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Financial Liberalization, the Weekend Effect, and Common Stock Returns in the Thai Stock Market

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ABSTRAK

Kajian ini menjalankan analisis empirik mengenai pola pulangan harian ekuiti dan kesan mingguan atas 29 saham dalam sektor kewangan yang tersenarai di Bursa Saham Thailand bagi jangkamasa yang selari dengan usaha kerajaan Thailand untuk menjadikan Bangkok sebagai pusat kewangan antarabangsa. Model Perniagaan Mengikut Masa (trading time model) digunakan untuk mengesan kesan mingguan, dan kesan penemuan kajian ini dibuat dengan teknik bukan parametrik. Penemuan kajian menunjukkan bagi setiap saham secara individu dan juga portfolio kesemua 29 saham, pulangan pada hari Isnin dan Selasa adalah positif dan untuk tiga hari yang lain adalah negatif. Pulangan purata hari Isnin adalah yang paling tinggi dan kemudahan bahan pulangan adalah paling tinggi pada hari Jumaat; koefisien variasi adalah tinggi dari pulangan hari Isnin. Penemuan ini menunjukkan tidak ada kesan mingguan, sejajar dengan pola pulangan ekuiti yang terdapat di pasaran saham Korea Selatan selepas negara tersebut mengamalkan polisi kewangan yang liberal, tetapi tidak akur dengan penemuan atas kajian yang serupa di bursa saham Asian yang kecil dan sedang membangun seperti Hong Kong, Singapura, Malaysia dan Filipina. Intisari penemuan kajian ini tidak menunjukkan bukti untuk menyokong penemuan kajian-kajian yang terdahulu yang merumuskan bahawa bursa saham Thailand adalah tidak cekap.

ABSTRACT

The purpose of this study is to undertake an empirical analysis of the pattern of the daily equity returns and the day-of-the-week effect on 29 individual stocks in the financial sector of the Thai stock market over the period following the government's attempts to establish Bangkok as an international financial centre; the trading time model is used to test the weekend effect, and the study confirms the test results with the non-parametric technique. The results indicate that for a portfolio of 29 stocks, as well as for most individual stocks, Monday and Tuesday returns are positive and returns for the other three days are negative. The Monday average return is the highest, while Friday has the highest volatility of return; (coefficient of variation) is higher than for Monday's returns. The test finds no evidence of the weekend effect, conforming to the pattern found in the South Korean stock market once financial liberalization got underway, and is contrary to the results from other small and developing Asian stock markets, such as those in Hong Kong, Singapore, Malaysia, and the Philippines. In essence, the results of this study show no evidence to support the inherent inefficiency of the Thai stock market as has been proposed in previous studies.

INTRODUCTION

Thailand has managed to achieve sustained long-term economic development during the last decade by first using an inward-looking protection policy and subsequently an outward-looking liberalization policy (*de facto* import substitution and export promotion, respectively). In addition, financial liberalization has been introduced to their economic development programmes in recent years. Liberalizing the Thai securities market is only part of a major plan set forth by the financial authorities to make Thailand (or rather, the capital city Bangkok) an international financial centre, at least on a regional level (Nolan 1990; Vichratith 1990, 1991; *Bangkok Bank Monthly Review* 1991).

So far, the government of Thailand has made substantial progress toward each of its liberalization plans and hopefully the process will gradually result in a more efficient, open, and competitive market where capital is allowed to move freely from one country to another (see

Annuar *et al.* 1988 for a detailed discussion of the definition of efficient capital markets). However, for any securities market to be informationally efficient the market must be able to adjust rapidly to new information and any changes in prices are random (Fama, 1970); its returns must be characterized by lack of any ex-post regularities, such as seasonality in returns, the weekend effect, or the January effect. The existence of a market regularity implies informational inefficiency if investors could use the regularity to devise a trading strategy that would consistently yield above-normal returns, net of transaction costs. Thus, to test whether Thai financial liberalization has led to efficiency in the Thai Stock Market, this paper proposes to test for the regularity of the weekend effect.

The purpose of this paper is to test empirically whether the Thai Stock Market has become efficient after the government's implementation of some major steps toward financial liberalization. The trading time model (weekend effect), along with the non-parametric technique as a supporting test, were employed to test the efficiency of the market, using daily returns of a portfolio of 29 stocks in the financial sector traded in the Thai Stock Market, as well as of each individual stock, from September 1988 to January 1991. This paper is organized as follows: firstly, a brief description of the financial liberalization process in Thailand and the growth of the Thai Stock Market in recent years. This is followed by a review of previous research on the day-of-the-week effect, the set-up of the testing model (trading time model and the non-parametric technique) including a description of the data used, and finally, the empirical results of the model and conclusions.

Execution of Financial Liberalization in Thailand

Since the late 1980s, various plans and instruments for Thailand's financial liberalization have been implemented: a) the ceiling on interest rates on fixed deposits was abolished on March 1, 1989, and the ceilings on savings deposit and credit interest rates will be eliminated in the near future (*Bangkok Bank Monthly Review* 1990); b) in 1989, the Finance Ministry invited foreign banks to apply for licences to operate branches in the country, with a narrow scope of business engagement initially (Vichratith 1990); c) on May 21, 1990, the Thai government announced its acceptance of Article 8 of the IMF Agreement to liberalize foreign exchange controls (*Bangkok Bank Monthly Review* 1990a); d) private business and other private parties could apply for permission to open foreign exchange accounts with banks abroad; individual and juristic entities would be allowed to take out of the country up to US $5 million per year of their capital for direct investment abroad without permission from the Bank of Thailand; and people domiciled abroad would be permitted to open baht accounts in Thailand (*Bangkok Bank Monthly Review* 1991); e) the development of commercial paper (including that denominated in foreign currenceis) must have guidelines to meet international standards and be in line with the changing economic conditions of the country, and both the commercial paper market and the stock market would be authorized to be under one supervisory body, the Stock Exchange Commission (*Bangkok Post* 1991); f) more relaxation of foreign exchange control was put into effect on April 1, 1991 - capital brought into Thailand is no longer required to be registered with the Bank of Thailand and can be repatriated freely along with earnings (Vichratith 1991).

With more activity in Thailand's financial market in recent years, the relatively new, emerging, and small Thai Stock Market has shown remarkable progress in its development and has mobilized domestic savings to help finance business investment. At the same time, significant inflows of foreign capital have also financed business investment (Ying 1990). Since the late 1980s, the Stock Exchange of Thailand Index (SET), with a base of 100 in 1983, increased to as high as 684 in 1989 and fluctuated around the 500 level in 1990 (Table 1). The trading value and volume of corporate scurities have increased many-fold; however, the government has issued fewer securities in recent years, reflecting the improved position of its fiscal budget. The surge in stock prices reflects an expansion and liberalizaton of the financial sector domestically and internationally, along with the economic growth of the country.

Previous Relevant Research on the Day-of-the-Week Effect

A number of apparent anomalies in stock market price behaviour have been documented in professional and academic journals in recent years. One such deviation which has become a regular feature is the day-of-the-week effect on

TABLE 1
Thai Stock Market (value: million baht)
(1983 - 1990)

Year	Corp. securities		Govt. securities		SET Index (1983 = 100)		
	Unit (Mil.)	Value (Mil. Baht)	Unit (Mil.)	Value (Mil. Baht)	High	Low	Closed
1983	71.2	9.120.6	1.73	203.4	100.00	100.00	
1984	83.3	10,595.2	1.85	276.0	97.62	104.73	105.82
1985	99.3	15,333.9	7.04	1,147.6	106.55	108.04	100.36
1986	153.7	24,993.4	6.32	4,854.7	140.19	103.56	154.09
1987	923.6	122,138.5	1.27	1,282.4	318.72	165.32	211.90
1988	1,579.6	156,457.2	.21	192.0	267.93	294.72	287.60
1989	3,253.6	377,028.2	.27	38.8	592.61	318.38	653.82
1990	8,243.9	627,232.8	.08	70.5	770.95	442.95	455.76

Sources: (1) Securities exchange of Thailand
(2) Bangkok Bank Monthly Review (from various issues).

stock markets around the world. With respect to the U.S. stock market, several studies have verified such a pattern. French (1980) first reported this effect for daily returns of the S & P Composite Index over the period from 1953 to 1977. Gibbons and Hess (1981) confirmed the effect for CRSP stocks for both equally-weighted and value-weighted portfolios for the period 1962 to 1978; and Keim and Stambaugh (1984) confirmed the effect as far back as 1928 for various indexes, portfolios, and time periods. Rogalski (1984) attributed the weekend effect to non-trading since the return is impounded at the opening price on Monday. In empirical studies of other stock markets in Asia, Jaffe and Westerfield (1985) observed the day-of-the-week effect in Japan; Aggarwal and Rivoli (1989) reported it in Hong Kong, Singapore, and the Philippines for 1976-1988; Annuar *et al.* (1988) reported it in Malaysia; McGowan and Collier (1990), however, noted no weekend effect for Hong Kong from the 1983-86 data (although it had been observed in 1982) and Kim (1991) found no conclusive presence of the day-of-the-week effect in Korea since each outcome depended on data used for the period in the study.

Although there have been a few studies on the Thai Stock Market, their results based on the capital asset pricing model have shown an inefficient market; besides, the data used were derived from the period prior to the mid-1980s (Sareewiwithana and Malone 1985; Sareewiwithana and Isabell 1985). Since the late 1980s, Thailand has embarked on the new policy of financial liberalization to support its economic development policy. To date, practically no study has tested the hypothesis of the day-of-the-week effect on the market. However, the Thai Stock Market is still relatively new and emerging and is smaller, and less developed than the other NICs' markets in the Pacific Rim, a fact which lends interest to this study.

The Trading Time Model, the Non-parametric Technique, and the Data

The trading time model is used to test the day-of-the-week effect on the Thai Stock Market. The model postulates that the rate of return for each day is constant and equal. Specifically, the model can be mathematically expressed as

$$R_t = a_1 + a_2 D_{2t} + a_3 D_{3t} + a_4 D_{4t} + a_5 D_{5t} + et \quad (1)$$

where t = the time-period ($t = 1, \ldots, n$),
R_t = the return for day t,
$D_{2t} - D_{5t}$ = dummy variables and are 1 for trading days Tuesday to Friday, and zero for Monday,
and $e = N \sim (0, \delta^2)$.

The intercept term, a_1, is the return for Monday, and the day-of-the-week coefficients, a_2 to a_5, are the differences between the expected return for Monday and the expected return of each of the other trading days. If the expected returns are the same for each day of the week in

the overall period of this study, the model suggests that the estimated day-of-the-week coefficients a_2 to a_5 will be close to zero and the estimated F-statistic, testing the hypothesis, should not be significant.

In addition, non-parametric testing (the Mann-Whitney test) is used to examine whether the distribution of the Monday return is identical to the distributions of Tuesday to Friday. The Mann-Whitney test could help to assure the result of the trading time model, especially when the sample size is small.

The data used in this analysis were the daily closing prices of 29 stocks in the financial sector on the Thai Stock Market, for the period from September 1, 1988 to January 4, 1991. Using each day's closing price, a return as the percentage change in the value of the price from the previous day for each stock is computed. Subsequently, the computed returns are used in the regression model (equation 1), as well as in the non-parametric technique; specifically the least-squares technique is employed to estimate the parameters of the trading time model.

Empirical Results

The means of the daily rates of return for each day of the entire period of this study, for a portfolio of 29 stocks as well as for each individual stock, are provided in Table 2. The Wednesday to Friday returns of the 29 stocks were found to be negative, and the returns for

TABLE 2
Daily rates of return, standard deviations (SD), and coefficient of variations (CV) for stock traded on the Thai Stock Exchange

			Monday	Tuesday	Wednesday	Thursday	Friday
All Firms		Mean	0.00105	0.00102	–0.00044	–0.00154	–0.00289
		SD	0.02583	0.2103	0.02075	0.01963	0.0.06519
		CV	0.04048	0.04858	–0.02126	0.07833	–0.04436
Firm	1	Mean	0.00259	0.00326	–0.00011	–0.00093	–0.02443
		SD	0.04416	0.03764	0.03796	0.03339	0.32343
		CV	0.05870	0.08661	–0.00297	–0.02784	–0.07552
	2	Mean	0.00134	–0.00013	0.00047	–0.00175	0.00541
		SD	0.04254	0.04239	0.03600	0.03723	0.03472
		CV	0.03145	–0.00315	0.01303	–0.04705	0.15580
	3	Mean	–0.00197	0.00211	0.00072	–0.00188	0.00112
		SD	0.02288	0.02313	0.02148	0.02075	0.01744
		CV	–0.08602	0.09115	0.03332	–0.09059	0.06435
	4	Mean	–0.00020	0.00169	–0.00303	0.00188	0.00564
		SD	0.03837	0.03333	0.02884	0.03024	0.03680
		CV	–0.00520	0.05076	–0.10512	0.06232	0.15320
	5	Mean	0.00324	0.00089	0.00051	–0.00087	–0.01816
		SD	0.04571	0.04023	0.03931	0.04217	0.20781
		CV	0.07077	0.02221	0.01286	–0.02064	–0.08740
	6	Mean	0.00201	–0.00282	–0.00058	–0.00060	0.00279
		SD	0.03372	0.03045	0.02731	0.02628	0.02386
		CV	0.05965	–0.09247	–0.02137	–0.02277	0.11673
	7	Mean	0.00267	–0.00147	–0.00201	–0.00017	0.00655
		SD	0.04614	0.04037	0.03801	0.03830	0.03481
		CV	0.05795	–0.03632	–0.05292	–0.00439	0.18819
	8	Mean	0.00025	0.00056	–0.02131	–0.00369	–0.00125
		SD	0.02564	0.02898	0.27634	0.02350	0.02580
		CV	0.00960	0.01916	–0.07711	–0.15691	–0.04847
	9	Mean	–0.00185	0.00285	0.00073	0.00128	–0.01461
		SD	0.04429	0.03767	0.03691	0.03731	0.24005
		CV	–0.04174	0.07562	0.01986	0.03438	–0.06085
	10	Mean	0.00292	–0.00198	0.00050	–0.00367	0.00413
		SD	0.03454	0.03344	0.02851	0.03355	0.02713
		CV	0.08467	–0.05921	0.01758	–0.10941	0.15215

Table 2 (*continued*)

11	Mean	–0.00008	0.00199	0.00028	–0.00339	–0.00005
	SD	0.04278	0.03049	0.03370	0.03326	0.03157
	CV	–0.00187	0.06533	0.00822	–0.10184	–0.00161
12	Mean	0.00353	0.00501	0.00066	0.00029	–0.01461
	SD	0.04943	0.04390	0.04011	0.03782	0.22322
	CV	0.07139	0.11403	0.01643	0.00761	–0.06547
13	Mean	0.00004	0.00302	0.00139	–0.00174	0.00442
	SD	0.04430	0.03801	0.03550	0.03701	0.03118
	CV	0.00086	0.07936	0.03904	–0.04706	0.14177
14	Mean	0.00020	0.00121	0.00127	–0.00430	0.00310
	SD	0.04290	0.03189	0.03056	0.03233	0.02933
	CV	0.00469	0.03793	0.04166	–0.13287	0.10557
15	Mean	–0.00092	–0.00134	0.00330	–0.00483	0.00197
	SD	0.03670	0.03131	0.03254	0.03288	0.02108
	CV	–0.02501	–0.04269	0.10131	–0.14704	0.09364
16	Mean	0.00134	0.00018	0.00158	–0.00453	0.00333
	SD	0.03348	0.02520	0.02605	0.02812	0.01992
	CV	0.04008	0.00708	0.06069	–0.16111	0.16731
17	Mean	0.00092	0.00227	0.00425	0.00112	–0.00082
	SD	0.01759	0.02362	0.02071	0.02816	0.02201
	CV	0.05255	0.09619	0.20523	0.03993	–0.03732
18	Mean	0.00213	0.00065	0.00015	–0.00085	–0.01628
	SD	0.04246	0.03900	0.03580	0.04033	0.26554
	CV	0.05026	0.01676	0.00431	–0.02101	–0.06130
19	Mean	0.00203	0.00084	–0.00478	–0.00172	0.00529
	SD	0.03362	0.03003	0.03667	0.02771	0.02453
	CV	0.06047	0.02802	–0.13037	–0.06218	0.21558
20	Mean	0.00286	–0.00155	–0.00092	–0.00377	0.00427
	SD	0.03502	0.03712	0.02897	0.02753	0.02727
	CV	0.08156	–0.04169	–0.03190	–0.13865	0.15644
21	Mean	0.00120	0.00280	0.00311	–0.00132	0.00029
	SD	0.01733	0.01848	0.01961	0.01843	0.01986
	CV	0.06922	0.15124	0.15839	–0.07149	0.01443
22	Mean	0.00009	–0.00019	0.000127	–0.00389	0.00195
	SD	0.03354	0.02881	0.02852	0.02352	0.01827
	CV	0.00271	–0.00673	0.04457	–0.16526	0.10649
23	Mean	0.00008	0.00138	0.00225	–0.00322	–0.02662
	SD	0.02569	0.02227	0.02270	0.01847	0.30792
	CV	0.00316	0.06191	0.09933	–0.17418	–0.08643
24	Mean	0.00134	0.00151	–0.00019	0.00334	0.00130
	SD	0.03495	0.03359	0.03041	0.03110	0.02747
	CV	0.03830	0.04486	–0.00612	0.10737	0.04738
25	Mean	0.00017	0.00230	0.00246	0.00036	–0.02065
	SD	0.02162	0.02098	0.02765	0.02622	0.27548
	CV	0.00787	0.10969	0.08901	0.01357	–0.07497
26	Mean	–0.00232	–0.00017	–0.00375	–0.00152	0.00305
	SD	0.03878	0.03045	0.03000	0.02700	0.02814
	cv	–0.05983	–0.00546	–0.12501	–0.05646	0.10835
27	Mean	0.00513	0.00245	–0.00015	–0.00372	–0.00219
	SD	0.03564	0.03033	0.02501	0.02484	0.02390
	CV	0.14404	0.08065	–0.00607	–0.14993	–0.09169
28	Mean	0.00119	0.00387	0.00000	0.00138	0.00316
	SD	0.04661	0.004004	0.03846	0.03770	0.03825
	CV	0.02543	0.09663	0.00001	0.03656	0.08249
29	Mean	0.00038	–0.00156	–0.00085	–0.00188	–0.00193
	SD	0.01989	0.02524	0.02562	0.02178	0.01682
	CV	0.01908	–0.06184	–0.03302	–0.08648	–0.11494

Note: These returns are defined as $R_t = \text{In } (P_t/P_t - 1)*100$, where P_t is the daily price at time t.

the other two days positive, with the highest return occurring on Monday; taken individually, most firms had the same pattern. In terms of ranking from highest to lowest rates of return, they were Monday and Tuesday, respectively; however, the volatility of return was highest on Friday, and second on Tuesday. The results do not seem to follow the pattern of high and positive returns on the last trading day and the first trading day of the week, contrary to the pattern found in other studies of stock markets in Hong Kong, Singapore, Malaysia, the Philippines, South Korea, Japan, and the U.S. (Annuar *et al.* 1988; Aggarval and Rivoli 1989). Nevertheless, more statistical tests are needed to verify the results. Table 3 shows the estimated parameters of the trading time model, including statistical testing results for a portfolio of 29 stocks and for each separate individual firm. None of the F-statistics was significant at 5 per cent, indicating the existence of the same expected returns for each day of the week; therefore, the hypothesis that the rates of return are equal for every day of the week is not rejected.

Furthermore, the results of the non-parametric test (the Mann-Whitney test) for the portfolio of 29 stocks are provided inTable 4. None of the Zu values (one value for each day) is statistically significant at 5 per cent, implying that the distribution of Monday returns is iden-

TABLE 3
Estimated parameters and F–statistics of the trading time model

Stock ID	a_1	a_2	a_3	a_4	a_5	R–squared	F–stat
All firms	0.10457	–0.00242	–0.14868	–0.25831	–0.39373	0.00184	0.26405
	(0.34294)	(0.47541)	(0.47064)	(0.47156)	(0.47250)		
1	0.25924	0.06679	–0.27049	–0.35221	–2.70178	0.00484	0.69725
	(1.45782)	(2.02093)	(2.00064)	(2.00457)	(2.00857)		
2	0.13381	–0.14717	–0.08690	–0.30899	0.40712	0.00395	0.56831
	(0.37491)	(0.51972)	(0.51450)	(0.51552)	(0.51654)		
3	–0.19686	0.40768	0.26843	0.00885	0.30907	0.00599	0.86374
	(0.20580)	(0.28530)	(0.28243)	(0.28299)	(0.28356)		
4	–0.01994	0.18911	–0.28320	0.20839	0.58367	0.00731	1.05539
	(0.32625)	(0.45227)	(0.44773)	(0.44861)	(0.44950)		
5	0.32351	–0.23416	–0.27298	–0.41057	–2.13990	0.00595	0.85725
	(0.98145)	(1.36055)	(1.34689)	(1.34954)	(1.35223)		
6	0.20111	–0.48266	–0.25949	–0.26093	0.07741	0.00502	0.72228
	(0.27577)	(0.38229)	(0.37845)	(0.37919)	(0.37995)		
7	0.26740	–0.41401	–0.46852	–0.28421	0.38764	0.00652	0.93968
	(0.38410)	(0.53247)	(0.52712)	(0.52816)	(0.52921)		
8.	0.02463	0.03090	–2.15564	–0.39339	–0.14965	0.00426	0.61304
	(1.24373)	(1.72414)	(1.70682)	(1.71018)	(1.71359)		
9.	–0.18486	0.46968	0.25818	0.31315	–1.27582	0.00316	0.45409
	(1.10648)	(1.53388)	(1.51848)	(1.52147)	(1.52450)		
10	0.29248	–0.49047	–0.24237	–0.65957	0.12029	0.00861	1.24431
	(0.30592)	(0.42408)	(0.41983)	(0.42065)	(0.42149)		
11	–0.00799	0.20720	0.03569	–0.33072	0.00291	0.00262	0.37688
	(0.33471)	(0.46399)	(0.45933)	(0.46024)	(0.46115)		
12	0.35290	0.14765	–0.28698	–0.32411	–1.81439	0.00429	0.61694
	(1.04765)	(1.45233)	(1.43774)	(1.44057)	(1.44344)		
13	0.00382	0.29783	0.13478	–0.17799	0.43825	0.00344	0.49436
	(0.36204)	(0.50189)	(0.49685)	(0.49783)	(0.49882)		
14	0.02013	0.10086	0.10721	–0.44967	0.28953	0.00563	0.81045
	(0.32572)	(0.45154)	(o.44700)	(0.44788)	(0.44878)		
15	–0.09178	–0.04186	0.42142	–0.39172	0.28920	0.00847	1.22365
	(0.30330)	(0.42045)	(0.41623)	(0.41705)	(0.41788)		
16	0.13420	–0.11636	0.02393	–0.58722	0.19902	0.01006	1.45597
	(0.26000)	(0.36043)	(0.35681)	(0.35751)	(0.35823)		

Table 3 (*continued*)

17	0.09242	0.13475	0.33261	0.02002	–0.17453	0.00556	0.80040
	(0.22125)	(0.30671)	(0.30363)	(0.30422)	(0.30483)		
18	0.21339	–0.14803	–0.19796	–0.29812	–1.84123	0.00299	0.42986
	(1.21437)	(1.68344)	(1.66653)	(1.66981)	(1.67314)		
19	0.20328	–0.11914	–0.68129	–0.37561	0.32558	0.01251	1.81468
	(0.29886)	(0.41430)	(0.41014)	(0.41094)	(0.41176)		
20	0.28563	–0.44036	–0.37805	–0.66241	0.14102	0.00894	1.29242
	(0.30423)	(0.42174)	(0.41750)	(0.41832)	(0.41916)		
21	0.11995	0.15957	0.19068	–0.25171	–0.09130	0.00775	1.11873
	(0.18259)	(0.25312)	(0.25058)	(0.25107)	(0.25157)		
22	0.00910	–0.02849	0.11803	–0.39779	0.18543	0.00583	0.84057
	(0.26104)	(0.36186)	(0.35823)	(0.35894)	(0.35965)		
23	0.00811	0.12976	0.21735	–0.32975	–2.66964	0.00607	0.87531
	(1.36525)	(1.89261)	(1.87360)	(1.87729)	(1.88103)		
24	0.13385	0.01684	–0.15247	0.20002	–0.00371	0.00132	0.18872
	(0.30615)	(0.42441)	(0.42014)	(0.42097)	(0.42181)		
25	0.01723	0.21288	0.22892	0.01837	–2.08244	0.00500	0.71974
	(1.22741)	(1.70152)	(1.68443)	(1.68774)	(1.69111)		
26	–0.23202	0.21538	–0.14299	0.07958	0.536690	0.00568	0.81789
	(0.30073)	(0.41690)	(0.41271)	(0.41352)	(0.41435)		
27	0.51331	–0.26871	–0.52850	–0.88576	–0.73245	0.01241	1.79954
	(0.27289)	(0.37450)	(0.37524)	(0.37599)			
28	0.11851	0.26838	–0.11848	0.01933	0.19701	0.00124	0.17814
	(0.39040)	(0.54120)	(0.53577)	(0.53682)	(0.53789)		
29	0.03797	–0.19408	–0.12256	–0.22633	–0.23136	0.00147	0.21061
	(0.21524)	(0.29838)	(0.29539)	(0.29597)	(0.29656)		

Note: The standard error of the coefficient is in parenthesis. The F–statistics are from the test of hypothesis that a_2 to a_5 are zero. The F–distribution value for the degrees of freedom at (4,578) and the 5 per cent significance level is 2.37.

tical to the distribution of those for Tuesday to Friday. Basically the Mann-Whitney test supports the outcome of the trading time model.

CONCLUSION

This study presents an empirical analysis of the pattern of daily equity returns and the day-of-the-week-effect on 29 individual firms in the financial sector of the Thai Stock Market during the period from September 1988 to January 1991 (following the government's embarkation on a policy of making Bangkok an international financial centre). The test does not show any evidence of the weekend effect. The overall results suggest that since the inception of the financial liberalization policy the Thai Stock Market has been fairly efficient over the period of this study, which contradicts the results of previous studies on the same market where results were derived from different models based

TABLE 4

Non-parametric testing (Mann-Whitney test) on daily rates or return of a portfolio of 29 stocks on the Thai Stock Market (September 1, 1989 - January 4, 1991)

Value of:	Tuesday	Wednesday	Thursday	Friday
U-Stat	6348	6476	6764	6080
Mu	6095	6360	6307	6254
Su	474.884	490.530	487.405	484.278
Zu	0.533	0.237	0.938	-0.359

Note: None of these Zu values (one for each day) is statistically significant at the 5 percent level.

on data from an earlier period. The differing results may be due to the different data used; empirical cases supporting this point concern the stock markets of South Korean (Kim 1991) and Hong Kong (McGowan and Collier 1990). Thus, conclusive results demonstrating an efficient stock market in Thailand cannot be drawn from this study: at best, the findings are sample- or data-specific; more comprehensive studies, with additional information, are needed.

Suggestions for Further Research

Further research on the weekend effect in the following areas is proposed:

(1) a comprehensive examination of broad market indexes,
(2) a classification of the returns of individual firm by market, firm size, degree of thinness of trading, etc.,
(3) extending the period under study; this factor was considered in this study but broadening the data base (ending January 1992) was not feasible because the market was highly volatile from early 1990 till mid-1992 in view of the anticipated political turmoil.

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