



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

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Abstract

Every country has agriculture, but only some Asian countries, including Vietnam have a predominant culture of agriculture. In recent decades, it seems that economic and agricultural development is trying to change the purity of Vietnamese people with the "industrialization and modernization" movement, trying to force the Vietnamese people to adopt modern practices instead of reaping the benefits of cultivation, thus breeding become workers. When Vietnamese people's strengths are not used and promoted, they are forced to use their weaknesses. Thus, 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) of GDP. This can lead to misunderstandings regarding the importance of that sector. 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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1. Introduction

In recent years, the high GDP growth and the falling share of value added of the agriculture, forestry, and fishery sectors in GDP seem to be the trend in Vietnam. Vietnam's government (at both central and local levels) encourages change in economic structure to follow this trend. As a result, the share of the agriculture, forestry, and fishery sectors in GDP has decreased from 18.4% in 2010 to 15.3% in 2017. The weight for the manufacturing and construction sectors increased slightly, while the weight for the service sectors increased significantly (see Table 1).

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

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

Table 1. Gross domestic product by economic sector¹.

Year	Total	Agriculture, forestry, and fishing	Manufacturing & construction	Services	Tax 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

Note: Unit: %.

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 and showed that the existing close relationship between agriculture and other sectors 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 the 11 agriculture, forestry, and fishery sub-sectors with other sectors surveyed in the model (see Appendix 1).

2. Methodology

Wassily Leontief, a Soviet-American economist, put forward the linear function's system for the relationship between supply and demand in an economy by sectors, solved using the following equations:

$$\sum_j X_{ij} + Y_i = X_i \tag{1}$$

$$\text{and } \sum_i X_{ij} + V_j = X_j \tag{2}$$

Where: X_{ij} represents sector j with product i as the input; $i, j = 1 \dots n$ with n being the number of sectors in the Input/Output model; Y_i is final product of product i ; X_i is the gross output of product i (total demand of product i), and V_j is the value added of sector j .

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

Equation 3: Gross output = intermediate demand (for production) + final demand (for consumption, gross capital formation and net exports).

Equation 4: Gross input = intermediate input (for production) + value added.

Total output always equals the total input.

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

$$\sum_j a_{ij} X_j + Y_i = X_i \tag{3}$$

We then rewrite Equation 3 in matrix form:

$$A.X + Y = X \tag{4}$$

With: $A = (a_{ij})_{(n \times n)}$; $Y = (Y_i)_{(n \times 1)}$; $X = (X_i)_{(n \times 1)}$.

Equation 4 is Leontief's standard, which can be rewritten as follows:

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

In this research, Matrix A is divided into sub-matrixes A^{RR} , A^{RS} , A^{SR} and A^{SS} .

Where: R and 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 the matrix of intermediary coefficients for S industry using R product as input; A^{SR} is the matrix of intermediary coefficients for R

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

industry using S product as input; A^{SS} is the matrix of intermediary coefficients for S industry using its own product as input.

We can rewrite Leontief's relation as:

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

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:

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

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

Equations 8 and 9 show that industry output is not only based on the final demand but also depends on other sectors' production. For example, the output of R depends on S's production by $A^{RS}.X^S$, or the output of S (X^S) depends on R's production by $A^{SR}.X^R$.

The relationship between S and R can be shown as:

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

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

Or

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

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

Equations 12 and 13 show that a change in each industry can lead to changes in other industries. Matrices $(I - A^{SS})^{-1}.A^{SR}$ and $(I - A^{RR})^{-1}.A^{RS}$ show this relationship. These equations are applied to quantify the output of industries that are not directly affected by indirect tax increases, and they are also reduced in the next production cycle. In order to consider the effect of the final demand of each industry to value added, we have:

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

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

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 spillover effect of the final demands of the R and S industries on value added.

3. Results

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

Some input sectors of agriculture, forestry, and fishery, such as feed for cattle and poultry, aquatic products, fertilizers and nitrogen compounds, pesticides and other chemicals used in agriculture have a low value added spillover 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, the intermediate costs of those sectors cannot be reduced and their value added increasingly falls. Is this the reason why some industries have high spillover into the economy but the producers face difficulties?

According to Appendix 3, the agriculture, forestry, and fishery groups stimulate other sectors more effectively than they are stimulated by other sectors. On average, a one-unit increase in the agriculture, forestry, and fishery group will lead to an increase of 0.43 units for other sectors, while if other sectors increase by one unit, the agriculture, forestry, and fishery group will increase by 0.16 units. The group comprising crops, livestock, and fisheries provides 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); vegetable processing (sector 15); products of milling and flour

production (sector 17); feed for cattle and poultry, and aquatic products (sector 18); products made from wood and bamboo (including beds, wardrobes, tables, chairs), and products made from straw, parchment, and plaiting materials (sector 18) have the largest spread to the agriculture, forestry, and fishery sectors.

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

On the opposite side, in order to meet the requirement of an increase in output of the 11 sub-sectors of agriculture, forestry, and fishery, the sectors (among remaining 25 sectors) including feed for cattle and poultry, aquatic products, chemical fertilizers, nitrogen compounds, and other processing industries' outputs have to increase the most. Appendix 5 shows that the livestock and aquaculture products have the highest spillover 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.

Table 2 shows that changes in inventory and household consumption have the highest spillover effect on value added among final demand factors, while export has the lowest spillover effect. This suggests that demand management policies need to be directed toward factors that have high spillover to value added. Agricultural, forestry and fishery products sold domestically are more profitable than if they were exported. 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. This is because these industries are basically outsourcing the spillover effect of their final demand on value added, which is trivial, whereas the final demand of agriculture, forestry, and fisheries spreads to value added more efficiently. In addition, the research also shows that the agricultural processing industry needs to be developed in the 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 link 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 advanced industry, such as Japan and the United States, have also introduced this policy, but the subsidy needs to be directly related to the first stage of the value chain.

The first in the value chain 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 there are too many intermediaries, especially associations. In many cases, the associations play a state management role, and the decisions taken by these associations have caused farmers to suffer.

The study also shows that two sub-sectors (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 subject the input products of these sectors to the VAT rate of 0%, as per 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.
Spillover 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
Spillover 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 spillover 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 the 2016 I/O table.

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Appendix 1. List of 36 sectors.

No.	Sectors
1	Annual tree products
2	Perennial products
3	Livestock products
4	Agricultural services
5	Other agricultural products not classified elsewhere
6	Forest planting and tending products
7	Wood exploitation
8	Other forest products; harvested from the forest
9	Forestry services
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	Vegetable processing
16	Milk and dairy products
17	Products of milling and flour production
18	Feed for cattle and poultry, and aquatic products
19	Products made from wood and bamboo (Including beds, wardrobes, tables, chairs); products made from straw, parchment, and plaiting materials
20	Fertilizers and nitrogen compounds
21	Pesticides and other chemical products used in agriculture
22	Products of the processing industry
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, and the 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 classified elsewhere	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 services	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	Vegetable processing	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	Feed for cattle and 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 and bamboo (Including beds, wardrobes, tables, chairs); products made 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 the processing industry	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 the 2012 and 2016 I/O tables.

Appendix 3. The power of dispersion of the sub-sectors of agriculture, forestry, and fishery on other sectors.

SST	Industry	Other sectors (25) stimulating agriculture, forestry, and fishery (11)	Agriculture, forestry, and fishery (11) stimulating 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 classified elsewhere		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 services		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; seafood processing and preservation	0.789	
15	Vegetable processing	0.757	
16	Milk and dairy products	0.025	
17	Products of milling and flour production	0.603	
18	Feed for cattle and poultry; aquatic products	0.559	
19	Products made from wood and bamboo (Including beds, wardrobes, tables, chairs); products made 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 the processing industry	0.028	
23	Electricity, gas, hot water, steam, and air conditioning	0.000	
24	Natural water extraction	0.001	
25	Construction materials	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 2016 I/O table.

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

STT	Industry	Sensitivity of agriculture, forestry, and fishery² (11 Sectors)	Sensitivity of other sectors³ (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 classified elsewhere	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 services	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	Vegetable processing		0.009
16	Milk and dairy products		0.004
17	Products of milling and flour production		0.176
18	Feed for cattle and poultry; aquatic products		0.598
19	Products made from wood and bamboo (Including beds, wardrobes, tables, chairs); products made 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 the processing industry		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 outputs as other sectors' output increases by one unit.

³ Other sectors' output as agriculture, forestry, and fishery output increases by one 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 the I/O table in 2016.

Appendix 5. Decomposition of the multiplier effect, feedback effect, and spillover effects of agriculture, forestry, and fishery to other sectors.

STT	Industry	Total effect	Direct effect, indirect effect, and spillover effect (Enlarged 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 classified elsewhere	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 services	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	Vegetable processing	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	Feed for cattle and poultry; aquatic products	2.767	1.983	1.566	0.417	0.783
19	Products made from wood and bamboo (Including beds, wardrobes, tables, chairs); products made 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 the processing industry	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 (Enlarged 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.