Uncertainty spillover and policy reactions

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A B S T R A C T

Spells of uncertainty are argued to cause rapid drops in economic activity. Wait and see behavior and risk aversion in combination with other frictions can make periods of increased uncertainty an important driver of the business cycle. Emerging economies may endure even stronger and prolonged recessions following a global uncertainty shock, as credit constraints in shallow financial markets limit smoothing. Active policy responses often exacerbate the cycle. The present study uses a novel proxy of uncertainty – inspired on Jurado et al. (2015) – in which I extract a common factor that is not driven by the business cycle from a broad set of forecast indicators. I then estimate an interacted panel VAR on a large set of developed and emerging economies over the period 1990Q1–2014Q3 to test responses to shocks to uncertainty. Emerging markets suffer a larger fall in consumption and investment as uncertainty spreads globally. The main finding is that more developed financial markets are key to dampen the transmission of the shock. Fiscal policy is an alternative, but only if there is sufficient fiscal space to smooth shocks. Monetary policy dampens the effects of uncertainty under a fixed peg better than in a floating exchange rate regime.

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R E S U M E N

Se argumenta que los episodios de incertidumbre causan caídas aceleradas de la actividad económica. Los comportamientos de «esperar y ver» y de aversión al riesgo, junto con otras fricciones, pueden originar que los periodos de incremento de la incertidumbre se conviertan en impulsores importantes del ciclo económico. Las economías emergentes pueden padecer las recesiones más fuertes y prolongadas que se produzcan tras un choque de incertidumbre global, en la medida en que las restricciones al crédito en los mercados financieros superficiales limitan el suavizamiento. Las respuestas de política activa exacerban a menudo el ciclo. El presente estudio utiliza un indicador novedoso de la incertidumbre – inspirado en Jurado et al. (2015) – en el que se extrae un factor común no impulsionado por el ciclo económico, de un conjunto amplio de indicadores de pronóstico. Continuación se estima un VAR de panel interactuado para un amplio conjunto de economías desarrolladas y emergentes durante el período 1990Q1–2014Q3, con el propósito de probar las respuestas a los choques a la incertidumbre. Los mercados emergentes sufren mayores caídas de consumo e inversión a medida que se expande la incertidumbre a nivel global. El principal hallazgo es que los mercados financieros más desarrollados son esenciales para amortiguar la transmisión del choque. La política fiscal es una alternativa, pero únicamente si existe suficiente espacio fiscal para suavizar los choques. La política monetaria amortigua mejor los efectos de la incertidumbre cuanto existe un tipo de cambio fijo, en comparación a los regímenes de tipo flotante.

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1. Introduction

Spells of uncertainty on economic or political events are argued to be responsible for rapid boom-bust patterns in economic activity. “Wait and see” behavior makes agents subject to fixed costs or partial irreversibilities so they keep consumption and investment decisions on hold, only to resume decision taking once the uncertainty is resolved (Beranke, 1983). Uncertainty also induces risk-averse agents to ask higher risk premia as they fear probabilities of default go up (Arellano, Bai, & Kehoe, 2010; Gilchrist, Sim, & Zakrjšek, 2014). Investors drop projects if they feel that tighter financial constraints make investment temporarily too costly to start up. Recent advances in DSGE modeling techniques show how uncertainty – modeled as a rise in conditional volatility – can be an important driver of the business cycle, especially in combination with other frictions that create some rigidity (see Fernández-Villaverde, Guerrero-Quintana, Rubio-Ramirez, & Uribe, 2011).

Emerging economies may endure even stronger and prolonged recessions following a global uncertainty shock, as credit constraints in shallow financial markets trigger stronger responses. Firms are forced to cut back on investment as the financial system withdraws credit lines. Moreover, policy-makers might have trouble to stabilize the cycle if external finance suddenly dries up. This is particularly complicated if erroneous past policy choices put a brake on fiscal policy’s intertemporal smoothing if fiscal space is limited. For monetary policy, a trade-off between exchange rate flexibility and the possibility to run an autonomous monetary policy is not obvious for small open economies (Klein & Shambaugh, 2008).

Spells of uncertainty are a latent stochastic process, and must be proxied for by some indicator. The empirical literature has gauged uncertainty from the volatility of financial indicators (Bloom, 2014; Bekoert, Hoerova, & Duca, 2013), cross-sectional dispersion of firm profits or productivity or the disagreement between professional forecasters (Rich & Tracy, 2010; Rossi & Sekhposyan, 2015), dispersion in business and consumer surveys (Bachmann, Elstner, & Sims, 2013), or a measure of keywords in newspapers related to uncertainty (Alexopoulos & Cohen, 2015; Baker, Bloom, & Davis, 2016). The underlying idea of all indicators is that spells over which opinions on financial markets, politics, and the economic outlook are more diverse, are reflecting greater uncertainty.

Empirical evidence seems to concur on the negative effect of uncertainty on economic activity. Uncertainty makes investment drop quickly, with a rebound later on. VAR studies show that consumption is dragged down for longer periods. Similar dynamics are observed in many other G7 countries (Gourio, Siemer, & Verdelhan, 2013). In emerging markets, the effects of uncertainty are found to be much stronger (Carrière-Swallow & Céspedes, 2013; Cerda, Silva, & Valente, 2016).

Some argue that uncertainty is the symptom, rather than the cause of the business cycle. Fluctuations in economic growth shake investment decisions by firms, and a rescheduling of consumption plans by households. Policy-makers must understand the causes and nature of the cycle to stabilize the economy, but are guided by incomplete information at the time of decisions. VAR studies circumvent the problem by arguing uncertainty proxies affect the economy directly, but the measure is not affected by economic developments in the short term. Evidence by Stock and Watson (2012) or Cesa-Bianchi, Pesaran, and Rebbu (2014) puts in doubt this assumption. The present study uses a novel proxy of uncertainty – inspired on Dovern (2015) and Jurado, Ludvigson, and Ng (2015) – that accounts for endogeneity to the business cycle. I employ the Consensus Economics monthly forecasts covering over 480 forecasters in G7 economies on a range of economic projections to extract forecastable projections using a common factor model. As the proxy spans a broad range of economic series and countries, the series is covering economy-wide uncertainty across the globe. As in Henzel and Rangel (2013) or Dovern (2015), I find that the main factor driving forecast errors is correlated with business cycle conditions, and hence is actually forecastable. The measure of uncertainty is the remaining variation in the factors once this cyclical factor is removed.

I then compare the effects of this new uncertainty measure on the economy with standard proxies from Baker et al. (2016) or Jurado et al. (2015). Following Bloom (2009), I estimate the response of investment and private consumption using a panel VAR on a large set of 50 developed and emerging economies over the period 1990Q1–2014Q3. Identification is achieved by cholesky ordering. I condition the VAR estimates on a set of economic characteristics, and examine their interaction with fiscal and monetary policy decisions, following the approach in Towbin and Weber (2013).

Emerging markets suffer larger falls in consumption and investment as uncertainty spreads globally. However, the dynamics of transmission effect do depend on structural characteristics. Countries with more developed financial markets manage to dampen the transmission of the shock as the credit channel allows absorption of the shock. The role of financial markets is much more important than a well-diversified export sector to withstand uncertainty. The recessionary impact is significantly dampened if fiscal policy avoids being procyclical. A country that has sufficient fiscal space can stabilize uncertainty shocks, even if financial markets are shallow. Monetary policy can dampen the effects of uncertainty better under a fixed exchange rate peg than with a floating currency, regardless of economic structure or depthness of financial markets.

These results give support to DSGE models of uncertainty on financial markets in small open economies as in Fernández-Villaverde et al. (2011). Limited access to finance domestically forces agents to borrow abroad. Increased uncertainty on the rates at which to borrow aggravates the economic situation if either fiscal policy – through borrowing on international bond markets – or monetary policy – through interventions on the foreign exchange market – cannot stabilize the economy. For policy-makers, it suggests that stability-oriented monetary and fiscal policy actions – like a peg, or budget control – can alleviate the impact of credit constraints. The impact of uncertainty shocks in these economies would be amplified if policy becomes too activist.

The paper is structured as follows. Section 2 of the paper develops the new multivariate global measure of uncertainty. Section 3 then presents the interacted panel VAR model and discusses the effects on emerging markets of spells of uncertainty, and demonstrates how the responses depend on structural factors and policy responses. Section 4 discusses the implications of our findings for theoretical models and policy-making under uncertainty.

2. A new measure of uncertainty

2.1. Proxies for uncertainty

Objective measures of uncertainty are hard to come by. Capturing a latent process that reflects agents’ uncertainty about what types of events might occur requires quite some assumptions. Subjective uncertainty is easier to measure as it assumes an underlying stochastic distribution. The empirical literature has developed three different types of indicators of uncertainty. A first line uses second moments of observable macroeconomic forward looking series such as the implied or realized volatility of stock market returns, or the cross-sectional dispersion of firm profits or productivity. Typical examples include the VXO, and measures volatility.
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