The Effects of Competition Intensity on Diversification Strategy and Firm Performance

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Ⅰ. Introduction

Firms under the recently intensifying competitive conditions should choose one as their goal; either growth or survival. For growth, the firms set the goal of increasing the sales or the market share, so they develop new products or expand into new geographic markets. What should the others which choose the survival as their goals do? Are they able to survive just by staying at and protecting the incumbent products or markets? Whichever the objective is, they should continue to look for new products or geographic markets. In other words, diversification strategy is not the option but the matter of duty for firms (Seo et al., 1999).

In the field of strategic management, the diversification strategy has been the main topic for over 30 years. In Korea, too, scholars have conducted the research on the diversification, but lots of them were for the business groups, *chaebols*. This seems to reflect the Korean recognition that the diversification is the strategy chosen by chaebols just to increase the group size. In addition, the mainstream of research has been on the relationship between diversification strategy and performance, and, to make matters worse, the results were not conclusive. Furthermore, although the research about determinants of diversification strategy can give some academic and practical implications, there has not been enough research.

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The increasing pressure of global competition since the late 20th century has been conceived as the critical change and threat in business. This intensifying global competition mostly comes in a form of increasing imports to the domestic firms. The foreign competition in the form of imports is named foreign-based competition.[1] Although there has been the provisional assumption that the increasing intensity of global competition would influence the decision about diversification strategy of a firm, neither a logically built model nor an empirically tested research does exist in Korea.

In sum, this research was conducted with the following objectives; to empirically test the effects of the foreign-based competition in an industry on diversification strategy of a firm and to provide a theoretically integrative framework including the determinants and results of diversification strategy.

Ⅱ. Model and Hypotheses

The model building in this research starts from the structure-conduct-performance framework. The structure limits the scope of alternatives and constraints with which firms in the industry are faced. This framework suggests the properties of industrial structure decide how long the firms in that industry can enjoy the above-average returns. In this research, foreign-based competition in an industry is considered as the structure and diversification strategy as the conduct of a firm.

Hence, the basic framework of the research is built like <Figure 1>.

1) Another source of foreign competition is *domestic-based competition* in the form of sales by foreign-subsidiaries located in the domestic market (Bowen and Wiersema, 2005). This is also increasing recently. However, we leave the study about this kind of foreign competition for future studies.

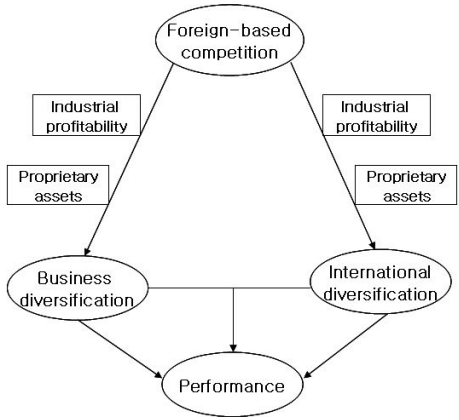
<Figure 1> The basic framework of the research model

However, not every firm under same industrial structure behaves equally. These differences should be explained by how proprietary resources they have, how efficiently they use the resources, whether they have core competences, or which ownership structure they have. In other words, a firm's behavior is affected by not only external but also internal environment.

In addition, we focus on the foreign-based competition in the core business industry which records the highest ratio of sales among businesses in a firm. This is because the unfavorably changing conditions in a firm's core business industry are more likely to urge the firm to behave strategically than those in the firm's non-core business industry.

Consequently, the final model is built as in <Figure 2>.

<Figure 2> The final research model



1. Foreign-based competition and business diversification

The intensifying foreign-based competition may force a firm to spend more resources on information-processing, monitoring and coordinating. It also requires incumbent firms to respond rapidly and strongly as the foreign-based competition is more disruptive than domestic competition (Bowen and Wiersema, 2005).

According to Lawrence and Lorsch (1967), the more diversified a firm, the more different the dispositions among managers. In turn, it needs more efforts for collaboration and coordination. Tallman and Li (1996) also argue that product diversification results in the dispersion of managerial attention. Hence, it takes more time in information processing and decision making and the activities of the firm become less efficient than before. That is, it incurs the higher cost of internal governance, which may lead to lower performance.

Consequently, the increasing foreign-based competition requires more managerial inputs, but the competencies that a firm owns are limited and not easily improved. Given that managerial resources are limited, the attention devoted to non-core businesses will cause the opportunity cost of keeping it away from the core business. Therefore, if foreign-based competition within an industry in which the firm's core business is situated increases, the firm should move against it by restructuring its business-portfolio.

In other words, the firm is expected to make the managerial resources focused on the core business and reduce its degree of business diversification.

H1: The degree of business diversification will be negatively related to the intensity of foreign-based competition.

The firm's decision to lower the degree of business diversification in response to the foreign-based competition may be influenced by the profitability of a firm's core business industry.

Some research on diversification reports that the level of the diversification is negatively related to industrial profitability (e.g., Rumelt, 1982; Dess, Ireland and Hitt, 1990; Delios and Beamish, 1999). Indeed, Montgomery (1985) found that firms with the high degree of product diversification tend to be in less attractive market places. Stimpert and Duhaime (1997) argue that when a firm operates in an industry which has low profitability and less opportunities for growth, the firm tends to expand by entering a new business. It implies that the business diversification is a means of escaping from the unprofitable industry and seeking a new profit-maker.

In light of prior research results, it is expected that industrial profitability can affect the negative relationship between the intensity of foreign-based competition and the degree of business diversification.

If the core business of a firm is situated in a more profitable industry, the opportunity cost of keeping the managerial resources in non-core businesses will be raised. Hence, the firm will have more propensities to lower the level of business diversification and focus on the core business in response to the foreign-based competition.

H1a: The more profitable the core business industry of the firm is, the more negative the relationship between the intensity of foreign-based competition and the degree of business diversification will be.

Proprietary assets are also expected to influence the relationship between the foreign-based competition and the degree of business diversification. Proprietary assets are differentiable from those of other firms, can be transferred across host countries, and don't depreciate (Caves, 1996). They are important determinants of business diversification. For business diversification strategy to contribute to improving performance, the firm should have its own assets that can be exploited across the businesses.

Jeon (1997) examined determinants of diversification for 30 Korean business groups from 1987 to 1993. He showed that the degree of firm

diversification was positively related to the amount of total assets and the level of advertising intensity. Hong (1998) also reported the more advertising-intensive a firm, the higher the level of firm diversification in the sample of 30 Korean business groups. It implies that assets or advertising capability may be the source for implementing diversification.

Asset-based barriers may relieve the firm from the pressure to improve the operational efficiency and, hence, to defeat the foreign-based competitors. Furthermore, the firm may dare to diversify with their surplus assets. On the other hand, a firm which has not established enough proprietary assets will be forced to more rapidly respond to the changes in the competitive condition. The lack of assets also prompts the firm to focus on its core business away from non-core businesses. In result, the firm will decide to focus the managerial attention on the core business and, consequently, reduce the degree of business diversification (Bowen and Wiersema, 2005).

H1b: For the firm with less technology-related assets, the relationship between the intensity of foreign-based competition and the degree of business diversification will be more negative.

H1c: For the firm with less marketing-related assets, the relationship between the intensity of foreign-based competition and the degree of business diversification will be more negative.

2. Foreign-based competition and international diversification

The theory of multinationals argues that international diversification strategy provides a firm with larger market size, more market opportunities, and access to less expensive input and less price-sensitive markets (Hitt, Ireland, and Hoskisson, 2005). On the contrary, the lower level of international diversification limits the market opportunities and the potential for growth.

The intensified foreign-based competition implies that the domestic market is not as locationally advantageous to the existing firms as before. Therefore, they should find new markets in order to sell their

products, improve the efficiency, or seek sources for less expensive inputs. Expansion into multinational markets can be interpreted as self-rescue measures for the firm faced with the intensified competitive condition at the home market.

The intensified foreign-based competition also forces the existing domestic firms to increase investment for the superior technology and greater overall efficiency. However, given that the markets are limited to the domestic, they cannot disperse the cost of R&D or advertising. Hence, they decide to adopt the higher level of international diversification so that the investment can be amortized on the basis of larger foreign markets. In result, the positive relationship is expected between the foreign-based competition and the level of international diversification.

H2; The degree of international diversification will be positively related to the intensity of foreign-based competition.

The positive relationship between the intensity of foreign-based competition and the degree of international diversification can be also moderated by the profitability of a firm's core business industry.

Christensen and Montgomery (1981) argue that firms within less profitable markets tend to implement higher level of diversification strategy. As mentioned in *H1a*, prior research implies that if the industry in which the firm's core business is located begins to lose the potential for profit in the domestic market, the managers seek new marketplaces to operate the core business. On the other hand, if the industrial condition is still favorable to firms, the pressure to approach new foreign markets will not be severe.

Consequently, once foreign-based competition in the core business industry becomes intensified and, additionally, the industry is unprofitable, the firm's propensity to expand into new marketplaces will be stronger.

H2a; The less profitable the core business industry of the firm is,

the more positive the relationship between the intensity of foreign-based competition and the degree of international diversification will be.

Proprietary assets of a firm may also influence the relationship between foreign-based competition and international diversification.

Some studies show that a firm's multinational activity is positively related to its proprietary asset (e.g., Caves, 1971). Therefore, the proprietary assets can be interpreted as a kind of motive power for multinational expansion. In other words, the potential for exploiting proprietary assets is an incentive for geographic expansion into new marketplaces. A firm with such assets can leverage some of its own capabilities in new markets, although it needs to adapt to new local factors.

Hence, it is expected that a firm with more proprietary assets is more likely to implement the higher degree of international diversification to move against the intensifying foreign-based competition in the core business industry.

H2b; For the firm with more technology-related assets, the relationship between the intensity of foreign-based competition and the degree of international diversification will be more positive.

H2c; For the firm with more marketing-related assets, the relationship between the intensity of foreign-based competition and the degree of international diversification will be more positive.

3. Business diversification and firm performance

Business diversification refers to expansion into new business markets which a firm has not experienced. Most literatures on strategic management state that business diversification provides a firm with economies of scope. The firm can leverage its own competences across

different business lines and this results in lower cost and greater performance.

Indeed, the positive relationship between business diversification and firm performance has been supported in some empirical studies. Montgomery (1985) researched the relationship between diversification, market structure and firm performance, utilizing regression analysis. For a sample with 128 firms of the Fortune 500, he found that more diversified a firm, the higher its profitability. Kim (1998) also reported that the performance of firms implementing the high degree of product diversification is better than that of firms with low levels of the diversification, using a sample of 98 manufacturing firms in Korea.

However, research results were not always positive. Delios and Beamish (1999) showed no significant relationship between product diversification and performance for the sample of 399 Japanese manufacturing firms. Geringer, Tallman and Olsen (2000) suggest that the diversification into fields where its strategic resources are not exploited may be costly and exacerbate performance. In addition, the significantly negative relationship was found between diversification and profitability in Kang(2005)'s research which examined for the sample with 217 Korean firms from 1993 to 2002.

The discrepancies across research results may be caused by unlike measure or methods or from underlying non-linearity in the relationship between diversification and performance.[2)]

According to Tallman and Li (1996), firms in early stage of the diversification tend to focus on related diversification and, hence, they have more chances for synergy effects. Indeed, the superior performance of related diversification has been empirically evidenced (e.g, Geringer, Beamish and daCosta, 1989; Rumelt, 1974; Hong, 1998). From these results, the increasing performance can be expected for firms in the early stage of business diversification.

Delios and Beamish (1999) found that high levels of product diversification reduced the investments in marketing (for full sample) and

2) J. Michael Geringer, Stephen Tallman and David M. Olsen, "Product and international diversification among Japanese multinational firms", *Strategic Management Journal*, Vol.21 Issue 1, 2000, p.54

R&D (only for low product diversification sample). It implies that firms implementing product diversification strategy can leverage the existing competences across different product lines, which means achievement of scope economies. However, in the subsample of firms implementing higher product diversification the expenditures on R&D increased along with the degree of the diversification. It can be interpreted as insufficient exploitation of existing technologies and increasing needs for development of new technologies in the highly diversified firms.

Consequently, we hypothesize business diversification improves performance by a moderate degree, but too high degree of business diversification hampers the performance. In other words, the relationship will be non-linear and inverted U-shaped.

H3: Firm performance will vary negatively with the square of degree of business diversification.

4. International diversification and firm performance

In the rapidly changing competitive condition, it is one of the most important decisions for firms where to locate their facilities, assets, or even human resources. Among strategies associated with these is international diversification strategy. Firms can achieve benefits such as larger market size, economies of scale, location advantage, and learning effects from the strategy. Internationally diversified firms can also achieve flexibility and bargaining power through multinational network.

Considering the benefits of international diversification described above, it makes sense that internationally diversified firms outperform the others. However, the previous research results are not consistent. While some research evidences the positive linear relationship between international diversification and performance (e.g., Grant, 1987; Kim, Hwang, and Burgers, 1993), others failed to show the significant relationship (e.g., Geringer, Beamish, and daCosta, 1989). Moreover, several studies found the non-linear and U-shaped relationship (e.g., Qian, 1997; Capar and Kotabe, 2003) or non-linear and inverted

U-shaped relationship (e.g., Geringer, Beamish, and daCosta, 1989; Gomes and Ramaswamy, 1999; Hitt, Hoskisson, and Kim, 1997). These imply that there is a threshold where the relationship changes from the positive to the negative or from the negative to the positive. Increasing the geographic dispersion too much may result in more uncertainty and complexity and these incur higher cost of coordination and management. These disadvantages of international diversification neutralize the advantages and, at a certain point, the cost exceeds the benefits. That is, the moderate degree of international diversification provides the benefits in excess of the cost, but too high degree offsets the benefits by the cost.

Hence, the non-linear and inverted U-shaped relationship is expected.

H4: Firm performance will vary negatively with the square of degree of international diversification.

5. Joint effects of business diversification and international diversification on performance

In the two hypotheses described above, we expect that the business and international diversification individually have the inverted U-shaped relationships with firm performance. Both hypotheses are also aimed at examining economies of scale and scope and efficiency of internal transaction. This similarity reflects the possibility for interaction between the two diversification strategies. If the two strategies are implemented together, what would happen?

Kim, Hwang and Burgers (1989) suggested that the effects of product diversification on performance vary with the degree of multinationality and showed that firms with high levels of product diversification perform better when they diversify internationally. Hitt et al. (1997) found that high levels of product diversification offsets the negative effects derived from high level of international diversification and interpreted it with learning perspective. Li and Qian (2005) evidenced that for a firm with low level of international diversification, performance is negatively

related to degree of product diversification. However, they failed to show that for a firm with high level of international diversification, performance is positively related to the degree of product diversification.

The possibility for interaction examined in prior research implies that the individual effect of business or international diversification on firm performance may be exaggerated or underestimated. Therefore, it is worthwhile to examine the joint effects of the two diversification strategies, which are decided under the intensified competitive context, on firm performance.

In this research, we hypothesize the joint effects in light of organizational learning theory. The theory suggests that firms cannot accumulate expertise or knowledge on business and competition in limited operating size (Morck and Yeung, 1991). The limited expertise and knowledge hinder firms from transferring or sharing knowledge-based resources across business lines. In addition, the limited market size deters the firm which expands into a new business from catching up with the market leader in regard to R&D or production efficiency.

On the other hand, the larger market increases the learning rates through exposures to various environment because the firms are urged to transfer and create knowledge-based resources to manage uncertainty derived from the multiple environment. The higher learning rates help to develop firm-specific capabilities associated with the new business which a firm enters. These capabilities are necessary sources for sustainable competitive advantages in the business (Li and Qian, 2005).

H5a: For the firm with low level of international diversification, performance will be negatively related to the degree of business diversification.

H5b: For the firm with high level of international diversification, performance will be positively related to the degree of business diversification.

Ⅲ. Methodology

1. Sample

The sample consists of the manufacturing firms publicly listed in the Korean Stock Exchange in September 2006. Among the 454 firms, ones for administration were eliminated. In addition, the sample should include only firms which have been listing since 2003 and of which all the data for this research are available. Next, we also eliminated firms smaller than the median value of firm size in consideration of the stronger tendencies for larger firms to diversify. The resulting sample consisted of 180 manufacturing firms.

When it comes to the degree of diversification and performance, the 540 pooling data of the sample were used from 2003 to 2005. However, we felt that although the recognition of competitive condition may be reflected to firm's strategic decision immediately, time lag should also be considered to reflect a general planning cycle as in some previous research (e.g., Geringer, Tallman and Olsen, 2000; Bowen and Wiersema, 2005). That is why the measurement of foreign-based competition and moderate variables was limited only in 2003.

2. Variables and measurement

1)Main variables

a) Foreign-based competition

Foreign-based competition was measured by the ratio of imports to total domestic consumption in the core business industry of the firm in 2003 (Bowen and Wiersema, 2005). However, it was difficult to find the data about total domestic consumption at the industry-level. Alternatively, we measured it by total sales of domestic firms minus exports plus imports within a given industry in the 3-digit level of KSIC. The data for import were collected through the KITA.

b) Business diversification

The number of businesses which a firm operates was used as a proxy variable to measure the degree of business diversification in consideration of availability of data. Although it does not indicate the relative importance of each segment in sales, it is expected not to distort the results. The data for the number of businesses which a firm operates were achieved through KISFAS.

c) International diversification

One of the most common methods to measure the degree of international diversification is the ratio of a firm's foreign sales to total sales (FSTS). Some scholars have objected to using such a unidimensional measure, but a multidimensional measure developed by Sullivan (1994) was criticized in Ramaswamy, Kroeck and Renforth (1996). Although there still remains ground for criticism against operationalizing the international diversification only as the FSTS, much research has used the measure (e.g., Geringer, Beamish and daCosta, 1989; Grant, Jaminine and Thomas, 1989). Ultimately, considering the possibility of comparison with previous results and the data availability, the ratio of FSTS was chosen to measure international diversification. The data for the ratio of FSTS were collected through the KISFAS.

d) Performance

Three accounting-based measures were considered as indicators of firm performance; return on assets (ROA), return on equity (ROE), return on sales (ROS). Among the three accounting-based measures, we did not employ ROE. It is more sensitive to capital structure differences. Consequently, we measured firm performance by ROA and ROS. The data were obtained from KISFAS.

2) Moderate variables

a) Industrial profitability

Industrial profitability was measured by the average ROA in the

3-digit KSIC core industry of the firm in 2003 (Bowen and Wiersema, 2005). All the data were obtained from the database of the Bank of Korea.

b) Proprietary assets

Technological and marketing assets have been considered as representative firm-specific capabilities to help firms achieve competitive advantages and above-average returns (Kogut and Chang, 1991; Caves, 1996).

We used R&D intensity for a proxy of the technology-related assets and advertising intensity for that of the marketing-related assets. R&D intensity was measured as the R&D expenditures divided by the firm's total sales in 2003 while advertising intensity was measured as the expenditures on advertising divided by the firm's total sales in 2003. The related data were obtained from the KISFAS.

3) Control variable

a) Firm size

Firm size was employed as a control variable because it has been shown to be related to levels of diversification and performance. It was operationalized as the amount of total assets. In addition, to avoid the effects of extreme differences of the amounts of total assets among firms in the sample, it was calculated with the natural logarithm. The data were also collected in the KISFAS.

3. Method of statistical analysis

In this research, path analysis with Amos 5.0 was employed to examine the relationships between the four main variables; foreign-based competition, business diversification, international diversification and firm performance. Then the roles of moderate variables were analyzed in the main relationships. To do that, the full sample was divided into two groups at the median of each moderator. In addition, regression analysis

was used to examine the non-linear relationships between diversification and performance which we hypothesized in H3 and H4. Finally, we divided the sample into a high international-diversified group and a low international-diversified group and did regression analysis to test the joint effect of the two diversification strategies on firm performance.

Ⅳ. Results

1. Examination of overall models

The fitness of the models should be checked at first.

Commonly used estimates are followed; χ^2, GFI (Goodness-of-Fit Index), AGFI (Adjusted Goodness-of-Fit Index), RMR (Root-Mean-square Residual), CFI (Comparative Fit Index) and NFI (Normed Fit Index).

In this research, some of χ are much higher compared to df and some of RMR are extraordinarily high. However, the sample size is big enough, the acceptance of RMR is up to this researcher's decision and most of the other indices are over or nearby 0.90. Hence, the models seem to be worth analyzing.

2. Examination of the hypotheses

2

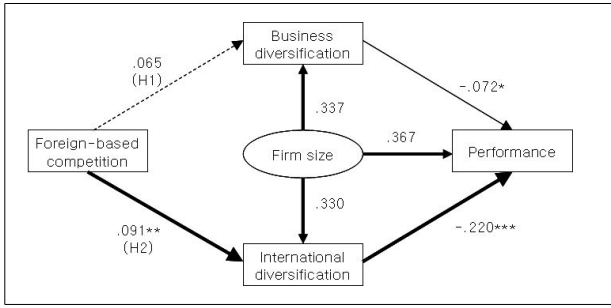
<Figure 3> presents the results of path analysis on the relationships between the main variables.

First is about the effects of foreign-based competition on each diversification. It shows the foreign-based competition doesn't significantly affect the degree of business diversification (γ_{11}= .065, t= 1.601, p>.10) but does give positive and significant influence on the degree of international diversification (γ = .091, t= 2.239, p<.05). In result, H2 is supported while H1 is rejected. That is, firms cope with the intensifying foreign-based competition through diversifying internationally rather than focusing on the core business.

Next is about the influence of each diversification strategy on firm

performance. The performance is negatively and significantly related to the degree of business diversification (β = -.072, t= -1.676, p<.10) and that of international diversification (β = -.220, t= -5.140, p<.01). Here, though, we would not conclude whether the hypotheses are supported or rejected. It is not the linear but the non-linear relationship that we should examine between each diversification and performance. The hypotheses(H3 and H4) will be tested later using regression analysis.

<Figure 3> The effects of foreign-based competition



χ = 28.838 (df=3, p=.000)
RMR=12.821
GFI=.980
AGFI=.898
NFI=.882
CFI=.890

*: p<0.1, **: p<0.05, ***: p<0.01

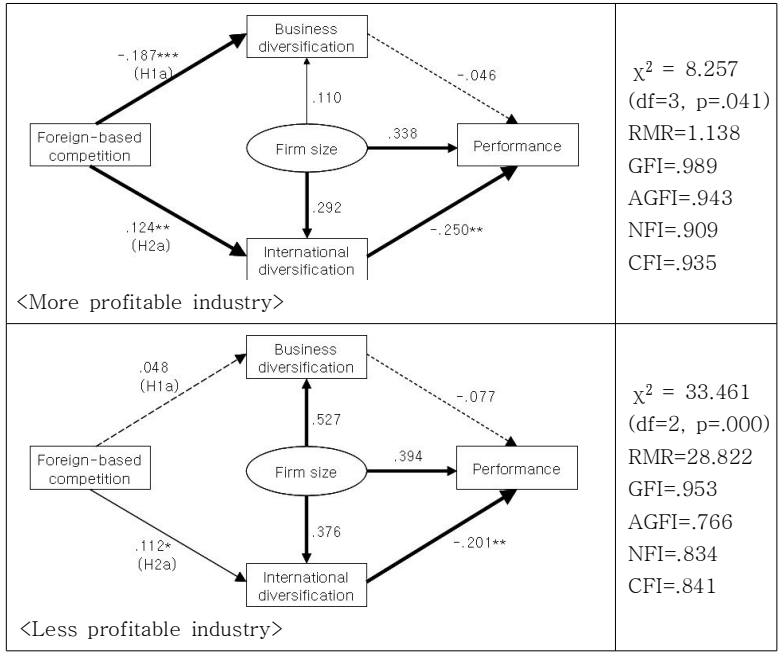
Then, the role of each moderator is tested in the relationships between foreign-based competition and each diversification strategy.

First is on how the relationships change along with the industrial profitability. When it comes to firms in highly profitable industry, the foreign-based competition is negatively and significantly related to the degree of business diversification (γ = -.187, t= -3.219, p<.01) and positively and significantly to the degree of international diversification (γ = .124, t= 2.190, p<.05). On the other hand, if a firm's core business is in a less profitable industry, the effect of foreign-based competition on the degree of business diversification becomes insignificant (γ = .048, t= .901, p>.10) while the effect on the degree of international diversification remains significant (γ = .112, t= 1.953, p<.10).

That is, the more profitable the core business industry is, the more the

firm focuses on the core business. However, there is no noticeable change in international diversification strategy. In result, H1a is supported while H2a is rejected.

<Figure 4> The moderate effects of industrial profitability



*: p<0.1, **: p<0.05, ***: p<0.01

While the first moderator is industry-level, the others below are firm-specific.

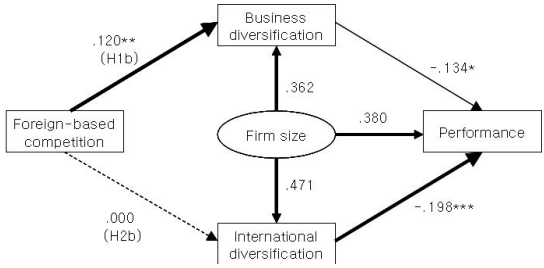
The first is analyzing the role of technology-related assets as a moderator in the relationships between foreign-based competition and diversification strategies. In a firm which has technology-related assets enough, the level of business diversification is positively and significantly related to the foreign-based competition (γ_{II}= .120, t=

2.088, p<.05), but the level of international diversification is not significantly related (γ = .000, t= -.006, p>.10). If a firm has more technology assets, it moves against foreign-based competition through entering new business markets rather than expanding internationally.

When it comes to firms with less technology-related assets, the effect of foreign-based competition on business diversification is not significant (γ = -.058, t= -.998, p>.10). However, the effect on the international diversification is positive and significant (γ = .223, t= 3.854, p<.01)

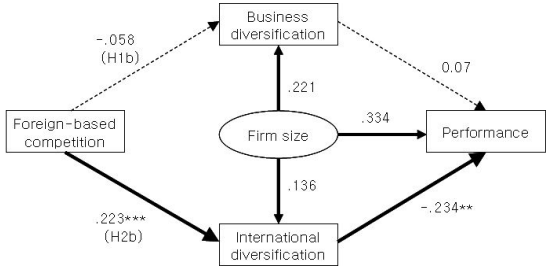
The results are opposite to the hypotheses. They show the more a firm has technology assets, the more it diversifies the businesses lines, and the less a firm has technology assets, the more it diversifies internationally. Both H1b and H2b are rejected.

<Figure 5> The moderate effects of technology-related assets



<More technology assets>

χ = 13.140 (df=3, p=.004)
RMR=19.907
GFI=.981
AGFI=.903
NFI=.913
CFI=.928



<Less technology assets>

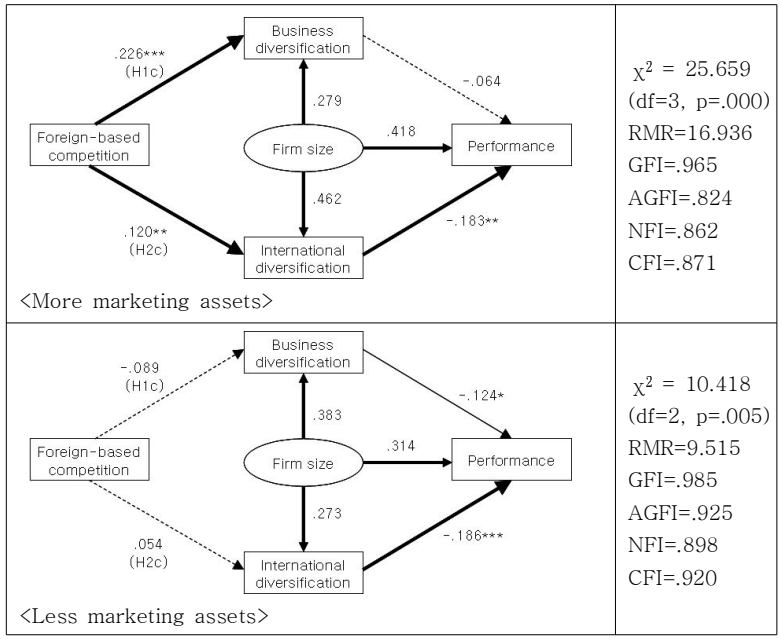
χ = 15.027 (df=3, p=.002)
RMR=5.283
GFI=.979
AGFI=.897
NFI=.840
CFI=.857

*: p<0.1, **: p<0.05, ***: p<0.01

The last moderator is the amount of marketing-related assets. In a firm which has more marketing-related assets, the foreign-based competition gives positive and significant effects on both business diversification (γ_{11} = .226, t= 3.968, p<.01) and international diversification (γ_{21}= .120, t= 2.235, p<.05). In contrast, in a less marketing-intensive firm, the effects are not significant (γ = -.089, t= -1.582, p>.10) (γ_{21}= .054, t= .919, p>.10).

It implies that the more a firm has marketing-related assets, the more it diversifies the businesses and international scope in response to the intensifying competition. The results reject H1c, but support H2c.

<Figure 6> The moderate effects of marketing-related assets



*: p<0.1, **: p<0.05, ***: p<0.01

Next is to analyze the relationships between each diversification strategy and firm performance.

Although <Figure 3> presented that performance was negatively and significantly related to the degree of each diversification strategy, we delayed discussing the results. It was the non-linear and inverted U-shaped relationship that we should examine. Therefore, we attempted regression analyses.

<Table 1> shows the results of the regression analyses. The firm performance is shown to be negatively and significantly related to the squared degree of business diversification. The result supports the H3 which expected the non-linear and inverted U-shaped relationship. However, no significant relationship is found from international diversification. That is, the relationship between the firm performance and international diversification is linear, as <Figure 3> showed, rather than non-linear. Therefore, H4 is not supported.

<Table 1> The effects of each diversification on performance

	H3		H4	
	unstandardized β	t-value	unstandardized β	t-value
constant	-.227	-5.514***	-.256	-6.356***
degree of diversification	.009	1.155	.000	-.786
squared degree of diversification	-.002	-1.693*	-2.6E-06	-.725
firm size	.014	6.698***	.016	7.838***
R^2	.081		.116	
Adusted R^2	.076		.111	
F	15.797***		23.366***	

*: p<0.1, **: p<0.05, ***: p<0.01

Note: The estimated regression equation for the curvilinear model regarding business diversification(BD) and performance(PER) will be

$$PER = -0.227 + 0.014SIZE + 0.009BD - 0.002(BD)^2.$$

To show where the turning point is, a derivative of the curvilinear regression equation is taken with regard to BD:

$$\frac{d(PER)}{d(BD)} = -0.004BD + 0.009$$

that will be zero if BD=2.25.

The last examination is about the joint effects of both the diversification strategies on performance. As in the role of moderator, we divided the full sample into two groups at the median.

The results suggest that for a firm with more expanded international markets, the business diversification gives negative and significant effects on the performance. However, for a firm implementing the low level of international diversification, its performance is not related to the degree of business diversification. That is, both H5a and H5b are not supported. Nevertheless, the results are meaningful as it advises that too much dispersed geographic markets may even deprive the firm of the benefits which the business diversification offers by a certain point.

<Table 2> The joint effects of the two diversification strategies

	Low international-diversified group (N= 307)		High international-diversified group (N= 233)	
Hypothesis	H5a		H5b	
	unstandar-dized β	t-value	unstandar-dized β	t-value
constant	-.246	-3.925***	-.215	-3.563***
degree of B.D.	-.001	-.456	-.006	-1.860*
firm size	.015	4.744***	.014	4.588***
R^2	.070		.084	
Adjusted R^2	.064		.076	
△F (P)	11.465 (.000)		10.536 (.000)	

*: p<0.1, **: p<0.05, ***: p<0.01

Ⅴ. Conclusion

1. Discussion

In this research, we examined how the intensity of foreign-based

competition influences the business and international diversification strategies in Korean manufacturing firms and what effects the strategies give on firm performance.

The effects of foreign-based competition on the diversification strategies are summarized as follows.

First, foreign-based competition was not shown to significantly influence the degree of business diversification. This result suggests that the level of business diversification may be decided in consideration of other factors rather than the intensity of foreign-based competition. However, it has positive and significant effects on the degree of international diversification. This supports the hypothesis that a firm whose core business is threatened by the foreign-based competition is likely to expand internationally as a means of seeking new marketplaces. In consequence, Korean manufacturing firms seem to cope with the intensifying foreign-based competition by diversifying internationally rather than focusing on the core businesses.

However, some industry-level and firm-specific factors change the direct effects of foreign-based competition on the diversification strategies.

The first moderator was the industrial profitability. In the case of international diversification, there was no remarkable difference stemming from the industrial profitability. However, the case of business diversification needs to check. It suggests that if a firm's core business is in a profitable industry, it moves against foreign-based competition through focusing on the core business and, namely, lowering the degree of business diversification. This is because the manager's attention can diverge and the efficient cooperation or coordination become increasingly difficult if a firm operates too many businesses. Moreover, when the core business is located in more profitable industry, the opportunity cost generated from dispersing the managerial capabilities into non-core businesses will be increased. This is also supported by Bowen and Wiersema (2005).

The next two moderators are firm-specific. The first among them is the amount of technology-related assets in a firm. The result shows that

firms with more technology assets are likely to diversify into new business lines against the intensifying foreign-based competition. In contrast, firms with less technology assets tend to diversify internationally. That is, a firm with more technology assets cope with the competition in its core business industry by developing new business markets, which allows to exploit their existing redundant technologies. On the other hand, if a firm doesn't have technology assets enough, it is likely to look for new foreign markets to sell its existing products. The less the technology-intensive assets, the more forceful the pressure to diversify internationally away from the threatened domestic market.

The second firm-specific moderator was marketing-related assets. In the subsample of firms with more marketing-related assets, both business and international diversifications were positively related to the competition while in the subsample of less marketing-related assets the effects were not significant. This means that marketing-related assets are necessary conditions for diversification, whether business or international. In other words, if a firm has marketing-related assets enough, they can move against the intensifying foreign-based competition through both business diversification and international diversification. However, if a firm lacks the assets, both diversification strategies are difficult to implement.

So far, we discussed the relationships between the foreign-based competition and the two diversification strategies. Then the discussion about the effects of the strategies on firm performance should be followed.

In the regression analysis, the performance was shown to vary negatively with the squared degree of business diversification but not to be related with the squared degree of international diversification. That is, the non-linear relationship was supported only between business diversification and performance. It implies that business diversification improves the firm performance by a certain point but begins to damage it beyond the point. As the firm can enjoy the economies of scope by leveraging the existing competencies, moderate level of business diversification yields better performance. However, in a firm

implementing too high level of business diversification, the cost of operating and coordinating its businesses exceeds the benefits from the business diversification. This result seems to provide Korean manufacturing firms with an important implication about the extent by which they implement business diversification and it was the level of 2.25 businesses in this research.

Unlike the effects of business diversification, international diversification was not shown to have an inverted U-shaped relationship with the firm performance. Rather, it can be said to have constantly negative effects on performance, as presented in <Figure 3>. This negative effects can be interpreted with the difficulties in adapting to foreign markets and doing business in international scope. In other words, the high level of complexity and uncertainty stemming from the expanded international scope overwhelms the benefits from larger market basis. This result gives firms, which enter foreign markets to run away from the intensifying competitive domestic market, an implication that international diversification doesn't always offer benefits.

Last, we examined the joint effects of two diversification strategies on performance. The degree of business diversification was shown to be negatively related to performance in spite of the larger marketplaces from international diversification. This means that the negative effect of international diversification, supported in H4, gives impact on the initial positive relationship between business diversification and performance, and, consequently, result in negative effects on performance. It implies that international diversification strategy without thorough preparation may even make the business diversification fail, too.

2. Suggestion for future studies

Despite the implications described above, there are still some limitations mainly involved with measurement. In measuring the degree of diversification, the unidimensional measurement was employed because of the difficulties to gain data for multidimensional measurement. Even though the unidimensional measurement has been

commonly used and yielded meaningful results, the multidimensional indices could have led to more exact results.

In light of the limitations, we can suggest the guideline of future studies. The better results can be expected with multi-item constructs for international diversification and business diversification. In addition, a modified research model can be suggested. For example, the intensity of foreign-based competition may influence industrial attractiveness, and the attractiveness is likely to affect diversification strategy decision. The analysis on this path seems to be worth attempting.

We hope the model and methods presented in this paper can contribute to subsequent theoretical and empirical research on these issues.

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