Real-time forecasting and political stock market anomalies: evidence for the U.S.

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Abstract:

Using monthly data for the period 1953–2003, we apply a real-time modeling approach to investigate the implications of U.S. political stock market anomalies for forecasting excess stock returns. Our empirical findings show that political variables, selected on the basis of widely used model selection criteria, are often included in real-time forecasting models. However, they do not contribute to systematically improving the performance of simple trading rules. For this reason, political stock market anomalies are not necessarily an indication of market inefficiency.

Keywords: Political stock market anomalies, predictability of stock returns, efficient markets hypothesis, real-time forecasting

JEL-Classification: G11, G14

Non-Technical Summary

This paper provides new empirical evidence on two high-profile stock market anomalies that are asserted to exist: the Democratic premium and the presidential cycle effect. The Democratic premium indicates that excess stock returns under Democratic presidencies are regularly higher than under Republican presidencies. The presidential cycle effect denotes the frequent finding that excess stock returns are higher in the second half of a presidential election cycle than in the first half. If confirmed, both anomalies would challenge the efficient market hypothesis.

Previous studies have found that taking into account either the party of the president or the timing of the coming presidential election may help to predict stock market returns. To analyze whether this is indeed the case, we use the real-time modeling approach developed by Pesaran and Timmermann (1995, 2000). The key advantage of this method over the approaches applied in the earlier literature is that it is built on the realistic assumption that an investor can only rely on contemporaneous and historical information to forecast excess stock returns. By contrast, information from subsequent periods is not available to the investor.

The paper reaches two main results. First, we find that political variables are often included as predictors in forecasting models for excess stock returns. The second finding, though, is that the economic benefits an investor could have gained by using political variables to forecast the stock market returns are rather small. As a consequence, the findings cast doubts as to whether the Democratic premium and the presidential cycle anomaly constitute a major deviation from the efficient markets hypothesis.

Nicht-technische Zusammenfassung

In diesem wird Papier neue empirische Evidenz zu zwei viel beachteten Anomalien auf dem US-amerikanischen Aktienmarkt präsentiert: Zum ersten zu der Behauptung, nach der die Erträge aus Anlagen in Aktien unter einer demokratischen Präsidentschaft höher sind als unter einer republikanischen Regierung. Zum zweiten zu der These, nach der die Erträge in der zweiten Hälfte einer Legislaturperiode höher sind, als im ersten Teil des Wahlzyklus. Wenn diese Thesen empirisch bestätigt werden könnten, bildeten sie ein wichtiges Gegenargument gegen die Hypothese effizienter Kapitalmärkte. Bisherige Studien fanden in der Tat, dass es für die Prognose der Erträge aus Aktien hilfreich sein könnte, Informationen über die Partei des jeweiligen Präsidenten bzw. über die Dauer bis zum nächsten Wahltermin zu verwenden.

In dem vorliegenden Papier wird das das von Pesaran und Timmermann (1996, 2000) vorgeschlagenen Prognoseverfahren zur Überprüfung der oben genannten Anomalien verwendet. Es hat den Vorteil, dass es, anders als sonst verwendete Ansätze, realistischerweise davon ausgeht, dass ein Investor bei seiner Anlageentscheidung nur Informationen verwenden kann, die im zu diesem Zeitpunkt auch tatsächlich zur Verfügung standen, um die Erträge zu prognostizieren.

Das Papier hat zwei wesentliche Ergebnisse: zum einen werden durch das Prognoseverfahren tatsächlich regelmäßig politische Variable in das Prognosemodell aufgenommen. Zum anderen ist jedoch der Gewinn, den ein Investor durch ihre Berücksichtigung realisieren würde, sehr gering. Eine systematische Verbesserung der Prognosen kann nicht erreicht werden. Daher stellen die genannten Anomalien keine bedeutsame Einschränkung der Effizienzmarkthypothese dar.

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1. Introduction

A number of researchers have reported empirical evidence supporting the existence of a Democratic premium and a presidential cycle effect in U.S. stock returns. For example, after controlling for business cycle conditions, Santa-Clara and Valkanov (2003) have found higher excess stock returns under Democrat presidencies than under Republican presidencies. Booth and Booth (2003) have confirmed this finding for small stocks and, in addition, have provided evidence of higher excess stock returns in the second half of a presidential election cycle than in the first half. Political stock market anomalies have also been found to be useful for establishing profitable trading rules (for example, Umstead 1977, Riley and Luksetich 1980, Gärtner and Wellershoff 1995). Thus, political stock market anomalies may constitute a major challenge to the efficient market hypothesis. However, there is already some good news for the efficient markets hypothesis: the results of recent empirical research cast doubts as to the existence of political stock market anomalies in stock returns. Nofsinger (2004) has pointed out that the evidence of a better stock market performance during Democrat presidencies is likely to be spurious. Analyzing high frequency data, Snowberg, Wolfers, and Zitzewitz (2006) have found expected stock prices to be higher under Republican presidencies than Democratic presidencies.

We report even more good news for the efficient market hypothesis. Based on a real-time modeling approach, we use monthly U.S. data for the period 1953–2003 to analyze the implications of political stock market anomalies for forecasting excess stock returns in

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real time. Our analysis is based on the key insight that political stock market anomalies can challenge the efficient market hypothesis only if an investor can take advantage of these anomalies by exploiting political variables to forecast stock returns. In order to study whether political stock market anomalies help to improve real-time forecasts of excess stock returns, we rely on the recursive modeling approach developed by Pesaran and Timmermann (1995, 2000). The Pesaran-Timmermann approach is built on the assumption that an investor, in real time, can only use contemporaneous and historical information to forecast excess stock returns and to set up trading rules. Information not available until later is not contained in an investor's information set. For this reason, the Pesaran-Timmermann approach, in contrast to the approaches used in the earlier literature on political stock market anomalies, provides a realistic modeling approach for investigating the informational content of political variables for forecasting excess stock returns.

The two main results of our empirical analysis can be summarized as follows. First, the Pesaran-Timmermann approach implies that political variables, based on widely used model-selection criteria, are included in the forecasting model an investor should have used to forecast excess stock returns in real time. Second, even though political variables are often included in the forecasting model, they would not have helped an investor to systematically improve, in real time, the performance of simple trading rules. This result indicates that political stock market anomalies are not necessarily an indication of market inefficiency. Of course, our two main results do not allow the question whether the market is efficient to be definitely answered. However, if the market is inefficient, it is unlikely that this inefficiency is due to political stock market anomalies.

We organize the remainder of our paper as follows. In Section 2, we briefly lay out the Pesaran-Timmermann approach and the statistical tests we use in our empirical analysis. In Section 3, we describe the data. Section 4 reports the results of the Pesaran-Timmermann approach. We also provide results of tests of market timing and forecast equivalence. Section 5 contains some concluding remarks.

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version of this paper. The views expressed in this paper are those of the authors and do not necessarily reflect those of the Deutsche Bundesbank.

2. The Pesaran-Timmermann Approach

We consider an investor whose problem is to combine, in every month, the then available information on macroeconomic, financial, and political variables to forecast one-month-ahead excess stock returns. In order to solve this problem, the investor applies a recursive modeling approach of the type developed by Pesaran and Timmermann (1995, 2000). Their approach is built on the assumption that the investor does not know the "optimal" forecasting model. For this reason, the investor attempts to identify a forecasting model by searching, in every month, over all possible permutations of macroeconomic, financial, and political variables considered as candidates for forecasting excess stock returns. As time progresses and new data become available, the investor recursively restarts this search. In order to conduct the search for a forecasting model in an efficient and timely manner, the investor considers linear regression models that can be estimated by the ordinary least squares technique. Furthermore, in order to set up the Pesaran-Timmermann approach, the investor has to choose a training period.

The investor selects a forecasting model among the large number of forecasting models being estimated in every month on the basis of a model-selection criterion. We consider three model-selection criteria: the Adjusted Coefficient of Determination (ACD), the Akaike Information Criterion (AIC, Akaike 1973), and the Bayesian Information Criterion (BIC, Schwarz 1978). These three model-selection criteria can easily be computed, and they are widely used in applied research. In every month, the investor selects three models: one model that maximizes the ACD, and two models that minimize the AIC and BIC, respectively. This yields three sequences of one-month-ahead forecasts of stock returns.

Every single one of these forecasts can be used by the investor to set up a trading rule. The trading rules analyzed require that the investor switches between shares and bonds. To this end, the investor extracts the forecasts of excess stock returns implied by the forecasting models which have been selected on the basis of one of the three model-selection criteria. The investor only invests in shares when the forecast of excess stock returns is positive. By contrast, the investor only invests in bonds in the case that the forecast of excess stock returns is negative. The investor neither makes use of short selling nor uses leverage. Trading in stocks and bonds involves transaction costs that are (i)

constant over time, (ii) the same for buying and selling stocks and bonds, and (iii) proportional to the value of a trade.

We measure the performance of the different trading rules in terms of Sharpe's (1966) ratio $SR = \bar{r} / SD$, where $\bar{r}$ denotes the average excess portfolio returns from the first month after the training period to the end of the sample and SD denotes the standard deviation of excess portfolio returns. In addition to Sharpe's ratio, we also compute investor's wealth at the end of the sample period under the different trading rules.

In addition, we use tests of market timing and forecast equivalence to compare the sequences of excess return forecasts implied by the Pesaran-Timmermann approach. We use the tests developed by Cumby and Modest (1987) and Pesaran and Timmermann (1992) to test whether including political variables in the set of variables potentially useful for forecasting excess stock returns improves an investor's market timing ability. The Cumby-Modest test requires estimating a regression of excess stock returns on a constant and a dummy variable that takes the value of one if the forecast of excess stock returns is positive, and zero otherwise. The Pesaran-Timmermann (1992) is a non-parametric test of market timing that has an asymptotically standard normal distribution.

We use the test developed by Giacomini and White (2004) to test whether the forecasts derived from the Pesaran-Timmermann approach when political variables are not considered as predictors of stock returns outperform the forecasts obtained when political variables are considered as predictors. While traditional tests of forecast equivalence answer the question of which forecast was more accurate on average, the Giacomini-White test answers the question of whether one can predict which forecast will be more accurate at a future date. The advantage of studying this question is that the Giacomini-White test can capture the effect of estimation uncertainty, handle forecasts of both nested and non-nested models, and be used to study forecasts produced by general estimation methods. These advantages come at the cost of having to specify a test function which helps to predict the loss from a forecast. Following Giacomini and White, we use the lagged loss to set up a test function.

3. The Data

Excess stock returns are calculated using monthly returns of value and equal weighted CRSP indices[1] and the three-month Treasury bill rate. The sample covers monthly U.S. data for the period 1953:04–2003:09. The training period needed to start the Pesaran-Timmermann approach is chosen as 1953:04–1962:12. Following Pesaran and Timmermann (1995), our choice of the sample and training period is governed by the consideration that reliable high-quality macroeconomic and financial data are available only after World War II. Moreover, the Fed stopped pegging interest rates and started to conduct an independent monetary policy only in 1951/52. We have downloaded the following data primarily from the FRED database maintained by the Federal Reserve Bank of St. Louis:

1. The term spread $Term_t$ is defined as the difference between a long-term government bond yield and the three-month Treasury bill rate.
2. The dividend yield DY_t is calculated as net corporate dividends (converted to a monthly frequency) divided by the lagged Dow Jones Industrial Average (DJIA) index. Data on the DJIA were taken from Thompson Financial Datastream.
3. The relative short-term interest rate $Rate_t$ is defined as the deviation of the three-month Treasury bill rate from its one-year moving average.
4. We calculate the default spread Def_t as the difference between the Moody's Seasoned Aaa and Baa corporate bond yields.
5. The inflation rate Inf_t is defined as the one-year moving average of the rate of change of the seasonally adjusted consumer price index for all urban consumers. We account for a publication lag of two months.

[1] CRSP stands for Centre for Research in Security Prices.

6. The growth rate of industrial production Ind_t is defined as the one-year moving average of the rate of change of the seasonally adjusted industrial production index. Again we account for a publication lag of two months.

To analyze the Democratic premium anomaly, we define a dummy variable (pol_t) that assumes the value of one whenever Republican presidents were in office and zero otherwise. For studying the presidential election cycle anomaly, the dummy variable takes on the value of plus one during the first two years of a presidential election cycle and minus one otherwise.

To set the stage for our analysis, we follow much of the earlier literature and estimate a regression, estimated by the ordinary least squares technique, of one-month-ahead excess stock returns on a constant, one of our two dummy variables, and the vector of macroeconomic and financial control variables. We estimate this regression model with the complete set of control variables and then delete one by one those control variables whose coefficients are statistically insignificant at the 10 percent level.

The coefficients of the dummy variables are negative and significant at the 1 percent level (Table 1). This implies that excess stock returns under Republican presidencies are lower than under Democratic presidencies. Moreover, excess stock returns are higher during the second half of a presidential term than during a first half, suggesting the existence of a presidential election cycle anomaly. The estimation results are qualitatively the same for the value and equal weighted stock index. For this reason, we report in Section 3 only the results for excess stock returns of the value weighted CRSP index.[2]

[2] The results for the equal weighted CRSP index are available from the authors upon request.

Table 1: Regression Results on the Democratic Premium and the Presidential Cycle Effect

	Democratic Premium				Presidential Cycle Effect			
	Value Weighted		Equal Weighted		Value Weighted		Equal Weighted	
Const	0.90 (0.59)	0.46 (0.46)	1.50 (0.73)**	2.16 (0.41)***	0.82 (0.58)	0.48 (0.47)	1.26 (0.72)	1.08 (0.26)***
Pol_t	-1.12 (0.41)***	-1.13 (0.40)***	-1.99 (0.50)***	-1.63 (0.46)***	-0.57 (0.18)***	-0.51 (0.17)***	-0.77 (3.45)***	-0.70 (0.22)***
$Term_t$	-2.22 (2.62)		-1.75 (3.26)		-4.02 (2.65)		-4.33 (1.31)	
DY_t	0.19 (0.14)		-0.008 (0.18)		0.33 (0.14)**	0.21 (0.11)*	0.21 (0.18)	
$Rate_t$	-5.13 (2.68)*	-5.12 (2.22)**	-8.66 (3.34)***	-9.76 (2.66)***	-6.52 (2.69)**	-4.21 (2.20)*	-10.70 (3.36)***	-8.54 (2.65)***
Def_t	0.98 (0.75)	1.50 (0.64)**	1.71 (0.93)*		-0.17 (0.70)		-0.17 (0.88)	
Inf_t	-0.24 (0.10)***	-0.17 (0.08)**	-0.15 (0.12)		-0.21 (0.10)**	-0.16 (0.08)**	-0.10 (0.12)	
Ind_t	-0.84 (0.48)*		-1.22 (0.60)**	-1.44 (0.55)***	-0.86 (0.48)*	-0.78 (0.46)*	-1.20 (0.60)**	-1.07 (0.54)**
MSE ratio	1.13		1.10		1.00		1.03	
MSE-t	-1.74		-1.52		-1.22		-1.38	
ENC-t	1.64		2.55		1.25		0.44	

Note: The regression model estimated is $r_{t+1} = \alpha_0 + \alpha_1 Pol_t + \phi X_t + u_{t+1}$, where r_{t+1} denotes the excess stock return, Pol_t a dummy variable capturing political stock market anomalies, X_t the vector of control variables, and u_{t+1} the error term. For definitions of variables, see Section 3. The *MSE ratio* is defined as the ratio of the mean squared error of the unrestricted model (including the dummy variable) and the mean squared error of the restricted model (excluding the dummy variable). *MSE-t* and *ENC-t* denote Clark and McCracken's (2001) forecasting and encompassing tests, respectively. Asterisks * (**, ***) denote statistical significance at the 10 (5, 1) percent level.

Table 1 also reports the results of tests of forecast equivalence. Because the forecasting model without a dummy variable is a nested version of a model featuring a dummy variable, we use the tests suggested by Clark and McCracken (2001) to test for forecast equivalence. We report results for two tests. The null hypothesis of the *MSE-t* test is that the mean squared error for the model without a dummy variable is less than or equal to the mean squared error implied by the model featuring a dummy variable. The null hypothesis of the *ENC-t* test is that the forecasts implied by the model without a dummy variable encompass the forecasts implied by the model featuring a dummy. Our results are based on a rolling window of observations. The test results reveal that, despite the in-sample significance of coefficients of the dummy variables, the inclusion of a dummy variable does not significantly improve the forecasting performance relative to a model that does not feature a dummy variable.

4. Empirical Results

The results summarized in Table 2 show that the dummy variables that capture the influence of the political variables on excess stock returns are very often included as predictors in the real-time forecasting models chosen on the basis of the ACD and AIC model-selection criteria. The dummy variables are selected less often as predictors under the BIC criterion. Overall, the results provide statistical evidence of political stock market anomalies in excess stock returns. Moreover, the evidence of political stock market anomalies is robust to the inclusion of macroeconomic and financial control variables as predictors in the real-time[3] forecasting models for excess stock returns.

With regard to the efficient markets hypothesis, it is crucial to analyze the question of whether the results are economically significant, i.e., whether the real-time informational content of political variables for excess stock returns could have been used by an investor to systematically improve the performance of simple trading rules. In order to analyze this question, we compute Sharpe ratios (Table 3, Panel A) and terminal wealths (Table 3, Panel B) for the simple trading rules described in Section 2. The Sharpe

[3] We do not use the term real-time data in the sense that it is used in the macroeconomics literature, i.e., we do not account for data revisions.

ratios for the trading rules that use the political variables as potential predictors of excess stock returns are almost identical to the Sharpe ratio for trading rules that neglect political variables as predictors of excess stock returns.

Table 2: Inclusion of Variables in the Optimal Forecasting Models (in %)

	Democratic Premium			Presidential Cycle Effect			No Political Dummy		
	ACD	AIC	BIC	ACD	AIC	BIC	ACD	AIC	BIC
Pol_t	86.06	77.66	0.41	94.06	89.55	43.44			
$Term_t$	17.01	11.06	3.69	58.20	21.72	3.69	27.46	10.25	3.69
DY_t	56.97	48.97	17.42	100.00	92.83	21.11	95.29	87.70	17.42
$Rate_t$	64.96	32.38	53.07	74.80	61.27	49.80	74.39	64.34	53.07
Def_t	86.27	80.94	16.19	27.05	17.62	5.12	36.07	24.59	16.19
Inf_t	100.00	99.79	28.89	99.80	88.73	29.71	100.00	85.86	28.89
Ind_t	100.00	100.00	32.79	100.00	100.00	41.60	100.00	97.75	32.38

Note: Figures are in percent. For definitions of variables, see Section 3. ACD denotes the Adjusted Coefficient of Determination, AIC the Akaike Information Criterion, and BIC the Bayesian Information Criterion.

Similarly, simple trading rules that use political variables as potential predictors of excess stock returns results in a rather limited increase in terminal wealth. Relying on a political variable to forecast excess stock returns yields an increase in terminal wealth only under the ACD and AIC model-selection criteria. The increase in terminal wealth becomes smaller when transaction costs are medium-sized and high. When a dummy variable for a presidential election cycle is used to forecast excess stock returns, terminal wealth decreases under the BIC model-selection criterion.

Table 3: Performance of Trading Rules

	Democratic Premium	Presidential Cycle Effect	No Political Dummy
		Panel A: Sharpe Ratio	
		Zero Transaction Costs	
ACD	0.21	0.21	0.20
AIC	0.20	0.21	0.19
BIC	0.18	0.17	0.18
		Medium-Sized Transaction Costs	
ACD	0.19	0.20	0.19
AIC	0.20	0.20	0.18
BIC	0.17	0.16	0.17
		High Transaction Costs	
ACD	0.19	0.19	0.18
AIC	0.19	0.19	0.18
BIC	0.16	0.16	0.16
		Panel B: Terminal Wealth	
		Zero Transaction Costs	
ACD	13,627	14,399	12,191
AIC	13,765	14,850	11,297
BIC	7,689	7,179	7,689
		Medium-Sized Transaction Costs	
ACD	11,086	11,504	10,333
AIC	11,575	12,475	9,414
BIC	6,420	5,971	6,420
		High Transaction Costs	
ACD	9,579	9,742	9,203
AIC	10,205	10,998	8,217
BIC	5,660	5,211	5,660

Note: In each period of time, the investor selects three optimal forecasting models according to the ADC, AIC, and BIC model-selection criteria. For switching between shares and bonds, the investor uses information on the optimal one-step-ahead stock-return forecasts implied by the optimal forecasting models. When the optimal one-step-ahead stock-return forecasts are positive (negative), the investor only invests in shares (bonds), not in bonds (shares). The investor neither makes use of short selling nor uses leverage when reaching an investment decision. Initial wealth is 100. We assumed medium-sized (high) transaction costs of 0.5 and 0.1 of a percent (0.1 of a percent and 1 percent) for shares and bonds, respectively.

The results of tests of market timing confirm our empirical results (Table 4). The Cumby-Modest test (Panels A, B, and C) and the Pesaran-Timmermann test (Panel D) yield similar results.

Table 4: Tests of Market Timing

	ACD	AIC	BIC
	Panel A: Cumby-Modest Test for Democratic Premium Model		
Constant	-0.43	-0.61	0.56
	(0.68)	(0.79)	(0.74)
Dummy	1.54	1.69	0.41
	(2.29)**	(2.11)**	(0.52)
	Panel B: Cumby-Modest Test for Presidential Cycle Effect Model		
Constant	-0.08	-0.15	0.76
	(0.17)	(0.27)	(1.29)
Dummy	1.22	1.27	0.20
	(2.25)**	(2.17)**	(0.32)
	Panel C: Cumby-Modest Test for No Political Dummy Model		
Constant	0.09	0.20	0.63
	(0.17)	(0.35)	(1.15)
Dummy	0.99	0.86	0.35
	(1.72)*	(1.43)	(0.59)
	Panel D: Pesaran-Timmermann Market Timing Test		
Democrat Premium	1.08	1.87**	0.97
Presidential Cycle Effect	2.11**	2.59***	0.27
No Political Dummy	1.89**	2.29**	0.97

Note: The Cumby-Modest test requires the estimation of a regression of excess stock returns on a constant and a dummy variable that takes on the value of one if the forecast of excess stock returns is positive and zero otherwise. t-statistics were computed using heteroskedasticity-consistent standard errors and are reported below the coefficients. The Pesaran-Timmermann (1992) test is a nonparametric test of market timing that has an asymptotically standard normal distribution. Asterisks * (**, ***) denote statistical significance at the 10 (5, 1) percent level.

The results of both tests are significant under the ACD and AIC model selection criteria, and insignificant under the BIC model-selection criterion. Under the AIC model-selection criterion, the p-value of the Cumby-Modest test is 15 percent in the case that political variables are not considered useful for forecasting excess stock returns. The main message conveyed by the results is that using political variables does not systematically affect an investor's market-timing ability. Similarly, the results of the Giacomini-White test confirm that political variables do not systematically improve forecasts of excess stock returns. The test does not reject the hypothesis of equal mean squared errors in all cases, as indicated by the rather high p-values reported in Table 5.

Table 5: Giacomini-White Test for Forecast Equivalence

	Democrat Premium	Presidential Cycle Effect
ACD	0.62	0.20
AIC	0.86	0.26
BIC	0.22	0.82

Note: The table reports the p-values of the forecasting test due to Giacomini and White (2004). A p-value below 0.1 (0.05, 0.01) would indicate a better forecasting performance of the model featuring a political variable.

5. Conclusions

We provide new empirical evidence on the Democratic premium and the presidential cycle effect by examining the implications of both anomalies for the predictability of U.S. excess stock returns. To this end, we use the real-time modeling approach developed by Pesaran and Timmermann (1995, 2000). The key advantage of the Pesaran-Timmermann approach over the approaches applied in the earlier literature is that it is built on the realistic assumption that an investor only relies on contemporaneous and historical information to forecast excess stock returns, whereas information only available in subsequent periods is not used. Our two main empirical results indicate that (i) political variables are often included as predictors in forecasting models for excess stock returns, and (ii) the economic benefits an investor could have reaped upon using political variables

to set up simple trading rules would have been small. Our results raise doubts as to whether the Democratic premium and the presidential cycle anomaly constitute a major challenge to the efficient markets hypothesis.

In future research, approaches other than Pesaran-Timmermann should be employed to gain further insights into the implications of political stock market anomalies for the efficient markets hypothesis. The forecasting approaches that have recently been suggested by Avramov (2002) and Aiolfi and Favero (2005) should be useful in this respect. Moreover, while we have studied an investor who seeks to forecast one-month-ahead excess stock returns, it could be of interest to future research to analyze the forecasting power of political variables for stock returns at longer horizons.

References

Aiolfi, M., and C. A. Favero (2005), "Model Uncertainty, Thick Modelling and the Predictability of Stock Returns", Journal of Forecasting 24, 233-254.

Akaike, H. (1973), "Information Theory and an Extension of the Maximum Likelihood Principle", in B. Petrov and F. Csake (eds.), Second International Symposium on Information Theory. Akademia Kiado, Budapest.

Avramov, D. (2002), "Stock Return Predictability and Model Uncertainty", Journal of Financial Economics 64, 423-458.

Booth, J. R., and L. C. Booth (2003), "Is Presidential Cycle in Security Returns Merely a Reflection of Business Conditions?", Review of Financial Economics 12, 131-159.

Clark, T. E., and M. W. McCracken (2001), "Tests of Equal Forecast Accuracy and Encompassing for Nested Models", Journal of Econometrics 105, 85-100.

Cumby, E. and D. Modest (1987), "Testing for Market Timing Ability: A Framework for Evaluation", Journal of Financial Economics 25, 169-189.

Gärtner, M. and K. W. Wellershoff (1995), "Is There an Election Cycle in American Stock Returns?", International Review of Economics and Finance 4, 387-410.

Giacomini, R., and H. White (2004), "Tests of Conditional Predictive Ability", available at: http://www.econ.ucla.edu/giacomin/.

Nofsinger, J. R. (2004), "The Stock Market and Political Cycles", Working Paper, Washington State University.

Pesaran, M. H., and A. Timmermann (1992), "A Simple Nonparametric Test of Predictive Performance", Journal of Business and Economic Statistics 10, 461-465.

Pesaran, M. H., and A. Timmermann (1995), "Predictability of Stock Returns: Robustness and Economic Significance", Journal of Finance 50, 1201-1228.

Pesaran, M. H., and A. Timmermann (2000), "A Recursive Modeling Approach to Predicting UK Stock Returns", Economic Journal 110, 159-191.

Riley, W.B. Jr., and W. A. Luksetich (1980), "The Market Prefers Republicans: Myth or Reality?", Journal of Financial and Quantitative Analysis 15, 541-559.

Santa-Clara, P., and R. Valkanov (2003), "The Presidential Puzzle: Political Cycles and the Stock Market", Journal of Finance 58, 1841-1872.

Schwarz, G. (1978), "Estimating the Dimension of a Model", Annals of Statistics 6, 416-464.

Sharpe, W. F. (1966), "Mutual Fund Performance", Journal of Business 39, 119-138.

Snowberg, E., J. Wolfers, and E. Zitzewitz (2006), "Partisan Impacts on the Economy: Evidence from Prediction Markets and Close Elections", Working Paper 12073, NBER, Cambridge, Mass.

Umstead, D. A. (1977), "Forecasting Stock Market Prices", Journal of Finance 32, 427-448.

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