3rd Chapman Conference on Money and Finance
May 4, 2018

Corporate Diversification, Sales Growth, and Capital Market Development: Cross-Country Evidence

Taek Ho Kwon
Chungnam National University, Korea
Sung C. Bae (Presenter)
Bowling Green State University, USA
Soon Hong Park
Chungnam National University, Korea

Sales Growth and Diversification

- Sales growth plays as a key element in shaping business strategies
  - Brings in more personal wealth to management (Jensen, 1986)
  - Directly affects firm value (Brush et al., 2000)
  - Target sales growth set as primary goal

- The slowdown of sales growth of firm and/or core industry => one of the most important drives for diversification

Literature on Diversification Effect

- Earlier studies on the rationales of positive diversification effects (Weston, 1970; Lewellen, 1971; Rumelt, 1974; Montgomery, 1985)
- Existence of diversification discount (Lang & Stulz, 1994; Berger & Ofek, 1995)
- Evidence of no diversification discount (Campa & Kedia, 2002; Villalonga, 2004a, 2004b)
- Existing studies have focused primarily on:
  - Measuring the diversification effect by controlling for *endogeneity* issues
  - Measuring the *average* effect of diversification on firm value

Research Objectives

- We posit that as diversification is closely related to SG, the diversification effect should be examined in conjunction with SG
- We posit that a successfully-implemented diversification strategy to cope with slow SG would lead to higher firm value
- Motivated by recent studies that argue for the need to examine diversification effect by considering firms' current conditions (Erdorf et al., 2013; Volkov & Smith, 2014)

Contributions and Key Findings

- New insights into determinants of diversification

  => Firms diversify to cope with poor sales growth
- New evidence on how the interactions of SG and DIVER affect firm value

  => Diversification discount on average

  => But Diversification premium exists when:
  - firms expand diversification with growing sales
  - firms reduce diversification with declining sales
- Empirical lights on different DIVER effect between developed economies and emerging economies

  => More pronounced for developed market firms

Testing Hypotheses

- ***H1:* SG of a firm and its core industry in the prior year is negatively related to the firm's degree of diversification**
- ***H2*: The diversification effect will vary by the type of diversification selected based on changes in SG and diversification activities**

Change in SG	Change in diversification	
	Increase in Dindex	Decrease in DIndex
Increase in sales	**Active Diversification** (+)	**Focusing** (+)
Decline in sales	**Transformation** (-)	**Refocusing** (+)

Data and Key Variables

- **Sample Firms: for 39 countries during the period of 1990-2015 (24 developed & 15 emerging markets), collected from Worldscope**
- **Final Sample: 349,666 firm-country-year obs.**

- **Diversification Index (*DIndex*): Herfindahl index, Entropy index & Caves index using SIC 2-digit code**
- **Firm Value (*FirmV*): Excess value (Berger and Ofek, 1995) & Industry-adjusted Tobin's q**
- **Control Variables: *Firm size; Debt; R&D; Dividend; Operating CF; Sales growth; Core industry SG; MB ratio*; Others for *country, industry & year***

Table 4. Distribution of *DIndex* by SG quantiles

Sales growth Quantiles	Whole sample	Developed markets	Emerging markets	Developed vs Emerging
	Mean (N)	Mean (N)	Mean (N)	t-stat
1 (Low)	0.126 (62,176)	0.129 (45,751)	0.116 (16,425)	7.71***
2	0.137 (61,746)	0.143 (45,436)	0.121 (16,310)	12.96***
3	0.148 (65,048)	0.154 (47,602)	0.131 (17,446)	13.44***
4	0.136 (61,652)	0.141 (45,381)	0.121 (16,271)	11.75***
5 (High)	0.115 (62,391)	0.115 (45,880)	0.116 (16,511)	-0.74

Table 6. Determinants of Diversification Index
(Dependent variable = *DIndex*)

Variables	Whole sample	Developed markets	Emerging markets
Constant	0.013	0.022	-0.181***
Firm size(t-1)	0.016***	0.016***	0.013***
Debt ratio(t-1)	0.068***	0.081***	0.037***
R&D ratio(t-1)	-0.164***	-0.144***	-0.472***
Dividend ratio(t-1)	0.069***	0.215***	-0.147***
Op. CF ratio(t-1)	-0.027***	-0.020***	-0.070***
Sales growth(t-1)	-0.024***	-0.027***	-0.007***
Core-industry SG(t-1)	-0.018***	-0.026***	-0.003
Market-to-book(t-1)	-0.008***	-0.008***	-0.006***
No of obs.	264,866	195,704	69,162
Adjusted R-square	0.114	0.126	0.099

Table 7. Effect of Diversification on Firm Value

(Dependent Variable = *FirmV*)

Variables	Whole sample		
Constant	-1.073***	-1.072***	-1.074***
DIndex	-0.187***	-0.216***	-0.169***
Firm size	0.064***	0.064***	0.064***
Debt ratio	-0.061***	-0.060***	-0.061***
R&D ratio	1.315***	1.314***	1.314***
Dividend ratio	3.311***	3.312***	3.312***
Operating CF ratio	0.047***	0.047***	0.047***
Sales growth (SG)	0.247***	0.239***	0.247***
Core-industry SG	-0.053***	-0.050***	-0.049***
DIndex x SG > 0		0.064***	
DIndex x core ind. SG > 0			-0.020***
No of obs.	164,310	164,310	164,310
Adjusted R-square	0.195	0.195	0.195

Table 8. Diversification Effect by SG Quantiles
(Dependent Variable = *Firm V*)

Variables	Whole sample	Developed markets	Emerging markets
Constant	-1.128***	-1.087***	-1.080***
DIndex x SG quantile 1	-0.292***	-0.296***	-0.246***
DIndex x SG quantile 2	-0.306***	-0.308***	-0.269***
DIndex x SG quantile 3	-0.244***	-0.236***	-0.262***
DIndex x SG quantile 4	-0.136***	-0.133***	-0.142***
DIndex x SG quantile 5	0.028***	0.043***	-0.034
Other control variables	YES	YES	YES
No. of obs.	164,310	126,019	38,291
Adjusted R-square	0.179	0.166	0.254

Table 10. Diversification Effect of Interactions

(Dependent Variable = *Firm V*)

Variables	Whole Sample	Developed markets	Emerging markets
Constant	-1.097***	-1.055***	-1.070***
ΔDIndex > 0, SG > 0	-0.057***	-0.059***	-0.047***
ΔDIndex > 0, SG <= 0	-0.114***	-0.117***	-0.096***
ΔDIndex <= 0, SG > 0	-0.043***	-0.045***	-0.033***
ΔDIndex <= 0, SG <= 0	0.046***	0.048***	0.042***
Other control variables	0.067***	0.065***	0.083***
No. of obs.	180,591	138,619	41,972
Adjusted R-square	0.154	0.141	0.234

Robustness Tests

- **Industry-adjusted Tobin's q as firm value**
- **Lagged variable of diversification index *(DIndex(t-1))* to control for endogeneity**
- **Analyses without U.S. firms (which represent more than 25% of sample firms)**
- **Report the results in Tables 11 - 17**

Summary (1)

- An inverse U shape relationship between SG and DIndex => Diversification varies by relative sales growth of the firm
- Firms diversify mainly to cope with poor SG of own and/or core industries
- Confirm a diversification discount on average => Suggests that it is not easy to achieve desired results from diversification strategies

Summary (2)

- After considering joint changes in SG and DIndex, a diversification premium exists:
  - firms expand diversification with their sales growing faster than industry peers
  - firms reduce diversification with declining sales
- Despite the negative diversification effect on average, a diversification premium is viable if a firm's diversification strategy is properly aligned with its business situations (e.g., sales growth)

Summary (3)

- Diversification effects are less pronounced for emerging market firms than developed ones
- Diversification by emerging market firms may not generate full benefits and contribute less to firm value due to higher agency costs resulting from greater information asymmetry and lower monitoring of firms by the market.
- Consistent with Lins & Servaes (2002) and Baek et al. (2004) who show a lower valuation effect for diversified firms in emerging economies

Thank You !