The Impact of the Day of the Week on IPO Return Autocorrelation and Cross-Correlation

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Two anomalies that generate continuing interest are the weekend effect and the underperformance of IPOs. Perfect and Peterson (1997) find that IPO returns are negative only on Monday and Tuesday, suggesting a related explanation for these two anomalies. We extend the work of Perfect and Peterson by examining the daily autocorrelation and cross-correlation patterns of IPO returns. We find evidence that IPO investors make buy and sell decisions on specific IPO securities based more on market returns the previous day than on returns to that security the previous day.

Introduction

Anomalies in the return patterns of securities are of recurring interest to financial researchers, as their presence documents market inefficiency. Two anomalies that have received considerable attention in the recent finance literature are the weekend effect and the long-run performance of IPOs. In this paper we examine the microstructure of returns around the weekend using a sample of IPO returns that we believe will offer additional insight into the weekend anomaly and the long-run performance of IPOs.

Researchers have suggested several hypotheses about the source of the weekend effect. One explanation of the weekend effect involves the trading behavior of investors. Abraham and Ikenberry (1994) examine the information-processing hypothesis as a way to explain return patterns around the weekend. Building on earlier work by Miller (1988) and Lakonishok and Maberly (1990), Abraham and Ikenberry suggest that there are some points in time when it is more costly for individual investors

0747-5535/00/1600/0057/$2.00

to process information. They find increased selling pressure on Mondays that is consistent with the idea that it is more costly for individuals to process information during the week and is also consistent with the documented negative Monday return on equities.

Several studies, including Ritter (1991), document significant underperformance in the returns of IPOs relative to a sample of seasoned equities. Loughran (1993) examines the anomalous return pattern for IPOs by examining seasonal effects in monthly IPO returns. Although Loughran finds evidence of patterns in raw returns similar to those seasonal patterns documented in all equities, the pattern is not clear after adjustments are made for market movements.

Perfect and Peterson (1997) combine the two areas of research by investigating IPO returns around weekends. They find that IPO returns are negative on Mondays and Tuesdays and positive on the other weekdays. They also find evidence that the day-of-the-week pattern in returns is stronger for IPOs than for seasoned securities. The authors suggest that both the weekend effect and the long-run underperformance of IPOs may be related and further suggest that the information-processing hypothesis of Abraham and Ikenberry (1994) may explain why IPOs underperform seasoned equities on Mondays and Tuesdays.

This paper continues in a direction similar to that of Perfect and Peterson (1997) by examining the autocorrelation and cross-correlation patterns in IPO returns. Bessembinder and Hertzel (1993) and Higgins and Peterson (1999) document a significant autocorrelation pattern around the weekend consistent with the information-processing hypothesis of Abraham and Ikenberry (1994). If the weekend pattern in IPOs is related to the information-processing hypothesis of Abraham and Ikenberry, IPO returns should behave in a manner similar to other securities around the weekend.

We examine daily autocorrelation patterns to determine if similarities exist between the IPO weekend effect and the weekend effect for seasoned firms and look for consistencies between our results and those documented in earlier studies. We also look at daily cross-correlation patterns in the IPO sample and compare them to the daily autocorrelation patterns to understand how IPO investors process information. The presence of stronger cross-correlation patterns in the IPO returns is consistent with the idea that IPO investors use information cues from the market to make their investment decisions following the weekend.

Data

The return data used in this study are obtained from the Center for Research in Security Prices (CRSP). The initial public offering (IPO) sample comprises Ritter's (1991) original sample of over 1,500 IPOs and a second sample of IPOs from the Securities Data Company. The final sample contains 2,954 IPOs spanning the period from 1975 to 1991. The sample represents an extension, through time, of Ritter's initial sample.

We form a matching sample of seasoned firms that have been publicly traded for a minimum of five years. We determine the month and year when an IPO occurs and then match the IPO firm with a seasoned firm that trades during the same time period. The matched firm is the firm with the closest market value of equity that has the same two-digit SIC code. The firms in the matching sample and the IPO sample are used to form two equally-weighted portfolios.

In addition to the matched sample, we use the CRSP equally-weighted (EW) index (NYSE/AMEX/NASDAQ) as a control portfolio to compare to our IPO portfolio. The complete dataset contains three sets of portfolios including the IPO set, the matching firms, and the EW index portfolio.

Daily return data are collected for both the IPO and the matching firms for 252 trading days following the offer.[1] The return series come from the period between March 10, 1975 and December 31, 1994. The IPO portfolio return for one day is calculated by averaging the day's return for all IPOs with non-zero trading volume that day. Returns for the matching portfolio are calculated using the same process.[2]

We determine the day of the week of each portfolio return for both the matching and the IPO samples. Monday-Tuesday, Tuesday-Wednesday, Wednesday-Thursday, Thursday-Friday, and Friday-Monday return combinations are assigned identifying variables. We apply a similar process of weekday identification to returns on the EW index. The three resulting return series then are aligned in calendar time to facilitate comparison. The final return series each comprise 3,370 days of returns.

Methodology

We begin the data analysis by providing a statistical summary of the IPO, matching sample, and CRSP EW index return series for each weekday. Additionally, we examine weekday return differences between the IPO and matching samples, the IPO and EW index, and the matching sample and the EW index.

Following the initial statistical summary of weekday IPO returns, we estimate regressions to identify daily autocorrelation patterns, using a methodology similar to Higgins and Peterson (1999). We examine the autocorrelation patterns to determine if similarities exist between the IPO weekend effect and the weekend effect for seasoned firms. The examination also provides us with a baseline to compare consistencies between our results and results in earlier studies.

Daily dummy variables isolate each day of the week to allow calculation of daily autocorrelation coefficients. Daily returns for a portfolio are regressed on the daily dummies and lagged portfolio returns as follows:

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[1] Some of the IPO return series are truncated during this period due to bankruptcies, takeovers, mergers, and other corporate restructuring events.

[2] The number of firms represented each day in the portfolios varies from 30 to 220 throughout the examination period.

$$(1)\ R_t = \alpha_1 M_t + \alpha_2 T_t + \alpha_3 W_t + \alpha_4 TH_t + \alpha_5 F_t + \beta_1 M_t R_{t-1} + \beta_2 T_t R_{t-1} + \beta_3 W_t R_{t-1} + \beta_4 TH_t R_{t-1} + \beta_5 F_t R_{t-1} + \varepsilon_t$$

where:

R_t = Daily returns for the sample at time t;
R_{t-1} = Daily returns for the sample at time t - 1;
M_t, T_t, W_t, TH_t, F_t = Dummy variables for the days of the week; and
ε_t = A random error term.

We do not include an intercept in our model, but, similar to Bessembinder and Hertzel (1993), our model uses a dummy variable for each day of the week to control for differences in daily mean returns that may cause spurious autocorrelations. In equation (1) the β terms measure the daily autocorrelation terms. Because only first-order autocorrelations are estimated, we use the Newey and West (1987) correction for autocorrelation and heteroskedasticity in the residual terms. Equation (1) is estimated separately for the IPO sample, the matching sample, and the EW index.

We also examine the return series of the IPO sample for the presence of daily cross-correlations with the EW index. To examine this relationship, we regress daily IPO returns on the day-of-the-week dummies and lagged index returns as follows:

$$(2)\ R_{t,IPO} = \alpha_1 M_t + \alpha_2 T_t + \alpha_3 W_t + \alpha_4 TH_t + \alpha_5 F_t + \lambda_1 M_t R_{t-1,EW} + \lambda_2 T_t R_{t-1,EW} + \lambda_3 W_t R_{t-1,EW} + \lambda_4 TH_t R_{t-1,EW} + \lambda_5 F_t R_{t-1,EW} + \varepsilon_t$$

where:

$R_{t,IPO}$ = Daily returns for IPO portfolio at time t;
$R_{t-1,EW}$ = Daily returns for EW index at time t - 1;
M_t, T_t, W_t, TH_t, F_t = Dummy variables for the days of the week; and
ε_t = A random error term.

For comparison, equation (2) is estimated using the matching sample return as the dependent variable. In equation (2), the λ terms measure the daily cross-correlations. Again, equation (2) is estimated using the Newey and West (1987) correction.

We estimate a final set of regressions to determine whether the documented patterns in the return series are more strongly associated with the presence of auto-correlations or cross-correlations. If the strength of the cross-correlations exceeds that of the autocorrelations, our results are consistent with IPO investors taking cues from market information to make investment decisions on the IPO security they hold.

The following regression model is used to compare daily autocorrelation and cross-correlation terms in IPO returns:

$$(3)\ R_{t,IPO} = \alpha_1 M_t + \alpha_2 T_t + \alpha_3 W_t + \alpha_4 TH_t + \alpha_5 F_t + \beta_1 M_t R_{t-1,IPO} + \beta_2 T_t R_{t-1,IPO} + \beta_3 W_t R_{t-1,IPO} + \beta_4 TH_t R_{t-1,IPO} + \beta_5 F_t R_{t-1,IPO} + \lambda_1 M_t R_{t-1,EW} + \lambda_2 T_t R_{t-1,EW} + \lambda_3 W_t R_{t-1,EW} + \lambda_4 TH_t R_{t-1,EW} + \lambda_5 F_t R_{t-1,EW} + \varepsilon_t$$

where:

$R_{t,IPO}$ = Daily returns for IPO portfolio at time t;
$R_{t-1,IPO}$ = Daily returns for IPO portfolio at time t - 1;
$R_{t-1,EW}$ = Daily returns for EW index at time t - 1;

M_t, T_t, W_t, TH_t, F_t = Dummy variables for the days of the week; and
ε_t = A random error term.

Again, for comparison, equation (3) is also estimated using the matching sample return regressed on lagged matching sample returns and lagged EW index returns. The Newey and West (1987) correction is again made to remove potential bias in the standard errors of the estimated parameters.

In equation (3) the β terms measure the daily autocorrelations and the λ terms measure the daily cross-correlations with the EW index. We conduct hypothesis tests to determine if each daily autocorrelation is equal to each cross-correlation. This will allow us to determine which pattern, autocorrelations or cross-correlations, are more dominant around the weekend. We conduct three additional hypothesis tests to determine if the intercepts, autocorrelations, and cross-correlations are jointly equal.

Results

Table 1 provides the statistical summary of the IPO sample, the matching sample, and the EW index return series. Similar to the results in Perfect and Peterson (1997), the return series shows that the long-run underperformance of IPOs occurs only on Mondays and Tuesdays. The mean return for the IPO sample that occurs on Monday is similar to that found by Perfect and Peterson (1997). Our mean Tuesday return for the IPO sample is substantially higher than that found in Perfect and Peterson. Although our Tuesday results differ in size from those in Perfect and Peterson, the results do confirm the persistence of the IPO performance phenomenon occurring only on Monday and Tuesday. IPO returns are shown to be significantly smaller than the EW

Table 1—Mean Daily Percentage Returns

This table presents the unconditional and conditional means of daily returns for portfolios comprising the sample IPOs, a matching set of firms, and the CRSP equally-weighted index. Also, the average daily return differences between the IPO and matching samples, the IPO sample and the CRSP equally-weighted index, and the matched sample and the CRSP equally-weighted index are presented. The IPO sample is a combined dataset from Ritter (1991) and Security Data Company. The final sample includes 2,954 IPOs that went public from 1975 to 1991. IPOs and matching firms are excluded from the portfolio return calculations after delisting. The sample encompasses 3,370 daily returns. An asterisk indicates that the return is significant at the 5 percent level and a double asterisk indicates that the return is significant at the 10 percent level

Portfolio	All Days	Monday	Tuesday	Wednesday	Thursday	Friday
Initial Public Offerings	0.0007*	-0.0021*	-0.0004	0.0020*	0.0017*	0.0021*
Matching Firms	0.0008*	-0.0015*	0.0005	0.0017*	0.0011*	0.0020*
CRSP Equally-Weighted Index	0.0009*	-0.0013*	0.0000	0.0015*	0.0016*	0.0023*
IPO Minus Matched Firm	-0.0001	-0.0006	-0.0009*	0.0003	0.0005	0.0000
IPO Minus CRSP Equally-Weighted Index	-0.0002	-0.0008**	-0.0005	0.0004	0.0001	-0.0003
Matched Firm Minus CRSP Equally-Weighted Index	-0.0001	-0.0002	0.0004*	0.00001	-0.0004*	-0.0003

index returns on Monday. Also, IPO returns are significantly smaller than matching sample returns on Tuesday. These results are generally consistent with, but not as strong as, the results found in Perfect and Peterson.

Daily autocorrelation terms for all three samples appear in Table 2. Panel A of Table 2 contains autocorrelation terms for the IPO sample, Panel B of Table 2 contains autocorrelation terms for the matching sample, and Panel C of Table 2 contains autocorrelations for the EW index. For all three samples, the Monday and Tuesday autocorrelation terms are significant; however, the Monday autocorrelation is much larger than the Tuesday autocorrelation. Both the IPO sample and the EW index have a significant Friday autocorrelation as well. In all three samples, F-tests show, at the 5 percent significance level, that the daily autocorrelation coefficients are different from each other. These results suggest that the autocorrelation pattern of returns in the IPO sample around the weekend is similar to that of other securities.

Due to the relative lack of public information about firms engaging in IPOs, it is possible that investors who trade in the securities of these firms may react to overall market information. To examine this possibility, daily cross-correlations between the IPO sample and the EW index appear in Panel A of Table 3. For comparison, Panel B of Table 3 contains daily cross-correlations between the matching sample and the EW index.

Strong evidence emerges that both the IPO sample and the matching sample react with a lag to information contained in the EW index. For the IPO sample, only the Wednesday cross-correlation term is not significant. For the matching sample, the Monday and Tuesday cross-correlation terms are significant. In both samples, the Monday cross-correlation term is the largest, indicating some association between cross-correlations and the weekend. Additionally, F-tests show that the daily cross-correlation coefficients are not equal to each other. These results provide some indication that IPO returns are responding with a lag to information produced by the market. This pattern, however, is similar to that observed in the matching sample.

To further examine the nature of IPO returns around the weekend, we compare daily autocorrelations and cross-correlations. Panel A of Table 4 compares the auto-correlations of the IPO sample with the cross-correlations between the IPO sample and the EW index. Again, for comparison, Panel B of Table 4 compares the autocorrelations of the matching sample with the cross-correlations between the matching sample and the EW index.

When we compare the daily IPO autocorrelation and cross-correlation coefficients, we again find evidence that the IPO returns lag the returns of the EW index. None of the daily autocorrelation terms is significant, but the Monday, Tuesday, and Thursday cross-correlation terms are significant. Although none of the autocorrelations are individually significant, an F-test shows that the autocorrelation terms are not jointly equal. The Monday cross-correlation term is significantly larger than the Monday autocorrelation term. This result is different from Higgins and Peterson (1999), who

Table 2—Daily Autocorrelation Patterns in IPO, Matching Sample, and Equally-Weighted Index Returns

The table examines how the predictive ability autocorrelation terms change daily. Panels A, B, and C contain daily autocorrelation terms for IPO returns, matching sample returns, and equally-weighted index returns. In the regression model, R_t and R_{t-1} are daily returns for the portfolio of securities examined on day t and t - 1, respectively. M, T, W, TH, and F are dummy variables that equal one when day t is the particular day of the week represented by the dummy variable and zero otherwise. Standard errors for the regression coefficients are adjusted using the Newey and West (1987) correction. Three lags are employed to compute the Newey and West correction. The sample sizes for all regression models are 3,370. An asterisk indicates that the regression coefficient is different from zero at the 5 percent significance level, and a double asterisk indicates significance at the 10 percent level. The following regression model is estimated for each sample:

$$R_t = \alpha_1 M_t + \alpha_2 T_t + \alpha_3 W_t + \alpha_4 TH_t + \alpha_5 F_t + \beta_1 M_t R_{t-1} + \beta_2 T_t R_{t-1} + \beta_3 W_t R_{t-1} + \beta_4 TH_t R_{t-1} + \beta_5 F_t R_{t-1} + \varepsilon_t$$

	Coefficient with t-statistic in Parentheses	
Day-of-the-Week Dummy Variable	Intercepts (α_i)	Autocorrelation Terms (β_i)
Panel A: Daily Autocorrelation Terms for the IPO Sample		
Monday	-0.0027*	0.3150*
	(-4.339)	(4.853)
Tuesday	0.0002	0.2786*
	(0.357)	(3.626)
Wednesday	0.0020*	0.0907
	(3.717)	(0.971)
Thursday	0.0015*	0.0758
	(2.747)*	(0.222)
Friday	0.0018	0.2043*
	(3.525)*	(2.838)
Joint Tests of Equality	12.491*	7.994*
Panel B: Daily Autocorrelation Terms for the Matching Sample		
Monday	-0.0026*	0.5060*
	(-4.802)	(5.047)
Tuesday	0.0008*	0.1955*
	(2.152)	(2.193)
Wednesday	0.0016*	0.0811
	(4.633)	(0.648)
Thursday	0.0009*	0.1375
	(2.579)	(1.607)
Friday	0.0019*	0.1459
	(4.794)	(1.307)
Joint Tests of Equality	22.829*	17.460*
Panel C: Daily Autocorrelation Terms for the Equally-Weighted Index		
Monday	-0.0030*	0.7220*
	(-5.635)	(4.905)
Tuesday	0.0006*	0.3637*
	(2.631)	(3.645)
Wednesday	0.0016*	0.1336
	(7.156)	(0.588)
Thursday	0.0013*	0.2036
	(4.527)	(1.494)
Friday	0.0019*	0.3007*
	(5.506)	(2.234)
Joint Tests of Equality	61.188*	34.539*

Table 3—Daily Cross-Correlation Patterns in IPO Return and Matching Sample Returns

The following table examines the ability of lagged equally-weighted index returns to predict IPO returns daily. For comparison, the ability of lagged equally-weighted returns to predict matching sample returns is also investigated. In the regression models that follow, $R_{IPO,t}$ and $R_{M,t}$ are the returns on day t for the IPO sample and matching sample, respectively. $R_{EW,t-1}$ and is the return on day t - 1 for the CRSP equally-weighted index. M, T, W, TH, and F are dummy variables that equal one when day t is the particular day of the week represented by the dummy variable and zero otherwise. Panel A contains cross-correlations between the IPO sample and the equally-weighted index, and Panel B contains cross-correlations between the matching sample and the equally-weighted index. All standard errors for the regression coefficients are adjusted using the Newey and West (1987) correction. Three lags are employed to compute the Newey and West correction. The sample size for all regression models is 3,370. An asterisk indicates that the regression coefficient is different from zero at the 5 percent significance level, and a double asterisk indicates significance at the 10 percent level

Panel A: Daily Cross-Correlations Between the IPO Sample and the Equally-Weighted Index

Model:

$$R_{IPO,t} = \alpha_1 M_t + \alpha_2 T_t + \alpha_3 W_t + \alpha_4 TH_t + \alpha_5 F_t + \gamma_1 M_t R_{EW,t-1} + \gamma_2 T_t R_{EW,t-1} + \gamma_3 W_t R_{EW,t-1} + \gamma_4 TH_t R_{EW,t-1} + \gamma_5 F_t R_{EW,t-1} + \varepsilon_t$$

	Coefficient with t-statistic in Parentheses	
Day-of-the-Week Dummy Variable	Intercepts (α_i)	Cross-Correlation Terms (γ_i)
Monday	-0.0043*	0.9489*
	(-5.397)	(4.476)
Tuesdasy	0.0003	0.5282*
	(0.605)	(3.999)
Wednesday	0.0020*	0.1961
	(3.684)	(0.644)
Thursday	0.0010**	0.4436**
	(1.727)	(1.935)
Friday	0.0014*	0.4607*
	(2.135)	(2.362)
Joint Tests of Equality	18.772*	9.508*

Panel B: Daily Cross-Correlations Between the Matching Sample and the Equally-Weighted Index

Model:

$$R_{M,t} = \alpha_1 M_t + \alpha_2 T_t + \alpha_3 W_t + \alpha_4 TH_t + \alpha_5 F_t + \gamma_1 M_t R_{EW,t-1} + \gamma_2 T_t R_{EW,t-1} + \gamma_3 W_t R_{EW,t-1} + \gamma_4 TH_t R_{EW,t-1} + \gamma_5 F_t R_{EW,t-1} + \varepsilon_t$$

	Coefficient with t-statistic in Parentheses	
Day-of-the-Week Dummy Variable	Intercepts (α_i)	Cross-Correlation Terms (γ_i)
Monday	-0.0035*	0.8547*
	(-5.241)	(4.913)
Tuesday	0.0009*	0.2840*
	(2.359)	(2.118)
Wednesday	0.0017*	0.0999
	(5.152)	(0.380)
Thursday	0.0009*	0.1862
	(2.181)	(1.268)
Friday	0.0016*	0.2602
	(3.322)	(1.409)
Joint Tests of Equality	31.402*	25.012*

Table 4—Daily Autocorrelation and Cross-Correlation Patterns in IPO and Matching Sample Returns

The following table compares the predictive ability of daily autocorrelations and cross-correlations in the IPO and matching samples. In the regression models that follow, $R_{IPO,t}$ and $R_{IPO,t-1}$ are daily returns for the IPO sample on day t and t - 1, respectively. $R_{EW,t}$ and $R_{EW,t-1}$ are daily returns for the equally-weighted sample on day t and t - 1, respectively. $R_{M,t}$ and $R_{M,t-1}$ are daily returns for the matching sample on day t and t - 1, respectively. M, T, W, TH, and F are dummy variables that equal one when day t is the particular day of the week represented by the dummy variable and zero otherwise. Panel A contains autocorrelations in the IPO sample and cross-correlations between the IPO sample and the equally-weighted index. Panel B contains autocorrelations in the matching sample and cross-correlations between the matching sample and the equally-weighted index. All standard errors for the regression coefficients are adjusted using the Newey and West (1987) correction. Three lags are employed to compute the Newey and West correction. The sample size for all regression models is 3,370. An asterisk indicates that the regression coefficient is different from zero at the 5 percent significance level, and a double asterisk indicates significance at the 10 percent level

Day-of-the-Week Dummy Variable	Coefficient with t-statistic in Parentheses: Intercepts (α_i)	Autocorrelation Terms (β_i)	Cross-Correlation Terms (γ_i)	F-test for Equality of (β_i) and (γ_i)
Panel A: Daily Autocorrelations and Cross-Correlations in IPO Returns				
Model: $R_{IPO,t} = \alpha_1 M_t + \alpha_2 T_t + \alpha_3 W_t + \alpha_4 TH_t + \alpha_5 F_t + \beta_1 M_t R_{IPO,t-1} + \beta_2 T_t R_{IPO,t-1} + \beta_3 W_t R_{IPO,t-1} + \beta_4 TH_t R_{IPO,t-1} + \beta_5 F_t R_{IPO,t-1} + \gamma_1 M_t R_{EW,t-1} + \gamma_2 T_t R_{EW,t-1} + \gamma_3 W_t R_{EW,t-1} + \gamma_4 TH_t R_{EW,t-1} + \gamma_5 F_t R_{EW,t-1} + \varepsilon_t$				
Monday	-0.0042*	0.0933	0.8221*	23.113*
	(5.165)	(1.190)	(3.301)	
Tuesday	0.0004	0.1267	0.3521**	2.214
	(0.660)	(1.247)	(1.718)	
Wednesday	0.0020*	0.0613	0.1051	0.092
	(3.689)	(0.577)	(0.293)	
Thursday	0.0010**	-0.0894	0.5802**	20.133*
	(1.646)	(-1.028)	(1.903)	
Friday	0.0015*	0.1294	0.2590	0.693
	(2.305)	(1.500)	(1.131)	
Joint Tests of Equality	18.393*	3.279*	6.232*	
Panel B: Daily Autocorrelations and Cross-Correlation in Matching Sample Returns				
Model: $R_{M,t} = \alpha_1 M_t + \alpha_2 T_t + \alpha_3 W_t + \alpha_4 TH_t + \alpha_5 F_t + \beta_1 M_t R_{M,t-1} + \beta_2 T_t R_{M,t-1} + \beta_3 W_t R_{M,t-1} + \beta_4 TH_t R_{M,t-1} + \beta_5 F_t R_{M,t-1} + \gamma_1 M_t R_{EW,t-1} + \gamma_2 T_t R_{EW,t-1} + \gamma_3 W_t R_{EW,t-1} + \gamma_4 TH_t R_{EW,t-1} + \gamma_5 F_t R_{EW,t-1} + \varepsilon_t$				
Monday	-0.0035*	-0.1487	0.8743*	17.385*
	(-4.905)	(-0.111)	(3.144)	
Tuesday	0.0009*	0.0450	0.2265	0.941
	(2.349)	(0.296)	(0.811)	
Wednesday	0.0016*	0.0833	-0.0040	0.329
	(5.043)	(1.009)	(-0.012)	
Thursday	0.0009*	0.1107	0.0441	0.115
	(2.260)	(1.341)	(0.226)	
Friday	0.0016*	-0.0484	0.3248	3.172
	(3.329)	(-0.539)	(1.620)	
Joint Tests of Equality	29.984*	0.659	8.235*	

show that cross-autocorrelations between small and large securities are not significant around the weekend. Thus, we can conclude that investors react with a lag to information produced on Friday by the market. Additionally, the significant cross-correlation between IPO returns and the EW index on Tuesday and Thursday suggests the same lagged response to information in the market. It appears the IPO investors use market information on Fridays, Mondays, and Wednesdays to make buy and sell decisions on Monday, Tuesday, and Thursday.

The results in Panel B of Table 4 for the matching sample are somewhat different from those found for the IPO sample. In the matching sample none of the individual autocorrelation terms is significant. In contrast to the IPO sample, however, the autocorrelation terms are jointly equal. Additionally, the only significant cross-correlation coefficient occurs on Monday. This Monday cross-correlation with the EW index is significantly larger than the Monday autocorrelation. The matching sample shows the same lagged reaction to market information around the weekend as the IPO sample. We do not observe significant cross-correlation on Tuesday or Thursday.

Conclusion

This paper provides an examination of the long-run performance of IPOs. Perfect and Peterson (1997) find evidence that IPO underperformance occurs only on Monday and Tuesday. We examine daily autocorrelations and cross-correlations in IPO returns to test whether the patterns in IPO returns are consistent with the patterns of returns for seasoned securities found by Abraham and Ikenberry (1994).

The results indicate that IPOs have a similar autocorrelation pattern to other firms around the weekend. The autocorrelation pattern for IPOs, however, is subsumed by cross-correlations with the CRSP equally-weighted index. Additionally, significant cross-correlations between the IPO sample and the CRSP equally-weighted index on Tuesday and Thursday are found. These results show that IPOs respond to information produced by the market with a lag. The significant cross-correlation between the Friday and Monday returns found for the IPO sample is also found for the matching sample; thus, we can not conclude that the weekend effect is the source of IPO underperformance. The IPO and matching samples, however, do react with a lag to information contained in the market around the weekend. This result differs from that of Higgins and Peterson (1999), who find no significant cross-correlation between large and small securities around the weekend.

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