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The Economic Policy Uncertainty index for Cyprus

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Ο δείκτη αβεβαιότητας για την οικονομική πολιτική στην Κύπρο

Παρασκευή Τζίκα

ΠΕΡΙΛΗΨΗ

Η αβεβαιότητα δεν είναι ένα νέο φαινόμενο, ωστόσο τα τελευταία χρόνια απασχολεί ιδιαίτερα και βρίσκεται στο επίκεντρο της έρευνας, κυρίως μετά την παγκόσμια οικονομική κρίση και την κρίση στην Ευρωζώνη. Οι οικονομικές αναταραχές των τελευταίων ετών έχουν οδηγήσει σε αύξηση της αβεβαιότητας σε παγκόσμιο επίπεδο. Η μελέτη της οικονομικής αβεβαιότητας για την Κύπρο είναι σημαντική, αν λάβουμε υπόψιν ότι ήταν η μόνη χώρα της Ευρωζώνης στην οποία εφαρμόστηκε κούρεμα καταθέσεων, κατά τη διάρκεια της τραπεζικής κρίσης του 2012-13. Τα τελευταία χρόνια, τόσο η πανδημία του Covid-19 όσο και ο πρόσφατος πόλεμος Ρωσίας-Ουκρανίας έχουν εντείνει την αύξηση της αβεβαιότητας για τις επιπτώσεις που θα επιφέρουν στην οικονομία, τόσο παγκοσμίως, όσο και στην Κύπρο.

Σκοπός της παρούσας έρευνας είναι η κατασκευή του δείκτη αβεβαιότητας για την οικονομική πολιτική (Economic Policy Uncertainty index, εφεξής EPU) στην Κύπρο, χρησιμοποιώντας τη μεθοδολογία των Baker, Bloom και Davis (2016), η οποία βασίζεται στη συχνότητα εμφάνισης συγκεκριμένων λέξεων σε άρθρα εφημερίδων. Ο Δείκτης EPU έχει κατασκευαστεί για σχεδόν 30 χώρες παγκοσμίως έως σήμερα, συμπεριλαμβανομένων αρκετών (11) χωρών της Ευρωπαϊκής Ένωσης. Είναι η πρώτη φορά που ο εν λόγω δείκτης εκτιμάται για την Κύπρο, από το Κέντρο Οικονομικών Ερευνών του Πανεπιστημίου Κύπρου. Για το σκοπό αυτό συλλέγουμε δεδομένα από τέσσερις κυπριακές εφημερίδες και κατασκευάζουμε τον δείκτη σε μηνιαία δεδομένα από τον Οκτώβριο του 1999 έως τον Μάιο του 2022. Καταμετρώνται για κάθε εφημερίδα τα άρθρα ανά μήνα που περιλαμβάνουν λέξεις σχετικές με τις εξής κατηγορίες: α) οικονομία, β) αβεβαιότητα, γ) πολιτική.

Ο δείκτης της Κύπρου αυξάνεται κατά τη διάρκεια γεγονότων όπως το δημοψήφισμα για το σχέδιο Αννάν το 2004, η έκρηξη στο Μαρί το 2011, η τραπεζική κρίση του 2012-13 και το κούρεμα των καταθέσεων το 2013, η πανδημία του Covid-19 που ξέσπασε στις αρχές του 2020, καθώς και η εισβολή της Ρωσίας στην Ουκρανία το 2022.

Στη συνέχεια, παρουσιάζονται τα περιγραφικά στοιχεία τους δείκτη για την Κύπρο, πριν και μετά την παγκόσμια χρηματοπιστωτική κρίση, τα οποία παρουσιάζουν αύξηση του δείκτη αβεβαιότητας την περίοδο μετά την κρίση.

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Abstract

In this paper, we construct the Economic Policy Uncertainty (EPU) index for Cyprus, using the novel newspaper frequency-based methodology proposed by Baker, Bloom, and Davis (2016). We collect data from four local newspapers and create the monthly data series of the EPU index for the period October 1999 until May 2022. The index reveals interesting insights for macroeconomic research given the increased economic uncertainty that is rationally triggered by global and domestic turmoil periods during the last two decades. The examination of the case of Cyprus is of great importance, as it is the only Eurozone country for which a bail-in programme was enforced during the Eurozone crisis. The newly constructed EPU index shows a tendency to increase during periods of domestic political anxiety with the referendum for the Annan's plan in 2004, unexpected events like the explosion in the Mari naval base in 2011, economic crises, the 2013 bank deposits haircut, the Covid-19 pandemic, and more recently the war between Russia and Ukraine.

Keywords: economic policy uncertainty, Cyprus

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1. Introduction

The concept of economic uncertainty is not new in the literature, but research on this field has been intensified after the outburst of the global financial crisis (hereafter GFC) and the subsequent Eurozone crisis. The turbulence of the world economy during these years has raised uncertainty and insecurity about the applied economic policies and their effectiveness. Cyprus was affected by the GFC, however, the country's economy deteriorated some years later, with the financial crisis of 2012-2013, the bank deposits' haircut and the capital controls.

The inconceivable nature of uncertainty has led many economic researchers through the years to quantify economic uncertainty in different ways. A variety of measures have been proposed as economic uncertainty indicators, either using forecast errors of macroeconomic variables, data from surveys, or even using the stock market volatility as financial uncertainty indicator. A measure of economic uncertainty has recently been introduced by Baker, Bloom, and Davis (hereafter BBD, 2016), the Economic Policy Uncertainty (hereafter EPU) index, the construction of which is based on textual analysis of newspaper articles.

Even though the EPU index is relatively new in the literature, it has attracted much research interest, as it provides important results about the impact of economic uncertainty on macroeconomic variables. So far, the index has been constructed for more than 25 countries, however, there is a lack of data for the EPU index for Cyprus so far; filling this gap is the aim of this paper. The literature review on the EPU index for other countries has shown that policy uncertainty affects several macroeconomic variables. Cyprus was the only Eurozone country where a bail-in programme was implemented, and bank deposits' haircuts and capital controls were enforced. Thus, it is important to construct this tool for Cyprus, a country that has gone through a severe economic crisis during the last decade. The EPU index can constitute a powerful tool to evaluate the economic policy actions and assess their implications on uncertainty and consequentially on the whole economy.

2. Literature review

Even before the introduction of the EPU index, there were several ways of quantifying economic uncertainty. Because of the multi-dimensional nature of economic uncertainty, several researchers have used different measurements of uncertainty, either depending on forecast errors, survey data, or even newspaper-based or finance-based ones (Moore, 2017). An approach with significant contribution to this field is the one by Jurado et al. (2015) who provide a

measurement of economic uncertainty related to the macroeconomy. Based on the unpredictable component of macroeconomic variables, they use forecast error variance and estimate uncertainty using a large set of variables with aggregation weights. Later, Girardi and Reuter (2016) capture uncertainty using data from business and consumer survey questions. Another indicator that is also used as a proxy of uncertainty is the CBOE Volatility Index (VIX), or the EURO VSTOXX specifically for the Eurozone. The two aforementioned ones are indicators of the expected volatility of the stock market, thus the counter-argument, in this case, is that they mainly capture financial uncertainty and not economic uncertainty in general (Bekaert, Hoerova, & Lo Duca, 2013). Some other studies proxy uncertainty based on the dispersion of individuals' and firms' expectations as these are expressed in opinion surveys (Bachmann, Elstner, & Sims, 2013; Abel, Rich, Song, & Tracy, 2016; Girardi & Reuter, 2016). Rossi et al. (2016) also add to the literature of measuring uncertainty, by providing an uncertainty indicator based on density forecasts of the Survey of Professional Forecasters (SPF). Compared to other uncertainty indices, research has shown that the EPU index responds immediately to events, as it captures real-time uncertainty expressed in the news (Altig, et al., 2020).

The rise of research interest on economic uncertainty over the last years has been triggered by the GFC and the Eurozone crisis. BBD (2016) added a new index in the literature of measuring economic uncertainty, by introducing a newspaper frequency-based indicator, the EPU index. They first constructed the EPU index for the US, by searching the digital archives of 10 leading US daily newspapers for the number of articles per month that contain at least one term for each of the three following categories: (i) Economy (E), (ii) Policy (P), and (iii) Uncertainty (U). They find that the EPU index peaks during significant economic, social and political events, like the 9/11 attack, elections, wars, the Lehman Brothers' collapse, etc. They also apply the same methodology to estimate the EPU index for other countries and even policy-specific ones for the US.[1]

More specifically, they count the number of articles that include the following terms: economy or economic, and uncertainty or uncertain, and policy or congress or deficit or Federal Reserve or legislation or regulation or White House. However, it is a fact that the total number of articles that are published, differs among the newspapers and also changes over time. Hence, the count of articles with the EPU words alone

[1] BBD have constructed US policy-categorical indices, for the following categories: monetary policy, fiscal policy, taxes, government spending, health care, national security, entitlement programmes, regulation, financial regulation, trade policy, sovereign debt/currency crisis (Baker, Bloom, & Davis, 2016). The data are available on policyuncertainty.com.

might not be representative to approximate uncertainty and examine its evolution over time. Thus, BBD scale, the number of articles that correspond to the EPU query, to the total number of articles that are published per month by each newspaper, hence getting a better approximation of uncertainty. To construct the EPU index, BBD first count the above numbers and scale the number of articles that contain the EPU query with the total number of published articles per month for each newspaper, and later they proceed with the standardisation to one standard deviation for the period 1985 to 2009. Afterward, they get the average of the 10 newspapers used for the US index. The final step is to normalise the series to a mean of 100 from 1985 to 2009.

Their approach for the measurement of policy uncertainty is based on textual analysis of newspapers, thus issues of reliability, bias, and consistency could have been addressed. However, BBD apply several tests to controvert such potential criticism. At first, they check the relationship of the EPU index with other measures of economic uncertainty, such as the VIX index.[2] Secondly, BBD conducted a human audit study. Student teams ran extensive audit studies of 12,000 articles, which have been randomly selected from the 10 newspapers used for the construction of the index. The auditors have been reading the articles to assess whether they are indeed related to economic policy uncertainty topics. The human audit results are used to evaluate the performance of the automated method of article search. The results corroborate the accuracy of the EPU index, as there is a high correlation between the computer-based EPU index and the human-audit EPU index. As a third step of the reliability tests, they examine if the index is affected by the political slant of the newspapers. They find that the results for left-leaning and right-leaning newspapers do not differ much. The reliability and consistency of the EPU index are finally corroborated by the fact that the index is provided by commercial databases, like Bloomberg, FRED, Haver, and Reuters.

So far, the index has been contrasted for 28 countries in total, and for all of them the index peaks during important domestic or international events. For example, the EPU index for the US during the past 4 decades, peaks during events like the Black Monday in 1987, the first and the second Gulf Wars (1990, 2003), elections, the Russian Crisis (1998), the 9/11 attack, the Lehman Brothers collapse (2008) etc. (Baker, Bloom, & Davis, 2016). As the data show, recently the EPU has increased also by the Covid-19 pandemic outburst increasing to its higher ever value, as the

[2] The VIX is estimated as the 30-day ahead expected volatility of the stock market and is used as a measure of financial uncertainty.

index exceeded the value of 500 in April 2020. Another example, the index for Spain shows high increases during Spanish elections in 200, the 9/11 attack, the Lehman Brothers collapse, the bailout programme of Greece in 2021, the Brexit referendum in 2016, and the Catalan crisis in 2017 (Ghirelli, Pérez, & Urtasun, 2019). The EPU index has also been constructed for Greece (Fountas, Karatasi, & Tzika, 2018) and relevant research shows that uncertainty increases either during international events (like the 9/11 attack, the second Gulf War, and the Lehman Brothers' collapse) or domestic events (like governmental elections, Greek debt crisis, referendum and capital controls).

Scanning the literature and to the best of our knowledge, so far there is only one research paper that applies the EPU index in research for Cyprus, but it uses the European EPU data index, due to the, until recently, lack of Cyprus EPU data. More specifically, Boumparis et al. (2017) examine the impact of the European EPU index on the credit ratings of several Eurozone countries, including Cyprus. Using a panel quantile approach on annual data for the period 2002 to 2015, the findings suggest that in Cyprus the EPU index has a negative impact on its credit ratings. This finding applies in general to the Eurozone periphery countries, e.g. Cyprus, Greece, Ireland, Italy, Portugal, and Spain. However, this research was conducted using the European EPU index, due to the lack of data for Cyprus. The results would have been even more interesting if they could have used the EPU data for Cyprus, which further intensifies the importance of this project, as it will make similar research applications possible.

3. The EPU index for Cyprus

To construct the EPU index for Cyprus we followed the textual analysis methodology proposed by BBD (2016). According to this method, the estimation of the index is based on the frequency of articles in newspapers, which contain words related to three terms: economy (E), policy (P), and uncertainty (U). The left column of Table 1 includes the words that BBD used for the construction of the EPU index for the US (BBD, 2016), while the right column includes the respective words in Greek, appropriately adjusted for the economy of Cyprus.

For the "policy" category, we have used some additional terms to better capture events that have troubled the economy of Cyprus. Moreover, based on related research it has been proven that the richer the word-set used, the more efficiently the EPU captures the events that have intensified economic uncertainty and the more significant are the responses of macro variables to EPU shocks (Ghirelli, Pérez, &

Urtasun, 2019). We search the digital archives of the printed version of four local newspapers.[3] The number of articles that contain those words is scaled by the number of articles published by each newspaper per month, and with the appropriate normalisation and standardisation procedure we get the EPU index as depicted in Figure 1.[4,5]

TABLE 1

Keyword sets for the construction of the EPU index

TERMS USED BY BBD FOR THE US	GREEK TERMS USED FOR CYPRUS
UNCERTAIN OR UNCERTAINTY OR UNCERTAINTIES	αβεβαιότητα Ή ανησυχία Ή αμφιβολία
AND	ΚΑΙ
ECONOMIC OR ECONOMY	Οικονομία
AND	ΚΑΙ
POLICY OR CONGRESS OR DEFICIT OR FEDERAL RESERVE OR THE FED OR LEGISLATION OR REGULATION OR REGULATORY OR THE WHITE HOUSE	πολιτική **Ή** κυβέρνηση **Ή** έλλειμμα **Ή** «Κεντρική Τράπεζα Κύπρου» **Ή** ΚΤΚ **Ή** «Ευρωπαϊκή Κεντρική Τράπεζα» **Ή** ΕΚΤ **Ή** μεταρρύθμιση **Ή** νόμος **Ή** νομοθεσία **Ή** βουλή **Ή** «διαρθρωτικές αλλαγές» **Ή** απορρύθμιση **Ή** υπουργείο **Ή** «ρυθμιστικό πλαίσιο» **Ή** «επιτροπή κεφαλαιαγοράς» **Ή** «επιτροπή ανταγωνισμού» **Ή** ΕΠΑ **Ή** προεδρικό **Ή** κατάθεση **Ή** κούρεμα

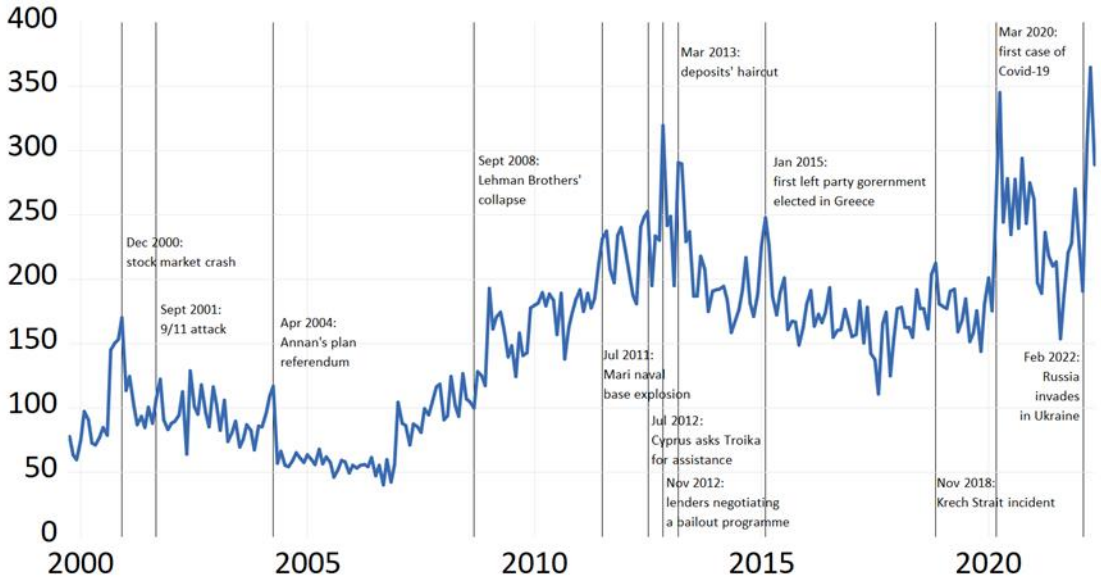
Notes: We have searched for any derivative and any suffix for each word, as in Greek the word might have different suffixes depending on the declension of the nouns and the adjectives under scrutiny. In addition, words that are synonymous with "uncertainty" are also used in the query.

The general picture makes it evident that policy uncertainty is volatile between the stock market crash in 2000 and the referendum for the Annan Plan in 2004. For the next few years, uncertainty is smoother, until the outburst of the GFC, when uncertainty begins slowly to climb up, to peak sharply in 2012-13 with the banking crisis the country faced. Since 2016 uncertainty seems to follow a more stable path at relatively lower levels compared to the previous period of turmoil. This less volatile period was disturbed by the Covid-19 pandemic outburst in March 2020, when the

[3] We had access to Phileleftheros and Politis, and to the Press and Information Office (PIO) through which we accessed the archives of Charavgi and Simerini. We search the digital archives of the newspaper "Politis" for the period October 1999 until May 2022, "Phileleftheros" for the period January 2007 until May 2022, the digital archives of the PIO for the newspaper "Charavgi" for the period October 1999 until December 2008, and "Simerini" for the period January 2003 until July 2007.
[4] For more details on the construction of the index refer to the Appendix.
[5] Further information for the construction of the EPU index for Cyprus is presented in Appendix I.

EPU index increased again, to peak at its highest value ever in March 2022, after Russia invaded Ukraine. The next section will give more details about the path of the EPU index throughout the years and the events that seem to be related to high rises of uncertainty in the economy of Cyprus.

FIGURE 1
The EPU index for Cyprus



Notes: Sample: October 1999 – May 2022, monthly data.

4. The economy of Cyprus and the EPU index

More in detail, the EPU index for Cyprus seems to peak during or after months when significant economic or social, international as well as domestic events took place. The sample of the EPU index starts in October of 1999, just a few months before the Cyprus stock exchange crisis in 2000 (Orphanides & Syrichas, 2012). Several events that took place in 1999, such as the talks about Cyprus entering the EU, the initiation of the negotiations about the Cyprus problem, and other positive developments regarding the economic and political life of the country, led to attracting investors' interest and boosting the stock exchange market. In late 1999- early 2000 it became obvious that this rise of the stock market would not be sustained for long. Thus, the Central Bank of Cyprus (hereafter CBC) warned and took action in the second half of 2000 to prevent a potential stock market bubble crash, imposing credit ratings and raising minimum reserve requirements. Despite these actions, credit growth reached 14.8% in 2000 and the country's stock market was led to a crash. The events of 1999-2000 were followed by the milestone year of 2001 when the interest rates in the country were liberalised and the Monetary Policy Committee (MPC) was established (Orphanides & Syrichas, 2012). The above years coincide with a peak of the EPU

index, as shown in Figure 1, during the last quarter of 2000, followed by a sharp drop in the first month of 2001.

The 9/11 attack in the US has been followed by increases in economic uncertainty in many countries, like the US, the UK, Ireland, Greece etc. (Baker, Bloom, & Davis, 2016; Zalla, 2017; Fountas, Karatasi, & Tzika, 2018). In the case of Cyprus, we observe that the EPU index peaks in October 2001, one month after the attack. The next noteworthy peak of uncertainty is in April 2004, when the referendum for the Annan's plan took place. Since 1974 and the Turkish invasion of the Cyprus territory, the Cypriot dispute has not come to a solution. Kofi Annan's plan, who was then the Secretary-General of the United Nations, was one of the few times that the dispute was very close to a solution. Annan presented the first form of the plan in 2002, with the last version of it being presented in March 2004. The negotiations ended with the referendum in April 2004, when more than 75% of the Greek Cypriots rejected Annan's plan. Thus, we can see high volatility of economic uncertainty between 2002 and 2004, and after a peak in April 2004 when uncertainty reached 83.4, it dropped to less than half its value in a month (40.8 in May 2004).

This period of uncertainty turmoil was followed by years of milder uncertainty with smoother volatility until the beginning of the GFC. After 2007, uncertainty in the country seems to be facing a mild increase to peak some years later. It is obvious that the EPU index for Cyprus responds with a lag to the beginning of the GFC and the collapse of the Lehman Brothers, as it increases in January 2009, however relatively less than other countries. This may be because the model of funding banks in Cyprus protected the economy from the first "wave" of the GFC in 2008, as the banks faced no liquidity constraints. A few years later, an unexpected event, irrelevant to the crisis took place in July 2011, the Mari naval base explosion, which is accompanied by an uncertainty increase about the economic policy actions, as shown in Figure 1. The Mari naval base explosion cost Cyprus about 10% of its annual GDP and deteriorated an already struggling economy. The Mari explosion and the banking system of the country are supposed by many to have played the most vital role in the Cyprus economic crisis of 2012-13.

Thus, the most noteworthy event which changed the course of the country's economy, but also of the EU, was the 2012-13 banking crisis in Cyprus, which was accompanied by the depositor bail-in and the capital controls imposed in March of the same year. Cyprus, in order to get financial assistance from Troika (the IMF, the ECB and the European Commission) agreed on a 7-billion-euro bail-in and the recapitalisation of its commercial banks. This implied that the second-largest

commercial bank of Cyprus (Laiki Bank) was merged with the largest bank in Cyprus (the Bank of Cyprus), and there were bank deposit haircuts, for deposits above 100,000 euros.

The next high peak of policy uncertainty in Cyprus is estimated in January and February 2015. This period coincides with the election of the first left party to ever govern Greece. It was a period with high EPU values in Greece as well (Fountas, Karatasi, & Tzika, 2018), and bearing in mind the strong connection between the two countries, it seems that the increase of the EPU index for Cyprus is due to the respective increase in Greece.

Another event that could be related to the Cypriot economic uncertainty is the intense relationship between Russia and Ukraine. The conflict between the two countries started in 2014 when Russia annexed the Crimean territory. But, on the 25th of November 2018, the Kerch Strait incident took place, with Russia openly engaging the Ukrainian forces for the first time. The economy of Cyprus seems to have been affected in terms of uncertainty, as there is an EPU peak in November 2018, though not as high as previous peaks. This effect of the Russia-Ukraine situation on the economy of Cyprus could be explained by the financial and tourism links between Cyprus and Russia.

During the last two years, uncertainty in Cyprus, as well as worldwide, has been affected by the outburst of the Covid-19 pandemic. Covid-19 is one of the most lethal and transmittable viruses of all time, has resulted in more than 400 million cases and 5 million deaths worldwide so far, leading many countries to impose tight quarantine policies thus disabling the economies to operate normally, with unknown and difficult to predict consequences to the economy. The outbreak started in November 2019 in Wuhan, China, but the first Covid-19 case in Cyprus was diagnosed in March 2020. Thus, the EPU index reached a peak equal to 345 in April 2020, when the cases started increasing and tighter lockdown measures were implemented. The EPU peaked up again in autumn 2021, when the positive cases exceeded 2000, reaching even more than 5000 in December of the same year.

On February 24, 2022, the Russian president announced the authorisation of military operations in Ukraine. This war seems to have triggered increases of economic uncertainty worldwide, as the global EPU index increased from 189 in February 2022 to 330 in March 2022. For Cyprus, the economic (eg tourism) and financial links with Russia were expected to lead to an uncertainty increase about the economic

consequences this war may have. Hence, indeed one can observe that the EPU index value increases sharply and reaches unprecedented levels in April 2022.

Overall, it can be concluded that after the beginning of the GFC there is a notable increase in the value of uncertainty, and more specifically after the EPU index peaks at the beginning of 2009. To get a clearer picture, Table 2 compares the descriptive statistics of the EPU index before and after the outburst of the GFC, thus splitting the sample into two different subsamples, October 1999 to December 2008, and January 2009 to February 2022. The mean and median values almost double in the second subperiod compared to the first one, and there is also evidence of higher volatility of the EPU series, as the standard deviation increases from 20.25 in the first period to 25.18 in the second.

TABLE 2
EPU descriptive statistics before and after the global financial crisis (GFC)

	pre-GFC period	**post-GFC period**
Mean	85.58	195.58
Median	85.27	186.79
Maximum	169.84	364.80
Minimum	40.26	110.85
Standard deviation	26.28	42.47

Notes: The pre-GFC period is defined as October 1999 to December 2008, while the post-GFC is defined from January 2009 until May 2022.

5.Conclusion

The main aim of this paper was to present the construction of the EPU index for Cyprus and analyse its effects on the economy of Cyprus. We constructed the monthly data for the EPU index for the period October 1999 until May 2022.[6] A first look at the EPU data series path indicates that the EPU was relatively low and less volatile before the GFC started with the collapse of the Lehman Brothers, except for the early period of the sample, when there was a high uncertainty following the stock market bubble crash in early 2000. However, after 2008 EPU seems to be on the rise, and especially during the 2012-13 crisis and the deposits' haircut, which triggered an even higher rise in economic uncertainty in the country, reaching a value of 319 in November 2012. Uncertainty seems to have been milder since 2017, as the consequences of the crisis started to fade away, to reach again its second highest value (345) at the beginning of the Covid-19 pandemic in April 2020. However, the

[6] The index will continue being updated, by the research team of the Economics Research Centre of the University of Cyprus, on regular basis.

highest uncertainty value (364) is being detected in April 2022, when Russia invaded Ukraine. The index also seems to have higher values after 2009 and the beginning of the GFC, as the global crisis, the banking crisis in the country, the Covid-19 pandemic and more recently the Russia-Ukraine war have been triggering uncertainty increases.

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Appendix I

For the construction of the EPU index for Cyprus the digital archives of four local daily newspapers are searched, but for different samples each.[7] We search the digital archives of the newspaper "Phileleftheros" for the period January 2007 until May 2022, "Politis" for the period October 1999 until May 2022, the digital archives of the PIO for the newspaper "Charavgi" for the period October 1999 until December 2008, and "Simerini" for the period January 2003 until July 2007.[8] As the volume of the published articles is different among the newspapers and also varies over time, we also count the total number of articles published per month by each newspaper, so that we can scale the counts of the articles that contain the "EPU" words to the total number of articles published each month. Then we standardise the series for each newspaper to the standard deviation for the sub-sample until August 2008. Afterward, we average across the four newspapers and normalise to a mean of 100 for the same sub-sample as above, to get the final EPU data series. More specifically, the steps followed to get the final version of the EPU index are the following:

1) Count the number of articles (A_{it}) that contain the keywords per month (t) and per newspaper (i), as well as the total number of articles (B_{it}) that are published per month for each newspaper.

2) Scale the number of articles that contain the "EPU" set of words (A_{it}) by the total number of articles published by the newspaper each month (B_{it}) and get the series X_{it}.

3) Split the sample into two subsamples T_1 and T_2.[9]

4) We standardise the X_{it} series for each newspaper to unit standard deviation, by dividing the X_{it} series with the standard deviation of T_1 and get the series Y_{it}.

5) Estimate the mean value of all Y_{it} for all newspapers and get the series Z_t.

6) Normalise the Z_t series by dividing it with the mean value of Z_t for the period T_1. Hence, we get the final EPU_t series.

[7] The search is executed on the digital archived is the printed version of the newspapers.
[8] The archives of "Charavgi" and "Simerini" are searched through the archives of the Press and Information Office (PIO) of Cyprus and the period of the search is dictated by the availability of the digitalised articles.
[9] We take *T1* to be October 1999 until December 2010 for all four newspapers.

Appendix II

TABLE 4
Events, domestic and international, related to the economy of Cyprus and possible uncertainty movements

Date	**Event**
1999	Increase of equities' values in the Cyprus Stock Exchange
2000	Cyprus Stock Exchange crisis
Jan-01	Interest rates fully liberalised
May-01	Domestic governmental elections (AKEL/ D. Christofias)
Sep-01	9/11 attack
Jan-02	The launch of the Euro in the first 12 countries of the Eurozone
Nov-02	Annan's plan (1st release)
Feb-03	Presidential elections (T. Papadopoulos)
Apr-03	Boarders with the occupied part open for the first time. Cyprus signs to enter the EU
Apr-04	Referendum for Annan's plan. Interest rates increase by 100 base points in one day (April 30)
May-04	Cyprus enters the EU
May-05	The Cypriot pound included in the Exchange Rate Mechanism
Aug-05	Flight No 522 Helios Airways crash
May-06	Domestic governmental elections (AKEL/ D. Christofias)
Jan-08	Launch of the Euro in Cyprus
Feb-08	Presidential elections (D. Christofias)
Sep-08	Lehman Brothers' collapse
May-10	Greece asks the EU and the IMF for financial assistance
2011	Cyprus is downgraded by credit rating agencies
May-11	Domestic governmental elections (DI.SY./ N. Anastasiadis)
Jul-11	"Evangelos Florakis" Naval base explosion in Mari[10]
Jul-12	Cyprus asks Troika for financial assistance
Nov-12	International lenders negotiating a bailout programme
Feb-13	Presidential elections (N. Anastasiadis)
Mar-13	Deposits haircut and capital controls
Jul-14	FinCEN's report against FBME
Jan-15	First left-wing party government elected in Greece
Jun-15	Referendum in Greece
Mar-16	End of three-year financial assistance programme
May-16	Domestic governmental elections (DI.SY./ A. Neofytou)
Jun-16	Brexit referendum
Jul-17	Negotiations ended in Crans-Montana
Jan-18	Presidential elections (N. Anastasiadis)
Nov-18	Kerch Strait incident between Russia and Ukraine
Mar-20	First Covid-19 case confirmed in the country
May-21	Domestic governmental elections (DI.SY./ A. Neofytou)
Feb-22	Russia invades Ukraine

[10] The economic impact of the explosion is estimated to have reached almost 10% of the country's annual GDP.