SHIFTS IN POLITICAL ENVIRONMENT AND INDUSTRY MOMENTUM: EVIDENCE FROM GLOBAL STOCK MARKETS

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ABSTRACT

This paper aims to examine whether shifts in the political environment can explain industry momentum profits in global stock markets. In the U.S., Canada and Australia, I find that the politically consistent momentum strategy, which takes a long position in industries that are both winners and politically favored and a short position in industries that are both losers and politically unfavored, outperforms the standard momentum strategy. In contrast, the politically inconsistent momentum strategy, which has a long position in industries that are winners but politically unfavored and a short position in industries that are losers but politically favored does not generate significant profits. Further, I find that a political-sensitivity-based long-short portfolio explains approximately 20% to 40% of industry momentum profits in the three countries. This explanatory power is concentrated around presidential (prime minister) elections. Overall, the results support the theory that investor underreaction to political information generates momentum. In other countries in which the pattern cannot explain momentum returns, I attempt to provide a new conjecture.

BIOGRAPHICAL SKETCH

Zhongyang Wang comes from Beijing. He got his Bachelor of Finance from Beijing Jiaotong University. In 2020, Zhongyang Wang started his 2-year academic study in Applied Economics and Management at Cornell University. His research interests are behavioral finance and asset pricing.

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I. Introduction

Momentum is one of the most best-known anomalies in the finance literature, and momentum strategies generate abnormal returns pervasively and persistently (Jegadeesh and Titman, 1993; Ahn et al., 2003; Chan et al., 1996). This pattern is robust across different size groups (Fama and French, 2008) and is significant in major stock markets around the world and across different asset classes. (Rouwenhorst,1998; Fama and French, 2012; Asness, Moskowitz and Pedersen, 2013; Chui and Titman, 2010). Momentum strategies are also effective at industry levels (Moskowitz et al., 1999, Nijman et al., 2004, Pan et al., 2004, Menzly et al., 2006). However, the highly debated explanations for price momentum range from time-varying expected returns (e.g., Berk et al., 2002; Sagi and Seasholes, 2007) to rationales based on market frictions and investor psychology (e.g., Hong and Stein, 1999; Grinblatt and Han, 2005; Antoniou and Doukas, 2013).

Another strand of the finance literature establishes a link between political environment and stock market returns (Cooper et al., 2010; Kim and Park, 2012; Belo et al., 2013). More recently, Addoum and Kumar (2016) propose a method to measure political sensitivity, and demonstrate that retail and institutional investors gradually tilt their portfolios toward stocks in politically favored industries when there is a change in the presidential party. Further, Addoum, Delikouras, Ke and Kumar (2019) focus on the impact of shifts in the political environment on momentum profits. They show that a political-sensitivity-based portfolio explains a part of monthly momentum alphas at both the stock and industry levels, and their results suggest that investor underreaction to political information generates momentum returns.

Based on this study, I reexamine the source of industry momentum profits in the US market, and extend the pattern to the global markets. Specifically, I select six well-developed countries with stable “two-party system” presidential (or prime minister) power transitions first. Then, I measure political sensitivity using the same method as Addoum and Kumar (2016) and classify momentum winner and loser portfolios into politically consistent and politically inconsistent categories. For the US, Canada and Australia, I find that the politically consistent momentum (PCM) strategy, which takes a long position in industries that are both winners and politically favored and a short position in industries that are both losers and politically unfavored, outperforms the standard momentum strategy (MOM) by 0.24%, 0.42% and 0.52% respectively on a monthly basis during each sample period[1]. In contrast, the politically inconsistent momentum strategy (PIM), which has a long position in industries that are winners but politically unfavored and a short position in industries that are losers but politically favored, generates average returns that are close to zero and even negative in Canada.

Next, I construct a political-sensitivity-based long-short portfolio (POL) at the industry level, and test its ability to explain the time variation in momentum profits. In the presence of several additional asset pricing factors, I find that a portion of the time-series of momentum profits can be explained by the time variation in POL returns in the US, Canada and Australia. The incremental explanatory power of our political sensitivity measure is economically meaningful as it eliminates approximately 20% to 40% of monthly momentum alphas in these three countries.

If I select subperiods around elections in which the party in power changes or stays the same as the estimation periods, for the US, Canada and Australia, the explanatory power

[1] The estimation period of the US is from January 1939 to December 2021 while that of Canada and Australia is from January 1981 to December 2021.

of political sensitivity is especially strong during subperiods in which there is a change in power and the political environment changes considerably. Meanwhile, the spreads between returns of PCM and MOM narrow if I only consider subperiods excluding around elections.

Therefore, my results provide empirical support for behavioral theories that suggest momentum in stock returns is driven by investor underreaction to news. From the traditional finance perspective, the party in power is identified as only a noisy signal of the stock market. Thus, differences over partisan cycles may be ignored, which may cause difficulties in interpreting the political information for investors. Given the potential delay in the interpretation of new political information, valuations of industries that are expected to benefit from the new political regime should gradually rise surrounding the change in ruling party.

However, in other countries like the UK, France, Germany and Japan, the standard momentum strategy outperforms the politically consistent momentum strategy in most of the estimation period. Also, when adding the POL factor into Fama-French three-factor model, its explanatory power for momentum returns barely increases. Their alpha drops are statistically indistinguishable from zero. That is, the changes of ruling parties or political climate cannot explain momentum profits for these four countries.

It should be noted that there are common features in these countries. In the estimation period, political parties in some countries have been in power for a considerable period of time. In the UK, the Conservative Party once is in power over 18 years, and right-wing parties have chaired for 17 years in France. Similarly, there is a dominant-party in Germany and Japan. For Germany, Unionsparteien (CDU/CSU) holds the premiership from 1982 to

1998 and from 2005 to 2021. Considering the party's long-term governance, I speculate that the ruling party's policies may have balanced the interests of various industries, such that few specific industries would steadily gain additional profits from the policies. On the other hand, investors may tend to see their influence on the stock market as limited, although the parties in a position of weakness will govern for some periods.

The rest of the paper is organized as follows: Section II reviews the previous studies on the related topics. In Section III, I describe the data source and the method for constructing momentum and political portfolios. Section IV shows the empirical results for the target markets. Section V focuses on additional robustness tests. Section VI discusses my findings and concludes with a brief summary.

II. Literature Review

1. Literature on Industry Momentum

Jegadeesh and Titman (1993) first introduce the concept "momentum strategies" in the stock market, and find trading strategies that buy past winners and sell past losers realize significant abnormal return. Then, Moskowitz and Grinblatt (1999) extend momentum strategies from the stock levels to the industry levels, they propose that industry momentum appears to be contributing substantially to the profitability of individual stock momentum strategies, and industry momentum is never subsumed by individual stock momentum and consistently subsumes individual stock momentum. Pan and Liano (2004) decomposes momentum profits into three components, and find that the industry momentum effect is primarily due to return own-autocorrelations. In a recent paper, Grobys (2018) argue that the respective investment strategies implemented using the US industries are significantly correlated with the market factor, but lack correlations with other factors in the Fama-French three-factor model.

From the perspective of portfolio returns, Behr and Guettler (2012) propose a parametric portfolio policy that uses industry return momentum to improve portfolio performance. Menzly (2006) documents a cross-momentum effect among industries that are related to each other along the supply chain, and using the momentum strategy in related upstream or downstream industries yield significant profits.

For international markets, Gregory and Tharyan (2010) prove that the momentum effect derives from market underreaction to either industry- or firm-specific information and it is a significant phenomenon in the UK stock returns. In addition, momentum and industry momentum strategies show many common characteristics in global markets. For example, Rouwenhorst (1998) uses a sample of 12 European countries, and reports that returns on European momentum portfolios are significantly correlated with relative strength strategies in the United States. Asness (2013) finds consistent value and momentum return premia across eight diverse markets, and a strong common factor structure among their returns. For markets of North America, Europe, Japan, and Asia Pacific, Fama and French (2012) suggest that there is return momentum everywhere, and spreads in momentum returns decrease from smaller to bigger stocks, except for Japan.

On the other hand, results from Nijman (2004) suggest that the positive expected excess returns of momentum strategies in European stock markets are primarily driven by individual stock effects, while industry momentum plays a less important role.

2. Literature on Explanations and Sources of Momentum

I classify the literature on this topic into two categories, some researchers propose risk-based explanations of momentum profits, and other studies explain momentum in returns from a behavioral perspective.

Berk (1999) proposes a model of expected returns which can explain features of the cross-sectional and time-series momentum returns. Sagi and Seasholes (2007) find momentum strategies that use firms with high revenue growth volatility or low costs outperform traditional momentum strategies. In addition, Bandarchuk (2013) presents an explanation of momentum that links momentum profits to extreme past returns. For international stock markets, Park and Kim (2013) find countries exhibiting momentum show that the cross-sectional dispersion in unconditional mean returns dominates the negative contribution from the component reflecting the intertemporal returns, while this is not the case in countries exhibiting no momentum.

On the other hand, more researchers explain the momentum profits by behavioral patterns. Hong and Stein (1999) propose the momentum traders can profit by trend chasing due to prices underreaction in the short run. Further, they (2000) find that firm-specific information, especially negative information, diffuses slowly across the investing public. Next, Chen and Lu (2017) improve their theory by exploiting the options markets to identify stocks with slow information diffusion speed. Grinblatt and Han (2005) use prospect theory to explain why momentum exists in the cross-section of stock returns. Similarly, Antoniou and Doukas (2013) establish the link between sentiment and the profitability of momentum strategies, and show that momentum profits arise only under optimism. Avramov and Doron (2007) show that momentum profitability is large and significant among low credit grade firms, but it is nonexistent among high credit grade firms. Moreover, they (2013) add that strategies based on price momentum derive profits from taking short positions in high credit risk firms. However, despite their strong positive returns across numerous assets, Daniel and Moskowitz (2016) find momentum crashes occur in panic states, following market declines and when volatility is high.

3. Literature on Relation between Political Climate and Stock Market

There is substantial evidence on the influence of political climate on the stock market. For example, Santa-Clara (2003) finds that the excess return in the US stock market is higher under Democratic than Republican presidencies, and the difference in returns across presidential parties consists largely of a difference in unexpected returns. Li and Jeffrey (2006) purpose the overall U.S. stock market is sensitive to political uncertainty, and after controlling for differences in the business cycle, the presidential political party effect remains robust. Wong and Michael (2009) verify a formal existence of the 4-year presidential election cycle for the US stock returns by applying spectral analysis. Belo (2013) shows the market underreaction to predictable variation in the effect of government spending policies. Hanke (2020) provides an approach that check whether or not stock prices reflect any outcome-dependent return expectations prior to political events. Investor attitudes towards market are also influenced by the political environment. Bonaparte and Kumar (2017) find that individuals become more optimistic and perceive markets to be less risky and more undervalued when their preferred party is in power.

At the firm levels, Cooper (2010) presents stock price responses of changes in the degree of political connectedness. From the prospective of political geography, Kim (2012) finds that the level of local firms' proximity to political power can explain the excess returns of these firms.

Addoum and Kumar (2016) provide a method to measure political sensitivity, and demonstrate that investors gradually tilt their portfolios toward stocks in politically favored industries when there is a change in the presidential party. Furthermore, using the measurement method, Addoum, Delikouras, Ke and Kumar (2019) show that shifts in the political climate are an important determinant of momentum returns, and investor underreaction to political information can explain a significant portion of the time-series variation in momentum returns. Based on the two studies, this paper reexamines the source of industry momentum profits in the US market, and extend the pattern to the international market. In some countries like Canada and Australia, political climate change can explain the momentum returns in the similar way. For the countries in which the pattern cannot explain the momentum returns, I attempt to offer a new insight.

III. Data and Methodology

1. Data Source

To extend the model Addoum, et al. (2019) proposed from the United States stock market to the international market, I select six representative countries (Australia, Canada, France, Germany, Japan and the UK) with well-developed domestic capital markets and stable "two-party system" presidential (or prime minister) power transitions.

For constructing momentum and political strategies at industry level in the US market from January 1929 to December 2021, I obtain monthly Standard Industry Classification (SIC) 48-industries value-weighted portfolio return, historical book equity data and Fama-French three factors from the Center for Research in Security Prices (CRSP) and Kenneth French's data library. The historical results for presidential elections, Senate and House majority are from the CQ Press Voting and Elections Collection.

For countries other than the United States, I use the unified Industry Classification Benchmark (ICB) and obtain monthly ICB 20-industries value-weighted portfolio return in each country from Datastream International. My international stock returns, annual market capitalization, book equity and other accounting data are primarily from Bloomberg, supplemented by Datastream and Worldscope. To have broad coverage of different size stocks and have enough traded firms in the markets I examine, the sample period of the UK is from January 1975 to December 2021, and other regions' are from January 1981 to December 2021. The historical results of the elections of each country's President (or Prime Minister) are available on the official website of the corresponding country. Appendix-Table 9 describes the specific method of calculating Fama-French three factors and shows the results of descriptive statistics for all seven regions. The results for international markets are like previous studies (Griffin, 2002 and Fama, 2012). Table 10 displays the definitions and codes of SIC-48 industries and ICB-20 industries.

2. Measurement of Political Sensitivity

Addoum and Kumar (2016) proposed a method of measuring political sensitivity at industry and stock level, and I use this method to identify industries that are politically favored. On the basis of CAPM, they introduced a party indicator into the original model. Specifically, for the US market, I rolling regress industrial excess return on market excess return and the indicator of the presidential party for each of the SIC 48 industries. The rolling period is 12 years, because during this given period, the party of president has completed at least one change. The only exception is that Democrats once held the presidency for 20 years (January 1933 to January 1953), the sensitivity estimator is regarded as keeping constant from January 1945 to January 1953 bec4ause of the similar political environment. The rolling period of the UK, Germany and France is 13 years,[2] and that of the other regions (Australia, Canada and Japan) is 10 years.[3] The time-series regression equation is as follows.

$$R_{it} - R_{ft} = \alpha_i + \beta\left(R_{mt} - R_{ft}\right) + \theta_i Pres_{Party_t} + \varepsilon_{it} \quad (1)$$

[2] In the UK, both prime ministers from May 1979 to May 1997 are from the Conservative Party, so the sensitivity estimator is constant from May 1992 to May 1997. Right-wing parties, Rassemblement pour la République (RPR) and Union pour un mouvement Populaire (UMP), have chaired for 17 years (May 1995 to May 2012) in France, and the sensitivity estimator is constant during the last four years. For Germany, Unionsparteien (CDU/CSU) holds the premiership from October 1982 to October 1998 and from November 2005 to December 2021.

[3] Similarly, the Liberal Party of Australia holds the premiership for 11 years and 9 months, from March 1996 to December 2007. The Liberal Party in Canada also holds the position of Prime Minister from November 1993 to June 2004. In Japan, seven consecutive Prime Ministers come from the Liberal Democratic Party between January 1996 to September 2009. The sensitivity estimators of the above regions are constant for the excess time more than 10 years.

Table 1. List of Parties and Corresponding Political Sensitivity Indicators

This table reports the political parties that have been in power in the United States from 1929 to 2021 and in other countries from 1975 to 2021. Specially, the presidents of France and the prime ministers of Japan come from more than two parties over the past few decades, so I classify these parties as left-wing and right-wing.$Pres_{Party_t}$=1 for the right-wing parties and $Pres_{Party_t}$=0 for the left-wing parties.

	Parties and Political Sensitivity Indicator	
Regions	**$Pres_{Party_t}$=1 (right-wing)**	**$Pres_{Party_t}$=0 (left-wing)**
U.S.	Republican	Democratic
U.K.	Conservative	Labour
France	Republican, Rally for the Republic, Union for a Popular Movement	Socialist, En Marche!
Germany	CDU/CSU Union	Social Democratic
Canada	Conservative	Progressive
Australia	Liberal	Labour
Japan	Liberal Democratic	Renewal, Socialist, Democratic

The binary variable *Pres_Party* depends only on national election outcomes. For example, in the United States, $Pres_{Party_t}$=1 if presidential party is Republican and $Pres_{Party_t}$=0 if it is Democratic. Although the political environment depends on factors beyond the presidential party (e.g., the president's approval rating, congressional control, and lobbying activities), the simple approach is motivated by past studies of politics and the macroeconomy. Santa-Clara and Valkanov (2003) and Addoum and Kumar (2016) find that congressional control has little impact on the effects associated with the president's partisan ties. Moreover, I will confirm it in the part of robustness check.

More generally, presidential party indicator variable is equal to one when the presidential party is right-wing parties and zero during left-wing parties' presidential periods in the non-US countries. Table 1 reports the parties that once hold the presidency or premiership and their corresponding political leanings in the listed countries.

I measure political sensitivity using rolling windows to allow for time-variation in both the magnitude and direction of our political sensitivity estimates. My focus is on the θ_i estimate, which captures the political sensitivity of an industry in the given period. A positive θ_i estimate indicates that the industry earns higher average returns during Republican (or right-wing parties in other countries) Presidential terms, while a negative θ_i estimate indicates that the industry earns higher returns when the President (Prime Minister) is a Democrat (left-wing party member).

Addoum (2019) shows that the political sensitivity estimates effectively capture industry-level partisan ties in the US market. For example, industries such as Tobacco, Pharmaceuticals, and Finance are typically estimated as being favored during Republican presidencies and unfavored during Democratic presidencies. However, the Healthcare and Construction industries are generally favored during Democratic presidencies and unfavored otherwise. Overall, investors may not be able to immediately identify and interpret the systematic effects of a new political regime' s policies on stock prices. In turn, this underreaction generates persistence in returns that can potentially explain momentum in stock prices.

Considering the characteristic above, I need to introduce conditional political sensitivity θ_i^c to normalize the estimator before my main empirical tests. In particular, I define $\theta_i^c = \theta_i$ if the president belongs to the Right-wing Party in the given month, while $\theta_i^c = -\theta_i$ if the president belongs to the Left-wing Party. It can be sure that the level of being favored of one industry in different political periods is comparable via the manipulation. In other words, the point of this transformation is that industries that are politically favored by the Right-wing Party (Left-wing Party) political environment have higher θ_i^c when the president is from Right-wing Party (Left-wing Party).

3. Construction of Political Sensitivity Portfolios

θ_i^c shows how favored an industry is in the current month, and θ_i^c cross-sectional data can be obtained for SIC 48 industries or ICB 20 industries. In the US market, I sort the estimator in descending order for each month and calculate its four quintiles. I use the top five industries to form the political favorites portfolio and the bottom five industries to form the political unfavorites portfolio. The favorites portfolio contains industries that are most favored by the existing political climate (Republican or Democrat), while the unfavorites portfolio contains industries that are least favored by the existing political climate. The remaining industries are split equally among group 2, 3, and 4.[4] Portfolios are value-weighted using industry market capitalization at the beginning of the month. The portfolio composition is fixed for one month.

In the international markets, uniform ICB 20 industries are adopted and the sorting rule will be different. The first group (political favorites portfolio) is formed by the top three industries and the last group (political unfavorite portfolio) is formed by the bottom three industries. The rest industries are split equally among portfolios 2, 3, and 4. Thus, both in the US and international markets, I use the political favorites and unfavorites portfolios to

[4] Considering the returns in some industries are not counted since 1927, such as the healthcare industry starts to count in 1969, the defense industry and the precious metals industry start to count in 1963, etc. This means that the number of industries in each group in the quintile may not be even. In order to construct the PCM and PIM strategies properly, we ensure the number of industries included in the first and fifth groups is equal.

create a political sensitivity factor (POL) by holding a long position in the favorites portfolio and a short position in the unfavorites portfolio.

4. Construction of Momentum Portfolios

To construct industry-level momentum portfolios, I follow Moskowitz and Grinblatt (1999) and sort all industries at the beginning of every month on the basis of their past six-month returns, and hold the resulting five portfolios for the subsequent six months.[5] To be clear, momentum portfolios are constructed by the same method in markets of all target countries. Moreover, to avoid potential microstructure biases (e.g., bid-ask bounce, price pressure, lead-lag reaction effects, and short-term reversal), I skip one month between the end of the ranking period and the beginning of the holding period.[6]

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[5] The strategy of portfolio construction is common in the momentum literature. See also Jegadeesh and Titman (1993), Conrad and Kaul (1998), Moskowitz and Grinblatt (1999), Hong et al. (2000) etc.

[6] Skipping a month is also common in this literature: Jegadeesh (1990), Lehmann (1990), Jegadeesh and Titman (1993), Moskowitz and Grinblatt (1999), Grundy and Martin (2001), Griffin et al. (2003), Liu and Zhang (2008).

IV. Empirical Results

In this section, I show the relation between political sensitivity and industry-level momentum profits in different countries. Then I use time-series and cross-sectional regression to prove that changes in the political environment alter expected industry returns in stock market, which in turn account for a substantial portion of momentum profits. The pattern works not only in the US but in some other countries.

1. Sorting Results

To test the relation between presidential party and momentum return, I first perform sorts using the conditional political sensitivity measure. Table 2 shows descriptive statistics for political sensitivity and momentum portfolios in different regions. By construction, the political sensitivity measure is monotonically decreasing across political sensitivity portfolios from group 1 to group 5. Moreover, for some countries like the US, the UK, Canada and Australia, momentum portfolios also exhibit a less pronounced monotonic pattern in their political sensitivities, suggesting a link between political sensitivity and momentum returns.

According to Table 2, monthly average excess returns are monotonically decreasing across political sensitivity portfolios in markets of the US, Canada and Australia, and the political sensitivity spreads (favorites - unfavorites) are 0.51%, 0.38% and 0.81% per month respectively. These numbers are statistically significant, and the result of the US market is very similar to that in Tables 1 of Addoum (2019). However, although I am able to gain positive average excess returns from political sensitivity portfolios in other countries, the excess returns do not show significant monotonicity (especially in France and Japan). On the right part of Table 2, monthly average excess returns are also monotonically decreasing across momentum portfolios for the US, Canada and Australia, and less pronounced monotonic in the UK. Their momentum spreads (winner - loser) are

Table 2. Performance of Political and Momentum Portfolios

This table reports monthly performance for political and momentum portfolios. To construct political portfolios. I sort all industries at the beginning of every month on the basis of their conditional political sensitivity and hold the resulting five portfolios for one month. The unfavorite portfolio at the industry level is an equally weighted portfolio of the five industries having the lowest political sensitivity, whereas the favorite portfolio consists of the five industries having the highest political sensitivity. Industry-level political portfolios 2, 3, and 4 are equally weighted portfolios of the remaining industries sorted into terciles based on their political sensitivity. POL is created by holding the favorite portfolio and shorting the unfavorite portfolio. To construct momentum portfolios, I follow Moskowitz and Grinblatt (1999) and sort all industries at the beginning of every month on the basis of their past six-month returns and hold the resulting five portfolios (same group classification as for political portfolios) for the subsequent six months. The t-statistics are adjusted for autocorrelation and heteroskedasticity using the Newey and West (1987) correction method and are reported in parentheses. The estimation period for the United States is January 1939 to December 2021, while for the remaining regions these are January 1981 to December 2021.

	Political Portfolios			**Momentum Portfolios**	
Group	**Sensitivity**	**Excess Return**	**Group**	**Sensitivity**	**Excess Return**
Panel A. U.S. 48 Industries					
1 (Favored)	4.23	1.03	1 (Winner)	1.04	1.09
2	1.79	0.89	2	0.72	0.82
3	0.33	0.78	3	0.31	0.74
4	-0.78	0.68	4	0.22	0.69
5 (Unfavored)	-2.66	0.52	5 (Loser)	-0.56	0.51
Portfolio (POL)		0.51 (3.56)	Portfolio (MOM)		0.58 (2.99)
Panel B. U.K. 20 Industries					
1 (Favored)	2.69	0.46	1 (Winner)	0.46	0.44
2	1.36	0.41	2	0.24	0.49
3	0.00	0.33	3	0.24	0.36

4	-0.97	0.15	4	0.03	0.27
5 (Unfavored)	-2.16	0.21	5 (Loser)	-0.24	-0.03
Portfolio (POL)		0.25 (1.47)	Portfolio (MOM)		0.47 (2.13)
Panel C. France 20 Industries					
1 (Favored)	2.33	0.49	1 (Winner)	0.68	0.37
2	1.56	0.54	2	0.53	0.42
3	0.94	0.28	3	0.66	0.41
4	-0.28	0.35	4	0.08	0.37
5 (Unfavored)	-1.96	0.22	5 (Loser)	-0.81	0.29
Portfolio (POL)		0.27 (2.41)	Portfolio (MOM)		0.08 (0.87)
Panel D. Germany 20 Industries					
1 (Favored)	2.42	0.55	1 (Winner)	0.49	0.52
2	1.06	0.44	2	0.32	0.54
3	0.90	0.59	3	0.39	0.38
4	0.31	0.39	4	0.18	0.32
5 (Unfavored)	-2.66	0.28	5 (Loser)	0.16	0.36
Portfolio (POL)		0.27 (1.66)	Portfolio (MOM)		0.16 (0.69)
Panel E. Canada 20 Industries					
1 (Favored)	2.12	0.79	1 (Winner)	0.42	0.91
2	0.93	0.60	2	0.05	0.54
3	0.11	0.45	3	-0.16	0.53
4	-0.82	0.45	4	-0.24	0.41
5 (Unfavored)	-2.80	0.41	5 (Loser)	-0.84	0.30
Portfolio (POL)		0.38 (2.57)	Portfolio (MOM)		0.61 (3.04)
Panel F. Australia 20 Industries					
1 (Favored)	3.53	0.88	1 (Winner)	1.37	1.16
2	1.23	0.29	2	0.22	0.38
3	0.01	0.28	3	0.04	0.30
4	-0.94	0.23	4	-0.06	0.05
5 (Unfavored)	-2.40	0.07	5 (Loser)	0.04	0.02
Portfolio (POL)		0.81 (3.14)	Portfolio (MOM)		1.14 (2.94)
Panel G. Japan 20 Industries					
1 (Favored)	1.99	0.08	1 (Winner)	0.84	0.06
2	1.54	0.03	2	0.80	0.11
3	0.83	0.07	3	0.32	0.08
4	-0.08	-0.03	4	0.38	-0.09
5 (Unfavored)	-1.42	-0.01	5 (Loser)	0.30	0.01
Portfolio (POL)		0.09 (0.57)	Portfolio (MOM)		0.05 (0.38)

0.58% (t-statistic=2.99), 0.61% (t-statistic=3.04), 1.14% (t-statistic=2.94) and 0.47% (t-statistic=2.13).[7] But the monotonicity does not show in France, Germany and Japan. I can sum up that at the industry level, the momentum and political sensitivity spreads are positively correlated in stock markets of the US, Canada and Australia.

Addoum (2019) finds that at the industry level, momentum profits mainly originate from the short leg of the strategy, while Moskowitz and Grinblatt (1999) propose that momentum profits depend on the long leg in the US market. My estimates in Table 2 support the result of the latter (but not so pronounced), suggesting that investing in portfolio 3 of industrial momentum and shorting losers yields a monthly average profit of 0.23%, whereas holding winners and shorting portfolio 3 yields a profit of 0.35%. Also, there are similar results in Canada and Australia markets and opposite conclusions in the UK market. For example, in the UK, winner-minus-portfolio 3 yields a monthly average profit of 0.08%, while portfolio 3-minus-loser yields a profit of 0.39%, which means momentum profits can be attributed to the short leg of the strategy. Nevertheless, I can only obtain relatively low average excess returns from the French, German and Japanese markets by this momentum portfolio method (0.08%, 0.16% and 0.05% respectively), and it is meaningless to confirm which part of the strategy supplies the profits.

Unlike momentum, profits for the political sensitivity portfolio mainly originate from the short leg of the strategy in the US market, while from long leg of the strategy in the UK, Canada and Australia market. To sum up, the findings above are important for the implementability of the politics-based trading strategy as well as its profits. Then I present empirical results at the industry level in order to better understand the relation between the

[7] For previous studies about the US market, in Moskowitz and Grinblatt (1999), industry momentum returns are 0.40% per month for momentum strategy, and in Grundy and Martin (2001) monthly industry momentum returns are 0.78%.

political climate and momentum.

2. Baseline Estimates

For the next test, I construct three momentum strategies. First, I sort all industries of all regions into five momentum portfolios and five political sensitivity portfolios. Within the winner portfolios, I pick only industries that also belong to the political unfavorites portfolio. My trading strategy consists of holding a long position in winner/favorite industries and shorting loser/unfavorite industries. I label this a politically consistent momentum (PCM) strategy.

Second, I construct the politically inconsistent momentum portfolio, I hold a winner industries position that also belongs to the unfavorites portfolio, and short loser industries that also belong to the favorites portfolio. I then compare the performance of the politically consistent momentum strategy to the standard momentum strategy (winner-minus-loser) and to the politically inconsistent momentum (PIM) strategy.

Table 3 presents performance estimates for the three momentum strategies: standard, politically consistent, and politically inconsistent. In the US, average monthly returns for the politically consistent momentum strategy (winners/favorites-minus-losers/unfavorites) exceed those of the standard momentum strategy by 0.24% (0.89% vs. 0.65%), and both the two results are significant. In contrast, the average monthly return for the politically inconsistent momentum strategy is statistically indistinguishable from zero (0.08%). In Canada and Australia, I find similar results that the average returns for PCM strategy exceed those of standard momentum strategy, and PIM strategy brings the least profits. For example, in Australia, PCM strategy exceeds MOM strategy by 0.72% and exceeds PIM strategy by 1.42% monthly. Compared to standard momentum strategy, PCM strategy is not so profitable in the UK, France, Germany and Japan. Even the average monthly return for PCM is statistically insignificant and close to zero, and PCM strategy underperforms PIM strategy in the UK market (0.08% vs. 0.17%).

To account for portfolio characteristics, I also calculate the Fama-French three-factor alpha for each strategy. Similar to the mean return results as mentioned previously, the politically consistent momentum strategy has an alpha of 1.25%, whereas the standard momentum strategy has an alpha of 0.79% in the US market. Again, the politically inconsistent strategy yields the least alpha (0.23%). I find similar patterns in Canada and Australia markets. Their politically consistent momentum strategies have the largest alphas among the three strategies (1.09% and 1.39% respectively), and both the results are statistically significant. However, I cannot obtain ideal alphas using PCM strategy in the UK, France, Germany and Japan.

Furthermore, in the US market, I find that average returns to the standard and politically consistent momentum strategies are largely driven by the short leg. This is consistent with the findings of Avramov et al. (2007, 2013) and Addoum (2019). In particular, the loser portfolio alpha of the politically consistent strategy is about 35.8% larger in magnitude (−0.72% vs. 0.53%) than that of the winner portfolio. However, in Canada and Australia, returns to politically consistent momentum strategy are driven by the long leg significantly. The alphas of the politically consistent winner portfolios have magnitude about five and eight times those of the loser portfolios (1.15% vs. -0.24% and 0.97% vs -0.12%).

Table 3. Performance of Three Momentum Strategies in Different Regions

This table reports monthly performance for three types of momentum strategies: standard momentum, politically consistent momentum, and politically inconsistent momentum. The standard momentum strategy invests in winners and short-sells losers. The politically consistent momentum strategy invests in an equally weighted portfolio of momentum winners, which are also political favorites, and short-sells an equally weighted portfolio of momentum losers, which are also political unfavorites. The politically inconsistent momentum strategy invests in an equally weighted portfolio of momentum winners, which are also political unfavorites, and shorts an equally weighted portfolio of momentum losers, which are also political favorites. W–L is winners-minus-losers, Alpha is the abnormal return adjusted by the Fama-French three-factor model. The t-statistics are adjusted for autocorrelation and heteroskedasticity and are reported in parentheses.

	PCM	**MOM**	**PIM**	**PCM**	**MOM**	**PIM**
		the US			*the UK*	
Excess Return of Winner	1.18	1.09	0.98	0.12	0.44	0.28
	(4.56)	(4.87)	(2.01)	(1.11)	(1.57)	(1.20)
Excess Return of Loser	0.28	0.44	0.89	0.04	-0.03	0.11
	(3.12)	(1.74)	(2.44)	(0.69)	(0.22)	(1.61)
W-L	0.89	0.65	0.08	0.08	0.47	0.17
	(2.56)	(2.05)	(0.22)	(0.34)	(1.99)	(0.72)
Alpha of Winner	0.53	0.33	0.01	0.01	0.13	0.24
	(3.18)	(4.11)	(0.04)	(0.15)	(0.71)	(1.10)
Alpha of Loser	-0.72	-0.46	-0.20	-0.03	-0.23	0.09
	(-4.20)	(-4.88)	(-0.76)	(-0.11)	(-1.18)	(0.25)
W-L	1.25	0.79	0.23	0.04	0.36	0.15
	(3.94)	(4.58)	(1.01)	(0.29)	(0.73)	(0.98)
		Canada			*Australia*	
Excess Return of Winner	1.28	0.91	0.40	1.60	1.15	1.00
	(5.31)	(4.96)	(3.68)	(3.84)	(4.67)	(2.38)
Excess Return of Loser	0.25	0.30	0.54	-0.05	0.02	0.57
	(2.20)	(2.89)	(2.16)	(1.27)	(0.34)	(1.98)
W-L	1.03	0.61	-0.14	1.65	1.13	0.43
	(3.79)	(3.02)	(-1.00)	(2.36)	(2.42)	(1.69)
Alpha of Winner	0.97	0.51	-0.09	1.15	0.93	0.90
	(2.41)	(2.43)	(-0.94)	(1.95)	(3.85)	(1.50)
Alpha of Loser	-0.12	0.20	-0.34	-0.24	-0.27	0.97
	(-0.22)	(0.96)	(-0.75)	(-0.49)	(-1.14)	(1.39)
W-L	1.09	0.31	0.25	1.39	1.20	-0.07
	(2.25)	(2.16)	(0.86)	(2.67)	(1.87)	(-0.56)

To present the findings reported in Table 3 more directly, Figure 1 shows the cumulative monthly log-returns for the various momentum portfolios in the US, Canada and Australia. To ensure the integrity of returns data, the period of the US momentum portfolios is from January 1939 to December 2021, and that of Canada and Australia is from January 1985 to December 2021. In Australia, I find the value of holding the politically consistent winner portfolio is about four times larger than the final value from holding the standard momentum winner portfolio: $573.81 versus $139.04. In contrast, the value of holding the politically consistent winner portfolio or standard portfolio is much less than the market returns ($0.53 and $0.30 vs. $12.45). Similar results hold when I calculate the portfolio returns in the US and Canada. But considering the lengths of period of different countries, the current values of the US portfolios are much greater than those of Canada and Australia.

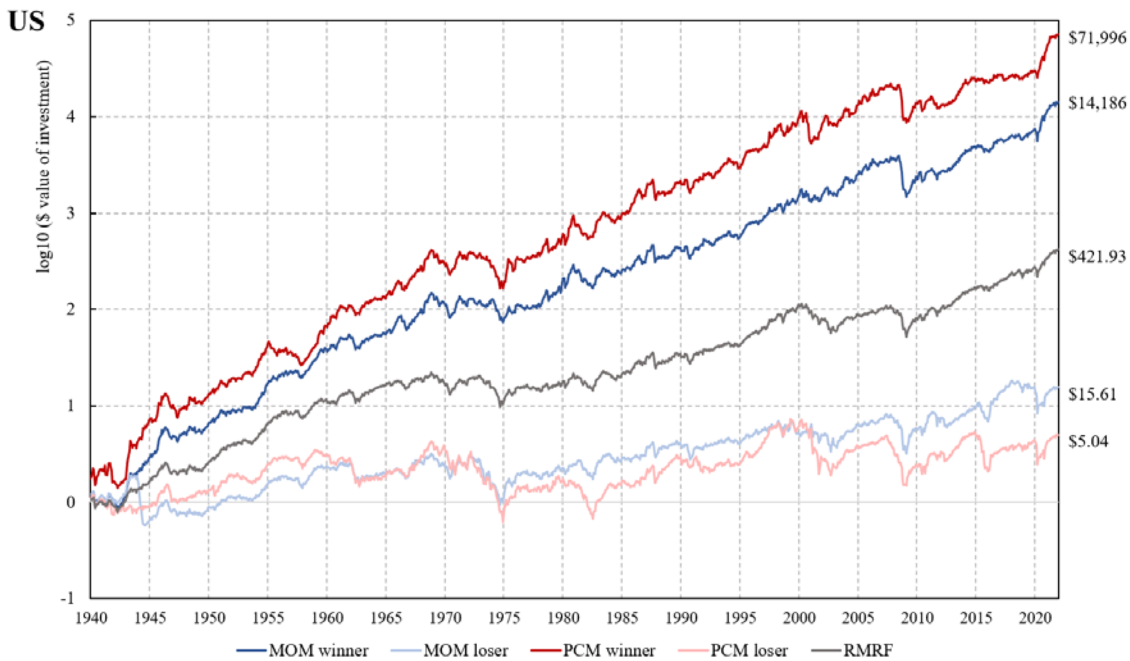
Collectively, the results in the US, Canada and Australia show that the politically consistent momentum strategy at the industry-level significantly outperforms the standard momentum strategy. These findings suggest that a substantial component of momentum strategies can be attributed to changes in the political climate.

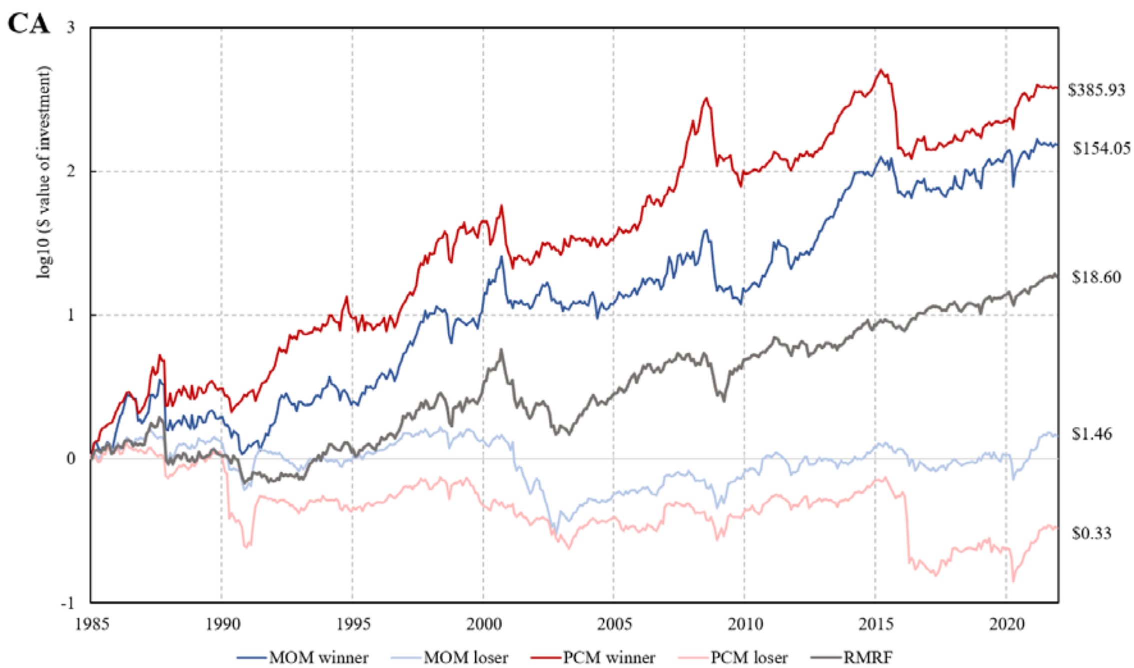
3. Performance Estimates During Periods of High Political Uncertainty

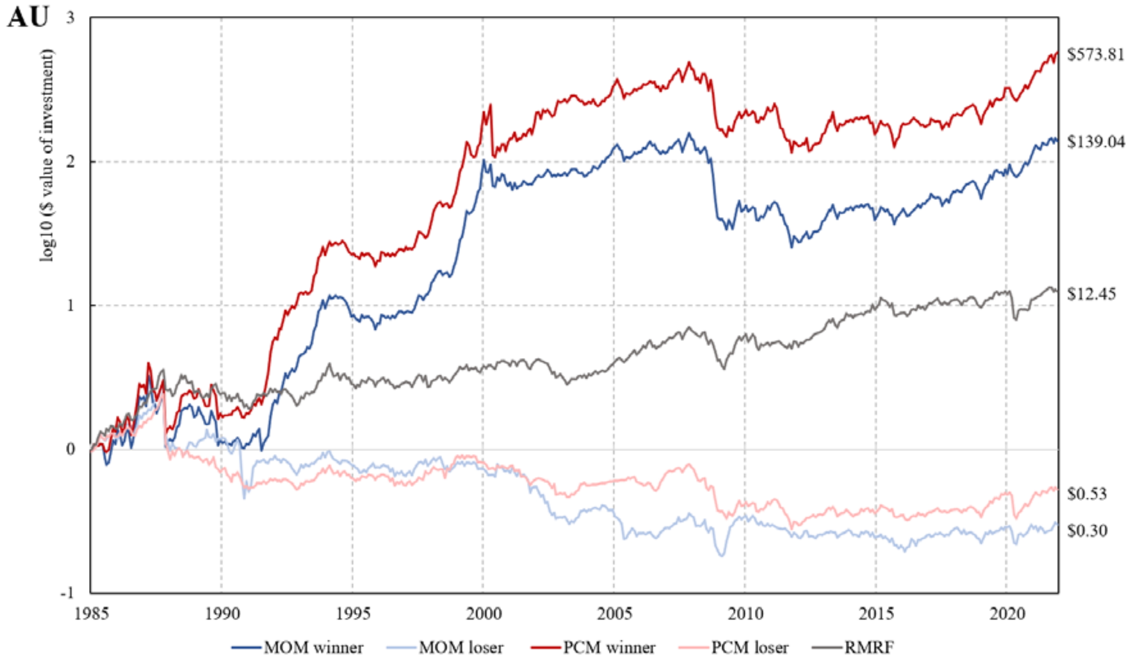
I have tested that political environment and momentum are significantly correlated in the US, Canadian and Australian markets. To shed additional light on the interplay between them, I focus on periods around presidential or prime minister elections. My hypothesis is that election years are periods of political uncertainty. Moreover, political uncertainty may be only partially resolved by election outcomes. Investors may remain uncertain about the new economic agenda until at least a few months into a new presidency or premiership,

Figure 1. Cumulative Gains for Momentum Portfolios in the Three Countries

This figure presents cumulative monthly log-returns for investing in: (1) the value-weighted market index; (2) the politically consistent winner portfolio (winners/favorites); (3) the politically consistent loser portfolio (losers/unfavorites); (4) the standard momentum winners portfolio; and (5) the standard momentum losers portfolio. The y-axis shows cumulative $\log_{10}$ returns for each portfolio. On the right side of the plot, I also present final dollar values for each of the five assets.







even if an incumbent candidate is reelected. Then, I can test the relation between political sensitivity of industries and momentum returns, and compare these periods of high political uncertainty with normal times.

Table 4 shows that during the US election switching-party years, the politically consistent strategy outperforms the standard momentum strategy by 0.31% (the full-sample difference is 0.24%) and the politically inconsistent strategy yields negative profits. More significantly, return of PCM strategy is 1.04% greater than MOM strategy in Australian switching-party years, while the result is 0.72% in normal times. The two PCM-minus-MOM differences are almost equal in Canadian market (0.42% vs. 0.41%). However, what the three markets have in common is that the profits of PIM strategy fall significantly during their switching-party years.

Table 4. Conditional Performance of Three Strategies Around Elections

This table reports conditional performance for standard momentum, politically consistent momentum, and politically inconsistent momentum strategies during periods of high political uncertainty. I test 6-month postelection and 12-month post party change for three countries. ER is excess return, and W-L is winners-minus-losers. The t-statistics are adjusted for autocorrelation and heteroskedasticity and are reported in parentheses. The estimation period of the US is from January 1939 to December 2021, and that of Canada and Australia is from January 1981 to December 2021.

Strategy	**PCM**	**MOM**	**PIM**	**PCM**	**MOM**	**PIM**
Period	**12-month Post Party Change**			**6-month Postelection**		
Panel A. the US						
ER_Winner	1.07	0.88	0.29	0.94	0.85	0.92
	(2.34)	(3.59)	(2.07)	(3.08)	(1.32)	(1.01)
ER_Loser	0.11	0.23	1.10	0.41	0.61	0.91
	(1.04)	(0.99)	(2.67)	(1.67)	(3.68)	(0.90)
W-L	0.96	0.65	-0.81	0.53	0.24	0.01
	(2.97)	(0.82)	(-2.56)	(0.84)	(2.35)	(0.26)
Panel B. Canada						
ER_Winner	1.64	0.78	0.49	0.97	0.96	0.21
	(2.88)	(0.85)	(1.33)	(2.44)	(3.48)	(1.13)
ER_Loser	0.27	0.31	0.85	0.16	0.75	0.84
	(2.31)	(1.96)	(2.44)	(1.80)	(2.34)	(2.02)
W-L	1.37	0.47	-0.36	0.81	0.21	-0.63
	(2.57)	(0.90)	(-1.03)	(2.06)	(2.21)	(-0.87)
Panel C. Australia						
ER_Winner	1.90	1.01	1.08	1.75	0.89	0.64
	(3.31)	(4.29)	(3.00)	(4.04)	(2.46)	(1.31)
ER_Loser	0.03	0.28	0.92	-0.02	0.10	0.49
	(2.75)	(2.93)	(2.82)	(-0.93)	(0.67)	(2.02)
W-L	1.87	0.83	0.16	1.77	0.79	0.15
	(3.60)	(2.37)	(1.02)	(1.85)	(0.98)	(0.90)

Next, I focus on the first six months after presidential (prime ministerial) elections[8], when the level of political activity/news should be high. Similar to the switching-party

[8] Unlike the United States, Canada and Australia implement the Westminster system. The reigning monarch appoints as prime minister the person most likely to command the confidence of the House of Commons, and this individual is typically the leader of the political party or coalition of parties that holds the largest number of seats in that chamber. Therefore, prime ministerial election is actually election for the House of Commons in Commonwealth of Nations.

subsample results, I find that, in the US, the politically consistent strategy outperforms standard momentum by 0.29%, while the result is 0.16% in normal times. Also, the politically inconsistent strategy generates average returns close to zero. Similarly, in Canada and Australia, politically consistent strategies outperform standard momentum strategies by 0.60% and 0.98% respectively, which are significantly greater than the differences during non-election period.

4. Performance Estimates Using Various Factor Models

So far, I have presented performance estimates of politically enhanced momentum strategies using different types of sorts. Next, I use various factor models to test the ability of my political portfolio (POL) to explain momentum in international stock prices.

Specifically, the returns for winner-minus-loser momentum (MOM) strategies are regressed on the three Fama-French factors (Fama and French (1992)) as well as my political factor (POL) of favorites-minus-unfavorites for all countries, and I add five Fama-French factors (Fama and French (2015)) for the US market.

For all factors of the US market, I can obtain the existing data from French's data library (https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html). But I still need to calculate three Fama-French factors of other countries. First, I select RMRF as the return on a region's value-weight market portfolio minus the 3-month interbank rate for that country. Second, to construct SMB and HML, I form portfolios at the end of June of each year t by sorting stocks in a region into two market cap and three book-to-market equity (B/M) groups. Half of the firms are classified as small market capitalization (S for small) and the other half as large market capitalization stocks (B for big). For the book-to-market classification, the B/M breakpoints for the four regions are the 30th and 70th percentiles of lagged (fiscal year t−1) B/M for the big stocks of a region, that is, the bottom 30% are designated as low B/M firms (L), the middle 40% as M, and the highest 30% as H. All selected stocks are ranked (independently) according to their size and B/M. The intersection of the rankings allows for six value-weighted portfolios: HB, MB, LB, HS, MS, and LS. The return variable SMB (small minus big) = (HS +MS +LS - HB - MB - LB)/3, and the return HML (high minus low) = (HB + HS - LB - LS)/2.

Table 5 reports the performance estimates MOM strategies at the industry level in the US, Canada and Australia, in which their coefficients for POL, alpha and alpha drops are statistically significant at reasonable confidence levels. However, the coefficients are not statistically significant in the UK, French, German and Japanese markets, the results are presented in Appendix-Table 11.

Just as the similar findings reported in Fama and French (1996), results in Table 5 imply that in the US, Canadian and Australian markets, neither the traditional Fama-French three factors nor new five factors can successfully explain momentum.[9] The magnitude and statistical significance of alpha estimates in the US are consistent with previous findings. For example, similar to Addoum (2019), I find that the CAPM alpha is 0.69% and that the Fama-French alpha is 0.78%, and the result is 0.81% when including Fama-French five factors. The alphas are all significant at 1% significance level. In Canada and Australia, the CAPM alphas are 0.62% and 1.15%, Fama-French alphas are 0.31% and 1.06% respectively. The results above are statistically significant at least at 10% significance level.

[9] The exceptions are HML factor in the US and SMB factor in Canada, and the significance levels are in 5% or 10%.

Table 5. Various Factors Model Estimates

This table reports the performance estimates for the winner-minus-loser momentum strategy. Component returns are those of equally weighted the US SIC 48-industry or ICB 20-industry portfolios. The set of factors includes market excess return (RMRF), size (SMB (i.e., small-minus-big)), value (HML (i.e., high-minus-low)), quality (RMW (i.e., profitable-minus-unprofitable)), invest (CMA (i.e., conservative-minus-aggressive)) and the zero-investment political portfolio (POL) at the industry levels. RMW and CMA are included only in the US market. The t-statistics are adjusted for autocorrelation and heteroskedasticity and are reported in parentheses. Alpha drop is the decrease in alpha due to the inclusion of POL in the linear model. *, **, and *** indicate significance at the 10%, 5%, and 1% levels respectively. The estimation period of the US is from January 1939 to December 2021, and that of Canada and Australia is from January 1981 to December 2021.

Factors	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
			Panel A. the US			
Alpha	0.69***	0.42***	0.78***	0.48***	0.81***	0.49***
	(4.13)	(2.69)	(4.74)	(3.06)	(4.98)	(2.88)
RMRF	-0.08	-0.08	-0.08	-0.07	-0.07	-0.06
	(-1.39)	(-1.57)	(-1.61)	(-1.77)	(-0.85)	(-0.96)
SMB			-0.02	0.01	-0.01	0.00
			(-0.22)	(0.19)	(-0.36)	(0.10)
HML			-0.26	-0.15	-0.21	-0.14
			(-2.48)	(-1.77)	(-1.80)	(-1.53)
RMW					-0.17	0.01
					(-1.07)	(0.51)
CMA					-0.04	0.08
					(-0.70)	(0.94)
POL		0.53***		0.52***		0.50***
		(10.56)		(10.31)		(8.95)
Adj. R^2	0.01	0.24	0.01	0.24	0.03	0.25
N (months)	996	996	996	996	996	996
Alpha Drop		0.27***		0.30***		0.32***
		(4.22)		(4.01)		(3.54)

Factors	**(1)**	**(2)**	**(3)**	**(4)**
		Panel B. Canada		
Alpha	0.62**	0.52*	0.41*	0.28*
	(2.03)	(1.85)	(1.82)	(1.66)
RMRF	-0.06	-0.12	-0.10	-0.15
	(-0.84)	(-1.14)	(-1.26)	(-2.12)
SMB			0.10	0.11
			(2.04)	(2.17)
HML			-0.08	-0.07
			(-1.46)	(-1.43)
POL		0.42***		0.43***

		(7.81)		(7.85)
Adj. R^2	0.00	0.18	0.04	0.19
N (months)	492	492	492	492
Alpha Drop		0.10**		0.13***
		(2.24)		(2.60)
Panel C. Australia				
Alpha	1.15***	0.86***	1.06***	0.77***
	(3.11)	(2.89)	(2.82)	(2.59)
RMRF	-0.12	-0.15	-0.12	-0.16
	(-1.50)	(-1.48)	(-1.10)	(-1.49)
SMB			-0.05	-0.05
			(-0.55)	(-0.64)
HML			-0.19	-0.20
			(-1.30)	(-1.74)
POL		0.14**		0.13***
		(1.96)		(2.70)
Adj. R^2	0.00	0.14	0.02	0.15
N (months)	492	492	492	492
Alpha Drop		0.29**		0.29**
		(1.98)		(2.03)

Moreover, in the countries listed in Table 5, including POL in any linear model (CAPM, Fama-French three-factor or five-factor) leads to an economically meaningful and statistically significant reduction in the alphas relative to models that do not include POL. However, the reduction is small and even close to zero in the countries listed in Appendix -Table 11. The declines in alphas are about 40% in the US and about 20% in the other two countries. Furthermore, these alpha drops are statistically significant at reasonable confidence levels, with t-statistics ranging from 1.98 to 4.58.

In addition to significant alpha drops, the fit of the linear factor model also improves when I add POL factor. For instance, as shown in Table 5, the Fama-French three-factor model augmented with POL can explain approximately 19% of the time-series variation in momentum returns for Canadian market and 15% for Australian, whereas the Fama-French three factors alone explain only about 4% and 2% of the variation respectively.[10]

5. Fama-MacBeth Regression Estimates

The analysis above has focused on the time-series dynamics of industry momentum in different countries. In this section, I employ the Fama and MacBeth (1973) method to examine how the political environment interacts with prior stock performance to explain the cross-section of returns**.**

Table 6. Industry-Level Fama-Macbeth Regressions

This table reports estimates from Fama and MacBeth (1973) regressions. Asset returns are from the value-weighted industry portfolios in each country. I regress monthly excess returns on the following variables: winner-favorite indicator, winner indicator, returns over the previous month and Fama-French three-factor betas (i.e., Beta_RMRF, Beta_SMB, and Beta_HML) calculated over the previous 60 months. The winner-favorite indicator is equal to +1 if the asset is a momentum winner and a political favorite, −1 if the asset is a momentum loser and a political unfavorite, and 0 otherwise. The winner indicator is equal to +1 if the asset is a momentum winner, −1 if it is a momentum loser, and 0 otherwise. The t-statistics are adjusted for autocorrelation and heteroskedasticity and are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels respectively. The estimation period of the US is from January 1941 to December 2021, that of Canada and Australia is from January 1985 to December 2021.

	Excess Return				
Independent Variables	**1**	**2**	**3**	**4**	**5**
Panel A. the US					
Winner-Favorite indicator	0.29***	0.27***	0.24**	0.22**	0.22**
	(3.05)	(3.06)	(1.97)	(2.23)	(2.16)
Winner indicator	0.18	0.14	0.13	0.14	0.13
	(2.08)	(1.70)	(1.70)	(1.59)	(1.52)
Lag return		0.06	0.05		0.04

[10] The majority of explanatory factors proposed in the literature imply coefficients of determination that are quite low. For example, in Griffin et al. (2003), the proposed macroeconomic risks model yields adjusted R^2's ranging from −1.60% to 7.8%, with almost half of them being negative. The macroeconomic model proposed in Asness et al. (2013) has an R^2 of 5.9%.

		(5.58)	(5.19)		(4.09)
Beta_RMRF (CAPM)			0.06		
			(0.47)		
Beta_RMRF				0.03	0.07
				(0.35)	(0.80)
Beta_SMB				0.00	-0.02
				(-0.02)	(-0.19)
Beta_HML				0.12	0.11
				(1.59)	(1.50)
Constant	0.75	0.78	0.69	0.68	0.65
	(4.49)	(4.91)	(5.12)	(4.96)	(4.78)
Adjusted R^2	0.09	0.12	0.12	0.15	0.17
Observation (months)	996	996	996	996	996
Panel B. Canada					
Winner-Favorite indicator	0.47*	0.19**	0.31*	0.59***	0.36**
	(2.15)	(2.51)	(1.81)	(2.62)	(2.02)
Winner indicator	0.21	0.18	0.05	0.08	0.06
	(0.97)	(0.99)	(1.31)	(1.49)	(1.69)
Lag return		0.02	0.02		0.00
		(1.95)	(2.15)		(2.57)
Beta_RMRF (CAPM)			-0.28		
			(-0.72)		
Beta_RMRF				-0.15	-0.15
				(-0.41)	(-0.40)
Beta_SMB				0.58	0.37
				(0.85)	(0.53)
Beta_HML				1.05	1.50
				(1.51)	(1.84)
Constant	0.56	0.45	0.54	0.53	0.45
	(2.75)	(2.08)	(1.71)	(1.67)	(1.49)
Adjusted R^2	0.03	0.05	0.06	0.09	0.12
Observation (months)	492	492	492	492	492
Panel C. Australia					
Winner-Favorite indicator	0.14*	0.17*	0.34**	0.54**	0.46**
	(1.89)	(1.71)	(2.16)	(2.45)	(2.33)
Winner indicator	0.45	0.50	0.43	0.27	0.31
	(2.02)	(2.60)	(2.48)	(1.46)	(1.87)
Lag return		0.03	0.04		0.01
		(1.28)	(1.48)		(0.62)
Beta_RMRF (CAPM)			-0.31		
			(-0.86)		
Beta_RMRF				-0.08	-0.14
				(-0.20)	(-0.35)
Beta_SMB				0.40	0.33
				(0.64)	(0.57)

Beta_HML				0.44	0.35
				(0.87)	(0.75)
Constant	0.24	0.25	0.54	0.23	0.25
	(2.19)	(2.15)	(1.69)	(1.58)	(1.67)
Adjusted R^2	0.02	0.04	0.04	0.05	0.08
Observation (months)	492	492	492	492	492

Each month, I estimate cross-sectional regressions of excess returns on the following variables: winner-favorite indicator, winner indicator, returns over the previous month, and industry-level Fama-French three-factor betas calculated over the previous month. At each cross-section level, the winner-favorite indicator is equal to +1 for industries that are both a momentum winner and a political favorite, −1 for industries that are a momentum loser and a political unfavorite, and 0 for all other industries. The winner indicator is equal to +1 for industries that are a momentum winner, −1 for industries that are a momentum loser, and 0 for all other industries.

From estimation results in Table 6, we know that, for the US, Canadian and Australian markets, the winner-favorite variable remains statistically significant even when we control for past performance through the lagged returns and the winner indicator. For instance, when an industry transitions from the loser-unfavorite portfolio to the winner-favorite portfolio, it earns 0.85%, 0.97% and 1.66% higher returns on average respectively. The winner-favorite indicator retains its statistical significance, albeit significant in the US while less pronounced in Australia and Canada, even after controlling for risk exposures using CAPM and Fama-French three factors. For Canada and Australia, t-statistics ranges from 1.81 to 2.62. In untabulated results, for the UK, France, Germany and Japan, winner-favorite variable is not statistically significant if controlling other factors.

According to adjusted R^2 reported in Table 6, the winner-favorite indicator variable has additional explanatory power in the cross-section of expected returns, even after controlling for past returns and additional industry risk exposures. The effectiveness of winner-favorite indicator is further proved for the three countries, and political environment is an economically important determinant of momentum in stock prices. However, the explanatory power of the winner-favorite indicator is not improved when controlling other factors in the UK, France, Germany and Japan, which implies the winner-favorite indicator is almost a "useless" characteristic in these markets.

To sum up, Addoum (2019) provide new insights into the economic mechanism behind part of the momentum phenomenon, and establish a link between the political environment and price momentum. My empirical tests prove that the pattern is not confined to the US market. Specifically, during switching-party years or during the first few months of a new presidency or premiership, the importance of POL increases, and so does its ability to explain momentum profits in Canada and Australia.

V. Robustness Check

In the article, I have presented that the profitability of the momentum strategy is sensitive to the political environment. Next, I try to add other factors that may affect political environment, and repeat the previous empirical tests in subperiods.

1. Measuring Political Sensitivity with House and Senate Majorities

The political sensitivity measure in Equation (1) focuses on the political affiliation of the president (prime minister). As a robustness check, I also measure the sensitivity of industry returns to the party that wins the majority in the Senate and the House of Representatives (Commons) of each country.

It is important to notice that the US, Canada and Australia are different in system of Congress (Parliament). Specifically, although there is a general belief that the Senate is more powerful than the House of Representatives in the US, senators and representatives both are chosen through direct election, and both Houses have important checks and balances on the executive (especially presidential) power. On the other hand, the Westminster system is used in Canada and Australia (former colonies of the Britain), the Prime Minister is the head of the Government and is always a member of the majority party or coalition in the House of Commons. Therefore, I only need to consider the majority party of the Senate in the two countries. Theoretically, the Canadian Senate has no effect in the decision to end the term of the prime minister or of the government. Only the House of Commons may force prime ministers to tender their resignation or to recommend the dissolution of Parliament and issue election writs. Thus, the Senate's oversight of the government is limited in Canada. Nevertheless, unlike upper houses in other Westminster-style parliamentary systems, the Australian Senate is vested with significant powers, including the capacity to reject all bills, including budget and appropriation bills, initiated by the government in the House of Representatives, making it a distinctive hybrid of British Westminster bicameralism and American-style bicameralism. As a result of proportional representation, the chamber features a multitude of parties vying for power.

Thus, I run the following time-series regressions for the US market, and only run Equation (2) for Canadian and Australian markets:

$$R_{it} - R_{ft} = \alpha_i + \beta\left(R_{mt} - R_{ft}\right) + \theta_i^S \; Senate_{Party_t} + \varepsilon_{it} \tag{2}$$

$$R_{it} - R_{ft} = \alpha_i + \beta\left(R_{mt} - R_{ft}\right) + \theta_i^H \; House_{Party_t} + \varepsilon_{it} \tag{3}$$

These equations are similar to the specification in Equation (1), but with the presidential party indicator replaced by Senate and House party indicators, depending on whether the Right-wing Party holds the majority in the Senate and House, respectively. Using these additional political sensitivity measures, I form portfolios at the industry levels, and examine the degree to which the returns of these portfolios are able to explain momentum returns.

The results reported in Table 7 indicate that, in the US market, neither the Senate- nor House-based political long-short portfolio can explain an economically significant portion of momentum returns. For example, the alpha-drop due to the inclusion of the president-based political portfolio (0.30, t-statistic = 4.01) is about three to four times larger than the alpha-drop due to the Senate- or House-based political portfolios (0.07 and 0.09, respectively). Moreover, when I pool all the political long-short portfolios together, much of the significance of the Senate- and House-based political portfolios is subsumed by the original political portfolio based on the presidential party. The similar results hold in Canadian and Australian markets, the alpha-drop due to the inclusion of the president-based political portfolio (0.29, t-statistic = 2.63) is more than three times larger than the alpha-drop due to the Senate-based political portfolios (0.08, t-statistic = 1.78). In addition, the significance of POL_Senate decreases sharply when adding POL_President and POL_Senate together into the regression. The evidence indicates that the presidential party-based political portfolio is able to capture the political environment better than other related measures.

Table 7. Factor Model Estimates: House and Senate Majority

This table reports performance estimates for the winner-minus-loser momentum strategy. Returns have been risk-adjusted with the Fama-French three-factor model (i.e., RMRF, SMB, and HML), and the Fama-French three-factor model augmented with three alternative measures of the political long-short portfolio. POL_President is the benchmark political portfolio based on the political affiliation of the president (prime minister). POL_Senate is the political portfolio based on the party that holds the majority in the Senate, and POL_House is the political portfolio based on the party that controls the House. The results for the US, Canada and Australia are presented in Panel A, B and C respectively. The t-statistics are adjusted for autocorrelation and heteroskedasticity and are reported in parentheses. Alpha drop is the decrease in alpha due to the inclusion of POL in the linear model. *, **, and *** indicate significance at the 10%, 5%, and 1% levels respectively. The estimation period of the US is from January 1939 to December 2021, and that of Canada and Australia is from January 1981 to December 2021.

Factors	**1**	**2**	**3**	**4**	**5**
		Panel A. the US			
Alpha	0.78***	0.48***	0.71***	0.69***	0.44***
	(4.74)	(3.06)	(5.97)	(5.12)	(3.98)
RMRF	-0.08	-0.07	-0.04	-0.05	-0.03
	(-1.61)	(-1.77)	(-0.92)	(-1.46)	(-0.85)
SMB	-0.02	0.01	-0.03	-0.02	0.01
	(-0.22)	(0.19)	(-0.34)	(-0.22)	(0.36)
HML	-0.26	-0.15	-0.19	-0.09	-0.05
	(-2.48)	(-1.77)	(-1.45)	(-0.79)	(-1.10)
POL_President		0.52***			0.46***
		(10.31)			(6.27)

POL_Senate			0.23***		0.08
			(3.57)		(1.04)
POL_House				0.26***	0.16*
				(4.69)	(1.73)
Alpha Drop		0.30***	0.07***	0.09***	0.35***
		(4.01)	(2.99)	(3.25)	(4.57)
Observation (months)	996	996	996	996	996

Factors	**1**	**2**	**3**	**4**
Panel B. Canada				
Alpha	0.41*	0.28*	0.35	0.25**
	(1.82)	(1.66)	(1.57)	(2.00)
RMRF	-0.10	-0.15	-0.08	-0.12
	(-1.26)	(-2.12)	(-1.69)	(-1.34)
SMB	0.10	0.11	0.13	0.15
	(1.95)	(2.07)	(1.40)	(1.25)
HML	-0.08	-0.07	-0.10	-0.09
	(-1.46)	(-1.43)	(-1.01)	(-0.97)
POL_President		0.43***		0.40***
		(7.85)		(4.78)
POL_Senate			0.48***	0.45
			(5.73)	(1.44)
Alpha Drop		0.13***	0.06**	0.16***
		(2.70)	(2.48)	(3.09)
Observation (months)	492	492	492	492
Panel C. Australia				
Alpha	1.06***	0.77***	0.98**	0.74***
	(2.82)	(2.59)	(2.15)	(2.96)
RMRF	-0.12	-0.16	-0.11	-0.08
	(-1.10)	(-1.49)	(-0.97)	(-0.88)
SMB	-0.05	-0.05	-0.04	-0.02
	(-0.55)	(-0.64)	(-0.59)	(-0.61)
HML	-0.19	-0.20	-0.14	-0.16
	(-1.30)	(-1.74)	(-1.88)	(-1.59)
POL_President		0.13***		0.15***
		(2.70)		(2.84)
POL_Senate			0.16**	0.13
			(1.98)	(1.10)
Alpha Drop		0.29***	0.08*	0.32***
		(2.63)	(1.78)	(2.72)
Observation (months)	492	492	492	492

2. Performance Estimates during Various Subperiods

Table 8 examines the performance of the three industry momentum strategies (standard, politically consistent, and politically inconsistent) during other subperiods for the US, Canadian and Australian markets. We find that the politically consistent momentum strategy yields higher profits than the standard momentum strategy across most subperiods, and the finding is the most pronounced in the Australian market. In contrast, the politically inconsistent momentum strategy yields profits that are close to zero or negative almost in all markets.

Table 8. Performance of Momentum Strategies: Subperiod Analysis

This table reports monthly excess returns in various subperiods for the three types of momentum strategies: standard momentum, politically consistent momentum and politically inconsistent momentum. The t-statistics are adjusted for autocorrelation and heteroskedasticity and are reported in parentheses. The estimation period of the US is from January 1941 to December 2020, that of Canada and Australia is from January 1981 to December 2020.

	PCM	**MOM**	**PIM**	**PCM**	**MOM**	**PIM**	**PCM**	**MOM**	**PIM**
		the US			*Canada*			*Australia*	
Ex. switch party year	0.82	0.75	0.04	0.98	0.65	-0.02	1.38	1.12	0.02
	(2.38)	(1.99)	(0.67)	(1.33)	(2.09)	(-0.84)	(2.30)	(1.88)	(0.94)
Ex. 6-mo postelection	0.89	0.72	0.13	1.09	0.67	-0.08	1.60	1.01	-0.01
	(1.57)	(1.93)	(0.89)	(3.79)	(0.96)	(-1.06)	(1.85)	(2.01)	(-0.12)
Jan 2011 – Dec 2020	1.46	1.23	0.19	0.83	0.89	-0.12	1.55	1.20	0.11
	(4.00)	(2.94)	(0.88)	(2.57)	(1.92)	(-0.86)	(3.16)	(2.54)	(1.28)
Jan 2001 – Dec 2010	0.89	0.93	0.04	1.33	0.53	0.04	0.54	0.60	-0.13
	(2.10)	(1.95)	(1.21)	(2.28)	(1.57)	(2.33)	(2.82)	(1.04)	(-0.94)
Jan 1991 – Dec 2000	0.94	0.81	0.00	1.10	0.67	-0.03	2.08	1.56	0.34
	(1.69)	(2.37)	(1.06)	(2.79)	(1.65)	(-0.76)	(2.75)	(2.07)	(1.10)
Jan 1981 – Dec 1990	0.75	0.74	-0.04	0.90	0.91	0.01	0.87	0.72	-0.03
	(1.84)	(1.30)	(-0.98)	(1.88)	(1.94)	(1.70)	(2.60)	(1.42)	(-0.25)
Jan 1961 – Dec 1980	1.29	0.74	-0.23						
	(3.04)	(2.52)	(-1.47)						
Jan 1941 – Dec 1960	0.30	0.66	0.31						
	(1.54)	(2.05)	(1.65)						

VI. Summary and Conclusion

Although the momentum phenomena in stock returns is perhaps one of the most robust empirical patterns, there are still the highly debated explanations for price momentum. In this paper, we use the method Addoum, Delikouras, Ke and Kumar (2019) propose, and retest whether the changes in political environment explain the momentum profits for the US market, and extend the theory to the global markets at the industry levels.

For the US, Canadian and Australian markets, I present that the politically consistent momentum strategy outperforms the standard momentum strategy in most of the estimation periods. Additionally, the changes in political environment can explain an economically significant part of the time-series variation in industry momentum profits with the similar pattern, even after controlling for effects of some traditional factors. Including the political factor in asset pricing models leads to a significant alpha drops, and to R^2's increases relative to previous momentum models. My results are particularly strong during periods of political window periods, which suggests that investor underreaction to information embedded in a changing political environment generates momentum in industry returns.

For the other countries, the changes of political climate cannot explain momentum profits. We attempt to provide a conjecture. Specifically, in the estimation periods, either political parties have been in power for a considerable period of time or there are dominant-parties in these countries. Considering the party's long-term governance, we speculate that the ruling party's policies may have balanced the interests of various industries, such that few specific industries would steadily gain additional profits from the ruling party's policies. On the other hand, although the non-dominant parties will govern for some periods, investors may tend to see their influence on the stock market as limited.

APPENDIX

Table 9. Summary Statistics for Fama-French 3 Factors in Different Regions

The table shows *Mean*, *Std Dev*, and *t-Mean* for factor returns of the following countries, and we calculate the three-factor data by the method given by Fama (Fama, 2017). First, RMRF is the return on a region's value-weight market portfolio minus the 3-month interbank rate for the region. Second, to construct SMB and HML, we form portfolios at the end of June of each year *t* by sorting stocks in a region into two market cap and three book-to-market equity (B/M) groups. Half of the firms are classified as small market capitalization (S for small) and the other half as large market capitalization stocks (B for big). For the book-to-market classification, the B/M breakpoints for the four regions are the 30th and 70th percentiles of lagged (fiscal year $t-1$) B/M for the big stocks of a region, that is, the bottom 30% are designated as low B/M firms (L), the middle 40% as M, and the highest 30% as H. All selected stocks are ranked (independently) according to their size and B/M. The intersection of the rankings allows for six value-weighted portfolios: HB, MB, LB, HS, MS, and LS. The return variable SMB (small minus big) = (HS +MS +LS - HB - MB - LB)/3, and the return HML (high minus low) = (HB + HS - LB - LS)/2. The estimation period of the US is from January 1930 to December 2021, the period of the UK is from January 1975 to December 2021, the periods of other countries are from January 1981 to December 2021. All the returns are reported in percentage terms.

	RMRF	SMB	HML	RMRF	SMB	HML
		U.S.			*U.K.*	
Mean	0.62	0.20	0.33	0.28	1.01	-0.01
Std Dev	4.32	2.94	3.11	3.68	3.21	1.84
t-Mean	2.53	1.12	0.98	1.34	2.20	-0.95
		Canada			*France*	
Mean	0.33	1.23	0.10	0.40	0.05	0.24
Std Dev	4.41	4.33	2.19	5.01	2.23	1.87
t-Mean	2.00	2.56	1.55	1.64	0.39	1.56
		Germany			*Japan*	
Mean	0.39	0.38	0.16	0.01	0.09	0.36
Std Dev	4.02	2.89	1.69	5.91	3.35	2.84
t-Mean	2.06	2.42	2.48	0.03	0.45	2.19
		Australia				
Mean	0.22	1.18	0.13			
Std Dev	5.24	5.69	2.66			
t-Mean	1.97	3.85	2.05			

Table 10. Industry Classification in the US and Other Regions

Panel A of the table tabulates the definitions of 48 industries in the US, and the industry classification is formulated using the methodology of Moskowitz and Grinblatt (1999). In order to uniformly classify industries across the following different countries excluding the US, the level-three (20 supersectors) Industry Classification Benchmark (ICB) classification scheme designed by the FTSE is adopted. Panel B of the table displays the definitions and associated DataStream ICB codes.

Panel A. 48 SIC Industries in the US				*Panel B. 20 ICB Industries in Other Regions*	
Industry	**SIC Code**	**Industry**	**SIC Code**	**Industry**	**ICB Code**
Agriculture	0100-0919	Shipbuilding and Railroad	3730-3743	Automobiles and Parts	4010
Food Products	2000-2063	Defense	3760-3795	Banks	3010
Candy & Soda	2064-2068	Precious Metals	1040-1049	Basic Resources	5510
Beer & Liquor	2080-2085	Non-Metallic and Industrial Metal Mining	1050-1119	Chemicals	5520
Tobacco Products	2100-2199	Coal	1200-1299	Construction and Materials	5010
Recreation	3940-3949	Petroleum and Natural Gas	1300-1389	Consumer Products and Services	4020
Entertainment	7800-7999	Utilities	4900-4942	Energy	6010
Printing and Publishing	2700-2799	Communication	4800-4899	Financial Services	3020
Consumer Goods	3160-3873	Personal Services	7200-7299	Food, Beverage and Tobacco	4510
Apparel	3100-3151	Business Services	7300-7399	Health Care	2010
Healthcare	8000-8099	Computers	3680-3689	Industrial Goods and Services	5020
Medical Equipment	3840-3851	Electronic Equipment	3661-3669	Insurance	3030
Pharmaceutical Products	2830-3836	Measuring and Control Equipment	3811-3839	Personal Care, Drug and Grocery Stores	4520
Chemicals	2800-2899	Business Supplies	2600-2761	Media	4030
Rubber and Plastic Products	3050-3099	Shipping Containers	2440-2449	Real Estate	3510
Textiles	2200-2399	Transportation	4000-4700	Retail	4040
Construction Materials	3200-3499	Wholesale	5000-5199	Technology	1010
Construction	1500-1799	Retail	5200-5799	Telecommunications	1510
Steel Works Etc	3300-3399	Restaurants, Hotels, Motels	5800-5899	Travel and Leisure	4050
Fabricated Products	3443-3479	Banking	6000-6199	Utilities	6510
Machinery	3510-3599	Insurance	6300-6399		
Electrical Equipment	3600-3660	Real Estate	6500-6599		
Automobiles and Trucks	3700-3716	Trading	6200-6299		
Aircraft	3720-3729	Others			

Table 11. Various Factors Model Estimates for the UK, France, Germany and Japan

This table is continued to Table 5, and reports the performance estimates for the winner-minus-loser momentum strategy for the four countries. Component returns are those of equally weighted ICB 20-industry portfolios. The set of factors includes Fama-French three factors. The t-statistics are adjusted for autocorrelation and heteroskedasticity and are reported in parentheses. Alpha drop is the decrease in alpha due to the inclusion of POL in the linear model. The estimation period of the UK is from January 1975 to December 2021, and that of France, Germany and Japan is from January 1981 to December 2021.

Factors	**(1)**	**(2)**	**(3)**	**(4)**
		Panel A. the UK		
Alpha	0.60	0.57	0.45	0.44
	(2.05)	(1.94)	(1.54)	(1.41)
RMRF	-0.11	-0.12	-0.07	-0.15
	(-1.68)	(-1.09)	(-1.12)	(-1.14)
SMB			0.14	0.12
			(2.10)	(1.79)
HML			-0.40	-0.36
			(-4.96)	(-4.40)
POL		0.18		0.11
		(3.63)		(2.18)
Adj. R^2	0.00	0.03	0.01	0.06
N (months)	552	552	552	552
Alpha Drop		0.03		0.01
		(0.68)		(0.59)
		Panel B. France		
Alpha	0.71	0.68	0.59	0.57
	(3.68)	(1.03)	(1.99)	(1.97)
RMRF	-0.08	-0.08	-0.06	-0.04
	(-1.12)	(-1.57)	(-1.20)	(-1.04)
SMB			0.25	0.22
			(1.69)	(1.58)
HML			-0.28	-0.18
			(-2.52)	(-1.39)
POL		0.24		0.20
		(0.98)		(0.97)
Adj. R^2	0.00	0.02	0.00	0.02
N (months)	492	492	492	492
Alpha Drop		0.03		0.02
		(0.79)		(0.78)
		Panel C. Germany		
Alpha	0.52	0.45	0.64	0.59
	(3.11)	(2.64)	(2.62)	(2.31)
RMRF	-0.13	-0.09	-0.11	-0.18

	(-1.59)	(-1.36)	(-1.64)	(-1.79)
SMB			0.31	0.24
			(3.14)	(3.01)
HML			-0.08	-0.12
			(0.89)	(1.04)
POL		0.17		0.15
		(2.73)		(2.46)
Adj. R^2	0.00	0.03	0.00	0.04
N (months)	492	492	492	492
Alpha Drop		0.07		0.05
		(1.08)		(1.00)
Panel D. Japan				
Alpha	0.83	0.82	0.79	0.77
	(2.19)	(2.15)	(2.08)	(1.55)
RMRF	-0.19	-0.23	-0.22	-0.28
	(-1.20)	(-1.01)	(-1.87)	(-1.96)
SMB			-0.01	-0.02
			(-0.21)	(-0.18)
HML			0.08	0.05
			(0.30)	(0.27)
POL		0.32		0.30
		(1.58)		(1.02)
Adj. R^2	0.01	0.01	0.01	0.02
N (months)	492	492	492	492
Alpha Drop		0.01		0.02
		(0.56)		(0.64)

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