PRIME MINISTER'S DEPARTMENT
DEPARTMENT OF STATISTICS MALAYSIA

4TH OCT 2022 (VIRTUAL) & 5TH OCT 2022 (ILSM, SUNGKAI, PERAK)

MyStats 2022

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Department of Statistics, Malaysia
Dealing with Uncertainties: Unearthing Measures for Recovery

IS THE MARKET PRICE OF LIVESTOCK MEAT INFLUENCED BY THE IMPORT PRICE OF ANIMAL FEED?

WAN SITI ZALEHA WAN ZAKARIA[1]; NUR MASLINA MUHAMED[1]; NUR SYAFIQAH MOHD AZRAAI[1,2]; ANIS SYAFIQAH MOHD ZAMRI[1,3]; SITI HASLINDA MOHD DIN[1]
[1]INTERNATIONAL TRADE STATISTICS DIVISION, DEPARTMENT OF STATISTICS MALAYSIA, [2]UNIVERSITI PUTRA MALAYSIA, [3]UNIVERSITI UTARA MALAYSIA

INTRODUCTION

- Malaysian households spent in 2019 an average of RM109.08 per month on meat, consisting of fresh meat, frozen meat and processed meat, representing 2.4% of Malaysia's total monthly household consumption expenditure during the year.
- The increasing **in livestock meat prices** (poultry, beef, mutton and pork), is often the focus, especially during the festive season.
- The increase was along with various **internal and external factors** such as lack of supply and rising prices of livestock feed.

OBJECTIVE

- To measure the influence of the price of livestock meat in the market with the import price of input for feeding stuff for animals i.e. maize, wheat and soya beans, and the import price for feeding stuff for animals.
- This study also looks at the correlation between the price of livestock meat in the market and ex-farm.

METHODS

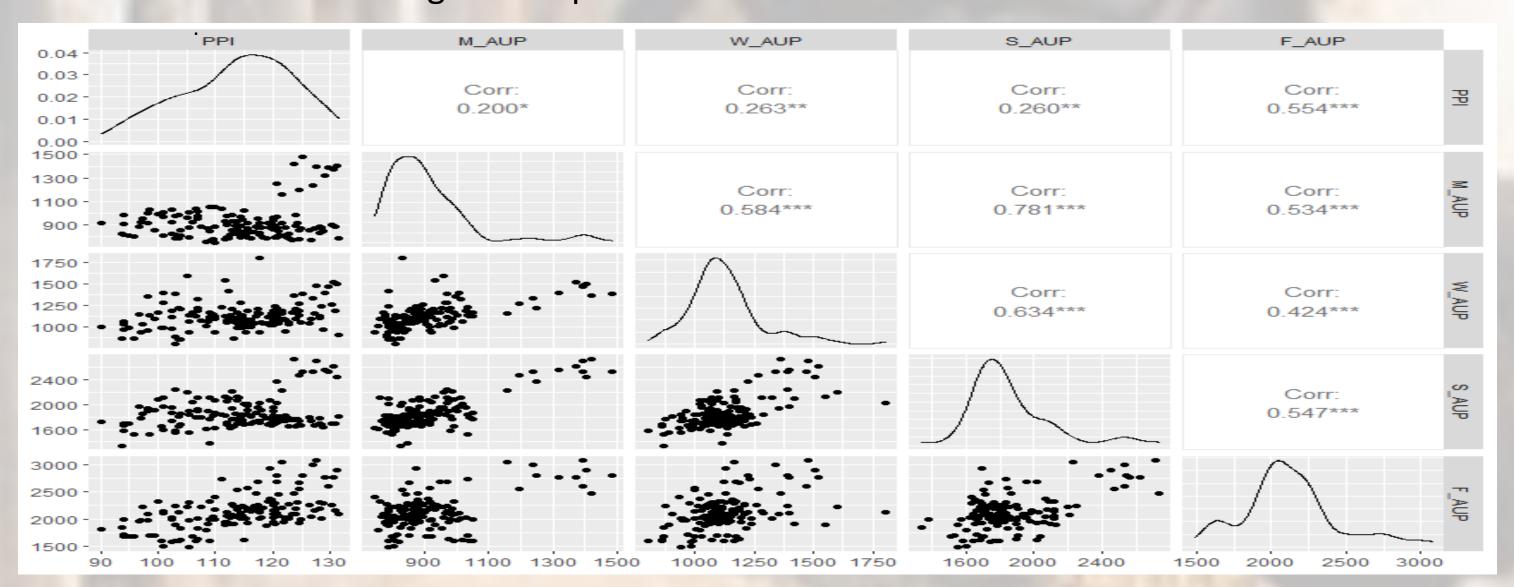| METHOD	MODEL
Pearson's Correlation Analysis	Measure the statistical relationship between monthly Malaysia's CPI Sub-group of Meat with PPI Local Production for Animal Production and import average unit price for maize, wheat, soya beans and animal feed
Multiple Linear Regression (MLR) analysis	$Y=\beta_0(PPI) +\beta_1(M\_AUP) +\beta_2(W\_AUP) +\beta_3(S\_AUP) +\beta_4(PPI) +\beta_5(F\_AUP) + \varepsilon$ Where: Y: CPI Sub-group of Meat PPI: PPI Local Production for Animal Production M_AUP: Import average unit price for Maize W_AUP: Import average unit price for Wheat S_AUP: Import average unit price for Soya bean F_AUP: Import average unit price for Animal feed The MLR method should satisfy regression model assumptions: linearity, normality, homoscedasticity, and multicollinearity 1) Linearity is shown from the Residuals vs Fitted graph 2) Normality is shown from the Normal Probability Q-Q graph 3) Breusch-Pagan test assures the residuals were distributed with equal variance to achieve homoscedasticity 4) Multicollinearity: Variance inflation factor (VIF) is used to measure how much the variance of the estimated regression coefficient is inflated if the independent variables are correlated

PEARSON'S CORRELATION ANALYSIS

	CPI	PPI	M_AUP	W_AUP	S_AUP	F_AUP
CPI	1.000	0.925**	0.232*	0.262*	0.263*	0.658**
PPI	0.925**	1.000	0.200*	0.263*	0.260	0.554
M_AUP	0.232*	0.200*	1.000	0.584	0.781**	0.534
W_AUP	0.262*	0.263*	0.584	1.000	0.634	0.424
S_AUP	0.263*	0.260	0.781**	0.634	1.000	0.547
F_AUP	0.658**	0.554	0.534	0.424	0.547	1.000

*Pearson's correlation significant p < 0.05
**Pearson's correlation significant p < 0.001

RESULTS

MULTIPLE LINEAR REGRESSION (MLR) ANALYSIS

Parameter		Estimate	SE	95% CI Lower	95% CI Upper	Pr(>| t |)	
Intercept	β_0	17.8289	3.493	12.0420	23.6147	1.09e-06	***
PPI	β_1	0.7909	0.033	0.7355	0.8464	< 2e-16	***
M_AUP	β_2	0.0003	0.003	-0.0049	0.0055	0.9200	
W_AUP	β_3	-0.0005	0.002	-0.0043	0.0034	0.8448	
S_AUP	β_4	-0.0034	0.002	-0.0065	-0.0003	0.0726	.
F_AUP	β_5	0.0078	0.001	0.0059	0.0098	1.04e-09	***

Notes: S.E.: estimated standard error.   *** p < 0.01
CI: confidence   . p < 0.1

PPI Local Production for animal production and import average unit price for animal feed were statistically significant. CPI Sub-group of meat was positively influenced by PPI Local Production for animal production. The increase in PPI Local Production for animal production by a unit led to an increase in the CPI Sub-group of meat by 0.791. Contrarily, a unit increase in the Import average unit price for animal feed will cause the CPI Sub-group of meat to increase by 0.008. Import average unit prices for maize, wheat and soya were statistically insignificant to the changes in the CPI Sub-group of meat, with a p-value of 0.9200, 0.8448 and 0.0726, respectively.

CONCLUSIONS

- Price of livestock meat in the market correlated and related strongly with the price of livestock meat ex-farm, implying that the changes in the price of livestock meat ex-farm have a direct impact on the price in the market.
- Correlation between the price of livestock meat in the market with animal feed import price, though marginal, leading to a minimal impact on changes in the price in the market.
- Correlation between the price of livestock meat in the market and the import price of input for feeding animals, i.e. maize, wheat and soya beans, were weak
- Further studies can be done on other intermediate goods and services for the livestock industry
- The rising global grain prices have become increasingly apparent along with the food stockpiling during the pandemic, weather phenomena and the Russia-Ukraine crisis
- Many are working together to increase the local production of animal feed and the cultivation of grain corn to lower the cost of livestock food production and subsequently, the price of livestock meat.

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National Agro-Food Policy 2021-2030 (DAN 2.0)

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