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Sovereign Risk, Elections, and Contagion

Chi Li, Christopher Balding, and Minsoo Lee

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CONTENTS

ABSTRACT	v
I. INTRODUCTION	1
II. THEORY AND INSTITUTIONAL BACKGROUND	3
III. MODEL	5
IV. EMPIRICAL STUDIES	6
V. RESULTS AND DISCUSSION	9
VI. POLICY IMPLICATIONS AND CONCLUSIONS	15
REFERENCES	17

ABSTRACT

This paper aims to quantify the political risk effect and its different economic implications in normal and crisis situations through the proxy analysis of election and the sovereign bond spreads. Our study leads to three main findings. First, in normal economic situations, elections and government turnovers expand bond spreads, demonstrating investors' concern over the possibility of government policies or instability brought by the election. During a crisis, however, investors prefer change, indicating hope in new policies ameliorate public finances. Second, due to the prolonged eurozone sovereign debt crisis, elections in European countries have stronger contagion effects in their own region during a global slowdown period than a normal period. However, their effect does not carry over globally after the 2008 financial crisis. Third, results show that the election induced peak shrinks from 3 months before and after the election date to 1–2 months when the economic situation turns from normal to a downgraded period.

JEL classification: F34, F36, O52

Keywords: election, sovereign bond, contagion, financial crisis, Europe, Asia

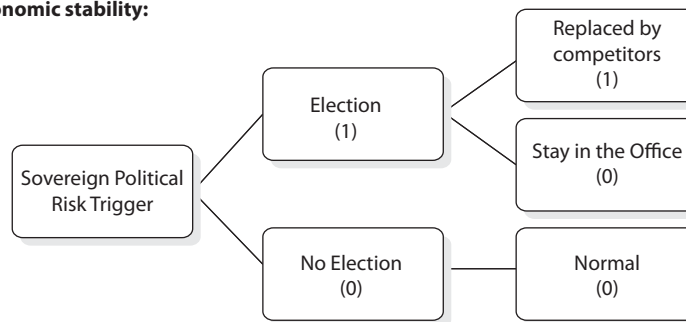
I. INTRODUCTION

Research on political risk in financial markets is conceptual. Methodologically and empirically, the research on the relationship between sovereign debt pricing and the possible triggers of political risks is sparse. Our study provides a number of unique findings. First, short-term investors care more about political events like elections than long-term investors. Second, economic stability alters the perception of political risk. In economically stable situations, an election may expand bond spreads, indicating investors' concern over the possibility of losing the status quo. In unstable environments, replacement of the government indicates hope of change and amelioration of public finances reflected in a short term narrowing of debt spreads.

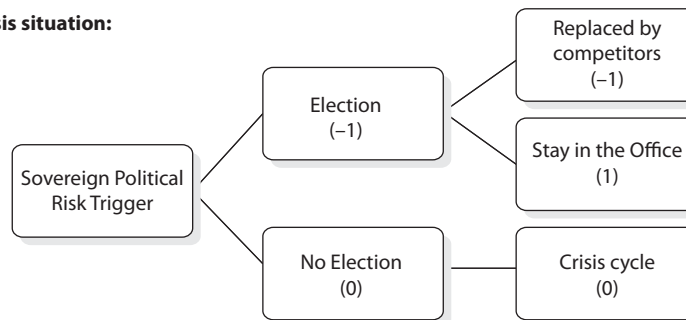
Using the 2008 financial crisis as a natural experiment, we test the impact of political risk on sovereign debt prices during periods of stability (normal periods) and instability (economic crisis periods). We produce a dataset from January 2004 to March 2012 across developed and emerging economies (Figures 1 and 2), finding that election events in Europe increased contagion effects regionally but diminished its effects globally, specifically with regards to Asia. This implies a decoupling of financial markets between advanced economies and emerging market countries.

Figure 1: The Election Effective Mechanism

In economic stability:

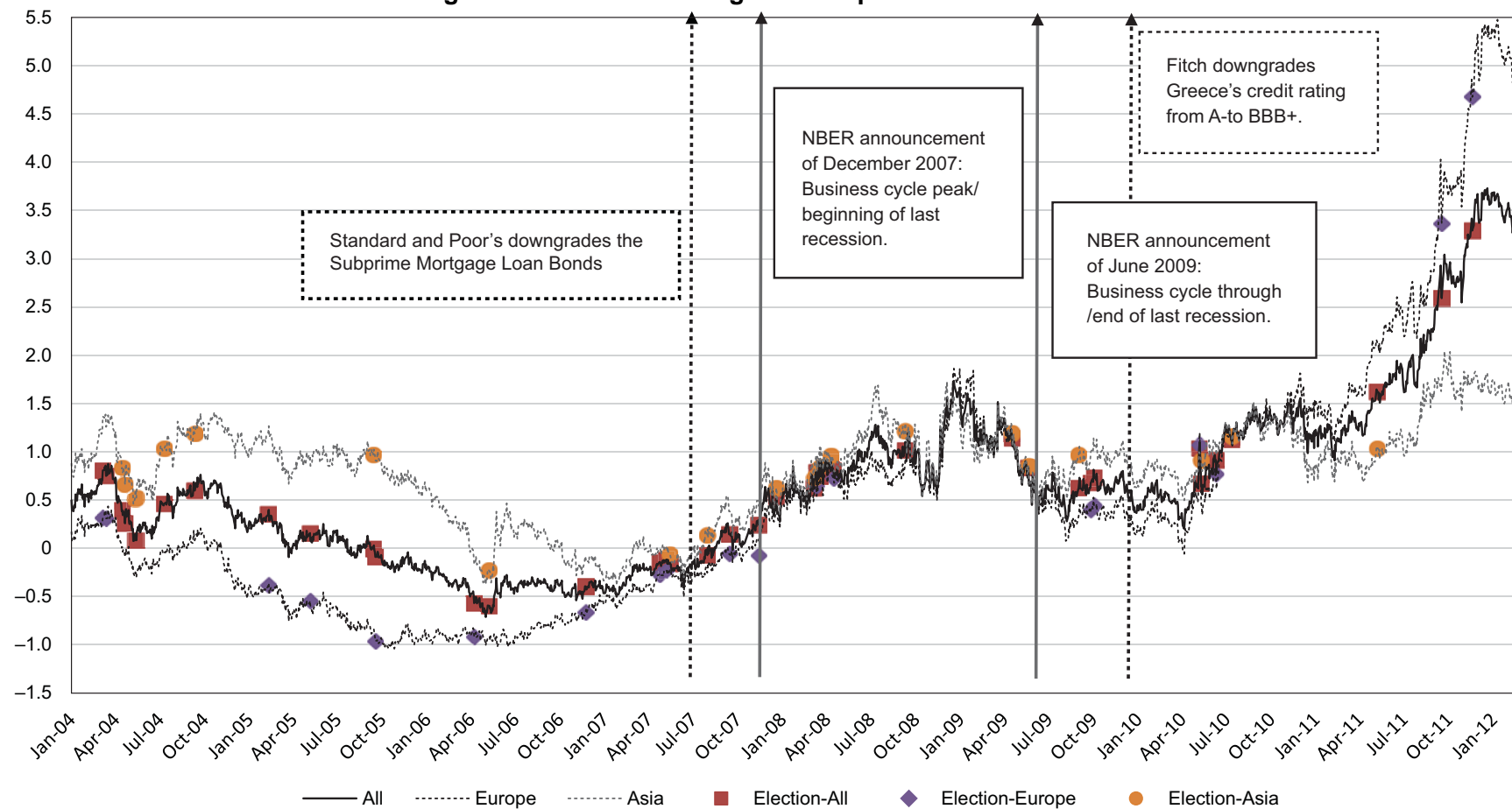


In crisis situation:



Source: Authors.

Figure 2: 10-Year Sovereign Bond Spreads and Elections



Source: Bloomberg, Fitch, the National Bureau of Economic Research, and Standard & Poor's.

We estimate the duration of election contagion effects. During periods of economic stability, election effect peaks about 90 days before and after the election date with pre-election (anticipation) effects proving more significant. Conversely, during periods of economic instability, election effects peak between the narrower range of 30–60 days. While the magnitude of the election effect during economic crises is substantially stronger than in normal periods, both anticipation and response effects are at similar levels to the actual election. Dividing into pre- and post-election effects allows us to disentangle investor sentiment and pricing of political risk given different economic circumstances.

This paper consists of three sections. First, we review the literature by summarizing the research methods, applications, and deficiencies in political risks and sovereign financial assets. Second, we describe our research methodology, model, and data. Third, we discuss our results, including policy implications.

II. THEORY AND INSTITUTIONAL BACKGROUND

Interest in linking political risk and financial risk dates to Hibbs (1977) who created a political economy framework of financial risk. Hibbs theorized that due to varying interest representation of left and right-wing parties, different governments choose divergent policies regarding interest rates, taxation, inflation, unemployment, and growth, resulting in different financial risks once in office. Using the perceived left-wing preference for more fiscal and monetary stimulus, Alesina (1987) focused on the effects of rational expectations to account for the possibility of parties' electoral victory. Alesina (1988) noted that if there are observable differences in the probability of winning the election between two or more opponents, investors will adjust their portfolios in advance dependent upon the party with a greater likelihood of winning. This functions as a type of forward looking policy arbitrage. Under these circumstances, the prior actions of investors diminish the impact of those policies if anticipated accurately. Thus, only unexpected winners or surprise policies will alter asset prices.

Political business cycle (PBC) theory was extended by MacRea (1977) and Nordhaus (1989), studying the relationship between politics and business cycles. They theorized that voters' homogenous preferences would guide the electoral candidates' claim of pre-election economic policies. Empirically, Santiso (1999a) found that politics is a factor in emerging markets crises and that more stable governments are less vulnerable to market sentiment than left-wing or small victory margin governments. Rogoff (1990) and Goldsmith (1994) drew similar conclusions about left-leaning candidates magnifying financial market fluctuations, but for different reasons. Rogoff found that expansionary policies increase the probability of negative outcomes when left-wing parties seek to enhance their election victory. Goldsmith described this as the promotion of political and economic freedom to attract more investment and market participants. Apart from party preferences, Rogoff and Siebert (1988) asserted that the policies of the incumbent party or government that stay in office are more easily observed and assessed. The challengers' policies however, can only be imputed from previous policies when in power or from campaign promises. This increases policy uncertainty associated with a challenger's victory regardless of political orientation.

The theory of partisan opportunistic political business cycle theory asserts that political orientation prefers risk avoidance and electoral certainty (Vaaler, Schrage, and Block 2005). The opportunistic orientation worry regarding an incumbent's easy electoral victory provides fewer incentives to take difficult decisions that may please investors. This work extends the theoretical framework towards a more complete understanding of the impact of political risk on

financial asset pricing and specifically sovereign debt (Hibbs 1977; Alesina, Roubini, and Cohen 1997; Schultz 1995; Berlemann and Merkwardt 2003; Block, Singh, and Ferree 2003).

Focusing on political variables beyond elections, Ciochini, Durbin, and Ng (2003) analyzed the impact of corruption, finding a positive relationship with the financing cost of external debt for developing countries. The effects of divided governments, like the United States (US), show slower reactions to exogenous shocks while also smoothing policy reforms owing to the systemically-induced longer cycle when passing new policies or legislation (Mayhew 1991; Boix 1997; Bowling and Ferguson 2001; Coleman 1999; Edwards, Barrett and Peake 1997). Divided governments have less freedom of action and face bigger obstacles in making significant policy changes. Due to the larger obstacles divided governments face in implementing policy modifications, investors have more certainty about divided governments' policies.

Case studies by Lee (1993), Murtha (1993), and Santiso (1999b) focus on specific countries, regions, or developing countries' campaigns and the impact of political risk. Their analysis pointed out that before the 1980s and 1990s, many developing countries' economic activities were not separated from electoral dynamics due to their dominant leadership or military government (Vaaler, Schrage, and Block 2005). However, since democratic reforms were implemented, elections introduce political risk into financial markets. During the 1980s and 1990s, risk was concentrated on lack of reform or debt repudiation, while democratic openness has explicitly introduced political risk into financial asset pricing.

In Latin America, exchange rate fluctuations coincided with election campaigns; moreover, for presidential systems, the post-election depreciation of the nominal exchange rate was over twice as large as in the pre-election period (Freeman, Hays, and Stix 2000; Frieden, Ghezzi, and Stein 2001). The relationship between stock markets and elections has also been studied widely (Estrella and Mishkin 1998; Gemmill 1992; Leblang and Mukherjee 2005; Fuss and Bechtel 2008), with authors finding that higher electoral uncertainty reduces stock price volatility, while victory of right-leaning parties leads to higher stock returns and higher volatility. By testing the futures data for economic data such as inflation, unemployment, and industrial production in the US from 1988 to 2000, Fowler (2006) concludes that a left-leaning president increases nominal interest rates, indicating higher inflation, while incumbent wins have a negative effect on the interest rate and inflation. The policy risk effects to the economy are predicted based on rational partisan theory and policy risk theory.

The sovereign risk ratings published by credit rating agencies and their influence on developing countries reflect the agencies' preferences rather than credit risks. The political or credit risk contagion between countries in the same region entails that countries which receive a credit rate downgrading negatively affect their neighbors (Dornbusch, Park, and Claessens 2000; Gande and Parsley 2005). Distinguishing emerging market countries from each other will diminish contagion effects. Aizenman, Jinjark, Lee, and Park (2012) apply event study methodology to gauge the scope for financial contagion from the EU to developing countries. They estimate the responsiveness of equity and bond markets in developing countries to news of the global and euro crisis, finding that whereas global crisis news had a consistently negative effect on returns of equity and bond markets in developing countries, the effect of euro crisis news was more mixed and limited.

Longstaff, Pedersen, Pan, and Singleton (2011) have studied the relationship between credit default swap (CDS) pricings and sovereign risk and find that most of the price premium is related to global factors rather than to sovereign specific risk. Balding (2011) focused on the

elections and sovereign CDS prices in emerging markets from 2004 to 2007, finding that short-run investors perceive different levels of political risk than long term investors, causing the spread between 1-year and 10-year CDS to narrow.

Vaaler, Schrage, and Block (2005) studied investment risk during 19 presidential elections in 12 developing countries from 1994 to 2000, using sovereign bonds spreads. Bond spreads have been used widely (Ciocchini, Durbin, and Ng 2003; Min 1998; Rowland 2005; McGuire and Schrijvers 2003) and their analysis has shown the importance of high-frequency characteristic embedded in bond spreads in explaining sovereign credit risks.

From the literature, sovereign debt research focuses on a small number of significant variables, including balance of payments, GDP growth rates, inflation, unemployment rates, sovereign debt ratio, and industrial production. Given previous research interest in the electoral structures of emerging markets, we target the impact of contagion and crises on sovereign debt pricing. Investor reaction to political risk uniquely depends on the economic situation. In other words, investors appear to prefer different political outcomes depending on the state of the economy.

III. MODEL

Using the 2008 financial crisis as a natural experiment, we will test the impact of political risk on sovereign debt prices during periods of economic stability and instability across developed and emerging economies. In an economically stable situation, an election may expand bond spreads, indicating investors' concern over the possibility of losing the status quo. However, in unstable environments, replacement of the government indicates hope of change and amelioration of public finances, reflected in a short term narrowing of sovereign debt spreads.

We examine to what degree political events impact sovereign bond spreads using economic fundamentals and elections. We theorize that elections will matter through a potential policy shift. This effect is magnified in periods of economic stability. During economic stability, people prefer the status quo as elections bring risks; however, during economic instability, investors accept change and an election may reduce risk (Figure 1).

Following models considered by Buiter (1980), Eaton and Gersowitz (1980), and Edwards (1984), we consider risk-neutral investors that compete for bonds from borrower countries. The market yield (r) is the sum of the risk free yield (r^*) and the risk premium or the bond spread (BS) that compensates investors for the default risk, $r = r^* + BS$. The no-arbitrage condition implies that $(1+r)(1-p) = (1+r^*)$, where p is the perceived probability of default. The bond spread can be expressed by the following:

$$BS = \frac{p}{1-p} (1 + r^*) \quad (1)$$

The decision to repudiate foreign debt depends on the level of the debt and the cost of repudiation. A country will repudiate its debt (D) if the value exceeds the present value of the expected cost (C) of repudiation. The perceived probability of default can be described as $p = \text{prob}\{C < D\}$ and $1-p = \text{prob}\{C > D\} \leq E(C)/D$. Therefore, with the equality:

$$p = 1 - \frac{E(C)}{D} \quad (2)$$

Combining equations (1) and (2) leads to:

$$BS = \left(\frac{D}{E(C)} - 1 \right) (1 + r^*) \quad (3)$$

The dynamics of the debt stock can be sustainable if they are insured by the condition of the primary surplus, interest rate and country growth rate (Ferrucci and Penalver 2003), $D \leq P_m^s / (r - g)$. $E(C)$ can include the country's complete or partial exclusion from future borrowing in the international capital markets, implying that the decision to default on foreign debt is a political decision. Sovereign defaults are determined not only by solvency and liquidity indicators, but also by willingness-to-pay, a political decision.

IV. EMPIRICAL STUDIES

To test election effects on sovereign debt pricing, we create a panel dataset to study sovereign bond prices under varying time horizons. We compiled daily 1-year, 5-year, and 10-year government bond yields spreads from 16 countries: seven from Asia¹ and eight European countries,² with the US used as a base country in calculating the bond spreads. We use the 1, 5, and 10-year sovereign bonds spreads for empirically and theoretically valid reasons. First, the term structure reveals the short and long-term risks of a country or government. If governments are trustworthy in their terms of office or if investors believe that the policies will provide stable and positive guidance on the development of the country, they may choose to buy long-term bonds. For investors skeptical of the government, short-term bonds will be the preferred option. Second, the preference for different bonds also differentiate the investors' risk acceptance. Value investors may demand longer term fixed income assets while shorter term bonds may attract short term speculators. Buying 5-year government bonds represents a signal of showing confidence in the winning party. Investors in 10-year or longer term government bonds indicate trust in the long term political and economic stability of the country.

To study bond spreads, we test against widely accepted variables such as balance of payments as a percentage of GDP, government debt as a percentage of GDP, GDP growth rate, unemployment rate, and inflation rate. Subsequently, we calculate the differential for each variable between the target country and the US. For instance, when we examine 10-year bond spreads, the BOP/GDP of Italy minus BOP/GDP of the US generates the spread of BOP/GDP at time t denoted as $\Delta BOP_{Italy}^{10} \cdot t$. We also include a comprehensive set of dummy variables controlling for election effects.

Furthermore, we test a range of political variables in addition to elections. To test the party or president's impact we create an incumbency variable. If the incumbent wins, there will be less uncertainty compared to being replaced by other parties or candidates. We also analyze the impacts of the victory margin in elections before and after financial crisis. We test contagion effects by a variety of cross-border tests. For instance, regional effect in one country's election or bond prices impacting the whole region or geographic contagion spreading across regions. Finally, we generate leading and lagging variables, which we use to test the duration of election effects. Regressions are based on the baseline model with numerous data and modeling variations for robustness testing.

¹ The PRC; Hong Kong, China; Japan; India; the Republic of Korea; the Philippines; and Singapore.

² Denmark, France, Germany, Greece, Italy, the Netherlands, Spain, and the United Kingdom.

There are numerous data issues to cover. First, we utilize time inconsistent data from daily, monthly, quarterly, and yearly sources. We employed econometric pre-tests such as stationarity, correlation and multicollinearity testing, to prevent econometric issues. The Hausman test indicates a fixed-effect panel model is most suitable with time controls rather than a random-effect model. We perform robustness econometric tests after we conduct the baseline and derivative models, showing consistent economic implications but with lower efficiency and weaker explanatory power.

Our baseline model is presented below

$$BS_{it}^n = \alpha + \beta_1 \Delta BOP_{it} + \beta_2 \Delta DEBT_{it} + \beta_3 \Delta GDPG_{it} + \beta_4 \Delta INF_{it} + \beta_5 \Delta UNEMP_{it} + ELECTION_{it} + \varepsilon_{it} \quad (4)$$

The variables are defined as the following:

n = Terms of the bond spreads, where $n = 1, 5$ and 10 represents 1 year, 5 year and 10 year bond spreads accordingly

i = target country i^3

t = time

BS_{it}^n = n year bond spreads for country i at time t , $(\text{Bond Yields}_{it} - \text{Bond Yields}_{USA\ t}) \times 100.^4$

ΔBOP_{it} = Net Balance of Payments as the percentage of its GDP for country i at time t compare to the US value, $(\frac{BOP_{it}}{GDP_{it}} - \frac{BOP_{USA\ t}}{GDP_{USA\ t}}) \times 100.^5$

$\Delta DEBT_{it}$ = External Government Debt as the percentage of its GDP for country i at time t compare to the US value, $(\frac{\text{Government Debt}_{it}}{GDP_{it}} - \frac{\text{Government Debt}_{USA\ t}}{GDP_{USA\ t}}) \times 100.^6$

$\Delta GDPG_{it}$ = GDP Growth Rate as the percentage of its GDP for country i at time t compare to the US growth rate, $(\text{GDP Growth Rate}_{it} - \text{GDP Growth Rate}_{USA\ t}) \times 100.^7$

³ Here we used the country code from The Quality of Government Institute (QOG) database: <http://www.qog.pol.gu.se/>

⁴ Data Resource: All from Bloomberg terminal, calculated and merged by the author.

⁵ Data Resource: US: the National Bureau of Economic Research (NBER) <<http://www.nber.org/>>; United Kingdom: UK National Statistics <<http://www.statistics.gov.uk/>>; Germany, Italy, Spain, the Netherlands, Denmark, and Greece: European Statistics <<http://ec.europa.eu/eurostat/>>; the PRC: State Administration of Foreign Exchange <<http://www.safe.gov.cn/>>; Japan: Ministry of Finance Japan <<http://www.mof.go.jp/>>; Republic of Korea: The Bank of Korea <<http://www.bok.or.kr/>>; Hong Kong, China: Census and Statistics Department, the Government of the Hong Kong Special Administrative Region <<http://www.censtatd.gov.hk/>>; India: Reserve Bank of India <<http://www.rbi.org.in/>>; Singapore: Statistics Singapore <<http://www.singstat.gov.sg/>>; Philippines: Bangko Sentral ng Pilipinas (BSP) <<http://www.bsp.gov.ph/>>. Among which, the Philippines and the Republic of Korea is monthly data, the PRC is half yearly data, others are quarterly data, calculated and merged by the author.

⁶ Data Resource: US: US Department of The Treasury <<http://www.treasury.gov/>>; United Kingdom: National Statistics <<http://www.statistics.gov.uk/>>; other countries: Central Intelligence Agency of the US <<http://www.cia.gov/>>. Among which, the US and the UK are monthly data, others are yearly data, calculated and merged by the author.

⁷ Data Resource: US: the National Bureau of Economic Research (NBER) <<http://www.nber.org/>>; UK: UK National Statistics <<http://www.statistics.gov.uk/>>; Germany, Italy, Spain, the Netherlands, Denmark, and Greece: European Statistics <<http://ec.europa.eu/eurostat/>>; PRC: National Bureau of Statistics of China <<http://www.stats.gov.cn/>>; Japan: Cabinet Office, Government of Japan <<http://www.cao.go.jp/>>; Republic of Korea: The Bank of Korea <<http://www.bok.or.kr/>>; Hong Kong, China: Census and Statistics Department, the Government of the Hong Kong Special Administrative Region <<http://www.censtatd.gov.hk/>>; India: Ministry of Statistics and Program Implementation <<http://www.mospi.gov.in/>>; Singapore: Statistics Singapore

ΔINF_{it} = Inflation Rate (here we used CPI year-on-year as the substitution) for country i at time t compare to the US inflation rate, $(CPIYOY_{it} - CPIYOY_{USA\ t}) \times 100$.⁸

$\Delta UNEMP_{it}$ = Unemployment Rate for country i at time t compare to the US unemployment rate, $(UNEMP_{it} - UNEMP_{USA\ t}) \times 100$.⁹

$ELECTION_{it}$ = Election dummy variable for country i at time t , i.e., if there is an election event in country i , the value for that country will be 1 for the whole election week; otherwise, 0.¹⁰

$INCUMBENCY_{it}$ = Incumbency variable for country i at time t , i.e., if there is an election event in country i and the incumbent is replaced or loses in that election or in other words, the opponent wins, the value for that country will be 1; otherwise, 0.¹¹

$MARGIN_{it}$ = Victory Margin defined as the difference in the vote shares between the winning party (or president) and their main opponents.¹²

$REGCON_{it}$ = Regional Contagion Effect variable for country i at time t , i.e., if there is an election event in country i , the value for the whole region will be 1; otherwise, 0.¹³

$GEOCON_{it}$ = Geographical Contagion Effect variable for country i at time t , i.e., if there is an election event in country i , the value for the other region which country i does not belong to will be 1; otherwise, 0.¹⁴

$LEADING_{it}$ ($LAGGING_{it}$) = Dummy variable whose value will be 1 at certain times prior (post) to the election indeed happen; otherwise, 0.

<<http://www.singstat.gov.sg>>; Philippines: National Statistical Coordination Board (NSCB) <<http://nscb.gov.ph>>. All of them are quarterly data, calculated and merged by authors.

⁸ Data Resource: US: US Department of Labor <<http://www.dol.gov>>; Japan: The Statistics Bureau and the Director-General for Policy Planning of Japan <<http://www.stat.go.jp>>, others data resource are same as the ΔBOP_{it} 's, all of them are monthly data, calculated and merged by authors.

⁹ Data Resource: The Netherlands, Denmark, and Greece data are from the World Bank <<http://www.worldbank.org>>; others data resource are same as ΔINF_{it} 's. Among them, the US; the UK; Germany; France; Italy; Japan; the Republic Korea; and Hong Kong, China are monthly data. The PRC, Singapore, and the Philippines are quarterly data, while Spain, the Netherlands, Denmark, and India are yearly data, calculated and merged by authors.

¹⁰ Data Resource: Psephos Adam Carr's Election Archive <<http://psephos.adam-carr.net>>, sorted by authors. If there is election on holidays when there will be no trading in the market, we treated on the last trading day before the election date.

¹¹ Data is sorted by authors based on the data collected from Psephos Adam Carr's Election Archive <<http://psephos.adam-carr.net>>

¹² Data is calculated by authors based on the data collected from Psephos Adam Carr's Election Archive <<http://psephos.adam-carr.net>>

¹³ Data Resource: <<http://psephos.adam-carr.net>>. The region is separated into Europe and Asia, where the European (Asian) countries' elections affect Europe (Asia).

¹⁴ 75 Data Resource: <<http://psephos.adam-carr.net>>. The region is separated into Europe and Asia, where the European (Asian) countries' elections affect Asia (Europe).

V. RESULTS AND DISCUSSION

Our baseline regression results are presented in Table 1. There are a number of results worth mentioning. First, from 1 January 2004 to 14 March 2012, all economic control variables exhibit the expected signs and are statistically significant in explaining the 1, 5, and 10-year sovereign bond spreads. In line with expectations, taking 1-year bond spreads for instance, the coefficient of the BOP and GDPG are negative, which implies that a 1% increase in the balance of payments on either current accounts or capital accounts results in 0.4% lower spreads of the government bonds. A 1% higher GDP growth rate leads to 0.6% lower bond spreads. Both debt and unemployment coefficients are positive, indicating higher risks due to higher debt and unemployment. The influence of unemployment is more critical compared to debt pressures: a 1% increase in unemployment rate of the target country will increase sovereign bond spreads by 4.5%, while increasing debt by 1% will only increase bond spreads about 0.8%. Interestingly, we note that over the whole time period, the coefficient of the election variable is insignificant. It is important to note however *why* the election variable is insignificant.

Table 1: The Baseline Model

Variables	All Sample		
	1-Year	5-Year	10-Year
BOP	-0.415*** (0.0307)	-0.062*** (0.0029)	-0.043*** (0.0018)
DEBT	0.822*** (0.0201)	0.086*** (0.0019)	0.055*** (0.0012)
GDPG	-0.623*** (0.0809)	-0.229*** (0.0076)	-0.160*** (0.0049)
INF	-1.449*** (0.1116)	-0.104*** (0.0105)	-0.056*** (0.0067)
UNEMP	4.545*** (0.1078)	0.677*** (0.0101)	0.479*** (0.0064)
ELECTION	-1.207 (1.6835)	-0.217 (0.1589)	-0.155 (0.1011)
R-Squared	0.2100	0.4267	0.4622

Variables	Pre-Crisis			Post-Crisis		
	1-Year	5-Year	10-Year	1-Year	5-Year	10-Year
BOP	0.011*** (0.0013)	-0.003*** (0.0011)	-0.008*** (0.0009)	-0.638*** (0.0490)	-0.055*** (0.0041)	-0.030*** (0.0025)
DEBT	-0.012*** (0.0009)	-0.001 (0.0007)	0.002*** (0.0005)	1.504*** (0.0405)	0.171*** (0.0034)	0.113*** (0.0021)
GDPG	-0.064*** (0.0047)	-0.041*** (0.0038)	-0.033*** (0.0030)	-0.057 (0.1171)	-0.154*** (0.0098)	-0.108*** (0.0060)
INF	0.143*** (0.0051)	0.106*** (0.0041)	0.080*** (0.0033)	-2.471*** (0.1743)	-0.164*** (0.0145)	-0.065*** (0.0089)
UNEMP	-0.405*** (0.0090)	-0.283*** (0.0073)	-0.165*** (0.0058)	5.478*** (0.1892)	0.751*** (0.0158)	0.497*** (0.0097)
ELECTION	0.380*** (0.0474)	0.251*** (0.0382)	0.168*** (0.0304)	-3.646 (2.9878)	-0.613** (0.2491)	-0.389** (0.1529)
R-Squared	0.7241	0.5811	0.4804	0.2575	0.4488	0.4852

BOP = net balance of payments, DEBT = external government debt, GDPG = GDP growth rate, INF = inflation, UNEMP = unemployment.

Note: Standard errors are in parentheses. ***, **, and * indicate 1%, 5%, and 10% significant levels, respectively.

Source: Authors' calculations.

According to the NBER, the recession began in December 2007 (Figure 2).¹⁵ We separate our dataset into two sub-periods: 1 January 2004–31 December 2007 and 1 January 2008–14 March 2012.¹⁶ This separates the time frame into neat sub-samples with the US subprime crisis as a rough boundary. Prior to 2008, the global economic environment was robust; afterwards it was in perpetual recession or crisis. The results presented in Table 1 provide increased precision when we focus on political risk before and after 2008. First, all variables are significant at a 1% significance level for 1-year, 5-year, and 10-year sovereign bond spreads. Furthermore, the election coefficients across bond duration illustrate a distinct pattern. If there is an election, there will be a 0.38% expansion on 1-year sovereign bond spreads, while the expansion decreases with term structure. For example, the increases in 5-year and 10-year bond spreads are merely 0.25% and 0.16%, which are about 34.2% and 57.9% lower than impact on the 1-year bond. Short-term investors care more about elections effects than long-term investors. Long term bonds holders accept more political risks due to numerous elections over the term of the bond and are less worried about individual elections.

Conversely, from 2008 through early 2012, election coefficients are higher for the 1-year spread compared to the 5-year and 10-year spreads. The post-2008 regressions also confirmed our hypothesis on financial asset pricing in crisis periods. In the 5-year term, elections will decrease bond spreads by about 0.61%, matching our hypothesis that in the crisis situation, investors have lost their confidence in the existing government. Holding an election, at least temporarily, improves investor confidence.

To further explore the impact of elections, we include variables on incumbency and the election winner's victory margin. We divide the data into pre and post-2008 time frames. Based on this additional control, the incumbency coefficients from Table 2 are significant at 1% level except for the 1-year bond spreads (10% level significant) from 2008–2012. Consistent with previous findings, short-term investors care more about elections than long-term investors. An interesting result is that investors' response to the replacement of government appears to differ significantly before and after 2008. In line with our theoretical model, before 2008 the market remained stable with little fear of sovereign default. During elections, if an incumbent lost, this increased the probability of policy changes. Government changes increased sovereign bond spreads and the impact of a handover would be greater than the election event itself. For instance, before 2008, the 1-year election coefficient is 0.38, while the incumbency coefficient is 0.50, about 31% larger. We find a similar pattern for results of 5-year and 10-year spreads. After 2008, the frequency of government replacement increased. Given increased expectation of a governmental transition, the government turnover after 2008 shrinks sovereign bond spreads. For instance, if the incumbent is replaced, there will be a 8.63% decline in the 1-year bond spreads, and 1.27% and 0.65% in 5-year and 10-year spreads, respectively.

¹⁵ Information on Recessions and Recoveries, the NBER Business Cycle Dating Committee, and related topics: <http://www.nber.org/cycles/main.html>

¹⁶ For robustness sake, we tested whether shifting our before and after delineation line would impact the results. Moving the before and after period barrier by any reasonable amount does not impact the results in anyway.

Table 2: Incumbency

Variables	Pre-Crisis			Post-Crisis		
	1-Year	5-Year	10-Year	1-Year	5-Year	10-Year
BOP	0.011*** (0.0013)	-0.003*** (0.0011)	-0.008*** (0.0009)	-0.637*** (0.0490)	-0.055*** (0.0041)	-0.030*** (0.0025)
DEBT	-0.012*** (0.0009)	-0.000 (0.0007)	0.002*** (0.0005)	1.503*** (0.0405)	0.171*** (0.0034)	0.112*** (0.0021)
GDPG	-0.064*** (0.0047)	-0.041*** (0.0038)	-0.033*** (0.0030)	-0.060 (0.1170)	-0.155*** (0.0098)	-0.109*** (0.0060)
INF	0.143*** (0.0051)	0.105*** (0.0041)	0.080*** (0.0033)	-2.480*** (0.1743)	-0.165*** (0.0145)	-0.066*** (0.0089)
UNEMP	-0.406*** (0.0090)	-0.284*** (0.0073)	-0.165*** (0.0058)	5.479*** (0.1892)	0.751*** (0.1577)	0.497*** (0.0097)
INCUMBENCY	0.498*** (0.0744)	0.367*** (0.0600)	0.224*** (0.0477)	-8.632* (4.763)	-1.265*** (0.3970)	-0.6468*** (0.2437)
R-Squared	0.7237	0.5809	0.4801	0.2576	0.4489	0.4852

BOP = net balance of payments, DEBT = external government debt, GDPG = GDP growth rate, INF = inflation, UNEMP = unemployment.

Note: Standard errors are in parentheses. ***, **, and * indicate 1%, 5%, and 10% significant levels, respectively.

Source: Authors' calculations.

The victory margin of elections also produces interesting results pre and post financial crisis. As shown in Table 3, before the financial crisis, the victory margin coefficients are positive and statistically significant at the 1% level. Taking 1-year spreads for instance, if the victory margin increased by 10%, there would be nearly 0.2% increase in bond spreads. We conclude that, in a normal economic situation, investors dislike continuing existing policies. For the post-2008 sample, however, the impact of the victory margin on the 1-year bond is insignificant. Given the shift in investor concern over public indebtedness, this reflects the opinion that new policies will have little impact on the short term repayment probability. The greater the margin of victory, the lower were long term bond spreads, indicating a reduced risk perception and confidence that the winner would enact investor preferred policies. This is also consistent with what we found previously: that investors prefer a strong leader in times of economic instability.

Table 3: Victory Margin

Variables	Pre-Crisis			Post-Crisis		
	1-Year	5-Year	10-Year	1-Year	5-Year	10-Year
BOP	0.003 (0.0018)	-0.001 (0.0014)	-0.005*** (0.0011)	-0.543*** (0.0504)	-0.047*** (0.0042)	-0.025*** (0.0026)
DEBT	-0.012*** (0.0009)	-0.000 (0.0007)	0.002*** (0.0006)	1.473*** (0.0405)	0.168*** (0.0034)	0.111*** (0.0021)
GDPG	-0.060*** (0.0047)	-0.042*** (0.0038)	-0.035*** (0.0030)	-0.091 (0.1173)	-0.157*** (0.0098)	-0.110*** (0.0060)
INF	0.145*** (0.0051)	0.105*** (0.0041)	0.080*** (0.0033)	-2.370*** (0.1747)	-0.154*** (0.0146)	-0.060*** (0.0089)
UNEMP	-0.400*** (0.0090)	-0.282*** (0.0073)	-0.165*** (0.0058)	5.545*** (0.1903)	0.756*** (0.0159)	0.500*** (0.0097)
MARGIN	0.021*** (0.0032)	0.017*** (0.0026)	0.013*** (0.0021)	-0.119 (0.0788)	-0.016** (0.0066)	-0.010** (0.0040)
R-Squared	0.7223	0.5808	0.4781	0.2552	0.4469	0.4837

BOP = net balance of payments, DEBT = external government debt, GDPG = GDP growth rate, INF = inflation, UNEMP = unemployment.

Note: Standard errors are in parentheses. ***, **, and * indicate 1%, 5%, and 10% significant levels, respectively.

Source: Authors' calculations.

In considering an election's potential contagion impact, we find evidence it may spill over to other markets. To study an election's impact on contagion, we divide it by international and regional contagion. We present our results on regional contagion first in Table 4. We find the election effect on sovereign bond spreads within the region of Europe is positive and statistically significant. The coefficients of 1-year, 5-year, and 10-year sovereign bond spreads before 2008 are 0.18, 0.16, and 0.11, respectively, significant at the 1% level. However, the values expand to 2.628, 0.276, and 0.164 after 2008, which are significant shifts given the economic environment. This demonstrates a clear expectation of the higher political risk spilling over to neighbors.

Table 4. Regional Contagion

Variables	Pre-Crisis			Pre-Crisis		
	1-Year	5-Year	10-Year	1-Year	5-Year	10-Year
BOP	0.012*** (0.0019)	-0.002 (0.0017)	0.001 (0.0014)	-0.004* (0.0024)	0.000 (0.0016)	-0.006*** (0.0011)
DEBT	0.000 (0.0025)	0.022*** (0.0022)	0.020*** (0.0018)	0.007*** (0.0011)	0.004*** (0.0007)	0.004*** (0.0005)
GDPG	-0.003 (0.0099)	-0.010 (0.0088)	-0.011 (0.0073)	-0.079*** (0.0049)	-0.040*** (0.0033)	-0.038*** (0.0023)
INF	0.160*** (0.0077)	0.163*** (0.0069)	0.145*** (0.0057)	0.119*** (0.0074)	0.077*** (0.0050)	0.065*** (0.0035)
UNEMP	-0.682*** (0.0283)	-0.433*** (0.0252)	-0.224*** (0.0209)	-0.318*** (0.0082)	-0.201*** (0.0056)	-0.111*** (0.0039)
ASIA	0.130*** (0.0351)	0.068** (0.0382)	0.029 (0.0259)			
EUROPE				0.182*** (0.0175)	0.161*** (0.0119)	0.111*** (0.0083)
R-Squared	0.7111	0.4761	0.3450	0.7916	0.7709	0.7655

Variables	Post-Crisis		
	1-Year	5-Year	10-Year
BOP	-0.665*** (0.2074)	-0.063*** (0.0158)	-0.027*** (0.0095)
DEBT	4.610*** (0.1046)	0.463*** (0.0080)	0.283*** (0.0048)
GDPG	2.430*** (0.3215)	-0.223*** (0.0245)	-0.191*** (0.0147)
INF	-7.582*** (0.4365)	-0.631*** (0.0332)	-0.317*** (0.0200)
UNEMP	2.899*** (0.2868)	0.462*** (0.0218)	0.328*** (0.0132)
ASIA			
EUROPE	2.628* (0.9926)	0.276* (0.1516)	0.164* (0.0914)
R-Squared	0.4177	0.6349	0.6656

BOP = net balance of payments, DEBT = external government debt, GDPG = GDP growth rate, INF = inflation, UNEMP = unemployment.

Note: Standard errors are in parentheses. ***, **, and * indicate 1%, 5%, and 10% significant levels, respectively.

Source: Authors' calculations.

We present our international contagion results in Table 5. We find that, due to the financial crisis, to some extent we are facing a so-called political power shift. The international contagion coefficient declines or becomes insignificant after 2008. The 1-year, 5-year, and 10-year coefficients are 0.16, 0.15, and 0.11, respectively before 2008; but 0.06, 0.10, and 0.12 after 2007. The impact of European elections on Asia has decreased since the financial crisis. Focusing on the 1-year spread, prior to the financial crisis, an election in a European country would increase Asian bond spreads by 0.16%. However, post 2008, a European election only increases Asian bond spreads by 0.06%. This represents a major shift in financial importance and the direction of contagion. Investors have decoupled Asian finances from the US and Europe. Prior to 2008, investors priced Asian sovereign debt based upon the risk of European elections. However, since 2008, investors have treated European and Asian sovereign risk separately. The effect of Asian election on Europe are insignificant pre or post-2008, implying that while European influence over Asian bond prices have declined, we do not yet see the reverse, namely, Asian elections influencing European bond prices. This may, however, be due simply to the unique economic circumstances in Europe.

Table 5: Geographical Contagion

Variables	Pre-Crisis			Pre-Crisis		
	1-Year	5-Year	10-Year	1-Year	5-Year	10-Year
BOP	−0.005** (0.0024)	−0.001 (0.0016)	−0.007*** (0.0011)	0.012*** (0.0019)	0.002 (0.0017)	0.001 (0.0014)
DEBT	0.007*** (0.0011)	0.004*** (0.0007)	0.004*** (0.0005)	−0.000 (0.0025)	0.022*** (0.0022)	0.020*** (0.0018)
GDPG	−0.076*** (0.0049)	−0.037*** (0.0034)	−0.037*** (0.0023)	−0.003 (0.0099)	−0.010 (0.0088)	−0.011* (0.0073)
INF	0.127*** (0.0074)	0.083*** (0.0051)	0.069*** (0.0035)	0.156*** (0.0077)	0.161*** (0.0069)	0.144*** (0.0057)
UNEMP	−0.317*** (0.0082)	−0.201*** (0.0056)	−0.111*** (0.0039)	−0.697*** (0.0283)	−0.443*** (0.0251)	−0.231*** (0.0209)
Asia to Europe	0.096*** (0.0186)	0.0147 (0.0127)	−0.012 (0.0089)			
Europe to Asia				0.159*** (0.0309)	0.151*** (0.0274)	0.109*** (0.0228)
R-Squared	0.7895	0.7659	0.7605	0.7119	0.4788	0.3479

Variables	Post-Crisis		
	1-Year	5-Year	10-Year
BOP	0.005*** (0.0013)	0.000 (0.0009)	0.001 (0.0009)
DEBT	0.018*** (0.0015)	0.006*** (0.0011)	0.013*** (0.0011)
GDPG	−0.079*** (0.0036)	−0.050*** (0.0025)	−0.033*** (0.0025)
INF	−0.011** (0.0050)	0.036*** (0.0034)	0.040*** (0.0035)
UNEMP	0.045*** (0.015)	0.119*** (0.0099)	0.098*** (0.0101)
Asia to Europe			
Europe to Asia	0.062 (0.0427)	0.095*** (0.0292)	0.120*** (0.0298)
R-Squared	0.1848	0.2638	0.1414

BOP = net balance of payments, DEBT = external government debt, GDPG = GDP growth rate, INF = inflation, UNEMP = unemployment.

Note: Standard errors are in parentheses. ***, **, and * indicate 1%, 5%, and 10% significant levels, respectively.

Source: Authors' calculations.

In Tables 6A and 6B, we present our findings on the duration and timing of election effects on sovereign debt pricing before and after 2008. Our results indicate that an election impacts bond spreads during the 2 weeks before and after the actual election date. Prior to 2008, the anticipation effect 3 months before the election is significantly higher than the resulting effect 3 months after an election. The coefficients of 90 days leading the election for 1-year, 5-year, and 10-year spreads are 0.32, 0.27, and 0.19 at the 1% level of significance, while the respective lagged coefficients are only 0.14, 0.09, and 0.05 with lower significance levels. However, since 2008, investors' perception of sovereign risk has increased. The coefficients of the election peak earlier: about 30–60 days before and after the election date. However, the 1–2 months' leading and lagging coefficients behave similarly. For instance, 2 months prior to an election, the election coefficients are –3.43, –0.97, and –0.69. Two months after the election, 1-year coefficients rose to –5.82, with the 5-year and 10-year coefficients similar at –0.97 and –0.63, respectively. These outcomes reveal the fragility of investor sentiment during periods of economic instability.

Table 6A: Contagion Duration–Normal Period

Variables	1-Year					5-Year				
BOP	0.011***	0.011***	0.011***	0.011***	0.011***	–0.003***	–0.003***	–0.003***	–0.003***	–0.003***
DEBT	–0.012***	–0.012***	–0.012***	–0.012***	–0.012***	–0.000	–0.000	–0.000	–0.001	–0.001
GDPG	–0.064***	–0.064***	–0.064***	–0.064***	–0.064***	–0.040***	–0.041***	–0.040***	–0.040***	–0.041***
INF	0.143***	0.143***	0.141***	0.142***	0.142***	0.106***	0.105***	0.105***	0.105***	0.105***
UNEMP	–0.406***	–0.404***	–0.405***	–0.405***	–0.404***	–0.284***	–0.282***	–0.283***	–0.283***	–0.282***
7-Day LEAD	0.350***					0.253***				
30-Day LEAD		0.165***					0.058			
60-Day LEAD			0.286***					0.134***		
90-Days LEAD				0.320***					0.273***	
120-Day LEAD					0.102***					0.039
7-Day LAG	0.331***					0.211***				
30-Day LAG		0.202***					0.051			
60-Day LAG			0.079*					0.031		
90-Day LAG				0.143***					0.090**	
120-Day LAG					0.045					0.004

Variables	10-Year				
BOP	–0.008***	–0.008***	–0.008***	–0.008***	–0.008***
DEBT	0.002***	0.002***	0.002***	0.002***	0.002***
GDPG	–0.032***	–0.033***	–0.032***	–0.032***	–0.033***
INF	0.080***	0.080***	0.080***	0.080***	0.080***
UNEMP	–0.165***	–0.164***	–0.164***	–0.165***	–0.164***
7-Day LEAD	0.191***				
30-Day LEAD		0.055*			
60-Day LEAD			0.115***		
90-Days LEAD				0.191***	
120-Day LEAD					0.027
7-Day LAG	0.126***				
30-Day LAG		0.007			
60-Day LAG			–0.017		
90-Day LAG				0.046	
120-Day LAG					–0.012

Source: Authors' calculations.

Table 6B: Contagion Duration–Crisis Period

Variables	1-Year				5-Year			
BOP	−0.537***	−0.347***	−0.200***	−0.095***	−0.051***	−0.038***	−0.022***	−0.008***
DEBT	1.256***	0.780***	0.415***	0.260***	0.162***	0.139***	0.107***	0.0915***
GDPG	−0.073	−0.099	−0.149***	−0.174***	−0.153***	−0.149***	−0.150***	−0.154***
INF	−2.145***	−1.612***	−1.141***	−0.678***	−0.150***	−0.116***	−0.066***	−0.008
UNEMP	4.872***	3.734***	2.510***	1.056***	0.731***	0.675***	0.552***	0.367
7-Day LEAD	−3.495				−0.701***			
30-Day LEAD		−3.092*				−0.776***		
60-Day LEAD			−3.427				−0.965***	
90-Days LEAD				−1.276				−0.421***
7-Days LAG	−3.938				−0.669***			
30-Days LAG		−5.768**				−0.968***		
60-Days LAG			−5.816**				−0.836***	
90-Days LAG				−3.815				−0.712***
R-Squared	0.2680	0.2437	0.1670	0.1397	0.4440	0.4186	0.4804	0.4136

Variables	10-Year			
BOP	−0.028***	−0.021***	−0.012***	−0.004***
DEBT	0.111***	0.100***	0.084***	0.076***
GDPG	−0.107***	−0.103***	−0.103***	−0.105***
INF	−0.061***	−0.044***	−0.016**	0.018***
UNEMP	0.493***	0.465***	0.396***	0.288***
7-Day LEAD	−0.471***			
30-Day LEAD		−0.520***		
60-Day LEAD			−0.689***	
90-Days LEAD				−0.290
7-Days LAG	−0.452***			
30-Days LAG		−0.634***		
60-Days LAG			−0.573***	
90-Days LAG				−0.606***
R-Squared	0.4817	0.4537	0.4131	0.4068

Notes: Standard Errors are not provided in the table due to limited space. ***, ** and * indicate 1%, 5% and 10% significant levels.

Source: Authors' calculations.

VI. POLICY IMPLICATIONS AND CONCLUSIONS

The results of our paper produce a number of interesting generalized findings and policy implications. First, global investors have become much more comfortable with Asian sovereign debt and have decoupled from western sovereign debt markets. While we do not yet see sovereign Asian bond movements spilling over into western markets, the impact of the US and Europe on Asian markets has declined or disappeared modestly. Second, investors appear to increasingly distinguish between countries. Previous financial crises and economic instability, in the Asian financial crisis for instance, were marked by herding, but current patterns indicate greater differentiation by investors between sovereign debt issues. Third, investors are voting with their holdings. Desired results that increase the probability of repayment reduce bond spread prices while election outcomes deemed undesirable raise bond spread prices. Fourth, short term price movements do not necessarily result in long-term changes. While prices, especially for the 1-year bond, react to elections, these prices quickly return to long-term trend, reflecting the underlying economic fundamentals and probability of repayment. Fifth, there is much more reaction to political news in the 1-year bond than longer-term bonds. We suspect this reflects differences in investor composition and risk acceptance. Sixth, there remain country “premiums.” Despite large budget and trade deficits, the US maintains one of the lowest sovereign debt prices. Similar discontinuities exist between other countries' economic fundamentals and their bond pricing. Governments and investors both stand to benefit with improved recognition of the relationship between financial markets and political events.

Our findings reveal the impact of political risk on sovereign bond spreads during times of economic stability and instability. When we consider elections in normal economic periods, an election increases bond spreads. Additionally, a government's turnover will expand the spreads, due to increased risk from policy uncertainty. While the victory margin analysis informs us that investors prefer continuity, they also welcome competition of the electoral candidates, increasing the chance of more beneficial policies. However, during periods of economic instability, investors prefer change and strong leaders, evidenced by a large winning margin. In these situations, elections, replacement and higher victory margins decrease sovereign spreads.

When we examine the election contagion effect, our outcomes demonstrate that the electoral effects rose within the European region with the shift from economic stability to instability. Due to this, the effects of European elections on Asia decrease between periods of stability and instability, implying a financial decoupling of Asia from Europe. Additionally, we measure the duration of the electoral effects. In normal situations, the election effects peak 3 months before and after the actual election date and the pre-election effect matters more conspicuously; but the duration shrinks to 1–2 months in the crisis situation. Moreover, in the crisis period, pre and post-election effects are at the same significance level or even higher than the actual election date's effects, due to the higher economic and political uncertainty, which causes investor stress and increased uncertainty with higher spreads.

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Sovereign Risk, Elections, and Contagion

This paper examines the political risk effect and its different economic implications in normal and crisis situations through the proxy analysis of election and the sovereign bond spreads.

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