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Economic policy uncertainty and firm-level investment ☆

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ABSTRACT

This paper examines the effect of economic policy uncertainty and its components on firm-level investment. It is found that economic policy uncertainty in interaction with firm-level uncertainty depresses firms' investment decisions. When firms are in doubt about costs of doing business due to possible changes in regulation, cost of health care and taxes, they become more guarded with investment plans. The effect of economic policy uncertainty on firm-level investment is greater for firms with higher firm-level uncertainty and during a recession. News-based policy shock has a significantly negative long-term effect on firms' investment. Federal expenditure forecast interquartile range shock has a significant negative effect in the short- and long-run. Policy uncertainty does not seem to influence the investment decisions of the very largest firms (about 20% of listed firms).

1. Introduction

In a recent paper Baker et al. (2013) examine whether economic policy uncertainty has intensified the 2007–2009 recession and weakened the recovery. This work is part of a growing literature on the real effects of policy uncertainty that builds on earlier work relating uncertainty to firm-level investment and employment decisions when there are adjustment costs. If firms decide to lower investment by realizing the option value of waiting for new information to arrive, an economic slowdown is likely to occur. Early work in this area includes contributions by Bernanke (1983), Romer (1990), Bertola and Caballero (1994), Dixit and Pindyck (1994), Abel and Eberly (1996), among others.

With regard to the literature on economic policy uncertainty, Rodrik (1991) notes that reform in developing countries can result in investment being delayed until uncertainty regarding the success of the reform is eliminated. Hassett and Metcalf (1999) and Fernandez-Villaverde et al. (2011) find the uncertainty works through a fiscal policy channel. They show the certainty of tax credits and budget adjustment acts as an implicit subsidy to encourage firms' investment, whereas the fiscal volatility shocks have significantly adverse effects on economic activity. Byrne and Davis (2004) provide evidence that uncertainty may affect U.S. nonresidential fixed investment through a monetary policy channel in which the temporary component of inflation uncertainty has a greater negative effect on investment than the permanent component. Recent papers by

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Gilchrist et al. (2010) and Pastor and Veronesi (2012) find that policy uncertainty drives up the cost of finance, lowering investment and intensifying economic contraction.[1]

In a related literature on the effect of uncertainty on firm-level decisions, Leahy and Whited (1996), Bloom et al. (2007), Baum et al. (2008), Bloom (2009) and Panousi and Papanikolaou (2012) argue that uncertainty faced by the individual firm can be represented by its own stock price volatility. Bloom et al. (2007) present a model in which uncertainty reduces firms' irreversible investment in response to shocks to sales. They argue that firms become more cautious during times of heightened volatility of a firm's daily stock returns over the year (interpreted as demand shocks). Leahy and Whited (1996) find for U.S. manufacturing firms over the period of 1981–1987, a negative relationship between investment and the volatility of a firm's daily stock returns over the year. Baum et al. (2008) and Bloom et al. (2007) report similar results for U.S. manufacturing firms during 1984–2003 and for UK firms from 1972 to 1991, respectively.

The relationship between firm-level investment and measures of firm-level uncertainty obtained from survey data have been examined by researchers. Guiso and Parigi (1999) obtain the conditional mean and variance of projected future demand and find that uncertainty weakens the response of investment by Italian firms to demand. Bontempi et al. (2010) and Bianco et al. (2013) measure demand uncertainty facing Italian firms by the min–max range of the expected growth rate of demand. Bianco et al. (2013) finds that investment by family firms is significantly more sensitive to uncertainty than is investment by nonfamily firms. Bontempi et al. (2010) find that firms' investment plans (obtained at the same time as subjective uncertainty about demand) are negatively impacted by uncertainty. Driver et al. (2004) find that an uncertainty variable based on the cross-sectional dispersion of beliefs across firms in an industry with regard to optimism for the industry has a negative effect on investment.[2]

The literature also addresses the issue of the effects of macro and microuncertainty on investment. Panousi and Papanikolaou (2012) show that firm-level idiosyncratic risk (volatility in stock price not explained by market and industry sector stock price) is negatively associated with investment by U.S. firms over 1970–2005.[3] Temple et al. (2001) distinguish between the effects of macro and microsources of uncertainty on investment by firms in the United Kingdom. Panel data on firm-level survey response regarding expectations that uncertainty about demand might limit future investment enable comparison of the two levels of uncertainty. It is found that both sources of uncertainty have a negative impact on investment (other than in highly concentrated industries in which neither effect is important). Baum et al. (2010) distinguish between own uncertainty, based on a firms' stock returns, market uncertainty, derived from stock index returns, and a measure of covariance between the two. An increase in market uncertainty inhibits firm-level investment, and the sign of the effect of the other measures of uncertainty on firm-level investment depend on interaction with cash flow.

The new finding in this paper is that firm-level investment is influenced by the interplay between the firm-level uncertainty (i.e., microuncertainty) and the aggregate economic policy uncertainty (i.e., macrouncertainty). Specifically, we find that economic policy uncertainty depresses firms' investment decisions, and the effect of economic policy uncertainty on firm-level investment is greater for firms with higher firm-level uncertainty. It is the uncertainty generated by the economic policy uncertainty shock in interaction with firm-level uncertainty (stock price volatility) that influences the firm investment decision significantly. We caveat our results by noting that stock price uncertainty shall contain an element driven by idiosyncratic and/or market uncertainty.

Overall economic policy uncertainty and its components, news-based policy uncertainty, tax legislation expiration, federal expenditures forecast interquartile range and CPI forecasters interquartile range are defined in Baker et al. (2013). An error correction model of capital stock adjustment is used to investigate the effect of economic policy uncertainty on firm-level investment over 2700 publicly traded U.S. manufacturing firms between 1985 and 2010. News-based policy shock has a significantly negative effect on the investment of firms in the long run. Federal expenditure policy shock has a significantly negative effect on the investment of firms in both the short- and long-run. The tax policy and inflation shocks have no significant effect on firm-level investment. Policy uncertainty does not seem to influence the investment decisions of largest manufacturing firms (about 20% of listed manufacturing firms). The depressing effect of policy shocks on firm-level investment is greater during recessions. Bloom et al. (2007) suggest that an increase in firm's stock price volatility reduces the link between sales growth and investment. We find evidence that greater federal expenditure policy uncertainty further weakens the link between sales growth and firm-level investment for a given level of firm uncertainty. Empirical results also show the effect is quantitatively amplified during the period 2007–2010.

The paper proceeds as follows. The empirical model is presented in the next section. Data and variables are specified in Section 3. Econometric issues and empirical results are discussed in Section 4. Section 5 offers concluding remarks.

[1] The view that uncertainty about economic policy may not have major effects has also been advanced. For instance, Bachmann and Bayer (2011) note that fast monetary policy reaction may dampen the aggregate fluctuations arising from uncertainty shocks. Born and Pfeifer (2011) in a general equilibrium model find aggregate uncertainty about labor and capital tax rates, monetary policy, and government spending has only minor effects on the business cycle.

[2] The papers by Guiso and Parigi (1999), Bontempi et al. (2010) and Bianco et al. (2013) utilize measures of demand uncertainty based on the Survey on Investment in Manufacturing by the Bank of Italy. Driver et al. (2004) use the Confederation of British Industry's Industrial Trends Survey.

[3] Chen et al. (2011) and Bhagat and Obreja (2013) provide reviews of the literature relating uncertainty to investment. Chen et al. (2011) argue that cross-industry dispersion of stock returns stand-in for permanent shocks that drive structural unemployment. Bhagat and Obreja (2013) relate investment to cash flow uncertainty. Bloom et al. (2012) argue that volatility in shocks to total factor productivity are strongly connected with firm stock price volatility and drive plant, firm, industry and aggregate output and productivity.