

Political Uncertainty and Cost Stickiness: Evidence from National Elections around the World

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Abstract

Using a large panel of elections in 56 countries for the period 1989-2012, we show that political uncertainty surrounding elections can affect asymmetric cost behaviors to activity changes (i.e., cost stickiness). The asymmetry in cost behaviors is stronger during election years than in the non-election years, even after controlling for other firm-level and country-level determinants. We further document that the difference in cost stickiness during election years is conditioned by formal political and legal institutions and informal institutions (culture). The results are consistent with the view that managers retain slack resources when political uncertainty is high but to be resolved soon.

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1. Introduction

Political uncertainty has attracted considerable attention in both research and public policy circles in recent years. Uncertain political events stemming from possible shifts in government policy or national leadership can engender policy uncertainty that disrupts firms' regularly planned activities and alters economic outcomes. Political uncertainty usually reaches its peak during election periods when competing parties formulate their regulatory and economic policies and outline their platforms for stimulating growth. Uncertainty shapes corporate behavior (Bernanke, 1983; Bloom et al., 2007). Recent studies in finance focus on national elections around the world to study how political uncertainty influences corporate decisions and outcomes (Julio and Yook, 2012; Durnev, 2014). We extend this line of research by analyzing the importance of political uncertainty to managers' operating decisions that drive cost behaviors. More specifically, we examine whether political uncertainty influences managers' resource-retaining decisions and hence asymmetric sensitivity of costs to activity changes labeled as "cost stickiness" in prior accounting research. Developing a greater understanding of what determines the degree of cost stickiness represents an important step in improving cost analysis. Our paper also responds to Kelly et al.'s (2015) call for research on the effect of political uncertainty. More specifically, they stress that despite the salience of political uncertainty, our understanding of its impact on the economy and financial markets remains minimal.

Cost stickiness is rooted in asymmetric cost behavior—costs decline less in response to a sales decrease than they rise for an equivalent sales increase (Anderson et al., 2003). The key to understanding cost stickiness is to identify whether and in what circumstance managers are more or less willing to retain slack resources when there is a need to do so (i.e., activity declines). However, in focusing on cross-sectional determinants of cost stickiness, extant research generally pays less attention to inter-temporal changes in cost stickiness. In their seminal work, Anderson et al. (2003) stress that managers respond to uncertainty by purposely delaying reductions to committed resources until the permanence of a decline in demand is better known.

Consequently, cost stickiness under this argument may reverse in a subsequent period when uncertainty is resolved. Although they do not analyze when uncertainty rises and subsides, Anderson et al. (2003) validate this argument by demonstrating that the degree of cost stickiness decreases with the aggregation of estimation periods. This reconciles with theory that the impact of demand uncertainty, which grows with the length of the time horizon, depends on the characteristics of firms' adjustment costs (e.g., Pindyck, 1982).

Although Anderson et al. (2003) emphasize the inter-temporal pattern in cost stickiness, empirical evidence on this front remains scarce. However, in an important exception, Banker et al. (2014) report that the direction of the prior period sales change is another determinant of cost stickiness. Specifically, their research implies that managers' expectations become optimistic after a prior sales increase, leading to increased stickiness; in the other direction, a prior sales decrease leads to pessimism, translating into anti-stickiness. Our analysis diverges from Banker et al. (2014) by focusing on managers' forward-looking activity projection under uncertainty instead of excessively anchoring to past information (i.e., prior period sales change). Accordingly, we contribute to extant research by considering whether uncertainty amounts to another determinant of cost stickiness.

National elections provide an opportune testing ground for studying the impact of political uncertainty on cost stickiness for three reasons. First, election outcomes are highly relevant to corporate decisions as they have broad implications for industry regulation, monetary and trade policy, and taxation, among other issues (Julio and Yook, 2012). Second, elections around the world provide a natural experimental framework that alleviates endogeneity concerns.¹ The timing of elections is beyond the control of any individual firm and usually set at fixed intervals according to constitutional rules. In addition, elections around the world take place at different points in time, allowing us to net out any global trends in corporate cost stickiness (Julio and Yook, 2012). National elections are exogenous political episodes that are well distributed across countries and over time, affording us with a powerful

¹ Political uncertainty is likely determined by several factors, including macroeconomic uncertainty. Kelly et al. (2015) conclude that the difficulty in assessing the impact of political uncertainty largely stems from the complexity involved in isolating exogenous variation in this uncertainty. They isolate political uncertainty by exploiting its variation around major political events, namely, national elections and global summits. Our identification of national elections as a source of political uncertainty therefore conforms well to Kelly et al.'s (2015) assertion.

econometric setting for examining our research questions (Durnev, 2014). Third, national elections provide an ideal context for isolating to what extent managers retain resources under uncertainty that will be resolved shortly afterward. Given that cost stickiness is an outcome of inter-temporal shifts in uncertainty, national elections enable researchers to directly observe how cost stickiness varies with uncertainty associated with national elections.

The intuition underlying the links between electoral uncertainty and cost stickiness is straightforward. Prior evidence suggests that cost stickiness becomes stronger when the adjustment cost is greater or the assessed probability for a permanent demand decline is lower (Anderson et al., 2003; Banker et al., 2013). During election years characterized by high political uncertainty, managers might perceive the sales decline as temporary. It follows that possible changes in government policies or national leadership could motivate managers to retain resources that would otherwise be divested in response to an activity decline.² Analytical research holds that the higher uncertainty surrounding political events induces firms to temporarily suspend their investment and hiring behavior when these decisions are at least partially irreversible (Bloom, 2009).³ Pastor and Veronesi (2012) show numerically that firms respond to policy uncertainty by reducing investment. In the presence of adjustment costs, firms experiencing higher uncertainty become more cautious in responding to shifts in business conditions according to theory.

Further, incumbent politicians eager to be reelected routinely strive to leave their constituents with the impression that a brighter future is in store (Nordhaus, 1975). If candidates on the campaign trail are persuasively adamant that economic conditions relevant to the firm are on the verge of improving, then the real option value of waiting to restore committed resources rises. In this situation, the firm may rationally delay incurring adjustment

² Government policies, including tax provisions, law enforcement, and regulations, affect a broad range of firms' operations. Governments change policies after weighing both economic and non-economic objectives. Although governments are generally eager to maximize citizens' welfare, they also consider the political implications (both costs and benefits) accompanying a policy shift. Political incentives are unknown to managers, which makes it difficult for them to gauge the likelihood that policy changes will occur (Pastor and Veronesi, 2012).

³ Prior research on the importance of uncertainty to firm behavior extends to policy uncertainty (e.g., Adda and Cooper, 2000).

costs until some or all of the policy uncertainty is resolved.⁴ The option value of inaction has direct implications for the extent of cost stickiness. For example, managers facing a downturn in sales may wait to obtain information to ensure that they are in a better position to gauge the permanence of the demand reduction before cutting resources. Such delays lead to sticky costs because unutilized resources are maintained during the interval between the reduction in volume and the adjustment decision (Anderson et al., 2003). Prior research on the political economy documents that the presence of policy-induced uncertainty usually introduces a bias toward the status quo (e.g., Fernandez and Rodrik, 1991). In the same vein, Bernanke (1983) holds that events with uncertain outcomes generate managerial decision cycles (e.g., investment) by increasing the option value of waiting for new information, particularly when the uncertainty will be resolved over time. Similarly, a temporary increase in uncertainty surrounding national elections creates incentives to delay any adjustments to resources, which would be evident in cost stickiness.

For a large number of firms, we test five predictions using national elections in 56 countries between 1989 and 2012. First, we examine changes in cost stickiness behavior as political uncertainty shifts surrounding elections by comparing corporate behavior in the national election year with that in non-election years.⁵ We posit that managers will further delay resource-divestment decisions during election periods, implying that the cost stickiness will be magnified during election periods relative to non-election periods. Our results lend strong, robust support to this prediction.

Second, we analyze whether the relation between electoral uncertainty and cost stickiness varies with the soundness of country-level political institutions. Authoritarian

⁴ There are two types of uncertainty to consider. The first type relates to uncertainty about whether the existing policy will change after election. The second type stems from the impact, if any, that a new government policy will have on the economic environment. More precisely, there is uncertainty about what the government will do, as well as uncertainty about the impact of its action. Pastor and Veronesi (2012) explicitly argue that both types matter in financial markets.

⁵ Our empirical setting considers the election year to test the political uncertainty hypothesis. However, it is important to stress that the timing of elections may not be a direct measure of political uncertainty (Julio and Yook, 2012). Accordingly, an important identification assumption is that political uncertainty is higher, on average, in the election years compared to other years (Bialkowski et al., 2008; Boutchkova et al., 2012).

governments undermine firm operations through, for example, over-regulation, solicitation of bribes, confiscatory taxation, and outright expropriation of firm assets (Stulz, 2005). To sustain their unjustifiable influence, such governments usually suppress political freedom and, as a result, the elections typically involve fewer unexpected outcomes. It follows that managers in countries with weak political institutions experience less uncertainty associated with government replacement or policy shifts during elections, leading to lower cost stickiness; i.e., in this situation, elections are almost irrelevant to firms' operating decisions given the minimal additional uncertainty. Consistent with this prediction, we find that the greater cost stickiness surrounding elections is concentrated in countries with relatively sound political institutions and in cases in which greater uncertainty accompanies the national election.

Third, we examine whether and to what extent cross-sectional variation in country-level rigidity in employee protection laws affects the relation between elections and cost stickiness. It is important to note that Banker et al.'s (2013) study country-level variation in employee protection regulations given that it captures the degree of adjustment costs across countries. However, rather than focus on whether this legislation affects cost stickiness itself, we analyze whether it motivates managers to retain resources (i.e., labor force), particularly during election years. We find that, in countries more protective of labor, cost stickiness is greater in election years relative to non-election years, implying that high adjustment costs reinforce managers' incentives to delay resource-divesting decisions when uncertainty is greater. Additionally, we find that the impact of political uncertainty on cost stickiness hinges on countries' legal origin, which drives several cost stickiness determinants (La Porta et al., 1997; 2000), and the efficiency of the judicial system (Banker et al., 2012).

Fourth, we investigate whether the link between political uncertainty and cost stickiness is sensitive to country-specific disclosure standards. Prior studies argue that managers' empire-building incentives or earnings management incentives influence the degree of cost stickiness (e.g., Chen et al., 2012; Dierynck et al., 2012; Kama and Weiss, 2013). We extend this line of research by analyzing whether the positive relation observed between political uncertainty and cost stickiness varies with countries' disclosure requirements. Our findings suggest that the impact of election-driven uncertainty on cost stickiness is more salient in countries with stricter

disclosure institutions, implying that sound disclosure infrastructure constrains managers' opportunism in the form of manipulating resource adjustment as a means of avoiding losses.

Last, besides examining the conditioning role of formal legal and political institutions on the connection between political uncertainty and cost stickiness, we analyze the moderating impact of an informal institution, countries' culture. This involves evaluating whether the changes in cost stickiness during elections is more intense in countries that exhibit stronger uncertainty avoidance. Prior research suggests that uncertainty-avoiding people require formal structures and rules to reduce their anxiety about ambiguity. In countries with high uncertainty avoidance, managers facing an activity decline might prefer to immediately adjust resources and conform to the traditional cost model—which implies a symmetric mechanical relation between changes in activity and changes in costs—to better cope with uncertain outcomes after the election. In contrast, managers operating in countries characterized by low uncertainty avoidance would be less sensitive to activity changes in resource adjustment. In these countries, it follows that managers would more gradually divest resources when activity declines. Consistent with this prediction, we find that the higher cost stickiness that occurs during election years is more pronounced in countries with low uncertainty avoidance.

Our study contributes to emerging evidence on cost behavior by demonstrating that the degree of cost stickiness varies across countries and over time. Extant research identifies a set of *firm*-level determinants of asymmetric cost behavior, including the magnitude of adjustment costs (Anderson et al., 2003), managerial opportunism (Dierynck et al., 2012; Chen et al., 2012) and managerial optimism or pessimism (Anderson et al., 2003). However, empirical research seldom analyzes whether, given that firms interact with the environment of the country in which they operate, *country*-level characteristics matter to managers' operating decisions, leading to differences in asymmetric cost behavior across countries. In investigating the "legal view" of cost stickiness, recent evidence implies that employment protection legislation (Banker et al., 2013) as well as judicial efficiency and shareholder protection laws (Banker et al., 2012) shape cost stickiness behavior. We extend recent research by providing initial evidence on the "political view" of cost stickiness. Our analysis lends empirical support to the narrative that political institutions play a major role in several firm decisions and outcomes (e.g., Rajan and Zingales, 2003; Roe, 2006; Qi et al., 2010; Boubakri et al., 2013; 2014). Moreover, against the

backdrop of extensive evidence on *why* costs are sticky (Chen et al., 2012; Banker et al., 2013), we directly examine *when* costs are sticky. A fuller understanding of cost behavior in general and of cost stickiness in particular requires careful analysis not only of the firm- and country-specific factors, but also of the importance of political cycle forces.

Set against extensive prior evidence implying that politics shape economic outcomes, asset prices, and financial risk, we also contribute to extant research by analyzing the implications of political uncertainty. Although empirical research primarily examines the impact of political uncertainty on financial markets (e.g., Erb et al., 1996; Boutchkova et al., 2012; Kelly et al., 2015), we share our focus with some studies estimating the real effects on corporate decisions (Fernandez-Villaverde et al., 2012; Julio and Yook, 2012; Baker et al., 2013; Gulen and Ion, 2013; Durnev, 2014). In particular, cost stickiness reflects operational resource management decisions. Although election outcomes affect corporate policies in various ways according to prior evidence, research on the importance of elections to firms' operating decisions remains scarce. By taking advantage of the inter-temporal changes in cost stickiness, we help close this gap by exploring the links between political cycles and corporate operational decisions.

The rest of this paper is organized as follows. Section 2 reviews prior research to develop the testable hypotheses. Section 3 outlines our data and reports descriptive statistics on the regression variables. Section 4 covers the empirical evidence and Section 5 concludes.

2. Motivation

2.1. Research on Cost Stickiness

The theory of asymmetric cost behavior builds on two key observations about costs (Anderson et al., 2013). First, many costs arise because managers make a deliberate decision to commit resources. Second, although many resource commitments can be changed in the short run, they usually incur resource adjustment costs such as installation and disposal costs for capital equipment. The interaction of deliberate managerial discretion and resource adjustment costs introduces complex dynamics in the choice of resource levels. In particular, managers have to consider not only current activity, but also past resource levels given that they affect adjustment costs incurred in the current period, along with expected future sales, which affect

future adjustment costs. Additionally, resource commitment decisions are sensitive to managers' incentives and behavioral biases.

In the wake of Anderson et al.'s (2013) seminal work, a number of studies document factors determining the degree of asymmetry in cost stickiness. For example, in cross-country research, Banker et al. (2013) analyze the adjustment cost explanation outlined in Anderson et al. (2003) by relying on the strength of countries' employment protection legislation to estimate labor adjustment costs. Although adjustment costs are hard to reliably measure, Banker et al. (2013) exploit cross-country variation in adjustment costs in terms of labor costs. Another line of research examines cost stickiness in an agency framework. Chen et al. (2012) show empirically that observed cost stickiness partly reflects value-destroying empire-building with poorly governed firms more likely to suffer from this misbehavior. Dierynck et al. (2012) and Kama and Weiss (2013) find that cost stickiness is less severe when managers face incentives to meet an earnings target set by financial analysts.

Relevant to our purposes, Banker et al. (2014) argue that a major determinant of cost asymmetry is the direction of the prior period sales change. Specifically, after a prior sales increase, managerial expectations become optimistic, leading to increased stickiness; conversely, a prior sales decrease engenders pessimism that translates into anti-stickiness. The practical constraints stemming from resource slack also magnifies this impact, which contributes to cost stickiness, reinforcing the role that optimism plays. Grounded in Banker et al. (2014), we posit that political uncertainty associated with elections could lead to managerial optimism arising from political propaganda spread by the incumbents. In sum, we expect that managers will deliberately make resource adjustment decisions due to their biased perceptions surrounding political elections, resulting in greater cost stickiness.

2.2. Hypotheses

Empirical research reflects that political uncertainty has been prominently featured in the economic landscape in recent years. Fernandez-Villaverde et al. (2012) find that changes in uncertainty about future fiscal policy, as measured by time-varying volatility of tax and spending processes, have a negative impact on economic activity. Similarly, Baker et al. (2013) provide evidence that policy uncertainty, as measured by their index, increases unemployment

and reduces investment. Gulen and Ion (2013) find that this negative effect on investment is stronger for firms with a higher degree of investment irreversibility and firms that are more financially constrained. The literature on the real effects of electoral uncertainty includes Julio and Yook (2012), who document that firms reduce their investment before national elections; Jens (2013), who finds that firms reduce their investment before U.S. gubernatorial elections; Julio and Yook (2013), who find that U.S. firms cut FDI flows to foreign affiliates before elections in recipient countries; and Durnev (2014), who reports that corporate investment is less sensitive to stock prices during election years.

Set against prior research focusing on firm performance and investment effects stemming from political uncertainty, we examine the association between political uncertainty and the operating decisions of managers that lead to changes in cost structure. We expect that further resource commitment in adjusting operating facilities would remain pending during election years. Since demand is stochastic, managers are eager to assess the permanence of any demand decline since they are responsible for adjusting committed resources downward. Further, political business cycle theory also suggests that incumbents manipulate fiscal and monetary policy instruments to generate a positive outlook on the economy in an attempt to maximize the probability that they will be reelected (Nordhaus, 1975). This will play a major role in shaping managerial optimism in general, and further delay resource-divesting decisions for firms suffering a sales decline, in particular. This discussion leads to our first prediction (all hypotheses are stated in alternate form).

H₁: Cost stickiness will be greater in election years than in non-election years.

The relative difference in cost stickiness between election years and non-election years is not necessarily uniform across countries. Initially, we consider whether the inter-temporal pattern in cost stickiness varies with the soundness of political institutions. Indeed, political institutions are tied to both the degree of corruption (Lederman et al., 2005) and the general information environment (Bushman et al., 2004), implying that managers in countries with high-quality political institutions are in a better position to make sensible resource adjustment decisions. In comparison, firms located in countries with weak political institutions (less democratic countries), in which wide government policy swings are scarce, are likely to be less

sensitive to election outcomes, resulting in smaller changes in cost stickiness during election years relative to firms in countries with sound political institutions.

Similarly, we also examine whether the impact of political uncertainty on cost stickiness varies across elections within and across countries. If the outcome of an election and subsequent policy shifts are anticipated well in advance, there should be little uncertainty associated with the election and therefore we expect that cost stickiness does not increase significantly during the election year. In contrast, for elections fraught with greater uncertainty, we expect to observe that the impact on cost stickiness will be larger.

H₂: The relative difference in cost stickiness between elections and non-election years is related to the country's political environment.

Apart from its uncertainty-driven nature, cost stickiness also stems from the presence of adjustment costs (Anderson et al., 2003). Exploiting country-level variation in labor adjustment costs across 19 OECD countries, Banker et al. (2013) document that cost stickiness is greater in countries with more rigid employee protection laws where corporate employment more likely stays at a sub-optimal level. Stricter employment protection laws lead to greater downward adjustment costs for labor, and firms in countries with stringent labor regulation will exhibit greater cost stickiness. In a similar vein, we also expect that in countries more protective of labor (stricter labor regulation), cost stickiness is greater in election years relative to in non-election years. In our analysis, we explore whether high adjustment costs reinforce managers' incentives to further delay resource-divesting decisions during election years when uncertainty is greater.

In addition, we test whether the impact of political uncertainty on cost stickiness varies with the efficiency of the judicial system. Judicial efficiency is commonly recognized to have important impacts on a country's business activities. Firms from countries with high judicial efficiency operate with greater assurance that contracts will be fairly and promptly enforced (La Porta et al., 1997, 1998). It follows that this assurance makes managers of such firms more willing to accept major commitments of resources despite the accompanying high adjustment costs, which, in turn, increases cost stickiness (Anderson et al., 2003). Banker et al. (2012) report evidence that higher judicial efficiency at the country level is associated with greater cost

stickiness at the firm level. Hence, we expect that the impact of political uncertainty on cost stickiness will be concentrated in countries with higher judicial efficiency.

Similarly, we also test whether the impact of political uncertainty on cost stickiness varies with the country's legal origin. Extensive prior research stresses the importance of jointly considering the effects of political and legal institutions on firm decisions and outcomes (Qi et al., 2010; Boubakri et al., 2013; 2014). The legal origin of a country is one of the primary drivers of cross-country differences in corporate governance, access to external financing, business regulation and other outcomes, all of which should play a role in shaping firm-level cost behaviors (e.g., La Porta et al., 1997; 2000). Indeed, Banker et al. (2013; 2014) and Calleja et al. (2006) find that legal origin affects cost behavior. For instance, common law countries exhibit greater cost stickiness given that their legal environment is more conducive to long-term resource commitments (La Porta et al., 1998; Banker et al., 2012). Accordingly, we set the following hypothesis.

H₃: The relative difference in cost stickiness between elections and non-election years is related to the country's legal environment.

A natural extension to analyzing the moderating impact of countries' legal institutions in general is to narrow the focus to specific regulations that are particularly salient to the relation between political uncertainty and cost stickiness. Against the backdrop of extensive prior research implying that accounting transparency deters managers' opportunism, we consider the role that countries' disclosure requirements play given that these institutions govern corporate financial reporting. Additionally, disclosure regulations are relevant in the context of cost stickiness because prior studies hold that agency-driven incentives shape cost stickiness with tough monitoring mechanisms enabling firms to constrain managers' opportunistic behaviors (e.g., Chen et al., 2012; Dierynck et al., 2012; Kama and Weiss, 2013). For example, Anderson et al. (2003) suggest that managers' empire-building incentives induce cost stickiness because entrenched managers tend to maintain slack resources even in bad times in order to defend the current scale of business. In measuring agency problems with free cash flow as well as CEO horizon, tenure, and compensation structure, Chen et al. (2012) provide empirical support for Anderson et al.'s (2003) argument by documenting that cost stickiness increases with managers' empire-building incentives. In a similar spirit, Kim et al. (2014) show

that SG&A cost asymmetry is exacerbated for firms with weak internal controls. This research helps motivate our analysis on whether the role that political uncertainty plays in cost stickiness hinges on country-level disclosure standards.

However, extant research remains mixed on the impact of agency conflicts on cost stickiness. On one hand, some evidence suggests that agency-driven motives lead to sticky cost behaviors (Anderson et al., 2003; Chen et al., 2012; Kim et al., 2014). On the other hand, some recent studies claim that earnings management incentives lower cost stickiness. For example, Kama and Weiss (2013) argue that managers tend to expedite the downward adjustment of slack resources when sales fall in an attempt to reduce unnecessary costs in order to avoid an earnings decrease. Similarly, Dierynck et al. (2012) in analyzing a sample of Belgian private companies find that cost stickiness is lower for firms that report small profits (i.e., firms that are more likely to manage earnings). Diverging from Anderson et al.'s (2003) claim about the impact of the empire-building incentives, the evidence in Kama and Weiss (2013) and Dierynck et al. (2012) implies a negative association between earnings management incentives and cost stickiness. Given that empire-building managers may be more apt to undertake earnings management, it becomes difficult to predict *ex ante* the association between agency-driven incentives and cost stickiness.

In linking the difference in cost stickiness between election and non-election years within an agency framework, we isolate whether cross-country variation in disclosure regulation influences the association between political uncertainty and cost stickiness. Entrenched managers eager to accelerate discretionary cuts to slack resources in the hope of avoiding losses may take advantage of uncertain environments during elections to execute such self-serving resource adjustment decisions. If disclosure requirements effectively prevent self-interested managers from doing so, it follows that the impact of political uncertainty on cost stickiness would be concentrated in countries with stricter disclosure standards. In contrast, if disclosure requirements suppress empire-building incentives of entrenched managers and thus attenuate *per se* cost stickiness, the relation between political uncertainty and cost stickiness would be concentrated in countries with relatively lax institutions governing disclosure. The following hypothesis reflects that it is difficult to form a directional prediction given the

competing prior evidence on the role that agency problems play. We therefore set the following hypothesis in null form.

H₄: The relative difference in cost stickiness between elections and non-election years is related to the country's disclosure standards.

Besides testing the role of formal institutions—countries' political, legal, and disclosure infrastructure under the predictions in H₂ to H₄—on the importance of political uncertainty to cost behavior, we investigate the moderating impact of an informal institution, the country's culture. Formal institutions and culture have been shown to work both independently and complementarily in determining financial and accounting decisions (e.g., Hope, 2003; Li et al., 2013). Previous studies show that even when corporate decisions are made by sophisticated professional managers in a globalized environment, culture still matters (Shao et al., 2010; Li et al., 2013). Next, we evaluate whether the impact of political uncertainty on cost stickiness varies systematically with the uncertainty avoidance dimension of the national culture. This involves analyzing whether the link between political uncertainty and cost stickiness hinges on countries' culture. Among the four cultural dimensions suggested by Hofstede (2001), namely, individualism/collectivism, masculinity/femininity, power distance, and uncertainty avoidance, the latter, which captures the extent to which people are averse to uncertainty, is the most relevant to our purposes.

Uncertainty-avoiding people shun ambiguous situations and tend to require formal structures and clear rules of conduct to alleviate their anxiety about ambiguity. We therefore expect that the severity of uncertainty avoidance would reinforce the impact of political uncertainty on cost stickiness. Specifically, we expect that managers belonging to high uncertainty avoidance societies would prefer to immediately adjust resources when confronting an activity decline to conform to the traditional cost model and to better cope with uncertain outcomes after the elections. In contrast, managers belonging to low uncertainty avoidance societies are more comfortable dealing with unpredictable outcomes. Consequently, they would exert less effort in mitigating the impact of uncertainty, which would be evident in a more gradual divestiture of slack resources. This leads to our final hypothesis.

H₅: The relative difference in cost stickiness between elections and non-election years is more salient in countries with lower uncertainty avoidance.

3. Research Design

3.1. Sample Construction

We obtain data for the analysis from Compustat (Global and North America) for publicly listed non-financial firms. After Banker et al. (2013), we exclude firm-year observations with missing sales or assets, missing or negative operating costs over the past two years, and extreme operating costs (i.e., operating costs which are less than 50% or greater than 200% of sales over the past two years). We also delete firm-years in a non-native currency form. We further exclude firm-years with extreme sales (i.e., when sales increased by more than 50% or decreased by more than 33% in the past two years) since these large shifts in sales likely capture unusual events such as mergers or divestitures. From this sample, we drop countries with one-party systems (e.g., China) and countries in which the chief executive is a monarch (e.g., Saudi Arabia) given the minimal political uncertainty surrounding elections there. Additionally, we omit from the analysis countries with fewer than 100 firm-year observations.⁶ We rely on country-specific GDP deflators to control for inflation. The final sample has 266,538 observations for 32,892 unique firms in 56 countries for the period 1989–2012. We begin the sample period in 1989 because *Compustat Global* covers non-North American firms starting in 1987, and two prior years are needed to calculate the growth rates.

3.2. Measuring Political Uncertainty

Drawing valid inferences on whether there is a causal link from political uncertainty to cost behaviors depends on the availability of an adequate empirical proxy for political uncertainty due to difficulties in measurement and possible endogeneity (Rodrik, 1991). Since most political events are likely correlated with economic conditions which, in turn, affect cost behaviors, we should identify a proxy for variation in uncertainty that is orthogonal to cost behaviors. In search of a valid proxy, we follow the identification strategy applied by Julio and Yook (2012) and Durnev (2014), among others, by using the timing of national elections around the world as a measure of variation in political uncertainty. This involves specifying an indicator variable for election timing which is equal to one for election years, and zero

⁶ Later in the paper, we report that our core evidence is almost identical when we return these countries to the sample.

otherwise. In constructing the election dummy, we appeal to the fact that the timing of elections is out of the control of the firms (Julio and Yook, 2012). Implicit in relying on election timing to proxy for the degree of political uncertainty is that political uncertainty increases in election periods (Bialkowski et al., 2008; Boutchkova et al., 2012). For instance, Baker et al. (2013) document that their index of economic policy uncertainty spikes upward around U.S. presidential elections, validating the premise that political uncertainty rises during election years.

3.3. Election Data

This study examines 248 national elections in 56 countries held between 1989 and 2012 in which the outcome determined the national leader directly or indirectly. Detailed election information is obtained from a variety of sources. We begin by collecting information on countries' political system and elections from the World Bank's 2012 Database of Political Institutions (Beck et al., 2001). We cross-check the election data with data reported in the Polity IV database maintained by the Center for International Development and Conflict Management at the University of Maryland. We supplement the election data with various other sources like *Elections around the World*, *Election Guide*, and *The CIA World Factbook* for cases in which election information is missing from the Polity IV database or the Database of Political Institutions.

Initially, we identify the chief executive of each country and the national elections for the chief executive. We follow Julio and Yook (2012) by analyzing presidential elections for countries with presidential systems because the president normally holds the supreme executive power under a presidential system. In contrast, in a parliamentary system, the cabinet responsible to parliament is vested an executive power. We thus consider legislative elections for countries with parliamentary systems as the outcome of such elections has the foremost influence over the appointment of prime minister or premier. Some countries use a hybrid system such that a president and a prime minister coexist with both presidential and legislative elections held nationally. In these cases, we select for the study the election associated with the leader who exerts more power over executive decisions after Julio and Yook (2012).⁷

⁷ Dropping these countries from the analysis does not change the tenor of our results.

3.4. Descriptive Statistics

Table 1 presents descriptive statistics sorted by country. In particular, the table reports for each sample country the total number of firm-year observations, the legal system origin (common law or civil law), the total number of elections, the average GDP growth, average firm log-changes in operating costs and sales, and average log assets intensity. Table 1 confirms that our sample covers a comprehensive set of geographical regions which is important when examining the interplay between political uncertainty and firm-level cost behavior. The U.S. and Japan contribute the largest share of the sample at 31% and 18%, respectively, followed by India (6.2%), and U.K. (6%).⁸ Firms from other countries comprise less than 4% of the sample. The average annual GDP growth over the sample period ranges from -0.22% for Greece to 7.13% for India. The sample captures, on average, five election cycles. For identification purposes, this instills confidence in using the election dummy as a proxy for political uncertainty since the sample covering a fairly large number of election cycles ensures that our evidence is less likely to spuriously stem from unique economic conditions; i.e., the analysis reflects pervasive phenomena rather than a heavy concentration of a certain period that otherwise could directionally influence firms' cost behaviors.

[Insert Table 1 about here]

In Table 2, we report that nearly 58% of the firms in our sample come from countries with a common law origin. The average annual growth rate for firm-level deflated log-sales is 0.03. Similarly, the average annual growth rate for firm-level deflated log-operating costs is 0.032. These statistics are broadly consistent with those reported in prior research (e.g., Banker et al., 2012; 2013). The average value of the main variable of interest, *ElectionYear*, is 0.26.

[Insert Table 2 about here]

⁸ As a robustness test, we drop these four countries from the sample and confirm that our findings are not driven by countries with large number of observations.

3.5. Empirical Model

In testing our hypotheses, we rely on a model based on the standard model developed by Anderson et al. (2003) and extended by Banker et al. (2013). This model incorporates country characteristics along with a set of firm-level controls:

$$\Delta \ln XOPR = \beta_0 + (\beta_1 + \beta_2 ElectionYear + \beta_3 COMMON + \beta_4 GDPGROWTH + \beta_5 \ln AINT) \Delta \ln SALE + (\beta_6 + \beta_7 ElectionYear + \beta_8 COMMON + \beta_9 GDPGROWTH + \beta_{10} \ln AINT + \beta_{11} LAGDEC) DEC * \Delta \ln SALE + \varepsilon \quad (1)$$

where $\Delta \ln XOPR$ is the log-change in operating costs; $\Delta \ln SALE$ is the log-change in sales; *ElectionYear* is a dummy variable equal to one for election years, and zero otherwise; *COMMON* is a dummy variable equal to one for common-law countries, and zero otherwise; *GDPGROWTH* is the real GDP growth rate; *lnAINT* reflects asset intensity (log-ratio of assets to sales); *DEC* is a dummy variable equal to one if sales decreased in year *t*, and zero otherwise; and *LAGDEC* is a dummy variable equal to one if sales decreased in year *t-1*, and zero otherwise; and ε is an error term. We estimate the model for the pooled sample with standard errors clustered by firms.

Specifically, we include two firm-level determinants of cost stickiness to consider that the distribution of the known firm-level factors could differ across countries; failing to control for these determinants could lead to a spurious relation between the political uncertainty and cost stickiness. We expect that asset intensity (*AINT*) captures firm-level adjustment costs (Anderson et al., 2003), and an indicator for prior sales decline *LAGDEC* reflects managers' biased expectation on future sales (i.e., managerial optimism or pessimism) (Banker et al., 2013). We also include the common law dummy *COMMON*, expecting more severe cost stickiness in common law countries where legal environments are more conducive to long-term resource commitments (La Porta et al. 1998). Last, we control for GDP growth *GDPGROWTH* to further capture managers' expectations (Anderson et al., 2003).

Extending Noreen and Soderstrom (1997), Anderson et al. (2003) provide a comprehensive empirical framework for examining the asymmetric response of costs to activity changes. Specifically, they include $\Delta \ln SALE$ and its interaction with sales decline dummy (*DEC*). The coefficient on $\Delta \ln SALE$ (i.e., the sum of β_1 to $\beta_5 \ln AINT$ in equation (1)) represents the

percentage change in costs in response to a one percent increase in sales. The coefficient on $DEC*\Delta\ln SALE$ (i.e., the sum of β_6 to $\beta_{11}LAGDEC$ in equation (1)) captures the incremental cost changes in response to sales changes when sales decline. Accordingly, a negative coefficient on $DEC*\Delta\ln SALE$ implies that costs respond less to sales changes when sales decline. Extending the baseline model of Anderson et al. (2003), the above equation (1) allows both coefficients to vary with the control variables – *ElectionYear*, *COMMON*, *GDPGROWTH*, and *lnAINT* where we are particularly interested in the coefficient on *ElectionYear* (i.e., β_7). We predict under H_1 that the coefficient β_7 is negative, consistent with the degree of cost stickiness increasing in political uncertainty (*ElectionYear*).

4. Empirical Results

In a multivariate regression framework, we begin by estimating the impact of political uncertainty on firms' cost stickiness using a sample of firms from 56 countries to examine the prediction in H_1 . Next, we analyze the prediction in H_2 that the impact of political uncertainty on cost stickiness is greater in countries with sound political institutions and when the elections outcome is more uncertain. For the predictions in H_3 to H_5 , we test whether the importance of political uncertainty to cost stickiness hinges on the quality of a country's legal and informal institutions.

4.1. Political Uncertainty and Cost Stickiness

4.1.1. Main Evidence

In Table 3, we start in Column 1 with the model of cost behavior that links annual changes in operating costs ($\Delta\ln XOPR$) to contemporaneous changes in sales revenue ($\Delta\ln SALE$) following the sticky costs models developed by Noreen and Soderstrom (1997) and Anderson et al. (2003):

$$\Delta\ln XOPR = \beta_0 + a_1 \Delta\ln SALE + a_2 DEC*\Delta\ln SALE + \varepsilon \quad (2)$$

In this specification, the slope a_1 approximates the percentage change in costs for a 1% increase (decrease) in sales, and the cost stickiness coefficient a_2 captures the degree of asymmetry in cost behavior (stickiness if a_2 is negative and anti-stickiness if a_2 is positive). In Columns 2 and 3, we

specify the firm-level slopes in equation (2) as a function of country-level explanatory variables and firm-level control variables after prior research (Anderson et al., 2003 and Banker et al., 2013). In our main model (Column 3), we specify the slope coefficients as:

$$a_1 = \beta_1 + \beta_2 \text{ElectionYear} + \beta_3 \text{COMMON} + \beta_4 \text{GDPGROWTH} + \beta_5 \ln \text{AINT} \quad (3)$$

$$a_2 = \beta_6 + \beta_7 \text{ElectionYear} + \beta_8 \text{COMMON} + \beta_9 \text{GDPGROWTH} + \beta_{10} \ln \text{AINT} + \beta_{11} \text{LAGDEC} \quad (4)$$

In Column 1, we find that the cost stickiness model by Anderson et al. (2003) persists for an international sample of firms from 56 countries, which is evident in the coefficient on $\text{DEC} \cdot \Delta \ln \text{SALE}$ loading negatively at the 1% level. Moreover, the coefficient on $\Delta \ln \text{SALE}$ loads positively at the 1% level, suggesting a systematic increase in operating costs for an increase in sales. In Column 2, after including the different firm and country-level variables identified in equations (3) and (4)—except our variable of interest, *ElectionYear*—we continue to find that the cost stickiness evidence holds. Additionally, we find that cost stickiness is higher in common law countries. Cost stickiness is increasing with GDP growth and assets intensity, and decreasing with prior sales decline. This evidence is consistent with Banker et al. (2013). After adding our variable of interest in Column 3, we find that the coefficient β_7 on $\text{DEC} \cdot \Delta \ln \text{SALE} \cdot \text{ElectionYear}$ is negative and statistically significant at the 1% level, suggesting that cost stickiness is higher during election years than in non-election years. This result lends support to the prediction in H_1 that cost stickiness is increasing in political uncertainty.⁹ Finally, we find that the remaining control variables enter significantly consistent with the earlier regressions.

[Insert Table 3 about here]

4.1.2. Additional Tests

We report additional evidence on the prediction in H_1 in Table 4. In Column 1, we present the results after restricting our sample to U.S. firms that comprise 31% of the full sample.

⁹ We do not find evidence that our results perceptibly hinge on whether the firm belong to a politically sensitive industry (tobacco products, pharmaceuticals, health care services, defense, petroleum and natural gas, telecommunications, and transportation industries), as identified by Herron et al. (1999). Julio and Yook (2012) explain that it is difficult to classify industries as being politically sensitive or not, and report marginal evidence implying that investments during elections years varies across industries according to their level of political sensitivity.

By considering firms from a single country, we help dispel the concern that the observed results spuriously stem from omitted country characteristics (e.g., Ke et al., 2014). In addition, elections in the U.S. are highly competitive with results often very close and outcomes uncertain in general, reinforcing that this is a high-power testing ground for our analysis. The U.S. sample contains 82,574 firm-year observations, covering six presidential elections from 1989 to 2012. The results show that the coefficient β_7 on $DEC*\Delta\ln SALE* ElectionYear$ is negative and statistically significant at the 1% level, providing some assurance that our earlier results are not driven by omitted country characteristics.

In Column 2 of Table 4, we include country dummies instead of the common law variable to capture the different country fixed effects. One drawback of this test is that a significant number of country dummies will be included in the analysis and hence the coefficients would be biased with possible multicollinearity problems. However, in an upside, the country fixed effects capture the different country-level time-invariant characteristics that would not be observable otherwise. The results reported in Column 2 confirm that omitted country-level fixed effects do not materially affect our earlier inferences.

In constructing our final sample, we omit countries with fewer than 100 firm-year observations. Given the small number of firms domiciled in these countries, we may not be to validly attribute our inferences to these countries, especially if the number of elections during the sample period is small. Nevertheless, in the interest of completeness, we return the previously excluded countries to the sample. We find in Column 3 that the negative coefficient on $DEC*\Delta\ln SALE* ElectionYear$ remains highly statistically significant in this regression, providing additional evidence consistent with the prediction in H₁.¹⁰

Another threat to reliable inference in this setting is that the U.S., Japan, India and the U.K. contribute an inordinate number of firms to the sample: collectively, these four countries account for 61% of the observations. Prior research implies that small shifts in country sampling can have a material impact on the results (e.g., Miller, 2004). To determine whether our results in Table 3 are driven by these countries, we re-estimate the regression in Column 3

¹⁰ Our main evidence persists when we exclude from the analysis observations from the recent financial crisis period (2007-2009).

of Table 3 after excluding observations from the U.S., Japan, India and the U.K. In Column 4 of Table 4, we report that the negative coefficient on $DEC*\Delta\ln SALE* ElectionYear$ remains statistically significant in this regression, helping to dispel the concern that our results reflect a few large countries dominating the data.

In Column 5 of Table 4, we consider an alternative proxy for political uncertainty. Consistent with the election years, the alternative political uncertainty proxy must be forward looking and should reflect political uncertainty in a narrow sense, as opposed to a comprehensive country measure that also embeds macro-economic factors. After Bekaert et al. (2014), we rely on the ICRG database to specify this proxy. We consider the opposite of the government stability dimension (*GOVINSTABILITY*) of the ICRG as an alternative proxy for political uncertainty.¹¹ The government stability dimension assesses the government's ability to carry out its declared programs and its ability to stay in office.¹² The results in Column 5 are consistent with our previous evidence with the coefficient on $DEC*\Delta\ln SALE*GOVINSTABILITY$ loading negatively at the 1% level.

Finally, in Column 6 of Table 4, we consider an alternative definition of the election year. After Julio and Yook (2012), we set the dummy variable *ElectionYear* equal to one for any firm-year in which an election is held no earlier than 60 days prior to the fiscal year-end in year t and no more than 274 days after the fiscal year-end of year t .¹³ Reinforcing our earlier evidence, $DEC*\Delta\ln SALE* ElectionYear$ loads negatively at the 1% level.

Overall, the results reported in Table 4 suggest that our evidence is robust to different sample composition, additional control variables, and alternative definitions of the political uncertainty proxy.

[Insert Table 4 about here]

¹¹ The results of subsample analyses on the predictions in H₂ to H₅ are qualitatively similar when we use the government instability measure as a proxy of political uncertainty in lieu of the election years.

¹² The rating is based on the insights of various analysts, ranging from 0 to 12, and is the sum of three subcomponents, each with a maximum score of four points. The subcomponents are: government unity, legislative strength, and popular support.

¹³ Please see the Internet Appendix of Julio and Yook (2012) for more detail on their procedure for classifying the election years.

4.1.3. Alternative Model

Banker et al.'s (2013; 2014) recent research implies that managerial optimism shapes the degree of cost stickiness in that managers with overly optimistic future prospects tend to keep slack resources even when divestment of the resources is necessary. Conversely, pessimistic managers tend to limit resource expansion when sales rise but cut resources when sales fall, even resulting in anti-stickiness. Likewise, manager optimism or pessimism plays a differential moderating role in determining cost stickiness. To address this issue in their empirical specifications, Banker et al. (2013; 2014) introduce two indicator variables for a prior sale increase or decrease given that positive (negative) changes in prior sales induce manager optimism (pessimism). We also interact both indicator variables in assessing the impact of *ElectionYear* on cost stickiness. The estimation model is as follows:

$$\begin{aligned} \Delta \ln XOPR = & \beta_0 + (\beta_1^{OPT} LAGINC + \beta_1^{PES} LAGDEC + \beta_2^{OPT} LAGINC * ElectionYear + \beta_2^{PES} LAGDEC * \\ & ElectionYear + \beta_3 COMMON + \beta_4 GDPGROWTH + \beta_5 \ln AINT) \Delta \ln SALE + \\ & (\beta_6^{OPT} LAGINC + \beta_6^{PES} LAGDEC + \beta_7^{OPT} LAGINC * ElectionYear + \beta_7^{PES} LAGDEC * ElectionYear + \beta_8 \\ & COMMON + \beta_9 GDPGROWTH + \beta_{10} \ln AINT) DEC * \Delta \ln SALE + \varepsilon \quad (5) \end{aligned}$$

where *LAGINC* (*LAGDEC*) is a dummy variable for prior sales increases (decreases), which proxies for managers optimism (pessimism). The other variables are defined in section 3.5. The parameter β_1^{OPT} (β_1^{PES}) captures the degree of stickiness (or anti-stickiness) under optimism (or pessimism). The main parameters of interest are β_7^{OPT} and β_7^{PES} . Hypothesis 1 implies that both β_7^{OPT} and β_7^{PES} will be negative because we expect that political uncertainty leads to an increase in cost stickiness under manager optimism but to a decrease in anti-stickiness under manager pessimism.

In Table 5, we extend the Banker et al. (2014) framework by examining the relation between political uncertainty and cost stickiness in consideration of differential impacts of managers' optimism or pessimism. This involves estimating the average degree of cost stickiness or anti-stickiness, and its relation with political uncertainty separately for optimism and pessimism. Consistent with the Banker et al. (2013; 2014), we find that, on average, operating costs are sticky in the optimistic case ($\beta_2^{OPT} = -0.112$, $t = -14.652$) and anti-sticky in the pessimistic case ($\beta_2^{PES} = 0.172$, $t = 19.028$). As expected, both parameters of our interest

(β_7^{OPT} and β_7^{PES}) are negative and significant at the conventional levels ($\beta_7^{OPT} = -0.025$, $t = -1.889$; $\beta_7^{PES} = -0.062$, $t = -4.116$). This evidence suggests that political uncertainty is associated with significantly higher stickiness under optimism and significantly lower anti-stickiness under pessimism.¹⁴ This result offers additional validation to our Hypothesis 1. In the rest of Table 5, we report similar evidence when we analyze the US sample only (Model 2) and when we consider government instability as a proxy of political uncertainty (Model 3).

[Insert Table 5 about here]

4.2. Do Political Institutions Influence the Relationship between Political Uncertainty and Cost Stickiness?

So far in the analysis, we implicitly assume that the relation between political uncertainty and cost stickiness is uniform across countries despite that this may be hard to justify as implausible. A related concern is that, although a national election represents an exogenous surge of political uncertainty, it would accompany a series of political events surrounding elections that we have not perfectly isolated. It is therefore important to ensure that our earlier findings are actually driven by political uncertainty imposed by national elections, not other factors that would also influence cost behavior. Accordingly, analyzing the moderating impact of the following variables helps empirically clarify whether the importance of national elections to cost stickiness indeed stems from political uncertainty. In this section, we examine whether the importance of political uncertainty to cost stickiness varies systematically with a set of country-level conditioning variables.

First, we expect that the soundness of political institutions play a role in shaping the relation between political uncertainty and cost stickiness. Wide government policy swings are less prevalent in countries with weak political institutions, putting managers in a better position to cope with election results. Second, it follows that political uncertainty during elections rises when election outcomes are less predictable. Specifically, election-driven political uncertainty

¹⁴ Similar to Banker et al. (2013), we find that cost stickiness is stronger with manager pessimism than with manager optimism. This appears reasonable because for the same sales decrease, pessimistic managers should be inclined to reduce costs more than optimistic managers, and thus the adjustment costs should have a larger impact on their choices.

would have been greater before elections under rational expectations if the election results turned out to be close afterwards. We are interested in isolating whether the closeness of the election outcomes affects the relation between political uncertainty and cost stickiness. However, it is important to stress that these two moderating variables (i.e., the strength of political institutions and the closeness of election results) are naturally related to the degree of uncertainty during elections. From an identification standpoint, analyzing these two variables provides some assurance that our earlier inference that political uncertainty, rather than other omitted variables during elections, influences managers' resource adjustment decisions.

To capture a country's political institutions and the closeness of the election outcomes, we employ four variables.¹⁵ We follow Qi et al. (2010) in measuring the strength of the prevailing political institutions with the political rights index (*POLRIGHTS*) developed by Freedom House. This index reflects the freedom, competitiveness, and fairness of elections and the strength of competing political and minority groups in constraining the government. We also specify Henisz' (2012) political constraints index (*PCON*) as a measure of the soundness of political institutions, where *PCON* ranges from 0 to 1, with higher scores indicating greater political constraints and hence stronger political institutions. Finally, the soundness of political institutions is measured by *CHECKS*, a proxy for the degree of political constraints within the government. This variable, which is drawn from the Database of Political Institutions (DPI), is calculated as the number of veto players in a political system, adjusting for whether these veto players are independent of each other, as determined by the level of electoral competitiveness in the system, their respective party affiliations, and the electoral rules. In gauging the closeness of the election outcome, we follow Julio and Yook (2012) by coding a dummy variable (*MARGIN*) equal to one if the margin of victory is smaller than the first quartile value of the margin of victory distribution over the sample of countries under consideration, where the margin of victory is defined as the difference between the fraction of votes received by the victor and that garnered by the runner-up.

¹⁵ In examining the predictions in H₂ to H₅, we rely on multiple measures of the country constructs under study since country-level regression variables can suffer from severe measurement error, admitting bias that can call into question the inferences drawn in these settings (e.g., Bushman and Smith, 2001; Miller, 2004). Moreover, several of these conditioning variables are derived from surveys that amount to subjective rankings, casting some doubt on the veracity of the underlying perceptions (e.g., Djankov et al., 2008).

In Table 6, we find across all the proxies that the coefficient β_7 on $DEC*\Delta\ln SALE^*$ *ElectionYear* is only negative and statistically significant in the subsample of firms located in countries with sound political institutions (Columns 2, 4, and 6) and amidst highly competitive elections (Column 8), consistent with the prediction in H₂. Reinforcing this evidence, the difference in the β_7 coefficients between the samples of weak and sound political institutions is statistically significant at conventional levels for three out of the four country-level political conditioning variables.¹⁶

[Insert Table 6 about here]

4.3. Do Legal Institutions Influence the Relationship between Political Uncertainty and Cost Stickiness?

Another important issue to consider when evaluating the sensitivity of cost stickiness to country-level characteristics is that the cost stickiness is a function of resource adjustment costs. In this section, we provide evidence on the prediction in H₃ by examining whether the link between political uncertainty and cost stickiness hinges on countries' legal infrastructure. Banker et al. (2013) report evidence on this front by investigating the role that employee protection laws play in cost stickiness across countries. They posit and find that more rigid employee protection laws impose higher adjustment costs, resulting in more sticky cost behaviors. In a similar spirit, we expect that the difference in cost stickiness between election years and non-election years varies with the severity of costly resource adjustment in each country. Specifically, we analyze whether cross-country differences in legal institutions shape the association between political uncertainty and cost stickiness. This involves examining whether the impact of political uncertainty on cost stickiness is more pronounced in countries with a more effective judicial efficiency or more rigid labor protection laws. Relatedly, grounded in prior research documenting that legal origins affect cost behavior (Banker et al., 2013; Calleja et al., 2006; Kim and Wang, 2014), we explore how the relation between political uncertainty and cost stickiness varies according to countries' legal origin.

¹⁶ In an additional test, we do not find evidence that our results differ between presidential and parliamentary systems.

To measure the strength of a country's legal institutions, we employ three measures that capture different dimensions of its institutional infrastructure. These measures include the country's legal origin (*COMMON*), labor regulation (*LABOR REG*), and judicial efficiency (*JUDEFF*). We follow La Porta et al. (1998) by setting the indicator variable *COMMON* to one for English Common Law countries, and zero otherwise. La Porta et al. (1998) show that common law countries are associated with higher investor protection than other countries. *LABOR REG*, obtained from the Economic Freedom of the World, captures the labor regulation along different dimensions. Among the more prominent are minimum wages, dismissal regulations, centralized wage setting, extension of union contracts to nonparticipating parties, and conscription. Derived from La Porta et al. (1998), *JUDEFF* assesses the "efficiency and integrity of the (country's) legal environment as it affects businesses."

In Table 7, we find across all proxies that the coefficient β_7 on *DEC*ΔlnSALE*ElectionYear* is negative and statistically significant at the 5% level or better in the subsample of firms located in countries with strong legal institutions (Columns 2, 4, and 6), suggesting that strong legal institutions intensify the cost stickiness exhibited during election years. In contrast, we find that the coefficient on *DEC*ΔlnSALE*ElectionYear* is statistically insignificant in the subsample of countries with weak legal institutions (Columns 1, 3, and 5). The difference in the β_7 coefficients between the samples of weak and strong legal institutions is statistically significant at the 1% level for all three of the country-level conditioning variables. Consistent with the prediction in H₃, these findings support the intuition that managers' suboptimal resource adjustment decisions under high political uncertainty (i.e., during elections) are worse when they have to cope with greater adjustment costs stemming from the country's legal institutions.

[Insert Table 7 about here]

4.4. Does Disclosure Infrastructure Influence the Relationship between Political Uncertainty and Cost Stickiness?

Next, we evaluate whether the link between political uncertainty and cost stickiness is sensitive to countries' disclosure institutions. If disclosure requirements effectively prevent self-interested managers from accelerating discretionary cuts to slack resources in order to avoid incurring losses, then we expect to observe that the impact of political uncertainty on cost

stickiness is more pronounced in countries that impose stricter disclosure standards. In contrast, if disclosure requirements suppress empire-building incentives of entrenched managers and, in turn, attenuate cost stickiness, then the relation between political uncertainty and cost stickiness will be less pronounced in countries with strict disclosure requirements. Given that the impact of disclosure standards could run in either direction, we leave this as an empirical question that we help resolve in analyzing H₄.

To capture a country's disclosure infrastructure, we employ three different measures. These measures include a disclosure requirements index (*DISCLOSE*), Center for Financial Analysis and Research (*CIFAR*) index, and Kurtzman et al.'s (2004) measure of financial reporting quality (*ACC*). *DISCLOSE* measures the strength of stock exchange-mandated disclosure requirements according to La Porta et al. (2006). *CIFAR* represents the average number of 90 items included in the 1995 annual reports of a sample of domestic firms; i.e., it reflects corporate voluntary disclosure largely stemming from countries' accounting standards.¹⁷ Kurtzman et al.'s (2004) measure of financial reporting quality (*ACC*) is one of the subindices of their opacity index.

In Table 8, we find across all conditioning proxies that the coefficient β_7 on *DEC*ΔlnSALE* ElectionYear* is only negative and statistically significant in the subsample of firms located in countries with strict disclosure requirements (Columns 2, 4, and 6), suggesting that strict disclosure requirements magnify the higher levels of cost stickiness firms exhibit during election years. The difference in the β_7 coefficients between the samples of weak and strict disclosure requirements is statistically significant at conventional levels for all three country-level disclosure variables. This evidence implies that disclosure requirements are effective in preventing firms from using cost cuts as a means of earnings management.

[Insert Table 8 about here]

4.5. Does Culture Influence the Relationship between Political Uncertainty and Cost Stickiness?

¹⁷ We acknowledge that prior studies raise concerns on the use of *CIFAR* as a measure of disclosure requirements in an economy (e.g., Bushman and Smith, 2001; Hail and Leuz, 2006). They argue that *CIFAR* index also captures voluntary disclosures by firms.

Cultural backgrounds have gained significant attention in cross-country analyses because it represents an important informal institution governing behavior. Complementing the analysis of formal institutions in the previous sections, we shift gears in this section by focusing on whether countries' cultural attributes influence the association between political uncertainty and cost stickiness. Among various layers of cultural variables, we are particularly interested in the role that uncertainty avoidance plays given its natural link to political uncertainty. We expect that the impact of political uncertainty on cost stickiness is less salient in countries where people tend to be eager to expedite downward resource adjustment when sales decline in order to avoid uncertainty (i.e., in countries with high uncertainty avoidance tendency).

To capture a country's uncertainty avoidance tendency, we rely on three different measures. These measures include Hofstede (2001)'s index (*UAI_HF*), Tang and Koveos' (2008) updated version of Hofstede's index (*UAI_TK*) and House et al.'s (2001) proxy of the country's uncertainty avoidance index (*UAI_HOUSE*). The Hofstede value dimensions were derived from a sample of IBM employees in the 1970s. Although we agree with Hofstede (1983) that culture is extremely stable over time and that his culture dimensions indicate the relative position of one country compared to another that rarely shifts even if culture changes, we test whether our findings are robust to Tang and Koveos' (2008) updated Hofstede index on uncertainty avoidance (*UAI_TK*) that is based on economic mutation within a country. We also employ the uncertainty avoidance index (*UAI_HOUSE*) constructed by House et al. (2001) to capture a country's institutional uncertainty avoidance. This dimension reflects the degree to which societal institutions are rooted in avoidance uncertainty (House et al., 2001).

In Table 9, we find across all proxies that the coefficient β_7 on *DEC*ΔlnSALE*ElectionYear* is negative and statistically significant at the 5% level or better in the subsample of firms located in countries with a lower uncertainty avoidance tendency (Columns 2, 4, and 6). This evidence implies that a lower uncertainty avoidance tendency magnifies the cost stickiness that firms experience during election years. The difference in the β_7 coefficients between the samples of high and low uncertainty avoidance tendency is statistically significant at the 1% level for two of the three country-level uncertainty avoidance indices (the lone exception is the comparison between Columns 1 and 2). Lending support to the prediction in H₅, These results suggest that

managers in low uncertainty avoidance countries are less willing to undertake adjustments in resources in response to a sales decline in order to avoid possible negative outcomes associated with uncertainty, which is evident in the higher cost stickiness exhibited during election years in such countries.

[Insert Table 9 about here]

5. Conclusion

For a large panel of firms representing 56 countries, we provide initial evidence on the role that political uncertainty, which we measure with national elections that engender an exogenous surge in political uncertainty, plays in shaping asymmetry in cost behaviors stemming from activity changes. In regressions that control for other firm-level and country-level determinants, we find that cost stickiness is greater in election years relative to non-election years, consistent with expectations. In another series of tests, we report strong, robust evidence supporting the predictions that the importance of political uncertainty to cost stickiness is concentrated in countries with sound political, legal, and disclosure institutions and countries whose populations are known to exhibit low uncertainty avoidance. These results collectively imply that the impact of political uncertainty on cost stickiness varies with countries' formal and informal institutions.

To the best of our knowledge, we provide the first broad sample empirical evidence on the links between political uncertainty and firms' cost behavior. In particular, we contribute to the extant literature by integrating two seemingly distant research streams. First, despite Anderson et al.'s (2003) intuitive argument that managers respond to uncertainty by deliberately postponing reductions to committed resources until they have a better handle on the permanence of a decline in demand, prior research seldom examines inter-temporal changes in cost stickiness, which stands in sharp contrast to the extensive evidence from cross-sectional analyses. Analyzing national election data enables us to help narrow this gap by providing an opportune inter-temporal research setting where uncertainty rises steeply during elections and falls steeply afterwards. Second, a growing stream of prior studies on the implications of politics for corporate behaviors has been largely silent on accounting issues. We add to this line of the literature by evaluating how firms respond to political events (i.e., national elections) in

terms of their asymmetric cost behaviors. Given that the interplay between politics and business becomes critical for firms' long-term survival, we look forward to further research on how politics bring differences in accounting practices.

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APPENDIX

Variable definitions and sources

Variable	Definition	Source
Country-level variables		
<i>ElectionYear</i>	Dummy variable takes a value of one for the election years, and zero otherwise.	Beck et al. (2001)
<i>COMMON</i>	Dummy variable equal to one for firms from English Common Law countries, and zero otherwise.	La Porta et al. (1998)
<i>GDPGROWTH</i>	GDP growth over the year.	World Development Indicators
<i>POLRIGHTS</i>	An index of political rights from 1980 to 2010. These ratings rely upon the following criteria: free and fair elections take place; the rulers are elected; there are competitive parties or other competitive political groupings; the opposition has real power and plays a significant role; and minority groups have moderate self-government powers or can participate in the government through informal consensus. The criteria are then grouped into three sub-categories: electoral process (three criteria), political pluralism (four criteria), and functioning of the government (three criteria). For each criterion, 0 to 4 points are granted, where 0 denotes the lowest degree and 4 the largest degree of rights. These scores are then combined to construct the political rights index. The index goes from 1 (weak political rights) to 7 (strong political rights).	Freedom House
<i>PCON</i>	Measures the degree of political constraints of a country. Derived from a model of political interaction that incorporates information on the number of independent branches of governments with veto power and the distribution of preferences across and within those branches. Government branches considered are chief executives, lower house of legislature, higher house of legislature, judiciary, and sub-federal branches. Higher scores indicate stronger political constraints and sound political institutions.	Henisz (2012)
<i>CHECKS</i>	Number of checks and balances in the country.	The Database of Political Institutions
<i>MARGIN</i>	Dummy variable set to one if the vote difference between the largest government party and the largest opposition party is less than the first quartile value of the sample distribution.	The Database of Political Institutions
<i>GOVINSTABILITY</i>	12 minus the government stability index. The government stability index assigns numbers between 1 and 12, where higher values indicate more stable governments. The index is updated on a monthly basis and assesses the government's ability to carry out its declared programs and to stay in office.	The International Country Risk Guide
<i>LABOR REG</i>	Many types of labor-market regulations infringe on the economic freedom of employees and employers. Among the more prominent are minimum wages, dismissal regulations, centralized wage setting, extension of union contracts to nonparticipating parties, and conscription. The index goes from 1 (weak regulated labor market) to 10 (strong regulated labor market).	Economic Freedom of the World

<i>JUD_EFF</i>	An index of judicial efficiency, with higher value indicating a more efficient judicial system	La Porta et al. (1998)
<i>DISCLOSE</i>	An assessment of disclosure requirements relating to: (1) prospectus; (2) compensation of directors and key officers; (3) ownership structure; (4) inside ownership; (5) contracts outside the ordinary course of business; and (6) transactions between the issuer and its directors, officers, and/or large shareholders. The index ranges from 0 to 1, with higher values indicating more extensive disclosure requirements.	La Porta et al. (2006)
<i>CIFAR</i>	Index created by examining and rating companies' 1995 annual reports on their inclusion or omission of 90 items. These items fall into seven categories: general information, income statements, balance sheets, funds flow statement, accounting standards, stock data, and special items. A minimum of 3 companies in each country were studied.	La Porta et al. (2006)
<i>ACC</i>	An assessment of the quality of countries' corporate accounting standards.	Kurtzman et al. (2004)
<i>UAI_HF</i>	Hofstede's cultural index on Uncertainty Avoidance.	Hofstede (2001)
<i>UAI_TK</i>	Tang & Koveos' updated cultural index on Uncertainty Avoidance.	Tang and Koveos (2008)
<i>UAI_HOUSE</i>	House et al.'s (2002) cultural index on Uncertainty Avoidance.	House et al. (2002)
Firm-level variables		
<i>ΔlnXOPR</i>	log-change in deflated operating costs	Compustat Global and North America
<i>ΔlnSALE</i>	log-change in deflated sales	Compustat Global and North America
<i>lnAINT</i>	log-ratio of total assets to sales	Compustat Global and North America
<i>DEC</i>	Dummy variable equal to one if deflated sales decreased in year t, zero otherwise	Compustat Global and North America
<i>LAGDEC</i>	Dummy variable equal to one if deflated sales decreased in year t-1, zero otherwise	Compustat Global and North America
<i>LAGINC</i>	Dummy variable equal to one if deflated sales increased in year t-1, zero otherwise	Compustat Global and North America

TABLE 1

Descriptive Statistics by Country

Country	Number of Observations	%	Average $\Delta \ln XOPR$	Average $\Delta \ln SALE$	Average $\ln AINT$	Average GDP Growth	COMMON	Number of Elections
ARGENTINA	308	0.12	0.038	0.034	0.48	3.356	0	3
AUSTRALIA	5,696	2.14	0.032	0.03	-0.03	3.207	1	8
AUSTRIA	911	0.34	0.037	0.034	0.07	2.038	0	7
BANGLADESH	124	0.05	0.082	0.079	0.272	6.269	1	1
BELGIUM	1,108	0.42	0.02	0.018	0.018	1.632	0	6
BRAZIL	2,420	0.91	0.033	0.035	0.283	3.328	0	4
BULGARIA	103	0.04	0.01	-0.002	0.312	2.873	0	3
CANADA	8,643	3.24	0.036	0.032	0.064	2.321	1	7
CHILE	1,469	0.55	0.037	0.033	0.377	4.314	0	5
COLOMBIA	239	0.09	0.039	0.04	0.737	3.817	0	5
CROATIA	208	0.08	0.024	0.019	0.334	1.381	0	4
CYPRUS	185	0.07	0.016	0.009	0.533	1.77	1	3
CZECH REPUBLIC	187	0.07	0.012	0.02	0.298	2.947	0	4
DENMARK	1,630	0.61	0.029	0.028	-0.104	1.405	0	7
EGYPT	175	0.07	0.024	0.023	0.446	4.759	0	3
FINLAND	1,419	0.53	0.034	0.033	-0.133	1.901	0	6
FRANCE	7,122	2.67	0.036	0.034	-0.002	1.427	0	4
GERMANY	7,058	2.65	0.03	0.03	-0.159	1.454	0	6
GREECE	1,420	0.53	0.015	0.003	0.404	-0.22	0	6
HUNGARY	217	0.08	0.004	0.003	0.074	2.351	0	4
INDIA	16,606	6.23	0.053	0.049	0.13	7.132	1	5
INDONESIA	2,431	0.91	0.019	0.015	0.099	5.033	0	3
IRELAND	338	0.13	0.042	0.04	0.024	2.388	1	3
ISRAEL	1,483	0.56	0.046	0.044	0.199	3.906	1	7
ITALY	2,202	0.83	0.027	0.021	0.311	0.393	0	6
JAPAN	48,324	18.13	0.019	0.02	-0.013	1.057	0	8
KENYA	167	0.06	0.031	0.024	0.087	4.215	1	3
KOREA, SOUTH	5,226	1.96	0.048	0.044	0.091	3.98	0	4
LATVIA	174	0.07	0.007	0.006	0.294	2.917	0	3
LITHUANIA	212	0.08	0.007	0.005	0.075	3.567	0	4
LUXEMBOURG	226	0.08	0.039	0.041	0.325	2.884	0	4
MALAYSIA	7,703	2.89	0.025	0.018	0.357	5.082	1	5
MAURITIUS	135	0.05	0.051	0.045	0.468	4.333	0	3
MEXICO	1,171	0.44	0.029	0.028	0.248	2.694	0	4
NETHERLANDS	1,859	0.7	0.028	0.029	-0.258	1.952	0	7
NEW ZEALAND	935	0.35	0.028	0.028	-0.014	2.291	1	8
NIGERIA	336	0.13	0.027	0.027	-0.193	7.004	1	4

Country	Number of Observations	%	Average $\Delta \ln XOPR$	Average $\Delta \ln SALE$	Average $\ln AINT$	Average GDP Growth	COMMON	Number of Elections
NORWAY	1,474	0.55	0.028	0.028	0.134	2.172	0	5
PAKISTAN	1,360	0.51	0.025	0.024	-0.097	4.168	1	5
PERU	668	0.25	0.052	0.054	0.422	5.663	0	4
PHILIPPINES	960	0.36	0.01	0.009	0.662	4.68	0	4
POLAND	2,100	0.79	0.049	0.045	-0.084	3.966	0	3
PORTUGAL	519	0.19	0.011	0.015	0.327	1.058	0	7
RUSSIA	1,071	0.4	0.012	0.012	0.157	4.124	0	4
SINGAPORE	4,772	1.79	0.04	0.034	0.228	5.857	1	5
SLOVENIA	186	0.07	0.025	0.025	0.265	1.846	0	4
SOUTH AFRICA	2,384	0.89	0.032	0.03	-0.213	3.22	1	4
SPAIN	1,429	0.54	0.038	0.037	0.316	2.15	0	6
SRI LANKA	860	0.32	0.016	0.024	0.253	6.414	1	3
SWEDEN	3,215	1.21	0.04	0.04	-0.133	2.354	0	6
SWITZERLAND	2,725	1.02	0.025	0.024	0.093	1.609	0	6
TAIWAN	9,398	3.53	0.019	0.01	0.157	1.409	0	5
THAILAND	3,659	1.37	0.038	0.034	0.091	3.748	1	6
TURKEY	1,036	0.39	0.029	0.022	0.085	3.898	0	6
UNITED KINGDOM	15,978	5.99	0.033	0.031	-0.129	2.11	1	5
UNITED STATES	82,574	30.98	0.036	0.034	-0.076	2.601	1	6
Total	266,538	100	0.032	0.030	0.012	2.690	0.577	4.840

TABLE 2
Descriptive Statistics

	Mean	Median	Standard Deviation	Min	Max
$\Delta \ln XOPR$	0.032	0.033	0.150	-1.387	1.306
$\Delta \ln SALE$	0.030	0.032	0.146	-0.415	0.405
$\ln AINT$	0.012	-0.023	0.643	-6.172	8.216
DEC	0.390	0.000	0.488	0.000	1.000
LAGDEC	0.370	0.000	0.483	0.000	1.000
GDPGROWTH	2.690	2.553	2.791	-17.955	14.781
COMMON	0.577	1.000	0.494	0.000	1.000
ElectionYear	0.262	0.000	0.440	0.000	1.000
GOVINSTABILITY	3.777	3.500	1.773	0.500	9.000
POLRIGHT	6.581	7.000	1.006	1.000	7.000
PCON	0.757	0.773	0.156	0.000	0.894
CHECKS	4.374	4.000	2.427	1.000	18.000
MARGIN	0.173	0.000	0.378	0.000	1.000
LABOR REG	7.146	7.500	1.521	2.800	9.300
JUD_EFF	9.085	10.000	1.623	2.500	10.000
CIFAR	73.197	76.000	6.741	56.000	85.000
DISCLOSE	0.824	0.833	0.178	0.250	1.000
ACC	26.124	22.000	8.569	0.000	63.000
UAI_TK	52.069	46.000	19.054	34.000	86.000
UAI_HF	59.143	46.000	22.443	8.000	112.000
UAI_HOUSE	4.261	4.110	0.470	3.160	5.610

TABLE 3

Estimates of the relationship between election years and cost stickiness

Dependent Variable: $\Delta \ln XOPR$	Sign	Model 1	Model 2	Model 3
$\Delta \ln SALE$	+	0.908*** (308.212)	0.895*** (244.048)	0.893*** (230.431)
$\Delta \ln SALE * ElectionYear$				0.008* (1.956)
$\Delta \ln SALE * COMMON$			-0.017*** (-4.587)	-0.017*** (-4.390)
$\Delta \ln SALE * GDPGROWTH$			0.008*** (8.934)	0.008*** (8.857)
$\Delta \ln SALE * \ln AINT$			-0.021*** (-4.658)	-0.021*** (-4.683)
$DEC * \Delta \ln SALE$	-	-0.071*** (-12.921)	-0.082*** (-12.241)	-0.071*** (-9.679)
$DEC * \Delta \ln SALE * ElectionYear$	-			-0.034*** (-3.677)
$DEC * \Delta \ln SALE * COMMON$	-		-0.021*** (-3.527)	-0.026*** (-4.272)
$DEC * \Delta \ln SALE * GDPGROWTH$	-		-0.017*** (-12.937)	-0.017*** (-12.813)
$DEC * \Delta \ln SALE * \ln AINT$	-		-0.059*** (-8.304)	-0.059*** (-8.324)
$DEC * \Delta \ln SALE * LAGDEC$	+		0.131*** (18.829)	0.132*** (18.949)
Constant		0.002*** (5.624)	0.002*** (6.016)	0.002*** (6.007)
Observations		266,538	266,538	266,538
R-squared		0.756	0.759	0.760

The estimation equation is:

$\Delta \ln XOPR = \beta_0 + (\beta_1 + \beta_2 ElectionYear + \beta_3 COMMON + \beta_4 GDPGROWTH + \beta_5 \ln AINT) \Delta \ln SALE + (\beta_6 + \beta_7 ElectionYear + \beta_8 COMMON + \beta_9 GDPGROWTH + \beta_{10} \ln AINT + \beta_{11} LAGDEC) DEC * \Delta \ln SALE + \varepsilon$
 where $\Delta \ln XOPR$ is the log-change in operating costs; $\Delta \ln SALE$ is the log-change in sales; $GDPGROWTH$ is the real GDP growth rate; $\ln AINT$ is asset intensity (log-ratio of assets to sales); $COMMON$ is a dummy variable equal to one for common-law countries; $ElectionYear$ is a dummy variable equal to one for election years; DEC is a dummy variable equal to one if sales decreased in year t and $LAGDEC$ is a dummy variable equal to one if sales decreased in year $t-1$; ε is an error term. Robust t -statistics clustered at the firm level are reported beneath each estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions and data sources for the variables are provided in the Appendix.

TABLE 4

Robustness Tests

Dependent Variable: $\Delta \ln XOPR$	Sign	U.S. sample (1)	Add country fixed effects (2)	Add countries with less than 100 observations (3)	Drop large economies (4)	Alternative political uncertainty proxy (5)	Alternative election year definition (6)
$\Delta \ln SALE$	+	0.863*** (118.011)	0.941 (0.001)	0.893*** (230.434)	0.906*** (170.508)	0.869*** (144.597)	0.894*** (227.593)
$\Delta \ln SALE * ElectionYear$		0.010* (1.869)	0.010** (2.291)	0.008* (1.956)	-0.002 (-0.314)		0.006 (1.334)
$\Delta \ln SALE * GOVINSTABILITY$						0.006*** (5.604)	
$\Delta \ln SALE * COMMON$				-0.017*** (-4.391)	-0.010 (-1.532)	-0.014*** (-3.659)	-0.017*** (-4.566)
$\Delta \ln SALE * GDPGROWTH$		0.011*** (5.280)	0.007*** (5.191)	0.008*** (8.857)	0.007*** (6.392)	0.009*** (9.527)	0.009*** (8.960)
$\Delta \ln SALE * \ln AINT$		-0.012** (-2.075)	-0.022*** (-4.793)	-0.021*** (-4.683)	-0.040*** (-6.451)	-0.021*** (-4.576)	-0.021*** (-4.681)
$DEC * \Delta \ln SALE$	-	-0.081*** (-7.100)	-0.090*** (-3.117)	-0.071*** (-9.679)	-0.051*** (-4.982)	-0.023* (-1.944)	-0.072*** (-9.921)
$DEC * \Delta \ln SALE * ElectionYear$	-	-0.050*** (-3.740)	-0.036*** (-3.851)	-0.034*** (-3.677)	-0.028** (-2.184)		-0.036*** (-3.658)
$DEC * \Delta \ln SALE * GOVINSTABILITY$	-					-0.013*** (-6.305)	
$DEC * \Delta \ln SALE * COMMON$	-			-0.026*** (-4.272)	0.001 (0.059)	-0.036*** (-5.287)	-0.025*** (-4.113)
$DEC * \Delta \ln SALE * GDPGROWTH$	-	-0.028*** (-10.854)	-0.020*** (-11.839)	-0.017*** (-12.813)	-0.008*** (-4.463)	-0.018*** (-13.527)	-0.017*** (-12.597)
$DEC * \Delta \ln SALE * \ln AINT$	-	-0.074*** (-8.121)	-0.065*** (-8.835)	-0.059*** (-8.324)	-0.056*** (-5.548)	-0.060*** (-8.372)	-0.059*** (-8.299)
$DEC * \Delta \ln SALE * LAGDEC$	+	0.154*** (16.350)	0.134*** (19.104)	0.132*** (18.949)	0.074*** (7.810)	0.132*** (18.963)	0.131*** (18.838)
Constant		0.002*** (5.916)	0.002*** (5.787)	0.002*** (6.007)	0.003*** (8.011)	0.002*** (5.895)	0.002*** (5.967)
$\Delta \ln SALE * COUNTRYEFFECTS$		NO	YES	NO	NO	NO	NO
$DEC * \Delta \ln SALE * COUNTRYEFFECTS$		NO	YES	NO	NO	NO	NO
Observations		82,574	266,538	267,489	103,056	266,402	266,538
R-squared		0.738	0.760	0.760	0.730	0.760	0.760

The estimation equation is:

$$\Delta \ln XOPR = \beta_0 + (\beta_1 + \beta_2 ElectionYear + \beta_3 COMMON + \beta_4 GDPGROWTH + \beta_5 \ln AINT) \Delta \ln SALE + (\beta_6 + \beta_7 ElectionYear + \beta_8 COMMON + \beta_9 GDPGROWTH + \beta_{10} \ln AINT + \beta_{11} LAGDEC) DEC * \Delta \ln SALE + \varepsilon$$

where $\Delta \ln XOPR$ is the log-change in operating costs; $\Delta \ln SALE$ is the log-change in sales; $GDPGROWTH$ is the real GDP growth rate; $\ln AINT$ is asset intensity (log-ratio of assets to sales); $COMMON$ is a dummy variable equal to one for common-law countries; $ElectionYear$ is a dummy variable equal to one for election years; DEC is a dummy variable equal to one if sales decreased in year t and $LAGDEC$ is a dummy variable equal to one if sales decreased

in year $t-1$; ε is an error term. Model 1 considers only U.S. firms. Model 2 controls for the country fixed effects. Model 3 includes countries with less than 100 observations. Model 4 drops large economies from the sample. Model 5 considers an alternative proxy of political uncertainty. Robust t -statistics clustered at the firm level are reported beneath each estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions and data sources for the variables are provided in the Appendix.

TABLE 5
Alternative Model

Dependent Variable: $\Delta \ln XOPR$	Sign	Total sample (1)	U.S. sample (2)	Alternative political uncertainty proxy (3)
$\Delta \ln SALE * LAGINC$	+	0.934*** (233.495)	0.905*** (126.635)	0.913*** (150.154)
$\Delta \ln SALE * LAGDEC$	+	0.784*** (124.056)	0.730*** (68.980)	0.749*** (59.259)
$\Delta \ln SALE * LAGINC * ElectionYear$		0.000 (0.040)	0.005 (0.978)	
$\Delta \ln SALE * LAGINC * GOVINSTABILITY$				0.005*** (4.146)
$\Delta \ln SALE * LAGDEC * ElectionYear$		0.035*** (3.242)	0.043*** (2.867)	
$\Delta \ln SALE * LAGDEC * GOVINSTABILITY$				0.011*** (3.923)
$\Delta \ln SALE * COMMON$		-0.025*** (-6.511)		-0.020*** (-5.415)
$\Delta \ln SALE * GDPGROWTH$		0.009*** (9.380)	0.009*** (4.713)	0.009*** (9.929)
$\Delta \ln SALE * \ln AINT$		-0.016*** (-3.603)	-0.008 (-1.425)	-0.015*** (-3.518)
$DEC * \Delta \ln SALE * LAGINC$	-	-0.112*** (-14.652)	-0.120*** (-10.285)	-0.081*** (-5.662)
$DEC * \Delta \ln SALE * LAGDEC$	+	0.172*** (19.028)	0.206*** (15.876)	0.243*** (14.251)
$DEC * \Delta \ln SALE * LAGINC * ElectionYear$	-	-0.025* (-1.889)	-0.051*** (-2.651)	
$DEC * \Delta \ln SALE * LAGINC * GOVINSTABILITY$	-			-0.007** (-2.311)
$DEC * \Delta \ln SALE * LAGDEC * ElectionYear$	-	-0.062*** (-4.116)	-0.078*** (-3.632)	
$DEC * \Delta \ln SALE * LAGDEC * GOVINSTABILITY$	-			-0.022*** (-6.085)
$DEC * \Delta \ln SALE * COMMON$	-	-0.019*** (-3.013)		-0.030*** (-4.380)
$DEC * \Delta \ln SALE * GDPGROWTH$	-	-0.017*** (-13.166)	-0.027*** (-10.413)	-0.019*** (-13.897)
$DEC * \Delta \ln SALE * \ln AINT$	-	-0.064*** (-9.096)	-0.078*** (-8.582)	-0.064*** (-9.077)
Constant		0.002*** (6.533)	0.003*** (6.601)	0.002*** (6.448)
Observations		266,538	82,574	266,402
R-squared		0.762	0.741	0.762

The estimation equation is:

$$\Delta \ln XOPR = \beta_0 + (\beta_1^{OPT} LAGINC + \beta_1^{PES} LAGDEC + \beta_2^{OPT} LAGINC * ElectionYear + \beta_2^{PES} LAGDEC * ElectionYear + \beta_3 COMMON + \beta_4 GDPGROWTH + \beta_5 \ln AINT) \Delta \ln SALE + (\beta_6^{OPT} LAGINC + \beta_6^{PES} LAGDEC + \beta_7^{OPT} LAGINC * ElectionYear + \beta_7^{PES} LAGDEC * ElectionYear + \beta_8 COMMON + \beta_9 GDPGROWTH + \beta_{10} \ln AINT) DEC * \Delta \ln SALE + \varepsilon$$

where $\Delta \ln XOPR$ is the log-change in operating costs; $\Delta \ln SALE$ is the log-change in sales; $GDPGROWTH$ is the real GDP growth rate; $\ln AINT$ is asset intensity (log-ratio of assets to sales); $COMMON$ is a dummy variable equal to one for common-law countries; $ElectionYear$ is a dummy variable equal to one for election years; DEC is a dummy variable equal to one if sales decreased in year t , $LAGINC$ is a dummy variable equal to one if sales increased in year $t-1$; and $LAGDEC$ is a dummy variable equal to one if sales decreased in year $t-1$; ε is an error term. Model 1 considers the total sample. Model 2 considers only U.S. firms. Model 3 considers an alternative proxy of political uncertainty. Robust t -statistics clustered at the firm level are reported beneath each estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions and data sources for the variables are provided in the Appendix.

TABLE 6

Subsample Analysis: Political Variables

Dependent Variable: $\Delta \ln XOPR$	Sign	<i>POLRIGHTS</i> Low (1)	<i>POLRIGHTS</i> High (2)	<i>PCON</i> Low (3)	<i>PCON</i> High (4)	<i>CHECKS</i> Low (5)	<i>CHECKS</i> High (6)	<i>MARGIN</i> High (7)	<i>MARGIN</i> Low (8)
$\Delta \ln SALE$	+	0.905*** (125.355)	0.909*** (234.310)	0.916*** (244.168)	0.896*** (142.196)	0.915*** (192.569)	0.895*** (213.421)	0.917*** (222.455)	0.880*** (92.124)
$\Delta \ln SALE * ElectionYear$		-0.004 (-0.612)	0.001 (0.370)	-0.006 (-1.532)	0.007 (1.480)	0.006 (0.998)	-0.003 (-0.852)	-0.009** (-1.995)	0.008 (1.190)
$\Delta \ln SALE * COMMON$		0.044*** (6.119)	-0.024*** (-7.025)	0.024*** (5.408)	-0.031*** (-5.749)	0.004 (0.596)	-0.006 (-1.605)	-0.019*** (-4.828)	0.005 (0.508)
$\Delta \ln SALE * GDPGROWTH$		0.001 (1.118)	0.007*** (7.001)	0.002*** (3.677)	0.011*** (7.640)	0.004*** (4.005)	0.008*** (11.269)	0.006*** (6.151)	0.006*** (5.016)
$\Delta \ln SALE * \ln AINT$		-0.067*** (-10.249)	-0.024*** (-6.210)	-0.054*** (-11.523)	-0.017*** (-3.699)	-0.041*** (-7.212)	-0.032*** (-8.305)	-0.030*** (-7.241)	-0.031*** (-3.871)
$DEC * \Delta \ln SALE$	-	-0.046*** (-3.327)	-0.078*** (-11.612)	-0.072*** (-10.214)	-0.065*** (-5.741)	-0.066*** (-7.343)	-0.063*** (-7.980)	-0.093*** (-12.094)	-0.062*** (-3.373)
$DEC * \Delta \ln SALE * ElectionYear$	-	0.008 (0.592)	-0.017* (-2.136)	0.020** (2.430)	-0.033*** (-3.080)	0.000 (0.012)	-0.016* (-1.785)	0.014 (1.558)	-0.051*** (-3.106)
$DEC * \Delta \ln SALE * COMMON$	-	-0.012 (-1.013)	-0.025*** (-4.186)	0.001 (0.075)	-0.019* (-1.906)	0.001 (0.088)	-0.031*** (-4.527)	-0.014* (-1.899)	-0.080*** (-4.882)
$DEC * \Delta \ln SALE * GDPGROWTH$	-	-0.001 (-0.899)	-0.015*** (-10.924)	-0.003*** (-2.685)	-0.020*** (-10.344)	-0.006*** (-4.103)	-0.007*** (-6.417)	-0.009*** (-6.130)	0.006*** (2.698)
$DEC * \Delta \ln SALE * \ln AINT$	-	0.004 (0.353)	-0.070*** (-11.019)	-0.022*** (-2.920)	-0.068*** (-8.826)	-0.053*** (-5.967)	-0.039*** (-6.203)	-0.064*** (-8.980)	-0.030** (-2.148)
$DEC * \Delta \ln SALE * LAGDEC$	+	0.045*** (4.357)	0.116*** (19.945)	0.067*** (10.568)	0.128*** (16.166)	0.084*** (10.225)	0.101*** (16.183)	0.113*** (16.903)	0.116*** (9.012)
Constant		0.003*** (6.561)	0.001*** (6.506)	0.002*** (6.792)	0.002*** (6.401)	0.003*** (8.551)	0.002*** (6.136)	0.002*** (6.146)	0.003*** (5.503)
p-value for difference in the β_7		0.10		0.00		0.26		0.00	
Observations		56,741	209,612	139,626	126,912	76,318	190,202	163,159	46,178
R-squared		0.754	0.756	0.788	0.723	0.807	0.737	0.751	0.738

The estimation equation is:

$$\Delta \ln XOPR = \beta_0 + (\beta_1 + \beta_2 ElectionYear + \beta_3 COMMON + \beta_4 GDPGROWTH + \beta_5 \ln AINT) \Delta \ln SALE + (\beta_6 + \beta_7 ElectionYear + \beta_8 COMMON + \beta_9 GDPGROWTH + \beta_{10} \ln AINT + \beta_{11} LAGDEC) DEC * \Delta \ln SALE + \varepsilon$$

where $\Delta \ln XOPR$ is the log-change in operating costs; $\Delta \ln SALE$ is the log-change in sales; $GDPGROWTH$ is the real GDP growth rate; $\ln AINT$ is asset intensity (log-ratio of assets to sales); $COMMON$ is a dummy variable equal to one for common-law countries; $ElectionYear$ is a dummy variable equal to one for election years; DEC is a dummy variable equal to one if sales decreased in year t and $LAGDEC$ is a dummy variable equal to one if sales decreased in year t-1; ε is an error term. Robust t -statistics clustered at the firm level are reported beneath each estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions and data sources for the variables are provided in the Appendix.

TABLE 7

Subsample Analysis: Legal Variables

Dependent Variable: $\Delta \ln XOPR$	Sign	COMMON =0 (1)	COMMON =1 (2)	Labor Regulation Weak (3)	Labor Regulation Stringent (4)	Judicial Efficiency Low (5)	Judicial Efficiency High (6)
$\Delta \ln SALE$	+	0.915*** (228.397)	0.886*** (199.683)	0.910*** (195.902)	0.907*** (224.105)	0.920*** (186.138)	0.897*** (211.150)
$\Delta \ln SALE * ElectionYear$		-0.003 (-0.544)	0.000 (0.053)	-0.006 (-1.277)	0.003 (0.726)	-0.012** (-2.132)	0.008** (2.054)
$\Delta \ln SALE * COMMON$				-0.030*** (-6.899)	0.010** (2.311)	0.015** (2.414)	-0.007* (-1.704)
$\Delta \ln SALE * GDPGROWTH$		0.004*** (4.099)	0.008*** (11.027)	0.008*** (10.328)	0.003*** (4.355)	0.003*** (3.017)	0.006*** (6.088)
$\Delta \ln SALE * \ln AINT$		-0.054*** (-9.593)	-0.027*** (-6.574)	-0.025*** (-5.472)	-0.041*** (-8.816)	-0.057*** (-9.488)	-0.025*** (-6.142)
$DEC * \Delta \ln SALE$	-	-0.076*** (-10.387)	-0.084*** (-10.635)	-0.080*** (-8.210)	-0.061*** (-8.202)	-0.063*** (-6.662)	-0.071*** (-9.399)
$DEC * \Delta \ln SALE * ElectionYear$	-	0.008 (0.894)	-0.023** (-2.328)	0.012 (1.114)	-0.027*** (-2.924)	0.011 (1.044)	-0.024*** (-2.703)
$DEC * \Delta \ln SALE * COMMON$				0.003 (0.318)	-0.056*** (-7.257)	0.022** (2.182)	-0.039*** (-6.092)
$DEC * \Delta \ln SALE * GDPGROWTH$	-	-0.006*** (-4.702)	-0.006*** (-5.451)	-0.010*** (-7.522)	-0.002* (-1.778)	-0.004** (-2.431)	-0.012*** (-8.323)
$DEC * \Delta \ln SALE * \ln AINT$	-	-0.028*** (-3.142)	-0.048*** (-7.249)	-0.044*** (-5.595)	-0.042*** (-5.512)	-0.007 (-0.774)	-0.068*** (-10.154)
$DEC * \Delta \ln SALE * LAGDEC$	+	0.082*** (11.890)	0.104*** (14.931)	0.107*** (14.095)	0.086*** (12.835)	0.053*** (6.398)	0.122*** (18.963)
Constant		0.001*** (4.840)	0.002*** (8.135)	0.001*** (4.493)	0.002*** (8.835)	0.003*** (9.049)	0.001*** (5.499)
p-value for difference in the β_7			0.01		0.00		0.01
Observations		112,735	153,803	120,161	146,107	78,664	182,746
R-squared		0.802	0.729	0.753	0.756	0.771	0.749

The estimation equation is:

$$\Delta \ln XOPR = \beta_0 + (\beta_1 + \beta_2 ElectionYear + \beta_3 COMMON + \beta_4 GDPGROWTH + \beta_5 \ln AINT) \Delta \ln SALE + (\beta_6 + \beta_7 ElectionYear + \beta_8 COMMON + \beta_9 GDPGROWTH + \beta_{10} \ln AINT + \beta_{11} LAGDEC) DEC * \Delta \ln SALE + \varepsilon$$

where $\Delta \ln XOPR$ is the log-change in operating costs; $\Delta \ln SALE$ is the log-change in sales; $GDPGROWTH$ is the real GDP growth rate; $\ln AINT$ is asset intensity (log-ratio of assets to sales); $COMMON$ is a dummy variable equal to one for common-law countries; $ElectionYear$ is a dummy variable equal to one for election years; DEC is a dummy variable equal to one if sales decreased in year t and $LAGDEC$ is a dummy variable equal to one if sales decreased in year $t-1$; ε is an error term. Robust t -statistics clustered at the firm level are reported beneath each estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions and data sources for the variables are provided in the Appendix.

TABLE 8

Subsample Analysis: Disclosure Variables

Dependent Variable: $\Delta \ln XOPR$	Sign	DISCLOSE Low (1)	DISCLOSE High (2)	CIFAR Low (3)	CIFAR High (4)	ACC Low (5)	ACC High (6)
$\Delta \ln SALE$	+	0.916*** (224.214)	0.792*** (17.659)	0.912*** (233.282)	0.907*** (131.066)	0.920*** (201.368)	0.893*** (194.698)
$\Delta \ln SALE * ElectionYear$		-0.002 (-0.357)	0.002 (0.350)	-0.006 (-1.304)	0.005 (0.978)	-0.013** (-2.399)	0.011*** (2.868)
$\Delta \ln SALE * COMMON$		-0.013 (-1.410)	0.092** (2.069)	-0.001 (-0.232)	-0.019*** (-2.942)	0.013** (2.513)	-0.019*** (-4.879)
$\Delta \ln SALE * GDPGROWTH$		0.004*** (3.700)	0.008*** (11.472)	0.006*** (6.280)	0.007*** (7.046)	0.003*** (4.059)	0.008*** (7.350)
$\Delta \ln SALE * \ln AINT$		-0.049*** (-8.902)	-0.026*** (-6.177)	-0.058*** (-10.878)	-0.017*** (-3.852)	-0.044*** (-8.716)	-0.026*** (-5.844)
$DEC * \Delta \ln SALE$	-	-0.080*** (-10.763)	0.046 (0.955)	-0.070*** (-9.671)	-0.079*** (-6.524)	-0.069*** (-7.760)	-0.062*** (-7.757)
$DEC * \Delta \ln SALE * ElectionYear$	-	0.011 (1.141)	-0.030*** (-2.979)	0.018** (2.081)	-0.032*** (-2.952)	0.011 (1.029)	-0.038*** (-4.387)
$DEC * \Delta \ln SALE * COMMON$	-	0.016 (0.948)	-0.132*** (-2.753)	0.005 (0.465)	-0.016 (-1.416)	0.001 (0.089)	-0.037*** (-5.324)
$DEC * \Delta \ln SALE * GDPGROWTH$	-	-0.006*** (-4.314)	-0.006*** (-5.375)	-0.005*** (-4.201)	-0.010*** (-6.178)	-0.001 (-0.564)	-0.019*** (-12.127)
$DEC * \Delta \ln SALE * \ln AINT$	-	-0.030*** (-3.252)	-0.050*** (-7.426)	-0.032*** (-3.620)	-0.055*** (-7.864)	-0.027*** (-3.467)	-0.066*** (-8.961)
$DEC * \Delta \ln SALE * LAGDEC$	+	0.079*** (11.179)	0.108*** (15.174)	0.070*** (10.507)	0.122*** (15.965)	0.057*** (7.302)	0.129*** (19.317)
Constant		0.001*** (4.395)	0.003*** (8.498)	0.001*** (5.075)	0.002*** (7.571)	0.003*** (8.253)	0.001*** (5.427)
p-value for difference in the β_7		0.00		0.00		0.00	
Observations		118,131	143,279	121,639	136,330	102,377	158,504
R-squared		0.786	0.737	0.794	0.728	0.752	0.762

The estimation equation is:

$$\Delta \ln XOPR = \beta_0 + (\beta_1 + \beta_2 ElectionYear + \beta_3 COMMON + \beta_4 GDPGROWTH + \beta_5 \ln AINT) \Delta \ln SALE + (\beta_6 + \beta_7 ElectionYear + \beta_8 COMMON + \beta_9 GDPGROWTH + \beta_{10} \ln AINT + \beta_{11} LAGDEC) DEC * \Delta \ln SALE + \varepsilon$$

where $\Delta \ln XOPR$ is the log-change in operating costs; $\Delta \ln SALE$ is the log-change in sales; $GDPGROWTH$ is the real GDP growth rate; $\ln AINT$ is asset intensity (log-ratio of assets to sales); $COMMON$ is a dummy variable equal to one for common-law countries; $ElectionYear$ is a dummy variable equal to one for election years; DEC is a dummy variable equal to one if sales decreased in year t and $LAGDEC$ is a dummy variable equal to one if sales decreased in year $t-1$; ε is an error term. Robust t -statistics clustered at the firm level are reported beneath each estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions and data sources for the variables are provided in the Appendix.

TABLE 9

Subsample Analysis: Cultural Variables

Dependent Variable: $\Delta \ln XOPR$	Sign	UAI_HF High (1)	UAI_HF Low (2)	UAI_TK High (3)	UAI_TK Low (4)	UAI_HOUSE High (5)	UAI_HOUSE Low (6)
$\Delta \ln SALE$	+	0.911*** (224.312)	0.864*** (71.493)	0.913*** (232.357)	0.881*** (158.493)	0.915*** (232.627)	0.907*** (156.310)
$\Delta \ln SALE * ElectionYear$		0.002 (0.487)	-0.002 (-0.406)	-0.005 (-1.162)	0.005 (0.921)	-0.007 (-1.563)	0.006 (1.211)
$\Delta \ln SALE * COMMON$		-0.016** (-2.534)	0.025** (2.120)	0.014*** (2.613)		0.025*** (4.475)	-0.021*** (-3.999)
$\Delta \ln SALE * GDPGROWTH$		0.005*** (5.611)	0.007*** (10.401)	0.004*** (5.066)	0.008*** (6.541)	0.004*** (4.307)	0.006*** (5.953)
$\Delta \ln SALE * \ln AINT$		-0.050*** (-9.358)	-0.024*** (-5.487)	-0.051*** (-10.203)	-0.017*** (-3.710)	-0.063*** (-11.417)	-0.017*** (-4.076)
$DEC * \Delta \ln SALE$	-	-0.066*** (-8.805)	-0.056*** (-3.265)	-0.073*** (-9.980)	-0.084*** (-8.833)	-0.067*** (-9.086)	-0.082*** (-7.663)
$DEC * \Delta \ln SALE * ElectionYear$	-	-0.003 (-0.334)	-0.021** (-2.053)	0.026*** (3.024)	-0.032*** (-2.739)	0.025*** (2.923)	-0.039*** (-3.689)
$DEC * \Delta \ln SALE * COMMON$	-	-0.022** (-1.998)	-0.037** (-2.313)	-0.023** (-2.525)		0.018* (1.907)	-0.022** (-2.372)
$DEC * \Delta \ln SALE * GDPGROWTH$	-	-0.010*** (-6.856)	-0.005*** (-4.041)	-0.002 (-1.576)	-0.015*** (-7.988)	-0.007*** (-5.291)	-0.011*** (-6.667)
$DEC * \Delta \ln SALE * \ln AINT$	-	-0.045*** (-5.097)	-0.043*** (-6.353)	-0.025*** (-3.049)	-0.059*** (-7.918)	-0.012 (-1.431)	-0.070*** (-9.788)
$DEC * \Delta \ln SALE * LAGDEC$	+	0.081*** (11.576)	0.110*** (15.111)	0.072*** (10.643)	0.126*** (15.269)	0.061*** (8.754)	0.125*** (16.870)
Constant		0.001*** (5.049)	0.003*** (8.259)	0.001*** (5.449)	0.002*** (6.588)	0.002*** (5.982)	0.002*** (7.060)
p-value for difference in the β_7		0.18		0.00		0.00	
Observations		130,124	133,776	133,844	116,630	113,003	144,875
R-squared		0.770	0.743	0.786	0.722	0.796	0.729

The estimation equation is:

$$\Delta \ln XOPR = \beta_0 + (\beta_1 + \beta_2 ElectionYear + \beta_3 COMMON + \beta_4 GDPGROWTH + \beta_5 \ln AINT) \Delta \ln SALE + (\beta_6 + \beta_7 ElectionYear + \beta_8 COMMON + \beta_9 GDPGROWTH + \beta_{10} \ln AINT + \beta_{11} LAGDEC) DEC * \Delta \ln SALE + \varepsilon$$

where $\Delta \ln XOPR$ is the log-change in operating costs; $\Delta \ln SALE$ is the log-change in sales; $GDPGROWTH$ is the real GDP growth rate; $\ln AINT$ is asset intensity (log-ratio of assets to sales); $COMMON$ is a dummy variable equal to one for common-law countries; $ElectionYear$ is a dummy variable equal to one for election years; DEC is a dummy variable equal to one if sales decreased in year t and $LAGDEC$ is a dummy variable equal to one if sales decreased in year t-1; ε is an error term. Robust t -statistics clustered at the firm level are reported beneath each estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions and data sources for the variables are provided in the Appendix.