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RESEARCH ARTICLE

BASIC AND PRODUSER PRICES IMPACT INCOME FROM AGRICULTURAL ACTIVITY IN EUROPEAN

Dian Ditami Sihombing[1*] | Iskandar Muda[1]

[1]Universitas Sumatera Utara, Medan, Indonesia

Abstract

Abstract. This study examines the pattern of income form agricultural activity in European countries, which consists of 31 (thirty one) countries, by looking at the patterns of income for the last 4 (four) years, since 2016 until 2019. This type of research is causality research. With the influencing variables are crop output, animal output, output of the agricultural industry, and gross value added at basic prices. Livestock production is valued at basic prices. The base price is the price received by the manufacturer after deducting all taxes on products but including all subsidies on products. The concept of output includes sales, stock changes, and products used for processing and own final use by producers. Plant production is valued at basic prices. The base price is the price received by the manufacturer after deducting all taxes on products but including all subsidies on products. The concept of output covers sales, stock changes and plant products used as animal feed, processing and own final use by producers. Existing variables will be processed using the WarpPLS statistical tool.

The results show that not all affect the income form agricultural activity.

Keywords: Crop Output, Animal Output, Output of the agricultural, Gross Value

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1 | INTRODUCTION

Agriculture is an effort to produce or produce food, food, fiber, and other products in the agricultural sector that requires human labor that involves specific types of plants and the growth of various local animals. Nowadays, agricultural activities face increasing difficulties, ranging from less fertile soil, less favorable weather and other factors. In addition, countries in Europe are countries that always export their agricultural products or will recycle them. Thus, this farming activity requires more expensive and higher costs to meet the various existing challenges and meet the existing needs. And

along with the higher costs for agriculture, of course the agricultural income will also be higher. If the four factors, namely crop production, livestock production, agricultural production and gross value added at basic prices, have higher sales value, agricultural income will also be higher. Crop production depends on the availability of arable land and depends in particular on yields, macroeconomic uncertainty as well as consumption patterns; it also has a strong influence on the prices of agricultural commodities. The importance of crop production is related to the harvested areas, returns per hectare (yields) and quantities produced. Crop yield is the production harvested per unit area of harvest for plant products. In most cases, yield data are not recorded, but are obtained by dividing production data by data for the area in which they were collected. The actual yield obtained on the farm depends on several factors, such as the genetic potential of the plant, the amount of sunlight, water and nutrients absorbed by the plant, the presence of weeds and pests. This indicator is presented for wheat, maize, rice and soybeans. Crop production is measured in tonnes per hectare, in thousands of hectares and in thousands of tons. Livestock production consists of primary and secondary. The basic one consists of meat, bones and skin. And the secondary consists of milk, blood, wool, traction, packet, horseback riding, dung, dung worms, and eggs. Livestock and arable crops are the main product categories of agricultural production. Agricultural production includes: sold production (including trade between agricultural holdings); stock changes; output for own consumption; production for further processing by agricultural producers; and internal consumption of livestock feed products. Gross value added (GVA) is defined as output (basic prices) less intermediate consumption (purchasing prices); it is the balancing item in the production account of national accounts. GVA can be divided into industry and institutional sector. The sum of gross value added for all industries or sectors plus taxes on products less subsidies on products gives gross domestic product.

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Corresponding Author: *Dian Ditami Sihombing*
Universitas Sumatera Utara, Medan, Indonesia

2 | LITERATURE REVIEW

2.1. Agricultural

Agriculture is the activity of utilizing biological resources by humans to produce food, industrial raw materials, or energy sources, as well as to manage the environment. The activities of utilizing biological resources which are included in agriculture are commonly understood by people as: plant cultivation or planting (plant cultivation) breeding, the use of microorganisms and bioenzymes in the processing of advanced products, such as making cheese and tempeh, or simply oil, such as fishing or forest exploration.

2.2. Crop Output

The crop yield is a measure of the amount of agricultural output harvested - the crop yield - per unit of land area. Crop yield is the measure most commonly used for cereals, grains, or legumes, and is typically measured in bushels or pounds per acre in the United States. The sample sizes of the harvested crops are generally measured to determine the estimated yield.

2.3. Animal Output

Livestock production is a technology used to keep animals for profit. It includes; feeding, breeding, keeping and marketing

2.4. Output of the agricultural

Agriculture in European countries produces various results, namely as follows:

1. Production of arable enterprises, i.e. the total value of crops produced by farm (other than field and warehouse losses). Includes crops used for forage and seeds by farms and those consumed on the farm and by.

2. By products, feed and crops that include production value agricultural by-products, feed sales, revaluation for forage and crops. Also includes rental income from bare land or short-term rental feed.

3. The production of breeding enterprises includes the total sale of animals and livestock products,

including direct livestock subsidies and production subsidies received, part of revaluation (see below), product consumed in farm and labor, and the value of milk and milk products fed on the farm (without direct breastfeeding) adjusted for debtors at the beginning and end year (except direct livestock subsidies) and transfers between enterprises;lower purchases of livestock and livestock products from outside the farm business.

4. Output varies includes the value of output from those activities that they are still at the center of the cost of agriculture, but are neither livestock nor livestock plant production of enterprises. These will include income from street and agricultural foliage rental, sale of various forests, rent for contract crops, various insurance receipts and payments of compensation.

Total agricultural output is the total agricultural output plus the production adjustment previous year's harvest plus total livestock production plus home production fodder crops grown plus crop and feed production plus diversified non-agricultural production plus miscellaneous income plus one-off payment Inputs are resources that are used in the production process, such as feed, materials, and labor and machines, valued in physical or financial terms.

2.5. Gross value

Gross Value Added (GVA) is a measure of the value of goods and services produced in an area, industry or sector of the economy. "Gross value added is the value of production less the value of intermediate consumption; it is a measure of the contribution to GDP of an individual producer, industry or sector; Gross Value Added is the source from which the SNA primary income comes.

generated and is therefore transferred to the primary distribution of income account.

3 | METHOD

This study uses secondary data which consists of country data from Belgium, Bulgaria, Czechia, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden, United Kingdom, Iceland, Norway, and Switzerland. And data from these countries are obtained from the European Union financial data. And this study uses a data analysis method using Warp PLS version 7.0.

4 | RESULT AND DISCUSSION

4.1 | Result

4.1.1 | Operational Variabel Table 1

Operational Variable

Variable	Indicator	Scale	Measurement
Income from agricultural activity	Crop Output	Nominal	Nominal
	Animal Output	Nominal	Nominal
	Output of the agricultural	Nominal	Nominal
	Gross value added at basic prices	Nominal	Nominal

Analysis with SEM Warp PLS still requires several suitability indices to measure the correctness of existing indicators.

4.1.2 | The Result of Descriptive Analysis

4.1.3 | Goodness of Fit Model Test

The model fit indicator is based on three indicators; the mean path coefficient (APC), the R-Squared average (ARS) and the mean variance inflation factor (AVIF). P values are given for both the APC and ARS indicators calculated by resampling estimation and Bonferronike correction (Sholihin & Ratmono, 2013). The results show:

Average path coefficient (APC)=0.177, P=0.011

Average R-squared (ARS)=-0.095, P=0.070

Average adjusted R-squared (AARS)=-0.132, P=0.033

Average block VIF (AVIF)=2.958, acceptable if <= 5, ideally <= 3.3

Average full collinearity VIF (AFVIF)=108.991, acceptable if <= 5, ideally <= 3.3

	X1	X2	X3	X4	Y	
Mean	7360,100	5794,8	1442	6101	122,9548	
	Standard Error	942,229	652,4	178	26,28	1,582	2,995256
	Median	2958,4	2857,	7198	2139,	120,5	5
	Mode	#N/A	#N/A	#N/A	#N/A	#N/A	
	Standard Deviation	10492,	7320,	1922	9037,	33,35	76
	Sample Variance	1100867	535,9	3E+08	8167451	1112,473	
	Kurtosis	3,1522	1,598	2,317	2,887	2,081	41
	Skewness	1,993634	1,529	1,813	1,99903	3,056192	
	Range	45118,	2728	7817	3381	190,1	
	Minimum	45,44	67,4	121,17	56,37	63,03	
	Maximum	45163,	2735	7829	3386	253,1	
	Sum	912652,3	718560	178850	756530	15246,4	
	Count	124	124	124	124	124	

Source : Microsoft Excel (2020)

Tenenhaus GoF (GoF)=0.000+0.308i, small >= 0.1, medium >= 0.25, large >= 0.36

Sympson's paradox ratio (SPR)=0.000, acceptable if >= 0.7, ideally = 1

R-squared contribution ratio (RSCR)=0.000, acceptable if >= 0.9, ideally = 1

Statistical suppression ratio (SSR)=0.500, acceptable if >= 0.7

Nonlinear bivariate causality direction ratio (NLBCDR)=0.000, acceptable if >= 0.7

Source : Result Test of WarpPLS (2020)

Thus, the APC and ARS values are significant at the alpha level below 5% and the AVIF value below the 5 value, indicating that the model is suitable.

4.1.4 | Analysis on the Test of Qualitative Data

Of the 124 questionnaire data distributed, it is used as an indicator of convergent validity which is part of the measurement model in SEM-PLS. The output is expected to show the construction on the column and the indicator on the existing row, the following results are obtained:

* Combined loadings and cross-loadings *

****

CO_X1 AO_X2 0AI_X3 GV_X4 IAA Type (a SE P value

X1 1.000 0.000 -0.000 0.000 -0.000 Reflect 0.070 <0.001

X2 -0.000 1.000 0.000 -0.000 0.000 Reflect 0.070 <0.001

X3 0.000 0.000 1.000 0.000 -0.000 Reflect 0.070 <0.001

X4 0.000 0.000 -0.000 1.000 -0.000 Reflect 0.070 <0.001

Y -0.000 -0.000 0.000 -0.000 1.000 Reflect 0.070 <0.001

Notes: Loadings are unrotated and cross-loadings are oblique-rotated. SEs and P values are for loadings. P values < 0.05 are desirable for reflective indicators. Source : Result Test of WarpPLS (2020)

Based on the above results, it shows that the external model does not meet the convergent validity requirements. The reflective construct and significant p value <0.05 indicated that the outer model did not meet the convergent validity of the reflective construct.

4.1.5 | Hypothesis Testing

The results of hypothesis testing on the data above are that crop output, output of the agricultural industry, and gross value added at basic prices, have no or no effect on income from agricultural activity. And only animal output has an effect and has a more impact on income from agricultural. To test the partial regression coefficient individually from each independent variable can be seen in the following figure:

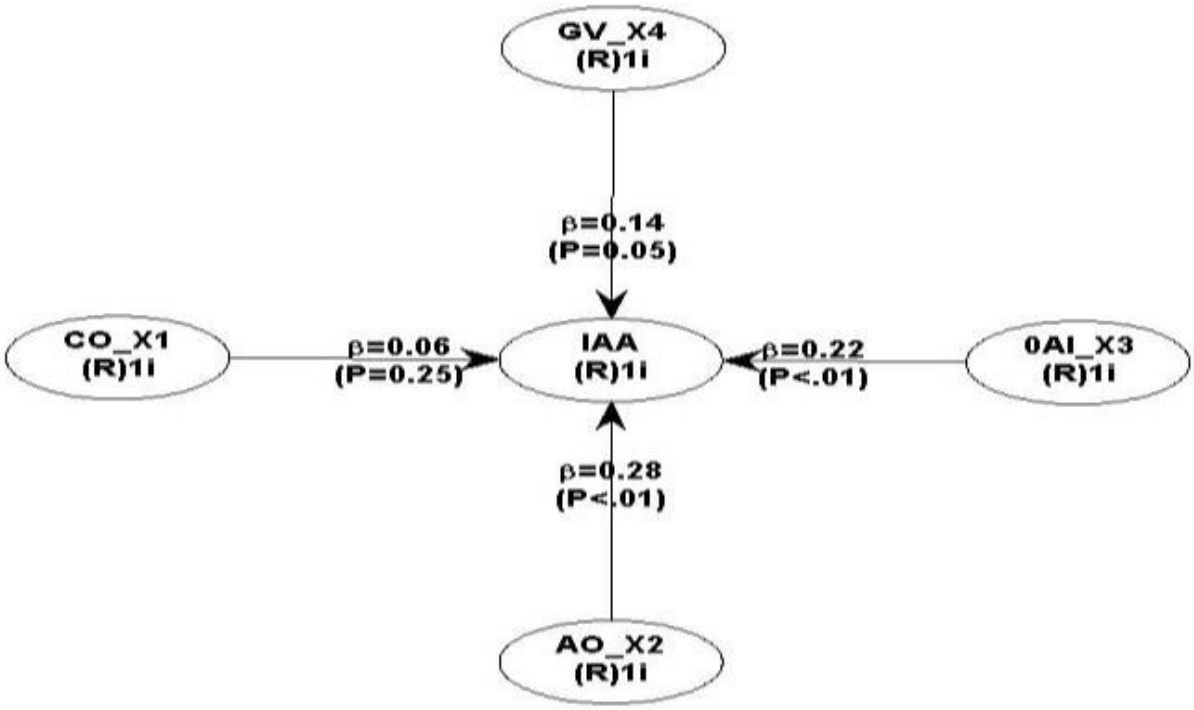

FIGURE 1: Testing Result WarpPLS 7.0 (2020) Source : WarpPLS result test (2020)

4.2 | Result And Discussions

From the results of the above discussion that crop output, output of the agricultural industry, and gross value added at basic prices, have no or no effect on income from agricultural activity. If we pay further attention to the reason that these three factors have no effect or only have a slight impact, it is because, like crop output, in fact, countries in the world rely more on the Asian region, so that it does not really affect agricultural income. And from the available data, only animal output has an effect and has a more impact on income from agricultural. That is because the technologies in European countries are very sophisticated, so they can increase their animal output. Compared to Asian countries which are their rivals, especially in crop output, it turns out that European countries are more powerful in animal output. That is why animal output greatly affects income.

5 | CONCLUSION

Crop output (X1), output of the agricultural industry (X3), and gross value added at basic prices (X4) have no effect on income (Y). So that the European Union countries must intensify activities on these three indicators. And keep animal output (X2) in order to keep increasing.

6 | REFERENCES

"Agricultural output", https://www.oecd-ilibrary.org/agriculture-and food/agriculturaloutput/indicator-group/english_44db9980-en

"Animal output - basic and producer prices " https://knoema.com/tag00055/animal-output-basic-andproducer-prices

"Crop Production" ,https://data.oecd.org/agroutput/crop-production.htm .

"European Statistical", https://ec.europa.eu/eurostat/data/browse-statistics-by-theme.

Bioenergy And Food Security (2014). Crop Production. http://www.fao.org/3/a-bp851e.pdf

Chen, James (2019). Crop Yield. https://www.investopedia.com/terms/c/crop-yield.asp

FBS. Definitions used by the Farm Business Survey. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/fi le/557605/fbs-definintions-4oct16.pdf

Hayes, Adam (2020). Gross Merchandise Value (GMV). https://www.investopedia.com/terms/g/gross-merchandise-value.asp

Sumarno. Green Agriculture Dan Green Food Sebagai Strategi Branding Dalam Usaha Pertanian. https://media.neliti.com/media/publications/69944-ID-green-agriculture-dan-green-foodsebagai.pdf

Prawiro, M (2019). Pengertian Agrikultur : Definisi, Sektor, dan Produk Agrikultur. https://www.maxmanroe.com/vid/bisnis/pengertian-agrikultur.html

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