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# Does free float affect shareholder wealth?

*New evidence from the Stock Exchange of Thailand*

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# Introduction

- Funding is one of the main contributions for the success of the firm.
- Initial public offering process (IPO) relate to the shareholder wealth through .
- A company's free float is important to potential investors because it offers insight into the company's stock volatility.
- Stocks with small free float tend to be more volatile because there are only a limited number of shares that can be bought or sold in the event of major trading news.

# Minority Shareholders and SET

- The Stock Exchange of Thailand (SET)'s Board of Governors (BoG)'s notification Maintaining the status of listed companies on the Exchange (4<sup>th</sup> amendment), 2007
- The listed companies to have at least 150 minority shareholders, or when such shareholders hold not less than 15% of a company's paid-up capital



# How about other ASEAN Emerging Markets

The Philippine Corporate Governance proposes for minimum free float of 10% but the survey of the Philippine listed companies in the first quarter 2013 is above 30% (Visto, 2013).

# Strategic Shareholders Definition

1. Directors, managers, and the top four executives subordinate to the managers, including any individuals in positions equivalent to the fourth-ranking executive, together with related persons - parents, spouses, siblings, children and children-in-law - and any juristic persons defined as related under Section 258 of the Securities and Exchange Act.
2. Shareholders holding more than 5% of paid-up capital, together with related persons. This provision excludes securities companies, life insurance companies, insurance companies, mutual funds, provident funds, pension funds, retirement funds or investment projects approved in accordance with the relevant law, unless there is a representative involved in management.

# Strategic Shareholders (Cont')

3. Controlling persons and related persons. Controlling persons refers to shareholders or any individuals who, by their behavior, influence a company's policy processes, management or operation significantly. Regardless of whether such an influence is acquired by shareholding or authorized by contract or any other means. It is the main responsibility of audit committees to certify the related relationships that could lead to any indirect control on the company.



# Research Objectives

- How to investigate the free float of listed SET companies effects on the shareholder wealth.
- To propose the implication of trading liquidity index i.e. turnover list ratio as the observation tools for the encouragement to new listed companies from families business.

# Research Benefits and Contributions

- The guideline of free float effects on shareholder wealth could lead to the market regulator whether the minimum requirement of free float should increase or not.
- The limitation of security demands control through turnover list ratio needs to be proved. The relationship between shareholder wealth and liquidity index in Thailand has not been investigated.

# Literature Review

Actually, the study on free float effects on shareholder wealth is very limited as the financial theory e.g. Capital Asset Pricing Model (CAPM) based on the efficient market (McGuigan et. al., 2006) etc.

# Literature Review (Cont)

- Hamon, J. and Jacquillat, B. (1999) studies on the relationship between size of the company and its stock return. They find that the smaller capitalization stocks on average outperform larger capitalization stocks over long periods of time
- Fenghua W. and Yexiao X. (2004) studies on the three-factor model to A-shares in the Chinese equity market. Size was found to explain the cross-sectional differences in returns, but contrary to findings for the U.S. market, the book-to-market ratio was not helpful



# Literature Review (Cont')

- Lim et. al. (2005) studies the immediate price impact of a single trade executed in the Australian Stock Exchange (ASX). On the top 300 stocks on the ASX for their free float market capitalization, they find that higher cap stocks experiencing lower price impact than lower cap stocks for the same traded volume.
- Rhee and Wang (2009) find that from January 2002 to August 2007, foreign institutions held almost 70% of the free-float value of the Indonesian equity market, or 41% of the total market capitalization.

# Literature Review (Cont')

- Lam et. Al. (2011) find that the switch to free-float weighting in the S&P 500 Index shows the effect of the availability of shares on liquidity in the medium term while the differences in liquidity and price impact measures that gradually narrowed following each phase of the free float adjustment.
- Chai et. al. (2010) examines two empirical issues regarding stock liquidity:
  - (1) to what degree are different liquidity proxies correlated and
  - (2) how different liquidity proxies are related to stocks' trading characteristics. Using data from the Australian equity market, their results confirm prior research that stocks' trading characteristics are important determinants of liquidity

# Literature Review (Cont')

The market liquidity indexes :

1. **Turnover value :**  $Turnover_t = \left( \frac{V_t}{Market\ Cap_t} \right)$

2. **Illiquidity ratio :**  $Amihud_t = \frac{1}{D_t} \sum_{d=1}^{D_{i,t}} |r_{d,t}| V_{d,t}$

3. **Adjusted zero return measures :**

$$LT_t = \frac{adjusted\ zero\ return_t}{Trading\ day_t}$$

# Literature Review (Cont')

4. Illiquidity ratio is developed on Amihud (2002) :

$$LT_t = \frac{\text{adjusted zero return}_t}{\text{Trading day}_t}$$

5. Return reversal measure is proposed by Pastor and Stambaugh (2003):

$$r_{t+1}^e = \gamma_0 + \gamma_1 r_{t+1} + \lambda [\text{sign}(r_t^e) \times V_t] + \varepsilon_t$$



# Literature Review (Cont')

6. Liu's measure or turnover adjusted number of zero daily volumes :

$$LM_t = \left[ NoLV_t + \frac{1/turnover_t}{Deflator} \right] \times \frac{21}{NoTD_t}$$

7. Index of Liquidity :

$$IOL_t = \sum \frac{Liquidity\ ratio_{i,t} - \overline{Liquidity\ ratio_i}}{\sigma_i}$$

# Variable and Model Development

**Tobin Q ratio or Q ratio** is applied as the shareholder wealth index. The Q ratio is hypothesized that the combined market value of all the companies on the stock market should be about equal to their replacement costs (Tobin, 1958).

# Variable and Model Development (Cont')

Mackie Mason (1988) studies on tax effects on asset values and investment decision and find that non debt tax shield e.g. the amount of tax carry forward or tax exemption significantly effects on the level of debt usage. Thus, the non-debt tax shield level (NDT variable) could effect on the valuation of the firm.

# Variable and Model Development (Cont')

- The optimal debt level leads to the higher stock price. The LEV variable defines as the ratio of total debt to total asset. The expectation on its relationship with TOBINQ is positive as Modigliani and Miller (1958, 1963) propose when firms must pay tax, the valuation of firms would increase from the borrowing.
- To develop the relationship among the variables, this paper reviews the study on the “family business” proposed by Claessens et. al. (2000) for the important roles of family firms in East Asian region.



# Variable and Model Development (Cont')

The common characteristics of family business and illiquid stocks, the sample data, is the low turnover ratio (Anderson and Reeb, 2003). The previous studies recommend the relationship between corporate governance characteristic, size, dividend yield and valuation of the firms (Daily and Dollinger, 1991; Gallo, 1995). The determination of shareholder wealth is measured by TOBINQ with ROA or ROE (Goopers et. al., 2010; Lee, 2006; Zellweger and Nason, 2008)

# Variable and Model Development (Cont')

In summary, the sample data is illiquidity stocks that relate to the companies under the limited number of families controlling. These sample are observed their characteristics through turnover ratio (TUR).

# Research Framework and Methodology

The research methodology mainly deals with structural models as two equation models are applied. The special relationship of the variable – exogenous variable with its determination from outside equation is observed. In this paper, exogenous variable is predetermined type not strictly category with the implication of Hausman test. The consideration of order condition and rank condition is recognized under the matrix form to limit the unidentified and over identified.

# Research Framework and Methodology (Cont')

$$\text{Tobin } Q = a_0 + a_1 \text{ DY} + a_2 \text{ ROA} + a_3 \text{ LEV} + a_4 \text{ NDT} \text{ ----- 1}$$

$$\text{ROE} = b_0 + b_1 \text{ TUR} + b_2 \text{ Tobin } Q + b_3 \text{ SIZE} + b_4 \text{ CG} + b_5 \text{ DY} \text{ ----- 2}$$

- Tobin Q is the ratio between the summation market capitalization and its total outstanding debt divided by total asset.
- Dividend yield (DY) is the ratio of total dividend paid-out within past 12 months and quarterly price.
- Leverage ratio (LEV) is the ratio of total debt to total asset.
- Non debt tax shield (NDT) is the ratio of depreciation and amortization divided by total asset.
- Return on equity (ROE) is the ratio of net profit and total equity.
- Return on asset (ROA) is the ratio of net profit and total asset.



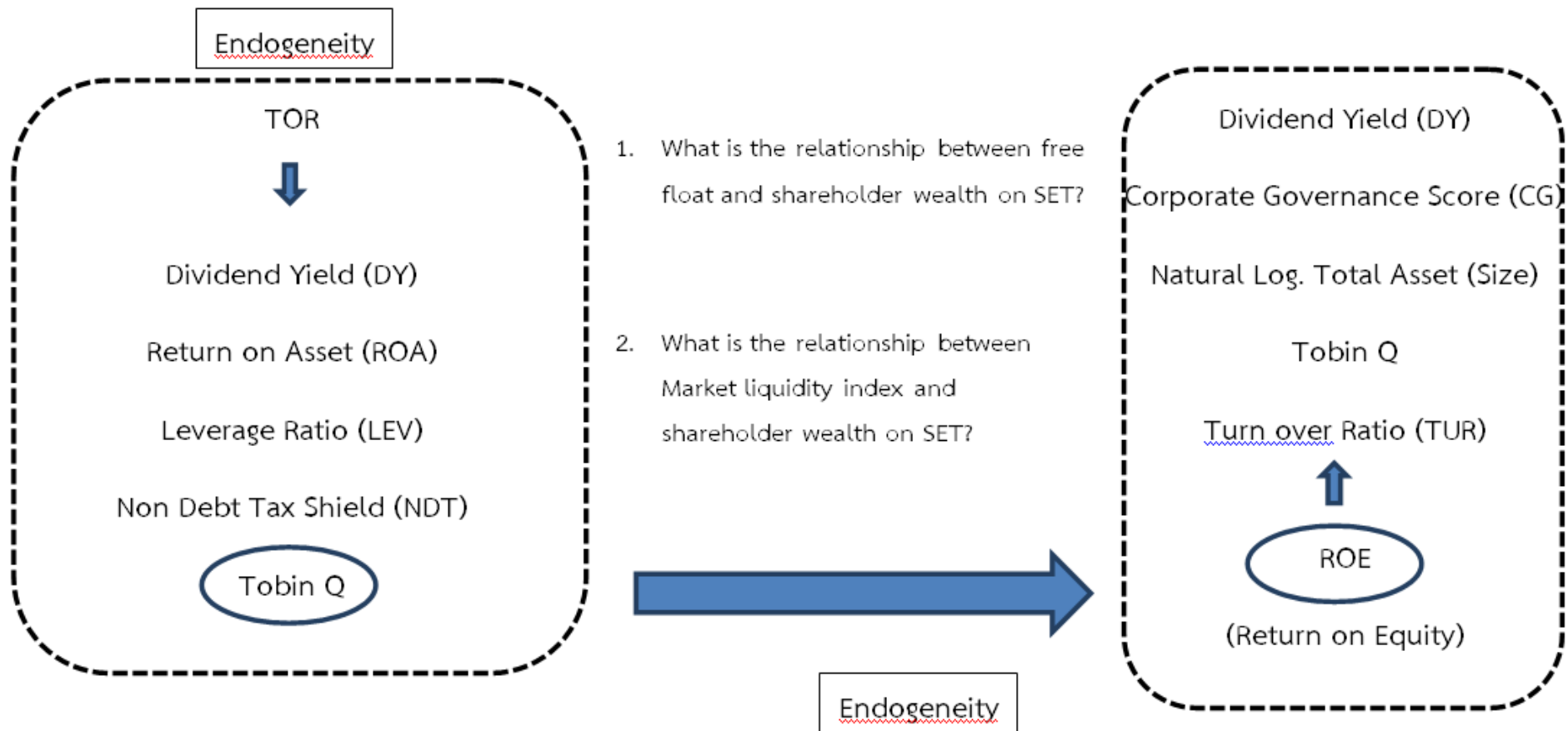
# Research Framework and Methodology (Cont)

Turnover Ratio =  $\frac{\text{Average weekly trading value} \times 100}{\text{Free Float Ratio} \times \text{Average Weekly Market Capitalization}}$  while

Free Float (FF) =  $\frac{\text{Total paid - up capital} - \text{Total stocks under strategic shareholder} \times 100}{\text{Total shares}}$

- Size is the natural logarithm of total tangible asset.
- Corporate governance (CG) is the score of corporate governance evaluation conducted by Thai Institute of director association (IOD). The total score is 5 consisting of 204 evaluation category.

# Research Conceptual Model



# Data Selection and Study Period

The implication of **bootstrapping technique** on SET index during this period return nearly 0% return so the classification on this period assumes to be stable. The SET index is significant increase after that period.

# SET Index Movement and Period of Screening





# Sample Selection and Screening

Population from 2011 to 2012

- List companies on SET :953
- Period of Observation: 107 weeks

*Data Screen by  
Free Float Factor*

Ranking Criteria to Sample List by Score  
Ranking

- Free Float Ratio  $\leq 25\%$  = 10 points
- Free Float Ratio 25.01% - 30% = 5 points
- Free Float Ratio  $> 30\%$  = 0 point

**List Companies 187 Companies**

- Delist 18 Companies
- Delist Code : NPG
- SPSU, ICBCT, SICCO, MGR, PTTAR, PTTCH (2011)
- BLS,UST, PYT, PHATRA (2012)
- PPC (2013)
- TCP, SECC, VGM, ITV, CAWOW, DTM, PICNI (2014)

Sample Output

Final Sample List

Sample List 169 Companies

- Service 40 companies
- Industrial goods 36 companies
- Property and Construction 26 co.
- Consumer Goods 25 companies
- Agriculture and Food Industry 22 co.
- Technology 16 companies
- Resource 4 companies

# Research Outcome Process

- **Test of stationarity**

Maddala - Wu Test for unbalanced panel reveals that the sample data is stationary as the  $H_0$  is rejected with the p-value from Chi-square of Dickey-Fuller test is less than 0.01.

- **Multicollinearity Test**

There are no any simple correlation coefficients between the variables is greater than 0.8 (Harvey, 1990)

# Research Outcome Process (Cont')

- **The heteroskedasticity Test**

White's heteroskedasticity test finds that the p values of F-statistics have the figure less than 0.05.

- **The test for autocorrelation**

The DW statistic of the model shows some concern of positive autocorrelation; however, Harvey (1990) suggest that minor positive autocorrelation is normal symptom for the financial data research.

# Summary of the Sample Characteristics

Items	CG	DY	LEV	NDT	ROA	ROE	SIZE	TUR	TOBIN Q
Max.	5.0000	21.7602	28.6698	0.208	66.3101	184.3000	7.8014	536.8400	13071.280
Avg.	3.5392	4.1616	1.12427	0.0108	7.5885	8.90682	5.8887	20.7421	1109.5721
Min.	3.0000	0.1100	-4.3722	0.000	-79.4301	-280.7607	3.9572	0.0100	19.4000
S.D.	0.6380	2.7040	2.4421	0.015	11.6710	24.0231	0.6291	52.6666	1179.7361
Total Observation	590	590	590	590	590	590	590	590	590



# Correlation Matrix Summary

Between	TOBINQ	DY	LEV	NDT	ROA	CG	TUR	SIZE
TOBINQ	1.0000	-0.1296	-0.1996	0.2798	0.6742	0.0666	0.0845	0.1109
DY	-0.1296	1.0000	-0.1095	0.1044	0.2111	-0.0247	-0.1862	-0.1349
LEV	-0.1996	-0.1095	1.0000	-0.2138	-0.2213	0.1880	0.1567	0.4144
NDT	0.2798	0.1044	-0.2138	1.0000	0.1660	-0.0770	-0.1330	0.0529
ROA	0.6742	0.2111	-0.2213	0.1660	1.0000	0.0827	0.0477	0.0704
CG	0.0666	-0.0247	0.1880	-0.0770	0.0827	1.0000	0.0251	0.4555
TUR	0.0845	-0.1862	0.1567	-0.1330	0.0477	0.0251	1.0000	-0.0007
SIZE	0.1109	-0.1349	0.4144	0.0529	0.0704	0.4555	-0.0007	1.0000

# Outcomes of OLS analysis on Tobin Q

Dependent Variable: TOBINQ

Method: Least Squares

Date: 07/14/15 Time: 21:00

Sample (adjusted): 2 583

Included observations: 463 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	202.0086	89.21580	2.264269	0.0240
DY	-110.0669	15.35347	-7.168861	0.0000
ROA	101.9831	5.337449	19.10709	0.0000
LEV	115.1645	29.89789	3.851927	0.0001
NDT	33108.55	5067.690	6.533262	0.0000
R-squared	0.542832	Mean dependent var	1255.380	
Adjusted R-squared	0.538839	S.D. dependent var	1304.648	
S.E. of regression	885.9707	Akaike info criterion	16.42199	
Sum squared resid	3.60E+08	Schwarz criterion	16.46667	
Log likelihood	-3796.690	Hannan-Quinn criter.	16.43958	
F-statistic	135.9550	Durbin-Watson stat	1.408167	
Prob(F-statistic)	0.000000			

# Outcomes of OLS analysis on ROE

Dependent Variable: ROE  
Method: Least Squares  
Date: 07/14/15 Time: 21:01  
Sample (adjusted): 22 583  
Included observations: 252 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-31.17990	5.711124	-5.459503	0.0000
TUR	0.075570	0.012456	6.066997	0.0000
TOBINQ	0.005996	0.000418	14.34235	0.0000
SIZE	3.467002	1.036527	3.344826	0.0010
CG	2.532983	1.014233	2.497436	0.0132
DY	1.686431	0.199294	8.462014	0.0000
R-squared	0.688335	Mean dependent var	15.96687	
Adjusted R-squared	0.682000	S.D. dependent var	16.34532	
S.E. of regression	9.217370	Akaike info criterion	7.303578	
Sum squared resid	20900.14	Schwarz criterion	7.387612	
Log likelihood	-914.2508	Hannan-Quinn criter.	7.337392	
F-statistic	108.6616	Durbin-Watson stat	1.555938	
Prob(F-statistic)	0.000000			

# Prediction Model

$$\text{Tobin } Q = 202.01 - 110.07 \text{ DY} + 101.98 \text{ ROA} + 115.16 \text{ LEV} + 33108.55 \text{ NDT}$$

Equation 3

$$\text{ROE} = -31.17 + 0.076 \text{ TUR} + 0.006 \text{ TobinQ} + 3.467 \text{ SIZE} + 2.53 \text{ CG} + 1.68 \text{ DY}$$

Equation 4



# Outcomes of TSLS analysis on Tobin Q

Dependent Variable: TOBINQ  
 Method: Two-Stage Least Squares  
 Date: 07/14/15 Time: 21:02  
 Sample (adjusted): 22 583  
 Included observations: 252 after adjustments  
 Instrument specification: DY ROA LEV NDT TUR SIZE CG  
 Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	682.1467	118.4187	5.760466	0.0000
DY	-125.0260	24.29725	-5.145682	0.0000
ROE	80.70107	4.630474	17.42825	0.0000
R-squared	0.527034	Mean dependent var	1457.329	
Adjusted R-squared	0.523235	S.D. dependent var	1516.934	
S.E. of regression	1047.415	Sum squared resid	2.73E+08	
F-statistic	153.4718	Durbin-Watson stat	1.055638	
Prob(F-statistic)	0.000000	Second-Stage SSR	2.41E+08	
J-statistic	42.56501	Instrument rank	8	
Prob(J-statistic)	0.000000			

# Final Equation of the Study

$$Tobin\ Q = 682.15 + 80.70\ ROE - 125.03\ DY$$

Equation 5

# Discussion and Conclusion

- This study proposes the investigation whether free float of listed SET companies effects on the shareholder wealth by developing the new sample group.
- These listed companies are mainly control by few families as the majority shareholders leading to the low free float.
- In the past few years, the Securities Exchange Commission (SEC) has employed the turnover list ratio as one of her monitoring tools.  
→ This practice has been canceled from July 2015.

# Discussion and Conclusion (Cont')

- Actually, the liquidity of the stocks is the fundamental required by institutional investors but the structure of Thai companies still relies on family business.
- With the promoting of more listed companies, the regulator should encourage the low free float securities e.g. stock analysis report issuance.
- The higher PE ratio would make the listing process is more lucrative and the SET market capitalization would be higher.



# Thank You

