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Impact of SME-suitable Business Area Designation on the Korean Tofu Market*

Jinkook Lee, Fellow at KDI

The SME-suitable industry designation scheme aims to foster the growth of Korea’s SMEs by restricting the entry or expansion of large enterprises. However, without a full understanding of specific business areas, the restrictive measures can undermine SMEs’ profit as well as consumer welfare. The scheme should be intricately implemented based on both prior investigation and ex-post analysis at product level. In the case that the prior investigation reveals little substitutability between SME-made and large enterprise-made products, it would be more prudent to not designate the business as SME-suitable. Additionally, business areas that are found to have suffered from a shrinking market and falling profits (SMES) via ex-post analysis should not be subject for renewal or extension.

I. Issue

Can the SME-suitable industry designation scheme (hereinafter, the designation scheme) foster the competitiveness and growth of Korea’s SMEs by restricting the entry and/or expansion of large enterprises?

More than three years have passed since its initiation, however, the efficacy of the scheme remains a constant source of contention. Large enterprises have called for the
abolition of the scheme, arguing that “the intent to protect SMEs has backfired and caused the market to shrink,” while SMEs have strongly demanded redesignation i.e. renewal of the scheme for a further three years, for the protection of their right to survival. There were heated arguments over the pros and cons of redesignating the recently expired 82 industries; it was several months after the deadline an agreement was reached to redesignate 33 of the 82 areas.

However, the underlying sources of conflict remain because the redesignation decisions were made based on insufficient prior investigation and ex-post analysis on the following key controversial issues: (1) whether the market has indeed shrunk, as argued by large enterprises; (2) if so, whether the designation scheme was the actual cause; (3) what strategies and responses were implemented by companies following the initiation of the scheme; and (4) what changes were witnessed in firms’ profits. Three years from now, when the protection term ends, another similar social discord may occur.

In this context, this study closely examines the impact of the designation scheme focusing on the Korean tofu market, which has been the subject of much controversy. Specifically, the study collected ‘product-level (individually packed tofu)’ data and identified firms’ strategic decisions regarding product characteristics after implementation of the scheme. Finally the changes in consumer welfare and firms’ profit were estimated. The results showed that the scheme’s sales restriction led large enterprises to produce less of the expensive domestic soybean tofu and more of the inexpensive imported soybean tofu. In turn, this change in product characteristic negatively affected the profits of SMEs, who were mostly producing imported soybean tofu. Finally, the study reveals that consumer welfare decreased as the production of domestic soybean tofu, which consumers preferred, also fell.

II. Status Quo of the Designation Scheme

The designation scheme was first introduced by the Korea Commission for Corporate Partnership (KCCP) in October 2011 for the purposes of laying foundations for the growth of Korea’s SMEs. Upon designation as a ‘SME-suitable’ business area, it becomes inaccessible to large enterprises and their expansion is limited for the initial three years. When the designation term expires, the business area is subject to a screening process to determine whether the protection period will be extended for another three years. This designation scheme is identical, in the context of its purpose, to the previous version, the SME-only Industry Designation System (revoked in 2006), which was also developed to designate certain businesses as ‘SME-only.’ The new scheme however, is considered to have a smaller degree of market intervention; the private sector is responsible for the designation of SME-suitable business areas, the protection is applied for a limited period,
and different recommendations are given to different industries (Table 1).

Nevertheless, it has been pointed out that companies under a set of recommendations cannot be free from social and political pressures and that imposing restrictions on large domestic enterprises could, rather, cause foreign companies to dominate the domestic market. Furthermore, concerns have been also raised about a potential weakening of market competition, which would consequently curtail consumer choice.

Changes in the designation of SME-suitable industries (Table 2) show that during the first term of the scheme, a total of seven decisions were delivered regarding the designation of 100 products. Currently, in the second term, numerous processes are ongoing to determine whether the soon-to-be expired products should be given extensions and what other products should be additionally designated.

At the core of recent disputes is whether the industries designated as SME-suitable between October 2011 and March 2012 should be redesignated. Large enterprises are opposed to the scheme and have called for its termination, arguing that it would only encourage SMEs’ dependence on government protection and eventually undermine their ability to self-sustain. They further point out that the markets for several products,

1) The Korea Commission for Corporate Partnership (KCCP) evaluates and releases the status of accompanied growth on 130 large enterprises in Korea. According to the index, failure to comply with the recommendations is a major reason for point deduction. The KCCP may request the administrator of the Small and Medium Business Administration (SMBA) to issue business adjustment recommendations to large enterprises who fail to comply with and according to the deliberation results, the administrator may recommend a business transfer; deduction of points on the accompanied growth index. Recommendations of business transfer could result in undermining corporate identity and triggering political and social pressure, hence a viable incentive to induce the implementation of recommendations.
including portable storage devices, gochujang (red pepper paste) and whole bean coffee, have already dwindled due to the scheme. On the other hand, SMEs are demanding the extension and strongly calling for the legislation of the scheme, citing that curbing the abuses of market-dominance by large enterprises has contributed to the increase in the number of new stores and sales of SMEs in certain business areas, such as bakeries. It should be noted, however, that changes in market size and the existence and magnitude of abuse by market-dominants vary across business areas. Making generalizations about the efficacy of the designation scheme based on a few industries will not resolve the ongoing conflicts. Indeed, analysis of the economic effects must be conducted separately for each industry, reflecting the features of the companies and characteristics of their products within an industry. This paper focuses its analysis on this particular perspective, specifically on packed tofu.

Table 2: Number of SME-suitable Industry Designated, Undesignated and Re-designated

<table>
<thead>
<tr>
<th></th>
<th>Designation in the 1st Term</th>
<th>Designation in the 2nd Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly designated</td>
<td>14</td>
<td>23</td>
</tr>
<tr>
<td>Redesignated</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Undesignated</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>37</td>
</tr>
</tbody>
</table>

Note: Total = Total in the preceding term + Newly designated - Undesignated.
Source: Created by author, based on announcements by Korea Commission for Corporate Partnership (KCCP)

The point of the recent disputes was on the redesignation of soon-to-be expired industries. There were heated arguments about the pros and cons among large, medium- and small-sized companies. Analysis of the economic effects of the scheme must be conducted separately for each industry, reflecting the features of the companies and characteristics of their products.

III. Analysis of the Market for Packed Tofu

The tofu manufacturing business, including both packed and bulk (non-packed) tofu, exhibited consistent growth until being designated as SME-suitable; stable growth began to recede in 2012 and entered negative territory in 2013. So, is the designation scheme to blame?

According to KCCP recommendations, large enterprises are forbidden from entering the bulk tofu market (entry restriction) and their sales of packed tofu shall not exceed the level at designation (expansion restriction). Meanwhile, so small is the size of bulk tofu production by large enterprises that the scheme’s effect has been insignificant. In this case, the scheme appears to have had little impact on the packing tofu market.

2) Actions to legislate the scheme are presently underway in two different directions; the passage of the bill for the Special Act on the Protection of Business Areas Designated as Suitable for SMEs and Small Retailers; and the revision of the Act on the Promotion of Collaborative Cooperation between Large Enterprises and SMEs.
regard, to identify the effect of the scheme, the sale of packed tofu must be examined separately, and the changes in sales should be also analyzed by firm size i.e. large enterprise and SME.  

<Figure 1> demonstrates that the market for packed tofu expanded rapidly, leading the growth of the entire tofu market while sales of bulk tofu little changed. Additionally, the weak growth in the tofu market since 2012 is found to be driven by the decreased sales of packed tofu.

<Figure 2> reveals that the sales at large enterprises (in particular, Pulmuone and CJ) increased consistently until 2011, followed by a slow or negative growth from 2012. To the contrary, no meaningful changes were observed in SME sales, compared to the pre-designation period.

These findings indicate that the scheme, in the process of limiting sales by large enterprises, pulled down the growth of the packed tofu market and ultimately that of the entire tofu market. If large enterprises encroach into SMEs’ business territories and split the fixed market, it would negatively impact the growth of SMEs. However, the above results imply that the overall market size continued to expand with the increased sales of

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3) Expansion restriction stipulates that the total market share of three large enterprises (Pulmuone, CJ, Daesang) shall not exceed 80%. This is the sum of their market shares at the time of designation taken into effect in 2011. For each large enterprise, the limitation corresponds to sales restriction.

4) Recommendations initially contained ‘market withdrawal’ which means that large enterprises should be pulled out of the market for packed bulk tofu. There is no data available regarding the sales of packed bulk tofu. The slowing and negative growth in the sales of packed tofu might have been affected by large enterprises leaving the market for packed bulk tofu. Nevertheless, <Figure 1> and <Figure 2> interpretations still hold.
both large enterprises and SMEs, before the scheme was adopted. The original purpose of the scheme was to enhance the growth of SMEs, but the findings indicate that it is not being realized.

### IV. Economic Effects of the SME-suitable Industry Designation Scheme

#### 1. Impact on Corporate Product Strategy

Then, what prevents the scheme from achieving its fundamental purpose? In seeking answers, it was recognized that large enterprises reduced the production of packed tofu made from domestic soybean, after the scheme was adopted.

According to data on the packed tofu sales volume at large retailers nationwide (Table 3), large enterprises posted a monthly average drop of 49 tons (1,477 tons → 1,428 tons) in total sales volume with a particularly steep monthly average decrease of 147 tons (1,059 tons → 912 tons) in domestic soybean tofu. The drop in overall sales volume resulted from

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5) The data on packed tofu sales used in this study consist of two spectra: pre-scheme period from January to November 2011 (11 months) and post-scheme period from January to May 2014 (5 months). The monthly average values of sales, sales volume and profit were used for comparison.
a reduction in the sales volume of domestic soybean tofu and increase in that of imported soybean tofu. Consequently, the sales proportion of domestic soybean tofu decreased from 72% to 64%.

Large enterprises reducing the proportion of domestic soybean-based products can be explained by the fact that selling imported soybean-based products, which are half the price of the former, slows down the speed at which large enterprises reach their sales limit. But, this explanation is insufficient given that large enterprises will be able to maintain the sales proportion of domestic soybean tofu if their profits rise enough as the sales of domestic soybean tofu increases.

For more accurate analysis, the total profit from each of the domestic and imported soybean-made products must be compared. <Table 4> provides the estimation results on the marginal cost, margin, variable profit, fixed cost and total profit of large enterprises and SMEs, using the 2011 packed tofu data and supply model parameters.\(^6\) Large enterprises posted sales of 87.4 billion won and 24.8 billion won from domestic and imported soybean-based products, respectively, and their variable profit from domestic soybean-based products marked 42.6 billion won, three times higher than that of imported soybean-based products (13.0 billion won). However, the total profit, excluding fixed costs, recorded 13.0 billion won for imported soybean-based products, much higher than the 8.8 billion won for domestic soybean-based products.\(^7\)

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6) Lee (2015) explains in detail a methodology that estimates a supply model and calculates cost and profit. The estimation of the supply model requires detailed information on product characteristics, other than Nielsen’s data (sales of individually packed tofu, sales volume, price per kg, and weight), as to whether the tofu is made from domestic soybeans, whether it uses chemical coagulating agents and whether it is an OEM product. To construct a dataset for analysis, the author gathered the information printed on the individually packed tofu products.

7) According to business insiders who participated in the face-to-face and telephone interviews, the causes of the increase in fixed cost for the production of domestic soybean-based products include costs for the buildup, maintenance and repair of production lines (facility cost) and to trade with respective soybean farmers from across the nation and the transfer of purchases (trading and transfer cost)—unlike domestic soybeans, imported soybeans are obtainable through direct transactions with the Korea Agro-Fisheries Trade Corporation—and for advertisements on TV, newspapers and media (marketing cost).
Even if it is true that large enterprises created the market for domestic soybean-based products and obtained huge gains, limiting sales will eventually weaken the incentive to produce domestic soybean tofu under current market conditions. On the other hand, imported soybean-based products are cheaper and comparatively free from the sales limit while relatively large profits can be expected. Despite the sales restrictions enforced on large enterprises, the stagnant sales volume of SMEs is possibly the consequence of large enterprises expanding the proportion of imported soybean-based products (mainstay of SMEs) and the resultant heightened competition in the market. The initial policy expectation - the sales restriction on large enterprises would lead to the growth of SMEs - has not been realized, mainly due to the lack of consideration for corporate strategy and market mechanism.

As large enterprises expanded their production of imported soybean-based products, the market witnessed heightened competition and stagnated sales of SMEs.

![Table 4](#) Packed Tofu Prices, Sales Volume, Sales, Cost, Profit by Company Type (sum from Jan. to Nov. 2011)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Large enterprises</th>
<th>SMEs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Domestic</td>
<td>Imported</td>
<td>Total</td>
</tr>
<tr>
<td>Price (1 thousand won/kg)</td>
<td>7.4</td>
<td>3.4</td>
<td>5.4</td>
</tr>
<tr>
<td>Marginal cost (1 thousand won/kg)</td>
<td>3.8</td>
<td>1.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Margin (1 thousand won/kg)</td>
<td>3.5</td>
<td>1.4</td>
<td>2.9</td>
</tr>
<tr>
<td>Sales volume (1 thousand ton)</td>
<td>12.8</td>
<td>12.5</td>
<td>25.3</td>
</tr>
<tr>
<td>Sales (1 billion won)</td>
<td>94.5</td>
<td>42.1</td>
<td>136.6</td>
</tr>
<tr>
<td>Variable profit (1 billion won)</td>
<td>45.5</td>
<td>17.8</td>
<td>63.4</td>
</tr>
<tr>
<td>Fixed cost (1 billion won)</td>
<td>36.5</td>
<td>-</td>
<td>36.5</td>
</tr>
<tr>
<td>Total profit (1 billion won)</td>
<td>9.1</td>
<td>17.8</td>
<td>26.9</td>
</tr>
</tbody>
</table>

*Note: This table excludes C (constant term of fixed cost not estimated in the supply model).*

8) Large enterprises’ fixed costs for the production of domestic soybean-based products and imported soybean-based products need to be expressed as 33.8+C and C, respectively, and total profit from each product as 8.8-C and 13.0-C, respectively, but these expressions are omitted for reader convenience.

9) There may be suspicions that SMEs might have been careful not to increase their sales so that they could continue to enjoy the government tax support. However, the eligibility criteria to qualify for the status of SME cover those with less than 10,000 full-time employees, or 100 billion won in equity, or 100 billion won in sales, or 500 billion won in total asset, and for now, there are none who fall close to the category.
2. Impact on Consumer Welfare and Corporate Profit

Changes in product characteristics driven by the scheme would eventually affect consumer choice. In this regard, the effect on consumer welfare must be considered when evaluating the scheme.

Analyzing the data and demand model estimates for the pre- and post-adoption periods reveals that since initiation, consumers have lost an average 2.4 billion won per month and 28.7 billion won per year in welfare (Table 5), which is a decrease of 5.5%. Specifically, while consumer welfare has been enhanced thanks to slightly lowered prices, reduced use of chemical coagulating agents, increase in bundle sales and more promotion sales, it has also been diminished due to the drop in the proportion of domestic soybean-based products and increase in OEM products. Considering that consumers are found to have a strong preference for domestic soybean-based products and a strong aversion to OEM products,\(^\text{10}\) the size of the decrease in consumer welfare is much larger than that of the increase.

The last observation pertains to the changes in corporate profit (Table 6). Large enterprises are estimated to have suffered a loss of 19.5% in profit in 2014 compared to 2011; monthly average profit decreased by 987 million won and annual profit by 11.84 billion won. The drop is particularly steep in domestic soybean-based products. Ultimately, the sales restriction forced large enterprises to give up a certain amount of profit that could have been obtained from domestic soybean-based products, causing the overall decline. Moreover, as the competition ramped up in the market for imported soybean tofu, large enterprises increased bundle and promotional sales, which has further exacerbated profit losses.

It is worth noting that SMEs have witnessed falling profits since the adoption of the scheme; compared to 2011, monthly average profit decreased by 127 million won and annual profit by 1.52 billion won in 2014 (18.1% loss). In terms of product type, while SMEs enjoyed a profit increase of 800 million won on an annual basis in the market for domestic soybean products, they witnessed a profit decrease of 2.33 billion won in the

\(^{9}\) Since the scheme was adopted, consumer welfare has suffered a loss of approximately 2.4 billion won (5.5%) on a monthly average basis, or 28.7 billion won on an annual basis.

\(^{10}\) The link between consumers’ growing interest in health and corporate strategy for differentiation via high-end food sources brought in various tofu products made from domestic, organic and Non-GMO soybeans. Consequently, their market shares continue to rise.
The designation scheme needs to be managed in a highly selectively, considering the characteristics of each industry.

Ironically, the scheme developed with the intent to encourage the growth of SMEs has ultimately undermined the profit of not only large enterprises but also SMEs.

### Conclusion and Policy Recommendations

In February 2015, the packed tofu business became subject to screening for redesignation as SME-suitable. Consequently, packed domestic soybean tofu was excluded from the protection on the account of soybean farmers’ falling revenues as large enterprises cut their purchase since the adoption of the scheme; imported soybean tofu was renewed for an additional three years. However, concrete answers as to why large enterprises have downsized their purchase of domestic soybean rather than that for imported soybean have yet to be identified. The results of this study provide convincing explanations on the cause, while at the same time clearly demonstrating that excluding the domestic soybean tofu business was the right path for the growth of both the tofu market and SMEs.

The underlying reason for the scheme’s failure to achieve its policy goals in the packed tofu market lies in the fact that large enterprises changed their strategy in response to restrictions in the market. Changing product characteristics have certain impacts on the condition of market competition and consumer decisions, eventually affecting company profits. And as it can be seen above, restrictive measures that lack a clear understanding

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Changes in Corporate Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable profit</td>
<td>Monthly average</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Large enterprises</td>
<td></td>
</tr>
<tr>
<td>SMEs</td>
<td></td>
</tr>
<tr>
<td>Domestic soybean</td>
<td></td>
</tr>
<tr>
<td>Large enterprises</td>
<td></td>
</tr>
<tr>
<td>SMEs</td>
<td></td>
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<tr>
<td>Imported soybean</td>
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</tr>
<tr>
<td>Large enterprises</td>
<td></td>
</tr>
<tr>
<td>SMEs</td>
<td></td>
</tr>
</tbody>
</table>

11) The price drop in domestic soybeans might have been driven not only by large enterprises reducing their purchases (demand factor), but also by domestic soybean farmers increasing their production significantly (supply factor).
of the respective business areas could diminish SMEs’ profits and consumer welfare.

Alternatively, the scheme should be implemented with more finesse based on thorough market analyses. It is important to conduct prior market investigation and ex-post effect analysis at the actual product level and on their characteristics. The results of the examination should be reflected in discussions regarding SME-suitable designation. It is highly desirable that the examination focuses on measuring the disparity in consumer utility from large enterprise-made and SME-made products for the identification of the cause; specifically, what differences in product features or quality were behind the cause. Besides the methodology used in this study, it would also be possible to conduct a survey containing specific questions to identify consumer satisfaction regarding representative SME products and their characteristics in detail. Responses from the survey could be of great use not only as a fundamental basis in the screening process but also as concrete guidelines for the quality advancement of SME products.

Redesignation should not be approved for businesses wherein the market size has decreased and SMEs’ profits have dropped, as in the packed tofu business, based on thorough ex-post evaluation. Moreover, the scheme should not encompass businesses wherein the products from large enterprises and SMEs are so different that they are rarely substitutable. This is not only because economic damages can be expected but also because such practices could only push the scheme further away from achieving the fundamental goal of resolving polarization and promoting accompanied growth.
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- Small and Medium Business Administration (SMBA) (http://www.smba.go.kr, last access date: Jul. 1, 2014)