Policy Risk and Investment:
Examining the Impact of Ruling Party Duration

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ABSTRACT

While there are a large number of studies on the effects of regime types and political stability on investment, there appears to be less attention paid to the causes of variation within democracies. Previous studies suggest that not only do political parties pursue different economic policies, but also that the same parties often follow very different agendas in different periods of control of the executive branch. This suggests that policy risk levels, the chances that a government might alter policy in ways that affect investor returns, change within democracies as a function of ruling parties' behavior. In this paper, we explore the empirical relationship between ruling party duration and investment. Investment may be depressed when new ruling parties come in power, since policy outcomes become less predictable. But, as new ruling parties stay in power longer, investors form clearer expectations about likely policy choices, leading to increased investment. We also examine whether or not the positive effects of ruling parties turn around over time and become negative. Previous studies suggest rent-seeking activities accumulate during periods of political stability, leading to institutional sclerosis; this could depress incentives to invest in productive activity. Panel models and generalized methods of moments are used to test the hypotheses. Our data are time series cross-section data and cover ninety-three democracies between 1965 and 2009. The results suggest that ruling party duration is positively associated with investment.

INTRODUCTION

Many scholars argue that political stability promotes investment and that investors find democracies more attractive than non-democracies (Feng, 2001; Jensen, 2003, 2006; Pastor & Hilt, 1993; Pastor & Sung, 1995), while they avoid states involved in wars (Schneider & Troeger, 2006).[1] However, others show that political instability actually does not lower investment. Campos and Nugent (2002) argue that political uncertainty increases investment in the long run and a decline is only temporary. Knack and Keefer (1995) show that negative effects of political instability on private investment are washed out, when some institutional variables that protect property rights are controlled. Although there are a large number of studies on investment, the effect of political instability is not yet clear.

This study examines the impact of political stability by focusing on the variation within democratic nations. While there are a large number of studies on the effects of regime types and political stability, there appears to be less attention paid to the causes of variation within democracies. Even when previous studies include a large number of democracies, they tend to overlook the effects of democratic institutions. To be sure, Knack and Keefer (1995) study institutions and show that the institutions which secure property rights and encourage effective use of resources promote investment. For example, the clarity of bureaucratic procedures and the effectiveness of judicial system are expected to protect property rights. Governments with little corruption encourage the effective use of resources, while reducing rent-seeking activities.

While broad applicability is certainly the strength of Knack and Keefer (1995), this approach overlooks the importance of some institutions that vary in a meaningful way only

among democratic nations. In particular, political parties are one of the most important features of democratic systems that influence political stability and policy outcomes. Modern democracies do not exist without functioning political parties. In democracy, political parties pursue policy that best represents their constituents. Their behavior is expected to influence economic policy. This suggests that attention to political parties may help in explaining cross-country differences in investment levels.

Previous studies suggest that political parties pursue different economic policy (Boix, 2003; Hibbs, 1977). This suggests that risk levels also change within democracies because of political parties' behavior. For example, risk levels are likely to be elevated when ruling parties alternate. Moreover, stability of ruling parties is associated with political stability more broadly. Countries with frequent changes in ruling parties are expected to be different from countries with long-lasting ruling parties in stability of policy outcomes.

Fuess and Bechtel (2008) provide one of the few studies that examine the effects of political parties. By studying coalitions in Germany, Fuess and Bechtel find that stock market volatility is elevated, during the time of coalition negotiation. Investors also expect higher returns in stock market, when they expect right wing parties to come to power after elections. However, this study focuses on market valuations and volatility within a particular country. To account for variation across democracies, we focus broadly on capital formation and extend the argument that changes in risk environments caused by political parties influence investment.

In this paper, we particularly explore the empirical relationship between ruling party duration and investment.[2] Variation in behavioral aspects of democratic political systems, specifically ruling party duration, shapes the real economy through investment decisions. The length of time that ruling parties stay in power accounts for perceptions of policy risk and, in turn, gross capital formation. Investment is depressed when new ruling parties come to power, since policy outcomes become less predictable, but increases as they stay in power longer. We also examine whether or not the positive effects of ruling parties turn around over time and become negative. Previous studies suggest rent-seeking activities accumulate during periods of political stability, leading to institutional sclerosis (Olson, 1982, 1983); this could depress incentives to invest in productive activity. If both the risk-reducing and sclerosis effects of ruling party duration obtain, the marginal effect of duration changes over time and the relationship is curvilinear. Thus, we examine the functional form of this relationship. Moreover, we examine if the relationship between ruling party duration and investment is endogenous. Voters might reasonably be expected to punish ruling parties at the polls when investment levels are low leading to disappointing economic results. If this scenario is true, ruling party duration and investment are in a reciprocal relationship.

We test the effects of ruling parties measured as the lengths of time that the chief executives' parties stay in power.[3] Testing these hypotheses is complicated by a number of econometric challenges, leading us to employ several strategies to establish confidence in our results. First, because the relationship between ruling party duration and investment has not yet been explored, we use locally weighted scatterplot smoothing (LOWESS) to identify functional forms suitable for the analysis. Second, panel models are used to test the impact of ruling party duration, since the data involve variation across countries and time. Third, we address the possibility that the relationship between ruling party duration and economic performance is endogenous. Our analysis uses time series cross-section data covering ninety-three democracies between 1965 and 2009.

RELATED THEORIES

According to Hibbs (1977), governing parties pursue policies that are preferred by their core constituents based on a perceived tradeoff between remedying unemployment or inflation through macroeconomic policy. Hibbs' analysis of survey data suggests that lower income classes are more averse to high unemployment than high inflation, whereas upper income classes are more averse to high inflation than high unemployment. Left-wing parties, as a result, pursue policies that lead to high-inflation and low unemployment, while right-wing parties choose policies that lead to low-inflation and high unemployment.

However, many studies suggest that achieving policy goals is quite difficult for these parties. Political parties are constrained by rational expectations of economic actors (Alesina, 1987; Alesina, Mirrlees, & Neumann, 1989). They adjust their behavior based on their expectations of which party may come to power, even before elections. Parties require the cooperation of labor unions to control the demand side of the economy. Left parties need the support of centrally organized labor unions to contain inflation through their voluntary effort to suppress wage increases, while right parties' strategy requires decentralized labor unions which promotes a non-coordinated wage setting system (Alvarez, Garrett, & Lange, 1991). The rational expectations of economic actors also shape monetary policy. Because governments have time-inconsistent preferences over monetary policy, political business cycles create sub-optimal levels of inflation as economic actors attempt to anticipate monetary policy. Central bank independence allows governments to credibly commit to low inflation and maintain price stability (Alesina & Summers, 1993) ; this limits the range of macroeconomic tools available to parties. Moreover, globalization of economy and, particularly, the mobility of capital across borders weaken policy autonomy.

Despite these constraints, Boix (1997) argues that parties play an important role in influencing economy, since parties are still autonomous in influencing the supply side of economy by raising taxes, expanding public sector and spending in capital formation. Boix (1997) states, "socialist policy makers only need a solid electoral majority to implement their preferred supply-side strategy" (pg. 819), while conservative parties spend less on public sector and depend on the private sector to form capital. Boix (1998), Mosley (2000) and Oatley (1999) also maintain that ruling parties retain important roles in influencing economy. The above suggests that the alternation of parties in power is likely to produce changes in macroeconomic policy. This is especially true when ruling parties of one ideological end are replaced by parties of the other extreme. Feng (2001) also finds that the expectation of Democratic victory increases inflation and nominal interest rates, even after accounting for the independence of central bank.

To be sure, rational partisan theory suggests that partisan effects are cancelled out, since economic actors adjust their investment patterns when they expect changes in ruling parties. However, levels of policy uncertainty seem to be elevated at election time, even when economic actors can predict election outcomes quite accurately. First, although economic actors are aware that parties have tendencies to pursue certain macroeconomic policy for their constituents, it is still difficult for them to accurately predict what new ruling parties actually pursue because of the idiosyncratic nature of legislators (Fowler, 2006). New leadership does not necessarily follow the old leadership, either. Second, the configuration of party system and the alliance between parties may change after an election. This requires the new ruling parties to learn to negotiate in the new party environment. Third, economy is dynamic and does not remain the same; even when the incoming ruling parties had experience in governing, new economic conditions may

require them to implement new policy. As a result, investment level is expected to be depressed at the time when new ruling parties come to power.

However, the elevated risk is expected to decline over time, as ruling parties stay in power longer. Ruling party duration promotes learning by economic and political actors. Although these actors are uncertain about the policy preferences of new ruling parties or how they respond to new economic and policy environments, the levels of uncertainty decline over time as ruling parties reveal their policy preferences and ability to negotiate. The time also allows new ruling parties to develop their negotiation skills through experimentation (Wohlgemuth, 2002).

H₁: Investment is relatively low at the beginning of ruling parties' tenure, but it increases as ruling party duration increases.

It is also conceivable that investment incentives may be dampened, if ruling parties stay in power for an extended period of time. Olson (1965) argues that the formation of interest groups is achieved only when they overcome collective action problems. These groups' interests are narrow and their economic goals are achieved only at the expense of the society as a whole, since they tend to promote rigidity in economy with more complex regulations and larger governments. This creates inefficiency in the use of resources. Buchanan and Tullock (1962) also point out that self-interested individuals support policy that promotes their own economic benefits, while they disregard the interest of the society as a whole. As a result, the economy loses its efficiency, resulting in slower growth (Rama, 1993).[4]

According to Cuberes and Jerzmanowski (2009), democracies have better control over rent seeking activities than autocracies because of checks against leaders. Democracies are also more amenable to the sectoral diversification of the economy, since barriers to entry are lower across sectors.[5] Sectoral diversification makes the economy more robust to exogenous shocks. However, Olson (1982, 1983) points out that even democracies can accumulate interest group based rent-seeking activities under prolonged political stability. Olson argues that stable societies promote the development of special interest groups. The British economy declined after WWII, while Germany and Japan grew fast despite the defeat. This is because the stability of British society kept distributional coalitions intact, while those in Germany and Japan were eliminated. As a result, Germany and Japan were much better equipped to cope with new economic environments with new technologies and inventions. Olson indeed shows that economic growth is negatively associated with the number of stable years without upheavals. Coates and Hecklman (2003) also maintain that the number of interest groups is negatively associated with the share of physical investment in GDP, supporting Olson's institutional sclerosis hypothesis. Coates and Wilson (2007) find that 1% increase in the number of interest groups decreases stock market returns by about 2 to 5%.

The discussion above does not necessarily involve ruling party duration, but the same logic seems to apply here. When the same ruling parties stay in power for a long period of time, checks against the leadership are weakened. The ruling parties develop strong ties with narrowly defined constituents based on specific firms or sectors of the economy at the expense of public interests. In well-known cases in Japan and Italy, the Liberal Democratic Party (LDP) and the Christian Democratic Party developed such connections with narrowly defined constituents under their long-lasting reigns after WWII. The LDP subsidized 560,000 construction companies with 6.7 million workers, while the LDP received kickbacks and contributions from these

companies (Broadbent, 2002). Over time, this suggests that there will be an increasing diversion of real resources from productive investment to rent-seeking behavior.

H_2: As ruling party duration increases, investment decreases.
It is also conceivable that both Hypotheses 1 and 2 effectively capture the relationship between ruling party duration and investment. The uncertainty/learning effects are more likely to occur at the beginning of ruling parties' tenures, while the institutional sclerosis effects may take place among those ruling parties that have survived for an extended period of time. The impact of the uncertainty/ learning effects is expected to be the largest at the beginning of ruling parties' tenures, since the initial observation of ruling party behavior reveals policy direction and negotiation skills more than later period. Learning effects also usually follow diminished marginal returns, creating a concave curve. In contrast, the effects of institutional sclerosis are expected to grow gradually over time. Olson points out that interest groups do not form overnight, since they need to overcome collective action problems. The accumulation of rent-seeking activities along with increase in regulation and government size also takes time. As a result of the shifts in the effects, the initial positive impact of uncertainty/learning effects is overtaken by the negative impact of accumulating institutional sclerosis. The relationship between ruling party duration and investment then follows an inverted U-shaped curve.

H_3: The relationship between ruling party duration and investment follows an inverted U-shaped relationship.

METHODS
The data structure and the theoretical expectations of the relationship between ruling party duration and investment make the test of hypotheses quite challenging. First, because of the possibility of the inverted-U relationship between ruling party duration and investment, we need to account for the curvilinear relationship. Because the relationship has not yet been explored, we use locally weighted scatterplot smoothing (LOWESS) to identify functional forms suitable for the analysis. Second, we use panel models to test the impact of ruling party duration, since the data are cross-sectional time series data. As a number of prior studies emphasize the importance of initial conditions, we opt for fixed effects estimation in order to eliminate unobserved unit-level heterogeneity. While we lose the ability to estimate the impact of time invariant factors, we avoid the questionable assumption that unobserved unit-level heterogeneity is uncorrelated with observed covariates. Third, since the relationship between ruling party duration and economic performance may be endogenous, we use multiple equation analysis. It is possible that longer ruling party duration attracts more investment because of policy stability and leads to positive economic performance that lengthens ruling party duration. This would mean that simultaneity bias, caused by the correlation between the residual terms in the duration equation and investment, becomes a concern.
We utilize a multiple equation approach to account for this problem. First, a Hausman test is performed to see if the relationship is endogenous. If it is endogenous, we use an instrumental variables approach with duration models to estimate the equation for ruling party duration.[6] We also use generalized method of moments (GMM) to check for the robustness of the results, as GMM is more efficient than the instrumental variable approach in the presence of heteroskedasticity and serial correlation. Our analysis uses cross-section time series data, which

cover forty-six democracies between 1981 and 2007. See Appendix 1 for a list of countries in the analysis.[7]

DATA

In order to capture investment decisions related to the accumulation of productive assets, we use gross fixed capital formation as a percentage of GDP as our dependent variable. Fixed capital formation consists of investments in land improvements, industrial, plant, machinery, equipment, public and private infrastructure, and buildings. This measurement excludes the accumulation of financial assets and changes in inventories, instead focusing on fixed assets that generate returns. As it is a gross variable, it also excludes the depreciation of existing fixed assets. Essentially, the variable measures the extent to which investors have created new tangible, fixed assets in the economy. Fixed assets are not easily moved and, hence, should be subject to greater political risk than more mobile assets (e.g., cash and cash equivalents) (Bates & Lien, 1985). This is appropriate as the focus of the analysis is on whether current decision-making by investors reflects a belief that the future economic environment will generate returns on their investments.

Many studies of investment focus on differences among a panel of countries in investment averaged over periods of five, ten, or more years. However, as we are interested in how changes in ruling party duration affect investment, our unit of analysis is a country-month. Monthly data are created in order to capture changes in ruling parties more accurately. Some ruling parties may be replaced in January, while others are replaced in December. Some countries also experience changes in ruling parties more than once in a single year. Comparing averages over multiple years between countries would miss such fine-grained differences in the duration.

As monthly data on gross fixed capital formation is not widely available, we must interpolate from longer period measurements. We use annual data, obtained from the World Bank's World Development Indicators, in order to obtain the largest possible sample. However, in order to assess the robustness of our results, we also estimate models using quarterly data for gross fixed capital formation as a percentage of GDP. This data comes from the IMF's International Financial Statistics Yearbook (IFS).

Some of the independent variables, such as democracy levels, can be measured monthly. Other variables must be interpolated annual or quarterly data. Again, the use of annual data yields the largest possible sample. But, we estimate models using quarterly data where possible as well in order to assess robustness. While the unit of analysis in each estimation remains a country-month, we refer to results estimated with annual data as "annual" and those with mostly quarterly data as "quarterly."

Our independent variable of interest is ruling party duration. Ruling party duration is the number of months that a member of the same party holds the chief executive's office (Maeda & Nishikawa, 2006).[8] The data sources are Woldendorp et al. (2000), Schemmel (2011), and Chow (2011). Each case in the dataset represents a month for a country that has been classified as a democracy (i.e., POLITY score of 6 or better).

We include political control variables similar to those in Feng (2003). First, the democracy variable is the polity score (which for our sample ranges from 7 to 10) from the POLITY IV dataset (Marshall & Jaggers, 2002); democratic institutions may be seen as preferable to investors as they allow voice and act as a check on government behavior.[9] Because the dataset registers the month in which changes in democracy level take place, this variable is

not interpolated. Second, we include the measure, control of corruption, from the World Bank's World Governance Indicators (WGI); societies that more effectively control corruption by public officials ensure the private appropriability of returns by investors. Scaled from -2.5 (most corruption) to 2.5 (least corruption), this index variable is an annually measured variable. Finally, we include the WGI variable, political stability. This variable, annually observed, measures the perceived likelihood that the government will be violently overthrown; political violence increases risk which should, in turn, lead to reduced investment.

We also include a set of baseline economic control variables identified in prior work on the role of politics in shaping aggregate investment levels (Alesina & Perotti, 1996; Feng, 2003). First, we include a measure of the expected growth rate, the average of the prior four periods of GDP growth rates; when firms anticipate high GDP growth rates, they have greater incentive to make fixed capital investments. For the models based on annual data, this variable consists of the prior year's growth of real GDP obtained from the WDI. For the models based on quarterly data, this variable consists of the average of the prior four quarters of quarterly real GDP growth rates, obtained from IFS. Second, the model includes a measure of the level of inflation; higher inflation may reduce the incentives to invest. For the annual models, this variable is WDI measurement of inflation. For the quarterly models, this variable is the percentage change in the consumer price index over the prior quarter. Third, we include the standard deviation of the inflation rate; greater variability in inflation means greater perceived risk which is expected to exert a chilling effect on investment. For the annual data models, this variable is the standard deviation of the prior four years' inflation rates. For the quarterly models, this variable is the standard deviation of the prior four quarters' inflation rates. Finally, we include government consumption as a percentage of GDP; with fewer real resources available to the private sector, less investment will be expected. Only annual data on government consumption data is available from the WDI; hence, this variable is the same for both the quarterly and annual data models.

RESULTS

LOWESS analysis, or locally weighted scatterplot smoothing, provides an initial, non-parametric approach to considering the appropriate functional form relating ruling party duration and investment, given the absence of prior theoretical or empirical work on the subject. Figure 1 shows the LOWESS curve for the investment variable based on annual data. Broadly, the figure indicates that the relationship between duration and investment is positive. According to Figure 1, investment is about 21% of GDP when new ruling parties come to power. It increases gradually and reaches about 28% among those ruling parties which survive to 800 months.[10] There is no indication in either figure that the relationship follows an inverted U-shaped curve as suggested by Hypothesis 3. It should be noted, however, that no variables are controlled. Another interesting characteristic of this figure is that the variation in investment is larger, where ruling party duration is short, but it reduces as the values of ruling party duration increase. This pattern is likely to create heteroskedasticity, if the problem is not corrected. This suggests that the use of GMM may be more effective in analyzing the effects of ruling party duration on investment, compared to other estimation methods, such as panel models.[11]

Figure 1: LOWESS
Investment on party duration, annual data
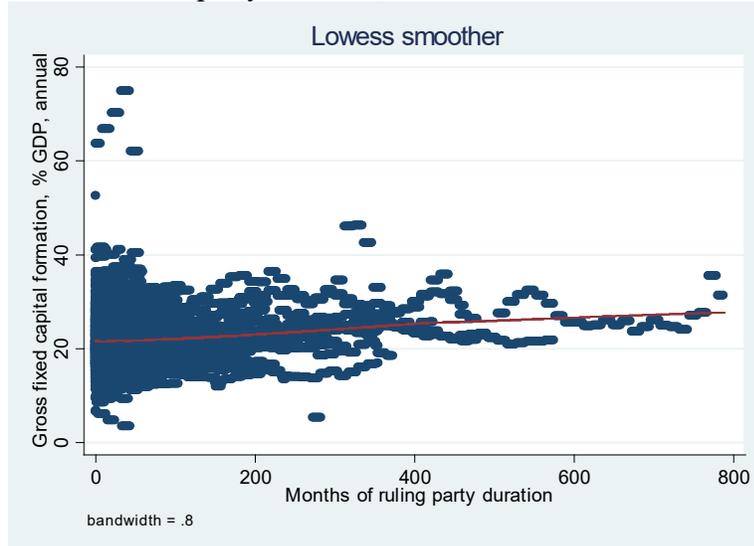
According to the Hausman test, the relationship between ruling party duration and investment is endogenous. However, finding a significant effect here may potentially be uninformative since there are over 25,000 cases. When we use the two equation approach to estimate the effect of investment, the investment variable is not a significant predictor in the final ruling party duration equation. The p value is larger than .90. Since the p-value is quite large, we focus on the single equation results. The results for the equation of ruling party duration are included in Appendix 2.

The results of our analyses are presented in Tables 1 through 4, which show the models estimated with annual and quarterly data using fixed effects and GMM estimators. Since Figure 1 shows more variation in investment with lower values of party duration, the GMM estimates may be more effective, but we include both for robustness checks. The results in Tables 1 and 2 are estimated using fixed effects models, while the results in Tables 3 and 4 are estimated using GMM. In these tables, Model 1 is the simple baseline economic model. As was expected growth has a positive and significant effect on investment that is consistent across the two estimators and the two different indicators of investment. Inflation has a negative effect that is significant in two of four estimations. Government consumption has a negative effect that is significant in two of four estimations as well.

Table 1 – FE estimates, annual data

Model	1 Simple Economic Model	2 Linear Model	3 Linear Model (Full)	4 Curvilinear Model	5 Curvilinear Model (Full)
Investment$_{t-12}$	0.79667*** (0.00360)	0.78387*** (0.00386)	0.78967*** (0.00768)	0.78371*** (0.00387)	0.78942*** (0.00767)
Expected growth	1.31017*** (0.08001)	1.54367*** (0.08481)	-0.30345* (0.17771)	1.56856*** (0.08651)	-0.25689 (0.17797)
Inflation	-0.00034*** (0.00004)	-0.00031*** (0.00004)	-0.03434*** (0.00257)	-0.00031*** (0.00004)	-0.03455*** (0.00257)
Sd(inflation)	-0.00016*** (0.00005)	-0.00015*** (0.00004)	-0.00088** (0.00035)	-0.00015*** (0.00004)	-0.00090** (0.00035)
Government consumption	-0.05876*** (0.00499)	-0.07550*** (0.00518)	-0.19784*** (0.01275)	-0.07539*** (0.00518)	-0.19127*** (0.01285)
Ruling party duration		0.00038** (0.00019)	0.00148*** (0.00045)	-0.00007 (0.00037)	-0.00100 (0.00077)
Ruling party duration^2				0.00000 (0.00000)	0.00001*** (0.00000)
Democracy		-0.08794*** (0.02268)	-0.02478 (0.04639)	-0.09404*** (0.02306)	-0.03466 (0.04643)
Corruption			0.34252*** (0.12498)		0.30287** (0.12529)
Political stability			0.49580*** (0.09427)		0.50480*** (0.09422)
Constant	5.00989*** (0.11317)	6.28805*** (0.23959)	8.11141*** (0.49431)	6.35257*** (0.24364)	8.14876*** (0.49402)
R-squared within	.7035	.7073	.6276	.7073	.6282
between	.9617	.9697	.8638	.9694	.8670
overall	.8207	.8290	.7749	.8289	.7765
N	28397	25448	9415	25448	9415

Note: Standard errors in parentheses. *: p<.1, **: p<.05, ***: p<.01

Table 2 – FE estimates, quarterly data

Model	1 Simple Economic Model	2 Linear Model	3 Linear Model (Full)	4 Curvilinear Model	5 Curvilinear Model (Full)
Investment$_{t-12}$	0.75453*** (0.00456)	0.76260*** (0.00472)	0.72778*** (0.00773)	0.76386*** (0.00473)	0.72682*** (0.00766)
Expected growth	0.00247*** (0.00005)	0.00246*** (0.00005)	0.00294*** (0.00008)	0.00247*** (0.00005)	0.00301*** (0.00008)
Inflation	0.00202 (0.00132)	0.00162 (0.00123)	0.00226 (0.01532)	0.00167 (0.00123)	0.00156 (0.01518)
Sd(inflation)	0.00272 (0.00173)	0.00244 (0.00162)	0.21763*** (0.03701)	0.00242 (0.00162)	0.20160*** (0.03671)
Government consumption	-0.10419*** (0.00744)	-0.10233*** (0.00744)	-0.08846*** (0.01418)	-0.10069*** (0.00745)	-0.06134*** (0.01428)
Ruling party duration		0.00001*** (0.00000)	0.00002*** (0.00000)	-0.00001* (0.00000)	-0.00005*** (0.00001)
Ruling party duration^2				0.00000*** (0.00000)	0.00000*** (0.00000)
Democracy		-0.00205*** (0.00037)	-0.00103* (0.00058)	-0.00206*** (0.00037)	-0.00116** (0.00058)
Corruption			0.00444*** (0.00147)		0.00411*** (0.00145)
Political stability			0.00329*** (0.00107)		0.00366*** (0.00106)
Constant	0.06458*** (0.00186)	0.08181*** (0.00404)	0.06676*** (0.00649)	0.08177*** (0.00404)	0.06451*** (0.00643)
R-squared within	.7138	.7200	.6452	.7202	.6516
between	.9347	.9378	.9463	.9377	.8808
overall	.8265	.8406	.8185	.8407	.7801
N	14958	13388	6302	13388	6302

Note: Standard errors in parentheses. *: p<.1, **: p<.05, ***: p<.01

Table 3 – GMM estimates annual data

Model	1 Simple Economic Model	2 Linear Model	3 Linear Model (Full)	4 Curvilinear Model	5 Curvilinear Model (Full)
Investment$_{t-12}$	0.87994*** (0.01757)	0.88239*** (0.01974)	0.90748*** (0.02774)	0.88180*** (0.01977)	0.90580*** (0.02804)
Expected growth	0.79068*** (0.23872)	0.85066*** (0.29095)	-0.11484 (0.50472)	0.86669*** (0.28658)	-0.23574 (0.50854)
Inflation	-0.00039* (0.00022)	-0.00037* (0.00022)	-0.01971* (0.01175)	-0.00037* (0.00022)	-0.02093* (0.01170)
Sd(inflation)	-0.00015 (0.00010)	-0.00013 (0.00011)	-0.00013 (0.00076)	-0.00013 (0.00011)	-0.00032 (0.00067)
Government consumption	-0.01171 (0.00736)	-0.01147 (0.00776)	-0.00382 (0.01362)	-0.01199 (0.00792)	-0.00689 (0.01344)
Ruling party duration		0.00062 (0.00053)	0.00070 (0.00095)	-0.00114 (0.00098)	-0.00389** (0.00161)
Ruling party duration^2				0.00000** (0.00000)	0.00001*** (0.00000)
Democracy		0.01410 (0.04026)	-0.00091 (0.08072)	0.02082 (0.03907)	-0.02247 (0.07901)
Control of corruption			-0.20445 (0.13562)		-0.17777 (0.13103)
Political stability			0.19726 (0.13654)		0.20945 (0.13823)
Constant	2.55882*** (0.37167)	2.32577*** (0.41860)	2.34355** (1.00412)	2.35639*** (0.41695)	2.85217*** (1.01390)
N	28397	25448	9415	25448	9415

Note: Standard errors in parentheses. *: p<.1, **: p<.05, ***: p<.01

Table 4 – GMM estimates quarterly data

Model	1 Simple Economic Model	2 Linear Model	3 Linear Model (Full)	4 Curvilinear Model	5 Curvilinear Model (Full)
Investment$_{t-12}$	0.85450*** (0.01353)	0.85773*** (0.01427)	0.83507*** (0.02152)	0.85706*** (0.01466)	0.82843*** (0.02205)
Expected growth	0.00221*** (0.00023)	0.00246*** (0.00024)	0.00277*** (0.00043)	0.00246*** (0.00024)	0.00276*** (0.00042)
Inflation	-0.00061 (0.00086)	0.00009 (0.00092)	-0.00580 (0.04461)	0.00009 (0.00092)	-0.01398 (0.04620)
Sd(inflation)	0.00193 (0.00192)	0.00275* (0.00147)	0.14763 (0.14008)	0.00251* (0.00149)	0.14183 (0.13947)
Government consumption	-0.02544** (0.01000)	-0.03180*** (0.00911)	-0.02704 (0.01933)	-0.03562*** (0.01002)	-0.03441* (0.02065)
Ruling party duration		0.00001** (0.00000)	0.00000 (0.00001)	-0.00001 (0.00001)	-0.00005** (0.00002)
Ruling party duration^2				0.00000** (0.00000)	0.00000*** (0.00000)
Democracy		0.00096 (0.00080)	-0.00022 (0.00137)	0.00129 (0.00086)	0.00019 (0.00141)
Control of corruption			-0.00048 (0.00139)		-0.00004 (0.00137)
Political stability			0.00352*** (0.00128)		0.00325** (0.00134)
Constant	0.02892*** (0.00355)	0.01924*** (0.00652)	0.03147*** (0.01173)	0.01802*** (0.00658)	0.03268*** (0.01185)
N	28397	25448	9415	25448	9415

Note: Standard errors in parentheses.   *: p<.1, **: p<.05, ***: p<.01

In the subsequent models, we add our variables of interest and other political variables as controls. Model 2 adds the party duration variable together with the democratic level as a control variable. Model 3 adds two more control variables, Corruption and Political Stability. Model 4 adds the squared duration variable to Model 2 in order to see if the relationship is curvilinear. Model 5 is the full model where the squared duration variable and two more control variables, corruption and political stability, are added to the model. In Model 2, ruling party duration has a positive effect on investment that is significant in three out of the four tables. In Table 1, the coefficient for ruling party duration is .00038 under Model 2. This suggests that one month increase in ruling party duration increases investment by .00038. That is, the increase could be .0456 percentage points of GDP, if the same party stays in power for 10 years. This is consistent with Hypothesis 1; continued observation of the policy behavior of new ruling parties leads to the reduction of political risk and increases in investment. Similarly, the coefficient for ruling party duration in Model 3 is positive in all four tables, although the significance is lost in the tables with GMM estimates. The coefficient is .0015 in Table 1. The increase in ten years is 0.18 percentage point.

In Models 4 and 5, we add ruling party duration squared in order to test for the presence of an inverted U-shaped relationship.[12] Tables 1 and 3 show significant positive coefficients, indicating a U-shaped relationship, yet, despite the significant coefficients, there is little indication that the relationship is actually curved. Because the estimated turning points in these curves are each very close to zero months, the increasing segment of the U-shape is essentially picking up the positive linear relationship shown in the LOWESS curves. The negative marginal effects of duration are predicted for durations less than zero months. In practical terms, this means that the downturn in investment predicted by Hypothesis 3 is not observed in the data. This would contradict the supposition that institutional sclerosis brought on by extended tenure of the ruling party decreases investment. One potential explanation for this might be that institutional sclerosis leads to the misallocation of investment rather than overall reduction in its level.

The results for the control variables appear to be subject to variation with the indicator for investment and estimation used. In the FE estimations, control of corruption has a consistently positive and significant impact on investment (Tables 1 and 2). This is as expected; investors will be more likely to make investments when appropriability of the returns is assured. Likewise, the impact of political stability is consistently positive in these estimations. The fear of a potential violent overthrow of the existing government or an uprising exerts a chilling effect on investment. In the GMM estimations, control of corruption has no significant impact on investment (Tables 3 and 4). Political stability increases investment in the models estimated with quarterly data for investment (Tables 2 and 4).[13] The effect of democracy is much less consistent, having no significant effect in GMM estimations and a negative effect in the FE models.

CONCLUSION
The results of previous studies of cross-country variation in investment levels differ with regard to the effects of political instability. Some scholars argue that instability depresses investment, while others contend that instability does not lower investment. A few scholars actually suggest that instability increases investment in the long run. In this paper, we have attempted to reconcile these divergent findings by re-conceptualizing political stability as the duration of ruling parties in democratic nations.

Our first hypothesis tested whether or not changes in ruling parties depress investment, while investment level increases over time, as ruling parties stay in power longer. This hypothesis is supported. Investors are better able to make decisions under risk, i.e. when probabilistic outcomes come from a known distribution, than uncertainty, when the probabilities of potential outcomes cannot be assessed. The observation of the policy behavior of new ruling parties appears to convert policy uncertainty into policy risk. Ceteris paribus, as investors collect information about the policy preferences and competence of ruling parties new to power, investment becomes more attractive and more acquisitions of fixed capital take place. Ultimately, this suggests that political instability indicated by changes in ruling parties in democracies actually depresses investment, while political stability increases investment gradually over time.

Our second hypothesis which explores the negative effects of ruling party duration based on the notion of institutional sclerosis was not supported. Although the theory of institutional sclerosis predicts economic stagnation with political stability, the results suggest that the survival of ruling parties does not reduce investment. Similarly, our results do not support the third hypothesis which examines the presence of a curvilinear relationship between ruling party duration and investment, as we do not find declining levels of investment under long-surviving ruling parties.

Our empirical analysis is not without weaknesses. In particular, the monthly values of gross fixed capital formation are interpolated using annual and quarterly data so that the units of analysis between the investment and party duration variables are compatible. We prefer this approach to using multiyear averages as it allows the analysis of the impact in changes in party duration. Moreover, we also test our hypotheses using annual and quarterly data for robustness checks. The results are robust to changing the time unit of analysis from months to quarters. However, future research with more updated data is needed to confirm our results.

Finally, our results imply that elections, which produce ruling party changes, are likely to disrupt investment trajectories. A large number of democracies face general elections every four to five years. If democracies were to maximize investment, they may attempt to stay with the same ruling parties longer. Although alternation of parties in power is an essential element of healthy democracies, this may be a disadvantage of democracies, since autocratic regimes without meaningful elections do not suffer from such election caused disruptions. The benefits of staying with the same ruling party may also be larger for young democracies, since parties are less institutionalized and do not have established policy track records. Ultimately, a normative assessment of the impact of duration must weigh the economic benefits against other important goals.

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Notes:

[1] This is not to suggest that investors avoid non-democracies altogether. Indeed, some argue that non-democracies are more likely to shield multinational corporations from populist demands for greater wages or taxation, leading to these regimes drawing more foreign direct investment than democracies (Li & Resnick, 2003). Regardless of one's position on the issue of which regime type produces greater stability, the broad point is that investors prefer reduced political risks.

[2] Since there is no previous research on the relationship between ruling party duration and investment, we focus on modeling it investment inductively. The theory section will remain non-formal.

[3] There may be other ways to measure ruling party duration, but we believe that this is one of the simplest ways of measuring ruling party duration. This measure also makes the comparison of ruling party duration between presidential and parliamentary systems possible (Maeda and Nishikawa 2006).

[4] Studying Uruguay, Rama (1993) suggests that rent-seeking is associated with lower economic growth.

[5] Of course, this does not guarantee that democracies will necessarily be more diversified than non-democracies. The mining industry in Botswana, for instance, constitutes a large percentage of the country's GDP.

[6] We estimate two equations. In one equation, the dependent variable is investment. In the other equation, ruling party duration is the dependent variable. In the first stage, the dependent variables are regressed on all the predetermined variables and the fitted values are produced for both of the variables. In the second stage, the investment equation and ruling party duration are estimated after substituting the ruling party duration variable and the investment variable on the right hand side of the equations with the fitted values. In estimating the party duration equation, we use survival analysis. Cox proportional hazard models are often used, since they require no prior knowledge in baseline hazard. However, since Cox proportional hazard models are designed to predict hazard rate rather than duration, we use log-normal models are used. The results from a generalized gamma model suggest that log-normal models may be the most effective in capturing the shape of baseline hazard function.

[7] Missing cases are dropped from the analysis.

[8] Ruling parties' tenures end because of voters and parties' behavior. They are terminated either when coalitions are terminated by the ruling parties in inter-election periods or when voters vote them out of office in elections. In this study, we do not distinguish the two types of termination in order to make the study manageable.

The occurrence of elections does not necessarily cause a termination of ruling parties, since the same ruling party may return to office. It is also important to point out that this measurement is not sensitive to the changes in coalition. In order to make our analysis doable, we focus on change in parties holding the chief executive's office. Another variable that could represent political stability in democracy is cabinet duration. Aisen and Veiga (2008) argue that changes in cabinet increase inflation. However, we believe that this is beyond the scope of this study, since ruling party duration and cabinet duration are very different political phenomena.

[9] The POLITY data are used, since the data are up to date and cover a wide range of countries.

[10] While this duration may appear extreme, it should be noted that there over 1400 country-months in the dataset where duration exceeds 300 months. The longest duration reached by a ruling party is 781 months.

[11] Another way to account for this problem is to include an explanatory variable that captures the variation. For example, some scholars argue that investors expect higher return in investment under right-wing parties, compared to left-wing parties (Fuess and Bechtel 2008). When left-wing parties are replaced by right-wing parties, investment may increase over time, since investment levels may be relatively low under left-wing parties. This suggests that the inclusion of the interaction term between ruling party duration and ideological party orientation may capture the wide variation.

[12] We use the squared term, although there are other ways to capture the curvilinear relationship, since this is the simplest and most widely used way.

[13] Variation in sectoral concentration may be correlated with ruling party duration. To address this, a separate regression was performed with the addition of a control for sectoral concentration. This variable is a Herfindahl index constructed using the percentage of economic activity in agriculture, industry, and services (WDI data). The addition of this variable altered neither the size nor the significance of our duration coefficients. Second, because this variable might miss the importance of volatility, we ran a regression that included a variable capturing terms of trade shocks (WDI data for terms of trade, change over prior year). Similarly, the addition of this variable did not produce changes in the size or significance of the duration coefficients. As a further robustness check, we divided the samples into developed and less developed nations to see if the results are maintained. The coefficient for ruling party duration for the less developed nations is three times as large. The coefficient for LDCs is three times as large as the coefficient for developed countries. This makes sense as party labels are more established in the developed countries, whereas more policy track record may be necessary for investors in developing countries. Hence, party duration in developing countries produces greater gains in investment.