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The Determinants and Welfare Implications of Labor Share

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I. Background of Study

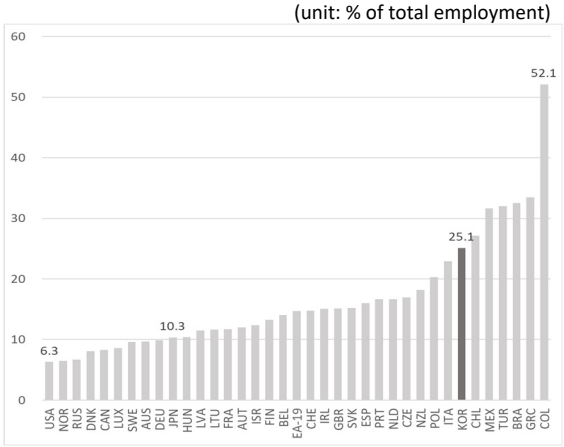
The decline in labor share is recognized as a global phenomenon. Concerns have been raised that this trend will exacerbate the income inequality between business owners as capitalists and households as the labor suppliers, prompting a decline in household income and consumption, which are major driving forces for sustainable growth. Meanwhile, various policy measures have been introduced to raise the labor share, with the aim of correcting inequality and boosting growth. This study explores the determinants of labor share and analyzes the effects of these factors on the economy and social welfare, offering various interpretations and policy alternatives according to economic conditions.

II. Measuring the Labor Share

The labor share is defined as the share of labor income in the national income. However, the measurement of labor income is an issue of particular controversy mainly due to differing opinions on how to handle the self-employed, that is, the separation of labor income from self-employment income. Under- or over-estimation of the labor share is rooted in this difference. The self-employment rate, defined as the ratio of self-employed to total employment, is 25.1% in Korea, which is relatively high among OECD countries (see Figure 1) and makes the measurement more challenging.

Figure 1. Self-employment rate

(unit: % of total employment)

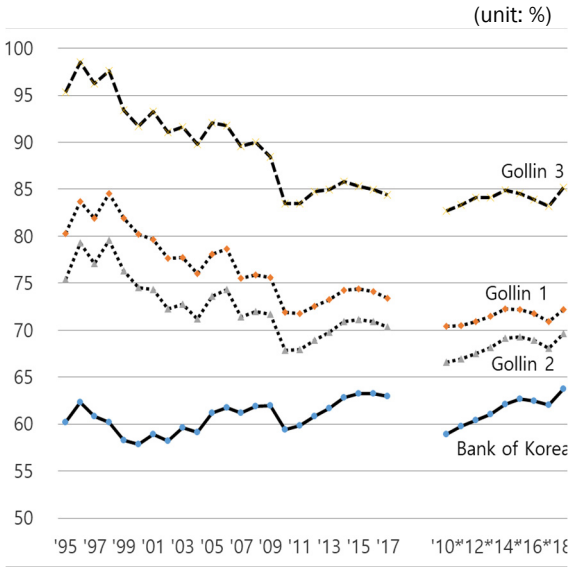


Note: As of 2018 or latest available.
Source: OECD Statistics.

Gollin (2002) suggests three methods in determining the contribution of labor out of the income of self-employed. The first method, Gollin 1, treats the entire self-employment income as the labor income. The second method, Gollin 2, assumes that the income composition is identical between the self-employment and other sectors, which suggests measuring the labor share without considering the self-employment sector. The third method, Gollin 3, measures the labor share based on the assumption that average income of the self-employed is the same as that of the wage employee.

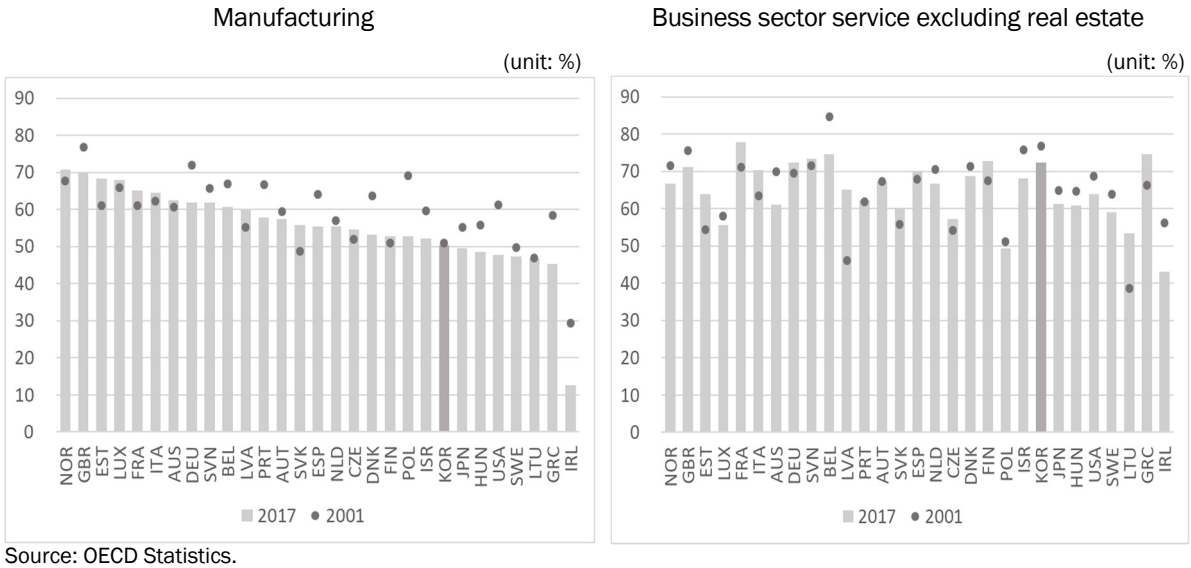
Figure 2 shows the downward trend from 1995 to the early 2010s in the labor share constructed via Gollin's methods, which is not identified in the official measure published by the Bank of Korea. The rapid decline right after the Asian currency crisis and the global financial crisis reflects the relatively larger fall in the self-employment sector income, compared to the corporate profit and employee compensation. In recent years after the global financial crisis, the upward trend is observed regardless of the method employed.

Figure 2. Korea's labor share



Note: (*) denotes estimates from the revised national account due to the base year change.
Source: Bank of Korea, Statistics Korea, Author's calculation.

Figure 3. Labor shares in OECD countries



Source: OECD Statistics.

Figure 3 shows the labor shares in OECD countries across manufacturing and service sectors, where the OECD employs a variant of Gollin 3. The total compensation as a share of gross value added in the manufacturing sector of Korea is 50.4% as of 2016 and ranked 10th out of 29 countries, which is much smaller than the labor share in the service sector and reflects the high capital concentration of the manufacturing sector.

There are various sources that determine the labor share and cross-country comparison is often misleading. Hence, details must be taken into account when interpreting the results, as the possibility of transmitting wrong signals cannot be ruled out under the current policy framework.

III. The Determinants of Labor Share

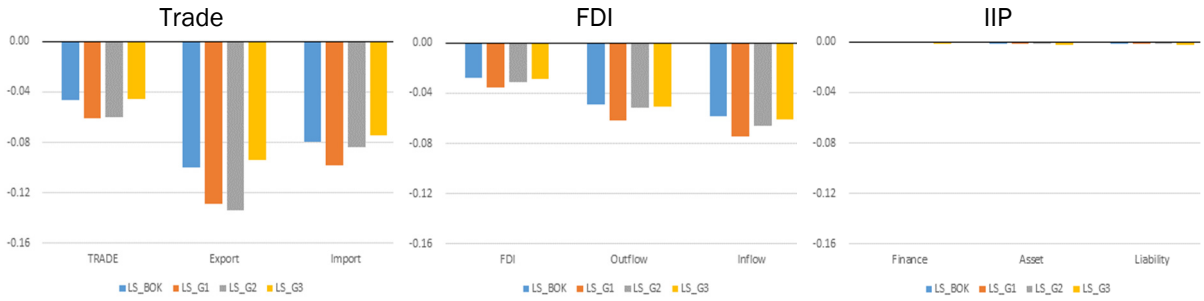
The effects of globalization on the labor share is examined using a panel data analysis. Trade openness, foreign direct investment (FDI), and international investment position (IIP) are considered as proxies of globalization. The following model is estimated with the annual panel data of 29 countries from 2012 to 2016.

$$LS_{i,t} = \rho LS_{i,t-1} + \beta_0 + \beta_1 Openness_{i,t} + \gamma X_{i,t} + \mu_i + \tau_t + \epsilon_{i,t}$$

Different measures of the labor share, following Gollin's and the Bank of Korea's methods, are constructed. Additional explanatory variables other than the openness include technology (R&D), human capital (low-skilled workers and the secondary educated), labor market (unionization and part-time workers), inflation, and the social safety net. Also, country- and time-fixed effects are considered.

The estimation results confirmed the followings. First, the labor share declines with the advent of globalization, and trade openness has greater effect than foreign direct investment. However, the expansion of international investment has little impact on labor share. Second, the labor share is found to be more affected by globalization when the income of the self-employed is considered. Third, expansion of social security funds raises the labor share. As globalization is a mega-trend beyond the control of a small open economy, a decline in labor share should be considered as a by-product. Moreover, redistribution policy can work as an inclusive policy alternative.

Figure 4. Openness on labor share



Note: Values in the bar denote estimated β_1 from each labor share and openness combination.
Source: Author's calculation.

IV. Welfare Implications from Structural Model

The theoretical aspects of labor share are also examined. Along with the imperfect competition structure in the product and factor market, the CES production function is considered in analyzing the impact of structural shocks on the labor share. In this analysis, the effects on social welfare were also identified, including the effects on key macro variables.

In a simple static setting with market concentrations and capital-labor complementarity, the labor share can increase with the introduction of redistributive policies such as minimum wage and unemployment benefits. If the capital and labor are complementary ($\sigma < 1$), an increase in the real reservation wage, which is affected by the redistribution policy, drives up the labor share as can be seen in Table 1.

Table 1. Labor shares in simple setting

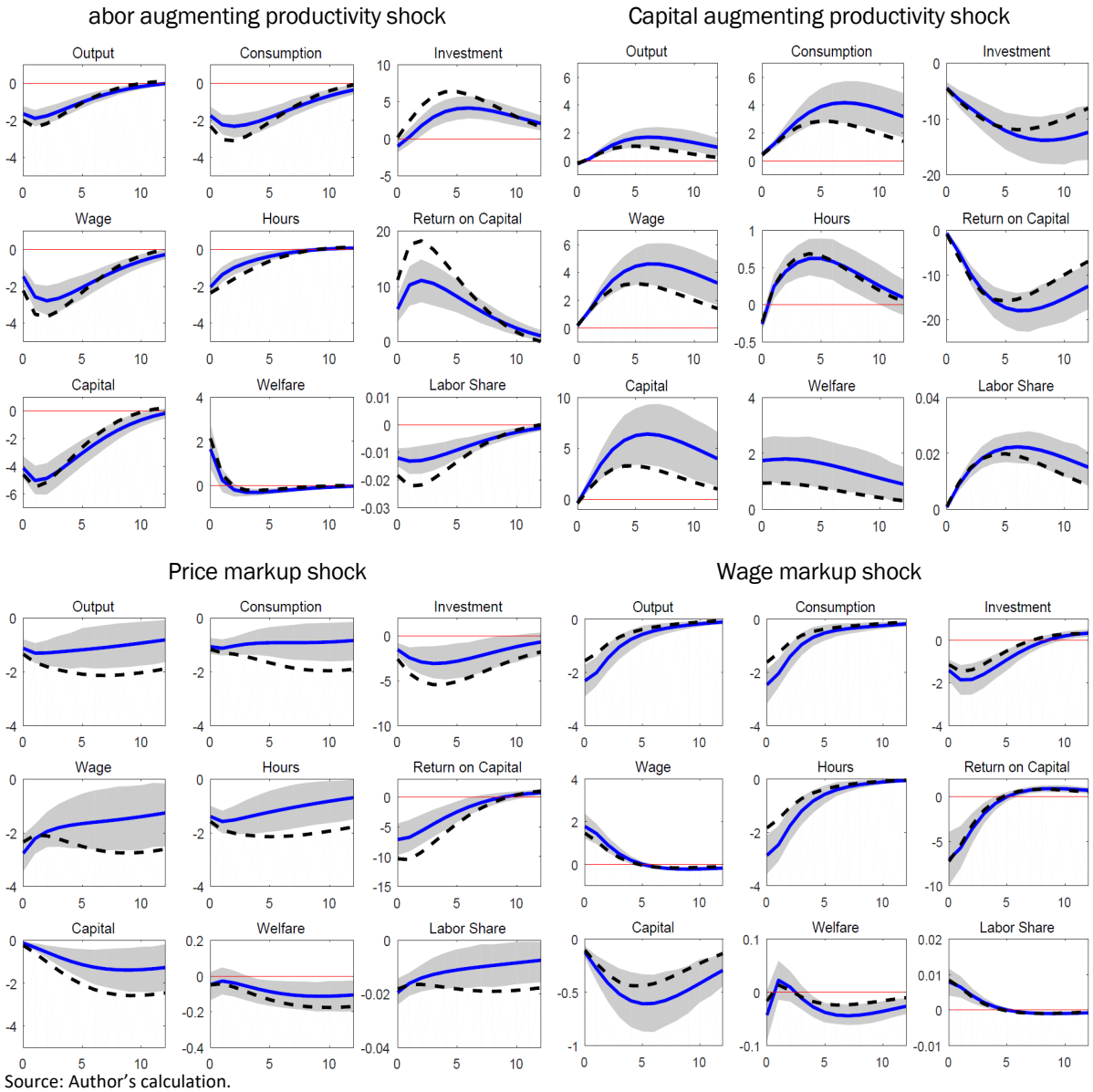
	Perfect competition	Firm's markup (μ)	Firm's markup (μ) & labor union's bargaining power (γ)
Cobb-Douglas (α)	α	$\frac{\alpha}{\mu}$	$\frac{\alpha}{\mu}+\frac{\mu}{\mu-1}\gamma$
CES (α, σ)	$\alpha^{\sigma}\left(\frac{W}{P}\right)^{1-\sigma}$	$\left(\frac{\alpha}{\mu}\right)^{\sigma}\left(\frac{W}{P}\right)^{1-\sigma}$	$\left(\frac{\alpha}{\mu}\right)^{\sigma}\left(\frac{W_R}{P}\right)^{1-\sigma}+\frac{\mu}{\mu-1}\gamma$

Note: Parameters are from following related functions. Cobb-Douglas production function $Y = L^{\alpha}K^{1-\alpha}$; CES production function $Y = \left[(1-\alpha)K^{\frac{\sigma-1}{\sigma}} + \alpha L^{\frac{\sigma-1}{\sigma}}\right]^{\frac{\sigma}{\sigma-1}}$ where σ is the elasticity of substitution between capital and labor; Nash bargaining objective function $\Pi^{1-\gamma}[(W-W_R)L]^{\gamma}$ where W_R is the worker's reservation wage and γ is worker's bargaining power; and the markup $\mu = \frac{\eta}{\eta-1}$ of a firm with monopoly power where η is the price elasticity of demand.
Source: Author's calculation.

An empirical analysis using the structural dynamic model of Korea shows that the labor share increases as a result of capital-augmenting technological progress accompanied by a decrease in the relative price of investment goods. This result is delivered because the elasticity of substitution between capital and labor is estimated to be complementary in Korea. In contrast, labor-augmenting technological progress lowers relative wages but also reduces working hours, consumption, and the labor share. In this case, however, the decrease in disutility due to the reduced working hours is relatively large and the social welfare increases in the short run. These results imply that social welfare can be reduced while labor share increases. This indicates that not only the components in the national account but also employment market statistics should be taken into account when the labor share is considered as a policy indicator.

Implications for the effects of globalization can also be found in the model. Increasing monopoly power of firms and labor supply, respectively, lead to an increase in price markup and wage markup. First, the opening of the domestic market increases the competitiveness of domestic firms from restructuring such as exiting and merger of marginal firms, which results in higher market concentration. This lowers the labor share through rising price markup in the model and reduces social welfare. On the other hand, when foreign capital flows in due to the opening of the financial market, the pressure on flexible labor market increases, which lowers the wage markup by reducing the labor share.

Figure 5. Impulse Responses



Source: Author's calculation.

V. Policy Implications

According to the findings in this study, it is not clear whether globalization has contributed in increasing the labor share. The bargaining power of the capitalist becomes larger with the advent of easier cross-border relocation, which workers and the self-employed cannot entertain. Therefore, the fairness and inclusiveness in trade policy should be emphasized as well as the effectiveness of the globalization. Related policy suggestions include: improving the trade adjustment assistance program, supporting growth through globalization of SMEs, and establishing a fair supplier-buyer relationship in the supply chain.KIEP