

Should Investors Pay Attention to Domestic and US Election Regimes? A Canadian Perspective

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Received: January 15, 2015

Accepted: January 20, 2015

Online Published: March 25, 2015

doi:10.5539/ijef.v7n4p105

URL: <http://dx.doi.org/10.5539/ijef.v7n4p105>

Abstract

Based on Canadian historical returns from 1951 to 2011 and mean-variance frontier analysis, we document better stock market opportunities in the late versus early part of the mandates of the Canadian federal governments or the American presidents, as well as when Democratic versus Republican American presidents are in power. Better bond market opportunities are found in majority versus minority Canadian parliaments and in Conservative versus Liberal federal governing parties. We investigate the role of controls for the state of the economy to explain these results. We conclude that both domestic and American electoral regimes significantly affect investment opportunities and optimal asset allocation.

Keywords: asset allocation, Canadian financial market, electoral regime, investment opportunity, Sharpe ratio

1. Introduction

In countries with a democracy, political parties spend large amounts of time, money and effort to convince electors that their policies are the most appropriate for their country. In particular, they argue that their economic policies are the best for the finances and growth of the country, that they are the best equipped to foster solid relations with their international partners and that they should be given “strong” mandate to operate efficiently and reduce uncertainty. Political analysts and economists regularly comment on these claims and further analyze the outside influence of foreign politics. The media and ultimately many citizens show tremendous interest for elections and their results. Should investors pay attention to election regimes?

In the United States (US), there is a growing academic literature that answers ‘yes’ to this question by looking at the relationship between electoral regimes and returns. For examples, Huang (1985), Hensel and Ziemba (1995), Johnson, Chittenden and Jensen (1999), Santa-Clara and Valkanov (2003) and Booth and Booth (2003) show that large and small-capitalisation equities yield higher returns under Democratic presidencies and in the last two years of a presidential term, while US Treasury bonds and bills produce higher returns under Republican presidencies. As no corresponding differences in volatility or macroeconomic conditions are found, the “Democratic equity premium” and “presidential cycle effect” have been called puzzles, although explanations based on a longer-run analysis (Beyer, Jensen, & Johnson, 2004), international comparison (Bohl & Gottschalk, 2006), spurious econometrics problem (Powell, Shi, Smith, & Whaley, 2007, 2009) and time-varying risk premiums (Sy & Zaman, 2011) have been proposed.

This study extends this literature by examining the question for another country, namely Canada. Apart from the importance of a clear answer for investors in Canadian capital markets, it makes two contributions. First, by focusing on Canada, a country similar to the US for the stability and functioning of its capital markets, and with a political system that has similarly resulted in only two parties being in power (a left-leaning one and a right-leaning one), this study provides a useful out-of-US-sample check on the US results. Second, and more importantly, this study gives a novel assessment of the outside influence of American politics on foreign capital markets by investigating whether US election effects spill over to the capital markets “north of the border”. Canada is a natural choice for detecting such influence as it has strong ties to the US, being its most important

economic and political partner in the last century.

Specifically, using monthly returns on Canadian bills, bonds and stocks from 1951 to 2011, this paper investigates five sub-questions. Are investment opportunities different in:

- 1) Left-leaning Liberal versus right-leaning Conservative governments?
- 2) Minority versus majority governments?
- 3) The early versus late parts of the federal mandates?
- 4) Left-leaning Democratic versus right-leaning Republican presidential administrations?
- 5) The early versus late parts of the American presidential mandates?

We answer these questions about investment opportunities in different electoral regimes with a traditional mean-variance analysis. Using bonds and stocks, we compute the investor opportunity set, which is delimited by the mean-variance frontier, conditional on the electoral regimes. We then evaluate the Sharpe ratio performance of the individual assets and optimal portfolios, and formally test for the equality of Sharpe ratios across regimes. While there are many other performance measures, the Sharpe ratio has a long history of relevancy and is the most natural measure to complement mean-variance analysis. Due to its simplicity and intuitive appeal, it is widely used both in practice and in academic studies. Next, we check the robustness of the results with controls for the state of the economy. Finally, we examine the optimal asset allocation between bills, bonds and stocks across regimes by computing the asset weights for selected optimal portfolios.

For Canada, Foerster (1994) and Chrétien and Coggins (2009) are the only two references that provide some evidence on these questions. Focusing on estimates of expected return and standard deviation, they document a “prime ministerial cycle effect” as well as a Democratic equity premium and a presidential cycle effect in Canadian stocks, but no robust “Liberal equity premium” or minority government differential. This paper expands on their results by considering a more complete dataset and by looking at mean-variance frontiers, Sharpe ratios and optimal asset allocations across regimes, offering a clearer overall picture of investment opportunities. It also puts more emphasis on the impact of American political regimes on Canadian investments.

The empirical results indicate that investors and portfolio managers should pay close attention not only to their domestic electoral regimes, but also to the American ones. With respect to the domestic regimes, the Canadian investment opportunities are significantly better in Conservative versus Liberal governing parties, although mainly a reflection of the strength of the bond market. This is consistent with Alesina and Sachs (1988), who suggest that leftist parties generate higher inflation, and with Booth and Booth (2003), who document a similar finding for the US bond market. While this difference is robust to the use of Canadian information variables to control for the state of the economy, it does not subsist when US information variables are included as controls. For the stock market, in contrast to the findings of the US literature, there is only weak evidence that it yields better opportunities under a left-leaning leadership, although the difference becomes significant when we use US information variables as controls. The exclusion of minority parliaments also reinforces these results.

The Canadian investment opportunities are also better in the late parts of the federal election cycle than in the first two years, with significantly higher Sharpe ratios for the bond market, the stock market and the optimal portfolio. With an optimal Sharpe ratios more than three times higher in the late versus early mandates (0.955 versus 0.311), these results confirm a prime ministerial cycle effect stronger than the presidential cycle effect in US returns, perhaps because Canadian governments have the additional option of calling an election at the “right moment”, as election dates are not fixed in our sample period.

With respect to the American regimes, we find that Canadian investment opportunities are significantly better in Democratic versus Republican administrations. The performance spread comes entirely from the stock market and is particularly striking: The value-weighted portfolio of stocks earn a Sharpe ratio of 0.830 in Democratic regimes versus -0.007 in Republican ones. Having ideologically aligned leaderships in Canada and the US preserves but does not reinforce the effects found independently. The Canadian stock market also performs significantly better in the late versus early parts of the US presidential cycle. Furthermore, stocks yield even worst risk-adjusted returns when the Canadian and US governments are simultaneously in the early parts of their mandates, with a *negative* Sharpe ratio of -0.385. Thus, the puzzling Democratic equity premium and presidential cycle effects strongly spill over “north of the border”. Hence, we document an important outside influence of American politics on Canadian capital markets that is consistent with the ties between both countries, as exemplified by correlations varying from 0.7 to 0.8 between their capitals markets.

These findings on the significant effects of the Canadian election cycle, the US President party and the US

election cycle are robust to the inclusion of Canadian or US controls for the state of the economy, so that they do not appear to have been expected due to measurable business cycle variations. Finally, we document that following electoral regimes would result in large optimal asset allocation shifts for managed portfolios of bills, bonds and stocks, consistent with differential investment opportunities. Nevertheless, given the low frequency of electoral regime switches, our performance results involve investable, low turnover, portfolio strategies.

The remainder of the paper is divided as follows. The next section describes the electoral regimes, the methodology for measuring the investment opportunities and the data sample. The third section presents and interprets the results. The last section concludes the paper with a look at the implication of our results for market efficiency.

2. Methodology and Data

This section defines the electoral regimes, and describes the financial assets and performance measures used to compare the investment opportunities across regimes. Our database starts in January 1951 and ends in December 2011, for a total of 732 monthly observations covering 21 different Canadian elections. Appendix A gives the background data on the outcomes of the Canadian federal elections and Appendix B gives information on US election outcomes.

2.1 Definitions of Electoral Regimes

Using publicly available information on Canadian and American election results, we form electoral regime variables organized into five categories: Canadian governing party, electoral strength of the government, Canadian election cycle, US President party and US election cycle. In each category, we classify each month into one of two mutually exclusive regimes as defined below, based on information *at the start of the month* so that the regimes are publicly known when examining the investment opportunities up to the end of the month. Figure 1 shows the proportion of months in a given regime.

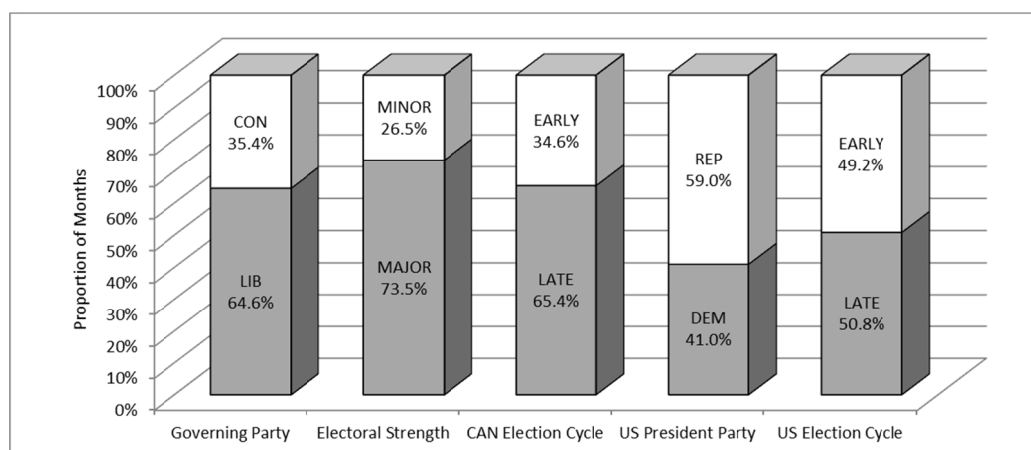


Figure 1. Electoral regimes, 1951 to 2011

Note. This figure shows the proportion of months for the Liberal (LIB) versus Conservative (CON) governing party regimes, for the majority (MAJOR) versus minority (MINOR) electoral strength regimes, for the late (LATE) versus early (EARLY) Canadian election cycle regimes, for the Democratic (DEM) versus Republican (REP) US president party regimes and for the late (LATE) versus early (EARLY) US presidential election cycle. The period from January 1951 to December 2011 represent a total of 732 months.

Canadian governing party: The LIB regime regroups the months under a Liberal federal government, while the CON regime includes the other months. The (left-leaning) Liberal Party of Canada is in power for 64.6% of the months, while the (right-leaning) Conservative Party of Canada (in its current appellation) rules for 35.4% of the time.

Electoral strength: The MINOR regime includes all months for which the parliament was in minority status (the governing party has less than half the total number of seats). The remaining months form the MAJOR regime. Minority governments represent just 26.5% of the months in our sample, although 9 (out of 21) elections resulted in such status.

Canadian election cycle: The EARLY regime includes the months in the first two years after an election resulting

in a majority, while the LATE regime has the other months. The restriction to majority months ensures governmental control on policy implementation and election calling in the early part of the mandate, creating conditions where “tough” long-term policies could be implemented more easily. With such a definition, 34.6% of the months fall in the EARLY part of the mandate (Note 1).

US President party: The DEM regime regroups the months under a Democratic President, while the REP regime includes the months with a Republican President. Democratic and Republican Presidents are in the White House for 41.0% and 59.0% of the months, respectively.

US election cycle: The EARLY US regime includes the months in the first two years after a fixed-date US presidential election, while the LATE US regime has the months in the last two years of the four-year mandate. Thus, about half the months are in each regime.

2.2 Measures of the Investment Opportunities

The Canadian investment opportunities we investigate are composed of four assets representing three common financial asset classes: bills (denoted RF, based on three-month Treasury bills), bonds (denoted RGOV, based on long-term government bonds) and stocks (two assets denoted RVW and REW, based on respectively value-weighted and equally-weighted portfolios of all exchange-traded stocks). While RVW is similar to the S&P/TSX Composite Index and is highly weighted in large-cap stocks, REW can be thought as representing the small- and medium-cap equity asset classes as they are the dominant portfolio components. The series of monthly realized returns for these assets are obtained from the TSX Canadian Financial Markets Research Centre (CFMRC).

Table 1 presents the annualized mean return (monthly value $\times 12$), the annualized standard deviation (monthly value $\times \sqrt{12}$) and correlations for the four assets (Note 2). The historical risk-reward opportunities look good compare to the ones of the last few years. More importantly for our purpose, we can observe a risk-return trade-off between the assets as expected.

Table 1. Investment opportunities, 1951 to 2011

	RF	RGOV	RVW	REW
Mean	5.46%	7.38%	10.60%	17.18%
St Dev		8.40%	15.46%	19.66%
Corr		RGOV	20.33%	10.51%
		RVW		83.81%

Note. This table presents the annualized means, standard deviations (St Dev) and correlations (Corr) for the monthly returns of three-month Treasury bills (RF), the long-term government bonds (RGOV), the value-weighted equity portfolio (RVW) and the equally-weight equity portfolio (REW).

To examine how the investment opportunities vary across electoral regimes, we rely on mean-variance (MV) analysis. Specifically, we first estimate the means, standard deviations and correlations, conditional on being in a given regime. We then compute the corresponding MV frontiers, which represent the limit of the investors' opportunity set. The MV frontier is defined as the portfolios that have minimum variance for a given mean return. Using the notation and demonstrations of Roll (1977), let \mathbf{R} be the 3×1 vector of mean returns for RGOV, RVW and REW, let \mathbf{V} be their corresponding variance-covariance matrix, and let $\mathbf{1}$ be the unit vector. Then, for a given mean return of $E(R_p)$, the MV frontier portfolios have the following variance:

$$\sigma_{MV-p}^2 = \frac{a - 2bE(R_p) + cE(R_p)^2}{ac - b^2} \quad (1)$$

where $a = \mathbf{R}'\mathbf{V}^{-1}\mathbf{R}$, $b = \mathbf{R}'\mathbf{V}^{-1}\mathbf{1}$ and $c = \mathbf{1}'\mathbf{V}^{-1}\mathbf{1}$.

Next, we compare the Sharpe ratios of the individual assets and of the MV tangency portfolio (the portfolio with the maximum Sharpe ratio) across regimes. The Sharpe ratio (Sharpe, 1966, 1994), also called the reward-to-variability ratio, is a portfolio's excess return over the risk-free rate divided by its standard deviation,

$$h_p = \frac{E(R_p) - R_f}{\sigma_p} \quad (2)$$

This commonly used performance measure is intuitively interpreted in the mean-standard deviation space as the

slope of a line from the risk-free asset to a specified portfolio. The higher is the slope, the better located is the portfolio. The highest possible slope leads to the MV tangency portfolio, with return denoted R_{MV-tan} , which has the following maximum possible or optimal Sharpe ratio:

$$h_{maximum} = \frac{E(R_{MV-tan}) - R_f}{\sigma_{MV-tan}} \quad (3)$$

where:

$$E(R_{MV-tan}) = \frac{a - bR_f}{b - cR_f} \quad (4)$$

$$\sigma_{MV-tan}^2 = \frac{a - 2bE(R_{MV-tan}) + cE(R_{MV-tan})^2}{ac - b^2} \quad (5)$$

As discussed by Ferson and Siegel (2003), the sample maximum Sharpe ratio is biased upward when the number of assets K is large relative to the number of observations T . We thus report adjusted maximum Sharpe ratio by using their proposed correction:

$$h_{maximum}^{adj} = \sqrt{\frac{h_{maximum}^2 \times (T - K - 2)}{T} - \frac{K}{T}} \quad (6)$$

In this paper, while T varies depending on the regimes under consideration, we only consider three assets ($K = 3$) for the MV frontiers, which implies that the bias is small. Furthermore, our tests focus on the difference between Sharpe ratios across regimes, which mitigates the effect of the bias further. Hence our results are similar whether we use adjusted Sharpe ratio or not.

We formally test for the equality of Sharpe ratios across regimes with a statistic proposed by Jobson and Korkie (1981), revisited by Lo (2002) and Memmel (2003). (See also Ledoit & Wolf, 2008, Leung & Wong, 2008, for further discussions.) Specifically, let $\hat{h}_{p,r}$ et $\hat{h}_{p,s}$ be the estimated Sharpe ratios for portfolio p in regimes r and s , two mutually exclusive regimes (for example MINOR and MAJOR). These estimates are obtained by using the sample mean and standard deviation of the portfolio returns in the two regimes, with samples of T_r and T_s observations, respectively. Then, under the null hypothesis that the Sharpe ratios are equal, and assuming that returns are identically and independently distributed, the estimated Sharpe ratio difference has the following asymptotic distribution, which allows a test on its significance:

$$\hat{h}_{p,r} - \hat{h}_{p,s} \xrightarrow{d} N\left(0, \frac{1 + \frac{1}{2}\hat{h}_{p,r}^2}{T_r} + \frac{1 + \frac{1}{2}\hat{h}_{p,s}^2}{T_s}\right) \quad (7)$$

This distribution leads to a z -test on the equality of Sharpe ratios across regimes. When applied to the maximum Sharpe ratio portfolio, this test becomes a test on the equivalence of the optimal MV opportunities across regimes.

As a robustness check, following Santa-Clara and Valkanov (2003), we also use predetermined information variables to control our results for the anticipated state of the Canadian economy. Specifically, we run the following regression with the returns of each risky asset class (RGOV, RVW and REW):

$$R_{it} = \mu_i + \mathbf{b}'\mathbf{Z}_{t-1} + \varepsilon_i \quad (8)$$

where \mathbf{Z}_{t-1} is a vector of state of the economy control variables that have been demeaned. Then, we re-estimate the measures of investment opportunities using a new set of returns that exclude the effect of the information variables:

$$R_{it}^Z = \mu_i + \varepsilon_i \quad (9)$$

Our information variables are Canadian versions of the ones used in the study of Santa-Clara and Valkanov (2003), namely the annualized log dividend-price ratio, the term spread, the default spread and the relative interest rate (Note 3). The predictive value of these variables has been studied extensively in the literature, starting with Keim and Stambaugh (1986), Campbell (1987), Campbell and Shiller (1988), and Fama and French (1988, 1989). Rapach, Wohar and Rangvid (2005), Hjalmarsson (2010) and Chrétien and Coggins (2014) provide evidence in a Canadian context. To account for the possibility that the Canadian information variables

might be endogenously determined along with our asset returns, under the common influences of Canadian government policies, we also consider the exogenously determined US versions of the information variables (Note 4).

Finally, we examine the optimal asset allocation between bills, bonds and stocks across regimes by computing the asset weights for selected MV efficient portfolios. Specifically, as the efficient portfolios are combinations of the risk-free asset with a weight of X_f and the MV tangency portfolio with a weight of $1 - X_f$, the optimal portfolio weights for an investor with a required return of $E(R_p)$ are equal to:

$$X_{MVp} = \begin{bmatrix} X_f \\ (1 - X_f)X_{MV-tan} \end{bmatrix} \tag{10}$$

where:

$$X_f = \frac{E(R_p) - E(R_{MV-tan})}{R_f - E(R_{MV-tan})} \tag{11}$$

$$X_{MV-tan} = V^{-1} [R \quad \mathbf{1}] \begin{bmatrix} a & b \\ b & c \end{bmatrix}^{-1} \begin{bmatrix} E(R_{MV-tan}) \\ 1 \end{bmatrix} \tag{12}$$

with X_{MVp} being a 4×1 vector and X_{MV-tan} being a 3×1 vector (Note 5).

3. Empirical Results

This section analyses our empirical results. We first focus on comparing the investment opportunities across regimes. Then, we examine some refinements with respect to our electoral regimes. Third, we assess the robustness of our results to the inclusion of the state of the economy control variables. Finally, we provide some evidence on the effect of the regimes on the optimal asset allocation.

3.1 Investment Opportunity Set and Sharpe Ratios

This section first presents our results with the help of a figure and a table for each electoral regime category. The figure shows, in the mean-standard deviation space, the risk-free asset RF, the risky assets RGOV, RVW and REW, and their MV frontier, across the two relevant regimes differentiated by black circle and grey square markers. The assets' annualized mean returns by regimes are also provided in their labels. The table gives the Sharpe ratio across regimes of the assets and of the tangency portfolio. It also provides the p -value and associated significance level for the test on the equality of the ratios across regimes given by equation (7).

3.1.1 Governing Party

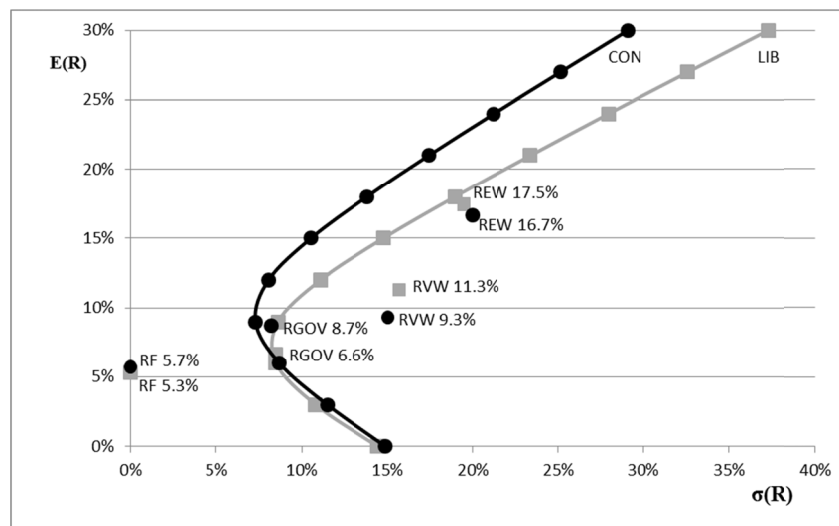


Figure 2. Investment opportunities and governing party

Note. This figure shows the risk free return (RF) and the investment opportunities in RGOV, RVW, REW and their MV efficient frontier, for Liberal (LIB) versus Conservative (CON) governing party regimes. Black circle (grey square) markers represent investment opportunities in the Conservative (Liberal) regime.

Figure 2 and Table 2 show the results for the Liberal versus Conservative government regimes. Although all four assets are located similarly under both regimes in Figure 2, the resulting MV frontiers show better opportunities in Conservative versus Liberal regimes. Accordingly, the tangency portfolio shows a significantly better Sharpe ratio in the Conservative regime (0.88 versus 0.66). The better opportunities appear to come from the bond market, as the RGOV Sharpe ratios (0.37 versus 0.16) are significantly different at the 1% level. In contrast, the Sharpe ratios for RVW and REW are slightly higher in the Liberal regime, although the differences are not statistically different at the 5% level.

Table 2. Sharpe ratios and governing party

	LIB	CON	Diff p-val
RGOV	0.156	0.365	0.008 ***
RVW	0.381	0.240	0.074 *
REW	0.622	0.549	0.376
Maximum	0.662	0.877	0.016 **

Note. This table presents Sharpe ratios for RGOV, RVW, REW and their MV efficient frontier tangency portfolio (Maximum) for Liberal (LIB) versus Conservative (CON) governing party regimes, and p-values on tests for the equality of Sharpe ratios across regimes (Diff p-val). ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

We thus find some evidence that the right-leaning Conservative policies and the left-leaning Liberal policies produce different investment opportunities, especially for the bond market. This is consistent with the US bond market results of Booth and Booth (2003), as well as the analysis of Alesina and Sachs (1988) that suggests that leftist parties generate higher inflation. However, our findings do not fully support the US evidence that the stock market performs better under a left-leaning leadership, as there is only weak evidence of better stock market opportunities in the Liberal regime.

3.1.2 Electoral Strength

Figure 3 and Table 3 show the results for the minority versus majority government regimes. Figure 3 shows that the MV frontiers are relatively similar across government strength regimes. The most noticeable difference is for bonds, as RGOV provides a higher mean return in majority than minority situations (8.8% versus 3.5%). Table 3 confirms these impressions. While the resulting RGOV Sharpe ratios (0.31 versus -0.06) are significantly different at the 1% level, the other Sharpe ratio differences are not significant. In particular, the test for the maximum Sharpe ratio portfolios indicates that the optimal MV opportunities are equivalent across government strength regimes. Hence, with regards to overall investment opportunities, our results do not support the commonly-stated request by politicians that they should be given “strong mandate” to reduce uncertainty, although there is some evidence that the bond market performs worst in minority parliament.

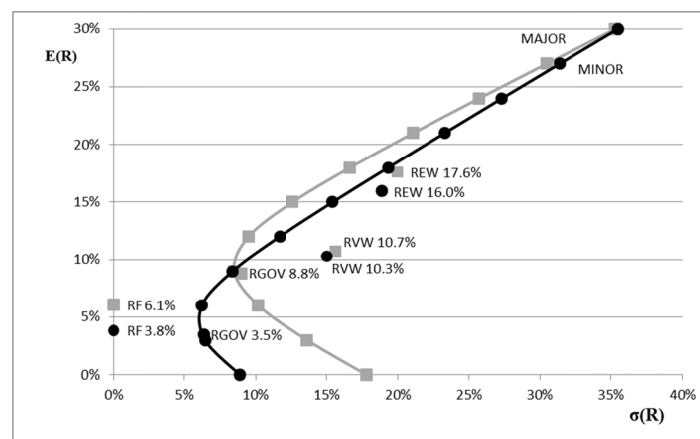


Figure 3. Investment opportunities and electoral strength

Note. This figure shows the risk free return (RF) and the investment opportunities in RGOV, RVW, REW and their MV efficient frontier, for majority (MAJOR) versus minority (MINOR) electoral strength regimes. Black circle (grey square) markers represent investment opportunities in the minority (majority) regime.

Table 3. Sharpe ratios and electoral strength

	MAJOR	MINOR	Diff p-val
RGOV	0.305	-0.056	0.000 ***
RVW	0.298	0.431	0.127
REW	0.579	0.646	0.466
Maximum	0.712	0.718	0.952

Note. This table presents Sharpe ratios for RGOV, RVW, REW and their MV efficient frontier tangency portfolio (Maximum) for majority (MAJOR) versus minority (MINOR) electoral strength regimes, and p-values on tests for the equality of Sharpe ratios across regimes (Diff p-val). ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

3.1.3 Canadian Election Cycle

Figure 4 and Table 4 show the results for the late versus early parts of the Canadian election cycle. Figure 4 illustrates striking differences in investment opportunities. In particular, there is strong evidence that the stock market performs much better in the LATE regime. Without any difference in their standard deviation, the historical returns on RVW and REW average, respectively, 13.3% and 22.1% in the LATE regime versus 5.5% and 7.9% in the EARLY regime. These return differences, combined with the lower risk of RGOV in the LATE versus EARLY regimes (7.5% versus 10.0%), produce materially better opportunities in the months leading to an election.

Table 4 confirms the significance of these differences. RVW has Sharpe ratios of 0.57 in late mandate and -0.07 in early mandate, while the values for the tangency portfolio are 0.96 and 0.31, respectively. Hence, the Sharpe ratio of the stock market in the LATE regime is higher than the optimal Sharpe ratio of the efficient frontier in the EARLY regime. While the Sharpe ratio of RGOV is two times higher in the LATE regime, the difference is only statistically significant at the 10% level.

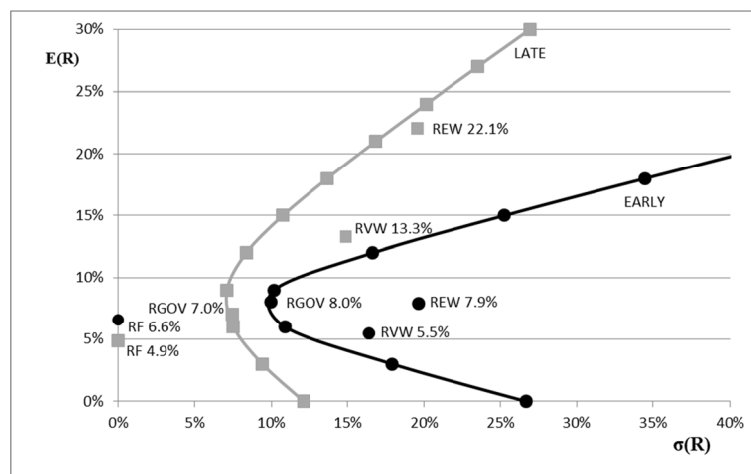


Figure 4. Investment opportunities and Canadian election cycle

Note. This figure shows the risk free return (RF) and the investment opportunities in RGOV, RVW, REW and their MV efficient frontier, for late (LATE) versus early (EARLY) election cycle regimes. Black circle (grey square) markers represent investment opportunities in the early (late) regime.

Table 4. Sharpe ratios and Canadian election cycle

	LATE	EARLY	Diff p-val
RGOV	0.292	0.144	0.060 *
RVW	0.567	-0.067	0.000 ***
REW	0.880	0.068	0.000 ***
Maximum	0.955	0.311	0.000 ***

Note. This table presents Sharpe ratios for RGOV, RVW, REW and their efficient frontier tangency portfolio (Maximum) for late (LATE) versus early (EARLY) Canadian election cycle regimes, and p-values on tests for the equality of Sharpe ratios across regimes (Diff p-val). ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

While confirming these hypotheses is beyond our scope, plausible explanations in the literature include strategic policy timing and opportunistic election calling. Governments have an incentive to choose “tough” policies in early mandate and to delay more popular measures to late mandate, near the next election (Smith, 2004; Kayser, 2005). They also have the option to call an election at the right moment, including when markets are performing well or before anticipated difficult times (Ellis & Thoma, 1991; Heckelman, 2001).

3.1.4 US President Party

Figure 5 and Table 5 explore the Democratic versus Republican US presidential regimes. Figure 5 indicates that the Canadian MV frontier under Democratic US presidents is convincingly better located. This finding is the consequence of the differential in stock market performance. For apparently similar risk, RVW and REW earn 11.2% and 20.7% higher mean returns, respectively. The corresponding Sharpe ratios confirm that the stock market performance difference is significant at the 1% level, leading to a similar conclusion for the overall investment opportunities. The reward per unit of risk available on the MV frontier is more than three times higher under Democratic versus Republican administrations. In fact, both stock indices in the DEM regime fall outside the MV frontier for the REP regime.

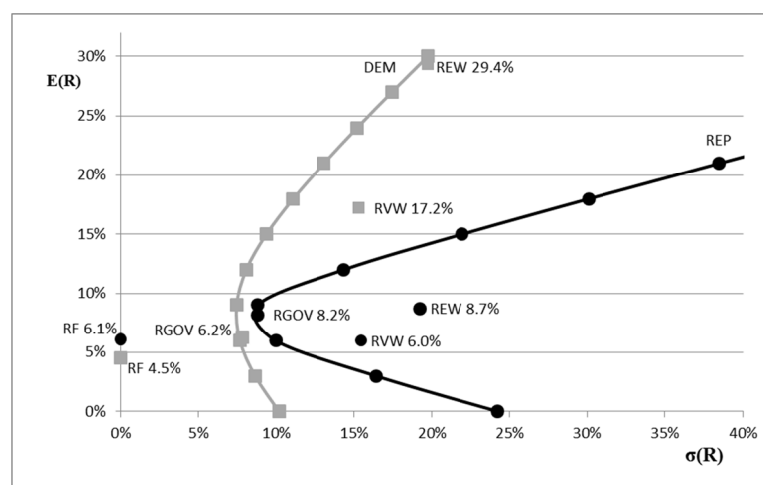


Figure 5. Investment opportunities and US president party

Note. This figure shows the risk free return (RF) and the investment opportunities in RGOV, RVW, REW and their MV efficient frontier, for Democratic (DEM) versus Republican (REP) US President party regimes. Black circle (grey square) markers represent investment opportunities in the Republican (Democratic) regime.

Table 5. Sharpe ratios and US president party

	DEM	REP	Diff p-val
RGOV	0.220	0.235	0.845
RVW	0.830	-0.007	0.000 ***
REW	1.258	0.136	0.000 ***
Maximum	1.275	0.401	0.000 ***

Note. This table presents Sharpe ratios for RGOV, RVW, REW and their MV efficient frontier tangency portfolio (Maximum) for Democratic (DEM) versus Republican (REP) US president party regimes, and p-values on tests for the equality of Sharpe ratios across regimes (Diff p-val). ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

This finding provides a striking result on the effect of US election outcomes on Canadian financial markets. It adds to the literature by showing that American politics have a significant influence on foreign capital market returns. Although its explanation is as puzzling as the so-called Democratic equity premium documented in the US stock market, it is expected given the ties between both countries. The Canadian and US capital markets are correlated (correlations are from 0.7 to 0.8 between the bond markets or the stock markets of both countries in our sample), and there exists related works on the cross-border effect of US politics and on Canada-US financial markets integration (for examples, Mittoo, 1992; Foerster & Schmitz, 1997; Normandin, 2004).

3.1.5 US Election Cycle

Figure 6 and Table 6 examine the late versus early US presidential mandate regimes. Figure 6 illustrates that late mandate opportunities dominate the early mandate opportunities for all expected returns. While the MV frontiers are close, there are large spreads in annualized mean return for the stock market assets. For example, RVW earns nearly twice as much return in the late versus early parts of the presidential cycle (13.8% versus 7.3%). Accordingly, the tests in Table 6 reject the equality of Sharpe ratios for RVW and REW at the 1% level. However, the Sharpe ratios for the bond market and the optimal MV portfolio are not significantly different across the US election cycle regimes, confirming that the MV frontiers are similar. While our results are consistent with the US literature on the presidential cycle effect, they highlight that the presidential cycle has a spill over effect “north of the border” for equities, but not for the overall Canadian investment opportunities.

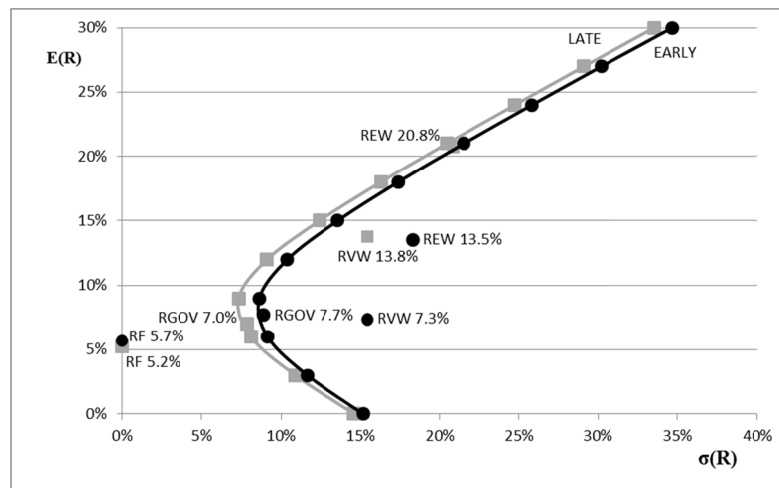


Figure 6. Investment opportunities and US election cycle

Note. This figure shows the risk free return (RF) and the investment opportunities in RGOV, RVW, REW and their MV efficient frontier, for late (LATE) versus early (EARLY) US Presidential election cycle regimes. Black circle (grey square) markers represent investment opportunities in the early (late) regime.

Table 6. Sharpe ratios and US election cycle

	LATE	EARLY	Diff p-val
RGOV	0.227	0.231	0.964
RVW	0.551	0.108	0.000 ***
REW	0.743	0.427	0.000 ***
Maximum	0.777	0.701	0.359

Note. This table presents Sharpe ratios for RGOV, RVW, REW and their MV efficient frontier tangency portfolio (Maximum) for late (LATE) versus early (EARLY) US presidential election cycle regimes, and p-values on tests for the equality of Sharpe ratios across regimes (Diff p-val). ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

3.2 Further Considerations

This section summarizes the findings of a number of additional steps taken to expand our results by refining our electoral regimes. Table 7 reports the results.

First, we re-examine the investment opportunities in the Liberal versus Conservative regimes, focusing on majority governments, where policies are more likely to be effectively implemented. Panel A of Table 7 shows little differences with Table 3. The bond market (0.50 versus 0.22) and the tangency portfolio (0.97 versus 0.66) still present significantly higher Sharpe ratios in Conservative versus Liberal governments.

Second, we examine the investment opportunities when Canada and the US have ideologically aligned leaderships. In support of the results of Table 2 and Table 5, Panel B of Table 7 shows that the stock market Sharpe ratios are higher and the bond market Sharpe ratio is lower in the left-leaning Liberal-Democratic combination than in the right-leaning Conservative-Republican combination. Similar to Table 5, but in contrast

to Table 2, the optimal Sharpe ratio is significantly higher for left-leaning leaderships. Overall, having ideologically aligned leaderships preserves but does not reinforce the effects found previously.

Table 7. Additional results on Sharpe ratios and electoral regimes

Panel A. Governing party in majority electoral strength regime

	LIB-MAJOR (<i>T</i> = 371)	CON-MAJOR (<i>T</i> = 167)	Diff p-val
RGOV	0.223	0.502	0.004 ***
RVW	0.361	0.130	0.015 **
REW	0.605	0.516	0.374
Maximum	0.656	0.968	0.005 ***

Panel B. Joint Canada-US governing party / US president party

	LIB-DEM (<i>T</i> = 214)	CON-DEM (<i>T</i> = 86)	Diff p-val
RGOV	0.108	0.490	0.004 ***
RVW	0.683	1.197	0.001 **
REW	0.971	1.988	0.000 ***
Maximum	0.965	2.280	0.000 ***

Panel C. Joint Canada-US election cycles

	LATE-LATE (<i>T</i> = 280)	EARLY-EARLY (<i>T</i> = 161)	Diff p-val
RGOV	0.219	0.095	0.213
RVW	0.557	-0.385	0.000 ***
REW	0.715	-0.376	0.000 ***
Maximum	0.739	0.418	0.003 ***

Note. This table presents Sharpe ratios for RGOV, RVW, REW and their MV efficient frontier tangency portfolio (Maximum) for Liberal (LIB) versus Conservative (CON) governing party regimes in majority (MAJOR) parliaments (Panel A), for the governing party / US president party joint left-leaning Liberal / Democratic (LIB-DEM) versus right-leaning Conservative / Republican (CON-REP) regimes (Panel B), and for the joint Canada-US late (LATE-LATE) versus early (EARLY-EARLY) election cycle regimes (Panel C), and p-values on tests for the equality of Sharpe ratios across regimes (Diff p-val). ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively. The number of observations (*T*) for each regime is in parentheses.

Third, in Panel C of Table 7, the effect of the combined Canadian and US election cycles is stronger than each effect taken separately, especially for the stock market. For example, RVW has Sharpe ratios of 0.56 when both countries are in late mandate and -0.39 when they are in early mandate, a difference statistically significant at the 1% level. The stock market tends to perform very poorly when both countries are simultaneously in the first two post-election years.

3.3 Controls for the State of the Economy

Our analysis has thus far documented numerous significant Sharpe ratio differences between the electoral regimes. Following Santa-Clara and Valkanov (2003), this section uses predetermined information variables to control our results for the anticipated state of the Canadian economy, using the methodology described previously. Table 8 presents the results when considering either Canadian controls (left side of the table) or US controls (right side of the table) as instruments for variations in the Canadian business cycle.

Table 8. Sharpe ratios and electoral regimes with controls for the state of the economy

	<i>Canadian Controls</i>			<i>US Controls</i>		
Panel A. Governing Party						
	LIB	CON	Diff p-val	LIB	CON	Diff p-val
RGOV	0.162	0.355	0.015 **	0.225	0.241	0.835
RVW	0.368	0.273	0.232	0.392	0.223	0.032 **
REW	0.641	0.543	0.244	0.679	0.461	0.009 ***
Maximum	0.701	0.829	0.147	0.751	0.682	0.428
Panel B. Electoral Strength						
	MAJOR	MINOR	Diff p-val	MAJOR	MINOR	Diff p-val
RGOV	0.300	-0.035	0.000 ***	0.257	0.138	0.158
RVW	0.252	0.576	0.000 ***	0.248	0.579	0.000 ***
REW	0.535	0.809	0.004 ***	0.522	0.825	0.001 ***
Maximum	0.690	0.870	0.064 *	0.656	0.929	0.005 ***
Panel C. Canadian Election Cycle						
	LATE	EARLY	Diff p-val	LATE	EARLY	Diff p-val
RGOV	0.258	0.195	0.422	0.292	0.151	0.074 *
RVW	0.512	0.031	0.000 ***	0.577	-0.083	0.000 ***
REW	0.797	0.241	0.000 ***	0.888	0.059	0.000 ***
Maximum	0.868	0.488	0.000 ***	0.967	0.330	0.000 ***
Panel D. US President Party						
	DEM	REP	Diff p-val	DEM	REP	Diff p-val
RGOV	0.230	0.229	0.997	0.319	0.175	0.060 *
RVW	0.788	0.022	0.000 ***	0.893	-0.047	0.000 ***
REW	1.267	0.142	0.000 ***	1.360	0.073	0.000 ***
Maximum	1.305	0.367	0.000 ***	1.391	0.324	0.000 ***
Panel E. US Election Cycle						
	LATE	EARLY	Diff p-val	LATE	EARLY	Diff p-val
RGOV	0.209	0.248	0.603	0.201	0.258	0.448
RVW	0.508	0.156	0.000 ***	0.543	0.118	0.000 ***
REW	0.685	0.514	0.033 **	0.716	0.466	0.002 ***
Maximum	0.713	0.812	0.240	0.736	0.789	0.527

Note. This table presents Sharpe ratios for RGOV, RVW, REW and their MV efficient frontier tangency portfolio (Maximum) for different electoral regimes after controlling for the state of the economy, and p-values on tests for the equality of Sharpe ratios across regimes (Diff p-val). The variables for the electoral regimes are described in Tables 2 to 6. The control variables are the dividend-price ratio, term spread, credit spread and relative interest rate. The results under Canadian and US Controls use respectively Canadian and US versions of the variables. ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 8 documents that most of our results are robust to controls for the state of the economy. Our findings on the effect of the Canadian governing party regimes are the most affected by the controls. In particular, compare to the ones in Table 2, the results in Panel A of Table 8 show that the higher Sharpe ratio for the bond market in Liberal versus Conservative governments is robust to Canadian controls, but not to US controls. The addition of US controls also renders the Sharpe ratio of the stock market under Liberals significantly higher than the one under Conservatives.

With respect to electoral strength, Panel B of Table 8 confirms that the bond market performs better in majority versus minority governments, although the statistical significance weakens with the use of US controls. While the other Sharpe ratio differences were not significant in Table 3, the inclusion of Canadian or US controls makes the stock market and optimal Sharpe ratios significantly higher in minority versus majority governments. For the stock market, it thus appears that, after controlling for the state of the economy, there is a higher reward per unit of risk in minority governments.

As the rest of Table 8 shows, whether using Canadian or US control variables, our main findings on the Canadian election cycle (Panel C), the US President party (Panel D) and the US election cycle (Panel E) are robust, so that they do not appear to have been expected due to measurable business cycle variations. In particular, the stock market has significantly higher Sharpe ratios in the late versus early part of the Canadian or

US election cycles, and under Democratic versus Republican administrations, even after controlling for the state of the economy.

3.4 Optimal Asset Allocation

Figure 7 shows the optimal MV asset allocation between bills, bonds and stocks across regimes for an investor with a 15% annualized required return, a value in between the annualized mean returns on the RVW and REW stock indexes for the period studied. While the portfolio weights for bills and bonds are based on RF and RGOV, respectively, the stock allocation is the sum of the portfolio weights on RVW and REW. Although not illustrated, a decrease in the investor's required return generally results in a larger allocation to bills with proportionally smaller allocations to bonds and stocks. For example, while the allocation to bills averages around 20% in Figure 7, it increases to around 60% if the required return is set to 10%.

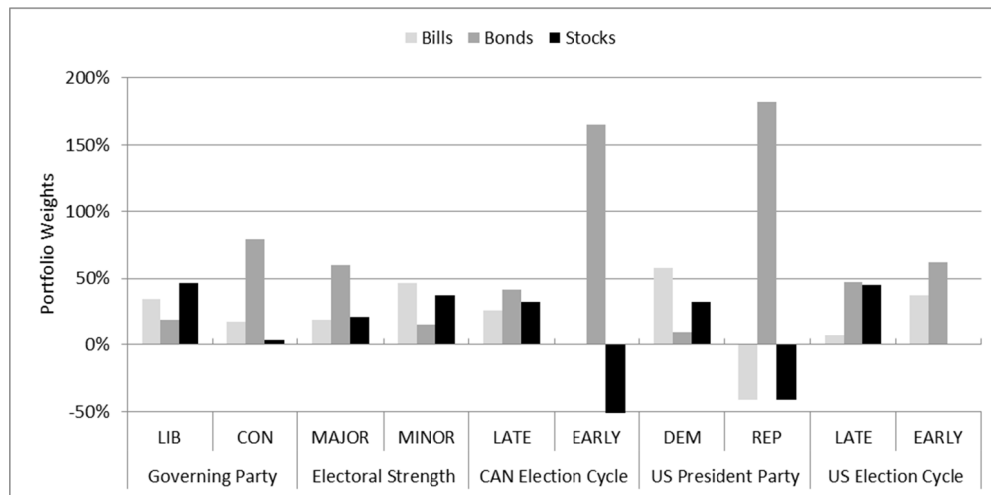


Figure 7. Optimal asset allocation and electoral regimes

Note. This figure shows portfolio weights across different regimes for the optimal asset allocation between bills (light grey bars), bonds (dark grey bars) and stocks (black bars) for an investor with an annualized required return of 15%.

The main conclusion from the figure is that an optimally managed portfolio would require considerable shifts in asset allocation across electoral regimes, even in situations where there was little statistical evidence of differential investment opportunities. In accordance with the results presented earlier, we observe large rebalancing of stocks. In particular, while their allocations in the LIB, DEM and LATE regimes are around 40%, they are liquidated or even sold short in the CON, REP and EARLY regimes. The allocations in bills and bonds also vary greatly, especially in the electoral strength and US president party regimes. Finally, the allocation shifts in Canadian portfolios appear as important across US election regimes than across Canadian ones, once again highlighting the significant role of American politics for investors in Canada.

4. Concluding Remarks

This paper starts by asking whether investors in Canadian financial markets should pay attention to election outcomes. Our findings show that they would gain considerably by following electoral regime signals and that doing so optimally would result in large asset allocation shifts.

The five elements we consider are the Canadian governing party, the Canadian electoral strength, the Canadian election cycle, the US presidential administration and the US presidential cycle. Our findings can be summarized as follow. First, optimal mean-variance investment opportunities are significantly better in Conservative versus Liberal federal governments, based on the strength of the bond market, although this result can be explained by controls for the state of the economy. Second, the bond market performs better in majority versus minority governments. The inclusion of Canadian or US controls also makes the stock market ratio and optimal Sharpe ratio significantly higher in minority versus majority governments. Third, optimal investment opportunities are significantly better in the late versus early parts of the Canadian election cycles, mostly due to the stock market performance. Fourth, the stock market similarly leads optimal investment opportunities to be significantly better in Democratic versus Republican White Houses. Finally, stock market opportunities are significantly better in the

late versus early US presidential election cycles. Controls for the state of the economy do not explain these last three findings.

While historical in nature, and thus subject to the difficulty of extrapolating from past returns, our performance results involve investable, low turnover, portfolio strategies, using start-of-the-month information to invest for the month. As no apparent variation in business cycle risk accounts for the results, the large differences in returns per unit of risk that we document are somewhat puzzling. Given that electoral information is public and easily available, the efficient market theory states that investors should not be able to profit from it, yet portfolio managers following some of the electoral signals would have made important gains. Since rational explanations for our results are not well developed and are left for future research, it remains to be seen if such opportunities will materialize again in the coming years.

Acknowledgements

The authors would like to thank Marie-Claude Beaulieu, Marie-Hélène Gagnon and Pierre Siklos for helpful comments and Ali Ghali for able research assistance. Financial support from the *Institut de Finance Mathématique de Montréal* (IFM²) and the Investors Group Chair in Financial Planning is gratefully acknowledged. The authors are research affiliates at CIRPÉE (Chrétien and Coggins), GReFA (Champagne, Chrétien and Coggins) and LABIFUL (Chrétien).

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Notes

Note 1. During our sample period, there is no fixed election date in Canada. While the dissolution of Parliament can occur at any time within the five-year electoral mandate, the shortest observed majority term is 41 months, a longer period than the longest observed minority term. In 2007, the Parliament adopted a bill for fixed election dates, with the first scheduled fixed date set for 2015.

Note 2. For simplicity, we assume that RF has a standard deviation of zero and correlations of zero with the other assets. These assumptions are commonly made and do not affect our results, given that three-month Treasury bill returns have a standard deviation and correlations with other assets that are close to zero.

Note 3. More precisely, the Canadian information variables are constructed as follow. The annualized log dividend-price ratio is the difference between the one-year total return of the S&P/TSX Composite Index and its one-year price return, multiplied by the value of the index one year ago, and divided by its current value, with data from CFMRC. The term spread is the difference between the average yield-to-maturity of the Canada Treasury bonds with a maturity of ten years or more (CANSIM series V122487) and the yield-to-maturity of the three-month Canada Treasury bill (CANSIM series V122541). The default spread is the difference between the yield on long-term corporate bonds and the government bond yield from series V122487. To construct a long history for the corporate bond yield, we combine three different series. From February 1950 to October 1977, we use the CANSIM series V35752, the Scotia-McLeod Canada Long-Term All-Corporate Yield Index. From November 1977 to June 2007, we take the Scotia Capital Canada All-Corporations Long-Term bond yield CANSIM series V122518. From July 2007, we take the yield from the Merrill Lynch Canada Long-Term Corporate Bond Index (F9C0) from Bloomberg. The relative interest rate is the deviation of the three-month Treasury bill rate from its one-year moving average using the previously introduced series V122541.

Note 4. The US variables are defined as in Santa-Clara and Valkanov (2003). They are the annualized log dividend-price ratio on the S&P 500, the term spread between yields of 10-year US Treasury notes and three-month US Treasury bills, the default spread between yields of BAA- and AAA-rated US bonds, and the relative interest rate given by the deviation of the three-month US Treasury bill rate from its one-year moving average. The data are available on the Professor Goyal's website, with the sources described in Welch and Goyal (2008).

Note 5. It is useful to observe that our approach is not designed to capture the abnormal returns associated with changes in regimes, which would necessitate, for example, an event study methodology. Instead, it focuses on measuring the risk-return opportunities and asset allocations across various electoral regimes, exploiting the large number of observations in each regime for more precise estimation. A study of the market responses to election events is beyond the scope of the paper.

Appendix A. Canadian Federal Election Outcomes, 1949 to 2011

Date	Government	BQ	CCF	IND	LIB	NDP	CON	REF	SC	Total	Prime Minister	Parliament	
Jun 27, 1949	LIB	Major	0	13	8	190	0	41	0	10	262	St Laurent	21 st
Aug 10, 1953	LIB	Major	0	23	5	171	0	51	0	15	265	St Laurent	22 nd
Jun 10, 1957	CON	Minor	0	25	4	105	0	112	0	19	265	Diefenbaker	23 rd
Mar 31, 1958	CON	Major	0	8	0	49	0	208	0	0	265	Diefenbaker	24 th
Jun 18, 1962	CON	Minor	0	0	1	99	19	116	0	30	265	Diefenbaker	25 th
Apr 8, 1963	LIB	Minor	0	0	0	129	17	95	0	24	265	Pearson	26 th
Nov 8, 1965	LIB	Minor	0	0	2	131	21	97	0	14	265	Pearson	27 th
Jun 25, 1968	LIB	Major	0	0	1	155	22	72	0	14	264	Trudeau	28 th
Oct 30, 1972	LIB	Minor	0	0	2	109	31	107	0	15	264	Trudeau	29 th
Jul 8, 1974	LIB	Major	0	0	1	141	16	95	0	11	264	Trudeau	30 th
May 22, 1979	CON	Minor	0	0	0	114	26	136	0	6	282	Clark	31 st
Feb 18, 1980	LIB	Major	0	0	0	147	32	103	0	0	282	Trudeau	32 nd
Sep 4, 1984	CON	Major	0	0	1	40	30	211	0	0	282	Mulroney	33 rd
Nov 21, 1988	CON	Major	0	0	0	83	43	169	0	0	295	Mulroney	34 th
Oct 25, 1993	LIB	Major	54	0	1	177	9	2	52	0	295	Chrétien	35 th
Jun 2, 1997	LIB	Major	44	0	1	155	21	20	60	0	301	Chrétien	36 th
Nov 27, 2000	LIB	Major	38	0	0	172	13	12	66	0	301	Chrétien	37 th
Jun 28, 2004	LIB	Minor	54	0	1	135	19	99	0	0	308	Martin	38 th

Jan 23, 2006	CON	Minor	51	0	1	103	29	124	0	0	308	Harper	39 th
Oct 14, 2008	CON	Minor	49	0	2	77	37	143	0	0	308	Harper	40 th
May 2, 2011	CON	Major	4	0	1	34	103	166	0	0	308	Harper	41 st

Note. Source: www2.parl.gc.ca/Parlinfo/compilations/ElectionsAndRidings/ResultsParty.aspx?Language=E. Abbreviations are BQ = Bloc Québécois, CCF = Co-operative Commonwealth Federation, IND = Independents and other political parties that do not ever achieve parliamentary standing (i.e., requisite of more than 12 seats), LIB = Liberal Party of Canada, NDP = New Democratic Party, CON = Conservative Party of Canada (Progressive Conservative Party before the 38th Parliament), REF = Canadian Reform Conservative Alliance (Reform Party before the 37th Parliament), SC = Social Credit Party and Ralliement Crétitiste, Major = Majority government, Minor = Minority government.

Appendix B. American Presidential Election Outcomes, 1945 to 2011

Elected Candidate	Party	Inaugurated	Regime Ends
TRUMAN, Harry	Democratic	12 Apr 1945	20 Jan 1953
EISENHOWER, Dwight	Republican	20 Jan 1953	20 Jan 1961
KENNEDY, John F.*	Democratic	20 Jan 1961	22 Nov 1963
JOHNSON, Lyndon B.	Democratic	22 Nov 1963	20 Jan 1969
NIXON, Richard M.*	Republican	20 Jan 1969	9 Aug 1974
FORD, Gerald	Republican	9 Aug 1974	20 Jan 1977
CARTER, Jimmy	Democratic	20 Jan 1977	20 Jan 1981
REAGAN, Ronald	Republican	20 Jan 1981	20 Jan 1989
BUSH, George H.W.	Republican	20 Jan 1989	20 Jan 1993
CLINTON, William J.	Democratic	20 Jan 1993	20 Jan 2001
BUSH, George W.	Republican	20 Jan 2001	20 Jan 2009
OBAMA, Barrack	Democrat	20 Jan 2009	

Note. * indicates a premature end to the presidency, in all cases succeeded by the vice-president.

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