



Tourist arrivals in four major economies: another side of economic policy uncertainty and fear

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Abstract

In this paper, we examine the direction of causal relationships among migration-related fear, economic policy uncertainty, tourism, and economic growth in the panel economies of France, Germany, the UK, and the USA. To the best of our knowledge, this study is the first to examine the interaction and interrelationship between these variables in a multivariate causality study, using a quarterly data over the period 1985Q1–2017Q4 via time-series causality approach as advanced by Emirmahmutoglu and Kose (Econ Model 28:870–876, 2011) that produces country-specific causality statistic and also captures slope heterogeneity in panel data. Empirical results show that migration-related fear is linked with EPU, tourism arrivals, and real income. Thus, we suggest fear-induced economic policy uncertainty, fear-induced tourism, and economic policy uncertainty–induced growth hypotheses with credible policy suggestions for tourist destinations.

Keywords Fear · Economic policy uncertainty · Tourism arrivals · Economic growth · 4 major economies

Introduction

In order to further understand the link between migration and tourism, the United Nations World Tourism Organization (UNWTO 2017) noted certain effects arising from the migratory mobility of tourism. Earlier, Williams and Hall (2000) noted the interconnectedness between tourism and migration and at the same time affirmed the existence of tourism-related

migration patterns to include labor, return, entrepreneurial, and retirement migration. Thus, the relevance of tourism to economic activities has continued to necessitate the need to further harness tourism opportunities in medical tourism, religious tourism, sport tourism, among other forms of tourism. But achieving the underlying opportunities in the tourism industry could be unattainable without decoupling the potential challenges associated the migration-related tourism. For instance, since the September 2011 terrorist attack in the USA by radical and self-acclaimed Islamic group, the aftermath of the impact soon resulted to migration/immigration-related problems. In the USA and many of the European countries (such as the UK, France, and Germany), the September 2011 attack has since increased backlash against the Muslim community and a spike in hate-related crimes, thus compounding migration-related fear and impeding tourism development (Gould and Klor 2016; Donadelli et al. 2018).

Insight from the tourism performance of the three of Europe's largest economies and the USA is an indication that the countries concerned are tourist destination countries. Specifically, in 2017, the contribution of tourism to total GDP in France, Germany, the UK, and the USA is respectively given as 8.9%, 10.7%, 10.5%, and 7.7%. In the same report of the World Travel and Tourism Council (WTTC), the performance of the tourism sector (total percentage of contribution to the GDP) in France, Germany, UK, and the USA is

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respectively expected to be 9.4%, 11.2%, 10.8%, and 8.4% by 2028 (WTTC 2018). Similarly, the WTTC indicated that travel and tourism have contributed (in total) to the employment and investment of the aforementioned countries. In France, 10% of total employment in 2017 was from the sector and it is expected to increase to 11.2% in 2028. For Germany, 13.8% of total employment in 2017 is from the sector and it is expected to increase to 14.8% in 2028. In the UK, total employment amounts to 11.6% in 2017 and is expected to increase to 12.1% in 2028. Meanwhile, 8.9% of total employment is generated by the sector and could possibly increase to 10.1% by 2028.

Importantly, the factors associated with the tourism performance and otherwise for the aforementioned countries could either be country-specific or a spillover of events from other countries. This is an indication that a certain level of (economic) uncertainty resulting from certain factors could significantly dictate the performance of the tourism sector. In recent time, studies have widely demonstrated the link between tourism and economic growth or the investigation of the tourism-led growth hypothesis (Rasekhi et al. 2016; Akadiri et al. 2017, Fahimi et al. 2018; Roudi et al. 2018; Usman et al. 2019), and the link between tourism and other factors (Katircioğlu 2014; Katircioğlu et al. 2014; Alola and Alola 2018a, 2018b). Notwithstanding, the tourism outlook of France, Germany, the UK, and the USA (and the global perspective) indicates the justification for the examination of the relationship between tourism and uncertainty parameters. This is necessary considering the unexpected risk associated with the ripple effects of the global financial crisis (GFC) that spread from the USA subprime mortgage market to other sectors of the economy.

On this note, the current study employs the economic policy uncertainty (EPU)¹ and the migration-related index² that has not been used in the extant literature and in the context of tourism. This is because of the degree of uncertainty associated with fiscal policies and the fear-induced factors in destination countries. Hence, the study hypothesizes that economic policy uncertainty and migration-related fear Granger cause tourism arrival in France, Germany, the UK, and the USA. The use of migration-related fear is responsible for the restriction to the 4 major economies (France, Germany, the UK, and the USA). To an extent, the result of the investigation is expected to offer direction to the implementation of economic-related policies in the examined countries. It will potentially

guide on how to address potential factors that induce fear in the destination countries, in this case, 4 major economies.

The remaining sections are structured as follows. The “**Tourist inflows: the economic uncertainty-fear dilemma**” section presents the underlying concept of fear, EPU, and tourism arrivals while the “**Data and methodology**” section highlights data description and the empirical methodologies. The empirical findings and implications for policy decision-making are reported in the “**Results and discussion**” section. Lastly, the concluding remarks are provided in the “**Conclusion**” section.

Tourist inflows: the economic uncertainty-fear dilemma

In addition to the effect of the US **subprime mortgage** market crash on the financial sector, the circumstance of the global financial crisis (GFC) of 2008–2009 on the international tourist arrivals globally is observed to be significant (Central Bureau Voor de Statistiek 2018). In reality, a high level of economic or financial risk is associated with low and effective predictability of the policy dynamics and such that characterizes the GFC. Hence, the fiscal policies, especially the uncertainty in the economic policy of the destination countries, are potential determinants of tourist inflows. For instance, as the world’s primary tourism destination, the European Union (EU)’s tourism sector generates 10% of the region’s GDP. Subsequently, this has since triggered environmental and socio-economic policies from the member countries (European Environment Agency 2016).

In addition to the impact of the economic uncertainty on the inbound tourists’ decision-making, the role of fear (migration-related fear) on the tourists is obviously important. Although fear is the feeling of a perceived threat, in this context (a migration-related fear), the threat is associated with the event within or round the destination country. As developed by Baker et al. (2016), the migration-related fear is characterized by anxiety, panic, bomb, fear, crime, terror, worry, concern, and violence. As such, these determinants of fear have been linked with tourism in previous studies (Wachowiak 2016; Bassil et al. 2019). For instance, transnational terrorism and domestic terrorism are primarily associated with migration-related fear. Nowadays, the new coronavirus (SARS-CoV2) has generated an unprecedented impact in most countries of the world. The virus has affected almost every country on the planet (138 in total), spread to more than 2 million people, and caused around 140,000 deaths (WHO 2020). The fear of the COVID-19 outbreak created a huge whirlpool of uncertainty. The results of this fear created the quarantine economy which affects consumer/tourist psychology. Therefore, this negative effect can be spread to travel industries.

¹ The Policy Uncertainty index (EPU) which was developed from the newspaper coverage of events (such as war, terrorist attacks, financial crisis, and fiscal policy) (Baker et al. 2016). Further information on economics can be read from <http://www.policyuncertainty.com/>.

² Baker et al. (2016) developed the migration fear index for four countries (France, Germany, UK, and the USA). The details can be read from http://www.policyuncertainty.com/immigration_fear.html.

Theoretical concept

As previously indicated, evidence has shown that there exists a significant linkage between migration and tourism, thus is the migration-related fear and tourism (Gould and Klor 2016; Donadelli et al. 2018). For reason of “sentiment” or “mood,” the decision to tour or not of a tourist (tourism consumer) is believed to change over time, thus affecting the outbound tourism and tourism demand of a destination (Schwarz and Clore 2003; Dragouni et al. 2016). Moreover, the study of Dragouni et al. (2016) and many others further established the link between tourism performance and the EPU. In specific, the consumer spending behavior (of a tourist) is believed to be a function of EPU (Gozgor and Ongan 2017; Alola et al. 2020). Thus, the concept of international tourism arrivals is further modified according the aforementioned studies to accommodate migration-related fear, EPU, and income as determinants and illustrated accordingly as $ITA = f(\text{EPU, FEAR, RGDP})$.

Data and methodology

Data

In the current study, data availability (migration-related fear data only available for the sampled countries) restricted to four (4) major economies which include: France, Germany, UK, and the USA. The series employed covers the period 1997Q1–2016Q4. The EPU and the migration-related fear index developed by Baker et al. (2016) for the aforementioned countries and the real GDP per capita are the independent variables employed. In addition, international tourism arrivals (ITAs) are employed as the dependent variable. Baker et al. (2016) developed the EPU and the migration fear indices from the newspaper captions as illustrated in detail from http://www.policyuncertainty.com/immigration_fear.html. The World Development Indicators (WDI 2018) is the source of the ITAs and real GDP per capita. All the variables are used in their logarithmic forms in the estimations.

Methodology

It has been well-established in the literature that the standard asymptotic theory cannot be used to test for hypothesis in a level VAR model if the series are nonstationary (Sims et al. 1990; Toda and Phillips 1993). To avoid this problem, Emirmahmutoglu and Kose (2011) proposed an alternative method to test coefficient restrictions of a level VAR model. This method is based on the modified Wald test in the lag-augmented VAR (LA-VAR) approach with the asymptotic chi-square (χ) distribution for the estimated VAR ($p + dmax$) model. Emirmahmutoglu and Kose (2011) extended the LA-

VAR approach to test panel causality for heterogeneous mixed panels.

$$z_{i,t} = \delta_i^z + \sum_{r=1}^{k_i+dmax_i} D_{11,ir} x_{i,t-r} + \sum_{r=1}^{k_i+dmax_i} D_{12,ir} z_{i,t-r} + \varepsilon_{i,t}^z \quad (1)$$

$$x_{i,t} = \delta_i^x + \sum_{r=1}^{k_i+dmax_i} D_{21,ir} x_{i,t-r} + \sum_{r=1}^{k_i+dmax_i} D_{22,ir} z_{i,t-r} + \varepsilon_{i,t}^x \quad (2)$$

where i stands for individual cross-sectional units and t is time period, k_i denotes the lag structure, and $dmax_i$ is the maximal order of integration. In this study, $z_{i,t}$, $i = 1, 2, \dots, N$ represents ITA while $x_{i,t}$, $i = 1, 2, \dots, N$ refers to EPU, FEAR, and RGDP. Three different results can be generated for the individual country from the Granger causality output, such as (i) unidirectional Granger causality from z (ITA) to x (EPU, FEAR, and/or RGDP) if all $D_{11,ir}$ are zero, but not all $D_{22,ir}$ are zero, (ii) unidirectional Granger causality from x (EPU, FEAR, and/or RGDP) to z (ITA) if all $D_{22,ir}$ are zero, but not all $D_{11,ir}$ are zero, (iii) bidirectional Granger causality relation between z and x if some of the $D_{11,ir}$ and $D_{22,ir}$ are non-zero.³

Results and discussion

This section deals with empirical results and discussion. For sound and robust empirical estimations, we test for the existence of CSD using panel unit root tests as advanced by Pesaran et al. (2008) bias-adjusted LM test, Pesaran (2004), Pesaran (2004) Scaled LM test, and Breusch and Pagan (1980) LM test. Using, Pesaran and Yamagata (2008) which is a standardized version of the Swamy (1970) we test for slope homogeneity as shown in Table 1. CSD results as reported in Table 1 show non-rejection of the null hypothesis of the existence of CSD at $p < 0.01$ significance level for the paneled data. Similarly, results as reported in Table 1 also show non-rejection of the null hypothesis of the existence of a slope homogeneity among the variables at $p < 0.01$ significance level. For the stationarity test, we used the CIPS unit root test approach as advanced by Pesaran (2007). CIPS unit root test results as reported in Table 2 show that the variables under observation are all stationarity at the first difference, i.e., $I(1)$. Finally, for long-run cointegration estimation, we make use of Westerlund and Edgerton (2007) bootstrap cointegration techniques. Cointegration results as reported in Table 3 show support for the existence of a long-run equilibrium relationship for both individuals and across the panel.

In order to achieve our research objectives, we carry out the Granger causality test to examine the direction of causality relationship between the variables and whether they have predictive power over one another or not. We capture omitted

³ For detailed information, interested reader should see Emirmahmutoglu and Kose (2011).

Table 1 Cross-sectional dependence and homogeneity test results

CD tests	Statistic (<i>p</i> value)		
	lnfear	lnepu	lnrgdp
LM (Breusch and Pagan 1980)	79.707* (0.000)	114.119* (0.000)	234.890* (0.000)
CDlm (Pesaran 2004)	21.277* (0.000)	31.211* (0.000)	66.075* (0.000)
CD (Pesaran 2004)	− 6.540* (0.000)	− 7.050* (0.000)	− 6.386* (0.000)
LMadj (Pesaran et al. 2008)	14.793* (0.000)	18.699* (0.000)	43.640* (0.000)
Slope homogeneity tests			
$\hat{\Delta}$	− 1.543 (0.939)	− 1.672 (0.953)	− 1.737 (0.959)
$\hat{\Delta}_{adj}$	− 1.583 (0.943)	− 1.716 (0.957)	− 1.782 (0.963)

**Significance at 0.05

*Significance at 0.01

variable bias in our empirical analysis by employing the real GDP per capita (a proxy for economic growth) as an additional variable for control purposes using the LA-VAR that generates country-specific causality method as suggested by Emirmahmutoglu and Kose (2011). Table 4 reveals the rejection of the null hypothesis of no causality nexus from fear to real income. Results show two-way causality nexus from fear and real income in Germany at $p < 0.10$ and $p < 0.05$ significance level. Thus, we infer that fear has predictive power over real income and vice versa. However, we could not reject the null of no causality nexus between fear and real income in France, the UK, and the USA respectively. This indicates that migration-related fear does not necessarily influence the increase/decrease in the level of income and vice versa. Thus, we suggest a fear-induced growth hypothesis in the case of Germany. These findings are consistent with the findings of Alola et al. (2020).

In addition, results, as reported in Table 4, show one-way causality nexus from fear and tourism in France, Germany, the UK, and the USA at $p < 0.10$, $p < 0.05$, and $p < 0.05$ significance level respectively. Thus, we infer that fear predicts tourist arrivals. However, we could not reject the null of no causality

nexus from tourism to fear in all countries. The findings evidently indicate that the historical values of migration-related fear do influence the present tourist decisions in choosing potential tourist destinations. It further implied that the causative circumstances of fear and especially the migration-related fear concerns in the examined economies are potentially linked with the tourism performance of the economies. Thus, we suggest a fear-induced tourism hypothesis for 4 major economies. These findings are consistent with the findings of Dragouni et al. (2016), Wachowiak (2016), Akadiri et al. (2019), Alola et al. (2020), and Bassil et al. (2019).

Results also show two-way causality from fear to EPU in the USA at $p < 0.05$ and $p < 0.01$ and one-way causality from EPU to fear in the UK at $p < 0.01$ significance level. We thus infer that fear predicts EPU. However, we could not reject the null of no causality nexus between fear and EPU, as migration-related fear does not necessarily influence EPU in France and Germany. Similarly, we found neutrality hypothesis between real income and tourism in all countries. Findings indicate that tourism does not necessarily predict an increase/decrease in real income within the 4 major countries and vice versa. These results suggest fear-induced policy uncertainty and economic policy uncertainty-induced fear hypotheses respectively.

Finally, results, as reported in Table 4, show one-way causality nexus from EPU to real income in Germany, the UK, and the USA. These results imply that EPU is a useful

Table 2 CIPS panel unit root test results

Variables	Statistics
ln _{ta}	− 2.225 (0.571)
Δ ln _{ta}	− 3.161** (0.027)
ln _{fear}	− 2.130 (0.700)
Δ ln _{fear}	− 5.017** (0.000)
ln _{epu}	− 2.806 (0.139)
Δ ln _{epu}	− 4.710* (0.000)
ln _{rgdp}	− 1.462 (0.983)
Δ ln _{rgdp}	− 3.223** (0.019)

**Significance at 0.05

*Significance at 0.01

Table 3 Cointegration test

Tests	Statistic (<i>p</i> value)
g_ tau	− 0.380 (0.501)
g_ alpha	2.224 (0.957)
p_ tau	0.217 (0.718)
p_ alpha	0.217 (0.946)

Critical values for CIPS statistics are − 3.030, − 2.830, and − 2.720 for 0.01, 0.05, and 0.10, respectively

Table 4 Ermirmahmutoglu and Kose (2011) Granger causality test

lnrgdp ≠> lnrgdp		lnrgdp ≠> lnrf		lnrf ≠> lnra		lnrf ≠> lnepu		lnra ≠> lnra		lnepu ≠> lnepu		lnepu ≠> lnra			
Lags	Wald statistics	p value	Wald statistics	p value	Lags	Wald statistics	p value	Lags	Wald statistics	p value	Lags	Wald statistics	p value		
France	1	2.256	0.110	1.769	0.183	1	3.295***	0.069	0.031	0.860	1	0.812	0.367	2.114	0.146
Germany	1	3.137	0.077	4.932**	0.026	1	5.235***	0.022	1.355	0.244	3	0.987	0.804	5.702	0.127
UK	1	1.806	0.179	0.686	0.408	1	4.987***	0.026	0.334	0.563	3	5.348	0.148	12.078**	0.007
USA	1	2.483	0.115	2.099	0.147	1	7.363***	0.007	0.065	0.799	3	10.265*	0.004	21.406**	0.001
Λ		17.324***	0.076	16.288	0.892		30.314	0.183	4.717	0.987		17.319	0.921	32.455	0.754

lnepu ≠> lnrgdp		lnrgdp ≠> lnepu		lnra ≠> lnrgdp		lnra ≠> lnra		lnra ≠> lnepu		lnepu ≠> lnra				
Lags	Wald statistics	p value	Wald statistics	p value	Lags	Wald statistics	p value	Lags	Wald statistics	p value	Lags	Wald statistics	p value	
France	1	2.593	0.107	0.001	0.978	1	0.032	0.858	1.268	0.260	1	1.060	0.303	1.887
Germany	1	6.815**	0.009	0.154	0.694	1	0.045	0.832	1.270	0.260	1	1.448	0.229	0.942
UK	1	7.154**	0.007	0.012	0.913	1	0.043	0.835	1.266	0.260	1	1.704	0.192	0.400
USA	1	6.699**	0.010	0.221	0.638	1	0.048	0.827	1.262	0.261	1	3.825	0.500	0.480
Λ		32.949**	0.027	1.855	1.000		1.416	0.998	10.764	0.984		14.611	0.141	8.472

The symbol “≠>” denotes that there is no Granger causality
 The Akaike information criteria (AIC) is used for lag selection
 ***Significance at 0.10
 **Significance at 0.05
 *Significance at 0.01
 Λ indicates fisher test statistic

predictor of economic growth. From the policy standpoint, heighten EPU would hamper economic growth, although we could not reject the null of no causality nexus between EPU and real income in France. Lastly, we found the neutrality hypothesis between EPU and tourism in France, Germany, and the UK respectively. Findings indicate that tourism does not necessarily predict an increase/decrease in EPU and vice versa. However, we found weak one-way causality nexus from EPU to tourism in the USA at $p < 0.10$ significance level. This result resonates with the findings of Akadiri et al. (2019); Saint Akadiri et al. (2019); Alola et al. (2019a, 2019b).

Conclusion

In this paper, we examine the direction of causality relationship among fear, EPU, and tourism. We employ real income as an additional variable for control purposes. To achieve research goals, we use the LA-VAR that generates country-specific causality statistics as introduced by Emirmahmutoglu and Kose (2011) for France, Germany, the UK, and the USA, using quarterly frequency data over the period 1995Q1–2016Q4. Empirical results show that migration-related fear is linked with EPU, tourism arrivals, and real income, implying that increase in the level of perceived fear influences tourists' decision-making, enhances policy uncertainty, and, hence economic growth. In specific, the study posited a statistically significant evidence that the past history of migration-related fear is effective at explaining the trend of tourism performance vis-à-vis the international tourism arrivals of the world's four major economies.

From the policy perspective, the study posits an implication that policymakers in tourism-dependent states (both small and large) should consider the potential factors that are associated with the migration-related fear and economic policy uncertainty as among the policy concern of the state. The states could incorporate tourism-related and economic growth policies that have the potential of positively influencing the tourists' decision-making. For instance, to mitigate the increasing sentiments arising from racial, hate, xenophobic or homophobic, and other fear-related attacks, there should be more drastic and effective policy changes to address such concerns in destinations. Thus, this finding provides a basis for policymakers to minimize and control fear-related attitude that potentially hampers tourist consumers' decision-making (such as investment in tourism) toward a destination. Such policy is important because it is capable of re-branding the destination country from the perspective of socio-economic, political, security, and cultural situation that controls the tourists' sentiment to embark on a tour. Also, considering the economic effect of emigration through the skill migration programs of some of the Organization for Economic Cooperation and Development (OECD) countries such as Australia and

Canada, other advanced economies can reap the benefits of migration-related tourism if impediments that are fear-related are discouraged in their society. Importantly, the current study can be extended in future attempt to address more economies such as the OECD.

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