



Effects of foreign and domestic economic policy uncertainty shocks on South Korea



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ABSTRACT

This paper investigates the effects of foreign and domestic economic policy uncertainty shocks on South Korea via structural VARs. The results show that both foreign and domestic policy uncertainty shocks exert negative and significant impacts on South Korea. Foreign economic policy uncertainty shocks are found to be more dominant than domestic economic policy uncertainty shocks in influencing the Korean output. The results also indicate that economic policy uncertainty that originates from foreign countries is a significant source of disturbance to the Korean economy, but domestic policy uncertainty plays a rather limited role in explaining Korean business fluctuations.

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1. Introduction

The financial crisis of 2007 has reignited interest in the impacts of uncertainty on the macroeconomy. Many recent studies look at the effects of a US uncertainty shock on the US economy. Bloom's (2009) seminal study finds that an uncertainty shock induces a drop and quick rebound in US output and employment in the short term and triggers an overshoot in the medium term. He shows that this drop, rebound and overshoot behavior is due to an increase in the real option value of waiting. Baker, Bloom, and Davis (2016) develop an index of economic policy uncertainty and show that a US policy-related uncertainty shock causes investment, employment and output to fall. Caggiano, Castelnuovo, and Groshenny (2014) estimate a non-linear vector autoregression (VAR) model and find that the effect of an uncertainty shock on unemployment is significantly larger during recessions. Nodari (2014) looks at how uncertainty related to financial regulation policies affects corporate credit spreads and the US economy.¹

The second line of research in this area focuses on the spillovers of uncertainty shocks across different countries. Mumtaz and Theodoridis (2015) look at the impact of a US volatility shock on the UK economy. They find that an increase in US volatility lowers UK's output but raises its prices. Colombo (2013) investigates the spillover effect of a US policy uncertainty shock on the Euro region. She finds that policy uncertainty shocks originating in the US exert greater impacts on European

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¹ Also see Pástor and Veronesi (2012), Kamber, Karagedikli, Ryan, and Vehbi (2013), Leduc and Liu (2016), Bachmann, Elstner, and Sims (2013), Gilchrist, Sim, and Zakrajšek (2013), Jurado, Ludvigson, and Ng (2015).

output fluctuations than European policy uncertainty shocks. [Carrière-Swallow and Céspedes \(2013\)](#) look at the effects of an uncertainty shock from the US on different developed and developing countries. They find that consumption and investment in emerging countries suffer larger declines after an uncertainty shock. [Handley \(2014\)](#) and [Handley and Lim&o \(2015\)](#) study the relationships between trade policy uncertainty, exports and investment in different countries. [Jones and Olson \(2015\)](#) investigate the effects of US uncertainty shocks on the Japanese and British economies with VAR models.

This paper contributes to the growing literature on uncertainty by examining the impacts of foreign and domestic economic policy uncertainty shocks on South Korea (henceforth Korea). Economic policy uncertainty could have vital implications for the Korean economy. Heightened policy uncertainty can alter consumption through the precautionary saving motive and cause delay in investment by increasing the option value of waiting ([Bloom, 2009](#)). Meanwhile, the open nature of the Korean economy makes it extremely vulnerable to external shocks, including economic policy uncertainty originating from other countries. For example, given the close trading relationship between Korea and the US, Korean exports may suffer from declines in US output and employment after a US economic policy uncertainty shock. [Gauvin, McLoughlin, and Reinhardt \(2014\)](#) also point out that an increase in policy uncertainty in advanced countries may cause investors to be less willing to take risk, prompting capital to flow out of emerging countries where funds are often considered to be insecure.

To what extent can economic policy uncertainty shocks affect business fluctuations in Korea? Does foreign policy uncertainty matter more than domestic uncertainty for Korea? To answer the questions of interest, I estimate a structural VAR model with Bayesian methods using the economic policy uncertainty (EPU) measures developed by [Baker et al. \(2016\)](#). In the baseline model, US variables are used to represent the foreign factors. Economic policy uncertainty shocks are identified through the imposition of short run restrictions on the model residuals.

Several important findings emerge from the analysis. First, heightened foreign and domestic policy uncertainties both exert negative and significant impacts on the Korean output. The negative effects of both shocks last for about two quarters. Second, foreign economic policy uncertainty shocks are more dominant than their domestic counterparts in influencing the Korean output. More specifically, a one standard deviation shock to the US EPU index causes Korea's output to drop by 0.2 percent at impact while a one standard deviation shock to the Korean EPU index reduces Korea's output by 0.1 percent. Third, economic policy uncertainty originating from foreign countries is a significant source of disturbance to the Korean economy.

The decomposition of the forecast error variance shows that the contributions of US policy uncertainty shocks to Korea's output fluctuations are approximately 24 percent at the 4 quarter horizon and 20 percent at the 24 quarter horizon. However, Korean policy uncertainty shocks account for only 3 percent and 9 percent of Korea's output variations at the 4 quarter horizon and the 24 quarter horizon respectively. This implies that domestic policy uncertainty shocks play a rather limited role in explaining Korea's economic fluctuations. Finally, the results are robust across several model specifications.

This paper is closely related to [Gauvin et al. \(2014\)](#). Gauvin et al. look at the spillover of economic policy uncertainty from the US and the Euro area to emerging countries, including South Korea, through capital flows. This paper also pertains to [Klößner and Sekkel \(2014\)](#) who investigate the effects of policy uncertainty in one country on the levels of policy uncertainty in other countries. [IMF \(2013\)](#) investigates how policy uncertainty shocks in the US and the Euro area influence other regions in the world. However, none of the aforementioned papers directly compare the effects of foreign and domestic policy uncertainty shocks on Korea, which is the main focus of this paper.

The rest of the paper is organized as follows. Section 2 focuses on the VAR model and the identification methods. Section 3 discusses the results. Section 4 conducts sensitivity analysis. Section 5 presents the results from the decomposition of the forecast error variance and Section 6 concludes.

2. The empirical model

The effects of foreign and domestic economic policy uncertainty shocks on Korea are estimated through a structural VAR model. I consider the following model:

$$B(L)y_t = d + \varepsilon_t$$

where y_t is a vector of endogenous variables, d is a vector of constant terms and ε_t are the reduced-form residuals, fulfilling $E(\varepsilon_t) = 0$ and $E(\varepsilon_t \varepsilon_t') = \Sigma$. $B(L)$ is given by $B(L) = I + B_1L + B_2L^2 + \dots + B_NL^N$, where N is the lag length of the VAR model.

The model consists of a domestic block and a foreign block. The following variables are included in the domestic block: the real Korean gross domestic product ($KOGDP_t$), the Korean inflation rate (KOI_t), the real Korean exports ($KOEXP_t$), the Korean money market rate (KOR_t), the Korean economic policy uncertainty index ($KOEPU_t$). In the baseline model, US variables are used as the foreign factors. The foreign block includes: the real US gross domestic product ($USGDP_t$), the US inflation rate (USI_t), the US three-month T-bill rate (USR_t) and the US economic policy uncertainty index ($USEPU_t$). More specifically, the vector y_t is:

$$y_t = [USEPU_t, USGDP_t, USI_t, USR_t, KOEPU_t, KOGDP_t, KOI_t, KOEXP_t, KOR_t]'$$

To capture policy uncertainty in the US and Korea, I adopt the economic policy uncertainty indicators developed by [Baker et al. \(2016\)](#). The overall economic policy uncertainty index for the US consists of three components: an index based on newspaper coverage, a measure developed from federal tax code provisions and an indicator drawn on economic forecaster disagreement. However, the economic policy uncertainty index for Korea solely depends on newspaper coverage. For

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