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Research Report

Business Groups and Declining Allocative Efficiency in Korea

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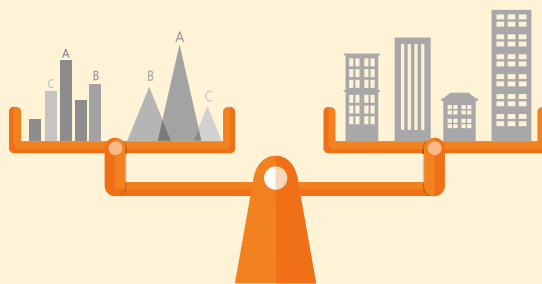
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Business Groups and Declining Allocative Efficiency in Korea

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* Based on Cho, Duksang, *Economic Dynamism of Korea: With the Focus on the Economic Concentration of Business Groups*, Policy Study 2017-14, Korea Development Institute, 2017 (in Korean).

Summary

■ The allocative efficiency in Korea is on a rapid downturn.

- Based on Statistics Korea's Survey of Business Activities, an analysis was conducted on firms with over 50 regular employees and 300 million won in equity during 2006–2015 to find that allocative efficiency has continued to decline since 2008 (labor productivity from 2008, TFP from 2011).
- Using the methodology proposed by Melitz and Polanec (2015), allocative efficiency was measured through the covariance between firms' productivity and market share—a decline in allocative efficiency means that resources are being excessively allocated to low-productivity firms while the opposite is true for high-productivity firms.

■ Since 2011, the decline in allocative efficiency has been observed mostly among affiliates of large business groups that are designated by the Korea Fair Trade Commission (KFTC) for limitations on cross-shareholding.

- Considering large business groups' immense share of inputs (labor and capital), their diminishing efficiency in resource allocation accounts for much of the recent productivity slowdown in Korea.

■ To improve overall economic growth, efforts must be made to offset the declining allocative efficiency engendered by large business groups.

- The holding company system needs an overhaul to prevent the growth of business-group firms from eroding allocative efficiency.
- Actions need to be taken so that any problems incurred from the misconduct of controlling shareholders do not lead to misallocation within business groups.

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Issues

■ Korea's real GDP growth rate has stalled at around the 3% range since 2011, fueling concerns over a stagnating economy.

- With a dwindling working age population and a large capital–output ratio, input-driven growth is no longer feasible. As such, the future potential growth of the Korean economy depends on the growth rate of total factor productivity (TFP).
- TFP is an indicator for how efficiently labor and capital inputs are being utilized. Korea's TFP growth rate dropped to the 1% level in 2011 and has remained static since.

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Declining Allocative Efficiency

¹ Statistics Korea's *Survey of Business Activities* is a complete enumeration survey of all establishments with 50 or more regular employees and 300 million won or more in capital from all industries. It also includes smaller establishments in wholesale and retail trade and services that have fewer than 50 regular employees but 1 billion won or more in capital.

[Figure 1] Real GDP and TFP Growth Rates



Source: GDP growth rates from the Bank of Korea (<http://ecos.bok.or.kr>, last accessed: Nov. 20, 2017). TFP growth rates from the OECD (<https://data.oecd.org/lprdy/multifactor-productivity.htm>, last accessed: April 9, 2018).

■ This study aims to reveal the causes of the decrease in the TFP growth rate and draw on measures to enhance Korea's economic growth.

- An empirical analysis was conducted using firm-level micro data from Statistics Korea's Survey of Business Activities.
- Particular focus was placed on the impact of business-group firms on allocative efficiency by identifying the ownership structure.

■ With the Survey of Business Activities,¹⁾ the changes in aggregate productivity of Korean firms in 2006-2015 was examined.

- Using Melitz and Polanec's (2015) Dynamic Olley-Pakes Decomposition method, the aggregate productivity of firms was decomposed into: average productivity (unweighted mean); allocative efficiency (covariance between productivity and market share) and; net entry effect by firms' entry and exit.
 - Aggregate productivity is the weighted mean of the productivity (labor productivity or TFP) of respective firms, which represents Korea's macroeconomic productivity.
 - Firms' labor productivity is calculated by dividing the value-added by labor input, which is then logged. In the analysis using labor productivity, the market share was set as the proportion of labor input.
 - Firms' TFP is constructed via a growth accounting method, using the Cobb-Douglas production function and then logged. In the analysis using TFP, the market share was set as the proportion of the nominal value-added.

■ Allocative efficiency has been on a rapid downward trajectory in recent years, pulling down the aggregate productivity growth rate.

- Analysis based on labor productivity found that a decline in allocative efficiency accounts for a yearly 0.7%p drop in the aggregate productivity growth rate while that based on TFP found a 0.4%p fall during the 2006-2015 period.
- Conditions deteriorated from 2011 to 2015, with figures posting larger decrements.
 - That for the former (labor productivity-based analysis) decreased to a yearly 1.5%p and the latter (TFP-based analysis) to a yearly 1.8%p.

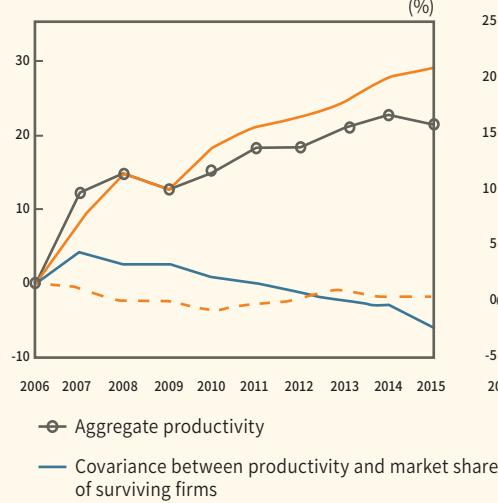
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Decomposition of the Declining Allocative Efficiency

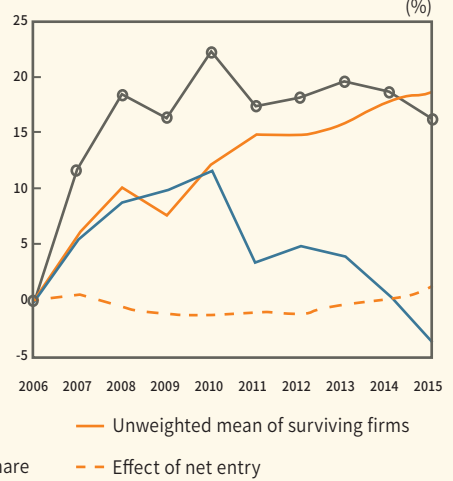
2 Using the KFTC's Business Group Information Portal (<http://groupopni.ftc.go.kr>), business groups subject to the limitation on cross-shareholding for respective years were extracted and linked to the data from the *Survey of Business Activities*.

- 3
- ① Those who continue to be stand-alone firms (not KFTC-designated business groups).
 - ② Affiliates of KFTC-designated business groups that have changed to stand-alone firms.
 - ③ Those who continue to be affiliates of KFTC-designated business groups.
 - ④ Stand-alone firms that have changed to affiliates of KFTC-designated business groups.

[Figure 2] Decomposition of the Cumulative Growth Rates of Labor Productivity (%)



[Figure 3] Decomposition of the Cumulative Growth Rates of TFP (%)

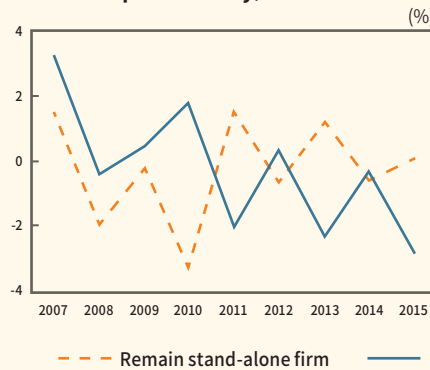


○ Meanwhile, both analyses found that the average productivity improved the aggregate productivity growth rate of all firms, with the exception of 2009.

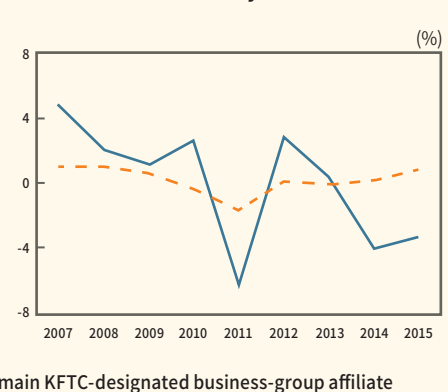
■ From 2011, the decline in allocative efficiency has been mainly observed among affiliates of large business groups,²⁾ that are designated by the Korea Fair Trade Commission (KFTC) for limitations on cross-shareholding.

- Firms were categorized into four types³⁾ according to their relation to the large business group to estimate the impact of changes in allocative efficiency in each group on the annual growth rate of aggregate productivity.
- The contribution of firms that remained affiliates of large business groups to the changes in aggregate productivity has continued to fall since 2007, marking a 2.4%p decrease in labor productivity and 3.6%p decrease in TFP in 2015.
- Meanwhile, the contribution of firms that remained stand-alone exhibited fluctuations that do not point to any particular trend.

[Figure 4] Contribution of Allocative Efficiency to Aggregate Productivity Growth (labor productivity) (%)



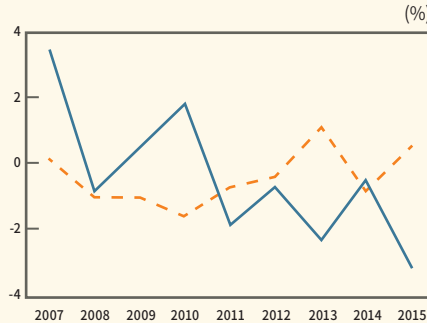
[Figure 5] Contribution of Allocative Efficiency to Aggregate Productivity Growth (TFP) (%)



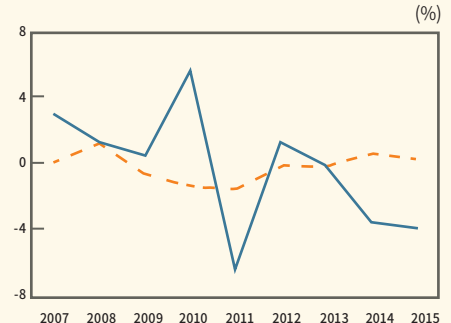
■ **The declining allocative efficiency cannot be explained by merely classifying firms by size (large or SMEs) without also considering their ownership structure.**

- The changes in allocative efficiency were decomposed by ownership structure and size⁴⁾ during the observation period (year) to estimate the impact of changes in allocative efficiency in each group on the aggregate productivity growth rate.
- It was found that the impact varied even among large firms with 300-plus regular employees depending on their ownership structure.
 - The contribution of business-group firms with 300-plus regular employees has maintained the decline since 2007, posting a 3%p decrease in labor productivity and 3.8%p decrease in TFP in 2015.
 - On the other hand, the contribution of stand-alone firms with 300-plus regular employees showed no distinctive trends.

[Figure 6] Contribution of Changes in Allocative Efficiency to Aggregate Productivity Growth (labor productivity)



[Figure 7] Contribution of Changes in Allocative Efficiency to Aggregate Productivity Growth (TFP)



— KFTC-designated business-group affiliate with 300+ employees
 - - - Stand-alone firm with 300+ employees

4 ① Stand-alone firms with 300-plus regular employees.
 ② Stand-alone firms with fewer than 300 regular employees.
 ③ KFTC-designated business-group affiliates with 300-plus regular employees.
 ④ KFTC-designated business-group affiliates with fewer than 300 regular employees.

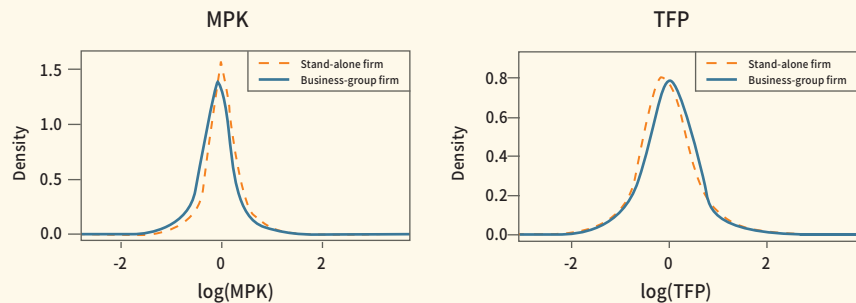
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Allocative Efficiency and Business Groups

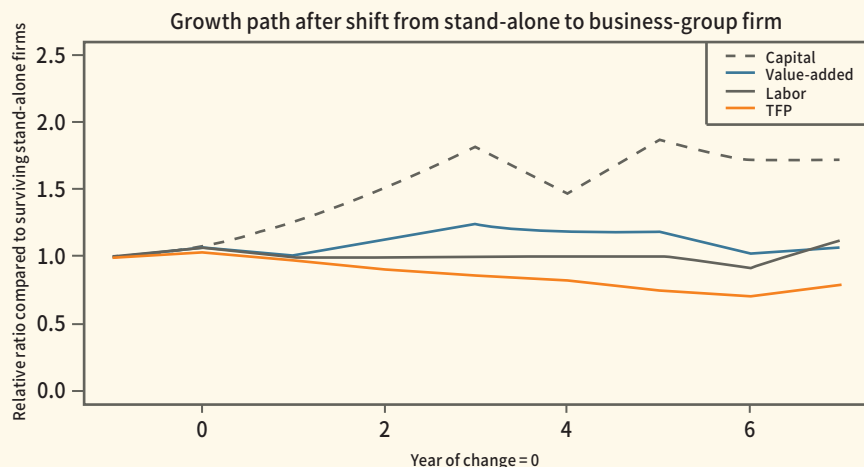
■ Business-group firms⁵ hold excessively larger capital than stand-alone firms that consequently undermines allocative efficiency

- The distribution of marginal productivity of capital (MPK) according to the ownership structure⁶ shows that firms with a pyramidal ownership structure (business-group firms, solid line) generally have lower MPK than stand-alone firms (dotted line).
 - MPK is the increase in output resulting from an additional one unit of capital, and has a tendency to decline on a rise in capital.
 - The fact that business-group firms have lower MPK than stand-alone firms means that a transfer of a unit of capital from the former to the latter could increase output throughout the entire economy.
- Business-group firms have higher TFP than stand-alone firms, overall.
 - This implies that the recent decline in allocative efficiency is not because business-group firms' technological capabilities are inferior but because they give rise to distortions in the market via their excessive use of capital.
- Meanwhile, stand-alone firms that became business-group firms exhibited faster growth with a large increase in capital compared to those whose ownership structure remained stand-alone.

[Figure 8] MPK and TFP by Ownership Structure



[Figure 9] Growth Rate on a Shift in Ownership Structure



⁵ Business-group firms in Section 4 refer to firms—from Statistics Korea's *Survey of Business Activities*—that have domestic subsidiaries or domestic parent companies, excluding subsidiaries with 90% or more equity investment by parent companies.

⁶ Firms' MPK was constructed by multiplying the average productivity of capital by the capital elasticity. To control for the differences in industries and business cycles, standardized distributions were constructed with the 2-digit industry average of MPK for the respective years. The standardized distributions of TFP were constructed in the same way.

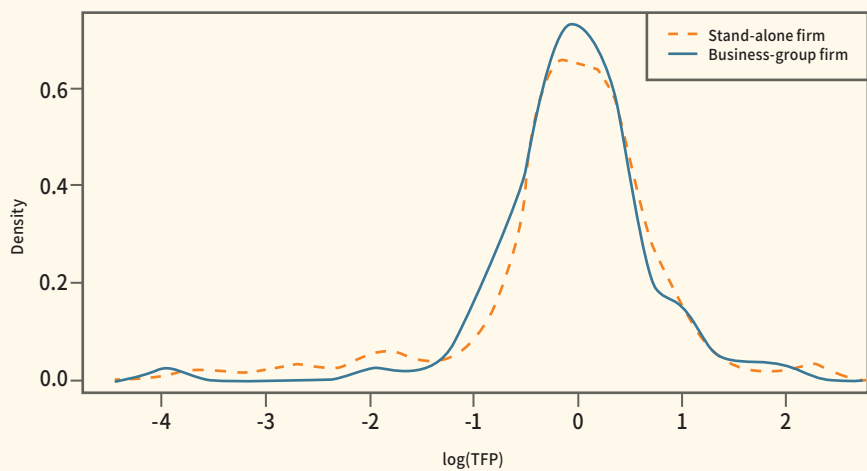
■ Compared to stand-alone firms, business-group firms⁷⁾ exhibit fewer cases of exits and entries which can dampen the dynamism of the Korean economy.

- Firms with a pyramidal ownership structure (business-group firms, solid line) exit less than stand-alone firms (dotted line).
- The TFP distribution of firms with 300-plus employees at the time of exit⁸⁾ shows that many business-group firms have lower TFP than stand-alone firms.
 - This implies that business-group firms with low productivity often stay longer in the market and exacerbate the inefficiencies.

[Figure 10] Firm Exit Rate by Ownership Structure (no. of regular employees) (%)



[Figure 11] TFP of Firms with 300-plus Regular Employees at Exit



7 Business-group firms in Section 4 refer to firms—from Statistics Korea’s *Survey of Business Activities*—that have domestic subsidiaries or domestic parent companies, excluding subsidiaries with 90% or more equity investment by parent companies.

8 To control for the differences in industries and business cycles, standardized TFP distributions were constructed with the 2-digit industry average of TFP for the respective years.

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Conclusion and Policy Suggestions

- **The declining allocative efficiency can account for much of the recent productivity slowdown in Korea.**
 - The decline in allocative efficiency is mainly centered around business groups and has been particularly rapid since 2011.
 - The pyramidal ownership structure can create an environment which enables business-group firms to raise asymmetrically large amounts of capital and grow faster than stand-alone firms (Almeida and Wolfenzon, 2006a).
 - When the ownership structure—not the productivity—generates discrepancies in the firm’s growth rate, misallocation can arise and restrict economic growth (Almeida and Wolfenzon, 2006b; Cho, 2016).
- **To improve the growth of the Korean economy, efforts must be made to enhance the allocative efficiency that business-group firms have decreased.**
 - The holding company system must be upgraded to prevent the growth of business-group firms from eroding allocative efficiency.
 - For instance, expanding the voting rights of controlling shareholders without additional capital input via spin-offs or easing the share requirements on (sub-) subsidiaries could widen the gap in the financing capabilities of business-group and stand-alone firms, which would exacerbate the inefficiency in resource allocation.
 - Action should be taken so that any problems arising from the misconduct of controlling shareholders do not result in the misallocation of resources.
 - For instance, controlling shareholders’ excessive exercise of their controlling rights can result in inefficient resource allocation within a business group. As such, various measures should be put into place to prevent such practices and hold those accountable (Kim and Lee, 2014; Lee, 2014; Cho and Yang, 2016).

References

- Almeida, Heitor and Daniel Wolfenzon, “A Theory of Pyramidal Ownership and Family Business Groups,” *The Journal of Finance*, 61(6), 2006a, pp.2637~2680.
- Almeida, Heitor and Daniel Wolfenzon, “Should Business Groups Be Dismantled? The Equilibrium Costs of Efficient Internal Capital Markets,” *Journal of Financial Economics*, 79(1), 2006b, pp.99~144.
- Cho, Duksang, “Pyramidal Business Groups and Asymmetric Financial Frictions,” in Theses and Dissertations, Washington University in St. Louis, 2016.
- Cho, Duksang, *Economic Dynamism of Korea: With the Focus on the Economic Concentration of Business Groups*, Policy Study 2017-14, Korea Development Institute, 2017 (in Korean).
- Cho, Sung Ick and Yong Hyeon Yang, *A New Discipline for Inter-Corporate Shareholding*, Research Monograph 2016-05, Korea Development Institute, 2016 (in Korean).
- Kim Jaehoon and Hwa Ryung Lee, “A Study of Board Independence and Behaviors,” in Wonhyuk Lim (ed), *Corporate Governance of Large Business Groups: Empirical Assessments and Policy Implications*, Research Monograph 2014-09, Korea Development Institute, 2014 (in Korean).
- Lee, Hwa Ryung, “A Study on Board Independence and CEO Turnover,” in Wonhyuk Lim (ed), *Corporate Governance of Large Business Groups: Empirical Assessments and Policy Implications*, Research Monograph 2014-09, Korea Development Institute, 2014 (in Korean).
- Melitz, Marc J. and Sašo Polanec, “Dynamic Olley-Pakes Productivity Decomposition with Entry and Exit,” *The Rand Journal of Economics*, 46(2), 2015, pp.362~375.

<Websites>

- Business Group Information Portal (<http://groupopni.ftc.go.kr>, last accessed: May 23, 2017).
- Bank of Korea (<http://ecos.bok.or.kr>, last accessed: Nov. 20, 2017).
- OECD (<https://data.oecd.org/lprdty/multifactor-productivity.htm>, last accessed: April 9, 2018).

<Data>

- Statistics Korea, *Survey of Business Activities*, 2006-2015.