat Flour and Meslin Flour	Fruits and Vegetables Processing and Preservation
10	Processed Pet Food	Other Foods
11	Other Flour	Processed Coffee
12	Processed Soybean	Sugar
13	Slaughtered of Livestock	Milk-based Foods and Beverages
14	Meat Processing and Preservation	Processed Pet Food
15	Processed Coffee	Copra
16	Fruits and Vegetables Processing and Preservation	Other Flour
17	Processed Tea	Meat Processing and Preservation
18	Fish Processing and Preservation	Dried Fish and Salted Fish
19	Copra	Wheat Flour and Meslin Flour
20	Rice Milling and Rice Farming	Rice Milling and Rice Farming
21	Dried Fish and Salted Fish	Fish Processing and Preservation

After excluding alcoholic beverages sector, there are 21 subsectors obtained in Indonesia. According to the result of input-output analysis, it is known that each sector has positive impact towards the economy and is potentially become leading sector. This research uses multiplier analysis by arranging multiplier quantity from the highest to the lowest, for each of its output and income multiplier. In appendix 2 it shows the quantity of multiplier for each halal food industry sector, therefore the ranking is obtained for the output and income multiplier as shown in table 1. Amongst these 21 halal food industry sectors, it is discovered that animal and vegetable oil subsector

contributes the highest multiplier index with 1,5 trillion rupiah. This means that for every increase in demand for animal and vegetable oil subsector output as much as 1 rupiah, it will punch the output of the whole economic sector as much as 1,5 trillion rupiah. The second highest output multiplier is other foods, in the Indonesia Standard Commodity Classification (KBKI Klasifikasi Baku Komoditas Indonesia in Bahasa), the other food subsector consists of 28 components of food sectors such as salt, vanilla, fast food processing service, etc. output multiplier for the other food subsector is 1,4 trillion rupiah, meaning that in every increase demand of output in other food subsector as much as 1 rupiah will punch the output of the whole economic sector as much as 1,4 trillion rupiah. The third highest output multiplier is chocolate and confectionery with 1,1 trillion rupiah, meaning that for every increase demand in this sector's output as much as 1 rupiah will punch the output for the whole economic sector with 1,1 trillion rupiah.

To analyze the contribution of halal food industry sector towards Indonesia's economy, this research uses the income multiplier analysis. In the output multiplier it is obtained 3 main sectors which then became the primary sector, the secondary sector, and the tarsier sector with the highest contribution compare to the other subsectors. Meanwhile, for the index for household income is explained through income multiplier analysis. The index for household income is used to

analyze the quantity of total raise in national income for every raise in output produced by one subsector. According to the input-output table of the halal food industry as a whole, it is known that the establishment of halal food industry has pushed towards the improvement of national income, although its multiplier index hasn't reached 1 yet. The highest income multiplier from halal food industry sector comes from the non-alcoholic beverages with 0,193 trillion rupiah, meaning that in every 1 rupiah increase demand in the non-alcoholic beverages subsector will punch the increase in sectoral income as much as 0,193 trillion rupiah. Following, the noodle, macaroni and the kinds subsector has 0,136 multiplier index. Meaning that in every 1 rupiah increase demand in this subsector will punch the national income as much as 0,136 rupiah. It goes the same with bread, biscuit and the kinds subsector that will punch the national income as much as 0,135 trillion rupiah.

Based on this analysis, it can be concluded that the three main sector from halal food industry which contribute the highest additional output are the animal and vegetable oil subsector, the other food subsector, and the chocolate and confectionery subsector. Wherein the three main sectors that punch the national income are the non-alcoholic beverages sector, the noodle, macaroni and the kinds sector, also the bread, biscuit and the kinds sector. But, based on the income multiplier analysis, the whole subsector of

halal food industry has not contributed significantly enough towards the economy, because the income multiplier index from the 21 subsectors has yet to reach 1.

The sector which has positive output means they play an important role in supporting the country's economy. Increase in investment in these subsectors will give out a huge impact for the sector's input and output. Based on the result of multiplier analysis, this research answers the research question about how does halal food industry punch Indonesia's economy, which is by accumulation and addition from the production and income of the halal food industry. In the analyzed subsector tables in this research, it is known that the subsectors which becomes the ingredients for halal food industry are the kind of foods most people are consuming daily such as beverages, chocolate, and even salt. Based on the findings of this research, it is also known that in 2010 halal food industry has contributed a rather large amount in output perspective. Among the other three main sectors, animal and vegetable oil are well distributed to other subsectors in the halal food industry. Also, this subsector gives the highest number of input in each distribution. Therefore, the findings of this research supported by available data which shows how the distribution of animal and vegetable oil in the halal food industry sector. Yet, it is quite conflicted when the findings were zooming in to KBKI data level because the composition of

animal and vegetable oil are combining all animal oil, where the animal oil in question may include pork oil. Hence it is important to redefine the halal food sectors in the next research so that it can be precise in separating the halal and non-halal sector. However, in the perspective of punching the national income, halal food industry sector has not been able to become the alternative in being the leading sector which support the growth of national income because the multiplier index accomplished is not enough. But, the multiplier which produced by the whole subsector of halal food industry is positive, meaning that there is potential to increase the national income in near future. Other than that, the findings of this research may become the reference when the government policy needs to set on a trade-off between income and production through halal food industry sector.

V.   CONCLUSION

It can be concluded that halal food on the plate of Indonesian consumers can actually punch Indonesia's economy through the calculation of production level and has also potential in terms of income. The leading subsectors on the halal food industry are the animal and vegetable oil subsector, the other foods subsector, and the chocolate and confectionery subsector. There are 21 subsectors of halal food in Indonesia which play a role in raising the index of national income by having a positive income multiplier, and even reaching

close to 1. If the government has a policy to increase the nation's wellbeing through halal food industry sector, the government can surely use the findings of this research as a valid and reliable foundation. By considering the potential possessed by the halal food industry sector, if the direction of the policy is to punch the economic growth and to improve the income of its people, then the leading subsector which gives out income index less than 1 or valued as -1 needs to get some attentions. This is hoped that there will be a good change if the government try to fix the income of people working in those area (subsectors). Besides, it is mentioned before that COVID-19 is one of the variables that influence lifestyle. Even before the covid-19, halal food sectors which exclude alcoholic beverage has created a chain in terms of the economy in Indonesia. The hope is that by accumulating output from the halal food industry sector, it can provide a more sustainable growth impact.

This research is absolutely far from perfection, therefore it is fitting to design further researches to develop other findings. One of the lacking in this research is the data, because the source data of this research is very limited to only the area of halal food industry from food subsector, we believe that this research would be even much richer if it uses the data of KBKI level. Then also, from the methodology perspective, input-output has other kind of analysis such as employment multiplier and linkage. It is hoped that in further

researches, these area would be covered and may use a more complex analysis approach to find out an even more comprehensive analysis. In the perspective of time period, as mentioned in literature review section that I-O analysis is the type which is sensitive towards changes of technology and is sure will change in the next five years (Dietzenbacher et al., 2013; Rose & Miernyk, 1989). Therefore, it is hoped that the further researches can use the newest I-O data which will enable to catch the behavior through technology.

From the above conclusion, it raises one recommendation for the policy perspective. Based on the findings, halal food industry sector gives out a relatively high contribution in terms of output. Thus, if the direction of development policy will use the halal food industry sector, then it is hoped that the government will prioritize and target the production of halal food industry, which also hoped can boost the NFE just like Thailand (Lekuthai, 2007). Whereas in the perspective of national income, halal food industry sector has a relatively strong potential to also contribute. However, if the development policy is directed towards the improvement of national income, then it is not recommended to use the halal food industry because the role it plays in this area is not as strong as its output contribution.

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APPENDIX 1.
Food Industry Input Output Table in Indonesia 2010

Code	Sector	053	054	055	056	057	058	059	060	061	062	063
053	Slaughter of livestock	3,613,077	2,055,028	-	-	-	-	-	-	-	-	-
054	Meat Processing And Preservation	-	361,737	-	-	-	-	-	-	-	-	-
055	Dried Fish and Salted Fish	-	-	5,513	19,005	-	-	1,332	-	-	-	-
056	Fish Processing and Preservation	-	-	3,602	10,393	-	2	47	-	-	-	-
057	Processing and Preservation of Fruits and Vegetables	-	-	-	15,060	793,158	182	-	28,911	5,969	-	-
058	Animal Oil and Vegetable Oil	795,145	36,126	-	3,597	120,883	29,714,111	-	2,341,538	102,295	-	-
059	Copra	-	207,266	-	-	1,132	5,632,491	23,180	1,525,472	60	-	-
060	Food and Beverages Made from Milk	-	-	-	217	4,237	-	20	3,540,875	5,077	-	-
061	Other Flours	-	207,940	-	1,680	83,976	12,656	-	1,053,473	757,492	57,345	-
062	Wheat flour and meslin flour	-	22,316	-	50	2,291	1,302	-	11,022	154,138	9,979,407	-
063	Rice Milling and Rice Farming	-	-	-	-	163	-	-	-	6,074,406	-	19,575
064	Bread, Biscuits and the kinds	-	-	-	-	-	2	-	2,060	455	-	-
065	Sugar	-	44,748	11	74	111,001	1,078	-	1,475,641	366,742	431,405	-
066	Chocolate and Confectionery	-	-	-	-	-	-	-	3,016,956	7,981	-	-
067	Noodles, Macaroni and the kinds	-	-	-	-	-	-	-	-	933	-	-
068	Processed Coffee	-	-	-	-	-	-	-	-	-	-	-
069	Processed Tea	-	-	-	-	-	-	-	-	-	-	-
070	Processed Soybeans	-	181	-	-	82	-	-	546	198	-	-
071	Other Foods	44,165	144,422	1,540	9,534	82,401	89	8	354,735	10,354	-	-
072	Processed Pet Food	-	-	-	-	-	-	-	-	15	-	-
073	Alcoholic beverages	-	-	-	-	157	-	-	65	1	-	-
074	Non-Alcoholic Drinks	-	-	-	-	-	275,280	-	-	8	-	-

Code	Sector	064	065	066	067	068	069	070	071	072	073	074
053	Slaughter of livestock	23,404	-	-	903	-	-	-	54,317	6,226	-	-
054	Meat Processing And Preservation	1,449	-	-	1,019	-	-	-	21,316	158,236	-	-
055	Dried Fish and Salted Fish	-	-	-	-	-	-	-	1,231,110	32,494	-	-
056	Fish Processing and Preservation	-	-	-	3	-	-	-	7,399	56,726	-	-
057	Processing and Preservation of Fruits and Vegetables	262,076	2,532	5,563	16,512	846	16,214	-	521,757	13,699	10,247	733,193
058	Animal Oil and Vegetable Oil	1,338,541	-	73,349	259,849	-	-	97,198	13,193,271	1,666,701	-	-
059	Copra	21,431	466	32	78	-	-	34,313	1,087,846	15,854	-	-
060	Food and Beverages Made from Milk	576,779	-	548,297	9,247	23,446	1,466	-	115,608	1,078	7,566	258,398
061	Other Flours	2,822,096	8,551,146	1,518,464	2,551,256	71,288	554	3,048,046	7,264,725	4,050,855	1,173	66,334
062	Wheat flour and meslin flour	5,479,464	25,711	13,941	11,494,713	11,136	-	11,884	3,144,340	1,083,921	-	429,398
063	Rice Milling and Rice Farming	106,690	-	-	131,683	-	-	-	3,138,863	795,506	3	-
064	Bread, Biscuits and the kinds	10,105	-	78	224	-	-	-	73	-	5,306	7,912
065	Sugar	941,455	2,274,606	1,254,600	11,725	37,854	91,552	1,089,097	676,278	83,364	203,942	5,355,717
066	Chocolate and Confectionery	3,515	-	12,617,256	-	49,852	-	-	6,221,270	224,976	7,014	2,929,471
067	Noodles, Macaroni and the kinds	346	-	-	10,457	-	-	-	12,037	-	-	-
068	Processed Coffee	-	290	3,056	-	555,944	16,878	-	1,883	-	36,404	1,143,664
069	Processed Tea	-	-	-	-	991	454,402	-	734	-	58,428	1,012,277
070	Processed Soybeans	66,713	-	111	3,505	168,205	-	73,550	1,642,231	80,939	-	-
071	Other Foods	233,919	244,624	48,715	932,085	586,528	34,403	340,746	1,127,479	254,856	50,129	530,224
072	Processed Pet Food	-	-	66	-	-	-	-	-	598,276	-	-
073	Alcoholic beverages	224	441	-	1,043	-	-	175	1,307	219	75,464	-
074	Non-Alcoholic Drinks	111	213,054	160,766	-	45,470	4,811	-	22,916	13,834	-	2,802,453

Source: Input-Output Table, 2010

Appendix 2.
Output Multiplier and Income Multiplier

I-O Code	Subsector Halal Food and Beverage	Output	Rank	Income	Rank
053	Slaughter of livestock	1,050	13	0,113	7
054	Meat Processing And Preservation	1,033	14	0,073	17
055	Dried Fish and Salted Fish	1,000	21	0,072	18
056	Fish Processing and Preservation	1,001	18	0,053	21
057	Processing and Preservation of Fruits and Vegetables	1,013	16	0,107	9
058	Animal Oil and Vegetable Oil	1,503	1	0,135	4
059	Copra	1,000	19	0,085	15
060	Food and Beverages Made from Milk	1,160	6	0,088	13
061	Other Flours	1,076	11	0,076	16
062	Wheat flour and meslin flour	1,116	9	0,068	19
063	Rice Milling and Rice Farming	1,000	20	0,057	20
064	Bread, Biscuits and the kinds	1,137	7	0,135	3
065	Sugar	1,123	8	0,100	12
066	Chocolate and Confectionery	1,190	3	0,134	5
067	Noodles, Macaroni and the kinds	1,174	4	0,136	2
068	Processed Coffee	1,019	15	0,100	11
069	Processed Tea	1,006	17	0,111	8
070	Processed Soybeans	1,052	12	0,125	6
071	Other Foods	1,486	2	0,106	10
072	Processed Pet Food	1,106	10	0,087	14
074	Non-Alcoholic Drinks	1,172	5	0,193	1