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Structure of Agricultural, Forestry and Fishery Sector in the Vietnam Economy: An Input – Output Analysis

Trung Hieu Le[1]
Thai Nguyen Quang[2]
Trinh Bui[3]♣
Hau Nguyen Thi[4]

[1,4]*General Statistics Office of Vietnam, Vietnam.*
[1]*Email: letrunghieugso@gmail.com*
[4]*Email: haunguyen.tk81@gmail.com*
[2]*Research Development Institute, Vietnam.*
[2]*Email: thai.nguyenquang@gmail.com*
[3]*FPT School of Business and Technology, FPT University, Vietnam.*
[3]*Email: buitrinhcan@gmail.com*

Abstract

As coming to Vietnamese culture, it refers to the culture of agriculture. Every country has agriculture, but the culture of agriculture is only in some Asian countries, including Vietnam. In the soul of the Vietnamese is always a pure soul and pure. In recent decades it seems that people are trying to change this with the "industrialization and modernization" movement, trying to force the Vietnamese people instead of using the advantages of cultivation, breeding become workers. When Vietnamese people's strengths are not used and promoted, they have to try or be forced to use their weakness. Thus, the failure is almost inevitable. In Vietnam, the importance of an industry or group of industries is usually measured by the share of the value added of the industry (or group of industries) in GDP. This can lead to misunderstandings about the importance of that sectors group, So, this study examines the change in the interactions between agriculture, forestry and fisheries with other sectors of the economy based on the structure of the 2012 and 2016 Input Output (I/O) tables of Vietnam.

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(♣ Corresponding Author)

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1. Introduction

In recent years, the high GDP growth, along with falling in the share value-added of the agriculture, forestry and fishery sectors in GDP seems to be the trend in Vietnam. Vietnam's government (in both central and local levels) encourages change economic structure following this trend. Therefore, the share of agriculture, forestry and fishery sectors in GDP decreases from 18.4% in 2010 to 15.3% in 2017, the weight for manufacturing, and construction sectors increase slightly while the weight for service sectors raises significantly Table 1.

Due to such orientation, the amount of investment in agriculture, forestry and fishery fell down, accounted for about 8% of the total investment in 2005, and only about 6% up to 2017, whereas the weight for industry& construction and for services accounted for the similar amount, about 47% of total investment (General Statistics Oficice, 2017).

An industry considered to be of relative importance to the economy is the one with the good index of the power of dispersion and sensitivity of dispersion, and high spill over effect to value-added but low spill over effect to imports. The result from the Input-Output model shows that agriculture, forestry, and fishery sector is the only ones that meet this requirement. In this study, agriculture, forestry, fishery sector is divided into 11 sub-sectors Appendix 1. The study also considers the relationship between 11 agriculture, forestry and fishery sub-sectors.

Table 1. Gross domestic product by economic sector[1].

Unit: %

Year	Total	Agriculture, forestry and fishing	Manufacturing & Construction	Service	Product taxes subsidies on production
2010	100	18.38	32.13	36.94	12.55
2011	100	19.57	32.24	36.73	11.46
2012	100	19.22	33.56	37.27	9.95
2013	100	17.96	33.19	38.74	10.11
2014	100	17.7	33.21	39.04	10.05
2015	100	17	33.25	39.73	10.02
2016	100	16.32	32.72	40.92	10.04
2017	100	15.3	33.3	41.4	10

Source: Vietnam General Statistics Office.

According to economic theory, the role of agriculture in economic growth has been emphasized by various studies since the 12th century (Cummings et al., 2000; Hwa, 1988). Hwa (1988) performed a statistical analysis of the contribution of agriculture to economic growth. The author showed that existing the close relationship between agriculture and other sectors, it contributed to national and international economic growth.

The most common use of the I/O model is to analyze the direct, indirect and spillover effects of the economy or a group of industries (Baumol & Wolff, 1994; Jensen, Mandeville, & Karunaratne, 1979; Richardson, 1972; Trinh, 2010).

This study also attempts to show the interaction of eleven agriculture, forestry and fishery sub-sectors with other sectors surveyed in the model Appendix 1.

2. Methodology

W. Leontief put forward the linear function's system for relationship between supply and demand of economy by sectors, solved at below:

$$\sum^{n}_{j}Xij + Yi = Xi \quad (1)$$

$$\text{And} \quad \sum^{n}_{i}Xij + Vj = Xj \quad (2)$$

Where: X_{ij} present sector j used product i as input; i,j = 1….n with n is number of sectors in input-output model; Yi is final product of product i; Xi is gross output of product i (total demand of product i) and Vj is value added of sector j.

Equation 1 describes total demand as gross output of economy and Equation 2 describes total supply as gross input.

Equation 3 shows: Gross output = Intermediate demand (for production) + Final demand (for consumption, gross capital formation and net, export).

Equation 4 shows: Gross input = Intermediate input (for production) + Value added.

Total output always equals to total input.

Put $a_{ij} = X_{ij}/X_j$ and Equation 1 we have:

$$\sum^{n}_{j}a_{ij}X_j + Y_i = X_i \quad (3)$$

Rewrite the Equation 3 to matrix form:

$$A.X + Y = X \quad (4)$$

With: $A = (a_{ij})_{(nxn)}$; $Y = (Y_i)_{(nx1)}$; $X = (X_i)_{(nx1)}$. The Equation 4 is Leontief's standard, this equation can rewrite as follow:

$$X = (I - A)^{-1}.Y$$

[1]Due to the change in statitistic methodology (excluding product taxes in value added), the data is collected from 2010.

In this research the matrix A is divided by sub-matrixes including A^{RR}, A^{RS}, A^{SR} and A^{SS}.

Where: R, S are industries; R is the industry is affected by increasing indirect tax; A^{RR} is the matrix of intermediate coefficients of r industry using its own product as input; A^{RS} is a matrix of intermediary coefficients for s industry using r product as input; A^{SR} is a matrix of intermediary coefficients for r industry using s product as input; A^{SS} is a matrix of intermediary coefficients for s industry using its own product as input.

We can rewrite Leontief's relation:

$$\begin{pmatrix} A^{RR} & A^{RS} \\ A^{SR} & A^{SS} \end{pmatrix} * \begin{pmatrix} X^R \\ X^S \end{pmatrix} + \begin{pmatrix} Y^R \\ Y^S \end{pmatrix} = \begin{pmatrix} X^R \\ X^S \end{pmatrix} \quad (5)$$

Or:

$$A^{RR}.X^R + A^{RS}.X^S + Y^R = X^R \quad (6)$$

$$A^{SS}.X^S + A^{SR}.X^R + Y^S = X^S \quad (7)$$

From (6) and (7) we have:

$$X^S = (I - A^{SS})^{-1}.(A^{SR}.X^R + Y^R) \quad (8)$$

$$X^R = (I - A^{RR})^{-1}.(A^{RS}.X^S + Y^S) \quad (9)$$

Equation 8 and 9 shows that output of industry is not only based on the final demand but also depend on other sector's productions. For example, ouput of R depend on S's production by $A^{RS}.X^S$, or output of S (X^S) depend on R's production by $A^{SR}.X^R$.

Relationship between S and R can be shown:

$$X^S = (I - A^{SS})^{-1}.A^{SR}.X^R \quad (10)$$

$$X^R = (I - A^{RR})^{-1}.A^{RS}.X^S \quad (11)$$

Or

$$\Delta X^S = (I - A^{SS})^{-1}.A^{SR}.\Delta X^R \quad (12)$$

$$\Delta X^R = (I - A^{RR})^{-1}.A^{RS}.\Delta X^S \quad (13)$$

Equation 12, 13 show that the change in each industry can be led to the change in other industries. Matrix $(I - A^{SS})^{-1}.A^{SR}$ and $(I - A^{RR})^{-1}.A^{RS}$ show this relationship. These equation is applied to quantify the the output of industries that are not directly affected by indirect tax increase are also reduced in the next production cycle. In order to consider the effect of final demand of each industry to value added, we put:

$$B = (I - A)^{-1} = \begin{pmatrix} B^{RR} & B^{RS} \\ B^{SR} & B^{SS} \end{pmatrix} \quad (14)$$

$$\begin{pmatrix} X^R \\ X^S \end{pmatrix} = \begin{pmatrix} B^{RR}Y^R + B^{RS}Y^S \\ B^{SR}Y^R + B^{SS}Y^S \end{pmatrix} \quad (15)$$

And

$$(V^R \quad V^S) = (v^R \quad v^S) * \begin{pmatrix} B^{RR}Y^R + B^{RS}Y^S \\ B^{SR}Y^R + B^{SS}Y^S \end{pmatrix}$$

Or:

$$V = (V^R B^{RR} + V^S B^{SR})Y^R + (V^S B^{SS} + V^R B^{RS})Y^S \quad (16)$$

Equation 16 indicates the spill over effect of final demand of R and S on value added.

3. Results

Appendix 2 shows that in the 11 subsectors of agriculture, forestry, and fisheries, there are two sectors that have the power of dispersion greater than the average, including livestock and aquaculture products. However, the import spill over indexes of these two subsectors is also above the average level and the value-added spill over indexes is lower than the average. The crop sector has good value-added spill over index but a low output spill over index.

Some input sectors of agriculture, forestry, and fishery such as feeds for cattle, poultry, and aquatic products, fertilizers and nitrogen compounds, pesticides and other chemicals used in agriculture have a low value-added spill over index. This may be due to the tax policy for this industry group. The input products of agriculture, forestry, and fisheries are not subject to VAT, meaning that those industries are not deducted input VAT. Thereby, intermediate costs of those sectors cannot be reduced and their value-added fall down more and more. Is this the reason why some industries have high spill over to the economy but the producers face difficulties?

According to Appendix 3, the agriculture, forestry and fishery groups stimulate other sectors much better than other sectors simulating on them. On average, one unit increase of the agriculture, forestry and fishery group will lead to an increase of 0.43 units for other sectors, while other sectors increased by one unit, the

agriculture, forestry, and fishery group will increase 0.16 units. The group of crops, livestock, and fisheries has the highest stimulus to the economy. In addition, the sub-sectors including Products for preserving meat and meat products (sector 13); Aquatic products and seafood processing and preservation (sector 14); Vegetables processed (sector 15); Products of milling and flour production (sector 17); Feeds for cattle, poultry and aquatic products (sector 18); Products made from wood, bamboo (including beds, wardrobes, tables, chairs); from straw, parchment and plaiting materials (sector 18)have the largest spread to agriculture, forestry and fishery.

Appendix 4 shows that in order to meet the requirement of an increase in the output of 25 sectors (excluding 11 sub-sectors of agriculture, forestry, and fishery sectors), the annual crop output needs to increase the highest, followed by the livestock and aquaculture products

. In the opposite side, in order to meet the requirement of an increase in output of 11 sub-sector of agriculture, forestry, and fishery, the sectors (among remaining 25 sectors) including feeds for cattle, poultry and aquatic products, chemical fertilizers, nitrogen compounds, and other processing industries output have to increase highest. Appendix 5 shows that the livestock and aquaculture products have the highest spill over effect of their final demand on other sectors' output among the 11 sub-sectors. Moreover, these sub-sectors also have the highest power of dispersion.

Moreover, Table 2 shows that change in inventory and household consumption have the highest spillover effect on value-added among final demand factors, while export has the lowest spillover effect. It suggests that demand management policies need to be directed towards factors that have high spillover to value-added. Agricultural, forestry and fishery products sold domestically are more profitable than export. Therefore, are the export-oriented policies a paradox?

4. Discussions and Conclusions

The study shows that the current policy of prioritizing manufacturing industries is a paradox. It is because that these industries are basically outsourcing, the spillover effect of their final demand on value-added is trivial, whereas the final demand of agriculture, forestry, and fisheries spreads to value-added much better. In addition, the research also shows that the agricultural processing industry needs to be developed in abundant raw materials areas in order to increase the value-added content in the value chain of agricultural products.

With the current economic structure, the demand for annual crop products is quite large. Therefore, instead of changing this structure, Vietnam needs to improve productivity and quality as well as linking agricultural production with manufacturing to improve the value-added content of these products. The subsidy for these products also needs to be taken into account, some developed countries with an advanced industry such as Japan and the United States have also introduced this policy, but the subsidy needs to be directly for the first stage of the value chain.

The first of the value chains is the farmer, the subsidy needs to be substantive, unlike previous price stabilization programs. One of the reasons for the low value-added content in the value chain of agricultural, forestry and fishery products is because of so many intermediaries, especially associations which are called association. In many cases, the associations play a role as state management. The decisions of these associations have many times made the farmers suffer.

The study also shows that two sub-sectors including livestock and aquaculture stimulate other sectors considerably. Unfortunately, according to the roadmap of import tax rates by 2020, these two industries have negative effective protection. In order to contribute to increasing the protection level for agriculture, forestry and fishery products, it is necessary to include input products of these sectors subject to the VAT rate of 0% as for foreign direct investment enterprises.

Table 2. The spillover effects of agriculture, forestry, and fishery final demand.

By	Consumption	HH.	Gov.	Investment	Gross fixed capital formation	Change in Inventory	Exp. of goods	Exp. of services	Total Exp.
Spill over effect of final demand on its value added	0.091	0.100	0.000	0.046	0.016	0.178	0.053	0.000	0.048
Spill over effect of final demand on value added of other sectors	0.047	0.052	0.000	0.027	0.010	0.106	0.021	0.000	0.019
Total spill over effect of final demand on total value added	0.137	0.152	0.000	0.073	0.026	0.284	0.074	0.000	0.068

Source: Calculated from I/O table in 2016.

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Appendix 1. 36 sectors.

No.	Sectors
1	Annual tree products
2	Perennial products
3	Livestock products
4	Agricultural services
5	Other agricultural products not elsewhere classified
6	Forest planting and tending products
7	Wood exploitation
8	Other forest products; harvested from the forest
9	Forestry Service
10	Aquatic products exploited
11	Aquaculture products
12	Mining products
13	Products for preserving meat and meat products
14	Aquatic products and seafood processing and preservation
15	Vegetables processed
16	Milk and dairy products
17	Products of milling and flour production
18	Feeds for cattle, poultry and aquatic products
19	Products made from wood, bamboo (including beds, wardrobes, tables, chairs); from straw, parchment and plaiting materials
20	Fertilizers and nitrogen compounds
21	Pesticides and other chemical products used in agriculture
22	Products of processing industry, the rest
23	Electricity, gas, hot water, steam and air conditioning
24	Natural water extraction
25	Construction Products
26	Wholesale and retail services; Car, motorbike and other motor vehicle repair services
27	Warehouse transportation services
28	Accommodation and catering services
29	Information and communication services
30	Banking and insurance services
31	Real estate business services
32	Professional, scientific and technological services
33	Education and training services
34	Medical services and social assistance
35	Arts, entertainment and entertainment services
36	Other Services

Appendix 2. Power of dispersion, sensitivity, spillover effect to value added, and spillover effect to imports.

STT	Industry	2012				2016			
		FL	BL	IM	IVA	FL	BL	IM	IVA
1	Annual tree products	2.25	0.94	0.75	1.11	2.07	0.94	0.82	1.10
2	Perennial products	1.00	0.89	0.74	1.11	0.92	0.91	0.82	1.10
3	Livestock products	1.37	1.52	1.21	0.91	1.24	1.46	1.14	0.92
4	Agricultural services	0.83	0.95	0.74	1.11	0.68	0.95	0.83	1.09
5	Other agricultural products not elsewhere classified	0.59	0.66	0.70	1.12	0.53	0.63	0.86	1.07
6	Forest planting and tending products	0.61	0.80	0.61	1.16	1.30	0.89	0.38	1.34
7	Wood exploitation	0.59	0.66	1.94	0.61	0.63	0.71	1.50	0.73
8	Other forest products; harvested from the forest	0.63	0.74	0.41	1.25	0.56	0.80	0.46	1.29
9	Forestry Service	0.67	0.71	0.62	1.16	0.51	0.75	0.61	1.21
10	Aquatic products exploited	0.74	0.93	1.68	0.72	0.67	0.94	1.49	0.73
11	Aquaculture products	1.06	1.32	1.04	0.99	1.04	1.31	0.98	1.01
12	Mining products	1.30	0.89	1.08	0.97	1.21	0.89	1.10	0.95
13	Products for preserving meat and meat products	0.68	1.70	1.05	0.98	0.59	1.61	1.03	0.98
14	Aquatic products and seafood processing and preservation	0.71	1.57	1.06	0.97	0.63	1.52	1.03	0.98
15	Vegetables processed	0.62	1.22	1.17	0.93	0.54	1.18	1.10	0.95
16	Milk and dairy products	0.94	1.26	1.65	0.73	0.84	1.21	1.50	0.73
17	Products of milling and flour production	1.16	1.53	0.99	1.00	1.10	1.48	1.00	1.00
18	Feeds for cattle, poultry and aquatic products	1.33	1.42	1.10	0.96	1.17	1.35	1.08	0.96
19	Products made from wood, bamboo (including beds, wardrobes, tables, chairs); from straw, parchment and plaiting materials	0.95	0.98	2.01	0.58	0.88	0.99	1.49	0.73
20	Fertilizers and nitrogen compounds	1.00	1.09	1.23	0.90	1.03	1.05	1.22	0.88
21	Pesticides and other chemical products used in agriculture	0.71	0.97	1.94	0.61	0.66	0.99	1.63	0.66
22	Products of processing industry, the rest	4.21	1.00	1.62	0.74	6.09	0.99	1.47	0.74
23	Electricity, gas, hot water, steam and air conditioning	0.98	0.73	0.39	1.25	0.91	0.75	0.63	1.20
24	Natural water extraction	0.67	0.85	0.78	1.09	0.59	0.86	0.89	1.06
25	Construction Products	0.76	1.00	1.50	0.79	0.69	0.98	1.41	0.78
26	Wholesale and retail services; Car, motorbike and other motor vehicle repair services	1.46	0.83	0.52	1.20	1.46	0.85	0.67	1.18
27	Warehouse transportation services	1.13	0.96	1.32	0.87	1.09	0.96	1.25	0.87
28	Accommodation and catering services	0.72	1.09	1.01	1.00	0.62	1.10	1.00	1.00
29	Information and communication services	1.03	1.03	1.01	0.99	0.93	1.01	1.04	0.98
30	Banking and insurance services	1.38	0.80	0.32	1.28	1.37	0.83	0.50	1.27
31	Real estate business services	0.66	0.83	0.56	1.18	0.57	0.83	0.78	1.12
32	Professional, scientific and technological services	0.74	0.95	0.68	1.13	0.76	0.98	0.83	1.09
33	Education and training services	0.60	0.71	0.26	1.31	0.52	0.76	0.48	1.28
34	Medical services and social assistance	0.58	0.88	1.28	0.88	0.50	0.89	1.25	0.87
35	Arts, entertainment and entertainment services	0.66	0.80	0.52	1.20	0.50	0.76	0.48	1.28
36	Other Services	0.68	0.80	0.53	1.20	0.60	0.89	1.25	0.87

Source: Calculated from I/O table in 2012 and 2016.

Appendix 3. The power of dispersionof sub-sector of agriculture, forestry, and fishery with other sectors.

SST	Industry	Other sectors (25) stimulate to agriculture, forestry, and fishery (11)	Agriculture, forestry, and fishery (11) stimulate to other sectors (25)
1	Annual tree products		0.5077
2	Perennial products		0.5669
3	Livestock products		0.6566
4	Agricultural services		0.6130
5	Other agricultural products not elsewhere classified		0.1496
6	Forest planting and tending products		0.1935
7	Wood exploitation		0.0385
8	Other forest products; harvested from the forest		0.2652
9	Forestry Service		0.1847
10	Aquatic products exploited		0.8787
11	Aquaculture products		0.6175
12	Mining products	0.000	
13	Products for preserving meat and meat products	0.817	
14	Aquatic products and seafood processing and preservation	0.789	
15	Vegetables processed	0.757	
16	Milk and dairy products	0.025	
17	Products of milling and flour production	0.603	
18	Feeds for cattle, poultry and aquatic products	0.559	
19	Products made from wood, bamboo (including beds, wardrobes, tables, chairs); from straw, parchment and plaiting materials	0.329	
20	Fertilizers and nitrogen compounds	0.003	
21	Pesticides and other chemical products used in agriculture	0.000	
22	Products of processing industry, the rest	0.028	
23	Electricity, gas, hot water, steam and air conditioning	0.000	
24	Natural water extraction	0.001	
25	Construction Products	0.004	
26	Wholesale and retail services; Car, motorbike and other motor vehicle repair services	0.004	
27	Warehouse transportation services	0.000	
28	Accommodation and catering services	0.124	
29	Information and communication services	0.000	
30	Banking and insurance services	0.001	
31	Real estate business services	0.000	
32	Professional, scientific and technological services	0.022	
33	Education and training services	0.009	
34	Medical services and social assistance	0.001	
35	Arts, entertainment and entertainment services	0.009	
36	Other Services	0.001	
	Average	0.164	0.4247

Source: Calculated from I/O table in 2016.

Appendix 4. The sensitivity of agriculture, forestry, and fishery with other sectors and versa.

STT	Industry	Sensitivity of agriculture, forestry, and fishery[2] (11 sectors)	Sensitivity of other sectors[3](25 sectors)
1	Annual tree products	1.261	
2	Perennial products	0.643	
3	Livestock products	0.858	
4	Agricultural services	0.120	
5	Other agricultural products not elsewhere classified	0.002	
6	Forest planting and tending products	0.256	
7	Wood exploitation	0.076	
8	Other forest products; harvested from the forest	0.018	
9	Forestry Service	0.003	
10	Aquatic products exploited	0.252	
11	Aquaculture products	0.599	
12	Mining products		0.204
13	Products for preserving meat and meat products		0.010
14	Aquatic products and seafood processing and preservation		0.030
15	Vegetables processed		0.009
16	Milk and dairy products		0.004
17	Products of milling and flour production		0.176
18	Feeds for cattle, poultry and aquatic products		0.598
19	Products made from wood, bamboo (including beds, wardrobes, tables, chairs); from straw, parchment and plaiting materials		0.092
20	Fertilizers and nitrogen compounds		0.324
21	Pesticides and other chemical products used in agriculture		0.041
22	Products of processing industry, the rest		1.926
23	Electricity, gas, hot water, steam and air conditioning		0.211
24	Natural water extraction		0.019
25	Construction Products		0.075
26	Wholesale and retail services; Car, motorbike and other motor vehicle repair services		0.371
27	Warehouse transportation services		0.180
28	Accommodation and catering services		0.043
29	Information and communication services		0.074
30	Banking and insurance services		0.201
31	Real estate business services		0.012
32	Professional, scientific and technological services		0.043
33	Education and training services		0.003

[2]Agriculture, forestry, and fishery output needs as other sector's output increase 1 unit
[3] Other sector's output needs as Agriculture, forestry, and fishery output increase 1 unit

STT	Industry	Sensitivity of agriculture, forestry, and fishery[2] (11 sectors)	Sensitivity of other sectors[3](25 sectors)
34	Medical services and social assistance		0.001
35	Arts, entertainment and entertainment services		0.001
36	Other Services		0.023

Source: Calculated from I/O table in 2016.

Appendix 5. Decomposition of the multiplier effect, Feedback effectandspillover effects of agriculture, forestry and fishery and other sectors.

STT	Industry	Total effect	Direct effect, indirect effect and spillover effect (Enlarge leontief Inverse)	Direct and indirect effects	Spillover effect	Feedback effect
1	Annual tree products	1.932	1.276	1.256	0.02	0.656
2	Perennial products	1.86	1.192	1.176	0.017	0.668
3	Livestock products	2.984	1.831	1.48	0.35	1.154
4	Agricultural services	1.952	1.224	1.191	0.033	0.728
5	Other agricultural products not elsewhere classified	1.296	1.122	1.118	0.004	0.174
6	Forest planting and tending products	1.811	1.514	1.505	0.009	0.296
7	Wood exploitation	1.458	1.367	1.364	0.003	0.091
8	Other forest products; harvested from the forest	1.629	1.298	1.278	0.02	0.331
9	Forestry Service	1.536	1.295	1.287	0.008	0.242
10	Aquatic products exploited	1.924	1.031	1.002	0.03	0.893
11	Aquaculture products	2.684	1.673	1.363	0.309	1.011
12	Mining products	1.814	1.795	1.785	0.009	0.019
13	Products for preserving meat and meat products	3.302	2.158	1.446	0.712	1.144
14	Aquatic products and seafood processing and preservation	3.103	2.071	1.387	0.683	1.033
15	Vegetables processed	2.416	1.629	1.193	0.437	0.787
16	Milk and dairy products	2.473	2.395	2.35	0.046	0.078
17	Products of milling and flour production	3.029	2.125	1.661	0.464	0.904
18	Feeds for cattle, poultry and aquatic products	2.767	1.983	1.566	0.417	0.783
19	Products made from wood, bamboo (including beds, wardrobes, tables, chairs); from straw, parchment and plaiting materials	2.026	1.597	1.524	0.073	0.429
20	Fertilizers and nitrogen compounds	2.155	2.134	2.124	0.01	0.021
21	Pesticides and other chemical products used in agriculture	2.026	2.004	1.994	0.01	0.021
22	Products of processing industry, the rest	2.024	1.964	1.934	0.03	0.061
23	Electricity, gas, hot water, steam and air conditioning	1.536	1.525	1.519	0.006	0.012
24	Natural water extraction	1.764	1.744	1.735	0.009	0.02
25	Construction Products	2.011	1.972	1.957	0.015	0.039
26	Wholesale and retail services; Car, motorbike and other motor vehicle repair services	1.747	1.72	1.708	0.012	0.027

STT	Industry	Total effect	Direct effect, indirect effect and spillover effect (Enlarge leontief Inverse)	Direct and indirect effects	Spillover effect	Feedback effect
27	Warehouse transportation services	1.964	1.939	1.928	0.012	0.025
28	Accommodation and catering services	2.243	1.945	1.766	0.178	0.298
29	Information and communication services	2.058	2.035	2.024	0.011	0.023
30	Banking and insurance services	1.7	1.684	1.677	0.007	0.016
31	Real estate business services	1.708	1.684	1.673	0.011	0.024
32	Professional, scientific and technological services	2.001	1.952	1.927	0.024	0.05
33	Education and training services	1.545	1.504	1.488	0.017	0.041
34	Medical services and social assistance	1.815	1.788	1.775	0.013	0.028
35	Arts, entertainment and entertainment services	1.545	1.504	1.488	0.017	0.041
36	Other Services	1.815	1.788	1.775	0.013	0.028

Source: Calculated from I/O table in 2016.