Asian Journal of Innovation and Policy (2025) 14.1:084-102
DOI: https://doi.org/10.7545/ajip.2025.14.1.084

Economic Analysis of the 6th Industrialization Policy in Rural Areas: Case of South Korea

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Abstract This study analyzes the performance of Korea's Sixth Industrialization Policy in rural areas and provides policy implications. Utilizing input-output tables from the Bank of Korea and applying a Computable General Equilibrium (CGE) model, various policy scenarios were simulated. The results indicate that increases in labor demand and government consumption expenditure significantly impact both primary and tertiary sectors. A comparative analysis of different industrial linkage types—primary only, primary-secondary, primary-tertiary, and full three-sector integration—reveals that injecting subsidies or capital into the primary sector alone yields limited economic effects. In contrast, linkages involving secondary and/or tertiary sectors generate greater policy impacts. These findings highlight the need to shift from primary-sector-focused support toward multidimensional strategies that promote cross-sectoral linkages. Future rural policies should be designed to foster integrated value chains rather than relying solely on direct support for agriculture.

Keywords Sixth Industrialization, Economic Impact, Cross-sectoral Linkages, Agriculture and Rural Development, CGE Model

I. Introduction

Rural areas serve as the foundation for national food security through their essential role in agricultural production. This function is widely regarded as a critical component of sustainable rural development across both domestic and international contexts. The Korean central government has consistently pursued policies to preserve the unique functions of rural communities and to revitalize the agricultural and rural economy.

Submitted, May 10, 2025; Accepted, July 11, 2025
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Policy approaches have evolved from uniform, top-down strategies to bottom-up frameworks that reflect local characteristics and needs. These locally driven policies not only prevent project redundancies but also promote efficient resource utilization, maximizing each region's potential. At the same time, agricultural policy has undergone a structural transformation. While earlier initiatives prioritized productivity—such as seed development and mechanization—recent trends have responded to rising income levels and changing lifestyles, especially the growing emphasis on the well-being of individuals. This shift has created new demands for food, leisure, and tourism, leading to the emergence of consumer-centered, customized policies. The Sixth Industrialization policy exemplifies this transformation.

The Sixth Industrialization policy aims to increase rural household income and revitalize regional economies by integrating the primary (agriculture) industry, secondary (processing) industry, and tertiary (services) industry sectors. It was adopted as a flagship initiative under the Park Geun-hye administration and has since attracted attention as a potential driver of rural growth. By strategically converging industries, the policy seeks to diversify income sources, create rural employment, and better align agricultural output with market needs.

Effective implementation of this policy requires more than conceptual integration across sectors. Success depends on the compatibility of the policy with institutional structures, rural conditions, and its feasibility in practice. While the policy has received continued attention, assessments of its effectiveness remain divided. Some expect it to improve rural incomes and economic activity, whereas others question its practical applicability. If the policy fails to function effectively in the field, it may reinforce negative perceptions regarding large-scale government expenditures and undermine public support for rural development initiatives.

Given the importance of agricultural and rural policy, it is essential to provide scientific, evidence-based evaluations that verify policy legitimacy and support continuity. This study aims to empirically assess the economic effects of the Sixth Industrialization policy by applying a Computable General Equilibrium (CGE) model. The model is based on a Social Accounting Matrix (SAM) constructed using Input-Output Tables published by the Bank of Korea.

This paper is organized as follows. Chapter 2 reviews the relevant literature and clarifies the unique contributions of this study. Chapter 3 outlines the data sources, SAM construction, and CGE model structure. Chapter 4 presents the results of the policy simulation, and Chapter 5 offers a synthesis of the findings, policy implications, and limitations of the study.

II. Backgrounds

1. Concept of 6th industrialization

Historically, Korea's agricultural and rural policy has evolved through several stages. The first phase (1st industrialization) emphasized productivity enhancement through agricultural production. The second phase focused on value-added processing activities (2nd industrialization), while the third phase introduced service-oriented activities such as rural tourism, education, and wellness (3rd industrialization). The Sixth Industrialization represents a convergence model that integrates all three sectors (1×2×3) or two sectors (1×2 or 2×3) within rural areas to diversify income sources and strengthen regional economies.

The Sixth Industrialization of agriculture is defined as an integrative model that combines primary industries (agriculture) with secondary (processing, value-added products) and tertiary sectors (distribution, food services, tourism, and accommodation). This framework departs from the conventional spatial-industrial division that relegated rural areas to primary production and urban areas to secondary and tertiary industrial functions. By promoting convergence within rural settings, the model is designed to create added value, generate employment, and revitalize rural economies. The ultimate goal is to foster holistic industrial integration that enables agriculture to fully realize its latent potential and embed that value within the local community.

Japan has been recognized as a leading example in the implementation of this model. According to Kim and Heo (2011), six types of organizational actors have emerged in the Japanese context, including producer groups, women's and elderly associations, village-based organizations, local governments, agricultural cooperatives, and third-sector entities. Kim et al. (2013) emphasized the importance of collective management involving both farming and non-farming stakeholders, identifying key players such as agricultural corporations, cooperatives, local food manufacturers, retailers, and food service enterprises. These actors form dense networks that enable cross-sectoral collaboration and policy coordination. Compared to Japan and certain European countries, Korea's regional networks remain underdeveloped, and the structural gap between the primary and higher-order industries presents practical challenges to implementation.

In Korea, the concept of Sixth Industrialization has evolved based on the framework proposed by Lee et al. (2008), largely drawing from Japan's strategic design. The primary actors include agricultural cooperatives, producer organizations, newly formed cooperatives, and community-based groups. These entities are expected to take the lead in mobilizing local resources to integrate

agriculture with secondary and tertiary industries. However, the underdeveloped regional agricultural system and sectoral imbalances continue to limit the full adoption of integrated models.

Although the policy was officially introduced in 2013, its conceptual foundation was already established by 2008, and related pilot programs were launched as early as 2010. The policy was formally adopted under the Park Geun-hye administration as part of a national rural development strategy to promote "creative agriculture." It aimed to enhance the competitiveness of the rural sector and stabilize rural household income through cross-sectoral integration. Accordingly, the effectiveness of policy implementation depends on addressing existing structural gaps and adapting policy tools to the specific conditions of the Korean context.

2. Previous studies

The concept of Sixth Industrialization in Korea began to take shape in the 1980s, laying a theoretical foundation for integrating rural industries (Choi and Kim, 1980; Seo et al., 1986). Since the 2000s, in line with a broader paradigm shift in agricultural policy, emphasis has gradually shifted toward creating added value by leveraging local rural resources and fostering interlinkages across the primary, secondary, and tertiary sectors (Lee et al., 2004; 2007). In 2013, the Korean government officially adopted the Sixth Industrialization policy as a national strategy to cultivate new rural growth engines by linking agriculture with processing, services, and tourism.

From a strategic standpoint, Kim and Son (2024) argued that the policy's success hinges on entrepreneurial approaches that promote sustainability and innovation through cross-sectoral integration. Similarly, Choi and Oh (2025) found that Sixth Industrialization certification significantly improves short-term business performance and facilitates the commercialization of patented technologies and the development of differentiated products. Complementing this, Lee and Hwang (2017) highlighted the importance of global expansion strategies, such as buyer matchmaking, promotional events, and overseas retail operations, in enhancing the policy's international reach.

Other studies have explored how best to implement and promote Sixth Industrialization (Song, 2010; Park, 2013), commonly emphasizing the need for integrated and collaborative policy execution. Specific strategies have focused on connecting agriculture with the food processing industry (Ahn, 2009; Song, 2010) and with rural services such as tourism and education (Lee, 2002; Yoon, 2009). However, Park et al. (2014) cautioned that full integration across all sectors does not necessarily yield superior outcomes; in some cases, more targeted linkages between agriculture and a single downstream sector may be more effective.

Internationally, both theoretical and empirical research have examined the economic implications of inter-industry linkages. For instance, Singer (1979) and Adelman (1994) emphasized the structural role of agriculture in national development, while Miller and Lahr (2001) noted that economic value is created directly and indirectly through transactions among agriculture-linked industries. Conversely, Rangarajan (1982) warned that the weakening of such linkages may reduce rural employment and diminish the presence of agriculture-based industries.

In Korea, the majority of previous research has focused on conceptual frameworks, strategic policy directions, and sectoral coordination. Despite growing interest in evaluating policy outcomes, empirical research remains limited. The Rural Development Administration (RDA) conducted the first nationwide survey on Sixth Industrialization in 2014, laying a foundation for further empirical inquiry. Nevertheless, quantitative assessments of macroeconomic impacts are still rare. Addressing this gap, the present study applies a Computable General Equilibrium (CGE) model to empirically assess the economic impacts of Sixth Industrialization and provide strategic insights for more effective policy design and implementation.

III. Data and methodology

1. Data

The study utilized the extended industry linkage table from 2005 to 2010 provided by the Bank of Korea, with industries reclassified according to the agricultural and rural 6th industrialization framework. The 6th industrialization concept represents an integrated industrial approach where primary, secondary, and tertiary industries are interconnected, with primary industry serving as the foundation to which secondary and tertiary industries are linked. To accurately reflect the characteristics of agricultural and rural tertiary industrialization, this research classified industries into primary, secondary, and tertiary categories using industry sub-classification data, with the classification components presented in <Table 1>. The primary industry classification encompassed agriculture and forestry, specifically excluding fisheries. Secondary industries included manufacturing and processing sectors producing processed agricultural products, as well as industries manufacturing agricultural inputs such as feed, fertilizers, pesticides, and agricultural machinery. The tertiary industries related to the sixth industrialization were classified as rural tourism, product sales and distribution, rural education, and rural experience and leisure. Industries with

minimal relevance to the Sixth Industrialization were classified as other industries.

Table 1. Reclassified according to the 6th industrialization framework

Code	Industry	Industry categories
01	Primary Industry	Rice, barley and miscellaneous grains, vegetables and fruits, other edible crops, non-food crops, dairy and beef cattle, other livestock, forest products, agricultural and forestry services, tobacco
02	Secondary Industry	Meat and meat processing products, dairy products, milled rice, flour milling, sugar manufacturing, starch and sugars, bread, confectionery and noodles, condiments, oils and edible oils, fruit and vegetable processed products, other food products, alcoholic beverages, beverages and ice, feed, fertilizers and pesticides, agricultural and construction machinery
03	Tertiary Industry	Wholesale and retail, restaurants, accommodation, road transportation, delivery services, educational services, medical and health services, entertainment services
04	Other Industries	All other industries

Note: Integrated from industry sub-classifications (168 sectors)
Source: Bank of Korea Economic Statistics System, http://ecos.bok.or.kr

The input and output structure of the agricultural and rural 6th industrialization is presented in the <Table 2>. Analysis of industry-specific total output reveals that the tertiary industry demonstrated the highest value at approximately 467 trillion won, followed by the secondary industry (approximately 96 trillion won) and the primary industry (approximately 53 trillion won). For intermediate-to-total input ratios, the secondary industry ranked highest at 86.57%, while primary and tertiary industries ranged between 45-50%. Regarding intermediate demand, the primary industry showed the highest proportion (74.95%), followed by secondary (60.88%) and tertiary (33.53%) industries. In final demand, consumption accounted for 83.76% and 91.05% of the primary and tertiary industries respectively, while exports represented a significantly higher proportion in the secondary industry compared to both primary and tertiary sectors.

Table 2. Input and Output Structure of 6th industrialization

(Unit: KRW billion)

Items		Primary Industry	Secondary Industry	Tertiary Industry
Intermediate input (A)		22,494.6	75,995.6	204,896.7
Value added	Compensation of employees	2,268.3	6,885.8	148,085.9
	Other	20,198.4	4,904.4	82,040.2
	Subtotal (B)	22,466.7	11,790.2	230,126.1
Total Input (C=A+B)		**44,961.3**	**87,785.8**	**435,022.8**
Intermediate demand (D)		39,917.50	58,759.90	156,660.50
Final demand	Consumption	20,799.0	37,338.0	298,571.0
	Investment	2,519.0	7,261.0	7,327.0
	Export	1,514.0	11,168.0	22,035.0
	Subtotal (E)	24,832.0	55,767.0	327,933.0
Import (deduction) (F)		11,489.3	18,008.6	17,425.9
Total Output (G=D+E-F)		**53,260.3**	**96,518.3**	**467,167.6**

Source: Bank of Korea Economic Statistics System, http://ecos.bok.or.kr

2. Social Accounting Matrix

The Social Accounting Matrix (SAM) used in this study is structured as shown in <Table 3>. Production factors were divided into labor and capital, while households were configured as a single sector. The production sector was classified into primary, secondary, tertiary, and other industries based on the categorization in <Table 1>. The government sector was divided into government consumption and subsidies. Investment was represented as the sum of private investment and government investment. The social accounting matrix was further divided into inventory, tariffs, and foreign sectors.

Table 3. Components of Social Accounting Matrix

Social Accounts	Detail
Production Factors	Labor, Capital
Household	Household
Industries	4 Industries (Primary Industry, Secondary Industry, Tertiary Industry, Other Industries)
Government	Government Consumption, Subsidies
Capital	Private Investment, Government Investment, Inventory
Foreign and Tariffs	Exports, Imports, Tariffs

In the social accounting matrix, most items such as wages (labor) and operating surplus (capital), gross production, private consumption expenditure, government consumption expenditure, subsidies, fixed capital formation, inventory, exports, imports, and tariffs utilized figures presented in the input-output table data. Government savings and total government revenue were derived from data provided by the Bank of Korea Economic Statistics System, which served as the basis for calculating household savings, household taxes, etc., to finalize the social accounting matrix.

Table 4. Social Accounting Matrix

(Unit: KRW Trillion won)

Item		Production factors		Household	Production				Government			Capital	Tariffs	Foreign (Exports)	Total
		Labor	Capital		Primary	Secondary	Tertiary	Others		Government consumption	Subsidies				
Production factors	Labor				2.3	6.9	148.1	369.0							526.3
	Capital				20.2	4.9	82.0	256.8							363.9
Household		526.3	363.9							0.0	18.8				909.0
Production	Primary			20.8	3.6	27.2	4.0	5.1		0.0	0.0	2.5		1.5	64.7
	Secondary			37.3	11.5	18.1	23.0	6.1		0.0	0.0	7.3		11.2	114.5
	Tertiary			224.0	2.0	7.7	23.9	123.0		74.6	3.1	7.3		22.0	487.7
	Others			334.9	5.4	23.0	154.0	1533.8		103.8	1.6	330.6		583.9	3070.9
Government				134.0	5.6	6.6	16.1	88.0					20.7		270.9
	Government consumption								178.4						178.4
	Subsidies								23.6						23.6
Capital				158.0	2.7	2.1	19.2	126.8	69.0						377.8
Tariffs					0.8	2.4	0.0	17.4				0.0			20.7
Foreign (Imports)					10.6	15.6	17.4	544.8				30.2			618.6
Total		526.3	363.9	909.0	64.7	114.5	487.7	3070.9	270.9	178.4	23.6	377.8	20.7	618.6	7044.7

Source: Bank of Korea Economic Statistics System, http://ecos.bok.or.kr

3. CGE Methodology

The CGE model used in this study is based on standard neoclassical assumptions, incorporating constant returns to scale, utility and profit maximization, and market clearing conditions. The production activities are modeled using CES(Constant Elasticity of Substitution) functions, while households optimize consumption subject to income constraints. International trade follows the Armington assumption, and the government and rest of the world are included as exogenous agents. The following equations represent the core structure of the model.

(1) Production Function (CES)

$$X_i = A_i\,[\alpha_i K_i^{\rho_i} + (1-\alpha_i)L_i^{\rho_i}][\alpha_i K_i^{\rho_i} + (1-\alpha_i)L_i^{\rho_i}]^{\frac{1}{\rho_i}}$$

Where :

- X_i: Output of sector i

- K_i, L_i: Capital and labor inputs
- A_i: Technology parameter
- α_i: Capital share parameter
- ρ_i = 1 - 1/σ_i: Related to elasticity of substitution (σ_i)

(2) Household Utility Maximization (Cobb–Douglas)

$$U = \prod_i C_i^{\theta_i}$$

Where :
- U: Utility level
- C_i: Consumption of good i
- θ_i: Preference weight for good i

(3) Market Clearing Condition

$$X_i = C_i + I_i + G_i + E_i - M_i$$

Where :
- Xi: Total output
- Ci: Consumption
- Ii: Investment
- Gi: Government expenditure
- Ei, Mi: Exports and imports

4. Parameter estimation

The substitution elasticity parameters (Armington Elasticity) between domestic demand goods and export goods, and between imported goods and domestically supplied goods, are estimated for application in the CGE model. Generally, domestic intermediate and final demand is satisfied by a combination of domestically supplied goods and foreign imported goods, which can be represented by the Armington Function. Based on this approach, parameters are derived through cost minimization processes (Kim, Jung, & Kwon, 2013). The Constant Elasticity of Transformation Function (CET Function) reflects imperfect elasticity between goods, with transformation elasticity calculated through profit maximization between domestically supplied goods and foreign exported goods (Kim et al., 2013).

Estimating individual parameters for all 168 sub-classified industries presents practical limitations. Therefore, this study estimated parameters with reference to previous research conducted by the KIPF (2003). The 28 major industrial classifications were reorganized into four industries ranging from primary to

other industries, and parameter values applicable to this study were estimated based on this framework. The estimation results showed that both RHOT and RHOC values were higher in the secondary industry compared to other industries. The CGE model employed in this study includes trade functions that distinguish between domestic and imported goods (Armington function) and between domestic supply and exports (CET function). Substitution elasticities in these functions play a key role in determining the response of trade flows to price signals.

Table 5. Result of parameter estimation

Items	Export Elasticity	Import Elasticity	RHOT	RHOC
Primary Industry	0.73	0.38	2.37	1.63
Secondary Industry	0.19	0.27	6.29	2.70
Tertiary Industry	0.84	1.94	2.20	-0.48
Others	1.37	0.88	1.73	0.13

IV. CGE analysis results

The analysis is conducted through a CGE model based on the social accounting matrix and estimated parameter values. GAMS programming was utilized for the CGE analysis, with results derived using the NLP (Nonlinear Programming) solver. Policy scenarios for examining the effects of agricultural and rural 6th industrialization policies were developed as shown in <Table 6>.

The basic guidelines for the policy scenarios are as follows. First, since agricultural and rural 6th industrialization must be based on primary industry, the primary industry must be included in scenarios involving increases in subsidies and capital inputs. Second, the scenarios were constructed based on the current government's 6th industrialization objectives and previously implemented policies. As the main goals of 6th industrialization policies are job creation and regional economic revitalization, policy experiments related to these factors are attempted. Furthermore, this study aims to measure the economic effects according to different industry linkage patterns in 6th industrialization (Primary + Secondary + Tertiary vs. Primary + Secondary, Primary + Tertiary), referencing the research of Park et al. (2014), and thereby derive effective strategies for future 6th industrialization initiatives.

Table 6. 6th industrialization policy scenarios

Items	Contents	Description
Scenario 1	10% increase in demand of labor	Increasing labor in accordance with the job creation goal of 6th industrialization policies
	10% increase in government consumption expenditure	Aiming to stimulate consumption by increasing government expenditure by 10%
Scenario 2	10% increase in subsidies	Examining changes according to increased subsidies across different industry combinations
	10% increase in capital	Examining changes according to increased capital across different industry combinations

<Table 7> shows the ripple effects that occurred when labor increased by 10%. Gross domestic product increased from 1,152 trillion won to approximately 1,202 trillion won, an increase of about 49 trillion won (4.27%). Examining by detailed industry, the effect on domestic prices was highest for the primary industry (5.52%), followed by the secondary industry (1.73%). Composite goods prices showed the same pattern of effects as domestic prices. The ripple effects on domestic production volume and composite goods supply were greatest for the tertiary industry. Regarding exports, only the primary industry showed negative effects, while the secondary industry showed no impact, revealing that the influence of labor increase on exports varies differentially by industry. Imports showed uniformly positive effects across all industrial sectors.

Table 7. Scenario 1: Impacts of a 10% increase in labor demand

(Unit: %)

Items	Primary Industry	Secondary Industry	Tertiary Industry	Others
Domestic price	5.52	1.73	-0.60	-0.05
Composite goods price	4.48	1.41	-0.58	-0.06
Domestic production volume	1.05	2.77	5.34	4.10
Composite goods supply	1.93	3.29	5.29	4.13
Exports	-6.38	0.41	6.04	4.02
Imports	5.03	4.34	4.96	4.17

According to <Table 8>, when government consumption expenditure increased by 10%, the overall GDP increased by approximately 58 trillion won. The price of composite goods was most significantly affected in the primary industry, while domestic production showed a 6.35% increase in other industries outside the 6th industrialization category. Composite goods supply was also most heavily influenced in other industries. For exports, the increase in government consumption expenditure had a negative impact on industries within the 6th industrialization scope. In contrast, for imports, the effect on the tertiary industry was analyzed to be 9.74%, significantly higher compared to other industry groups.

Table 8. Scenario 1: Impacts of a 10% increase in Government expenditure

(Unit: %)

Items	Primary Industry	Secondary Industry	Tertiary Industry	Others
Domestic price	7.07	4.55	4.30	-1.10
Composite goods price	5.62	3.62	3.95	-1.03
Domestic production volume	0.06	0.51	1.91	6.35
Composite goods supply	1.29	2.05	3.13	6.21
Exports	-8.86	-6.64	-8.63	6.63
Imports	5.52	5.10	9.74	6.04

<Table 9> analyzes changes in total GDP according to subsidies and capital changes across different industries. First, examining the results of providing subsidies to different industry linkage patterns (primary, primary + secondary, primary + tertiary, and primary + secondary + tertiary industries), providing subsidies to primary + tertiary or primary + secondary + tertiary industries showed significant positive impacts on total GDP. Notably, providing subsidies exclusively to the primary industry produced no economic effects whatsoever. While subsidy payments, which have occupied a large portion of traditional agricultural policies, showed no economic ripple effects, subsidies to primary + tertiary or primary + secondary + tertiary industries increased economic impacts. This supports the legitimacy of 6th industrialization policies and confirms the necessity of providing subsidies linked to upstream and downstream industries when implementing such policies.

Regarding capital, increasing capital exclusively in the primary industry resulted in negative economic effects exceeding 13% on GDP. Unlike the subsidy case, increasing capital in primary + secondary industries showed positive effects on GDP growth. Capital increases in primary + secondary +

tertiary industries, similar to subsidy increases, demonstrated positive economic effects.

Table 9. Scenario 2: Change of Total GDP according to Increasing of Subsidies or Capital

(Unit: %)

Items	Primary	Primary + Secondary	Primary + Tertiary	Primary + Secondary + Tertiary
Increasing Subsidies	0.0000	-0.0039	0.0775	0.0777
Increasing Capital	-0.1323	0.2336	-0.0243	0.1677

The <Figure 1> graphically illustrates the effects of subsidy increases and capital increases by industry linkage type according to policy scenario 2. To summarize briefly, the analysis shows that subsidies provided exclusively to the primary industry produced no economic effects whatsoever, while providing subsidies simultaneously to primary and tertiary industries, or to primary, secondary, and tertiary industries together, maximized economic benefits. In contrast, capital increases were observed to have consistently positive effects on the export sector regardless of industry linkage patterns.

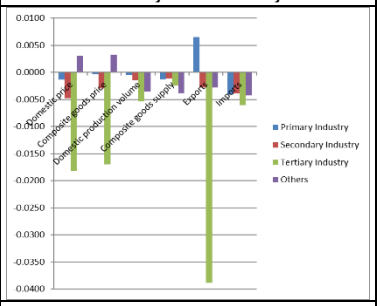
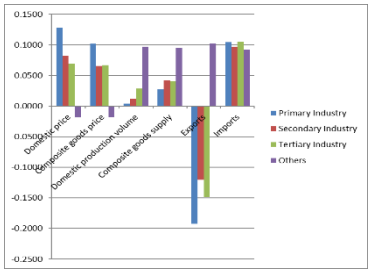
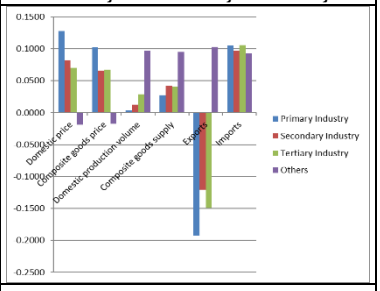
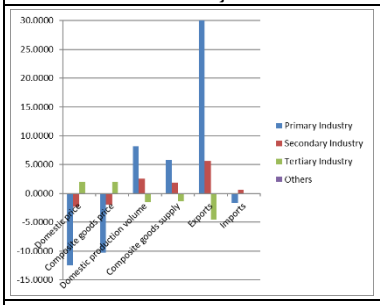
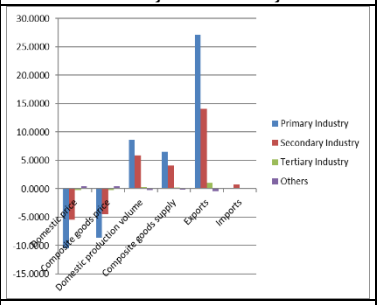
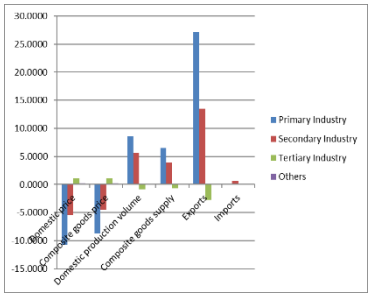
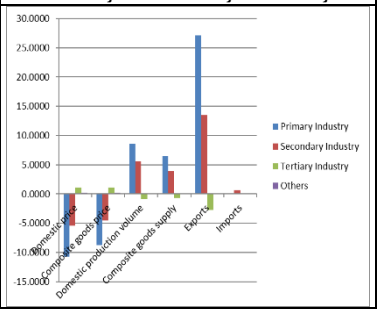
Items	Primary	Primary + Secondary
10% increase in subsidies	No economic effect	
	Primary + Tertiary	Primary + Secondary + Tertiary
		
10% increase in capital	Primary	Primary + Secondary
		
	Primary + Tertiary	Primary + Secondary + Tertiary
		

Figure 1. Scenario 2: Effects by Factor in Policy Scenario 2

Regarding capital, increasing capital exclusively in the primary industry resulted in negative economic effects exceeding 13% on GDP. Unlike the subsidy case, increasing capital in primary + secondary industries showed positive effects on GDP growth. Capital increases in primary + secondary + tertiary industries, similar to subsidy increases, demonstrated positive economic effects.

Table 10. Scenario 2: Change of Total GDP according to Increasing of Subsidies or Capital

(Unit: %)

Items	Primary	Primary + Secondary	Primary + Tertiary	Primary + Secondary + Tertiary
Increasing Subsidies	0.0000	-0.0039	0.0775	0.0777
Increasing Capital	-0.1323	0.2336	-0.0243	0.1677

These CGE simulation results suggest the necessity of strategic approaches when implementing agricultural and rural 6th industrialization policies in the future.

V. Conclusion

Sustainability in Korea's rural communities faces growing threats due to population decline, demographic aging, and the diminishing vitality of rural economies. These structural crises, combined with evolving paradigms in agricultural policy, have prompted a shift toward integrative strategies—most notably, the Sixth Industrialization policy. Designed to bridge the agricultural sector with processing, distribution, and services, this approach seeks to revitalize rural regions by fostering cross-sectoral linkages and generating new employment opportunities.

To evaluate the economic impact of this policy, this study applied a Computable General Equilibrium (CGE) model built on a Social Accounting Matrix derived from the Bank of Korea's 2010 input-output tables. In contrast to prior studies that primarily addressed institutional frameworks or used limited micro-level data, this analysis offers a macro-level simulation of various industrial linkage scenarios, assessing the effects of policy-induced changes in labor, government spending, subsidies, and capital investment.

Key findings emerged across different policy interventions. A 10% increase in labor demand led to notable price increases in the primary (5.52%) and tertiary (4.48%) sectors, highlighting the potential of labor-driven growth when combined with service-oriented industries. Government spending also stimulated production and imports, though its effects were relatively moderate due to constraints within the primary sector.

More substantial insights came from simulations involving subsidies and capital investment under different industry linkage configurations. Scenarios limited to the primary sector produced negligible or even adverse results. In contrast, configurations involving primary-tertiary or primary-secondary-tertiary sectors exhibited significantly higher economic ripple effects. These results emphasize that industrial convergence is not merely beneficial but essential for achieving the intended outcomes of Sixth Industrialization.

Two main policy implications arise from these findings. First, agricultural support must move beyond its traditional primary-sector focus toward integrated schemes that reinforce cross sectoral integration. Second, financial and institutional resources should be strategically directed toward configurations that include the tertiary sector, particularly those involving distribution, food services, and tourism. These approaches align more closely with the foundational goals of Sixth Industrialization and have been empirically shown to produce superior economic effects.

Despite its contributions, this study has several limitations. Although the analysis covered 168 industry classifications, it did not account for regional or crop-level heterogeneity. Furthermore, due to data constraints, elasticities were applied based on broader sectoral categories rather than disaggregated industry-specific values. Future research should seek to address these limitations by incorporating micro-level behavioral data, refining elasticity estimates, and exploring dynamic or spatial CGE models to enhance the robustness of policy evaluations.

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