
Day-of-the-week effects in emerging stock markets

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This study uses both unconditional and conditional risk analysis to investigate the day-of-the-week effect in 21 emerging stock markets. In addition, risk is allowed to vary across the days of the week. Different models produce different results but overall day-of-the-week effects are present for the Philippines, Pakistan and Taiwan even after adjusting for market risk. The results in this study show that while the day-of-the-week effect is not present in the majority of emerging stock markets studied, some emerging stock markets do exhibit strong day-of-the-week effects even after accounting for conditional market risk.

I. Introduction

The day-of-the-week effect continues to be one of the more interesting stock market anomalies to study because the existence of significant day-of-the-week effects would be very useful for developing profitable trading strategies. Investors could buy stocks on days with abnormally low returns and sell stocks on days with abnormally high returns. Published research for the United States and Canada finds that daily stock market returns tend to be lower on Mondays and higher on Fridays (French, 1980; Gibbons and Hess, 1981; Rogalski, 1984; Smirlock and Starks, 1986; Flannery and Protopapadakis, 1988; Kohers and Kohers, 1995). In contrast, daily returns in Pacific Rim countries tend to be lowest on Tuesdays (Jaffe and Westerfield, 1985; Dubois and Louvet, 1996; Brooks and Persaud, 2001).

To date, most of the published research on day-of-the-week effects has focused on the developed stock markets. This study examines the day-of-the-week effect in 21 emerging stock markets and extends the existing literature by including unconditional and conditional risk factors in the analysis. In addition, risk is allowed to vary across the days of the week. This study also differs from previous research by examining excess market returns in US dollars which

is more relevant from an international investor perspective.

II. Methodology and Data

The data for this study consist of daily closing prices on 21 emerging stock markets and the Morgan Stanley Capital International (MSCI) World index. The data are available from Datastream and cover the period 31 December 1992 to 31 October 2003 for a total of 2827 observations. All of the data are in US dollars so that investment decisions are from the perspective of a US investor or an international investor who has a US dollar trading account. The countries included in the study are, Argentina (ARG), Brazil (BRA), Chile (CHL), Colombia (COL), India (IND), Indonesia (IDN), Israel (ISR), Jordan (JOR), Korea (KOR), Malaysia (MYS), Mexico (MEX), Pakistan (PAK), Peru (PER), Philippines (PHL), Poland (POL), Sri Lanka (LKA), Taiwan (TAI), Thailand (THA), Turkey (TUR), Venezuela (VEN) and South Africa (ZAF). Daily excess stock returns are calculated by subtracting the daily yield on a 3-month US T bill from the continuously compounded daily stock returns.

In this study, five different models are estimated and tested. In Model 1, the excess stock returns (R_t)

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for each country are regressed on five daily dummy variables.

$$R_{it} = \sum_{j=1}^5 \delta_{ij} D_{jt} + \varepsilon_{1it} \quad (1)$$

where $I=1, \dots, 21$ (the number of countries in the sample) and D_{1t}, \dots, D_{5t} represents the day-of-the-week (0, 1) dummy variables for Monday, ..., Friday. The error term is assumed to be independent and identically distributed with a zero mean and constant variance. Equation 1 is the simplest test for stock market day-of-the-week effects. Statistically significant estimated coefficients in Equation 1 provide evidence of day-of-the-week effects. Model 1 does not, however, include any risk factors. Daily returns can be higher (lower) on different days of the week because risk is higher (lower). Model 2 includes daily dummy variables and a market risk factor (MR) provided by the excess returns on the MSCI World stock market index (Brooks and Persaud, 2001).

$$R_{it} = \sum_{j=1}^5 \delta_{ij} D_{jt} + \beta_i MR_t + \varepsilon_{2it} \quad (2)$$

In Model 2, the risk factor is constant across the week. Model 2 can be improved upon by adding slope interaction dummy variables that allow risk to vary across the days of the week (Model 3).

$$R_{it} = \sum_{j=1}^5 \delta_{ij} D_{jt} + \sum_{j=1}^5 \beta_{ij} (D_{jt} MR_t) + \varepsilon_{3it} \quad (3)$$

Models 1–3 are unconditional models where World market risk is assumed to have a symmetric impact on emerging country stock market returns. An alternative approach to testing for day-of-the-week effects is to use a conditional model.

There may be an asymmetric relationship between stock returns and market risk where positive market returns have a different impact on stock returns than do negative market returns (Fletcher, 2000; Pettengill *et al.*, 1995). Model 4 is a conditional model that relates stock returns to market risk.

$$R_{it} = \sum_{j=1}^5 \delta_{ij} D_{jt} + \beta_{iu} D_{ut} MR_t + \beta_{id} D_{dt} MR_t + \varepsilon_{4it} \quad (4)$$

where D_{ut} (D_{dt}) is a dummy variable takes on a value of 1 when MR_t are positive (non- positive) and 0 otherwise.

Model 5 is a conditional model relating excess stock returns to market returns that also includes slope interaction terms between the day-of-the-week variables and the up (down) excess market returns.

This model allows conditional risk to vary across the days-of-the-week.

$$R_{it} = \sum_{j=1}^5 \delta_{ij} D_{jt} + \sum_{j=1}^5 \beta_{iju} D_{jt} (D_{ut} MR_t) + \sum_{j=1}^5 \beta_{ijd} D_{jt} (D_{dt} MR_t) + \varepsilon_{5it} \quad (5)$$

III. Results

The results from estimating Model 1 indicate some evidence of day-of-the-week effects (Table 1). Malaysia, Taiwan, Thailand and Turkey each exhibit Monday effects. Pakistan and the Philippines have Tuesday effects, Turkey has a Thursday effect, and Taiwan and Turkey each have Friday effects. The results from estimating Model 2 show that the significant day-of-the-week effects found in Table 1 remain after adding in a market risk factor (Table 2). Moreover, some additional day-of-the-week effects are picked up (a Monday effect for Argentina and a Tuesday effect for Israel). The market betas are positive, less than unity and statistically significant for 17 of the 21 stock markets studied indicating that these stock markets are less risky than the world market. Estimation results for Model 3 show that the day-of-the-week effects detected in Table 2 remain (Table 3). The interaction terms do vary across the days-of-the-week. In the case of Argentina, for example, the interaction terms vary from a low of 0.229 (Tuesday) to a high of 0.763 (Monday).

Models 4 and 5 are conditional models that allow for asymmetric market effects. Model 4 is similar to Model 2 except that the market factor in Model 2 is replaced by a conditional variable that depends upon whether the market return is up or down (Table 4). The estimation results from Model 4 present a slightly different picture of the day-of-the-week effect as was previously seen in Tables 1–3. In particular, the Monday effect for Taiwan and the Tuesday effect for the Philippines both disappear. Monday effects are detected in Malaysia, Thailand and South Africa, Tuesday effects are detected in Indonesia, Israel and Pakistan, Wednesday effects are detected in Argentina, Thursday effects are detected in Turkey, and Friday effects are detected in Philippines, Taiwan and Turkey. Up market returns are statistically significant in eight out of the 21 market studies while down market returns are statistically significant in 15 out of the 21 market studies. The estimation results from Model 5 show that some of the day-of-the-week effects seen in Table 4 disappear with the addition of slope interaction terms (Table 5).

Table 1. Model I, no market risk factors

	ARG	BRA	CHL	COL	IND	IDN	ISR	JOR	KOR	MYS	MEX	PAK	PER	PHL	POL	LKA	TAI	THA	TUR	VEN	ZAF
Monday	-0.25	-0.06	-0.02	-0.01	0.078	-0.24	0.092	0.009	-0.04	-0.27	-0.02	0.127	-0.13	-0.04	0.046	-0.07	-0.22	-0.26	-0.40	-0.16	0.032
Tuesday	-1.95	-0.33	-0.29	-0.19	1.032	-1.79	1.293	0.163	-0.45	-3.38*	-0.27	1.582	-1.53	-0.46	0.258	-0.92	-2.56*	-3.14*	-2.40*	-1.09	0.433
Wednesday	-0.07	-0.14	-0.03	-0.09	0.033	0.155	-0.12	-0.03	-0.05	0.070	-0.16	-0.24	-0.10	-0.14	0.015	-0.13	-0.01	-0.02	-0.12	0.108	-0.03
Thursday	-0.89	-1.08	-0.75	-1.49	0.460	1.318	-1.72	-0.80	-0.62	1.004	-1.58	-2.82*	-1.49	-2.38*	0.158	-1.81	-0.21	-0.28	-0.89	0.839	-0.57
Friday	0.149	0.001	0.005	-0.10	0.047	-0.15	-0.08	0.008	-0.00	0.029	0.102	0.028	0.058	-0.11	-0.04	0.057	0.013	-0.00	-0.12	-0.19	-0.08
	1.670	0.011	0.108	-1.75	0.710	-1.24	-1.27	0.248	-0.03	0.308	1.327	0.404	0.952	-1.49	-0.53	0.886	0.217	-0.06	-0.88	-1.11	-1.65
	0.029	0.065	0.000	0.062	-0.03	-0.03	0.027	0.019	-0.00	0.002	-0.01	0.121	0.100	-0.08	-0.08	0.061	-0.00	-0.03	0.347	0.131	-0.01
	0.299	0.474	0.005	0.889	-0.56	-0.21	0.408	0.673	-0.00	0.028	-0.13	1.290	1.750	-1.53	-0.84	0.813	-0.12	-0.30	2.326*	1.265	-0.31
	0.048	0.243	0.062	0.094	-0.13	0.086	0.066	-0.03	0.103	0.110	0.081	-0.14	0.192	0.153	0.273	0.085	0.245	0.117	0.406	0.149	0.081
	0.440	1.479	0.840	1.101	-1.70	0.602	0.889	-0.81	0.623	0.920	0.838	-1.02	1.807	1.205	1.726	0.794	2.008*	0.683	2.300*	1.102	1.092

Notes: Country identifiers given in Section II of the paper. The first cell contains the coefficient estimate and the second cell contains the t -statistic. * denotes a coefficient is statistically significant at the 5% level. Newey and West (1987) robust standard errors used in calculating the t -statistics.

Table 2. Model 2, market risk factor

	ARG	BRA	CHL	COL	IND	IDN	ISR	JOR	KOR	MYS	MEX	PAK	PER	PHL	POL	LKA	TAI	THA	TUR	VEN	ZAF
Monday	-0.25	-0.06	-0.02	-0.01	0.077	-0.25	0.087	0.009	-0.04	-0.27	-0.02	0.127	-0.13	-0.04	0.042	-0.07	-0.22	-0.26	-0.40	-0.16	0.028
	-2.01*	-0.37	-0.35	-0.21	1.027	-1.82	1.289	0.162	-0.49	-3.40*	-0.36	1.585	-1.56	-0.48	0.240	-0.93	-2.61*	-3.21*	-2.44*	-1.11	0.405
Tuesday	-0.08	-0.16	-0.04	-0.10	0.029	0.145	-0.14	-0.03	-0.06	0.067	-0.18	-0.24	-0.11	-0.15	0.002	-0.14	-0.02	-0.03	-0.13	0.102	-0.04
	-1.03	-1.24	-1.02	-1.54	0.409	1.241	-2.03*	-0.81	-0.73	0.954	-1.82	-2.82*	-1.57	-2.44*	0.026	-1.85	-0.28	-0.34	-0.98	0.792	-0.80
Wednesday	0.150	0.003	0.006	-0.10	0.048	-0.15	-0.08	0.008	-0.00	0.030	0.103	0.028	0.059	-0.11	-0.04	0.057	0.014	-0.00	-0.12	-0.19	-0.08
	1.704	0.027	0.133	-1.74	0.714	-1.24	-1.35	0.249	-0.02	0.311	1.423	0.403	0.969	-1.48	-0.53	0.896	0.224	-0.05	-0.87	-1.11	-1.67
Thursday	0.023	0.054	-0.00	0.060	-0.03	-0.03	0.019	0.018	-0.00	0.000	-0.02	0.121	0.097	-0.09	-0.09	0.059	-0.01	-0.03	0.341	0.128	-0.02
	0.238	0.404	-0.09	0.867	-0.59	-0.24	0.310	0.668	-0.06	0.002	-0.27	1.294	1.710	-1.57	-0.92	0.794	-0.17	-0.34	2.310*	1.236	-0.46
Friday	0.040	0.230	0.055	0.092	-0.13	0.080	0.055	-0.03	0.096	0.108	0.068	-0.14	0.188	0.150	0.265	0.083	0.242	0.113	0.398	0.145	0.074
	0.379	1.431	0.764	1.075	-1.74	0.561	0.788	-0.82	0.588	0.906	0.748	-1.01	1.770	1.191	1.681	0.776	1.993*	0.662	2.276*	1.079	1.020
MR	0.489	0.830	0.439	0.145	0.153	0.385	0.683	0.010	0.429	0.151	0.821	-0.03	0.260	0.160	0.542	0.121	0.219	0.267	0.485	0.249	0.496
	5.288*	6.414*	7.198*	2.661*	3.355*	3.642*	12.35*	0.456	6.454*	1.939	11.96*	-0.64	3.412*	2.360*	6.591*	1.881	4.025*	3.252*	3.892*	2.134*	7.650*

Notes: See Table 1.

Table 3. Model 3, day and market risk factor

	ARG	BRA	CHL	COL	IND	IDN	ISR	JOR	KOR	MYS	MEX	PAK	PER	PHL	POL	LKA	TAI	THA	TUR	VEN	ZAF
Monday	-0.25	-0.06	-0.02	-0.01	0.076	-0.25	0.088	0.008	-0.04	-0.27	-0.02	0.128	-0.13	-0.04	0.041	-0.08	-0.22	-0.26	-0.40	-0.16	0.028
Tuesday	-2.02*	-0.38	-0.37	-0.23	1.009	-1.83	1.292	0.158	-0.51	-3.39*	-0.36	1.585	-1.56	-0.49	0.236	-0.94	-2.62*	-3.22*	-2.44*	-1.11	0.395
Wednesday	-0.97	-1.22	-1.00	-1.49	0.445	1.287	-2.04*	-0.79	-0.68	0.963	-1.82	-2.82*	-1.55	-2.39*	0.003	-0.13	-0.02	-0.03	-0.12	0.102	-0.04
Thursday	0.150	0.003	0.006	-0.10	0.048	-0.15	-0.08	0.009	-0.00	0.029	0.103	0.028	0.059	-0.11	-0.04	0.057	0.013	-0.00	-0.12	-0.19	-0.08
Friday	1.701	0.027	0.129	-1.75	0.711	-1.24	-1.35	0.254	-0.02	0.306	1.420	0.397	0.968	-1.49	-0.53	0.901	0.215	-0.06	-0.87	-1.11	-1.68
Monday MR	0.024	0.057	-0.00	0.060	-0.03	-0.03	0.018	0.018	-0.00	0.000	-0.02	0.119	0.097	-0.09	-0.09	0.059	-0.01	-0.03	0.340	0.130	-0.49
Tuesday MR	0.254	0.424	-0.08	0.872	-0.57	-0.23	0.294	0.664	-0.04	0.010	-0.28	1.279	1.719	-1.56	-0.92	0.798	-0.16	-0.34	2.309*	1.259	-0.02
Wednesday MR	0.038	0.232	0.057	0.092	-0.13	0.082	0.056	-0.03	0.096	0.105	0.067	-0.14	0.190	0.147	0.266	0.085	0.241	0.110	0.398	0.145	0.074
Thursday MR	0.364	1.441	0.790	1.081	-1.74	0.576	0.807	-0.79	0.583	0.885	0.744	-1.01	1.789	1.172	1.693	0.790	1.992*	0.647	2.290*	1.080	1.029
Friday MR	0.763	1.211	0.702	0.333	0.392	0.713	0.646	0.044	0.679	0.248	0.885	-0.05	0.459	0.327	0.642	0.306	0.400	0.417	0.655	0.602	0.557
Monday MR	2.566*	2.561*	2.983*	1.829	3.381*	2.239*	6.802*	0.583	5.083*	1.051	4.514*	-0.59	1.620	1.581	2.280*	1.371	2.574*	2.025*	1.712	1.494	2.455*
Tuesday MR	0.229	0.684	0.400	0.017	0.052	0.203	0.701	-0.03	0.220	0.119	0.765	-0.00	0.166	0.024	0.492	-0.07	0.212	0.035	0.215	0.231	0.517
Wednesday MR	1.998*	4.885*	6.972*	0.264	0.734	1.286	5.900*	-0.70	1.512	1.401	7.019*	-0.08	2.007*	0.336	5.349*	-0.89	1.744	0.360	0.913	2.096*	7.315*
Thursday MR	0.412	0.819	0.352	0.058	0.063	0.519	0.706	0.097	0.440	-0.11	0.681	-0.23	0.246	-0.07	0.552	0.219	-0.03	0.130	0.522	-0.02	0.332
Friday MR	2.200*	5.473*	4.659*	0.639	0.595	1.641	7.320*	1.741	3.422*	-0.65	3.682*	-1.60	3.055*	-0.49	3.997*	2.190*	-0.32	0.556	2.201*	-0.08	3.019*
Monday MR	0.367	0.608	0.366	0.138	0.051	0.224	0.764	0.012	0.280	0.107	0.882	0.149	0.246	0.095	0.514	0.112	0.193	0.261	0.512	0.066	0.578
Tuesday MR	3.142*	4.783*	5.769*	1.915	0.658	1.350	8.615*	0.403	2.479*	1.213	11.26*	1.835	3.528*	1.708	5.501*	1.187	2.430*	2.663*	2.678*	0.509	8.906*
Wednesday MR	0.602	0.753	0.311	0.120	0.146	0.212	0.603	-0.06	0.474	0.344	0.856	-0.04	0.136	0.359	0.490	0.003	0.262	0.434	0.476	0.271	0.457
Thursday MR	4.300*	4.073*	4.413*	1.276	1.478	1.159	6.410*	-2.01*	2.844*	2.587*	7.148*	-0.29	1.437	2.436*	3.271*	0.029	2.457*	2.251*	2.097*	1.904	5.432*

Notes: See Table 1.

Table 4. Model 4, conditional market risk factor

	ARG	BRA	CHL	COL	IND	IDN	ISR	JOR	KOR	MYS	MEX	PAK	PER	PHL	POL	LKA	TAI	THA	TUR	VEN	ZAF
Monday	-0.14	-0.00	0.034	0.027	0.143	-0.01	0.061	0.028	0.053	-0.20	0.030	0.120	-0.05	0.096	0.077	-0.08	-0.08	-0.19	-0.30	-0.07	0.127
Tuesday	-1.30	-0.03	0.729	0.453	1.890	-0.12	0.808	0.496	0.524	-2.72*	0.423	1.318	-0.99	1.130	0.423	-1.18	-0.94	-2.26*	-1.93	-0.55	2.308*
Wednesday	0.016	-0.10	0.008	-0.06	0.089	0.361	-0.16	-0.01	0.024	0.134	-0.13	-0.24	-0.04	-0.02	0.034	-0.14	0.107	0.027	-0.04	0.187	0.044
Thursday	0.156	-0.59	0.122	-0.76	1.097	2.403*	-2.20*	-0.26	0.236	1.377	-1.10	-2.56*	-0.40	-0.30	0.274	-1.51	1.171	0.208	-0.25	1.045	0.548
Friday	0.249	0.058	0.059	-0.06	0.106	0.051	-0.10	0.026	0.087	0.095	0.155	0.022	0.131	0.007	-0.01	0.055	0.140	0.056	-0.03	-0.11	0.003
MR up	2.311*	0.360	0.837	-0.93	1.415	0.385	-1.55	0.598	0.947	0.858	1.869	0.296	1.423	0.091	-0.15	0.688	1.882	0.601	-0.20	-0.54	0.048
MR down	0.130	0.115	0.053	0.101	0.024	0.191	-0.00	0.037	0.092	0.071	0.035	0.114	0.176	0.043	-0.05	0.057	0.126	0.033	0.437	0.218	0.073
	1.064	0.604	0.665	1.199	0.321	0.996	-0.08	0.985	0.970	0.765	0.345	1.083	1.907	0.514	-0.45	0.614	1.658	0.268	2.333*	1.449	0.936
	0.145	0.289	0.112	0.132	-0.07	0.302	0.031	-0.01	0.192	0.177	0.123	-0.15	0.265	0.281	0.298	0.081	0.375	0.178	0.492	0.232	0.167
	1.091	1.413	1.171	1.346	-0.89	1.774	0.397	-0.34	1.094	1.312	1.120	-1.01	1.951	2.055*	1.662	0.669	2.664*	1.000	2.398*	1.310	1.723
	0.311	0.730	0.342	0.076	0.048	0.007	0.724	-0.02	0.266	0.033	0.728	-0.02	0.130	-0.06	0.486	0.124	-0.00	0.155	0.325	0.101	0.337
	2.545*	3.007*	4.380*	0.957	0.585	0.053	8.032*	-0.37	2.211*	0.373	7.934*	-0.23	1.282	-0.73	3.451*	1.336	-0.08	1.371	1.746	0.747	4.491*
	0.657	0.924	0.530	0.208	0.252	0.740	0.644	0.040	0.582	0.262	0.909	-0.04	0.382	0.369	0.595	0.118	0.433	0.372	0.635	0.389	0.645
	3.565*	4.137*	3.768*	1.850	3.472*	3.156*	7.975*	0.839	5.902*	1.633	6.010*	-0.51	2.238*	2.657*	3.878*	0.861	3.935*	2.299*	2.499*	1.396	4.367*

Notes: See Table 1.

Table 5. Model 5, day and conditional market risk factor

	ARG	BRA	CHL	COL	IND	IDN	ISR	JOR	KOR	MYS	MEX	PAK	PER	PHL	POL	LKA	TAI	THA	TUR	VEN	ZAF
Monday	0.066	-0.03	0.141	-0.02	0.194	0.200	0.023	0.088	0.190	0.084	0.182	0.202	0.030	0.331	0.325	0.119	0.122	0.052	0.246	0.123	0.381
Tuesday	0.312	-0.10	0.849	-0.16	1.685	0.799	0.250	0.901	1.434	0.488	1.210	1.886	0.150	2.024*	1.139	0.750	0.993	0.339	0.826	0.413	2.440*
Wednesday	0.078	0.033	0.068	0.012	0.029	0.306	-0.11	-0.09	-0.18	-0.01	-0.20	-0.33	-0.03	-0.07	0.027	-0.17	-0.14	-0.01	-0.34	0.318	0.002
Thursday	0.740	0.175	1.044	0.132	0.294	1.820	-1.02	-1.82	-1.33	-0.13	-1.34	-2.77*	-0.39	-0.81	0.193	-1.73	-1.11	-0.08	-1.50	1.466	0.030
Friday	0.091	-0.07	0.006	0.040	-0.03	0.129	-0.04	0.087	0.103	-0.08	0.073	-0.09	0.100	-0.21	-0.02	-0.03	0.070	-0.19	0.132	-0.54	-0.06
Monday up	0.653	-0.49	0.094	0.461	-0.28	0.505	-0.50	1.626	0.845	-0.51	0.483	-0.81	1.209	-1.83	-0.26	-0.47	0.788	-1.05	0.650	-1.69	-0.87
Tuesday up	-0.01	-0.04	-0.03	-0.01	0.061	0.088	-0.06	-0.00	0.084	0.056	-0.03	0.162	0.104	-0.07	-0.32	0.028	0.084	-0.01	-0.01	0.256	-0.04
Wednesday up	-0.11	-0.21	-0.45	-0.22	0.585	0.497	-0.70	-0.11	0.721	0.643	-0.31	1.192	1.414	-0.85	-2.26*	0.292	1.014	-0.13	-0.05	1.781	0.60
Thursday up	0.077	0.447	0.037	0.122	-0.01	0.099	0.033	-0.02	0.191	0.131	0.151	-0.10	0.242	0.339	0.277	-0.03	0.459	0.165	0.389	0.184	0.071
Friday up	0.520	1.808	0.346	1.009	-0.15	0.496	0.359	-0.28	0.873	0.844	1.191	-0.55	1.335	2.080*	1.196	-0.23	2.290*	0.781	1.891	1.010	0.699
Monday do	0.213	1.154	0.418	0.344	0.193	-0.05	0.755	-0.08	0.275	-0.35	0.530	-0.18	0.172	-0.30	0.164	-0.02	-0.18	-0.12	-0.45	0.113	-0.03
Tuesday do	0.687	1.245	1.680	1.465	0.826	-0.18	5.042*	-0.45	1.061	-1.40	2.804*	-1.14	0.544	-1.52	0.381	-0.11	-1.09	-0.55	-1.02	0.362	-0.23
Wednesday do	-0.03	0.362	0.209	-0.16	0.056	-0.05	0.646	0.082	0.415	0.255	0.808	0.156	0.044	-0.09	0.452	-0.00	0.424	0.005	0.574	-0.12	0.435
Thursday do	-0.16	1.445	2.234*	-1.51	0.465	-0.18	2.966*	1.281	1.851	1.650	3.606*	1.265	0.360	-0.72	2.975*	-0.04	2.022*	0.036	1.522	-0.56	3.398*
Friday do	0.516	0.963	0.351	-0.19	0.201	0.012	0.637	-0.04	0.254	0.087	0.734	-0.01	0.174	0.107	0.516	0.386	-0.13	0.464	0.074	0.596	0.297
Monday do	2.034*	3.982*	3.617*	-1.55	1.115	0.034	3.452*	-0.48	0.986	0.430	4.229*	-0.06	1.502	0.551	1.866	2.018*	-0.79	1.711	2.215	1.917	1.682
Tuesday do	0.432	0.778	0.410	0.268	-0.11	0.020	0.903	0.050	0.133	0.015	0.910	0.078	0.235	0.067	0.902	0.164	0.036	0.238	1.093	-0.14	0.611
Wednesday do	1.974*	2.887*	3.419*	2.062*	-0.65	0.072	6.032*	1.142	0.631	0.091	5.690*	0.491	1.878	0.599	4.897*	0.873	0.216	1.098	2.983*	-0.49	5.203*
Thursday do	0.535	0.378	0.347	0.068	-0.06	0.183	0.644	-0.09	0.308	0.299	0.710	-0.11	0.045	0.026	0.470	0.208	-0.11	0.340	0.492	0.204	0.463
Friday do	1.812	1.021	2.466*	0.379	-0.34	0.719	3.506*	-1.29	1.013	1.334	3.149*	-0.34	0.193	0.097	1.492	1.097	-0.47	0.932	1.274	0.740	2.885*
Monday do	1.230	1.260	0.944	0.325	0.562	1.365	0.554	0.157	1.023	0.761	1.187	0.048	0.702	0.864	1.049	0.592	0.899	0.877	1.596	1.019	1.063
Tuesday do	1.967*	1.572	1.826	0.867	3.177*	1.963*	3.200*	1.146	5.087*	1.513	2.722*	0.295	1.145	1.982*	1.995*	1.270	3.009*	2.034*	2.028*	1.124	2.128*
Wednesday do	0.502	1.020	0.598	0.211	0.048	0.475	0.759	-0.14	0.016	-0.02	0.721	-0.17	0.292	0.149	0.533	-0.13	-0.00	0.066	-0.16	0.606	0.602
Thursday do	2.771*	4.589*	6.292*	1.780	0.391	2.004*	4.269*	-1.94	0.061	-0.14	3.946*	-1.27	2.032*	1.161	3.111*	-1.15	-0.03	0.365	-0.33	2.281*	4.896*
Friday do	0.309	0.676	0.353	0.305	-0.07	1.019	0.774	0.233	0.623	-0.31	0.629	-0.44	0.317	-0.24	0.588	0.053	0.061	-0.19	0.965	-0.63	0.366
Monday do	0.798	2.750*	2.288*	1.569	-0.36	1.371	5.027*	2.090*	3.306*	-0.75	1.420	-1.43	2.318*	-0.84	4.015*	0.414	0.276	-0.36	2.037*	-0.92	1.911
Tuesday do	0.305	0.447	0.324	0.015	0.206	0.417	0.632	-0.02	0.419	0.193	0.855	0.217	0.257	0.121	0.145	0.063	0.343	0.283	-0.03	0.263	0.548
Wednesday do	1.715	1.887	3.702*	0.181	1.957	1.843	4.104*	-0.43	2.474*	1.947	6.048*	1.568	2.735*	1.320	1.251	0.490	2.757*	1.854	-0.14	1.671	4.791*
Thursday do	0.663	1.091	0.278	0.166	0.335	0.238	0.567	-0.04	0.624	0.385	0.987	0.015	0.218	0.659	0.508	-0.18	0.603	0.519	0.462	0.333	0.453
Friday do	3.760*	3.991*	2.437*	1.106	2.102*	0.682	4.132*	-0.71	2.676*	1.808	5.755*	0.090	1.312	3.121*	2.181*	-1.09	3.209*	2.335*	1.394	1.562	3.415*

Notes: See Table 1.

Table 6. Countries in which day-of-the-week effects are present

	Model 1	Model 2	Model 3	Model 4	Model 5
Monday	MYS, TAI, THA, TUR	ARG, MYS, TAI, THA, TUR	ARG, MYS, TAI, THA, TUR	MYS, THA, ZAF	PHL, ZAF
Tuesday	PAK, PHL	ISR, PAK, PHL	ISR, PAK, PHL	IDN, ISR, PAK	PAK
Wednesday				ARG	
Thursday	TUR	TUR	TUR	TUR	POL
Friday	TAI, TUR	TAI, TUR	TAI, TUR	PHL, TAI, TUR	PHL, TAI

From Table 5, Monday effects are significant in the Philippines and South Africa, Tuesday effects are significant in Pakistan, Thursday effects are significant in Poland, and Friday effects are significant in the Philippines and Taiwan.

Comparing Tables 1–5, day-of-the-week effects are present for the Philippines, Pakistan and Taiwan even after adjusting for market risk (Table 6). Pakistan has a negative Tuesday effect in all of the models studied while Taiwan has a positive Friday effect in all of the models studied. The Philippines has a Tuesday effect in the three unconditional models but has a Friday effect in the two conditional models. Other countries like Malaysia, Thailand and Turkey exhibit day-of-the-week effects in four of the models. These results are different from Brooks and Persaud (2001) who found no day-of-the-week effect for the Philippines but their paper did not include conditional market risk analysis or use excess returns.

IV. Summary and Conclusions

This study uses both unconditional and conditional risk analysis to investigate the day-of-the-week effect in 21 emerging stock markets. In addition, risk is allowed to vary across the days of the week. Different models produce different results but overall day-of-the-week effects are present for the Philippines, Pakistan and Taiwan even after adjusting for market risk. Other countries like Malaysia, Thailand, and Turkey exhibit day-of-the-week effects in four of the models. The results in this study show that while the day-of-the-week effect is not present in the majority of emerging stock markets studied, some emerging stock markets do exhibit strong

day-of-the-week effects even after accounting for conditional market risk.

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