Managerial Response to Macroeconomic Uncertainty: Implications for Firm Profitability

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1 Introduction

Understanding the causes of corporate profitability is an important factor for a wide range of issues in accounting and finance (Penman 1992, Fama and French 2006, Kothari et al. 2010). In this paper I evaluate how uncertainty about the macroeconomy affects consumers and managers' decision making and how their resulting actions impact firm profitability. My investigation is motivated by two factors. First, the existing literature that considers the influence of the macroeconomy on firm profitability generally focuses on the role of aggregate macroeconomic growth expectations (Ball et al. 2009, Bonsall et al. 2013, Li et al. 2014). However, research in macroeconomics shows that uncertainty about the state of the macroeconomy has a much larger effect on consumers and managers than whether the economy will expand or contract (Baker and Bloom 2013).[1] Despite the importance of macroeconomic uncertainty, systematic empirical evidence on how agents' reactions to macroeconomic uncertainty impact corporate profitability is lacking.[2]

Second, the relationship between macroeconomic uncertainty and corporate profitability is theoretically ambiguous. Profitability is a result of the interplay among consumption, output, and investment, which determine revenues and costs. On the one hand, precautionary savings theory predicts that risk-averse consumers respond to macroeconomic uncertainty by increasing their savings and decreasing their consumption to hedge against negative personal income shocks (Leland et al. 1968, Sandmo 1970, Dreze and Modigliani 1975). The resulting decrease in purchases reduces firms' revenues. Similarly, real options theory predicts that macroeconomic uncertainty increases consumers' incentives to delay purchase decisions, especially if the value of the good or service under consideration comprises a large share of the consumer's wealth, again leading to a reduction in revenues (Romer 1990, Eberly 1994).

[1] The macroeconomics literature often refers to aggregate growth expectations and uncertainty as aggregate first and second moments.

[2] Knight (1921) distinguishes between risk and uncertainty. A chance experiment is risky when one knows the probability distribution of all possible outcomes. In contrast, a chance experiment is uncertain if one does not know the outcomes' associated probabilities. This paper follows Bloom (2014) and understands uncertainty as a mixture of Knightian risk and uncertainty.

Thus, theory predicts that macroeconomic uncertainty lowers demand and subsequent corporate revenues.

On the other hand, consumers are not the only agents affected by macroeconomic uncertainty. Rational expectation models featuring belief fragility (Hansen and Sargent 2010) and behavioral models featuring loss aversion (Kahneman and Tversky 1979) predict that risk-averse managers assume the worst-case scenario when facing macroeconomic uncertainty, inducing them to cut costs. In response to high macroeconomic uncertainty, managers reduce capital spending, hiring, and advertising (Stein and Stone 2013), which results in a negative relation between macroeconomic uncertainty and firms' expenses. Similarly, macroeconomic uncertainty induces managers to wait and see before investing, which reduces expenses deriving from current-period investment such as depreciation (Bloom 2009). Hence, theory also predicts that macroeconomic uncertainty induces managers to cut costs via halting investment which lowers expenses.

While theory can guide predictions about the directional response of revenues and expenses to macroeconomic uncertainty, the net effect on corporate profitability is thus unclear and depends ultimately on the relative strength of the revenue and expense responses. If the reduction in expenses offsets the reduction in sales, which is plausible given that investment is more inter-temporally substitutable than consumption (Basu and Bundick 2017), the resulting relation between profitability and macroeconomic uncertainty is positive. On the contrary, if managers do not scale back sufficiently to offset the reduction in sales (Anderson et al. 2003), the relation is negative.

To analyze the effect of macroeconomic uncertainty on profitability, I employ Baker et al.'s (2016) Economic Policy Uncertainty Index (EPUI), which spikes in response to uncertainty shocks, such as the Gulf Wars, 9/11, and the Lehman collapse, as a measure for macroeconomic uncertainty. I then examine the relationship between macroeconomic uncertainty and quarterly corporate profitability for a sample of US firms spanning the 1988 to 2018 period. Consistent with consumers reducing purchases in response to macroeconomic uncertainty

and managers anticipating and counteracting the resulting adverse demand shock via cutting costs, I find that the relation between macroeconomic uncertainty and both revenues and expenses is negative. The effect persists for approximately four quarters, which is consistent with Bloom (2009) and Bloom et al.'s (2018) model predictions. Further, once uncertainty is resolved approximately six quarters after the initial shock, the pent-up aggregate demand is released, leading to higher revenues and production in quarters six to eight. However, the net effect on profitability is positive and persists for five quarters. Managers' cost-cutting efforts more than offset the negative demand shock caused by macroeconomic uncertainty.

The reduction in expenses can potentially take several forms, including aspects of cost of goods sold (COGS), net operating expenses, and net non-operating expenses. For example, managers may use cheaper materials, decrease spending on advertising, or reduce Property, Plant and Equipment (PPE), respectively. To examine which cost-cutting activities are most responsible for the increase in profitability, I examine gross profit and operating profit in detail. I observe that both COGS and gross profit are negatively associated with macroeconomic uncertainty, consistent with demand decreases overwhelming any cost-cutting measures with respect to COGS. However, the macroeconomic uncertainty-profitability relation turns increasingly positive when moving down the income statement. Specifically, macroeconomic uncertainty is positively (negatively) associated with operating income (operating expenses). This implies that while cost-cutting in COGS by itself is not sufficient to generate profits in response to macroeconomic uncertainty, decreases in COGS in conjunction with operating expenses, such as Sales, General, and Administrative expenses (SG&A) and depreciation, are sufficient. Moreover, profitability increases further after considering non-operating expenses, such as financing costs and gains and losses on the sale of capital, to arrive at bottom-line earnings (Bartov 1993).

To increase the external validity of my findings, I re-estimate all tests for an international sample. Whether these quarterly profitability results extend to countries beyond the US is unclear given different institutional and financial reporting environments. Many countries,

notably the United Kingdom, China, and Germany, do not require quarterly reporting as the US does, which requires an analysis of profitability at the annual level. To capture macroeconomic uncertainty in economies outside of the US, I measure aggregate growth expectations and uncertainty via MSCI World Index returns and Baker et al.'s (2016) Global Economic Policy Uncertainty Index. I am able to confirm the inferences obtained from the US sample internationally. That is, in response to macroeconomic uncertainty shocks, revenues and expenses decrease but profits increase and the positive association between profitability and macroeconomic uncertainty begins to occur with operating income.

Beyond external validity, the international setting enables further assessment of the operating costs that are adjusted to facilitate the increasing relationship between macroeconomic uncertainty and corporate profitability. Specifically, employment protection legislation (EPL) varies across countries, which enables an analysis of labor cost-cutting. Managers' ability to cut net operating expenses, in which salary expenses typically concentrate, is restrained in countries with strong EPL. I, therefore, examine how the effect of macroeconomic uncertainty on corporate outcomes varies with EPL. While revenues and COGS remain unaffected, macroeconomic uncertainty's negative effect on net operative expenses and positive effect on operating profit and overall earnings are attenuated in countries with strong EPL. In economic terms, moving from a low (USA) to a high (China) EPL regime erases more than half of the positive effect of macroeconomic uncertainty on bottom-line earnings. Thus, the analysis of international data indicates that resource adjustment costs, in this case emanating from EPL, constrain managers' ability to counteract negative macroeconomic uncertainty demand shocks.

The interpretation of the empirical regularities I document assumes exogeneity of macroeconomic uncertainty. While this assumption appears reasonable under the notion that an individual firm's fate is unlikely to drive domestic or international economic policy uncertainty, recent literature suggests such a possibility. Gabaix (2011) shows that idiosyncratic firm-level shocks cause macroeconomic movements in economies with firm size distributions

following power laws. Similarly, firms' increased risk-taking in bad times can cause uncertainty at the aggregate level (Bachmann et al. 2011, Tian 2015, Decker et al. 2016). To avoid the reverse causality concern that financial profitability of certain firms drives economic policy uncertainty and thereby the association I document, I turn to an instrumental variable approach. Specifically, I follow Baker and Bloom (2013) and extend the analysis by exploiting exogenous variation arising from natural disasters, political shocks, revolutions, and terrorist attacks within a 2SLS framework. My inferences remain unchanged, suggesting reverse causality is not an explanation for my findings.

This paper contributes to the literature in several ways. First, I extend the literature exploring the effects of macroeconomic uncertainty on managers and consumers and the resulting consequences for corporate outcomes.[3] While studies in this literature generally focus on firms' investment decisions, I test how macroeconomic uncertainty affects firms' revenues, expense structures, and the resulting net effect on profitability. Most closely related to my study, a small number of papers employ surveys and small sample evidence to examine the relation between volatility in macroeconomic variables and contemporaneous corporate profitability and find mixed results (Musa 2014, Kemuma 2015, Demir 2009, Bayar and Ceylan 2017).

Second, the paper adds to the large earnings forecasting literature. Following early work by Kinney (1971), Foster (1977) and Watts and Leftwich (1977), researchers have, among other things, examined how accrual persistence, analyst bias, risk-taking, agency conflicts, mean reversion, firm-level uncertainty, and GDP forecasts affect future profitability.[4] I contribute to this literature by documenting a positive effect of macroeconomic uncertainty on future corporate profitability and by identifying managers' underlying cost cutting techniques responsible for this effect.

Third, the paper answers Dechow et al.'s (2010) call for research on the effects of macroe-

[3]See Bloom (2014) for a review of this literature.

[4]See e.g. Sloan (1996), Schipper (1991), Bradshaw et al. (2001), Fama and French (2000, 2006), Dichev and Tang (2009), Hou et al. (2012), Li et al. (2014), Carabias (2018).

conomic conditions on corporate outcomes more generally and Shivakumar's (2010) call for research on how the macroeconomy affects corporate earnings more specifically. This literature has received growing attention recently. Among other things, previous papers examine reciprocal effects between macroeconomic uncertainty and management guidance (Rogers et al. 2009, Kim et al. 2015, Binz and Mayew 2015), how inflation and macroeconomic uncertainty affect investors' assessment of firms financial statements (Chordia and Shivakumar 2005, Basu et al. 2010, Konchitchki 2011), whether and how aggregate fluctuations impact contemporaneous corporate profitability (Ball et al. 2009, Bonsall et al. 2013), whether analysts with access to in-house macroeconomists provide more accurate earnings forecasts (Hugon et al. 2015), and whether macroeconomic estimation errors affect firms' investment, production, and profitability (Binz et al. 2017).

2 Literature Review and Hypothesis Development

2.1 Literature Review

The interplay of consumers' purchasing and managers' investing decisions ultimately underpin corporate profitability, but research on the effects of macroeconomic uncertainty on profitability is scarce. Ample theoretical and empirical work, however, does focus on the effects of macroeconomic uncertainty on consumption and investment. Real options theory and risk aversion are two key tenets of this literature, which I discuss in turn.[5,6]

[5]For a detailed review of this literature see Bloom (2014).

[6]While this paper is concerned with how macroeconomic developments affect corporate outcomes, a recent stream of literature in accounting takes the opposite approach by examining the effects of aggregated corporate outcomes on the macroeconomy. See e.g. Kothari et al. (2006), Anilowski et al. (2007), Shivakumar (2007), Sadka (2007), Sadka and Sadka (2009), Cready and Gurun (2010), Jorgensen et al. (2012), Konchitchki and Patatoukas (2014a,b), Patatoukas (2014), Gkougkousi (2014), Gallo et al. (2016), Kalay et al. (2016), Choi et al. (2016), Nallareddy and Ogneva (2016), Shivakumar and Urcan (2017), Hann et al. (2017), Gallo et al. (2018), Shevlin et al. (2019).

2.1.1 Real Options

Investment opportunities give rise to real options whose value increases in macroeconomic uncertainty. Different types of real options either encourage or discourage investment. On the one hand, sizing options give firms the flexibility to tailor the scale of their operations to future business conditions (Oi 1961, Hartman 1972, Abel 1983). For example, consider a manager contemplating the purchase of a machine, which would allow her to quickly and inexpensively adjust the firm's production volume to market demand. In this case, high macroeconomic uncertainty encourages the purchase as the manager obtains the option to limit downside by cutting production when demand turns out to be low and to maintain upside by ramping up production when demand turns out to be high. Consistent with the presence of sizing options, Paddock et al. (1988) find that uncertainty increases the value of oil drilling leases.

On the other hand, in the presence of asymmetric adjustment costs, for example, when it is more costly for firms to reduce than to increase their capital stocks, macroeconomic uncertainty increases the value of the option to delay investment (Bernanke 1983, McDonald and Siegel 1986). When uncertainty about the future state of the economy is high, managers prefer to wait and see before making costly investments to increase capacity until they have a better idea of how much capacity will be required to fulfill demand. Accordingly, in Bloom (2009) and Bloom et al.'s (2018) models, business conditions have to improve (deteriorate) more when macroeconomic uncertainty is high before managers invest (divest). In other words, their region of inaction expands. In consequence, investment and production contract. Similarly, the option to delay paired with high macroeconomic uncertainty can also decrease consumption. Romer (1990) and Eberly (1994) argue and find that consumers prefer to wait and see until uncertainty about their employment and financial situation resolves before making costly durable purchases such as automobiles.

The net effect of macroeconomic uncertainty on investment through the real options channel depends on whether the value increase of sizing options outweighs the value increase

of the option to delay or *vice versa*. Consistent with the option to delay but inconsistent with sizing options, the empirical literature generally documents a negative relationship between uncertainty and investment (Leahy and Whited 1996). Reduced investment comes in the form of decreased capital expenditures, hiring, and advertising (Stein and Stone 2013). Further, firms reduce investment before national elections and when policy uncertainty is high (Julio and Yook 2012, Gulen and Ion 2015). Lastly, aggregate growth, inflation, and trade correlate negatively with macroeconomic uncertainty (Ramey and Ramey 1995, Baker and Bloom 2013, Leduc and Liu 2016, Novy and Taylor 2014, Handley and Limao 2015).

2.1.2 Risk Aversion

An additional explanation for the negative relation between macroeconomic uncertainty and consumption and investment to the option to delay is risk aversion. Risk aversion can impact customers, creditors, and managers. Assuming that agents' utility function $U(\cdot)$ satisfies prudence $U'''(\cdot) > 0$ in addition to non-satiation $U'(\cdot) > 0$ and risk-aversion $U''(\cdot) < 0$, an increase in macroeconomic uncertainty leads to a rise in current savings and a corresponding decline in current consumption. Prudence implies that marginal utility is decreasing in personal income at an increasing rate, making consumers more willing to give up current consumption to build up precautionary savings as a hedge against negative personal income shocks (Leland et al. 1968, Sandmo 1970, Dreze and Modigliani 1975). The empirical literature confirms that precautionary savings explain a small but steady share of individual and aggregate savings. Guiso et al. (1992) use Italian Survey of Household Income and Wealth survey responses to questions about individuals' savings rates and participants' subjective estimates about their own future personal income uncertainty and estimate that 1.82% of individuals' overall wealth accumulation is explained by the precautionary savings motive. Lusardi (1998) documents a somewhat larger effect (2 to 4.5%) for respondents to the US Health and Retirement survey. Hahm and Steigerwald (1999) and Menegatti (2010) confirm these findings for aggregate savings.

In principle, an increase in savings will result in an increase in investment. However, within a New Keynesian framework featuring nominal rigidities (i.e. sticky prices), Basu and Bundick (2017) show that aggregate demand determines managers' investment and output choices in the short-run. The uncertainty induced drop in consumption decreases incentives to invest. Similarly, Panousi and Papanikolaou (2012) argue that managers' wealth tends to be concentrated in the equity of their firms. Consequently, given their lack of diversification, managers respond to heightened macroeconomic uncertainty by becoming more cautious in their investment programs. Further, risk-sensitive managers tend to assume the worst-case scenario when faced with macroeconomic uncertainty and react by decreasing investment (Hansen and Sargent 2010). Lastly, Gilchrist et al. (2014) and Christiano et al. (2014) show how risk aversion drives investment through its effect on the availability of financing. Increased macroeconomic uncertainty induces lenders to increase their demanded credit spreads. The resulting rise in firms' cost of capital decreases the net present value (NPV) of firms' investment opportunities and thereby depresses investment.

In practice, it is difficult to determine whether the negative effect of macroeconomic uncertainty on investment and consumption derives from the option to delay or risk aversion. While the two explanations are based on different assumptions, the former assumes that managers account for the value of implicit real options while the latter makes assumptions about the functional form of agents' utility, both yield similar predictions and are potentially at play at the same time.[7]

2.1.3 Profitability

Largely independent from the literature reviewed above, a small number of studies evaluates the effects of macroeconomic uncertainty on contemporaneous corporate profitability. Baum et al. (2001) model the effect of exchange rate uncertainty on firms' profits. While

[7]While there is no evidence on the relative magnitude of the real options and risk aversion channels on firm investment, Oh and Yoon (2019) use structural estimation to show that the real options channel accounts for more than one-third of the decline in residential investment between 2002 and 2009, highlighting its importance.

their analytical results do not yield clear directional predictions for profit levels, they show that higher exchange rate volatility results in higher profit growth rate variability. Collecting survey data in Kenya, Musa (2014) and Kemuma (2015) find that exchange rate volatility does not affect profits of oil marketing firms but decreases profits of insurance companies. Demir (2009) and Bayar and Ceylan (2017) employ samples of Turkish manufacturers and non-metallic mineral mining companies and document a negative relation between corporate profitability and macroeconomic uncertainty measured as GDP growth volatility and exchange rate volatility, but no relation when macroeconomic uncertainty is measured as inflation rate volatility.

In sum, theories based on real options and risk aversion link macroeconomic uncertainty to investment, output, and consumption. Empirical research documents a negative relation, which is consistent with both the option to delay and risk aversion. However, it is less clear how macroeconomic uncertainty affects profitability as the theoretical underpinnings are less developed and the empirical findings yield mixed results.

2.2 Hypothesis Development

This section develops my hypothesis regarding how macroeconomic uncertainty affects profitability. Theories based on risk aversion and the option to delay predict that individuals reduce their consumption in response to macroeconomic uncertainty. In consequence, they buy less, which should reduce corporate revenues. Thus, my first hypothesis:

Hypothesis 1 *Macroeconomic uncertainty decreases firms' revenues.*

Consumers are not the only agents who alter their decisions when faced with macroeconomic uncertainty. Risk aversion and the option to delay also induce managers to cut costs via reducing investment, for example by halting capital spending, slowing production, using cheaper input materials, renegotiating supplier and labor contracts, or scaling down. These actions, in turn, affect firms' expenses.[8] Thus, my second hypothesis:

[8] Within a principal-agent framework, Riggs-Cragun (2018) shows that optimal contracts overweight cost-

Hypothesis 2 *Macroeconomic uncertainty decreases firms' expenses.*

Together, Hypotheses 1 and 2 predict that macroeconomic uncertainty not only lowers revenues but also expenses. As a result, the net effect on profitability is unclear and depends on which of the two effects dominates. Given this ambiguous directional prediction, I state my third hypothesis in the null form:

Hypothesis 3 *Macroeconomic uncertainty does not affect firm profitability.*

Figure 1 graphically illustrates my hypothesis development. The left side of the chart depicts Hypothesis 1 and shows that macroeconomic uncertainty negatively impacts profitability through its effect on consumption. Macroeconomic uncertainty decreases consumption, which decreases revenue, and in turn decreases profits. The right side of the chart depicts Hypothesis 2 and shows that macroeconomic uncertainty positively impacts profitability through its effect on investment. Macroeconomic uncertainty decreases investment, which decreases expenses, and, in turn, increases profits. However, the sign of macroeconomic uncertainty's effect on overall profitability is ambiguous, because, as implied by Hypothesis 3, it depends on the relative strength of the expense and revenue effects.

cutting over revenue growth to achieve a desired level of profitability as the outcome of cost-cutting is less uncertainty than that of revenue growth. In consequence, the risk-neutral principal has to compensate the risk-averse manager less. Hence, managers might prefer expense decreasing over revenue increasing actions to counteract negative macroeconomic uncertainty demand shocks. The survey evidence in Graham et al. (2005) aligns with this theoretical prediction. 79.9% of managers state that they would try to achieve an earnings target by cutting costs, but only 39.1% state that would try to achieve the target via revenue growth.

3 Empirical Results

3.1 US Quarterly Data

3.1.1 Research Design

Building on Fama and French (2000, 2006), Hou et al. (2012) propose the following profitability forecasting model, which has become standard in the literature:

$$E_{i,t+1} = \beta_0 + \beta_1 E_{i,t} + \beta_2 A_{i,t} + \beta_3 D_{i,t} + \beta_4 DD_{i,t} + \beta_5 NegE_{i,t} + \beta_6 AC_{i,t} + \epsilon_{i,t+1} \tag{1}$$

Where E denotes seasonally adjusted earnings before extraordinary items scaled by total assets, A denotes log total assets, D denotes dividends scaled by total assets, DD is an indicator that the firm pays a dividend, $NegE$ is an indicator that the firm is making a loss, and AC denotes accruals scaled by total assets.

Li et al. (2014) expand the model by including macroeconomic growth expectations (GE) yielding:

$$E_{i,t+1} = \beta_0 + \beta_1 GE_t + \beta_2 E_{i,t} + \beta_3 A_{i,t} + \beta_4 D_{i,t} + \beta_5 DD_{i,t} + \beta_6 NegE_{i,t} + \beta_7 AC_{i,t} + \epsilon_{i,t+1} \tag{2}$$

Following the real options and risk aversion literatures discussed in Sections 2.1.1 and 2.1.2, I further extend (2) by adding macroeconomic uncertainty (MU):[9]

$$\begin{aligned} DV_{i,t+1} \quad = \quad & \beta_1 GE_t^{\text{US}} + \beta_2 MU_t^{\text{US}} + \beta_3 A_{i,t} + \beta_4 D_{i,t} + \beta_5 DD_{i,t} + \beta_6 NegE_{i,t} + \\ & \beta_7 AC_{i,t} + \Gamma_i + \epsilon_{i,t+1} \end{aligned} \tag{3}$$

[9]Kellogg (2014) and Bloom et al. (2018) argue that it is crucial to include both, aggregate growth expectations and uncertainty, in one's model. Specifically, macroeconomic uncertainty spikes following adverse shocks to growth expectations such as 9/11, the Gulf Wars, the Cuban missile crises, President's Kennedy's assassination, and the financial crisis of 2009-2011 (Bloom 2014). However, corporate profitability also varies with aggregate growth expectations, resulting in correlated omitted variable bias.

Where DV denotes the dependent variable, which can be revenues (Rev), net expenses (X), and earnings (E) all scaled by average total assets. To control for constant firm characteristics, I drop the lagged dependent variable from the Hou et al. (2012) model and include firm fixed effects, Γ_i.[10] Consistent with prior literature, I measure macroeconomic growth expectations (GE^{US}) via aggregate US market stock returns (Leahy and Whited 1996, Bloom et al. 2007, Baker and Bloom 2013). Further, I employ Baker et al.'s (2016) newspaper based Economic Policy Uncertainty Index (EPUI) as a plausibly exogenous measure of US macroeconomic uncertainty (MU^{US}). Specifically, while it is likely that aggregate economic policy affects individual firms, I assume that individual firms do not affect aggregate economic policy. EPUI is constructed on a monthly basis from articles published in 10 large US newspapers (USA Today, the Miami Herald, the Chicago Tribune, the Washington Post, the Los Angeles Times, the Boston Globe, the San Francisco Chronicle, the Dallas Morning News, the Houston Chronicle, and the Wall Street Journal) containing the terms *uncertainty* or *uncertain*, *economic* or *economy*, and one or more of the terms *congress*, *legislation*, *white house*, *regulation*, *federal reserve*, or *deficit*. The data are available starting in 1985. Details on EPUI's construction are available on www.policyuncertainty.com. In the computations to follow, I scale EPUI by 100 to facilitate interpretation.

EPUI improves upon alternative macroeconomic uncertainty measures such as realized or implied stock return volatilities and macroeconomic forecaster disagreement. While the correlation across these measures is generally high,[11] market-based measures only incorporate information related to public, but not private firms, which account for approximately two-thirds of overall US employment. However, I evaluate the robustness of my findings

[10] In contrast to Hou et al. (2012) whose focus is earnings prediction, this paper aims to determine causality and thus seeks to control for factors that potentially confound the relation between corporate outcomes and macroeconomic uncertainty. Fixed effects control for a variety of constant factors, such as industry or location specific institutional factors. However, they also prevent the incorporation of the lagged dependent variable in the regression model, as a fixed effects model featuring the lagged dependent variable among the explanatory variables will produce biased and inconsistent estimates, especially when the number of observations per group is small as is the case in firm-level panel data (Nickell 1981). However, I repeat all tests using a lagged dependent variable instead of a fixed effects model. All inferences remain unchanged.

[11] For example, the correlation between EPUI and Chicago Board Options Exchange's VIX is 0.58.

to alternative aggregate growth expectation and uncertainty measures in Section 3.4. My inferences remain unchanged.

3.1.2 Data

EPUI is available starting in 1985 at a monthly frequency. To match EPUI's time-series as closely as possible with financial firm-level data, I start my analysis using quarterly US financial reports. The US is a convenient setting to begin because other countries, such as Germany and the UK, do not require quarterly reporting, although I do consider longer fiscal periods in a global sample in subsequent analysis.

Table 1 Panel A presents summary statistics for all variables employed in the US quarterly analysis. I obtain accounting data from Compustat. The sample spans from 1988, the first year for which cash flow statement data becomes available, to 2018. All continuous firm-level variables are computed as seasonally adjusted changes, scaled by average total assets, and winsorized at the 1st and 99th percentiles to mitigate outlier effects.

Macroeconomic growth expectations (GE^{US}), proxied by aggregate stock returns, average 3% with a standard deviation of 8%. The GE^{US} distribution is fairly symmetric with a median equal to mean, and 1st (-22%) and 99th (22%) percentiles of similar absolute magnitude. Figure 2 plots EPUI over time to gain understanding of the variability in this measure. NBER recessions are shaded in grey and dashed red lines depict the one-standard-deviation confidence interval. The index spikes during times of macroeconomic turmoil, such as the Gulf Wars, the Russian debt crisis, 9/11, the Lehman collapse, and the recent US government shutdowns. As argued in Baker et al. (2014), uncertainty appears to experience a secular increase over time. The average EPUI level after the 2007 to 2010 financial crisis is consistently higher than in prior periods.

Revenues (Rev) and net expenses (X) display right skewness with means and medians of 0.02 and 0.01 and vary considerably with standard deviations and interquartile ranges of 0.10 and 0.17, and 0.05 and 0.06. The distributions of gross profit (GP), operating profit

(OP), and earnings (E) are approximately symmetric around 0 but experience increasing volatility the more expense accounts are included with standard deviations of 0.07, 0.08, and 0.12. Hence, net non-operating expenses induce more profit volatility than COGS and net operating expenses. In contrast, the volatility of expense accounts themselves decreases when moving down the income statement with standard deviations of 0.10, 0.07, and 0.06 for cost of goods sold ($COGS$), net operating expenses (OX), and net non-operating expenses (NOX). Dividends (D) tend to be small with 1st and 99th percentiles of -0.01 and 0.02. 34% of firms pay a dividend and 39% make losses. Lastly, accruals are volatile around zero with large tails. While the interquartile range is only 0.03, the difference between the 1st and 99th percentile is 1.24.

Table 1 Panel B presents the correlation matrix. Not surprisingly, overall earnings correlate increasingly positively with revenue (0.12), gross profit (0.34), and operating profit (0.69), and increasingly negatively with net expenses (-0.73), COGS (-0.14), net operating expenses (-0.38), and net non-operating expenses (-0.63). Firms that do not pay a dividend have higher earnings. Loss firms are generally smaller. Macroeconomic growth expectations (GE^{US}) are negatively associated with macroeconomic uncertainty, consistent with the notion that uncertainty tends to be low in good times and high in bad times (Bloom 2009). With respect to firm-level variables, macroeconomic growth expectations are positively correlated with revenues, net expenses, profits, COGS, net operating expenses, but negatively correlated with net non-operating expenses. Macroeconomic uncertainty correlates negatively not only with revenues but also to expenses. This suggests that macroeconomic uncertainty not only discourages consumers from purchasing but also that it induces managers to anticipate and counteract the adverse effect of decreased consumption on corporate profits by cutting expenses. The net effect can be observed when moving from one income statement subtotal to the next. While macroeconomic uncertainty's Spearman correlation with revenues is strongly negative (-0.13), the negative correlation decreases when moving to gross profits (-0.08), to operating profits (-0.02), and, finally, to earnings (-0.01). For Pearson correlations,

the effect sign even turns positive for operating profit (0.02) and earnings (0.02). Drawing strong conclusions from these correlations, however, would be premature given the potential for confounding factors. For example, dividend paying firms (DD) tend to be larger and more mature and exhibit a positive (negative) association with macroeconomic uncertainty (revenue growth). This implies the possibility that some firm factors may explain, at least partially, the association between macroeconomic uncertainty and profitability. To more formally rule out firm factors as confounds, I turn to multivariate regression analysis to formally control for such a possibility.

3.1.3 Main Results

Revenues. Table 2 Panel A columns 1 and 2 tests Hypothesis 1 by estimating Equation (3) for one-quarter-ahead revenues. Standard errors are clustered by firm and quarter. Growth expectations increase revenues before (0.028, t = 2.04) and after (0.024, t = 2.00) controls. A 9% increase in aggregate stock market returns, which equals GE^{US}'s interquartile range (0.09), increases revenues by 0.22% (= 0.09 × 0.024) of total assets, which is 10.8% of Rev's mean (0.02) and median (0.01). In contrast, macroeconomic uncertainty lowers one-quarter-ahead revenues. An EPUI increase equivalent to MU^{US}'s interquartile range (0.55) decreases revenues by 1.38% (= -0.025 × 0.55) and 0.45% (= -0.018 × 0.55) of total assets before and after controls, which again is large relative to Rev's mean and median and the effect of growth expectations.

Columns 1 and 2 in Panel B to D extend the analysis to revenues two to four quarters ahead. In the presence of controls, aggregate growth expectations effects are larger in quarters two (0.042, t = 3.80), three (0.056, t = 5.43) and four (0.054, t = 4.80) relative to quarter one. However, macroeconomic uncertainty's effects steadily decrease over time, decaying from -0.018 in quarter one, to -0.015, -0.010 and -0.004 in the subsequent three quarters.

One interpretation of the decay is that consumers initially employ a wait-and-see strategy

but eventually consume (Bloom et al. 2018). If this is true, revenues may eventually increase at longer horizons where the uncertainty is more likely to be resolved and consumers begin to satisfy built-up demand. To assess this possibility, I follow Jordà (2005) and graphically display the point estimates of the revenue response to macroeconomic uncertainty obtained from estimating Equation (3) over eight quarters instead of four in Figure 3 Panel A. The eight quarter horizon follows the extant literature (Thomas and Zhang 2002, Binz et al. 2017). Macroeconomic uncertainty's slope coefficient magnitude (95% confidence interval) is presented with a solid (dashed) line. The negative macroeconomic uncertainty effect is statistically negative up to four quarters ahead, becomes insignificant five quarters ahead, and turns significantly positive six to eight quarters ahead. This evidence is precisely consistent with Bloom et al.'s (2018) model, which predicts that macroeconomic uncertainty induces consumers to wait and see before releasing the built-up demand once uncertainty is resolved four quarters following a macroeconomic uncertainty shock.

In sum, consistent with Hypothesis 1, macroeconomic uncertainty lowers firms' revenues. In times of high macroeconomic uncertainty, consumers reduce their purchases and firms' revenues fall. The effect of macroeconomic uncertainty on revenues is large and persistent, lasting for four quarters in the future.

Expenses. Consumers are not the only agents affected by macroeconomic uncertainty. Hypothesis 2 predicts that managers cut costs to counteract negative macroeconomic uncertainty demand shocks. To test Hypothesis 2, Table 2 Panel A columns 3 and 4 adjusts the revenue model by replacing revenues with net expenses (X) as the dependent variable, where net expenses include all non-revenue components of earnings (i.e. $Rev - E = X$). While growth expectations are positively associated with net expenses in univariate analysis (Table 1 Panel B), after controlling for other factors there remains no robust association between net expenses and growth expectations. This differs from the positive association growth expectations exhibited with one-quarter ahead revenues in the presence of controls.

Except for accruals, which relate negatively to future net expenses, all other control variables behave as observed in column 2 for revenues.

More importantly regarding testing of Hypothesis 2, I observe net expenses decrease in macroeconomic uncertainty before (-0.032, t = -9.45) and after (-0.027, t = -8.33) controls. This translates into 1.76% (= -0.032 × 0.55) and 1.49% (= -0.027 × 2.39) of total assets net expense decreases in response to an increase in macroeconomic uncertainty equivalent to MU^{US}'s interquartile range, which exceeds the revenue effect magnitudes. Columns 3 and 4 and Figure 3 Panel B show that, as for revenues, the effect of macroeconomic uncertainty on net expenses decreases but persists for four quarters before turning insignificant in quarters five and six and positive in quarters seven and eight. In contrast, the effect of growth expectations turns increasingly positive over time. This implies that the seeming lack of an initial response to growth expectation changes by managers (Table 2 Panel A), is simply delayed and appears in quarters two, three, and four (Table 2 Panels B, C, and D, respectively).

As a collection, consistent with Hypothesis 2, macroeconomic uncertainty lowers not only firms' revenues but also their expenses. Risk-averse managers value the option to delay and wait and see before making investment decisions or cutting costs. As a result, expenses decrease.

Profits. As Figure 3 Panels A and B reveal, the effects of macroeconomic uncertainty on both revenues and expenses exhibit similar trends over time. Given the similarity in estimated effects for revenue and expenses, the overall effect on profitability is not obvious. To assess the impact on profitability and test Hypothesis 3, estimation of Equation (3) with earnings as the dependent variable is presented in Table 2 Panel A columns 5 and 6.

Consistent with the extant literature, larger, dividend-paying, loss firms with low accruals experience lower subsequent earnings. Moreover, earnings exhibit a positive but statistically insignificant relationship with macroeconomic growth expectations (0.010, t = 1.04), suggesting that increases in revenues that follow a positive growth expectation shock are offset

by expenses incurred by the firm. With respect to Hypothesis 3, macroeconomic uncertainty exhibits a statistically positive association with earnings both before (0.006, t = 4.46) and after (0.008, t = 6.07) controls. An interquartile range macroeconomic uncertainty shock increases earnings by 0.44% (= 0.008 × 0.55) of total assets. Table 2 Panels B to D columns 5 and 6 and Figure 3 Panel C demonstrate that the effect remains positive and significant in initial quarters, but weakens over time before turning statistically insignificant in quarters six to eight.

As a collection, the net effect of macroeconomic uncertainty on profitability is large and positive. Mangers cut costs more than consumers cut purchases in response to macroeconomic uncertainty. Thus, while prior literature generally documents a slow down in economic activity, losses are not an immediate implication at the firm-level. However, my findings do not allow me to make inferences about the effect on overall shareholder welfare. For example, the discount rate effects of macroeconomic uncertainty documented by Gilchrist et al. (2014) and Christiano et al. (2014) could more than offset the cash flow effect documented here, resulting in an overall decrease in shareholder welfare.[12]

3.1.4 Disaggregated Results

Macroeconomic uncertainty lowers revenues and expenses, but the net effect on earnings is positive. However, the specific decisions through which management achieves the reduction in expenses remain unclear. To shed light on this issue, this section examines how various types of expenses are affected by macroeconomic uncertainty.

Using information from a standard multiple-step income statement, expenses can be separated into three broad categories: Direct input costs, net operating expenses, and net

[12] Another question that arises is why managers do not cut expenses even in the absence of macroeconomic uncertainty if they can increase earnings that way. To address this, I estimate my results for up to 20 quarters ahead and find that the earnings reaction to macroeconomic uncertainty reverses in the long-run, indicating that the long-run costs of managers' reaction to macroeconomic uncertainty might outweigh the short-run benefits. This finding casts doubt on whether managers' reaction to macroeconomic uncertainty is a positive NPV project. However, extending the analysis that far in the future leads to a significant drop in sample size, raising concerns of survivorship bias. Hence, the findings should be interpreted with caution.

non-operating expenses. Managers can take actions to impact each expense category. For example, managers can decrease direct input costs using cheaper materials or renegotiating supplier and labor contracts, which reduces COGS. Managers can decrease net operating expenses by lowering investment in PPE or by cutting labor cost, which reduces depreciation and salary expense, respectively. Managers can also decrease net non-operating expenses by lowering debt levels or by selling PPE, which reduces interest expenses and potentially leads to one-time gains, respectively.

Table 3 examines how COGS, net operating expenses, net non-operating expenses, and their corresponding income statement subtotals, gross profit, operating profit, and earnings, are associated with macroeconomic uncertainty by using each as a dependent variable in Equation (3). Panel A presents the results for one quarter ahead. Columns 1 to 4 show how the effect of macroeconomic uncertainty develops for different subtotals moving down the income statement. To facilitate comparison, columns 1 and 4 replicate the Table 2 column 2 and 6 results.[13]

The negative effect of macroeconomic uncertainty on revenues (-0.018, t = -7.83) is partially offset for gross profit (-0.003, t = 4.35), turns positive for operating profit (0.007, t = 6.98), and even more positive for earnings (0.008, t = 6.07). The effect differential from revenue to gross profit (-0.018 vs. -0.003) exceeds that from gross profit to operating profit (-0.003 vs. 0.007), which in turn exceeds that from operating profit to earnings (0.007 vs. 0.008), suggesting that the effect on COGS is larger than the effect on net operating expenses, and that the effect on net operating expenses is larger than the effect on net non-operating expenses. Columns 5 to 7 examine this conjecture directly by documenting a negative effect of macroeconomic uncertainty on COGS (-0.016, t = -7.86), net operating expenses (-0.009, t = 8.85), and net non-operating expenses (-0.001, t = -1.44). These results suggest that in response to macroeconomic uncertainty, managers cut both variable (COGS) and fixed (net operating expenses, net non-operating expenses) costs. The decrease in variable costs

[13] I repeat the analysis for specific operating expenses, in particular, depreciation and SG&A. The inferences for these individual operating expense accounts mirror those for aggregate net operating expenses.

is not sufficient to offset a decrease in revenue, as gross profit remains negatively associated with macroeconomic uncertainty. However, operating profit is increasing in macroeconomic uncertainty, suggesting that additional cuts in fixed costs allow managers to more than offset revenue declines resulting from increases in macroeconomic uncertainty.

Table 3 Panels B to D and Figure 3 Panel D to H extend this analysis beyond one quarter ahead. Managers cost-cutting activities lower COGS (Panel F) and net operating expenses (Panel G) two and three quarters in the future. Afterwards, the effect temporarily becomes insignificant before rebounding in quarters seven and eight. The effect on net non-operating expenses is more volatile and often insignificant with the exceptions of quarters two to five in which the effect is significantly negative.

Overall, the evidence in this section indicates that managers counteract adverse macroeconomic uncertainty demand shocks by cutting direct input and operating costs. The negative effect of macroeconomic uncertainty on revenues is increasingly offset and eventually turns positive when moving down the income statement from revenues to gross profit to operating profit to earnings.

3.2 International Annual Data

So far, I have used quarterly US data to document that macroeconomic uncertainty not only decreases aggregate demand but also induces managers to increase operational efficiency via cost-cutting, leading to an increasingly positive net effect on profitability as more expense accounts are taken into consideration. This section extends the previous analysis to an international annual sample, where I measure aggregate growth expectations and uncertainty as aggregate world stock market returns and global economic policy uncertainty (EPUI_{g}). Considering an international sample compliments the US analysis in three ways. First, endogeneity concerns are further mitigated as it is even less likely that the fate of an individual firm determines policy uncertainty across the globe. Second, verifying that the results persist for a range of countries with different political systems, institutions, and ac-

counting standards enhances external validity (Acemoglu and Robinson 2013, Nobes 2001). To illustrate, firm-level reactions to macroeconomic uncertainty could differ across countries depending on managers' expectations about the central banks' monetary policy reaction (Cieslak and Vissing-Jorgensen 2017). Third, examining how the effect of macroeconomic uncertainty varies across countries allows me to exploit cross-country variation in employment protection legislation, which should moderate the extent to which managers can adjust labor costs.

3.2.1 Research Design

For the international analysis, I replace my aggregate growth expectations and uncertainty measures with MSCI World Index returns (GE^{g}) and $\mathrm{EPUI_g}$ (MU^{g}):

$$DV_{i,t+1} \quad = \quad \beta_1 GE_t^{\mathrm{g}} + \beta_2 MU_t^{\mathrm{g}} + Controls + \Gamma_i + \epsilon_{i,t+1} \tag{4}$$

Where all other variables defined as previously. The time subscript, t, captures years instead of quarters as as many countries around the world, such as China, Germany, and the United Kingdom, do not require firms to report on a quarterly basis. *Controls* is the vector of control variables included in (3). Standard errors are clustered by country and year. All continuous variables are measured in changes from last fiscal year and scaled by average total assets.[14]

3.2.2 Data

I measure aggregate world stock market returns as the cumulative fiscal year return on the MSCI World Index, which covers large and mid-cap stocks in 23 developed countries.[15] $\mathrm{EPUI_g}$ is Baker et al.'s (2016) fiscal year average purchasing-power-adjusted GDP weighted global economic policy uncertainty index calculated from country-specific EPUI indices for

[14] All results are robust when using levels rather than changes.
[15] I download MSCI World Index return data from www.msci.com.

Australia, Brazil, Canada, Chile, China, France, Germany, Greece, India, Ireland, Italy, Japan, Mexico, the Netherlands, Russia, South Korea, Spain, Sweden, the United Kingdom, and the US.[16,17] EPUI_g is available from 1997, which restricts my sample period from 1997 to 2018. Fundamental annual data comes from Compustat Global. I use Compustat's Exchange Rate Monthly file and translate all nominal amounts into USD to ensure comparability. Figure 4 plots EPUI_g over time. While highly correlated with EPUI ($\rho = 0.76$), EPUI_g is less pronounced for US-specific events, such as the debt ceiling dispute, and more pronounced for global events, such as the recent trade disputes between the US and the EU and China, which led to an all-time EPUI_g peak at the end of 2018.

Table 4 Panel A presents my international sample composition, which comprises 112 countries, and firm-year means for GE^g and MU^g by country. As in prior studies (e.g. Li et al. 2014), the US comprises a large share of the overall number of firm-year observations (25.34%). Other countries, such as China (7.22%), India (7.16%), and Japan (9.81%), also contribute large numbers of observations. Panel B shows descriptive statistics for the variables of interest and controls. The numbers are similar to the quarterly US sample data summarized in Table 1 Panel A, albeit less dispersed, reflecting the aggregation of quarterly numbers to annual numbers, thereby smoothing volatility. Panel C presents the correlation matrix, which mirrors the findings in Table 1 Panel B. Aggregate growth expectations correlate negatively with macroeconomic uncertainty and positively with revenues, expenses, and profits, and macroeconomic uncertainty correlates negatively with revenues and expenses, but increasingly positively with profits as one proceeds down the income statement. This evidence is suggestive that negative demand shocks triggered by macroeconomic uncertainty are offset by managers' cost-cutting, but given these data still include US firms, it remains unclear whether results generalize outside of the United States.

[16] I download EPUI_g data from www.policyuncertainty.com.

[17] My findings are robust to using only firms in countries whose EPUI indices included in the aggregate EPUI_g measure and to replacing EPUI_g with US EPUI as the macroeconomic uncertainty measure in (4). All inferences remain unchanged.

3.2.3 Results

Table 5 Panel A extends Table 3 to annual one-year-ahead corporate outcomes for US firms only. Consistent with the quarterly results, macroeconomic uncertainty lowers not only revenues (-0.049, t = -2.82) but also COGS (-0.049, t = -3.46), net operating expenses (-0.031, t = -4.53), and net non-operating expenses (-0.019, t = -3.45). For annual data, managers are able to offset the negative ramifications of decreased revenue through cost of goods sold as the macroeconomic uncertainty effect turns insignificantly negative for gross profit (-0.002, t = -0.41). Moving down the income statement, the relationship with macroeconomic uncertainty is increasingly positive for operating profit (0.028, t = 5.01) and earnings (0.050, t = 4.55), as observed at the quarterly level. In terms of economic significance, an increase in macroeconomic uncertainty equal to an MU^{g}'s interquartile range (0.45) increases earnings by 2.25% (= 0.050 × 0.45) of total assets.

Table 5 Panel B tests whether my inferences generalize to other countries than the US via estimating the model for all countries listed in Table 4 Panel A after excluding the US. My main inferences remain unchanged. Revenues and expenses decrease in response to macroeconomic uncertainty and the net effect on profitability is positive. However, there is variation in the effect magnitudes. While similar for revenues and COGS, firms' reduction in net operating (-0.016 vs. -0.031) and non-operating (-0.010 vs. -0.019) expenses is lower in the international sample in comparison to the US sample, suggesting the presence of institutional differences in adjustment costs impeding managers' ability to cut certain costs quickly. To examine this issue, I exploit cross-country variation in employment protection legislation (EPL), an implicit labor adjustment cost.[18]

[18] As noted by Banker et al. (2013), capital adjustment costs include opportunity costs that are not measured in accounting systems. In contrast, labor adjustment costs in the form of EPL are readily measurable.

3.2.4 Employment Protection Legislation

Existing research suggests that stronger EPL increases the cost of layoffs, not only making it more expensive for management to fire workers in bad or uncertain times but also restraining hiring in good or less uncertainty times (Van Long and Siebert 1983, Pissarides 1999). As such, managers' cost-cutting response to macroeconomic uncertainty and the resulting profitability effect should be weaker for countries with strong EPL. I test this conjecture by examining the interactive effects of macroeconomic uncertainty and EPL. Following prior literature (e.g. Banker et al. 2013), I measure EPL via the Organization for Economic Co-operation's (OECD) protection of permanent workers against individual dismissal score, which is part of the Indicators of Employment Protection dataset.[19,20] Country-specific EPL scores are presented in Table 4 Panel A. More market-oriented countries, such as the US (0.49), the UK (1.18), and Canada (0.92) have low EPL scores, while more government intervention oriented countries, such as Venezuela (3.50) and China (3.31) have high EPL scores.

To test for EPL effects, I estimate the Equation (4) on the entire global sample, and interact an indicator taking a value of one when the firm's home country's EPL is above the sample median and a value of zero if the firm's home country's EPL is below sample median or missing ($High\ EPL$) with macroeconomic growth expectations and uncertainty.[21] Before considering the moderating effects of EPL, I first present the estimation without the EPL interaction as a baseline specification. The results are presented in Table 5 Panel C, and by construction, the point estimates of the global sample fall in between the estimates obtained for the US only sample (Table 5 Panel A) and the non-US sample (Table 5 Panel B).

Table 6 presents the regression results examining the effects of EPL. There is no evidence

[19] I download OECD EPL data from https://www.oecd.org/employment/.

[20] The Indicators of Employment Protection dataset includes two alternative EPL measures: Protection of permanent workers against individual and collective dismissals, and regulation on temporary forms of employment. I also estimate my tests using these alternative EPL measures. All inferences remain unchanged.

[21] The results are robust to using OECD's continuous EPL score instead of the indicator as the EPL measure and to excluding countries without EPL data.

that EPL alters the effect of macroeconomic uncertainty on revenues, COGS, and gross profit. However, the incremental effect on net operating expenses, in which wage expense typically concentrates, is significantly positive (0.019, t = 3.05). That is, managers in countries with higher EPL lay off fewer workers in response to increases in macroeconomic uncertainty. More than half of macroeconomic uncertainty's main effect on net operating expenses (-0.029, t = -5.99), which captures the effect of macroeconomic uncertainty in low EPL countries, is offset when moving to a high EPL regime (-0.029 + 0.019 = -0.010). In turn, the positive effect of macroeconomic uncertainty on operating profit (0.023, t = 4.49) and earnings (0.041, t = 4.61) in low EPL countries also is attenuated by about half.

To summarize, the results in this section indicate that managers in high EPL regimes, where labor cost adjustment is more difficult, cut costs less in response to increases in macroeconomic uncertainty. Consequently, net operating expenses fall to a smaller degree, muting the cost-cutting benefits to operating profit and overall profit that would otherwise be observed.

3.3 Disaster Shocks

The analysis thus far suggests that revenue effects of negative demand shocks are offset by managers' cost-cutting. The research design relies on the assumption that macroeconomic variables such as aggregate stock returns and economic policy uncertainty are exogenous to the firm. However, recent work suggests the potential for at least some reverse causality between firm-level and macro-level variables, in turn questioning my exogeneity assumption. For example, Gabaix (2011) shows that idiosyncratic firm-level shocks cause macroeconomic movements in economies in which firm size follows a power-law distribution, as is generally the case in modern economies. Similarly, Bachmann et al. (2011), Tian (2015), and Decker et al. (2016) argue that firms' option to abandon via declaring bankruptcy encourages price experimentation, risk-taking, and reduced diversification in bad times. As the threat of exit looms larger, troubled firms may engage in more risky gambles with unknown outcomes,

leading to increased uncertainty about firm and industry performance. To address these concerns and to enhance internal validity, I follow Baker and Bloom (2013) and use country-level natural disasters, political unrest, revolutions, and terrorist attacks as instruments for aggregate growth expectations and uncertainty.[22]

3.3.1 Research Design

Baker and Bloom (2013) measure disaster shocks as indicators that a natural disaster, political shock, revolution, or terrorist attack occurred within a country-year. As the number of qualifying shocks is large with several events per week across the globe, they limit themselves to relatively severe shocks fulfilling one of the following three conditions: (1) More than 0.001% of a country's population dead, (2) more than 0.01% of a country's GDP in damage, or (3) a successful coup or regime change as a result of the shock.

Other concerns are that the disaster shocks were anticipated or relatively small in magnitude. Baker and Bloom (2013) address these issues via weighting each shock by the percentage increase in Google News Archive citations of the country in which the shock occurred during the 15 days surrounding the shock date. For example, if a country is mentioned 10 times during the 15 days preceding the shock and 12 times during the 15 days following the shock, the shock triggers a 50% jump in news citations and is assigned a weight of 0.12 ($= 12/10 - 1$). As multiple shocks of a specific category, i.e. natural disasters, political unrest, revolutions, or terrorist attacks, can occur in a given country-year, the analysis is restricted to the event with the highest jump in media citations for that category in the country-year.

I follow Baker and Bloom (2013) and employ a 2SLS design, which allows me to distinguish between aggregate growth expectations and uncertainty variation arising from disaster shocks. Thus, the first stage stage model for aggregate growth expectations takes the form

[22]The majority of disaster shocks arises from natural disasters. The frequency and severity of natural disasters have been increasing over time. Specifically, the Swiss Re Institute (2019) documents that real average annual natural disasters losses more than sextupled from 1980 to 2019.

of:

$$GE_{c,t}^{\text{BB}} = \alpha_1^1 NaturalDisaster_{c,t} + \alpha_2^1 PoliticalShock_{c,t} + \alpha_3^1 Revolution_{c,t} + \alpha_4^1 TerroristAttack_{c,t} + Controls + \Gamma_i + \Phi_t + u_t^1 \tag{5}$$

The first stage for macroeconomic uncertainty is as follows:

$$MU_{c,t}^{\text{BB}} = \alpha_1^2 NaturalDisaster_{c,t} + \alpha_2^2 PoliticalShock_{c,t} + \alpha_3^2 Revolution_{c,t} + \alpha_4^2 TerroristAttack_{c,t} + Controls + \Gamma_i + \Phi_t + u_t^2 \tag{6}$$

The second stage model for the dependent variables of interest is as follows:

$$DV_{i,t+1} = \beta_1 \hat{GE}_{c,t}^{\text{BB}} + \beta_2 \hat{MU}_{c,t}^{\text{BB}} + Controls + \Gamma_i + \Phi_t + \epsilon_{i,t+1} \tag{7}$$

Where hats symbolize predicted values obtained from the first stage, $GE_{c,t}^{\text{BB}}$ captures country specific aggregate annual stock returns, $MU_{c,t}^{\text{BB}}$ captures country specific aggregate annual stock market volatility, $Controls$ capture the vector of control variables as in (3), and Γ_i and Φ_t capture firm and year fixed effects controlling for constant firm characteristics and global macroeconomic shocks.

3.3.2 Data

To estimate the 2SLS, I obtain annual fundamental data from Compustat Global and aggregate stock returns, aggregate stock return volatility, and disaster shock data from Nicholas Bloom's website.[23] The sample period starts in 1988 with the inception of Compustat Global and ends with Baker and Bloom's (2013) sample in 2013. Again, I use Compustat's Exchange Rate Monthly file and translate all nominal amounts into USD to ensure comparability. Baker and Bloom's (2013) coverage is limited to countries with more than $50 billion in nominal GDP in 2008 and with at least five years of aggregate daily stock market

[23] I download Baker and Bloom's (2013) data from https://nbloom.people.stanford.edu/. See their Section 3.1 for an extensive discussion about data sources and variable computation.

index data. To align the timing of Compustat and Baker and Bloom (2013) data, I retain firm-year observations with fiscal years ending in March, June, September, or December.

Table 7 Panel A presents the sample composition and country-specific averages for aggregate growth expectations and uncertainty, which are measured as the countries' major stock market's annual index returns and daily return volatility. Again, US firms comprise a large share of the sample (37.35%). Other major contributors include Japan (9.16%), India (7.24%), and China (6.50%). Aggregate returns vary considerably across countries with a maximum annual return of 3.32% for Peru and a minimum return of -14.73% for Serbia. Volatility in developed countries, such as the US and Germany, tends to be lower than in developing countries, such as Egypt or Greece. Panels B and C present descriptive statistics and the correlation matrix, which mirror the findings of Tables 1 and 4.

3.3.3 Results

Table 8 presents the first and second stage results for all variables of interest. Control variables are suppressed to conserve space. I begin by examining the validity of my research design. To yield sensible estimates, the instruments must satisfy the exclusion restriction, i.e. the instruments cannot be related to the error term, and relevance condition, i.e. the instruments must be related to the instrumented variables. The exclusion restriction is inherently untestable as the structural error term is unobservable. However, first stage regression estimates yield evidence regarding instrument relevance. Revolutions and political shocks are significantly negatively related to aggregate growth expectations and significantly positively related to macroeconomic uncertainty. However, surprisingly, natural disasters are negatively related to macroeconomic uncertainty, although the statistical significance is marginal (-0.001, t = 1.71) and the effect sizes are much smaller than those observed for political shocks (0.013, t = 5.94) and revolutions (0.041, t = 15.54). One potential explanation for this finding is that increased foreign aid and political pressures following natural disasters offset some of the capital damage and help to create more stable operating

environments for business, thereby reducing macroeconomic uncertainty (Fomby et al. 2011). Lastly, terror attacks are not significantly related to macroeconomic growth expectations or uncertainty, which might reflect their rarity. Specifically, only 920 firm quarters in my sample experience a terrorist attack, which is equivalent to 0.28% (= 920/334,168) of the overall sample.

With respect to the second stage, I confirm Li et al.'s (2014) finding that aggregate growth expectations positively impact corporate profitability (0.835, t = 2.60). The GE^{BB} slope coefficient is significantly positive for gross profits (0.309, t = 2.83) and operating profits (0.744, t = 2.55) as well, but insignificant for revenues (-0.324, t = -0.87) and net non-operating expenses (-0.038, t = -0.21), and marginally significantly negative for COGS (-0.663, t = -1.72) and net operating expenses (-0.492, t = -1.69). As before, macroeconomic uncertainty relates negatively to revenues (-11.816, t = -2.03), COGS (-12.473, t = -2.05), net operating expenses (-7.469, t = -1.62), and net non-operating expenses (-7.485, t = -4.08). Reductions in expenses offset the reduction in revenues. As a result, the effect of macroeconomic uncertainty turns insignificantly negative for gross profits (-0.013, t = -0.01), insignificantly positive for operating profits (6.750, t = 1.46), and significantly positive for earnings (15.050, t = 5.45).

Collectively, using disaster shocks as plausibly exogenous variation in aggregate growth expectations and uncertainty confirms prior sections' findings that macroeconomic uncertainty lowers firms' revenues and expenses with a positive net effect on earnings. Managers' cost-cutting more than offsets uncertainty induced decreases in sales, yielding a positive net effect of macroeconomic uncertainty on profitability.

3.4 Robustness Tests

3.4.1 Denominator Effects

One concern with the previous analysis is that profits could go up in response to macroeconomic uncertainty because of denominator rather than numerator effects. Prior research

documents that macroeconomic uncertainty reduces investment, which in turn reduces average total assets, the deflator in my empirical tests. Hence, even if profits fall, profits scaled by average total assets could rise if the proportional decrease in assets exceeds the proportional decrease in profits.

To address this concern and to demonstrate the robustness of my findings to alternative scalars, I redo my main tests with alternative deflators including average, beginning of the year, and end of the year total assets and market value of equity. The results are shown in Table 9. Using beginning of the year total assets or market value of equity as the scalar mitigates denominator concerns by holding the asset base fixed. For each scalar, my inferences remain unchanged.

3.4.2 Bad News

Another concern is that my results could be driven by bad news rather than macroeconomic uncertainty. Uncertainty spikes during bad times and it is difficult to identify instances in which uncertainty increases in response to good news. Specifically, Bloom (2014) identifies the October 1982 business cycle turning point, which lies outside my sample period, as the only good news event that caused macroeconomic uncertainty to increase in recent times.

In my main test, I follow Baker and Bloom (2013) and address this issue via controlling for good and bad news through aggregate stock market returns. However, in the presence of nonlinearities, adding a control variable to a linear model might not be sufficient. Therefore, in untabulated analysis, I redo all my main tests after excluding observations for which aggregate stock returns take on a value below the 25th percentile of GE's distribution. My inferences remain unchanged. Further, in a separate set of tests, I add an interaction term between macroeconomic uncertainty and growth expectations to the model. If my results are driven by bad times, the observed macroeconomic uncertainty effects should be stronger during bad times. That is, the interaction term's slope coefficient should be significantly negative in the profitability regressions. However, the slope coefficient is not statistically

significant in any of the regressions, which is evidence that my results are not driven by bad news.

3.4.3 Additional Test

In additional analyses, I reestimate my main test using a lagged dependent variable rather than a firm-fixed effects design. As shown in Nickell (1981), including firm fixed effects in a lagged independent variable model yields biased and inconsistent estimates, precluding simultaneous adoption of both designs. I also estimate Equation (3) for specific operating expenses, depreciation and SG&A, and alternative profitability measures, pre-tax profits and net income. Further, I employ alternative aggregate growth expectation measures, including cross-firm stock returns, bond yields, exchange rates, and GDP forecasts, and alternative macroeconomic uncertainty measures, including cross-firm stock return volatility, bond yield volatility, exchange rate volatility, GDP forecaster disagreement, CBOE's volatility index (VIX), and Jurado et al.'s (2015) macroeconomic uncertainty proxies. Lastly, I redo my tests using dependent variables levels rather than changes. Across all robustness tests, my inferences remain unchanged.

4 Conclusion

This paper examines the effects of macroeconomic uncertainty on consumers and managers' decisions making and the implications for corporate profitability. In response to macroeconomic uncertainty, consumers reduce purchases and managers reduce investment. As a result, firms' revenues and expenses drop. The net effect on profitability is positive as, on average, the cuts in expenses exceed the fall in revenues. The results last up to five quarters in the future, hold internationally, vary predictably with cross-country differences in employment protection legislation, and are robust to instrumental variable estimation employing exogenous variation arising from disaster shocks.

Appendix A: Variable Definitions

Variable	Source	Definition
A	Compustat Global	Log total assets in USD: log(AT)
AC	Compustat Global	Change in accruals scaled by average total assets: $(\Delta\text{IB} - \Delta\text{OANCF})/\overline{\text{AT}}$
COGS	Compustat Global	Change in cost of goods sold scaled by average total assets: $\Delta\text{COGS}/\overline{\text{AT}}$
D	Compustat Global	Change in dividends scaled by average total assets: $\Delta\text{DVT}/\overline{\text{AT}}$
DD	Compustat Global	Indicator that the company pays a dividend
E	Compustat Global	Change in earnings scaled by average total assets: $\Delta\text{IB}/\overline{\text{AT}}$
EPL	OECD	OECD protection of permanent workers against individual and collective dismissals index
GP	Compustat Global	Change in gross profit scaled by average total assets: $(\Delta\text{SALE} - \Delta\text{COGS})/\overline{\text{AT}}$
High EPL	OECD	Indicator that the company's country's protection of permanent workers against individual and collective dismissals index is above sample median
Natural Disaster	Baker and Bloom (2013)	Indicator that a natural disaster occurred during the country-year weighted by the increase in Google News Archive citations of the name of the country the natural disaster occurred in
NegE	Compustat Global	Indicator that the company is making a loss
NOX	Compustat Global	Change in net non-operating expenses scaled by average total assets: $(\Delta\text{OP} - \Delta\text{E})/\overline{\text{AT}}$
OP	Compustat Global	Change in operating profit scaled by average total assets: $\Delta\text{OIADP}/\overline{\text{AT}}$
OX	Compustat Global	Change in net operating expenses scaled by average total assets: $(\Delta\text{GP} - \Delta\text{OP})/\overline{\text{AT}}$
Political Shock	Baker and Bloom (2013)	Indicator that a political shock occurred within the country-year weighted by the increase in Google News Archive citations of the name of the country the political shock occurred in
Rev	Compustat Global	Change in revenues scaled by average total assets: $\Delta\text{SALE}/\overline{\text{AT}}$
Revolution	Baker and Bloom (2013)	Indicator that a revolution occurred within the country-year weighted by the increase in Google News Archive citations of the name of the country the revolution occurred in
Terror Attack	Baker and Bloom (2013)	Indicator that a terror attack occurred within the country-year weighted by the increase in Google News Archive citations of the name of the country the terror attack occurred in
GE^{US}	CRSP	Aggregate US stock market index return over the quarter
MU^{US}	Baker et al. (2016)	US economic policy uncertainty index averaged over the quarter and scaled by 100
GE^{g}	MSCI	Aggregate world stock market index return over the quarter
MU^{g}	Baker et al. (2016)	Purchasing power parity adjusted global economic policy uncertainty index averaged over the year and scaled by 100
GE^{BB}	Baker and Bloom (2013)	Annual return of the firm's country's major stock market index
MU^{BB}	Baker and Bloom (2013)	Log quarterly daily stock return standard deviation of the firm's country's major stock market index averaged over the last four quarters
X	Compustat Global	Change in net expenses scaled by average total assets: $(\Delta\text{SALE} - \Delta\text{E})/\overline{\text{AT}}$

Δ denotes change relative to the same quarter in the last fiscal year for quarterly data and relative to the last fiscal year for annual data. $\overline{}$ denotes average over period start and end value.

References

Abel, A. B., 1983. Optimal investment under uncertainty. The American Economic Review 73, 228.

Acemoglu, D., Robinson, J. A., 2013. Why nations fail: The origins of power, prosperity, and poverty. Crown Business.

Anderson, M. C., Banker, R. D., Janakiraman, S. N., 2003. Are selling, general, and administrative costs "sticky"? Journal of Accounting Research 41, 47–63.

Anilowski, C., Feng, M., Skinner, D. J., 2007. Does earnings guidance affect market returns? The nature and information content of aggregate earnings guidance. Journal of Accounting and Economics 44, 36–63.

Bachmann, R., Moscarini, G., et al., 2011. Business cycles and endogenous uncertainty.

Baker, S. R., Bloom, N., 2013. Does uncertainty reduce growth? Using disasters as natural experiments.

Baker, S. R., Bloom, N., Canes-Wrone, B., Davis, S. J., Rodden, J., 2014. Why has us policy uncertainty risen since 1960? American Economic Review 104, 56–60.

Baker, S. R., Bloom, N., Davis, S. J., 2016. Measuring economic policy uncertainty. The Quarterly Journal of Economics 131, 1593–1636.

Ball, R., Sadka, G., Sadka, R., 2009. Aggregate earnings and asset prices. Journal of Accounting Research 47, 1097–1133.

Banker, R. D., Byzalov, D., Chen, L. T., 2013. Employment protection legislation, adjustment costs and cross-country differences in cost behavior. Journal of Accounting and Economics 55, 111–127.

Bartov, E., 1993. The timing of asset sales and earnings manipulation. The Accounting Review pp. 840–855.

Basu, S., Bundick, B., 2017. Uncertainty shocks in a model of effective demand. Econometrica 85, 937–958.

Basu, S., Markov, S., Shivakumar, L., 2010. Inflation, earnings forecasts, and post-earnings announcement drift. Review of Accounting Studies 15, 403–440.

Baum, C. F., Caglayan, M., Barkoulas, J. T., 2001. Exchange rate uncertainty and firm profitability. Journal of Macroeconomics 23, 565–576.

Bayar, Y., Ceylan, I. E., 2017. Impact of macroeconomic uncertainty on firm profitability: A case of bist non-metallic mineral products sector. Journal of Business, Economics and Finance 6, 318–327.

Bernanke, B. S., 1983. Irreversibility, uncertainty, and cyclical investment. The Quarterly Journal of Economics 98, 85–106.

Binz, O., Mayew, W., 2015. Macroeconomic uncertainty and voluntary disclosure: Evidence from guidance reports.

Binz, O., Mayew, W. J., Nallareddy, S., 2017. Firms' response to macroeconomic estimation errors.

Bloom, N., 2009. The impact of uncertainty shocks. Econometrica 77, 623–685.

Bloom, N., 2014. Fluctuations in uncertainty. Journal of Economic Perspectives 28, 153–76.

Bloom, N., Bond, S., van Reenen, J., 2007. Uncertainty and investment dynamics. Review of Economic Studies 74, 391–415.

Bloom, N., Floetotto, M., Jaimovich, N., Saporta-Eksten, I., Terry, S. J., 2018. Really uncertain business cycles. Econometrica 86, 1031–1065.

Bonsall, S. B., Bozanic, Z., Fischer, P. E., 2013. What do management earnings forecasts convey about the macroeconomy? Journal of Accounting Research 51, 225–266.

Bradshaw, M. T., Richardson, S. A., Sloan, R. G., 2001. Do analysts and auditors use information in accruals? Journal of Accounting Research 39, 45–74.

Carabias, J. M., 2018. The real-time information content of macroeconomic news: Implications for firm-level earnings expectations. Review of Accounting Studies 23, 136–166.

Choi, J. H., Kalay, A., Sadka, G., 2016. Earnings news, expected earnings, and aggregate stock returns. Journal of Financial Markets 29, 110–143.

Chordia, T., Shivakumar, L., 2005. Inflation illusion and post-earnings-announcement drift. Journal of Accounting Research 43, 521–556.

Christiano, L. J., Motto, R., Rostagno, M., 2014. Risk shocks. American Economic Review 104, 27–65.

Cieslak, A., Vissing-Jorgensen, A., 2017. The economics of the Fed put.

Cready, W. M., Gurun, U. G., 2010. Aggregate market reaction to earnings announcements. Journal of Accounting Research 48, 289–334.

Dechow, P., Ge, W., Schrand, C., 2010. Understanding earnings quality: A review of the proxies, their determinants and their consequences. Journal of Accounting and Economics 50, 344–401.

Decker, R. A., D'Erasmo, P. N., Moscoso Boedo, H., 2016. Market exposure and endogenous firm volatility over the business cycle. American Economic Journal: Macroeconomics 8, 148–98.

Demir, F., 2009. Financialization and manufacturing firm profitability under uncertainty and macroeconomic volatility: Evidence from an emerging market. Review of Development Economics 13, 592–609.

Dichev, I. D., Tang, V. W., 2009. Earnings volatility and earnings predictability. Journal of Accounting and Economics 47, 160–181.

Dreze, J. H., Modigliani, F., 1975. Consumption decisions under uncertainty 5, 459–486.

Easton, P. D., Kelly, P., Neuhierl, A., 2017. Beating a random walk.

Eberly, J. C., 1994. Adjustment of consumers' durables stocks: Evidence from automobile purchases. Journal of Political Economy 102, 403–436.

Evans, M. E., Njoroge, K., Yong, K. O., 2017. An examination of the statistical significance and economic relevance of profitability and earnings forecasts from models and analysts. Contemporary Accounting Research .

Fama, E. F., French, K. R., 2000. Forecasting profitability and earnings. The Journal of Business 73, 161–175.

Fama, E. F., French, K. R., 2006. Profitability, investment and average returns. Journal of Financial Economics 82, 491–518.

Fomby, T., Ikeda, Y., Loayza, N., 2011. The growth aftermath of natural disasters. Journal of Applied Econometrics .

Foster, G., 1977. Quarterly accounting data: Time-series properties and predictive-ability results. The Accounting Review 52, 1–21.

Gabaix, X., 2011. The granular origins of aggregate fluctuations. Econometrica 79, 733–772.

Gallo, L. A., Hann, R. N., Li, C., 2016. Aggregate earnings surprises, monetary policy, and stock returns. Journal of Accounting and Economics 62, 103–120.

Gallo, L. A., Hann, R. N., Li, C., Zotova, V., 2018. Is the us unique? International evidence on the aggregate earnings-returns association.

Gerakos, J. J., Gramacy, R. B., 2013. Regression-based earnings forecasts.

Gilchrist, S., Sim, J. W., Zakrajšek, E., 2014. Uncertainty, financial frictions, and investment dynamics.

Gkougkousi, X., 2014. Aggregate earnings and corporate bond markets. Journal of Accounting Research 52, 75–106.

Graham, J. R., Harvey, C. R., Rajgopal, S., 2005. The economic implications of corporate financial reporting. Journal of Accounting and Economics 40, 3–73.

Guiso, L., Jappelli, T., Terlizzese, D., 1992. Earnings uncertainty and precautionary saving. Journal of Monetary Economics 30, 307–337.

Gulen, H., Ion, M., 2015. Policy uncertainty and corporate investment. The Review of Financial Studies 29, 523–564.

Hahm, J.-H., Steigerwald, D. G., 1999. Consumption adjustment under time-varying income uncertainty. Review of Economics and Statistics 81, 32–40.

Handley, K., Limao, N., 2015. Trade and investment under policy uncertainty: Theory and firm evidence. American Economic Journal: Economic Policy 7, 189–222.

Hann, R. N., Li, C., Ogneva, M., 2017. Another look at the macroeconomic information content of aggregate earnings: Evidence from the labor market.

Hansen, L. P., Sargent, T. J., 2010. Fragile beliefs and the price of uncertainty. Quantitative Economics 1, 129–162.

Hartman, R., 1972. The effects of price and cost uncertainty on investment. Journal of Economic Theory 5, 258–266.

Hou, K., Van Dijk, M. A., Zhang, Y., 2012. The implied cost of capital: A new approach. Journal of Accounting and Economics 53, 504–526.

Hugon, A., Kumar, A., Lin, A.-P., 2015. Analysts, macroeconomic news, and the benefit of active in-house economists. The Accounting Review 91, 513–534.

Jordà, Ò., 2005. Estimation and inference of impulse responses by local projections. American Economic Review 95, 161–182.

Jorgensen, B., Li, J., Sadka, G., 2012. Earnings dispersion and aggregate stock returns. Journal of Accounting and Economics 53, 1–20.

Julio, B., Yook, Y., 2012. Political uncertainty and corporate investment cycles. The Journal of Finance 67, 45–83.

Jurado, K., Ludvigson, S. C., Ng, S., 2015. Measuring uncertainty. American Economic Review 105, 1177–1216.

Kahneman, D., Tversky, A., 1979. Prospect theory: An analysis of decision under risk. Econometrica 47, 263–292.

Kalay, A., Nallareddy, S., Sadka, G., 2016. Uncertainty and sectoral shifts: The interaction between firm-level and aggregate-level shocks, and macroeconomic activity. Management Science 64, 198–214.

Kellogg, R., 2014. The effect of uncertainty on investment: Evidence from texas oil drilling. American Economic Review 104, 1698–1734.

Kemuma, N. E., 2015. The effect of foreign exchange rate volatility on profitability of insurance industry in Kenya.

Kim, K., Pandit, S., Wasley, C. E., 2015. Macroeconomic uncertainty and management earnings forecasts. Accounting Horizons 30, 157–172.

Kinney, W. R., 1971. Predicting earnings: Entity versus subentity data. Journal of Accounting Research 9, 127–136.

Knight, F. H., 1921. Risk, uncertainty and profit. Houghton Mif in Company.

Konchitchki, Y., 2011. Inflation and nominal financial reporting: Implications for performance and stock prices. The Accounting Review 86, 1045–1085.

Konchitchki, Y., Patatoukas, P. N., 2014a. Accounting earnings and gross domestic product. Journal of Accounting and Economics 57, 76–88.

Konchitchki, Y., Patatoukas, P. N., 2014b. Taking the pulse of the real economy using financial statement analysis: Implications for macro forecasting and stock valuation. The Accounting Review 89, 669–694.

Kothari, S., Lewellen, J., Warner, J. B., 2006. Stock returns, aggregate earnings surprises, and behavioral finance. Journal of Financial Economics 79, 537–568.

Kothari, S., Ramanna, K., Skinner, D. J., 2010. Implications for GAAP from an analysis of positive research in accounting. Journal of Accounting and Economics 50, 246–286.

Leahy, J. V., Whited, T. M., 1996. The effect of uncertainty on investment: Some stylized trends. Journal of Money, Credit & Banking 28, 64–84.

Leduc, S., Liu, Z., 2016. Uncertainty shocks are aggregate demand shocks. Journal of Monetary Economics 82, 20–35.

Leland, H. E., et al., 1968. Saving and uncertainty: The precautionary demand for saving. The Quarterly Journal of Economics 82, 465–473.

Li, K. K., Mohanram, P., 2014. Evaluating cross-sectional forecasting models for implied cost of capital. Review of Accounting Studies 19, 1152–1185.

Li, N., Richardson, S., Tuna, İ., 2014. Macro to micro: Country exposures, firm fundamentals and stock returns. Journal of Accounting and Economics 58, 1–20.

Lusardi, A., 1998. On the importance of the precautionary saving motive. The American Economic Review 88, 449–453.

McDonald, R., Siegel, D., 1986. The value of waiting to invest. The Quarterly Journal of Economics 101, 707–727.

Menegatti, M., 2010. Uncertainty and consumption: New evidence in oecd countries. Bulletin of Economic Research 62, 227–242.

Musa, F. M., 2014. The effect of foreign exchange rate volatility on the financial performance of oil marketing companies in Kenya.

Nallareddy, S., Ogneva, M., 2016. Predicting restatements in macroeconomic indicators using accounting information. The Accounting Review 92, 151–182.

Nickell, S., 1981. Biases in dynamic models with fixed effects. Econometrica 49, 1417–1426.

Nobes, C., 2001. GAAP 2001: A survey of national accounting rules benchmarked against international accounting standards. Andersen.

Novy, D., Taylor, A. M., 2014. Trade and uncertainty.

Oh, H., Yoon, C., 2019. Time to build and the real-options channel of residen- tial investment. Journal of Financial Economics .

Oi, W. Y., 1961. The desirability of price instability under perfect competition. Econometrica 29, 58–64.

Paddock, J. L., Siegel, D. R., Smith, J. L., 1988. Option valuation of claims on real assets: The case of offshore petroleum leases. The Quarterly Journal of Economics 103, 479–508.

Panousi, V., Papanikolaou, D., 2012. Investment, idiosyncratic risk, and ownership. The Journal of Finance 67, 1113–1148.

Patatoukas, P. N., 2014. Detecting news in aggregate accounting earnings: Implications for stock market valuation. Review of Accounting Studies 19, 134–160.

Penman, S. H., 1992. Return to fundamentals. Journal of Accounting, Auditing & Finance 7, 465–483.

Pissarides, C. A., 1999. Policy influences on unemployment: The european experience. Scottish Journal of Political Economy 46, 389–418.

Ramey, G., Ramey, A., 1995. Cross-country evidence on the link between volatility and growth. The American Economic Review 85, 1138–1151.

Rehse, D., Riordan, R., Rottke, N., Zietz, J., 2019. The effects of uncertainty on market liquidity: Evidence from Hurricane Sandy. Journal of Financial Economics 132.

Riggs-Cragun, A., 2018. Toward an accounting-centric principal-agent framework: Theory and some applications.

Rogers, J. L., Skinner, D. J., Van Buskirk, A., 2009. Earnings guidance and market uncertainty. Journal of Accounting and Economics 48, 90–109.

Romer, C. D., 1990. The great crash and the onset of the great depression. The Quarterly Journal of Economics 105, 597–624.

Sadka, G., 2007. Understanding stock price volatility: The role of earnings. Journal of Accounting research 45, 199–228.

Sadka, G., Sadka, R., 2009. Predictability and the earnings-returns relation. Journal of Financial Economics 94, 87–106.

Sandmo, A., 1970. The effect of uncertainty on saving decisions. The Review of Economic Studies 37, 353–360.

Schipper, K., 1991. Analysts' forecasts. Accounting Horizons 5, 105.

Shevlin, T. J., Shivakumar, L., Urcan, O., 2019. Macroeconomic effects of corporate tax policy. Journal of Accounting and Economics .

Shivakumar, L., 2007. Aggregate earnings, stock market returns and macroeconomic activity: A discussion of "Does earnings guidance affect market returns? The nature and information content of aggregate earnings guidance". Journal of Accounting and Economics 44, 64–73.

Shivakumar, L., 2010. Discussion of aggregate market reaction to earnings announcements. Journal of Accounting Research 48, 335–342.

Shivakumar, L., Urcan, O., 2017. Why does aggregate earnings growth reflect information about future inflation? The Accounting Review 92, 247–276.

Sloan, R. G., 1996. Do stock prices fully reflect information in accruals and cash flows about future earnings? The Accounting Review 71, 289–315.

Stein, L. C., Stone, E., 2013. The effect of uncertainty on investment, hiring, and R&D: Causal evidence from equity options.

Swiss Re Institute, 2019. Natural catastrophes and man-made disasters in 2018: "Secondary" perils on the frontline.

Thomas, J. K., Zhang, H., 2002. Inventory changes and future returns. Review of Accounting Studies 7, 163–187.

Tian, C., 2015. Riskiness, endogenous productivity dispersion and business cycles. Journal of Economic Dynamics and Control 57, 227–249.

Van Long, N., Siebert, H., 1983. Lay-off restraints and the demand for labor. Zeitschrift für die gesamte Staatswissenschaft pp. 612–624.

Watts, R. L., Leftwich, R. W., 1977. The time series of annual accounting earnings. Journal of Accounting Research 15, 253–271.

Figure 1. Hypothesis Development

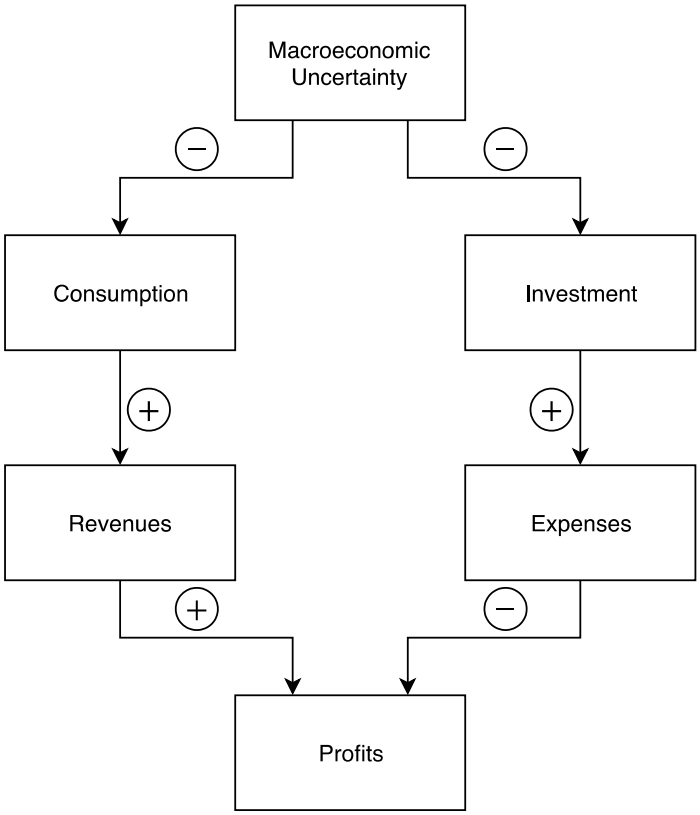


Figure 1 illustrates my hypothesis development.

Figure 2. Economic Policy Uncertainty Index

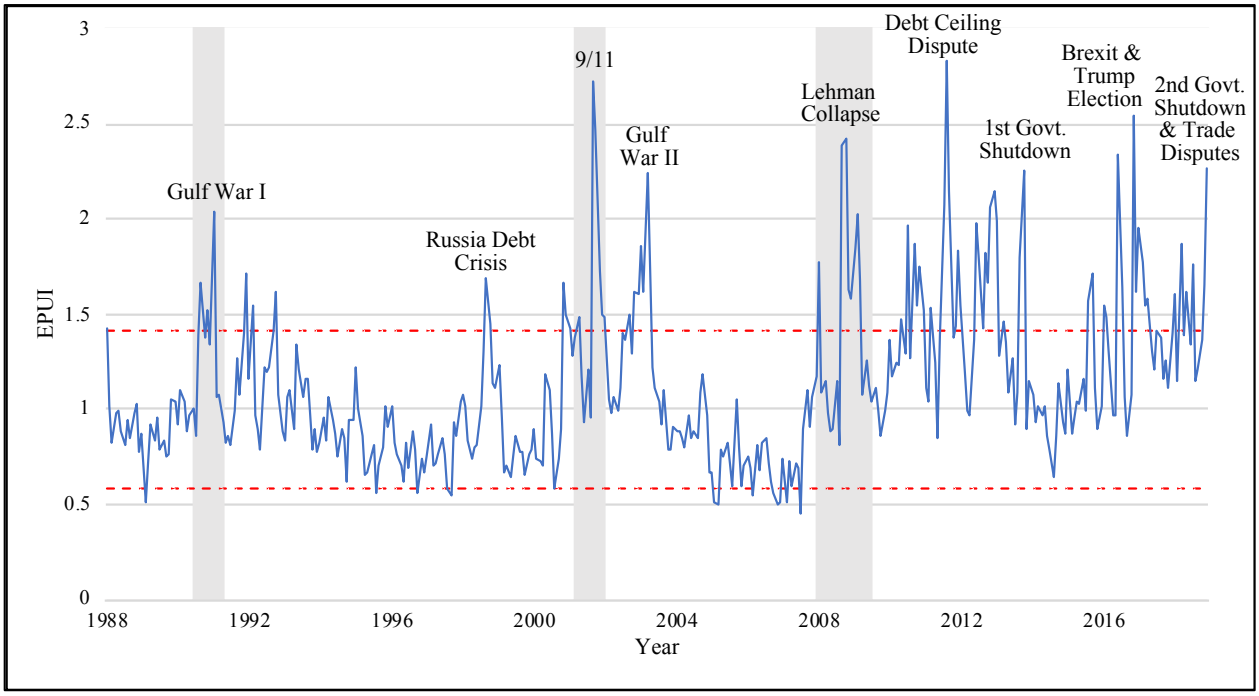
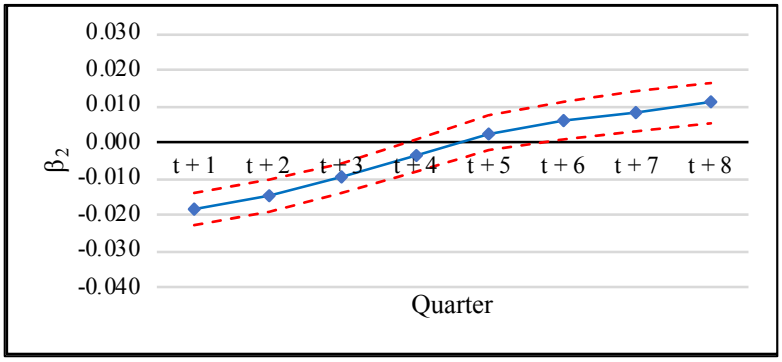


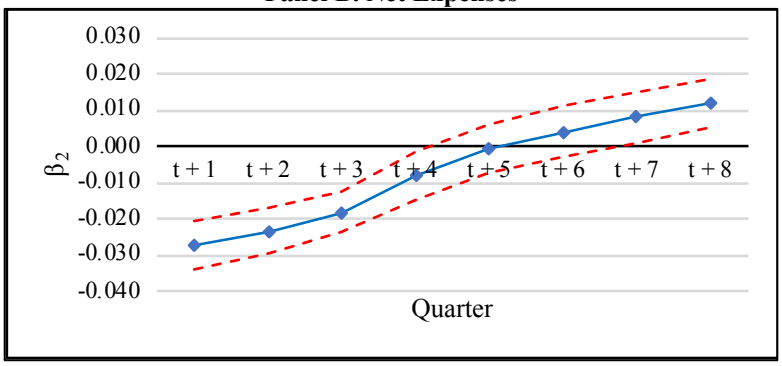
Figure 2 plots Baker et al.'s (2016) US Economic Policy Uncertainty Index over time. NBER recessions are shaded in grey. Red dashed lines depict the one-standard-deviation confidence interval.

Figure 3. Long-Run Response Functions: Macroeconomic Uncertainty and Corporate Outcomes

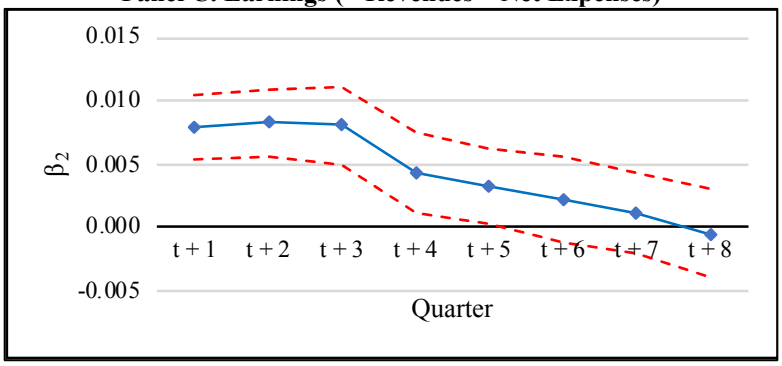
Panel A. Revenues



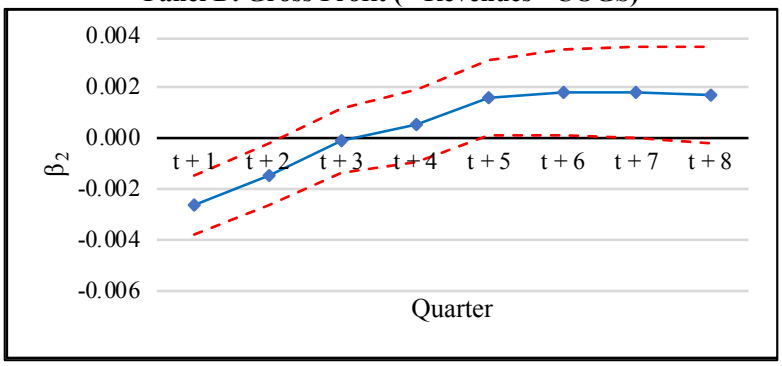
Panel B. Net Expenses



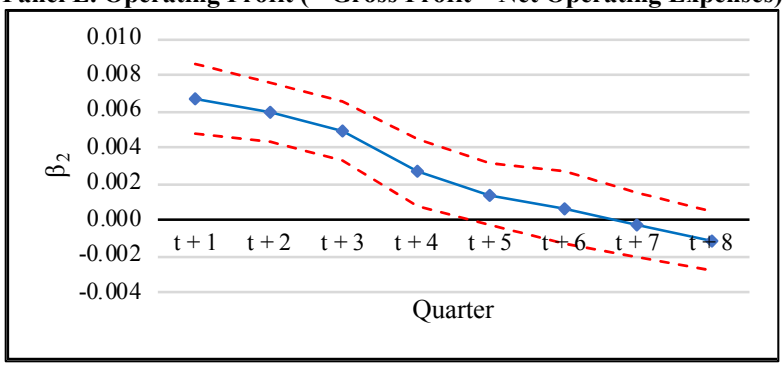
Panel C. Earnings (= Revenues – Net Expenses)



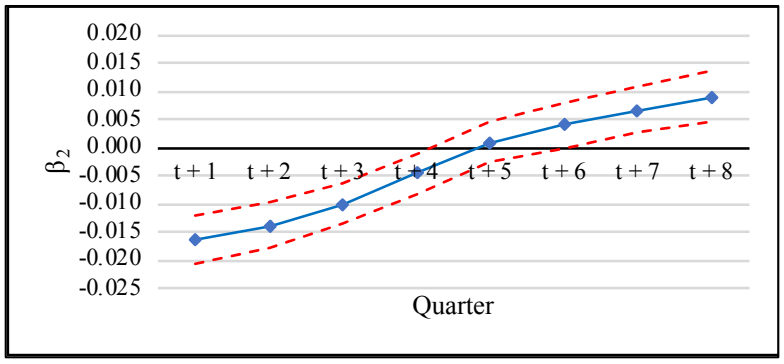
Panel D. Gross Profit (= Revenues - COGS)



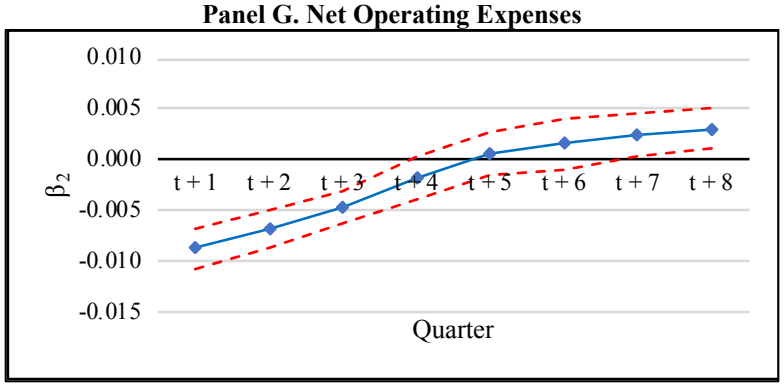
Panel E. Operating Profit (= Gross Profit – Net Operating Expenses)



Panel F. Cost of Goods Sold



Panel G. Net Operating Expenses



Panel H. Net Non-Operating Expenses

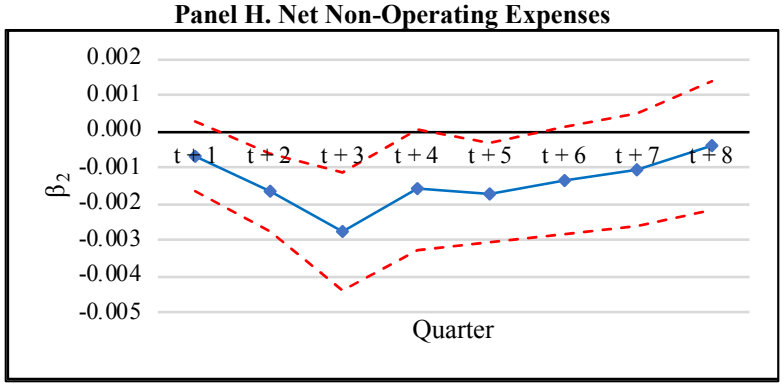


Figure 3 Panel A, B, C, D, E, F, G, and H plot response functions (Y axis) of revenues, net expense, earnings, gross profit, operating profit, cost of goods sold, net operating expenses, and net non-operating expenses to a unit shock in economic policy uncertainty over 1 to 8 quarters (X axis) in the future. Responses measured as macroeconomic uncertainty's slope coefficient β_2 (blue solid line) and confidence intervals (red dashed line) are obtained from estimating equation (3) with the full set of controls. Variable definitions are in Appendix A. Standard errors are clustered by firm and by quarter.

Figure 4. Global Economic Policy Uncertainty Index

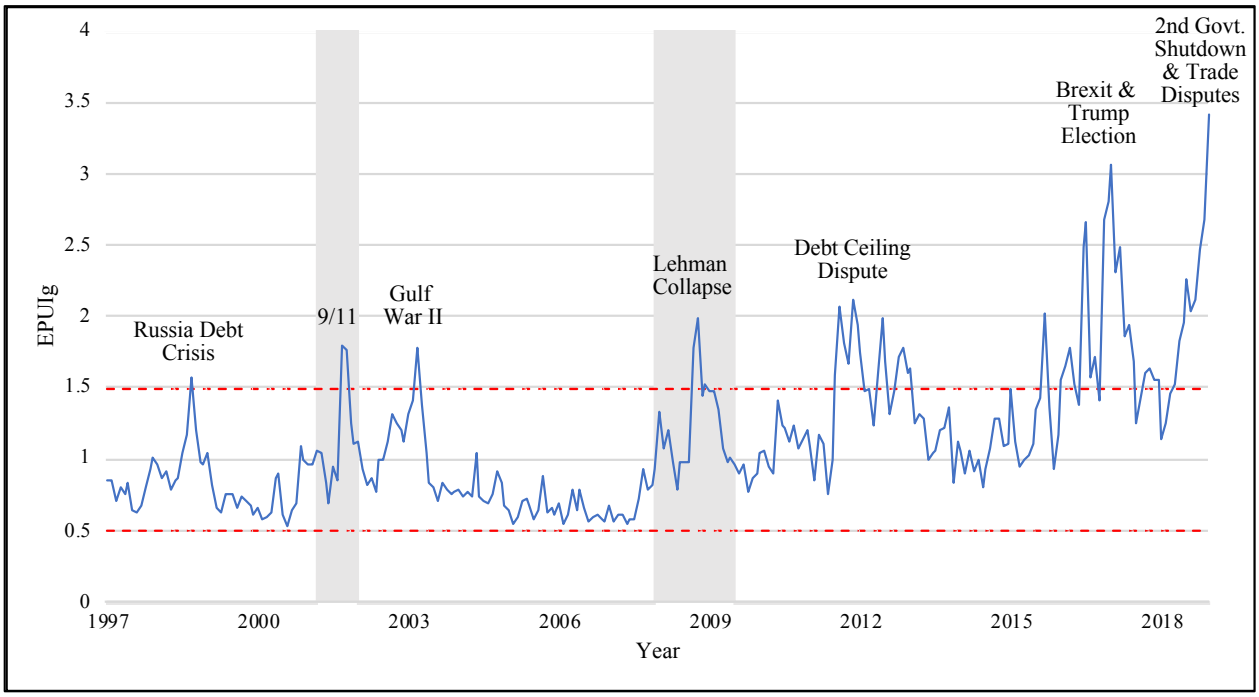


Figure 4 plots Baker et al.'s (2016) global Economic Policy Uncertainty Index (EPUIg) over time. NBER recessions are shaded in grey. Red dashed lines depict the one-standard-deviation confidence interval.

Table 1. US Quarterly Data: Descriptive Statistics and Correlation Matrix

Panel A. Descriptive Statistics

Variable	N	Mean	StD	P1	P25	Median	P75	P99
GE_{tUS}	526,163	0.03	0.08	-0.22	-0.02	0.03	0.07	0.22
MU_{tUS}	526,163	1.12	0.37	0.57	0.80	1.03	1.35	2.11
Rev_t	526,163	0.02	0.10	-0.35	-0.01	0.01	0.04	0.46
X_t	526,163	0.02	0.17	-0.77	-0.01	0.01	0.05	0.78
E_t	526,163	0.00	0.12	-0.54	-0.01	0.00	0.01	0.59
$COGS_t$	526,163	0.01	0.10	-0.39	-0.01	0.00	0.03	0.44
OX_t	526,163	0.01	0.07	-0.36	0.00	0.00	0.01	0.39
NOX_t	526,163	0.00	0.06	-0.30	0.00	0.00	0.01	0.31
GP_t	526,163	0.01	0.07	-0.28	-0.01	0.00	0.02	0.33
OP_t	526,163	0.00	0.08	-0.34	-0.01	0.00	0.01	0.39
A_t	526,163	5.90	2.66	-0.82	4.09	6.03	7.79	11.51
D_t	526,163	0.00	0.00	-0.01	0.00	0.00	0.00	0.02
DD_t	526,163	0.34	0.47	0.00	0.00	0.00	1.00	1.00
$NegE_t$	526,163	0.39	0.49	0.00	0.00	0.00	1.00	1.00
AC_t	526,163	0.00	0.13	-0.64	-0.02	0.00	0.01	0.60

Panel B. Correlation Matrix

Variable	GE_{tUS}	MU_{tUS}	Rev_{t+1}	X_{t+1}	E_{t+1}	$COGS_{t+1}$	OX_{t+1}	NOX_{t+1}	GP_{t+1}	OP_{t+1}	A_t	D_t	DD_t	$NegE_t$	AC_t	AC_t
GE_{tUS}	1.00	-0.14*	0.04*	0.02*	0.00	0.03*	0.02*	-0.01*	0.02*	0.00	-0.01*	0.00	0.01*	-0.03*	0.01*	0.01*
MU_{tUS}	-0.06*	1.00	-0.09*	-0.07*	0.02*	-0.08*	-0.05*	0.00	-0.03*	0.02*	0.08*	0.00	0.02*	0.05*	0.00*	0.00
Rev_{t+1}	0.04*	-0.13*	1.00	0.54*	0.12*	0.71*	0.26*	0.05*	0.53*	0.21*	-0.02*	0.01*	-0.02*	-0.14*	0.02*	0.02*
X_{t+1}	0.02*	-0.12*	0.70*	1.00	-0.73*	0.58*	0.49*	0.54*	0.08*	-0.40*	-0.01*	0.01*	-0.01*	-0.06*	-0.04*	0.02*
E_{t+1}	0.03*	-0.01*	0.30*	-0.27*	1.00	-0.14*	-0.38*	-0.63*	0.34*	0.69*	-0.02*	0.00*	-0.01*	-0.03*	0.07*	0.07*
$COGS_{t+1}$	0.02*	-0.13*	0.77*	0.73*	0.04*	1.00	0.00	0.04*	-0.16*	-0.16*	0.01*	0.01*	0.00*	-0.09*	-0.01*	-0.01*
OX_{t+1}	0.02*	-0.11*	0.46*	0.56*	-0.14*	0.32*	1.00	0.04*	0.39*	-0.52*	-0.01*	0.00	-0.01*	-0.03*	-0.06*	-0.06*
NOX_{t+1}	0.00	-0.02*	0.22*	0.43*	-0.21*	0.13*	0.08*	1.00	0.03*	-0.01*	-0.02*	0.00*	-0.01*	0.02*	-0.02*	-0.02*
GP_{t+1}	0.03*	-0.08*	0.69*	0.36*	0.49*	0.24*	0.46*	0.25*	1.00	0.51*	-0.04*	0.00	-0.03*	-0.07*	0.04*	0.04*
OP_{t+1}	0.02*	-0.02*	0.40*	-0.02*	0.75*	0.08*	-0.16*	0.26*	0.65*	1.00	-0.04*	0.00	-0.02*	-0.04*	0.09*	0.09*
A_t	0.00*	0.09*	0.00	-0.04*	-0.01*	0.00	-0.03*	-0.02*	-0.02*	-0.02*	1.00	0.04*	0.48*	-0.41*	0.03*	0.03*
D_t	0.00	-0.01*	0.04*	0.01*	0.01*	0.03*	0.01*	0.00*	0.02*	0.01*	0.23*	1.00	0.20*	-0.06*	0.00	0.00
DD_t	0.01*	0.02*	-0.03*	-0.06*	-0.01*	-0.02*	-0.06*	-0.02*	-0.04*	-0.02*	0.49*	0.48*	1.00	-0.34*	0.01*	0.01*
$NegE_t$	-0.02*	0.05*	-0.20*	-0.09*	-0.12*	-0.14*	-0.11*	0.00	-0.16*	-0.12*	-0.40*	-0.20*	-0.34*	1.00	-0.08*	-0.08*
AC_t	0.01*	-0.01*	0.05*	0.01*	0.07*	0.04*	-0.02*	-0.02*	0.05*	0.07*	0.01*	0.01*	0.01*	-0.12*	1.00	1.00

Table 1 presents the US quarterly sample descriptive statistics (Panel A) and correlation matrix (Panel B). * indicates significance at the 1% level. Pearson (Spearman) correlations are above (below) the diagonal. Variable definitions are in Appendix A.

Table 2. US Quarterly Data: Macroeconomic Uncertainty and Corporate Outcomes

Panel A. One Quarter Ahead

Variable	(1) Rev_{t+1}	(2) Rev_{t+1}	(3) X_{t+1}	(4) X_{t+1}	(5) E_{t+1}	(6) E_{t+1}
GE_{tUS}	0.028**	0.024**	0.018	0.015	0.012	0.010
	(2.04)	(2.00)	(0.90)	(0.81)	(1.21)	(1.04)
MU_{tUS}	**-0.025*** **	**-0.018*** **	**-0.032*** **	**-0.027*** **	**0.006*** **	**0.008*** **
	(-8.86)	**(-7.83)**	**(-9.45)**	**(-8.33)**	**(4.46)**	**(6.07)**
A_t		-0.015***		-0.012***		-0.005***
		(-22.99)		(-13.09)		(-7.38)
D_t		0.154**		0.338***		-0.177**
		(2.06)		(3.44)		(-2.57)
DD_t		-0.002*		0.003**		-0.005***
		(-1.95)		(2.35)		(-9.08)
$NegE_t$		-0.031***		-0.019***		-0.013***
		(-29.44)		(-16.58)		(-17.13)
AC_t		0.006**		-0.033***		0.038***
		(2.11)		(-4.01)		(5.58)
Observations	526,163	526,163	526,163	526,163	526,163	526,163
Adjusted R-squared	0.137	0.161	0.077	0.082	0.026	0.030
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm

Panel B. Two Quarters Ahead

Variable	(1) Rev_{t+2}	(2) Rev_{t+2}	(3) X_{t+2}	(4) X_{t+2}	(5) E_{t+2}	(6) E_{t+2}
GE_{tUS}	0.045***	0.042***	0.037**	0.033**	0.010	0.010
	(3.70)	(3.80)	(2.06)	(1.97)	(1.05)	(1.03)
MU_{tUS}	**-0.021*** **	**-0.015*** **	**-0.029*** **	**-0.024*** **	**0.007*** **	**0.008*** **
	(-7.70)	**(-6.40)**	**(-8.42)**	**(-7.35)**	**(5.52)**	**(6.31)**
A_t		-0.018***		-0.017***		-0.003***
		(-25.74)		(-18.18)		(-4.97)
D_t		-0.088		0.184**		-0.265***
		(-1.25)		(2.10)		(-4.00)
DD_t		-0.001		0.003**		-0.004***
		(-1.42)		(2.39)		(-7.31)
$NegE_t$		-0.021***		-0.018***		-0.003***
		(-22.83)		(-15.47)		(-4.83)
AC_t		0.003		0.048***		-0.036***
		(1.07)		(6.09)		(-5.76)
Observations	504,790	504,790	504,679	504,679	505,455	505,455
Adjusted R-squared	0.135	0.157	0.078	0.086	0.027	0.029
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm

Panel C. Three Quarters Ahead

Variable	(1) Rev_{t+3}	(2) Rev_{t+3}	(3) X_{t+3}	(4) X_{t+3}	(5) E_{t+3}	(6) E_{t+3}
GE_{tUS}	0.059***	0.056***	0.067***	0.061***	-0.004	-0.003
	(5.28)	(5.43)	(4.92)	(5.04)	(-0.50)	(-0.36)
MU_{tUS}	**-0.016*** **	**-0.010*** **	**-0.025*** **	**-0.018*** **	**0.008*** **	**0.008*** **
	(-6.53)	**(-4.75)**	**(-7.68)**	**(-6.30)**	**(4.94)**	**(5.23)**
A_t		-0.021***		-0.022***		-0.001**
		(-26.91)		(-21.76)		(-2.17)
D_t		-0.181**		0.048		-0.229***
		(-2.13)		(0.57)		(-2.99)
DD_t		-0.001		0.003***		-0.004***
		(-0.93)		(2.98)		(-7.41)
$NegE_t$		-0.010***		-0.017***		0.007***
		(-12.09)		(-12.89)		(7.55)
AC_t		0.002		0.119***		-0.097***
		(0.92)		(15.82)		(-16.36)
Observations	487,829	487,829	487,731	487,731	488,417	488,417
Adjusted R-squared	0.129	0.153	0.076	0.093	0.028	0.039
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm

Panel D. Four Quarters Ahead

Variable	(1) Rev_{t+4}	(2) Rev_{t+4}	(3) X_{t+4}	(4) X_{t+4}	(5) E_{t+4}	(6) E_{t+4}
GE_{tUS}	0.056***	0.054***	0.079***	0.070***	-0.019**	-0.014*
	(4.66)	(4.80)	(5.36)	(5.58)	(-2.04)	(-1.90)
MU_{tUS}	**-0.009*** **	**-0.004* **	**-0.018*** **	**-0.008** **	**0.008*** **	**0.004*** **
	(-3.63)	**(-1.73)**	**(-4.73)**	**(-2.44)**	**(3.88)**	**(2.74)**
A_t		-0.024***		-0.027***		0.001
		(-27.63)		(-23.75)		(1.04)
D_t		-0.122		-0.068		-0.043
		(-1.51)		(-0.75)		(-0.70)
DD_t		0.000		0.001		-0.000
		(0.47)		(0.80)		(-0.48)
$NegE_t$		0.008***		-0.043***		0.051***
		(8.89)		(-28.46)		(38.38)
AC_t		-0.004		0.210***		-0.178***
		(-1.52)		(24.38)		(-25.86)
Observations	472,138	472,138	472,076	472,076	472,591	472,591
Adjusted R-squared	0.125	0.154	0.075	0.122	0.029	0.090
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm

Table 2 Panels A, B, C, and D present the results of regressing seasonally adjusted 1, 2, 3, and 4 quarter ahead revenues (Rev), net expenses (X), and earnings (E) on controls and macroeconomic growth expectations (GE_{US}) and uncertainty (MU_{US}). Variable definitions are in Appendix A. Standard errors are clustered by firm and quarter. Robust t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10% level.

Table 3. US Quarterly Data: Macroeconomic Uncertainty and Disaggregated Corporate Outcomes

Panel A. One Quarter Ahead

Variable	(1) Rev_{t+1}	(2) GP_{t+1}	(3) OP_{t+1}	(4) E_{t+1}	(5) $COGS_{t+1}$	(6) OX_{t+1}	(7) NOX_{t+1}
GE_{tUS}	0.024**	0.010***	0.002	0.010	0.013	0.007	-0.006
	(2.00)	(3.12)	(0.46)	(1.04)	(1.24)	(1.50)	(-1.49)
MU_{tUS}	**-0.018*** **	**-0.003*** **	**0.007*** **	**0.008*** **	**-0.016*** **	**-0.009*** **	**-0.001**
	(-7.83)	**(-4.35)**	**(6.98)**	**(6.07)**	**(-7.86)**	**(-8.85)**	**(-1.44)**
A_t	-0.015***	-0.007***	-0.005***	-0.005***	-0.008***	-0.003***	-0.000
	(-22.99)	(-20.68)	(-12.11)	(-7.38)	(-15.95)	(-9.07)	(-1.59)
D_t	0.154**	-0.005	-0.046	-0.177**	0.154**	0.041	0.101***
	(2.06)	(-0.10)	(-0.99)	(-2.57)	(2.57)	(1.28)	(2.78)
DD_t	-0.002*	-0.002***	-0.003***	-0.005***	0.000	0.001***	0.001***
	(-1.95)	(-4.67)	(-8.19)	(-9.08)	(0.43)	(3.04)	(4.28)
$NegE_t$	-0.031***	-0.015***	-0.010***	-0.013***	-0.017***	-0.005***	0.002***
	(-29.44)	(-26.15)	(-17.12)	(-17.13)	(-22.37)	(-12.82)	(6.06)
AC_t	0.006**	0.015***	0.044***	0.038***	-0.010***	-0.027***	-0.000
	(2.11)	(6.53)	(12.01)	(5.58)	(-3.24)	(-7.72)	(-0.11)
Observations	526,163	526,163	526,163	526,163	526,163	526,163	526,163
Adjusted R-squared	0.161	0.075	0.059	0.030	0.117	0.079	0.001
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm	Firm

Panel B. Two Quarters Ahead

Variable	(1) Rev_{t+2}	(2) GP_{t+2}	(3) OP_{t+2}	(4) E_{t+2}	(5) $COGS_{t+2}$	(6) OX_{t+2}	(7) NOX_{t+2}
GE_{tUS}	0.042***	0.014***	0.001	0.010	0.028***	0.012***	-0.008*
	(3.80)	(4.00)	(0.24)	(1.03)	(2.93)	(2.98)	(-1.91)
MU_{tUS}	**-0.015*** **	**-0.001** **	**0.006*** **	**0.008*** **	**-0.014*** **	**-0.007*** **	**-0.002*** **
	(-6.40)	**(-2.30)**	**(7.39)**	**(6.31)**	**(-6.92)**	**(-7.45)**	**(-3.03)**
A_t	-0.018***	-0.008***	-0.004***	-0.003***	-0.011***	-0.005***	-0.001**
	(-25.74)	(-21.11)	(-9.01)	(-4.97)	(-19.87)	(-12.97)	(-2.48)
D_t	-0.088	-0.093**	-0.101**	-0.265***	0.000	0.005	0.115***
	(-1.25)	(-2.19)	(-2.22)	(-4.00)	(0.00)	(0.17)	(3.28)
DD_t	-0.001	-0.002***	-0.003***	-0.004***	0.001	0.001***	0.001***
	(-1.42)	(-4.12)	(-7.58)	(-7.31)	(0.71)	(2.79)	(2.80)
$NegE_t$	-0.021***	-0.007***	-0.001*	-0.003***	-0.014***	-0.007***	0.002***
	(-22.83)	(-15.41)	(-1.68)	(-4.83)	(-20.09)	(-16.30)	(5.62)
AC_t	0.003	0.001	0.005	-0.036***	0.002	-0.004	0.022***
	(1.07)	(0.48)	(1.36)	(-5.76)	(0.54)	(-1.36)	(7.50)
Observations	504,790	500,852	499,922	505,455	501,320	499,895	499,908
Adjusted R-squared	0.157	0.071	0.055	0.029	0.121	0.082	0.005
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm	Firm

Panel C. Three Quarters Ahead

Variable	(1) Rev_{t+3}	(2) GP_{t+3}	(3) OP_{t+3}	(4) E_{t+3}	(5) $COGS_{t+3}$	(6) OX_{t+3}	(7) NOX_{t+3}
GE_{tUS}	0.056***	0.016***	-0.005	-0.003	0.041***	0.020***	-0.002
	(5.43)	(4.04)	(-1.10)	(-0.36)	(5.22)	(5.30)	(-0.59)
MU_{tUS}	**-0.010*** **	**-0.000**	**0.005*** **	**0.008*** **	**-0.010*** **	**-0.005*** **	**-0.003*** **
	(-4.75)	**(-0.16)**	**(6.14)**	**(5.23)**	**(-5.74)**	**(-5.56)**	**(-3.31)**
A_t	-0.021***	-0.008***	-0.002***	-0.001**	-0.014***	-0.006***	-0.001***
	(-26.91)	(-21.08)	(-4.96)	(-2.17)	(-23.08)	(-16.26)	(-3.25)
D_t	-0.181**	-0.140**	-0.103*	-0.229***	-0.030	-0.030	0.073**
	(-2.13)	(-2.45)	(-1.74)	(-2.99)	(-0.51)	(-0.90)	(2.50)
DD_t	-0.001	-0.002***	-0.003***	-0.004***	0.001	0.001***	0.001***
	(-0.93)	(-3.63)	(-7.20)	(-7.41)	(1.06)	(2.79)	(3.77)
$NegE_t$	-0.010***	0.001	0.009***	0.007***	-0.011***	-0.008***	0.001***
	(-12.09)	(1.18)	(15.46)	(7.55)	(-15.01)	(-18.16)	(2.96)
AC_t	0.002	-0.010***	-0.026***	-0.097***	0.015***	0.014***	0.044***
	(0.92)	(-3.92)	(-7.21)	(-16.36)	(4.37)	(4.14)	(15.88)
Observations	487,829	484,699	483,708	488,417	485,098	483,679	483,692
Adjusted R-squared	0.153	0.066	0.057	0.039	0.117	0.078	0.011
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm	Firm

Panel D. Four Quarters Ahead

Variable	(1) Rev_{t+4}	(2) GP_{t+4}	(3) OP_{t+4}	(4) E_{t+4}	(5) $COGS_{t+4}$	(6) OX_{t+4}	(7) NOX_{t+4}
GE_{tUS}	0.054***	0.011***	-0.008**	-0.014*	0.043***	0.019***	0.004
	(4.80)	(2.67)	(-2.27)	(-1.90)	(5.17)	(4.52)	(1.10)
MU_{tUS}	**-0.004***	**0.001**	**0.003*** **	**0.004*** **	**-0.005** **	**-0.002**	**-0.002***
	(-1.73)	**(0.76)**	**(2.73)**	**(2.74)**	**(-2.59)**	**(-1.64)**	**(-1.92)**
A_t	-0.024***	-0.008***	-0.000	0.001	-0.017***	-0.008***	-0.001***
	(-27.63)	(-20.99)	(-0.69)	(1.04)	(-25.48)	(-18.54)	(-3.97)
D_t	-0.122	-0.060	-0.005	-0.043	-0.050	-0.047	0.005
	(-1.51)	(-1.24)	(-0.10)	(-0.70)	(-0.77)	(-1.39)	(0.17)
DD_t	0.000	0.000	-0.001***	-0.000	0.001	0.001***	-0.001**
	(0.47)	(0.06)	(-2.61)	(-0.48)	(0.92)	(2.82)	(-2.52)
$NegE_t$	0.008***	0.016***	0.027***	0.051***	-0.008***	-0.010***	-0.018***
	(8.89)	(27.91)	(33.85)	(38.38)	(-9.84)	(-21.30)	(-22.08)
AC_t	-0.004	-0.023***	-0.057***	-0.178***	0.023***	0.031***	0.076***
	(-1.52)	(-7.29)	(-15.38)	(-25.86)	(5.85)	(8.67)	(24.11)
Observations	472,138	470,107	469,280	472,591	470,407	469,258	469,270
Adjusted R-squared	0.154	0.078	0.081	0.090	0.121	0.086	0.036
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm	Firm

Table 3 Panels A, B, C, and D present the results of regressing seasonally adjusted 1, 2, 3, and 4 quarter ahead revenues (Rev), gross profits (GP), operating profits (OP), earnings (E), cost of goods sold (COGS), operating expenses (OX), and non-operating expenses (NOX) on controls and macroeconomic growth expectations (GE_{US}) and uncertainty (MU_{US}). Variable definitions are in Appendix A. Standard errors are clustered by firm and quarter. Robust t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10% level.

Table 4. International Annual Data: Sample Composition and Summary Statistics

Panel A. Sample Composition

Country	Firm-Years	% Sample	Mean GE_{tg}	Mean MU_{tg}	EPL
Argentina	884	0.20%	1.4%	1.08	2.12
Australia	18,780	4.25%	-1.2%	1.11	1.57
Austria	945	0.21%	1.9%	1.05	2.12
Bahamas	10	0.00%	0.6%	1.26	2.10
Bahrain	178	0.04%	1.7%	1.16	.
Bangladesh	883	0.20%	-0.4%	1.24	.
Belgium	1,164	0.26%	2.0%	1.09	2.14
Belize	4	0.00%	1.7%	1.15	.
Bermuda	5,469	1.24%	1.4%	1.15	.
Botswana	127	0.03%	1.1%	1.10	.
Brazil	3,528	0.80%	2.3%	1.11	1.84
British Virgin Is.	310	0.07%	1.5%	1.20	.
Bulgaria	372	0.08%	1.4%	1.23	.
Canada	23,150	5.23%	1.5%	1.06	0.92
Cayman Islands	6,899	1.56%	1.4%	1.22	.
Chile	2,247	0.51%	2.3%	1.08	2.53
China	31,919	7.22%	1.8%	1.12	3.31
Colombia	356	0.08%	2.1%	1.15	1.67
Croatia	804	0.18%	1.6%	1.14	2.32
Curaçao	31	0.01%	2.0%	1.16	.
Cyprus	562	0.13%	1.5%	1.11	.
Czech Rep.	183	0.04%	2.8%	1.05	2.87
Denmark	1,485	0.34%	1.3%	1.12	2.10
Ecuador	14	0.00%	0.7%	1.19	2.10
Egypt	807	0.18%	0.8%	1.26	.
Estonia	228	0.05%	2.4%	1.05	1.74
Falkland Islands	15	0.00%	1.4%	1.30	.
Faroe Islands	33	0.01%	2.2%	1.13	.
Finland	1,633	0.37%	1.9%	1.13	2.38
France	7,184	1.62%	1.8%	1.07	2.60
Gabonese Rep.	9	0.00%	0.2%	1.18	.
Germany	7,946	1.80%	1.7%	1.05	2.53
Ghana	106	0.02%	0.7%	1.20	.
Gibraltar	40	0.01%	1.3%	1.17	.
Greece	2,123	0.48%	1.1%	1.11	2.07
Guernsey	111	0.03%	0.8%	1.19	.
Hong Kong	1,541	0.35%	1.4%	1.19	.
Hungary	239	0.05%	2.4%	1.06	1.45
Iceland	115	0.03%	1.8%	1.14	2.04
India	31,678	7.16%	2.2%	1.09	3.49
Indonesia	4,362	0.99%	2.1%	1.10	.
Ireland	776	0.18%	1.7%	1.05	1.50
Isle of Man	131	0.03%	1.6%	1.23	.
Israel	3,181	0.72%	1.8%	1.14	2.35
Italy	2,791	0.63%	1.8%	1.11	2.55
Ivory Coast	66	0.01%	1.1%	1.15	.
Jamaica	264	0.06%	1.9%	1.09	1.63
Japan	43,384	9.81%	0.8%	1.06	1.62
Jersey	438	0.10%	1.3%	1.18	.
Jordan	1,185	0.27%	1.8%	1.07	.
Kazakhstan	127	0.03%	1.7%	1.13	3.20
Kenya	308	0.07%	0.3%	1.14	.
Korea	11,384	2.57%	1.9%	1.20	2.29
Kuwait	703	0.16%	1.4%	1.19	.
Latvia	318	0.07%	1.8%	1.10	2.57
Lebanon	16	0.00%	1.6%	1.07	.
Liberia	11	0.00%	1.62%	1.04	.
Lithuania	395	0.09%	2.05%	1.09	2.23
Luxembourg	368	0.08%	1.11%	1.17	2.28
Malawi	14	0.00%	0.45%	1.09	.
Malaysia	8,743	1.98%	1.20%	1.16	2.71
Malta	126	0.03%	1.14%	1.15	.
Marshall Islands	31	0.01%	1.08%	1.23	.
Mauritius	266	0.06%	-0.52%	1.13	.
Mexico	1,265	0.29%	2.16%	1.13	1.91
Monaco	29	0.01%	1.98%	1.03	.
Morocco	460	0.10%	1.63%	1.09	.
Namibia	43	0.01%	0.83%	1.19	.
Netherlands	1,825	0.41%	2.10%	1.08	2.84
New Zealand	1,350	0.31%	0.26%	1.10	1.41
Nigeria	748	0.17%	1.87%	1.09	.
Norway	2,025	0.46%	1.74%	1.12	2.23
Oman	785	0.18%	1.98%	1.15	.
Pakistan	3,205	0.72%	-1.29%	1.13	.
Panama	27	0.01%	1.57%	1.16	2.43
Papua New Guinea	73	0.02%	2.51%	1.11	.
Peru	1,183	0.27%	2.28%	1.10	1.60
Philippines	1,514	0.34%	1.22%	1.16	.
Poland	5,102	1.15%	1.49%	1.18	2.20
Portugal	647	0.15%	2.09%	1.07	3.01
Qatar	217	0.05%	1.59%	1.18	.
Romania	480	0.11%	1.41%	1.22	.
Russia	2,064	0.47%	1.48%	1.15	2.86
Saudi Arabia	1,209	0.27%	1.58%	1.19	1.61
Senegal	2	0.00%	0.88%	1.16	.
Serbia	52	0.01%	0.27%	1.21	1.67
Singapore	6,086	1.38%	1.10%	1.15	.
Slovakia	73	0.02%	2.21%	1.08	1.81
Slovenia	317	0.07%	2.17%	1.06	1.99
South Africa	3,134	0.71%	-0.12%	1.07	2.06
Spain	1,176	0.27%	0.92%	1.20	1.95
Sri Lanka	1,879	0.42%	2.51%	1.15	.
State of Palestine	86	0.02%	1.57%	1.29	.
Sudan	12	0.00%	1.28%	1.16	.
Swaziland	2	0.00%	0.52%	1.59	.
Sweden	5,069	1.15%	1.59%	1.18	2.52
Switzerland	2,982	0.67%	2.28%	1.06	1.50
Taiwan	19,841	4.48%	2.12%	1.12	.
Tanzania	66	0.01%	1.30%	1.10	.
Thailand	6,887	1.56%	2.15%	1.12	3.03
Trinidad & Tobago	145	0.03%	1.51%	1.14	.
Tunisia	322	0.07%	0.99%	1.18	2.73
Turkey	2,261	0.51%	1.54%	1.20	2.21
Uganda	40	0.01%	0.69%	1.08	.
Ukraine	108	0.02%	0.94%	1.16	.
UAE	516	0.12%	1.63%	1.15	.
United Kingdom	18,231	4.12%	1.32%	1.04	1.18
USA	112,122	25.34%	2.13%	1.01	0.49
Venezuela	153	0.03%	1.45%	0.97	3.50
Vietnam	2,721	0.62%	1.11%	1.28	.
Zambia	117	0.03%	2.07%	1.08	.
Zimbabwe	238	0.05%	0.95%	1.12	.
Total	442,389	100.00%	1.59%	1.08	1.46

Panel B. Descriptive Statistics

Variable	N	Mean	StD	P1	P25	Median	P75	P99
GE_{tg}	442,389	0.02	0.05	-0.15	-0.03	0.03	0.05	0.11
MU_{tEPUIg}	442,389	1.08	0.31	0.63	0.79	1.06	1.24	1.94
Rev_t	442,389	0.07	0.29	-1.05	-0.02	0.03	0.15	1.24
X_t	442,389	0.05	30.14	-1.93	-0.03	0.04	0.16	1.65
E_t	442,389	0.01	0.21	-0.84	-0.02	0.00	0.03	1.06
$COGS_t$	442,389	0.04	0.25	-0.97	-0.02	0.02	0.10	1.12
OX_t	442,389	0.01	0.15	-0.77	0.00	0.01	0.04	0.64
NOX_t	442,389	0.00	0.11	-0.55	-0.01	0.00	0.02	0.50
GP_t	442,389	0.02	0.14	-0.60	-0.01	0.01	0.06	0.64
OP_t	442,389	0.01	0.14	-0.59	-0.02	0.00	0.03	0.71
A_t	442,389	4.97	2.31	-1.09	3.51	4.98	6.47	10.31
D_t	442,389	0.00	0.01	-0.06	0.00	0.00	0.00	0.08
DD_t	442,389	0.41	0.49	0.00	0.00	0.00	1.00	1.00
$NegE_t$	442,389	0.31	0.46	0.00	0.00	0.00	1.00	1.00
AC_t	442,389	0.00	0.23	-0.92	-0.05	0.00	0.05	1.14

Panel C. Correlation Matrix

Variable	GE_{tg}	MU_{tEPUIg}	Rev_{t+1}	X_{t+1}	E_{t+1}	$COGS_{t+1}$	OX_{t+1}	NOX_{t+1}	GP_{t+1}	OP_{t+1}	A_t	D_t	DD_t	$NegE_t$	AC_t
GE_{tg}	1.00	-0.04*	0.08*	0.06*	0.01*	0.07*	0.02*	0.00	0.04*	0.01*	0.01*	0.01*	0.00	-0.03*	0.01*
MU_{tEPUIg}	-0.11*	1.00	-0.06*	-0.06*	0.02*	-0.06*	-0.02*	-0.02*	-0.02*	0.01*	0.06*	-0.02*	-0.02*	0.00*	-0.01*
Rev_{t+1}	0.11*	-0.10*	1.00	0.72*	0.07*	0.82*	0.35*	0.10*	0.57*	0.19*	-0.02*	0.03*	0.01*	-0.10*	0.02*
X_{t+1}	0.09*	-0.12*	0.79*	1.00	-0.59*	0.71*	0.55*	0.47*	0.24*	-0.31*	0.02*	0.03*	0.03*	-0.17*	0.17*
E_{t+1}	0.05*	0.02*	0.28*	-0.18*	1.00	-0.11*	-0.41*	-0.61*	0.30*	0.72*	-0.06*	-0.01*	-0.03*	0.15*	-0.23*
$COGS_{t+1}$	0.10*	-0.11*	0.83*	0.79*	0.09*	1.00	0.12*	0.07*	0.04*	-0.08*	0.00	0.03*	0.02*	-0.12*	0.05*
OX_{t+1}	0.05*	-0.09*	0.49*	0.58*	-0.11*	0.33*	1.00	0.09*	0.46*	-0.50*	0.02*	0.03*	0.02*	-0.11*	0.06*
NOX_{t+1}	0.01*	-0.05*	0.20*	0.41*	-0.31*	0.13*	0.10*	1.00	0.07*	-0.01*	0.01*	0.01*	0.01*	-0.12*	0.21*
GP_{t+1}	0.08*	-0.05*	0.69*	0.44*	0.46*	0.31*	0.52*	0.23*	1.00	0.47*	-0.04*	0.02*	0.00	-0.01*	-0.04*
OP_{t+1}	0.06*	0.00	0.41*	0.07*	0.72*	0.16*	-0.12*	0.23*	0.64*	1.00	-0.06*	0.00*	-0.03*	0.10*	-0.09*
A_t	0.01*	0.05*	0.00*	-0.03*	-0.03*	0.01*	-0.04*	0.00	-0.03*	-0.03*	1.00	0.01*	0.35*	-0.34*	-0.03*
D_t	0.00	-0.04*	0.07*	0.06*	-0.01*	0.06*	0.07*	0.01*	0.05*	0.00	0.12*	1.00	0.23*	-0.07*	0.01*
DD_t	0.00	-0.03*	0.03*	0.01*	-0.03*	0.03*	0.01*	0.00	0.00	-0.02*	0.35*	0.42*	1.00	-0.35*	-0.01*
$NegE_t$	-0.02*	0.01*	-0.15*	-0.19*	0.17*	-0.16*	-0.17*	-0.11*	-0.05*	0.09*	-0.33*	-0.19*	-0.35*	1.00	-0.09*
AC_t	0.02*	-0.02*	0.04*	0.12*	-0.14*	0.06*	0.04*	0.13*	-0.02*	-0.05*	0.00*	0.03*	0.01*	-0.14*	1.00

Table 4 presents the international annual sample composition (Panel A), descriptive statistics (Panel B) and correlation matrix (Panel C). * indicates significance at the 1% level. Pearson (Spearman) correlations are above (below) the diagonal. Variable definitions are in Appendix A.

Table 5. International Annual Data: Macroeconomic Uncertainty and Disaggregated Corporate Outcomes

Panel A. US Only

Variable	(1) Rev_{t+1}	(2) GP_{t+1}	(3) OP_{t+1}	(4) E_{t+1}	(5) $COGS_{t+1}$	(6) OX_{t+1}	(7) NOX_{t+1}
GE_{tg}	0.523***	0.155***	-0.048	-0.038	0.366***	0.208***	-0.011
	(5.71)	(5.45)	(-1.31)	(-0.65)	(5.12)	(6.14)	(-0.37)
MU_{tg}	**-0.049*** **	**-0.002**	**0.028*** **	**0.050*** **	**-0.049*** **	**-0.031*** **	**-0.019*** **
	(-2.82)	**(-0.41)**	**(5.01)**	**(4.55)**	**(-3.46)**	**(-4.53)**	**(-3.45)**
A_t	-0.053***	-0.028***	-0.025***	-0.037***	-0.025***	-0.003*	0.010***
	(-13.72)	(-18.75)	(-14.68)	(-10.02)	(-8.22)	(-1.68)	(4.44)
D_t	0.014	0.038	-0.104*	-0.178**	-0.014	0.122*	0.049
	(0.18)	(0.75)	(-1.70)	(-2.36)	(-0.20)	(1.84)	(1.39)
DD_t	0.001	0.000	-0.001	0.002	0.000	0.001	-0.002
	(0.15)	(0.06)	(-0.48)	(0.38)	(0.03)	(0.34)	(-1.40)
$NegE_t$	-0.025***	0.023***	0.064***	0.121***	-0.050***	-0.041***	-0.046***
	(-4.46)	(7.85)	(15.72)	(21.74)	(-11.63)	(-12.17)	(-12.73)
AC_t	0.010	-0.018***	-0.048***	-0.225***	0.033***	0.034***	0.123***
	(1.48)	(-4.24)	(-8.01)	(-22.52)	(5.14)	(5.49)	(21.08)
Observations	112,122	112,122	112,122	112,122	112,122	112,122	112,122
Adjusted R-squared	0.139	0.071	0.062	0.098	0.107	0.095	0.039
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm	Firm

Panel B. All Countries Excluding US

Variable	(1) Rev_{t+1}	(2) GP_{t+1}	(3) OP_{t+1}	(4) E_{t+1}	(5) $COGS_{t+1}$	(6) OX_{t+1}	(7) NOX_{t+1}
GE_{tg}	0.392***	0.077*	0.061**	0.054*	0.320***	0.013	0.007
	(3.01)	(1.82)	(2.44)	(1.81)	(3.06)	(0.41)	(0.45)
MU_{tg}	**-0.052*** **	**-0.003**	**0.013*** **	**0.027*** **	**-0.052*** **	**-0.016*** **	**-0.010*** **
	(-3.09)	**(-0.68)**	**(2.79)**	**(3.45)**	**(-3.36)**	**(-2.88)**	**(-3.49)**
A_t	-0.047***	-0.023***	-0.027***	-0.041***	-0.022**	0.004	0.010***
	(-5.70)	(-8.77)	(-8.66)	(-6.54)	(-2.53)	(0.98)	(5.01)
D_t	0.307***	0.107**	0.049*	0.028	0.199***	0.053	0.017
	(2.73)	(2.61)	(1.97)	(0.73)	(2.63)	(1.46)	(0.67)
DD_t	-0.005	-0.003	-0.004**	0.003	-0.003	0.001	-0.006***
	(-1.19)	(-1.51)	(-2.56)	(0.70)	(-0.69)	(0.83)	(-2.71)
$NegE_t$	-0.030***	0.013***	0.046***	0.093***	-0.042***	-0.032***	-0.042***
	(-6.28)	(4.67)	(10.90)	(10.57)	(-11.50)	(-9.94)	(-9.43)
AC_t	0.036***	-0.026**	-0.078***	-0.230***	0.070***	0.054***	0.104***
	(3.17)	(-2.45)	(-4.88)	(-9.43)	(5.77)	(4.09)	(18.14)
Observations	330,267	330,267	330,267	330,267	330,267	330,267	330,267
Adjusted R-squared	0.120	0.055	0.041	0.098	0.089	0.052	0.016
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm	Firm

Panel C. All Countries

Variable	(1) Rev_{t+1}	(2) GP_{t+1}	(3) OP_{t+1}	(4) E_{t+1}	(5) $COGS_{t+1}$	(6) OX_{t+1}	(7) NOX_{t+1}
GE_{tg}	0.431***	0.101***	0.027	0.025	0.334***	0.073	0.002
	(3.82)	(2.73)	(0.83)	(0.69)	(3.82)	(1.45)	(0.12)
MU_{tg}	**-0.051*** **	**-0.003**	**0.017*** **	**0.032*** **	**-0.052*** **	**-0.019*** **	**-0.012*** **
	(-3.25)	**(-0.69)**	**(3.58)**	**(4.04)**	**(-3.64)**	**(-3.55)**	**(-3.62)**
A_t	-0.048***	-0.025***	-0.026***	-0.040***	-0.023***	0.002	0.010***
	(-7.73)	(-10.89)	(-11.86)	(-8.98)	(-3.59)	(0.61)	(7.10)
D_t	0.206**	0.081***	-0.007	-0.046	0.128*	0.078***	0.027
	(2.10)	(2.83)	(-0.18)	(-0.87)	(1.83)	(3.14)	(1.64)
DD_t	-0.003	-0.001	-0.003	0.004	-0.002	0.001	-0.005***
	(-0.75)	(-0.88)	(-1.64)	(1.54)	(-0.63)	(0.66)	(-3.52)
$NegE_t$	-0.029***	0.016***	0.051***	0.100***	-0.044***	-0.034***	-0.043***
	(-6.76)	(5.31)	(10.03)	(11.31)	(-12.86)	(-10.22)	(-12.39)
AC_t	0.026***	-0.023***	-0.066***	-0.228***	0.056***	0.046***	0.112***
	(2.87)	(-3.22)	(-4.92)	(-14.78)	(4.62)	(4.50)	(17.82)
Observations	442,389	442,389	442,389	442,389	442,389	442,389	442,389
Adjusted R-squared	0.126	0.061	0.050	0.099	0.094	0.068	0.027
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm	Firm

Table 5 presents the results of regressing changes in one year ahead revenues (Rev), gross profits (GP), operating profits (OP), earnings (E), cost of goods sold (COGS), operating expenses (OX), and non-operating expenses (NOX) on controls and macroeconomic growth expectations (GE_g) and uncertainty (MU_g) for the US (Panel A), all countries excluding the US (Panel B), and all countries (Panel C). Variable definitions are in Appendix A. Standard errors are clustered by firm and quarter in Panel A, country and quarter in Panels B. Robust t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10% level.

Table 6. International Annual Data: Employment Protection Legislation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variable	Rev_{t+1}	GP_{t+1}	OP_{t+1}	E_{t+1}	$COGS_{t+1}$	OX_{t+1}	NOX_{t+1}
GE_{tg}	0.498***	0.127***	-0.009	-0.000	0.371***	0.138***	-0.008
	(4.69)	(4.85)	(-0.31)	(-0.00)	(4.20)	(2.92)	(-0.41)
MU_{tg}	-0.054***	-0.006	0.023***	0.041***	-0.051***	-0.029***	-0.016***
	(-3.70)	(-1.55)	(4.49)	(4.61)	(-3.93)	(-5.99)	(-3.83)
GE_{tg} × High EPL	-0.145	-0.058	0.080**	0.058	-0.080	-0.144***	0.021**
	(-1.49)	(-1.27)	(2.59)	(1.59)	(-1.01)	(-2.81)	(2.02)
MU_{tg} × High EPL	**0.006**	**0.006**	**-0.011***	**-0.019****	**-0.001**	**0.019*****	**0.007****
	(0.78)	**(1.10)**	**(-1.75)**	**(-2.00)**	**(-0.21)**	**(3.05)**	**(2.33)**
A_t	-0.048***	-0.025***	-0.026***	-0.040***	-0.023***	0.002	0.010***
	(-7.78)	(-10.97)	(-11.66)	(-8.84)	(-3.60)	(0.59)	(6.94)
D_t	0.204**	0.080***	-0.005	-0.043	0.127*	0.075***	0.027
	(2.08)	(2.81)	(-0.12)	(-0.82)	(1.82)	(2.91)	(1.61)
DD_t	-0.002	-0.001	-0.003*	0.003	-0.002	0.001	-0.005***
	(-0.69)	(-0.79)	(-1.84)	(1.37)	(-0.60)	(0.89)	(-2.78)
$NegE_t$	-0.029***	0.016***	0.051***	0.100***	-0.044***	-0.034***	-0.043***
	(-6.71)	(5.16)	(10.05)	(11.32)	(-12.79)	(-10.27)	(-12.22)
AC_t	0.026***	-0.023***	-0.066***	-0.228***	0.056***	0.046***	0.112***
	(2.86)	(-3.22)	(-4.93)	(-14.81)	(4.62)	(4.51)	(17.38)
Observations	442,389	442,389	442,389	442,389	442,389	442,389	442,389
Adjusted R-squared	0.126	0.061	0.051	0.099	0.095	0.069	0.027
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm	Firm

Table 6 presents the results of regressing changes in one year ahead revenues (Rev), gross profits (GP), operating profits (OP), earnings (E), cost of goods sold (COGS), operating expenses (OX), and non-operating expenses (NOX) on controls and macroeconomic growth expectations (GE_g) and uncertainty (MU_g) interacted with the an indicator that the firm's host country's employment protection legislation score is above the sample median (High EPL). Variable definitions are in Appendix A. Standard errors are clustered by country and quarter. Robust t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10% level.

Table 7. Baker and Bloom (2013) Data: Sample Composition and Summary Statistics

Panel A. Sample Composition

Country	Firm-Years	% Sample	Mean GE_{tBB}	Mean MU_{tBB}
Argentina	574	0.17%	2.01%	1.66%
Australia	14,297	4.28%	-0.06%	0.96%
Austria	691	0.21%	0.27%	1.14%
Bangladesh	74	0.02%	-4.64%	1.05%
Belgium	880	0.26%	-0.15%	1.09%
Brazil	2,633	0.79%	1.67%	1.84%
Canada	15,967	4.78%	0.59%	1.00%
Chile	1,746	0.52%	1.82%	0.73%
China	21,716	6.50%	0.82%	1.72%
Colombia	249	0.07%	2.36%	1.21%
Czech Republic	148	0.04%	-0.13%	1.35%
Denmark	1,036	0.31%	0.91%	1.07%
Ecuador	9	0.00%	0.29%	0.73%
Egypt	363	0.11%	2.51%	1.73%
Finland	1,151	0.34%	-0.31%	1.63%
France	5,379	1.61%	-0.28%	1.32%
Germany	6,283	1.88%	0.03%	1.43%
Greece	1,590	0.48%	-4.39%	1.86%
Hong Kong	934	0.28%	1.47%	1.83%
Hungary	189	0.06%	-0.31%	2.06%
India	24,209	7.24%	1.24%	1.54%
Indonesia	3,220	0.96%	1.86%	1.49%
Ireland	556	0.17%	-0.59%	1.30%
Israel	2,148	0.64%	1.49%	1.26%
Italy	2,033	0.61%	-1.24%	1.33%
Japan	30,600	9.16%	-0.92%	1.45%
Kenya	90	0.03%	-1.86%	0.96%
Korea	6,864	2.05%	1.30%	1.54%
Kuwait	381	0.11%	-0.06%	0.68%
Luxembourg	246	0.07%	-1.06%	1.31%
Malta	71	0.02%	1.57%	1.07%
Mexico	944	0.28%	1.81%	1.37%
Morocco	332	0.10%	1.07%	0.80%
Netherlands	1,505	0.45%	-0.03%	1.35%
New Zealand	891	0.27%	-0.55%	0.68%
Nigeria	460	0.14%	1.82%	1.22%
Norway	1,516	0.45%	1.24%	1.43%
Pakistan	2,350	0.70%	1.30%	1.41%
Peru	891	0.27%	3.32%	1.44%
Philippines	987	0.30%	1.35%	1.34%
Poland	3,055	0.91%	-0.08%	1.51%
Portugal	508	0.15%	-0.66%	1.30%
Romania	248	0.07%	0.17%	1.66%
Russia	1,378	0.41%	0.23%	2.22%
Saudi Arabia	762	0.23%	-0.69%	1.37%
Serbia	9	0.00%	-14.73%	1.30%
Singapore	3,965	1.19%	0.30%	1.14%
South Africa	1,866	0.56%	1.46%	1.45%
Spain	694	0.21%	-2.08%	1.54%
Sweden	3,081	0.92%	0.13%	1.41%
Switzerland	2,386	0.71%	0.65%	1.04%
Taiwan	13,890	4.16%	0.68%	1.30%
Thailand	4,907	1.47%	0.91%	1.46%
Tunisia	188	0.06%	1.64%	0.58%
Turkey	1,215	0.36%	1.93%	1.78%
Ukraine	66	0.02%	-3.25%	1.92%
United Kingdom	13,326	3.99%	-0.15%	1.04%
USA	124,826	37.35%	0.89%	1.03%
Venezuela	78	0.02%	0.83%	1.67%
Vietnam	1,517	0.45%	-3.92%	1.59%
Total	334,168	100.00%	0.54%	1.24%

Panel B. Descriptive Statistics

Variable	N	Mean	StD	P1	P25	Median	P75	P99
GE_{tBB}	334,168	0.01	0.07	-0.20	-0.03	0.01	0.05	0.19
MU_{tBB}	334,168	0.01	0.01	0.01	0.01	0.01	0.01	0.03
Rev_t	334,168	0.08	0.31	-1.10	-0.02	0.04	0.17	1.32
X_t	334,168	0.07	0.40	-1.81	-0.02	0.05	0.18	1.60
E_t	334,168	0.01	0.21	-0.84	-0.03	0.00	0.03	1.06
$COGS_t$	334,168	0.06	0.26	-0.97	-0.01	0.02	0.11	1.14
OX_t	334,168	0.02	0.15	-0.77	0.00	0.01	0.04	0.64
NOX_t	334,168	0.00	0.11	-0.55	-0.01	0.00	0.02	0.50
GP_t	334,168	0.02	0.15	-0.60	-0.01	0.01	0.06	0.64
OP_t	334,168	0.01	0.15	-0.59	-0.02	0.01	0.04	0.71
A_t	334,168	4.91	2.33	-0.94	3.40	4.92	6.44	10.31
D_t	334,168	0.00	0.01	-0.06	0.00	0.00	0.00	0.08
DD_t	334,168	0.41	0.49	0.00	0.00	0.00	1.00	1.00
$NegE_t$	334,168	0.32	0.47	0.00	0.00	0.00	1.00	1.00
AC_t	334,168	0.00	0.23	-0.87	-0.06	0.00	0.05	1.06

Panel C. Correlation Matrix

Variable	GE_{tBB}	MU_{tBB}	Rev_{t+1}	X_{t+1}	E_{t+1}	$COGS_{t+1}$	OX_{t+1}	NOX_{t+1}	GP_{t+1}	OP_{t+1}	A_t	D_t	DD_t	$NegE_t$	AC_t
GE_{tBB}	1.00	-0.38*	0.13*	0.11*	-0.02*	0.12*	0.05*	0.03*	0.06*	0.00	-0.03*	0.02*	0.00	-0.05*	0.03*
MU_{tBB}	-0.30*	1.00	-0.06*	-0.06*	0.03*	-0.06*	-0.04*	-0.03*	-0.03*	0.01*	0.07*	-0.04*	-0.02*	-0.04*	-0.02*
Rev_{t+1}	0.18*	-0.07*	1.00	0.75*	0.07*	0.82*	0.39*	0.12*	0.59*	0.19*	-0.03*	0.03*	0.01*	-0.11*	0.03*
X_{t+1}	0.17*	-0.09*	0.80*	1.00	-0.56*	0.73*	0.57*	0.47*	0.29*	-0.28*	0.01*	0.03*	0.02*	-0.17*	0.17*
E_{t+1}	0.03*	0.02*	0.28*	-0.17*	1.00	-0.11*	-0.39*	-0.62*	0.29*	0.72*	-0.06*	-0.01*	-0.03*	0.16*	-0.22*
$COGS_{t+1}$	0.17*	-0.08*	0.83*	0.79*	0.08*	1.00	0.15*	0.09*	0.08*	-0.07*	-0.01*	0.03*	0.01*	-0.13*	0.05*
OX_{t+1}	0.11*	-0.08*	0.51*	0.60*	-0.11*	0.35*	1.00	0.11*	0.50*	-0.46*	0.02*	0.03*	0.01*	-0.11*	0.06*
NOX_{t+1}	0.06*	-0.04*	0.22*	0.42*	-0.29*	0.15*	0.12*	1.00	0.08*	-0.02*	0.02*	0.01*	0.01*	-0.12*	0.21*
GP_{t+1}	0.12*	-0.05*	0.70*	0.45*	0.46*	0.32*	0.53*	0.24*	1.00	0.47*	-0.04*	0.02*	-0.01*	-0.01*	-0.03*
OP_{t+1}	0.06*	-0.01*	0.41*	0.08*	0.73*	0.16*	-0.10*	0.23*	0.64*	1.00	-0.06*	0.00*	-0.03*	0.11*	-0.09*
A_t	-0.03*	0.08*	-0.02*	-0.05*	-0.03*	-0.01*	-0.05*	0.00	-0.04*	-0.03*	1.00	0.01*	0.37*	-0.34*	-0.03*
D_t	0.04*	-0.08*	0.06*	0.06*	-0.01*	0.06*	0.06*	0.02*	0.04*	0.00	0.12*	1.00	0.22*	-0.06*	0.01*
DD_t	0.00*	-0.01*	0.01*	-0.01*	-0.03*	0.01*	-0.02*	0.00	-0.01*	-0.02*	0.37*	0.40*	1.00	-0.32*	-0.01*
$NegE_t$	-0.04*	-0.05*	-0.15*	-0.19*	0.17*	-0.17*	-0.18*	-0.12*	-0.04*	0.09*	-0.34*	-0.18*	-0.32*	1.00	-0.10*
AC_t	0.04*	-0.02*	0.04*	0.12*	-0.15*	0.06*	0.05*	0.13*	-0.02*	-0.06*	0.00	0.03*	0.01*	-0.15*	1.00

Table 7 presents the international annual Baker and Bloom (2013) sample composition (Panel A), descriptive statistics (Panel B) and correlation matrix (Panel C). * indicates significance at the 1% level. Pearson (Spearman) correlations are above (below) the diagonal. Variable definitions are in Appendix A.

Table 8. Baker and Bloom (2013) Data: Disaster Shocks as Instruments for Macroeconomic Uncertainty

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variable	Rev_{t+1}	GP_{t+1}	OP_{t+1}	E_{t+1}	$COGS_{t+1}$	OX_{t+1}	NOX_{t+1}
			IV 1st Stage: GE_{tBB}				
Natural Disaster$_t$	-0.023	-0.023	-0.023	-0.023	-0.023	-0.023	-0.023
	(-1.58)	(-1.58)	(-1.58)	(-1.58)	(-1.58)	(-1.58)	(-1.58)
Political Shock$_t$	-0.250***	-0.250***	-0.250***	-0.250***	-0.250***	-0.250***	-0.250***
	(-10.90)	(-10.90)	(-10.90)	(-10.90)	(-10.90)	(-10.90)	(-10.90)
Revolution$_t$	-0.518***	-0.518***	-0.518***	-0.518***	-0.518***	-0.518***	-0.518***
	(-17.29)	(-17.29)	(-17.29)	(-17.29)	(-17.29)	(-17.29)	(-17.29)
Terrorist Attack$_t$	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	(0.42)	(0.42)	(0.42)	(0.42)	(0.42)	(0.42)	(0.42)
			IV 1st Stage: MU_{tBB}				
Natural Disaster$_t$	-0.001*	-0.001*	-0.001*	-0.001*	-0.001*	-0.001*	-0.001*
	(-1.71)	(-1.71)	(-1.71)	(-1.71)	(-1.71)	(-1.71)	(-1.71)
Political Shock$_t$	0.013***	0.013***	0.013***	0.013***	0.013***	0.013***	0.013***
	(5.94)	(5.94)	(5.94)	(5.94)	(5.94)	(5.94)	(5.94)
Revolution$_t$	0.041***	0.041***	0.041***	0.041***	0.041***	0.041***	0.041***
	(15.54)	(15.54)	(15.54)	(15.54)	(15.54)	(15.54)	(15.54)
Terrorist Attack$_t$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
			IV 2nd Stage				
GE_{tBB}	-0.324	0.309***	0.744**	0.835**	-0.663*	-0.492*	-0.038
	(-0.87)	(2.83)	(2.55)	(2.60)	(-1.72)	(-1.69)	(-0.21)
MU_{tBB}	**-11.816****	**-0.013**	**6.750**	**15.050*****	**-12.473****	**-7.469**	**-7.485*****
	(-2.03)	**(-0.01)**	**(1.46)**	**(5.45)**	**(-2.05)**	**(-1.62)**	**(-4.08)**
Observations	334,168	334,168	334,168	334,168	334,168	334,168	334,168
Adjusted R-squared	0.140	0.058	-0.002	0.042	0.097	0.042	-0.008
Controls	YES	YES	YES	YES	YES	YES	YES
Fixed Effects	Firm & Year	Firm & Year	Firm & Year	Firm & Year	Firm & Year	Firm & Year	Firm & Year

Table 8 presents the 2SLS first and second stage results of regressing changes in one year ahead revenues (Rev), gross profits (GP), operating profits (OP), earnings (E), cost of goods sold (COGS), operating expenses (OX), and non-operating expenses (NOX) on controls and macroeconomic growth expectations (GE_{BB}) and uncertainty (MU_{BB}) instrumented by natural disasters, political shocks, revolutions, and terrorist attacks. Variable definitions are in Appendix A. Standard errors are clustered by country and quarter. Robust t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10% level.

Table 9. International Annual Data: Alternative Scalars

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variable	Rev_{t+1}	GP_{t+1}	OP_{t+1}	E_{t+1}	$COGS_{t+1}$	OX_{t+1}	NOX_{t+1}
Beginning Assets (N = 442,389)							
MU_{tg}	-0.052***	-0.001	0.017***	0.031***	-0.052***	-0.014**	-0.011***
	(-2.89)	(-0.15)	(3.69)	(4.24)	(-3.31)	(-2.53)	(-3.43)
Ending Assets (N = 442,389)							
MU_{tg}	-0.047***	0.000	0.021***	0.039***	-0.051***	-0.021***	-0.013***
	(-3.03)	(0.02)	(3.93)	(4.17)	(-3.55)	(-3.16)	(-3.59)
Average Assets (N = 442,389)							
MU_{tg}	-0.051***	-0.003	0.017***	0.032***	-0.052***	-0.019***	-0.012***
	(-3.25)	(-0.69)	(3.58)	(4.04)	(-3.64)	(-3.55)	(-3.62)
Beginning Market Value of Equity (N = 358,415)							
MU_{tg}	-0.019	0.004**	0.014**	0.027*	-0.026*	-0.009*	-0.011*
	(-1.43)	(2.01)	(2.02)	(1.94)	(-1.72)	(-1.66)	(-1.81)
Ending Book Value of Equity (N = 376,129)							
MU_{tg}	-0.018	0.005**	0.016*	0.034*	-0.027*	-0.012*	-0.014*
	(-1.56)	(2.28)	(1.90)	(1.90)	(-1.75)	(-1.80)	(-1.76)
Average Book Value of Equity (N = 355,443)							
MU_{tg}	-0.020	0.002	0.011*	0.024*	-0.025*	-0.009*	-0.010*
	(-1.54)	(1.50)	(1.97)	(1.97)	(-1.75)	(-1.77)	(-1.82)
Controls	YES	YES	YES	YES	YES	YES	YES
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm	Firm

Table 9 presents the results of regressing changes in one year ahead revenues (Rev), gross profits (GP), operating profits (OP), earnings (E), cost of goods sold (COGS), operating expenses (OX), and non-operating expenses (NOX) on controls and macroeconomic growth expectations (GE_g) and uncertainty (MU_g). All variables are scaled by beginning of the year assets, end of the year assets, average assets, beginning of the year market value of equity, end of the year market value of equity, or average market value of equity. Variable definitions are in Appendix A. Standard errors are clustered by country and quarter. Robust t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10% level.