THE EFFECTS OF GLOBAL OIL PRICES ON COST OF POULTRY

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Abstract: This study evaluates the cost-effect relationship between the price of crude oil to poultry feed and chicken prices in Malaysia. The main issue is the increasing chicken market prices. The study utilizes monthly data over the period of January 2003 through December 2009. The results showed that resource price plays an important role in changing the price of chicken products in Malaysia.

Keywords: poultry, agricultural economics, price analysis, correlation statistics

INTRODUCTION

Increasing consumer awareness on nutritional values of food has created the demand for functional/healthy, minimally processed fresh food and organic in nature. Consumers would continue to consume chicken meat and eggs as they are highly nutritional, easily available and among the cheapest sources of protein. The last few years saw a phenomenal increase in primary commodity prices such as crude oil and animal feed. The increasing commodity prices are said to give a direct impact to the poultry industry. From 2003 until 2009 the production of chicken per annum has increased about 26% from 409,545,060 to 516,231,809 birds and the market demands keep increasing every day and this affects the price of chicken in the market. Feed and day-old chicks comprise about 65% to 70% and 10% to 15% of the total cost of production respectively. This study was conducted to evaluate the relationship patterns and impact of resource (crude oil) price on chicken prices.

MATERIALS AND METHODS

This study adopted a simple model to express relationship between main resource price which is crude oil and chicken feed in Malaysia between the years 2003-2009. Statistical mathematic method such as correlation has been used to indicate the relationship between the prices and test the hypothesis of whether or not changes in resource prices play an important role in changing the chicken livestock wholesale and retail price. SPSS package was used to conduct the statistical analysis.

RESULTS AND DISCUSSION

Figure 1 shows that crude oil has the most unstable price compared to the other commodities. Beginning from January 2007, the price of crude oil has shot up at a relatively higher rate than before and was at the highest price in July 2008, which was USD 133.52. During this period, the crude oil prices increased by about 163% and also raised poultry prices. The feed price has increased by 41%, wholesale prices 45% and retail prices by 21%. Crude oil price index has increased 272% between 2000 and March 2008 (IMF, 2008). High energy price led to an increase in the production cost and additionally, it triggered the demand for alternatively energy sources such as biofuels. Principally the biofuels are ethanol and biodiesel. It is estimated that the global biodiesel production alone has increased by 350% by the year 2010. The increase in production of biofuels invariably results in increasing demand of feedstock thus increasing their prices. The biofuels shift led to increasing the grain price thus the feed cost which will invariably increase the poultry production cost. Nowadays, chicken has become a major source of animal protein and has gained an important share in the Malaysian diet, compared to beef, mutton and pork. The rebound in confidence in chicken meat due to reduced fears about bird flu and a relatively rapid increase in world per capita income will increase the chicken market demand. The increasing of the global resource prices in the poultry industry and the high market demand led to give a higher chicken market price. At the same time this situation could have been manipulated by some people to make extra profits, making a negative impact on the middle and lower income groups. Another factor that can influence poultry market price is marketing margin. The marketing margin can be said as difference between what the consumer pays and what the farmer
receives. It is usually measured as the difference between the retail price and the farm price. Generally, the retail margin is larger than the wholesale margin. High value of margin generally will give the high value of market retail price. On the whole the average of margin was RM2.02 per kg and about 36% higher than ex-farm price which means the chicken market will give a profit of 36% to the seller if they buy directly from the farm. The higher margin price shown is RM3.04 and the higher margin is 51%.

Figure 1: Price Indices of Commodities, January 2003 to May 2009 (Source: EIA, FAMA, FLFAM)

Table 1 Correlation between Resource and Chicken Livestock.

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Crude Oil</th>
<th>Feed</th>
<th>DOC</th>
<th>Exfarm</th>
<th>Wholesale</th>
<th>Retail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Oil</td>
<td>1</td>
<td>.743</td>
<td>.210</td>
<td>.562</td>
<td>.607</td>
<td>.583</td>
</tr>
<tr>
<td>Feed</td>
<td>.743</td>
<td>1</td>
<td>.182</td>
<td>.694</td>
<td>.799</td>
<td>.809</td>
</tr>
<tr>
<td>DOC</td>
<td>.210</td>
<td>.182</td>
<td>1</td>
<td>.555</td>
<td>.546</td>
<td>.482</td>
</tr>
<tr>
<td>Exfarm</td>
<td>.562</td>
<td>.694</td>
<td>.658</td>
<td>1</td>
<td>.876</td>
<td>.844</td>
</tr>
<tr>
<td>Wholesale</td>
<td>.607</td>
<td>.799</td>
<td>.546</td>
<td>.876</td>
<td>1</td>
<td>.985</td>
</tr>
<tr>
<td>Retail</td>
<td>.583</td>
<td>.809</td>
<td>.482</td>
<td>.844</td>
<td>.985</td>
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</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).**

Table 1 shows that all except day-old-chick (DOC) are highly correlated to crude oil. Feed is the most correlated with crude oil which is r=0.743, followed by wholesale r=0.607, retail r=0.583 and ex-farm r=0.562. The result gives a clear view that when price of crude oil increases, the prices along the production chain of poultry also increases and vice versa. The price of DOC is independent of crude oil price. Wholesale and retail prices have a strong correlation, r=0.985. This means that, wholesale and retail prices are highly related and will affect each other directly.

CONCLUSION

The result of the statistical correlation test shows that there is relationship between crude oil prices and the cost of poultry. These results show that crude oil price is a determining factor in the poultry industry. Clearly further analysis on the econometric study on the poultry industry needs to be conducted and also the analysis of the mechanics of the poultry market will have to incorporate crude oil price as one major market determinant, as well as the understanding of the structural and behavioral aspects of the industry.

GENERAL REFERENCES