



Liquidity and Investment Potentials of MAI Stocks

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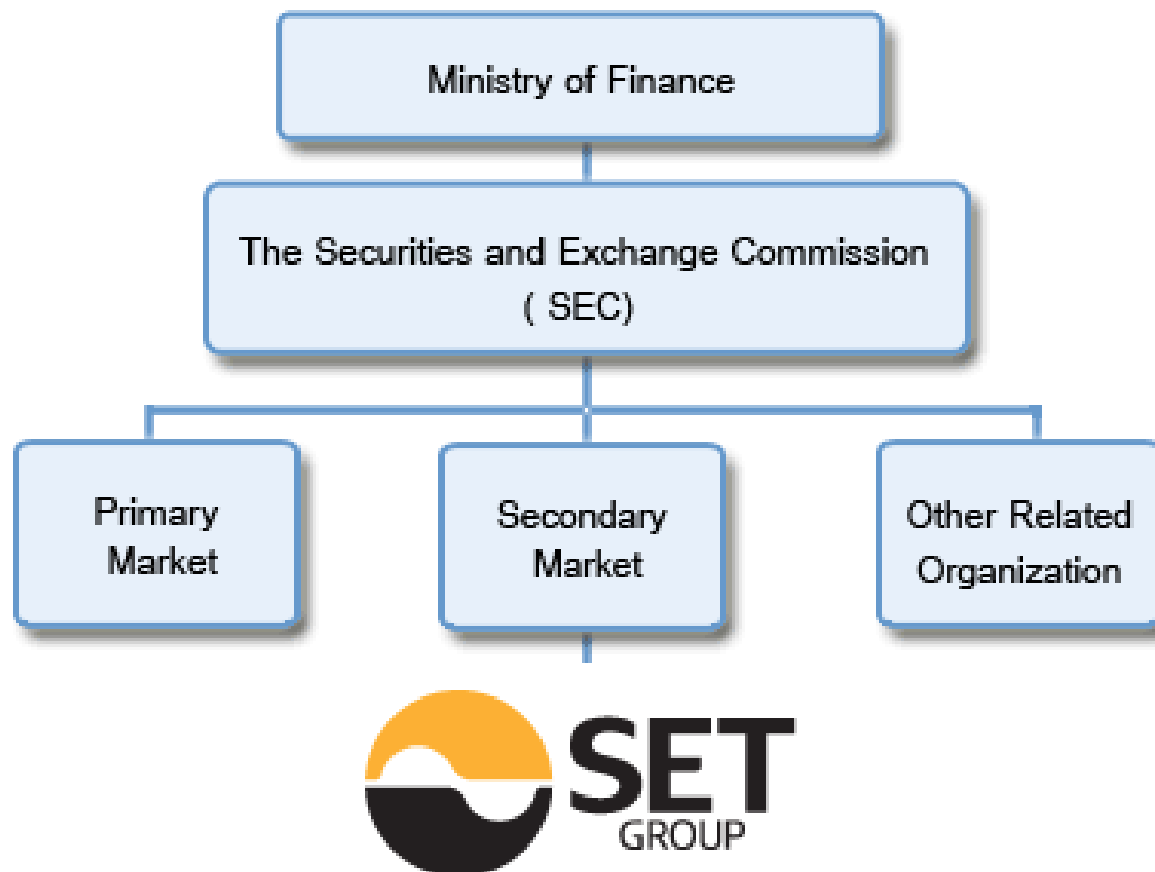


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Overview of the Stock Exchange of Thailand





Overview of the Stock Exchange of Thailand

- ▶ The Stock Exchange of Thailand (SET) was incorporated under the Securities Exchange of Thailand Act, B.E. 2517 (1974) to be the market for the trading of listed securities. SET was also tasked with promoting personal financial planning and providing related services.
- ▶ Market for Alternative Investment (mai) was established under the Securities and Exchange Act to provide alternative funding opportunities for innovative businesses with high potential growth as well as provide a greater range of investment options for investors. mai officially began operations on June 21, 1999.



Yearly Market Statistics (SET & mai)

(As of 28/02/2017)	2013	2014	2015	2016
SET Index (Close)	1,298.71	1,497.67	1,288.02	1,542.94
mai Index (Close)	356.8	700.05	522.62	616.27

SET Total Turnover Volume (M.Shares)	2,768,476.00	2,771,230.00	2,487,472.00	2,670,287.00
SET Total Turnover Value (M.Baht)	11,777,210.10	10,193,179.07	9,997,371.75	12,259,772.49
mai Total Turnover Volume (M.Shares)	223,755.00	379,572.00	322,387.00	257,756.00
mai Total Turnover Value (M.Baht)	553,458.69	946,111.84	768,097.75	556,486.51

Yearly Market Statistics (SET & mai)

(As of 28/02/2017)	2013	2014	2015	2016
Number of Listed Companies in SET	489	502	517	522
Number of Listed Companies in mai	95	111	122	134
SET Market Dividend Yield (%)	3.24	2.94	3.36	3.04
SET Market P/E Ratio	14.6	17.81	22.57	18.55
SET Market P/BV	2.02	2.13	1.74	1.96
mai Market Dividend Yield (%)	1.46	0.87	1	1.24
mai Market P/E Ratio	28.32	69.63	52.94	63.27
mai Market P/BV	2.69	5.64	3.29	3.86



Fund Managers' Choices

- ▶ Mutual fund industry in Thailand consists of 1,400 mutual funds with asset value more than trillion Baht (SEC, 2016).
- ▶ Most of mutual fund investments concentrate in fixed-income security.
- ▶ Equity mutual fund proportions are about 14% of total mutual fund industry.
- ▶ Nevertheless, these equity mutual funds normally invest in large market capitalization stocks or SET50 stocks.



Market Anomalies

- ▶ Quarterly earnings reports and earnings surprise
- ▶ January effect
- ▶ The small-firm effect
- ▶ P/E ratio effect
- ▶ Neglected firm effect
- ▶ BV/MV ratio effect



Research Questions

- ▶ How different are between stock characteristics in MAI and stock characteristics in SET?
 - ▶ Profitability
 - ▶ Market sizes
 - ▶ Liquidity
- ▶ Are mai stock characteristics suitable and comparable to SET's small and mid-capitalization stocks?



Literature Review

- ▶ Liquidity literatures are well explored in developed exchanges but rare in emerging exchanges.
- ▶ Bakaert et. al 2003 report that liquidity risk models outperform other models that incorporate only market risk factors in predicting future returns for emerging markets.
- ▶ Amihud (2002) shows that expected market illiquidity positively affects ex ante stock excess return over time.
- ▶ Lesmond (2005) presents that price-based liquidity measures perform better at representing cross-country liquidity effects than do volume-based liquidity measures.



Methodology

Data

Daily data were collected from the SETSMART website covering 2011-2015. I pick up 30 largest market-capitalization stocks in MAI comparing to approximately same-size SET100 stocks. I collect portfolio information from wealth management system (2015).



Liquidity proxies and measures

Turnover

$$\text{Turnover} = \frac{\text{Volume}}{\text{Listed share}}$$

Where Volume represents trading volume in domestic currency (Baht) and listed share means value of total listed shares (Baht).



Liquidity proxies and measures

Amihud's or illiquidity ratio considers combination between price changes and trading volume. Liquid stocks will exhibit low Amihud's measure. Amihud also provides a measure of the price impact.

$$Amihud_t = \frac{1}{d_t} \sum_{d=1}^{D_t} |R1_{d,t}| / v_{d,t}$$

d_t measures numbers of trading days in month t

$R1_{d,t}$ measures stock daily returns in month t

$v_{d,t}$ measures stock trading volume in month t



Liquidity proxies and measures

Roll's, the effective bid-ask spread in efficient markets

$$\text{Roll's}_t = 2 \left(\sqrt{-\text{cov}(\Delta P_t, \Delta P_{t+1})} \right)$$

Where ΔP_t , ΔP_{t+1} are price changes at time t and t+1, successively.



Liquidity proxies and measures

Zero return, (percent) represents the number of zero returns over one month scaled by the total number of available trading days

$$\text{Zero return} = \frac{Z}{N}$$

Where Z means numbers of zero-return days and N represents total trading days of that month.



Liquidity proxies and measures

Quoted spread

$$\text{Quoted Spread}_m = 1/2 \left[\left(\frac{\text{Ask}_m - \text{Bid}_m}{(\text{Ask}_m - \text{Bid}_m)/2} \right) + \left(\frac{\text{Ask}_{m-1} - \text{Bid}_{m-1}}{(\text{Ask}_{m-1} - \text{Bid}_{m-1})/2} \right) \right]$$

where Ask_m and Ask_{m-1} represent the best selling price in month m and $m-1$, while Bid_m and Bid_{m-1} represent the best buying price in month m and $m-1$, successively.



Empirical Results

Baht

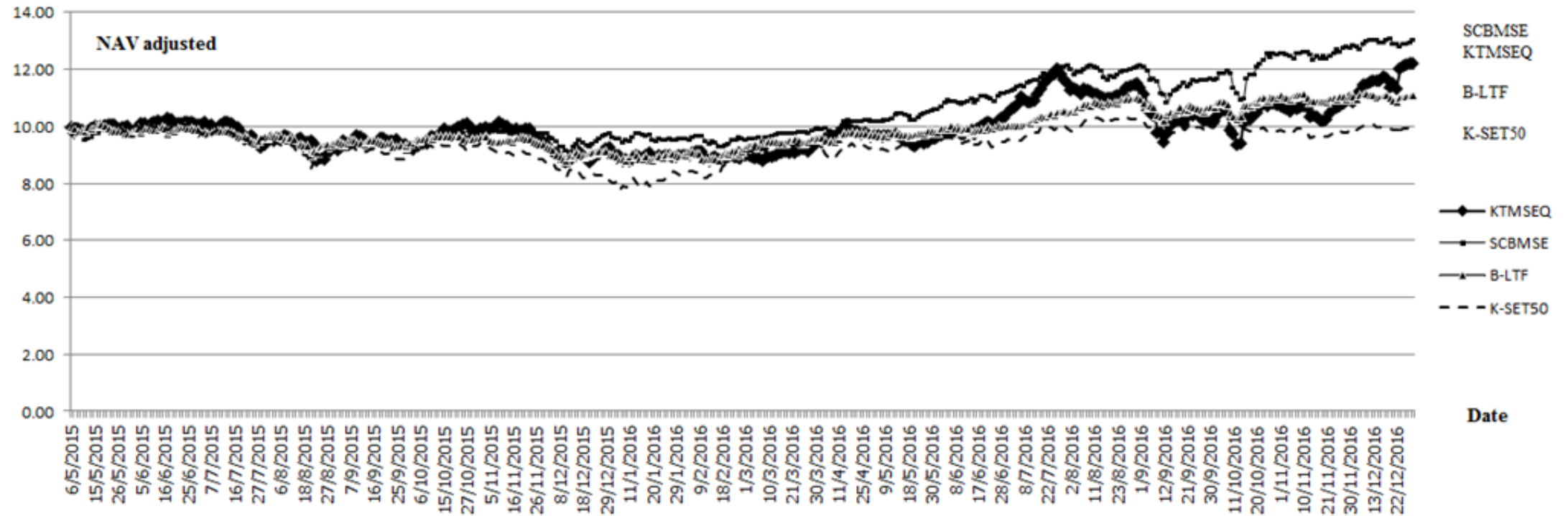


Figure 1 Net asset value of mid and small market capitalization mutual fund

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Empirical Results

Table 1 Return and risk of mid and small market capitalization mutual funds

	KTMSEQ	SCBMSE	B-LTF	K-SET50
Historical return (1 year)	30.92%	34.28%	22.11%	22.42%
Beta (1 year)	1.35	0.70	0.66	1.00
SD (1 year)	21.81%	13.61%	10.41%	12.88%
Equity style	Growth-small	Blend-Mid	Blend-Large	Blend-Large
Numbers of equities	14	55	40	51
Top 10 holdings	82.64%	32.99%	59.31%	55.27%
Top 10 stocks in SET	TSR	BJC	BJC	PTT
	SCI	PTT	SCC	SCC
	SMT	TAAC	CPALL	AOT
	BJC	BEAUTY	PTT	CPALL
	ORI	TPCH	BLA	SCB
	TAAC	GL	KTB	AIS
	JWD	COM7	BBL	K-BANK
	ANAN	SPALI	BDMS	BDMS
	TPBI	SCC	EGCO	PTTEP
	BR	PTG	EA	BBL



Empirical Results

Table 2 Descriptive statistics, Panel A: Liquidity (Trading costs)

	<i>Trading day (Days)</i>	<i>Zero return (%)</i>	<i>Turnover</i>	<i>Amihud</i>	<i>Roll's</i>	<i>Quoted spread</i>	<i>Variance (%)</i>	<i>Value (mil. Bt)</i>	<i>Market Cap (mil. Bt)</i>	<i>Price (Baht)</i>
MAI										
Mean	768.77	20	0.02	0.02	0.02	0.01	43.42	64.74	6,425	7.23
Median	676.00	19	0.01	0.00	0.01	0.01	21.13	45.12	3,471	6.39
STD	459.70	8	0.01	0.07	0.03	0.01	56.21	59.22	10,645	5.08
SET										
Mean	1194.00	19	0.01	0.01	0.03	0.00	9.50	55.75	11,408	23.64
Median	1415.00	18	0.01	0.00	0.00	0.00	7.60	52.31	10,218	14.84
STD	383.18	5	0.01	0.01	0.07	0.00	8.49	40.60	6,985	35.03



Empirical Results

Table 2 Descriptive statistics (cont.), Panel B: Stock profitability

	<i>Profit2015</i> <i>(mil. Baht)</i>	<i>Yield</i>	<i>PE</i>	<i>ROA</i>	<i>ROE</i>	<i>Free float</i>
MAI						
Mean	182.84	0.01	50.73	0.12	0.14	0.37
Median	90.91	0.00	28.87	0.13	0.17	0.36
STD	418.19	0.01	79.77	0.14	0.18	0.12
SET						
Mean	809.12	0.03	27.29	0.14	0.21	0.47
Median	499.96	0.04	16.25	0.12	0.18	0.43
STD	712.50	0.02	34.49	0.09	0.13	0.15



Empirical Results

Table 3 Correlation matrix

	<i>Trading day</i>	<i>Zero return</i>	<i>Turnover</i>	<i>Amihud</i>	<i>Roll's</i>	<i>Quoted spread</i>	<i>Variance</i>	<i>Value</i>	<i>Market.cap</i>	<i>Price</i>
MAI										
Trading day	1.000									
Zero return	0.555***	1.000								
Turnover	-0.577	-0.486	1.000							
Amihud	0.366**	0.424**	-0.120	1.000						
Roll's	0.029	0.078	-0.060	0.567***	1.000					
Quoted spread	0.340*	0.483***	-0.054	0.951***	0.380**	1.000				
Variance	-0.462	-0.265	0.656***	0.038	0.145	0.078	1.000			
Value	-0.547	-0.468	0.348*	-0.085	-0.104	-0.040	0.108	1.000		
Market cap	-0.195	-0.250	-0.020	-0.101	-0.135	-0.090	-0.084	0.720***	1.000	
Price	0.051	-0.203	-0.250	-0.312	-0.374	-0.291	-0.338	0.054	0.326*	1.000



Empirical Results

Table 3 Correlation matrix

	<i>Trading day</i>	<i>Zero return</i>	<i>Turnover</i>	<i>Amihud</i>	<i>Roll's</i>	<i>Quoted spread</i>	<i>Variance</i>	<i>Value</i>	<i>Market.cap</i>	<i>Price</i>
SET										
Trading day	1.000									
Zero return	0.378**	1.000								
Turnover	-0.283	-0.600	1.000							
Amihud	0.247	0.240	-0.079	1.000						
Roll's	0.085	0.166	-0.197	-0.010	1.000					
Quoted spread	0.392**	0.134	0.054	0.422**	-0.299	1.000				
Variance	-0.499	-0.584	0.628***	-0.118	-0.127	-0.257	1.000			
Value	-0.255	-0.642	0.608***	-0.366	-0.230	0.015	0.382**	1.000		
Market cap	-0.147	-0.022	-0.370	-0.379	0.073	-0.330	-0.051	0.361**	1.000	
Price	0.077	0.176	-0.283	-0.059	0.888***	-0.514	-0.063	-0.218	0.293	1.000



Empirical Results

Table 4 Regression analysis of market liquidity

	Intercept	Price	Variance	Value	Market cap	Roll's	Amihud	Turnover	Zero return	Adj-R ²
MAI	0.016**	-0.623	-0.003	-0.010	0.049					-0.060
	0.011*	-0.375	-0.005	-0.001	0.012	0.113				-0.002
	0.006**	0.077	0.007	0.013	-0.056		0.138**			0.890
	0.017**	-0.604	0.021	0.013	-0.039			-0.209		-0.076
	0.008**	-0.029	0.011	0.009	-0.041	-0.089**	0.155**	0.000		0.932
	-0.010	-0.151	0.032	0.060	-0.135				0.084*	0.207
SET	0.007**	-0.052*	-0.183*	0.017	-0.176					0.308
	0.007**	-0.118*	-0.148	0.010	-0.085	0.004				0.335
	0.005*	-0.050*	-0.177*	0.028	-0.111		0.117*			0.422
	0.008**	-0.048*	-0.131	0.043	-0.305			-0.259		0.296
	0.005*	-0.117*	-0.104	0.037	-0.098	0.005	0.121*	-0.172		0.450
	0.002	-0.051*	-0.143	0.031	-0.201				0.021	0.306



Results, Discussion, and Policy Implication

- ▶ Small and mid-cap mutual funds perform better than larger funds do because they focus on investing in small and mid-cap stocks.
- ▶ They do not pick up stocks from the MAI, except EA stock.
- ▶ Trading environment in MAI shows lower liquidity than that in SET.
- ▶ Stock profitability and company size figures in SET shows larger than observed in MAI.
- ▶ Amihud (price impact) play a major role for explaining trading costs or illiquidity in MAI due to highly significant correlation coefficient between Amihud and quoted spreads.



Results, Discussion, and Policy Implication

- ▶ In sum, stocks in MAI are much smaller and have lower profitability than those in SET.
- ▶ The MAI still have lower liquidity than the SET has.
- ▶ The small and mid-cap equity funds are not ready to pick up stocks in MAI due to its too small sizes, lower profitability, and potential price impact.
- ▶ Policy makers or regulators should aim to make MAI stocks become bigger and build higher profitability. Smaller stock sizes in MAI cause price impact easily. That is why the small and mid-cap equity funds do not pick up stocks in MAI for the time being.



Q & A
Thank you