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ARTICLE

Economic policy uncertainty and economic activity in Turkey

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ABSTRACT

We construct economic policy uncertainty (EPU) index for Turkey based on newspaper coverage frequency. The EPU index reflects the frequency counts of articles in major Turkish newspapers that contain specific terms related to economy, policy and uncertainty. The EPU index rises around national elections (2002, 2007 and 2015), domestic uncertainty periods (2008 and 2013), domestic and global financial crisis periods (2001 and 2009) and the Euro area debt crisis in 2011. The investigation of the impact of EPU on economic activity reveals that policy uncertainty has adverse impacts on economic growth, consumption and investment in Turkey. Remarkable is that high uncertainty leads to a greater investment decline than output and consumption.

KEYWORDS

Economic policy; uncertainty; vector autoregression; business cycles

JEL CLASSIFICATION

C22; D81; E32

I. Introduction

Economic policy uncertainty (EPU) is defined as the agents' inability to predict future economic policies as well as the consequences of policies that have already been adopted by the government. Agents often face uncertainty about the timing, content and potential effect of policy decisions.

The quantification of policy uncertainty is very difficult due to its unobservable nature. Baker, Bloom, and Davis (2016) developed an index of EPU based on newspaper coverage frequency and showed that the EPU index proxies for movements in policy-related economic uncertainty. The underlying idea of this EPU index is that a higher number of news articles about EPU reflect a higher level of EPU faced by agents. Building on the methods in Baker, Bloom, and Davis (2016), there are several other studies that developed EPU indices for Japan (Arbatli et al. 2017), Chile (Cerda, Silva, and Valente 2016), Ireland (Zalla 2017), South Africa (Hlatshwayo and Saxegaard 2016), The Netherlands (Kroese, Kok, and Parlevliet 2015) and India (Bhagat, Ghosh, and Rangan 2013).

In this study, we first develop an index of EPU for Turkey based on newspaper coverage frequency following the approach in Baker, Bloom, and Davis (2016). Then, employing this measure, we investigate the impact of EPU on economic activity using vector autoregression (VAR) models. The results imply that upward EPU shocks foreshadow deteriorations in Turkey's macroeconomic performance.

The remainder of this article is organized as follows: Section II introduces the EPU index for Turkey; Section III discusses the results of VAR estimation; and finally, Section IV concludes.

II. EPU index for Turkey

We construct EPU index for Turkey by using the text archives for six Turkish newspapers from January 1998 onwards: Cumhuriyet, Hurriyet, Milliyet, Sabah, Turkiye and Yeni Safak. We select the national newspapers that have a high daily circulation with an archive history starting in 1998 in Turkey. We use the digital text archives of newspapers at the Grand National Assembly of Turkey (TBMM) for the period 1998–2014 and the digital press archives of INTERPRESS[1] for the period from January 2015 onwards.

For each newspaper, we count the number of news articles containing at least one term in each of the economy, uncertainty and policy categories listed in Table 1. We conduct a series of small-scale audits that help us to select the terms in the policy category. We also search for grammatical variations of these words. Since the number of the news varies

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[1]Interpress is a media monitoring company in Turkey.

Table 1. Term sets for the Turkish EPU index.

Economy (E)	Uncertainty (U)	Policy (P)
Any word beginning with 'econ' (to include words like economy, economics and economist)	Any word beginning with 'uncertain' (to include words like uncertainty and uncertainties)	'Central Bank of Turkey' 'Ministry of Finance' 'The Grand National Assembly of Turkey' Parliament Government deficit Tax, taxation, taxes Senate Regulation Policy Budget Spending

among newspapers and over time, the number of raw counts of EPU news is scaled by the total number of economic news. The total number of economic news is taken as the number of news in the economy category. In the next step, we standardize these scaled news by dividing through by their SD. Then, we average the standardized series across the six newspapers by month to obtain our overall monthly EPU index for Turkey. Finally, we divide the index by its average and multiply by 100 to obtain the normalized EPU Index.

Figure 1 plots the resulting EPU index for Turkey. As can be seen from this figure, all of the spikes in EPU are associated with identifiable domestic and global economic, financial and political events. It follows from this figure that the EPU index shows a peak in September 2001. Turkey experienced a very severe economic crisis in November 2000 and again in February 2001 when it was following the exchange rate-based disinflation programme led by the International Monetary Fund (IMF). Afterwards, the pegged exchange rate regime was abolished, the stock exchange crashed, overnight interest rates went up and the Turkish Lira (TL) depreciated against the US dollar sharply.

In the immediate aftermath of the 2001 crisis, Turkey was challenged by a weakened government and political uncertainty about its future in 2002. The political crisis escalated following the prime minister's illness in May 2002. The minister of state who was seen as the driving force behind the ongoing IMF-backed economic recovery programme resigned from the country's crumbling coalition government. The prime minister's refusal to step down resulted in the resignation of more than 50 members of the Turkish parliament. The governing coalition fell and the parliament voted on July to hold the elections 18 months ahead of the schedule. There were growing concerns that the political uncertainty might derail a $16-billion rescue deal endorsed by the IMF to help the country out of its worst economic crisis. As shown in Figure 1, the EPU index reaches an all-time peak value in July 2002.

The uncertainty about economic policies spikes again in June 2006. Starting from May 2006, international investors switched to relatively stable

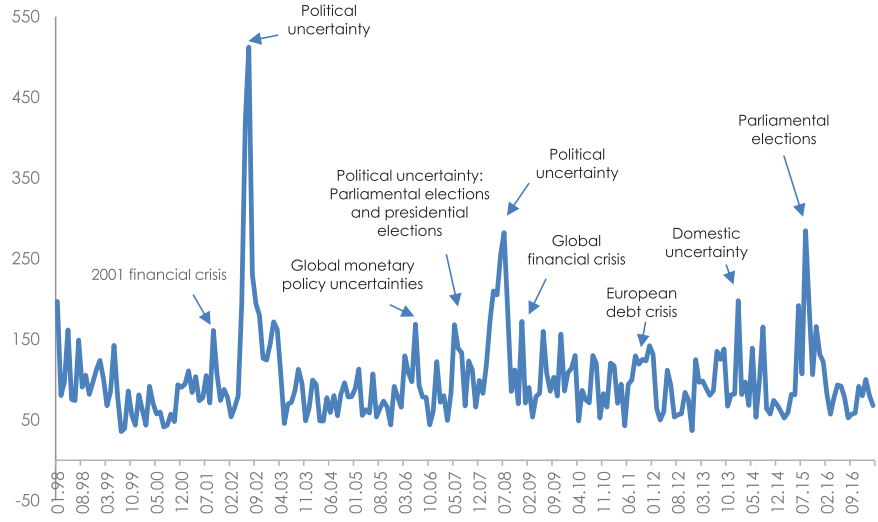

Figure 1. Economic policy uncertainty index for Turkey.

instruments in developed countries. Along with the decline in the global risk appetite, there were capital outflows from many emerging markets including Turkey. In this period, the depreciation of the TL against the US dollar was around 30% and the central bank introduced sharp interest rate hikes to encourage investors to remain and invest in the country.

In 2007, Turkey experienced growing political tension due to both the presidential and the parliamentary elections. Political tensions started to rise in the spring of 2007, following the failure by the parliament to elect a new president. The crisis in the parliament regarding the election of Turkey's next president resulted in early elections in July. Thus, there was a high level of uncertainty surrounding the economy caused by the elections in this period.

Political tensions reappeared once again in 2008 with a closure case filed against the ruling party. The closure case was initiated in March 2008 and ended in July 2008. During this period, the political uncertainty escalated significantly in Turkey.

In the last quarter of 2008, Turkey was hit by the global financial crisis which appeared in developed markets and then spread across the world. In September and October 2008, a high level of uncertainty stemming from the global financial market turbulence led to a wave of financial deleveraging that caused a sharp rise in sovereign credit risk premia and a significant depreciation of the Turkish lira against the US dollar in Turkey. Hence, the uncertainty about economic policy surged during the global financial crisis.

Following the 2008 crisis, Turkey was also affected by the aggravated Euro Area debt crisis. As the Turkish economy is closely linked to the European economy, the economic slowdown and the recession in EU-member countries negatively affected Turkish exporters in the form of market contraction. It follows from Figure 1 that the EPU was elevated in the period between August and December 2011.

On 17 and 25 December 2013, Turkey was confronted with a corruption investigation that increased the political uncertainty remarkably (17–25 December incidents). Following these incidents, the EPU index displayed a hike in January 2014.

In June 2015 elections, the ruling party lost its majority in the parliament. In order to form a government, the party would have to establish a coalition with one or more of the opposition parties or call for another round of elections. As the parties failed to end up with a coalition model, it was announced that another round of elections would take place in November 2015. In this period, domestic uncertainties climbed; the Turkish lira displayed a volatile course and depreciated against the US dollar. Consequently, the uncertainty about economic policy substantially increased in August 2015.

III. The impact of policy uncertainty on economic activity in Turkey

We use VAR models to capture the existing dynamic relationship between the policy uncertainty and the economic activity. In the VAR models, we include four variables: the EPU index, the real exchange rate,[2] the real interest rate[3] and one of the three macroeconomic indicators, which are real GDP, real investment and real private consumption. In these specifications, variables except the EPU index are defined in terms of gap, i.e. in terms of deviations of actual variables from their trend values. The variables are detrended using the HP filter to transform the variables as deviations from their trend. VAR models run from 2006Q4 to 2016Q4 for quarterly data. We use Cholesky decomposition for the structural identification in VAR models. The system is identified following the standard recursive ordering procedure with the order following the listing of the variables above.[4] We use one lag in all VAR specifications.[5]

Figure 2 presents the impulse response functions of GDP, consumption and investment to 1 SD EPU shock along the 95% confidence band.

According to impulse response functions, an upward EPU shock has depressing effects on the real economy. The responses typically take three to four quarters to reach the maximum effect and then

[2]The real exchange rate is the CPI-based real exchange rate.
[3]The real interest rate is calculated by using the one-year government debt securities interest rate and the expectation of annual CPI inflation at the end of the next 12 months.
[4]As a robustness test, we changed the ordering of the variables in the VAR models, but no significant change is observed in impulse responses.
[5]Based on the Schwarz information criteria.

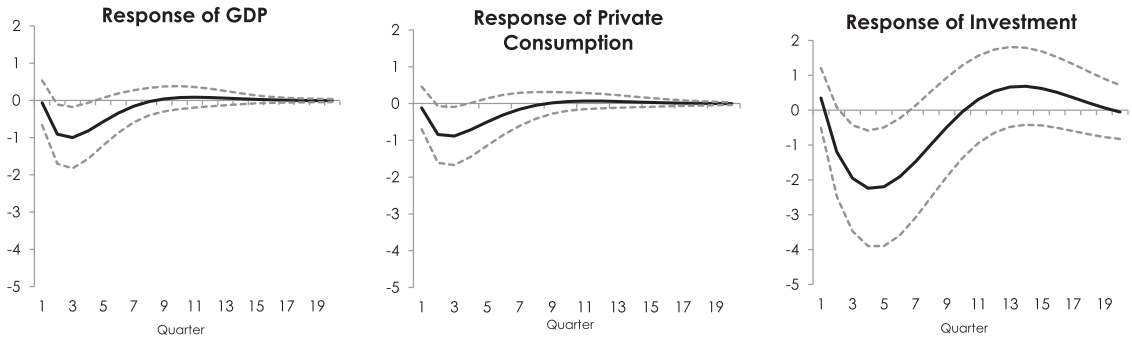

Figure 2. Impulse responses to one unit EPU shock.

revert back. The major effect on GDP appears at around −1.0% after three quarters and the response is significantly negative after up to eight quarters. The response of consumption to a shock in EPU displays similar dynamics, with a decrease peaking three quarters after the shock at −0.89% followed by a rebound. Noticeably, investment declines far more than the GDP and the consumption in response to a policy uncertainty shock. The uncertainty shock leads to a strong decline in investment with a peak impact after four quarters at −2.2% and the following fading out happens later (10 quarters). Overall, the results of the VAR analysis provide evidence that the EPU negatively affects the economic activity in Turkey, and the investment reacts the most to uncertainty shocks.

IV. Conclusion

We construct EPU index for Turkey, which reflects the frequency counts of articles in six leading Turkish newspapers that contain specific terms related to the economy, policy and uncertainty. The EPU index rises in periods of national elections (2002, 2007 and 2015) and domestic political uncertainties (2008 and 2013), during the global financial crisis in 2001, in reaction to the global monetary policy uncertainties in 2006 and during the global financial crisis in 2008 and the Euro area debt crisis in 2011.

Policymakers can monitor the policy uncertainty in the overall economy by using the EPU index. Besides, empirical evidence points to a significant negative impact of EPU shocks on economic activity. Our results suggest that we can achieve more vigorous macroeconomic performance if policymakers can ensure more predictability in the economic policy environment by implementing stronger communications framework.

Disclosure statement

No potential conflict of interest was reported by the authors.

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