Related Party Transactions and Corporate Value

Ching-Chieh Tsai, Ling-E. Chang, and Yuang-Lin Chang

Abstract—Business groups are ubiquitous and play an important role in Taiwanese fiscal revenue and economic development. Related party transactions are an arm's length transaction could lead to negative effects to group affiliated firms' value and performance. Drawing on the institution-driven intentions of shell resource maintenance and refinancing qualification, our paper aims to examine the relationship between related party transactions and corporate value for the firms listed on the Taiwan Stock Exchange and in the GreTai Securities Market in Taiwan. The empirical results reveal that both of the related party sales and purchases increase the value of the affiliated firms. The institutional perspective is supported and the business group-affiliated firms seem to be propped up. However, when the related party sales of the affiliated firms are bigger than their related party purchases, the firm value of the affiliated firms is more likely to be lower than those of nonaffiliated firms and demonstrates the tunneling motivation of related party transactions.

Index Terms—Related party transactions, corporate value, business group, institutional perspective.

I. INTRODUCTION

Business groups are an important business form and play an important role in Taiwanese fiscal revenue and economic development. Related party transactions are an arm's length transaction could lead to negative effects to group affiliated firms' value. Drawing on the institution-driven intentions of shell resource maintenance and refinancing qualification [1], our paper aims to examine the relationship between related party transactions and corporate value for the firms listed on the Taiwan Stock Exchange and in the GreTai Securities Market in Taiwan for the period from 2006 to 2012.

To examine the relationship between related party transactions and the corporate value, our paper first includes the related party transaction variables, the business group affiliation dummy variable and control variables in the regression models. Next, our paper contrasts affiliated with non-affiliated firms, in an attempt to look for different levels of corporate values. Finally, our paper introduces the interaction terms between the related party transactions and group affiliation dummy variables to the models to investigate their interaction effects on corporate value.

The empirical results reveal that through related party sales or purchase transactions, the business groups could offer benefits to their affiliated firms and resolve the problems

arising from the imperfections in the markets. Therefore, this study shows that the institutional perspective of business groups is supported and the affiliated firms seem to be propped up and demonstrate higher corporate values. However, when the related party sales of the affiliated firms are bigger than their related party purchases, the firm value of the affiliated firms is more likely to be lower than those of non-affiliated firms and demonstrates the tunneling motivation of related party transactions.

Our study contributes to the extant related party transaction literature in two ways. First, while most studies have indicated that related party transactions have an impact on corporate value, to the best of our knowledge, little attention has been directed to address the effects of related party transactions on the corporate value of affiliated firms. Second, our study adds to the growing literature on the institutional theoretical perspective to explain the roles that business groups play through related party transactions.

II. HYPOTHESES DEVELOPMENT

The Business groups are an important business form in many emerging markets. Taiwanese listed companies are often characterized by business group affiliation and family control. Academic studies have recognized several theoretical perspectives to explain the emergence of such groups. These include the resource dependence view, institutional theory, transaction cost analysis, and relational rents view [2]-[8]. Among these perspectives, the institutional theory has caused widespread concern in academic studies. According to the institutional perspective, firms are embedded in, and influenced by, their formal and informal institutional conditions, and business groups act as an inter-organizational network to offer benefits to their affiliates and resolve the problems that arise from the imperfection of the emerging markets.

However, business groups may have a dark side [9]-[12]. Yeh and Woidtke [13] indicate that Taiwan is characterized by its relatively weak protection of minority shareholders, highly concentrated ownership, and an abundance of pyramidal groups, interlocking directors, and cross-holdings among affiliated firms. These characteristics make it difficult for the minority shareholders to detect both the degree of separation and the diversion of resources. A large body of academic literature has shown that controlling shareholders often take advantage of minority shareholders through related party transactions, especially in emerging markets with poor protection of minority shareholders. There are three relevant motivations behind related party transactions in prior literature-tunneling, propping, and earnings management [14].

Evidence on tunneling literature documents that the value

of the minority shareholders has expropriated as a result of the specific related party transactions. Cheung *et al.* [14] find that the minority shareholders in Chinese publicly listed firms seem to be subject to expropriation through tunneling but also gain from propping up and there seems to be more tunneling than propping up. Also, the study of Cheung *et al.* [15] indicate that the controlling shareholders appear to benefit directly at the expense of firms listed in Hong Kong by selling assets to them at above market prices and acquiring assets from them at below market prices. Berkman *et al.* [16] identify that the publicly traded Chinese firms expropriating wealth from minority shareholders through loan guarantees to their related party. The findings of Jiang *et al.* [17] also shed light on the severity of the minority shareholders expropriation through intercorporate loans in China.

Peng *et al.* [18] show that when listed companies in China are financially healthy (in financial distress), their controlling shareholders are more likely to conduct connected transactions to tunnel (or prop up) their listed firms. The study of Lei and Song [19] provide evidence that the firm value of listed Chinese companies in Hong Kong is significantly lower for firms undertaking potentially expropriating transactions. Ge *et al.* [20] and Kohlbeck and Mayhew [21] also suggest that related party transaction firms have significantly lower valuations than non-related party transaction firms.

Literature on propping up is more limited. Yeh *et al.* [22] support the propping up hypothesis through different types of related party transactions for firms listed in Taiwan and find that corporate governance moderates the relation between the motives and the level of related party transactions. Ying and Wang [1] point out that the institution-driven intentions of shell resource maintenance and refinancing qualification to be the two most important reasons for the controlling shareholders of Chinese listed firms to prop up their companies.

In term of the research on earnings management, Aharony *et al.* [23] show that related party sales of goods and services could be used opportunistically to manage earnings upwards in the pre-IPO period for Chinese IPO firms. Lo *et al.* [24] find that good corporate governance helps constrain earnings management via transfer pricing manipulations in China. Against the above backdrop, our paper contends that publicly listed firms seem to be subject to expropriation through tunneling but also gain from propping up. Hence, this leads us to establish two competing hypotheses as follows:

H1a: The related party transactions are positively related to the corporate value.

H1b: The related party transactions are negatively related to the corporate value.

Motivated by the prior studies [1], [22] and the institutional perspective of business groups, our paper seeks to test whether through related party transactions, the business groups could offer benefits to their affiliated firms and resolve the problems arising from the imperfections in the markets. Therefore, our paper contends that if the institutional perspective is supported, the affiliated business group firms would be propped up. However, if the high levels of concentrated ownership structure dominate, the firm value of the business group-affiliated firms is more likely to be lower for firms undertaking potentially expropriating related party transactions. Thus, this paper hypothesizes that:

H2a: The related party transactions are positively related to group-affiliated firms' corporate value.

H2b: The related party transactions are negatively related to group-affiliated firms' corporate value.

III. RESEARCH DESIGN

The sample firms employed in this study include firms listed on the Taiwan Stock Exchange and in the GreTai Securities Market in Taiwan for the period from 2006 to 2012. Data are collected from the Taiwan Economic Journal (TEJ) database. We exclude the firms in the finance and insurance industries and government firms due to the unique nature of their regulations and requirements. After deleting firms with missing data and observations used in the process of estimating variables, the final sample comprises a total of 8,560 firm-year observations of which 2,942 are related to business group-affiliated firms and 5,618 to non-affiliated firms are included in this study to examine our hypotheses. To reduce the possible influence of outlier observations, all of the variables are winsorized at the 1st and 99th percentile levels.

TABLE I: VARIABLE DEFINITIONS

Variable	Definitions
VALUE	MB or MVTA, MB is the book value of debt plus the market value of equity divided by total assets; MVTA is the market value of equity to total assets
ABRSP	Absolute value of related party sales transactions to total assets minus related party purchase transactions to total assets
DURSP	Related party transaction dummy, which takes a value of 1 if a firm's related party sales transactions is bigger than its related party purchase transactions, and 0 otherwise
DUGA	Group affiliation dummy variable that takes a value of 1 if a firm is affiliated to a group with at least two listed firms, and 0 otherwise
SIZE	Natural logarithm of total assets
LEV	Total debt to total assets
ROA	The sum of profit after tax plus interest expense to total assets

This study examines the impact of related party transactions on the corporate value of the firms affiliated to the business group. Our paper employs two dependent variables to represent corporate value VALUE: MB and MVTA [1], [19], [20]. MB is the book value of debt plus the market value of equity divided by total assets. MVTA is the market value of equity to total assets. This study employs three independent variables in the analyses: Absolute value of related party transactions ABRSP, related party transaction dummy DURSP, and affiliation of the Business Groups DUGA. ABRSP is the absolute value of the related party sales to total assets minus related party purchase to total assets. Since the purpose of this study is to measure the magnitude and not the direction of corporate value, we use the absolute value proxy to capture the combined effect of value-increasing and value-decreasing. DURSP is defined as a related party transaction dummy variable to further

examine the effect of the difference between related sales and purchase on corporate value. Following Tsai [25], the affiliated firms of the business group DUGA are measured by an indicator variable, which takes a value of one, if the affiliated business group includes at least two listed firms, and zero otherwise. Based on the existing literature, a number of firm-specific control variables included in the models.

Specifically, we use: (a) the natural logarithm of the firm's total assets SIZE to control for firm size; (b) the leverage LEV measured as total debt divided by total assets; and (c) the return rate on assets ROA is included in our study. Definitions of all the variables are summarized in Table I.

IV. Empirical Analysis

A total of 8.560 firm-year observations are included in the sample to test the hypotheses. The definitions of the variables are provided in Table I. Table II presents summary statistics for the full sample and the results of the nonparametric Wilcoxon test for the subsamples, respectively. Panel A of Table II indicates that the mean of the market-to-book ratio MB is 1.354 and the mean value of the market value of equity to total assets MVTA is 0.939.The mean value of the absolute value of related party transactions (related party sales transactions to total assets minus related party purchase transactions to total assets) ABRSP is 6.6% and the mean value of the related party transaction dummy variable DURSP is 39.4%. The mean value of the business group affiliation dummy variable DUGA is 0.344. The mean of the total assets SIZE is 15.278. The mean and standard deviation of leverage LEV are 41.406% and 17.946%, respectively. On average, the return on total assets ROA is 8.917%. In Panel B of Table II, almost all of the *t*-value and Wilcoxon values of the variables are significantly negative at least at the 10% level. These findings are consistent with our predicted signs and show that non-affiliated firms with related party transactions are less likely to increase corporate value than business group-affiliated firms.

TABLE II: DESCRIPTIVE STATISTICS AND DIFFERENCE TESTS OF SUBSAMPLES

Panel A: All Samples (*N*=8,560)					
Variable	Mean	Median	St. Dev.	Mini.	Max.
MB	1.354	1.130	0.719	0.548	4.687
MVTA	0.939	0.704	0.781	0.085	4.410
ABRSP	0.066	0.004	0.228	0.000	6.320
DURSP	0.394	0.000	0.489	0.000	1.000
DUGA	0.344	0.000	0.475	0.000	1.000
SIZE	15.278	15.094	1.414	12.538	19.640
LEV	41.406	41.400	17.946	6.200	87.790
ROA	8.917	8.460	9.231	-20.010	34.630
Panel B: Corporate Value Difference Test					
	Nonaffiliated (N=5,618)	Affiliated (N=2,942)	Difference Test		
Variable	Mean	Mean	*t*-value	Wilcoxon Z	
MB	1.355	1.353	0.125	-1.219	
MVTA	0.942	0.935	0.373*	-1.824*	
ABRSP	0.053	0.091	-7.514***	-25.630***	
DURSP	0.332	0.512	-16.500***	-16.244***	
SIZE	14.941	15.923	-32.307***	-27.125***	
LEV	41.273	41.661	-0.951***	-1.195	
ROA	8.834	9.007	-1.155**	-0.232	

Notes: The symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are as defined in Table I.

For brevity, we do not tabulate the specifications of the Pearson/Spearman correlation matrix of the related variables for corporate value. All of the variables are significantly correlated with the dependent variables MB and MVTA at least at the 10% level, respectively. The relationships suggest that all of the explanatory variables are important in explaining the corporate value. While most of the independent variables are highly correlated with the others, the variance inflation factors (VIF) of the explanatory variables in the regressions amount to less than 2, which suggests that a severe multicollinearity problem does not exist.

TABLE III: REGRESSION ANALYSES OF RELATED PARTY TRANSACTIONS AND CORPORATE VALUE: ALL SAMPLES (*N*=8,560)

$VALUE_{it} = a_0 + a_1 ABRSP_{it} + a_2 DURSP_{it} + a_3 DUGA_{it} + a_4 SIZE_{it} + a_5 LEV_{it} + a_6 ROA_{it} + a_7 YEAR\ Dummies + \varepsilon_{it}$

Variable	Predicted Sign	MB(Model 1) Coefficient	MVTA(Model 2) Coefficient
Intercept		2.574***	2.570***
		(33.703)	(33.599)
ABRSP	+/-	0.138***	0.140***
		(4.781)	(4.848)
DURSP	+/-	-0.027**	-0.027**
		(-2.004)	(-2.002)
DUGA	+/-	0.089***	0.088***
		(5.969)	(5.904)
SIZE	?	-0.096***	-0.096***
		(-17.740)	(-17.718)
LEV	-	-0.003***	-0.013***
		(-6.580)	(-30.778)
ROA	+	0.034***	0.034***
		(44.050)	(43.978)
YEAR Dummies		YES	YES
Adj-R^2		0.298	0.402
F-statistic		304.306***	481.377***

Notes: Robust *t*-statistics are in parentheses. The symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are as defined in Table I.

The results of the effects of related party transactions and corporate value are provided in Table III. The related party transaction proxy ABRSP coefficients in Table III are all positive and significant at the 1% level and provide evidence in support of the hypothesis H1a. The results are consistent with prior studies [22], [23] and show that both related party sales and purchase prop up the corporate value. However, the other transaction proxy DURSP coefficients in Table III are all negative and significant at the 1% level and provide evidence in support of the hypothesis H1b. The evidence is consistent with the tunneling literature [19]-[21] and indicates that firms with related party sales bigger than purchase are more likely to impair corporate values. The business group affiliation dummy variable DUGA coefficients in Table III are all positive and significant at the 1% level and provide evidence in support of the hypothesis H2a. The significantly positive effects of the affiliation dummy on the corporate values provide evidence in support of the institutional perspective, and show that the group-affiliated firms have higher values than non-affiliated firms.

TABLE IV: REGRESSION ANALYSES OF RELATED PARTY TRANSACTIONS AND CORPORATE VALUE: SUBSAMPLES

$VALUE_{it}= a_0 + a_1ABRSP_{it} + a_2DURSP_{it} + a_3DUGA_{it} + a_4SIZE_{it} + a_5LEV_{it} + a_6ROA_{it} + a_7YEAR\ Dummies + \varepsilon_{it}$

Variable	Predicted Sign	Non-affiliated (N=5,618) MB(Model 1) Coefficient	Affiliated (N=2,942) MB(Model 2) Coefficient
Intercept		2.925*** (26.833)	2.304*** (20.189)
ABRSP	+/-	0.090*** (2.634)	0.247*** (4.643)
DURSP	+/-	0.011 (0.666)	-0.089** (-3.990)
SIZE	?	-0.121*** (-15.722)	-0.071*** (-9.235)
LEV	-	-0.002*** (-4.430)	-0.003*** (-5.131)
ROA	+	0.034*** (35.519)	0.036*** (26.423)
YEAR Dummies		YES	YES
Adj-R^2		0.292	0.317
F-statistic		211.899***	125.015***

Variable	Predicted Sign	Non-affiliated (N=5,618) MVTA(Model 3) Coefficient	Affiliated (N=2,942) MVTA(Model 4) Coefficient
Intercept		2.925*** (26.772)	2.292*** (20.119)
ABRSP	+/-	0.093*** (2.700)	0.248*** (4.688)
DURSP	+/-	0.012 (0.676)	-0.089*** (-4.007)
SIZE	?	-0.121*** (-15.729)	-0.070*** (-9.204)
LEV	-	-0.012*** (-23.731)	-0.013*** (-19.773)
ROA	+	0.034*** (35.395)	0.036*** (26.495)
YEAR Dummies		YES	YES
Adj-R^2		0.392	0.428
F-statistic		330.297***	201.087***

Notes: Robust *t*-statistics are in parentheses. The symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are as defined in Table I.

Table IV provides the results of the subsamples. The related party transaction proxy ABRSP coefficients in Table IV for both nonaffiliated and affiliated firms are all positive and significant at the 1% level and are similar to the results of Table III. Nevertheless, the other transaction proxy DURSP coefficients in Table IV are negative and significant at the 1% level only for the affiliated firms and provide evidence in support of the hypothesis H2b. The results do not provide evidence in support of the hypothesis H1b for nonaffiliated firms and demonstrate that the firm value of affiliated firms is significantly lower for firms undertaking potentially expropriating transactions.

The results of the impacts of the interaction terms are provided in Table V. The findings are consistent with the results in Table III and Table IV. The coefficients of the interaction terms DUGA×ABRSP and DUGA×DURSP provide evidence in support of H2a and H2b, respectively. As for the control variables, collectively, small firms, firms

with lower leverage and higher returns on assets demonstrate better corporate values.

V. CONCLUSION

Using an institutional perspective of shell resource maintenance and refinancing qualification, our paper aims to examine the relationship between related party transactions and corporate value for the firms listed on the Taiwan Stock Exchange and in the Gre Tai Securities Market in Taiwan for the period from 2006 to 2012. The empirical results reveal that both of the related party sales and purchases increase the value for all of the firms listed in Taiwan. The results provide evidence in support of the institutional perspective and the listed firms seem to be propped up. However, when the related party sales of the firms are bigger than their related party purchases, the firm value of the affiliated firms is more likely to be lower than those of nonaffiliated firms and demonstrates the tunneling motivation of the related party transactions. A further exploration using longer sample periods to examine the endogeneity problems in the empirical analysis of corporate value would be worthwhile. Moreover, this paper does not incorporate all of the types of related party transactions into the regression models. Future studies could incorporate the other types of related party transactions into the models to examine the impacts of the related party transactions on corporate value.

TABLE V: REGRESSION ANALYSES OF RELATED PARTY TRANSACTIONS AND CORPORATE VALUE: INTERACTION TERMS (N=8,560)

$VALUE_{it}= a_0 + a_1ABRSP_{it} + a_2DURSP_{it} + a_3DUGA_{it} + a_4DUGA_{it} \times ABRSP_{it} + a_5DUGA_{it} \times DURSP_{it} + a_6SIZE_{it} + a_7LEV_{it} + a_8ROA_{it} + a_9YEAR\ Dummies + \varepsilon_{it}$

Variable	Predicted Sign	MB(Model 1) Coefficient	MVTA(Model 2) Coefficient
Intercept		2.574*** (33.703)	2.559*** (33.471)
ABRSP	+/-	0.094*** (2.741)	0.096*** (2.813)
DURSP	+/-	0.006 (0.325)	0.006 (0.329)
DUGA	+/-	0.116*** (5.813)	0.126*** (6.463)
DUGA×ABRSP	+/-	0.148** (2.353)	0.146** (2.325)
DUGA×DURSP	+/-	-0.089*** (-3.159)	-0.089*** (-3.164)
SIZE	?	-0.095*** (-17.692)	-0.095*** (-17.671)
LEV	-	-0.003*** (-6.683)	-0.013*** (-30.883)
ROA	+	0.034*** (43.925)	0.034*** (43.855)
YEARDummies		YES	YES
Adj-R^2		0.299	0.403
F-statistic		262.059***	414.284***

Notes: Robust *t*-statistics are in parentheses. The symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are as defined in Table I.

REFERENCES

[1] Q. Ying and L. Wang, "Propping by controlling shareholders, wealth transfer and firm performance: Evidence from Chinese listed companies," *China Journal of Accounting Research*, in Press, 2013.

[2] T. Khanna and K. Palepu, "Why focused strategies may be wrong for emerging markets," *Harvard Business Review*, vol. 75, no. 4, pp. 41-51, 1997.

[3] T. Khanna and K. Palepu, "Is group affiliation profitable in emerging markets? An analysis of diversified Indian business groups," *Journal of Finance*, vol. 55, no. 2, pp. 867-891, 2000.

[4] T. Khanna and K. Palepu, "The future of business groups in emerging markets: Long-run evidence from Chile," *Academy of Management Journal*, vol. 43, no. 3, pp. 268-285, 2000.

[5] T. Khanna and J. W. Rivkin, "Estimating the performance effects of business groups in emerging markets," *Strategic Management Journal*, vol. 22, no. 1, pp. 45-74, 2001.

[6] M. F. Guillén, "Business groups in emerging economies: A resource-based view," *Academy of Management Journal*, vol. 43, no. 3, pp. 362-380, 2000.

[7] X. Luo and C. Chung, "Keep it all in the family: The role of particularistic relationships in business group performance during institutional transition," *Administrative Science Quarterly*, vol. 50, pp. 404-439, 2005.

[8] T. N. Mursitama, "Creating relational rents: The effect of business groups on affiliated firms' performance in Indonesia," *Asia Pacific Journal of Management*, vol. 23, no. 4, pp. 537-557, 2006.

[9] M. Bertrand, P. Mehta, and S. Mullainathan, "Ferreting out tunneling: An application to Indian business groups," *The Quarterly Journal of Economics*, vol. 117, no. 1, pp. 121-148, 2002.

[10] E. E. Friedman, S. Johnson, and T. Mitton, "Propping and tunneling," *Journal of Comparative Economics*, vol. 31, no. 4, pp. 732-750, 2003.

[11] S. Claessens, J. P. H. Fan, and L. H. P. Lang, "The benefits and costs of group affiliation: Evidence from East Asia," *Emerging Markets Review*, vol. 7, no. 1, pp. 1-26, 2006.

[12] M. Carney, E. R. Gedajlovic, P. P. M. A. R. Heugens, M. V. Essen, and J. V. Oosterhout, "Business group affiliation, performance, context, and strategy: A meta-analysis," *Academy of Management Journal*, vol. 54, no. 3, pp. 437-460, 2011.

[13] Y.-H. Yeh and T. Woidtke, "Commitment or entrenchment? Controlling shareholders and board composition," *Journal of Banking and Finance*, vol. 29, no. 7, pp. 1857-1885, 2005.

[14] Y.-L. Cheung, L. Jing, T. Lu, P. R. Rau, and A. Stouraitis, "Tunneling and propping up: An analysis of related party transactions by Chinese listed companies," *Pacific-Basin Finance Journal*, vol. 19, pp. 372-393, 2009.

[15] Y.-L. Cheung, Y. Qj, P. R. Rau, and A. Stouraitis, "Buy high, sell low: How listed firms price asset transfers in related party transactions," *Journal of Banking and Finance*, vol. 33, pp. 914-924, 2009.

[16] M. Berkman, R. A. Cole, and L. J. Fu, "Expropriation through loan guarantees to related parties: Evidence from China," *Journal of Banking & Finance*, vol. 33, pp. 141-156, 2009.

[17] G. Jiang, C. M. C. Lee, and H. Yue, "Tunneling through intercorporate loans: The China experience," *Journal of Financial Economics*, vol. 98, pp. 1-20, 2010.

[18] W. Q. Peng, K. C. J. Wei, and Z. Yang, "Tunneling or propping: Evidence from connected transactions in China," *Journal of Corporate Finance*, vol. 17, pp. 306-325, 2011.

[19] A. C. H. Lei and F. M. Song, "Connected transactions and firm value: Evidence from China-affiliated companies," *Pacific-Basin Finance Journal*, vol. 19, pp. 470-490, 2011.

[20] W. Ge, D. H. Drury, S. Fortin, F. Liu, and D. Tsang, "Value relevance of disclosed related party transactions," *Advances in Accounting, incorporating Advances in International Accounting*, vol. 26, pp. 134-141, 2010.

[21] M. Kohlbeck and B. W. Mayhew, "Valuation of firms that disclose related party transactions," *Journal of Accounting and Public Policy*, vol. 29, pp. 115-137, 2010.

[22] Y.-H. Yeh, P.-G. Shu, and Y.-H. Su, "Related-party transactions and corporate governance: The evidence from the Taiwan stock market," *Pacific-Basin Finance Journal*, vol. 20, no. 5, pp. 755-776, 2012.

[23] J. Aharony, J. Wang, and H.Yuan, "Tunneling as an incentive for earnings management during the IPO process in China," *Journal of Accounting and Public Policy*, vol. 29, pp. 1-26, 2010.

[24] A. W. Y. Lo, R. M. K. Wong, and M. Firth, "Can corporate governance deter management from manipulating earnings? Evidence from related-party sales transactions in China," *Journal of Corporate Finance*, vol. 16, pp. 225-235, 2010.

[25] C.-C. Tsai, "Business group characteristics and affiliated firm cash holdings," *International Proceedings of Economics Development and Research (Conference on Innovation, Trade and Economic)*, vol. 39, pp. 36-40, 2012.

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