

# Political instability and Tourism. The case of Arab Spring

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## Abstract

This paper analyzes the effect that the Arab Spring has had on tourism. For this purpose, a number of countries have been selected from among the affected and potential beneficiaries (Tunisia, Egypt, Thailand and Spain) and the gain or loss of tourists has been quantified through the use of the Synthetic Control Method. Our results suggest that the two affected countries have suffered large losses in the number of tourists while Thailand has increased the number of tourists in Thailand as a result of this conflict. In contrast, in Spain no significant effect is observed.

## **1. Introduction**

Tourism activity, like the rest of economic sectors, can be affected by political and social instability. The impact degree is greater when the social conflict is transformed into public disorders and, in extreme cases, into terrorist acts or even into armed conflicts. Of course, it becomes maximum when tourism -for which it itself can assume contact with other cultures, economic support of the regimes, or symptom of openness- becomes the ultimate goal of this confrontation or terrorist acts .

In this sense, the social conflict that originates in Tunisia at the end of 2010 and that extends into the Arab world throughout the following year, has its prolongation in armed conflicts or terrorist acts especially intense in 2015. This situation , therefore, it is a good scenario for the study of the impact that both types of events have on tourism activity and its capacity for response and recovery.

In contrast to other papers that only analyze this phenomenon from the perspective of the countries affected by this situation of political instability and conflict, here we will also try to assess the extent to which potential winners of the conflict can be detected, through a process of deviation of tourist flows to other countries.

To do this, the following section provides a brief chronology of the Arab Spring and the events of instability and subsequent conflicts. Next, we review the literature on the impact of political instability on economic activity and, specifically, on tourism. In the following section, the synthetic control method is presented, as an adequate instrument capable of evaluating the impact of instability on tourism activity and which consists in the construction of a counterfactual of the tourist flow, so that the impact is measured as difference between the real data and the constructed counterfactual. Perhaps one of the main weaknesses of this

procedure is that the construction of the counterfactual must be carried out through a linear combination of the tourist flows of other economies that have not been affected by this effect, neither positively nor negatively.

To carry out this selection of countries, a process is implemented in three stages: a) identification of the countries affected by the Arab Spring; b) identification of the countries that sent their tourists to those affected and that substantially modify their bilateral flows with them; c) identification of the receiving countries (substitutes) of the affected countries through the analysis of the change of destinations of the countries identified in stage b). Once these countries have been identified, it is possible to carry out the synthetic control method that is applied to the two most affected countries: Tunisia and Egypt; and two of the possible beneficiaries: Spain and Thailand. The paper concludes with the usual conclusions and final considerations.

## **2. The Arab Spring and its effects on political stability**

For many years, the countries of the Arab world have been governed by authoritarian governments that have combined methods of repression and redistribution in order to maintain their systems of government (Malik and Awadallah, 2011). As Boukhars (2011) points out, Arab societies began to exacerbate their discontent due to economic and political deficiencies despite certain improvements in education and access to new technologies and the Internet. The culmination of this process occurs in a social outbreak by several countries in the MENA region (Middle East and North Africa) between December 2010 and June 2011, and has been called with the generic name of "Arab Spring".

Specifically, this public demonstration of discontent begins in December 2010 in the city of Sidi Bouaziz (Tunisia), when Mohamed Bouazizi, a fruit vendor whose stand had been requisitioned by the police, immolated himself, triggering the general discontent of the

Tunisian citizenship (Glosh, 2016). On the contrary, Chomsky (2010) dates the beginning of this process in the uprisings produced in Western Sahara in October of that same year. The riots in Tunis led to the resignation of President Ben Ali on January 14, 2011.

After the successes of neighboring Tunisia, the wave of protest spread to Egypt, where youth along with other sectors of the population got the resignation of President Mubarak on February 11, involving that the army dissolved the Parliament, suspended the Constitution and pledged to abolish the emergency laws in force for 30 years (Kirkpatrick, 2012). It is worth noting the role played by the youth sectors first, in the beginning of the riots and later, in the fall of Mubarak. What is more, it was a group of young people who years before the outbreak of the Arab spring joined the labor movement to protest the labor rights of textile workers in the city of Mahalla al Kubra (Souaiaia, 2011). This struggle led to a strike on April 6, 2008, of which this group took the name, called April 6 Movement (Wellman and Rainie 2014).

In Syria, a civil war is still ongoing facing forces loyal to President Assad's regime along with its allies and other forces opposing both the government and each other in varying constellations. This conflict has extended directly to Lebanon where it has strengthened sectarian clashes between factions in support of and opposed to the Assad regime. In Yemen, the protests led to the ouster of President Ali Abdullah Saleh, who had been in power for more than 33 years. In Libya, the protests ended with the assassination of the dictator Muammar Gaddafi and the elections to the General National Congress took place in July 2012. Although, in Morocco and in Jordan, King Mohammed VI and Jordan King Abdullah II have both stayed in power, they have been forced to make such contributions as cabinets and constitutions reforms.

The victory in both Tunisia and Egypt of the revolts can not be explained without the role of the army. He decided to disengage from the presidential orders, refusing to intervene to quell the riots (Abu-Tarbush, 2009). On the contrary, in countries like Libya, Syria or Yemen, an armed struggle was established, which in the case of Syria is still under way.

The root of the problems that led to this situation of discontent were economic, political and demographic. Among the economic causes, as Joffe (2011) points out is the rise in the prices of basic necessities, especially those related to food. According to FAO, food more than doubled its price between 1990 and 2011 (at a cumulative annual growth rate of 4.3%) that was not accompanied either similar wage increases and or low unemployment rates. Besides, there was a the drop in remittances and tourism revenues, as well as the financing difficulties of these economies, as a consequence of the financial crisis of 2007 that significantly affects its main commercial and tourist partners: the European countries (Habibi, 2009). At the political level, the lack of political freedoms linked to the repressive apparatus of the State has exasperated large sections of the population. In addition, widespread corruption and the misuse of public resources increased the degree of delegitimization of these regimes among the popular sectors (Cook, 2011).

Furthermore, the demographic component has played a key role in the outbreak of the revolution. These countries have an important proportion of young population (20% of the population is between 15 and 24 years old) that has led to an increase in education efforts by the Arab states (UNDP, 2002), which clashes head-on with fewer opportunities in access to the labor market, creating disaffection with the different regimes among young people (Bibi and Nabli, 2012). Thus, youth unemployment rates double and even triple the general rates (World Bank, 2009 figures these rates at this time in 43.8% for Libya (43.8%), 30.3% for Yemen and 29, 4% for Tunisia).

Finally, it is remarkable the decisive role that new technologies have played in the propagation of the revolts by granting alternative means of communication to citizens, especially the youngest ones (Lotan et al, 2011), despite the low level of penetration of the same, because its use does not reach more than a third of the population in the best of cases.

### **3. The effect of political and social instability on economic and tourism activity: a quick review**

The study of the economic effect of political instability, terrorism and violence has generated a good number of papers, especially since the September 11 attacks. Moreover, the intensity and nature of the conflicts dealt with are very broad; from strikes, protests and demonstrations to armed conflicts and various forms of terrorism (Buesa et al, 2008, Abadie and Gardeazabal, 2003 Blattman and Miguel, 2010). The strong link that sometimes exists between the different forms of instability may explain the difficulty of separating the various effects at the time of being treated (Sonmez, 1998) and hence it is usually expressed political instability in general terms.

In addition, there is a literature that analyzes the channels through which instability affects economic results. Aisen and Veiga (2013) conclude that political instability negatively affects growth. Miguel and Roland (2006) study the economic effect of the American bombings in the subsequent underdevelopment of Vietnam, concluding that the destruction of these attacks had no long-term effects on the levels of poverty, consumption, infrastructure, literacy or population density due to the rapid recovery of affected areas. Braithewaite, Kucik and Maves (2014) evaluate the effect that political instability has on the FDI, proving that markets receive less investment when violent episodes occur and when those revolts fail. Fielding (2013) finds that the episodes of violence of the "Intifada" have caused a lower level of saving of the Israeli economy compared to international standards. Justino (2010)

highlights how conflicts affect human capital through shorter school time and that effect is greater for women than for men.

One of the main issues faced by these papers is both to define what is meant by political instability and to identify the beginning of the event to be studied. In fact Jong-A-Pin (2009) points out that these processes are multidimensional and hence the problem of identification. In this sense, Alesina et al. (1996), Siemann (1998) and Miljkovic and Rimal (2008) consider that a change in government can be a sign of political instability, while Alesina and Perotti (1992) identify it with any degree of social instability as political assassinations, coups d'état and deaths related to conflicts.

There is some controversy in the way that instability must be measured, since it is an unobservable. For example, latent variable models have been used to capture the effect of the probability of a change of government (Gurgul and Lach, 2012); Gwenhamo, W. Fedderke, of Kadt (2012) quantified political instability as a composite index that included the number of political detentions or declarations of states of emergency.

A classic problem in the literature is the possible existence of reverse causality caused by the relationship between economic variables and the elements of political instability. This problem has been partially solved, either through the application of the Instrumental Variables technique, through the specification of models of simultaneous equations, or using procedures such as the synthetic control method, whenever it is eliminated in the construction of the counterfactual all the economies that have not suffered the conflict.<sup>1</sup>

The study of the economic effects of instability in tourism is much more scarce (Ryu, 2005). In particular, some research has been done for the analysis of specific countries such as the

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<sup>1</sup> For a more detailed study of the various estimation methods see Gardeazabal (2010)

partition of Cyprus (Mansfeld and Kliot, 1996), The Troubles in Ireland (Wall, 1996), or the terrorism by local groups in Greece, Israel and Turkey (Drakos and Kutun, 2003) and in Spain (Enders and Sandler, 1991). Also, some investigations have been carried out using an aggregate sample of countries (Thompson, 2011, Llorca-Vivero, 2008, Saha and Yap, 2014, Groizard, Ismael and Santana, 2016).

Regarding the political instability that emerged as a result of the Arab Spring, some papers have been written. Groizard, Ismael and Santana (2016) use a gravity equation to find the effect on the flow of tourists finding a direct effect on countries, but also evidencing a contagion effect in Algeria, Jordan, and Lebanon and a substitution effect Iraq, Saudi Arabia, Albania, Bosnia and Herzegovina, Turkey, and Spain. Perles-Ribes et al. (2016) explore the effect on the countries of the Mediterranean through the use of time series, finding a deviation of tourism towards Morocco and Turkey while Greece and Spain do not seem to have benefited. Afonso- Matta, Appleton and Bleaney (2016) estimate the effect of the AS in the GDP Tunisia using the Synthetic Control Method and finding important losses as a consequence of this phenomenon. Finally, Rodríguez and Santana-Gallego (2018) analyze the deviation of the flow of tourists to Spain using cointegration techniques, finding some evidence for the period 2008-2015.

There are multiple explanations why tourism has become the target of different terrorist groups. Richter (1980) points out that tourists are seen as "ambassadors of hostile governments" by terrorist factions. Enders et al (1992) consider that attacks on tourist objectives are intended to deter potential tourists and, in this way, to pressure the government to accede to their demands. In addition, these attacks assure them greater coverage in international media (Richter and Waugh, 1986).



One of the main consequences observed in all those papers is that political instability leads to a fall in tourist flows, regardless of whether tourism is the direct objective of the agents involved. For example, countries with authoritarian governments or where human rights are violated, at least facing the international community, experience a lower flow of tourism compared to the rest (Neumayer, 2004). Also, most of the works coincide in pointing out the existence of a lag of between three and nine months between the event being analyzed and the fall in tourism, probably as a consequence of the seasonal contracting systems of the sector (Enders and Sandler ( 1991), Pizam and Fleischer (2002), Bertrand et al, 2004). In terms of recovery time depends on certain factors such as the intensity of the conflict, the frequency of terrorist events and the involvement that the tourism sector has in them (Fletcher and Morakabati, 2008, Pizam, 1999, Drakos and Kutan, 2003, Bruck and Wickstorm, 2004; Frey et al, 2004; Morakabati, 2007).

Moreover, various articles have discovered the existence of two more effects of political instability in tourism: the contagion effect and the substitution effect. The first one known with the term generalization or simply spillover is provoked when a country has a negative image and that image is transmitted to a group of countries that share common characteristics. This spillover effect is the result of biased media coverage and lack of geographical knowledge among Westerns (Taylor, 2006). For example, Beck (2014) finds that Morocco is affected to belong to the same region as countries that are in conflict such as Tunisia and Egypt. On the other hand, this same author finds that UAE has benefited from the conflicts that occurred in the countries of the MENA region, experiencing a substitution effect. This effect is caused when tourists replace tourist destinations that are involved in some conflict by others with similar characteristics. The degree of substitution will depend on the specificity of the country's attractions (Neumayer, 2004). Although it is true, there is

some disagreement in the literature on which of the two effects prevails in a given region (Wall, 1996).

#### **4. Synthetic Control Method**

Often, researchers have tried to evaluate the effect of an event that affects economic activity by comparing the behavior of economic agents affected by this event with others who have not been exposed to it. The main problem lies in finding appropriate controls, that is, agents or individuals that, on the one hand, resemble the treated unit as much as possible but, on the other hand, have not been affected by the event or, as specifies in these methodologies, by the treatment.

In experimental studies, this problem is solved through randomization. For example, in clinical studies, the effect of a treatment is compared between those who have been provided with such and those who have not been provided. Randomization therefore ensures that if the sample is large enough, both the units used as control and those treated will have similar characteristics.

In economics, this type of experiment is more restricted because the units are often not people, but regions or countries, making it more difficult to search for adequate controls. In order to overcome this problem, different methods have been used, as is the case of the differences in differences model. The difference in differences method contrasts the differences in the results of a population enrolled in a program (treatment group) and an unregistered population (control group), controlling for the fixed and unobservable characteristics of both groups and under the assumption that these characteristics remain unchanged. This means that this method allows the existence of unobservable confounders but restricts the effect of these confounder to be constant in time, so that they can be eliminated taking differences. This last assumption could have been relaxed thanks to the

adoption of the Synthetic Control Method. This procedure, which is essentially similar to the previous one, allows the effect that unobservables have to vary over time (Abadie, Diamond, and Hainmueller, 2010).

Intuitively, the synthetic control method tries to estimate the effect of the treatment by comparing the effect on the observed variable and the counterfactual or synthetic construction as a weighted average of some units used as controls. This procedure is carried out in such a way that said weights are chosen so that the characteristics of the units used as controls are as similar as possible to that of the unit treated.

Formally, it is assumed that there is a sample of  $J + 1$  units indexed by  $j$ , among which there is a unit that is going to be treated  $j = 1$ , with the remaining units ( $j = 2$  to  $j = J + 1$ ) being potential controls<sup>2</sup>. In this context, it is called  $T_0$  to the periods prior to the intervention and  $T_1$  to the subsequent periods so that the total period of study is  $T$ ,

$$T = T_0 + T_1$$

The synthetic control is represented by a vector  $(J \times 1)$  of weights  $W = (w_2, w_3 \dots w_{(J+1)})$  where  $w_j$  is between  $[0 - 1]$  for  $j = 2 \dots J + 1$  and  $w_2, w_3 \dots w_{(J+1)} = 1$ . That is, it is a set of weights that will be applied to the variable under study but for untreated units, so that they replicate the variable under study before treatment for the unit treated and serve to construct the counterfactual or synthetic after the treatment. By forcing the weights to add up to one and to be non-negative, the problem of

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<sup>2</sup> It is assumed that a balanced panel is available and the sample contains a number positive of periods before and after the intervention.

extrapolation is avoided (Abadie and Gardeazabal, 2003). Those weights will be chosen so that the characteristics of the synthetic control are as close as possible to the characteristics of the unit treated

Let  $X_1(k \times 1)$  be a vector containing the values of the characteristics belonging to the pre-treatment period for the treated unit and let  $X_0$  be a vector  $(K \times J)$  that collects the same values but for the units in the control group. These characteristics, also called predictors, will try to explain the outcome variable, so lags in the outcome variable can also be included as predictors (Abadie, Diamond, and Hainmueller, 2015). The inclusion of this type of predictors solves the problem of the omission of relevant predictors since the effect includes the effect of any variable, whether or not it has been included in the model (Ferman, Pinto, and Possebom, 2016). These variables will be used as predictors of the outcome variable in the preintervention period because they are not precisely affected.

The differences between the characteristics of the unit treated and the synthetic control in the pre-treatment period is given by the vector  $X_1 - X_0W$ . Those weights  $W^*$  will be chosen in such a way as to minimize the difference, that is,

$$\sum_{s=1}^k v_s (X_{1s} - X_{0s}W)^2$$

Where  $s = 1 \dots k$ , let  $X_{1s}$  be the value of the sth-variable for the unit affected by the treatment and let  $X_{0s}$  be the vector  $(1 \times j)$  containing the values of the sth -variable for the units in the group of control and be  $v_s$  indicates the relative weight that is assigned to each predictor. There are several ways to choose the optimal weights of the predictor variables. In this paper the weights will be chosen in a way that minimizes the prediction

error, that is to say that  $v$  selects the  $W$  that minimize the RMSPE during the pre-treatment period (Abadie, Diamond, and Hainmueller, 2010).

Finally, let  $Y_{jt}$  be the result variable for unit  $j$  at time  $t$ . Denote as  $Y_1(T_1 \times 1)$  the vector that collects the values for the result variable after the intervention for the unit treated, that is,  $Y_1 = (Y_{1T_0+1}, \dots, Y_{1T})$ . Similarly, let  $Y_0$  be a matrix  $(T_1 \times j)$  where column  $j$  contains the values of the outcome variable after the intervention. The synthetic control estimator is calculated as follows:

$$Y_{1t} - \sum_{j=2}^{J+1} w_j^* Y_{jt}$$

One of the main advantages of the SCM is the possibility of comparing the units used as controls. This is because the synthetic control makes explicit the relative contribution of each control unit to the counterfactual of interest and the similarities or differences between the affected unit and the synthetic control in terms of the predictors. This eliminates the discretion that the researcher can impose in the selection of the control group, replacing it with a data-driven process that looks for those units within the control group that most resemble the unit treated.

On the other hand, one of the main criticisms that has been made about this method is the lack of guidance when selecting predictors (McClelland and Gault, 2017). A possible solution could be to select those predictive variables that minimize MSPE during the pre-treatment period. This is because if the model is correctly specified, the MSPE corresponding to the pre-treatment period should be close to zero because the units in the control group are not affected by it (Ferman, Pinto, and Possebom, 2016). Furthermore, there is no guide to how

many linear combinations of the outcome variable should be used as predictors. While some authors use the variable lagged result for all periods as predictors (Bilgel and Galle, 2015, Kreif et al, 2016, O'Neil et al, 2016), Klößner, Pfeifer, and Schieler (2016) discourage this specification since although it improves the adjustment during the period before the intervention, it eliminates the effect that other covariables may have on the outcome variable. In this way, the weight given to the set of lag variables can cause a bias in the estimator since the eliminated covariables are not taken into account to predict the values of the outcome variable in the period after treatment.

In order for the synthetic control method to be correctly used, a series of conditions must be met: 1) Only the treated unit must be affected by the treatment, since it is a necessary condition for the use of the controls. It is of particular relevance to analyze the existence of spillover since, in the case of any, the affected units should be eliminated; 2) There should be no previous effects to the treatment since if there were the comparison between the synthetic control and the unit treated would be biased. If there is one, this problem can be solved through a readjustment in the year of the beginning of the treatment; 3) The counterfactual created by the synthetic control must be approximated by a fixed combination of the units used as controls; 4) Synthetic control should have a structure similar to that of the treated unit, that is, that the variables used as predictors should be similar to the observed variables of the unit treated. If there is a difference, then the divergence between the outcome variable of the unit treated and the control could be due to structural causes and not to the effect of the treatment itself (Matta, Appleton and Bleaney, 2016)

Since the series of seminal publications that gave rise to the synthetic control (Abadie and Gardeazabal, 2003, Abadie, Diamond and Hainmueller, 2010, Abadie, Diamond and Hainmueller, 2015), there has been a great profusion of papers that have used this method to analyze the effect of natural events (Du Pont and Noy, 2012; Cavallo et al., 2013), political

events (Abadie et al., 2014; Gautier et al., 2009) and economic events (Billmeier And Nannicini, 2013; De Angelo and Hansen, 2014).

## **5. Data and identification of affected and benefited by the Arab Spring**

The basic information used for the evaluation of the effect of political instability originated in the MENA area by the Arab Spring comes from the Compendium of Tourism Statistics prepared by UNWTO. Specifically, as a result variable (on which the analysis is carried out) the total of the visitor (overnight visitors) has been selected. As regressors, the rest of the variables included in this database were initially selected under the rubric of Basic Data and Indicators, eliminating the countries and variables that presented a greater number of omitted data. Finally, basic information has been provided in the form of a balanced data panel for 169 countries or destinations and 42 variables, although from them up to 34 additional ratios have been built. From these 76 variables have been selected those in a joint regression of all of them against the entry of tourists have a p-value less than 0.05, which has reduced the number of variables to 55 (32 of the original and 23 of the calculated ones). The list of countries and variables considered can be found in the Appendix.

As it is indicated in the introduction, one of the key issues is to define precisely both the affected countries and the beneficiaries of this political instability caused by the Arab Spring. For this, three steps are followed: a) identify the countries where the event occurs and, from them, evaluate in which the inbound tourist flows have been damaged; b) identify the origins of these tourists to see their substitutes in those markets; c) identify the countries that could have benefited from the diversion of tourists from the markets indicated in b).

To identify the affected countries, the first thing that has been done is to consult different sources in order to offer a broad list of countries that suffered some type of protest or conflict that may be related to the Arab Spring. The list of selected countries is as follows:

Western Sahara, Tunisia, Algeria, Jordan, Oman, Egypt, Yemen, Djibouti, Sudan, Iraq, Bahrain, Libya, Kuwait, Morocco, Mauritania, Lebanon, Saudi Arabia, Syria and Palestine . From this list of countries and the availability of information, the evolution of tourist flows before the event (2007 to 2009) and during its effects (2012 to 2014) and after it, but coinciding with the increase in terrorism, is analyzed. in the area (2015 to 2017).

As it can be seen in Table 1, the three countries that truly seem to have suffered the effect of the Arab Spring are Tunisia, Egypt and Yemen. The rest of the countries have had changes both downward and upward, but of a moderate magnitude. Therefore, these three will be taken into consideration for the concrete analyzes of countries. However, to solve possible problems of contamination of the sample of the rest of the units with which the synthetic is calculated, the other eight economies of those previously mentioned as affected are eliminated from which data are available before and after the event<sup>3</sup>.

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<sup>3</sup> These countries eliminated from the sample of units with which to build the counterfactual are Lebanon, Saudi Arabia, Morocco, Algeria, Jordan, Oman, Bahrain and Kuwait. For Mauritania, Sudan, Djibouti, Somalia, Iraq, Syria and Libya, full information was not available, so they were previously eliminated.



**Table 1. Tourist Arrivals and market share in the International Tourism Market**

	Pre-Arab Spring		During Arab Spring		Post-Arab Spring	
	2007-2009		2012-2014		2015-2017	
	Annual Tourist Arrivals	Market share	Annual Tourist Arrivals	Market share	Annual Tourist Arrivals	Market share
<b>Slight impact</b>						
Lebanon	1398	0,15	1332	0,12	1693	0,13
Sudan	432	0,05	617	0,06	800	0,06
Saudi Arabia	12395	1,35	16788	1,53	17065	1,37
Djibouti	51	0,01	63	0,01	71	0,01
Kuwait	283	0,03	268	0,02	199	0,02
Morocco	7876	0,85	9901	0,90	10608	0,84
<b>Moderate impact</b>						
Algeria	1809	0,20	2556	0,23	2020	0,16
Jordan	3650	0,40	4032	0,37	3967	0,32
Oman	1372	0,15	1415	0,13	2260	0,18
Irak	928	0,10	1002	0,09		
Bahrain	5319	0,58	5812	0,53	9571	0,76
<b>Strong impact</b>						
Tunisia	7203	0,79	7171	0,65	6043	0,48
Egypt	11607	1,27	9999	0,92	7509	0,60
Syria	5227	0,57				
Yemen	1000	0,11	961	0,09	367	0,03
Libya	36	0,00				

Once the three affected economies have been identified, we have proceeded to evaluate which are the countries of origin that have possibly diverted tourists to alternative destinations. To achieve this goal, the information provided by UNWTO on the bilateral flows of tourists received in these three countries has been used and compared information for the period before the Arab Spring (2007 to 2009) with that obtained for the post-Arab Spring period (2015 to 2016). The aggregate results for the three economies are presented in table 2. In total, the three economies lost 7.43 million tourists (in absolute terms and without considering possible growth of tourism between both periods), although this figure is the result of a loss of 8.92 million tourists from the origins that decrease their tourist flow and a gain of 1.49 million from other origins that increase it.

	Average annual tourist arrivals		Change	
	2007-2009	2015-2016	Absolute	% on total loss/gain
France	1.898.269	547.005	-1.351.265	15,15
Italy	1.462.140	310.106	-1.152.034	12,92
United Kingdom	1.492.935	668.121	-824.814	9,25
Libya	2.212.732	1.442.113	-770.619	8,64
Germany	1.674.257	1.011.598	-662.659	7,43
Poland	640.023	155.345	-484.678	5,43
Russian Federation	1.936.193	1.560.006	-376.188	4,22
Belgium	360.029	110.747	-249.283	2,79
Spain	262.435	39.958	-222.478	2,49
Netherlands	343.687	130.921	-212.767	2,39
Switzerland	272.796	90.988	-181.808	2,04
Austria	275.601	115.859	-159.742	1,79
Sweden	187.434	53.024	-134.411	1,51
United States of America	337.554	208.888	-128.667	1,44
Japan	123.157	19.207	-103.951	1,17
Hungary	104.271	29.401	-74.871	0,84
Norway	77.840	12.821	-65.019	0,73
Syrian Arab Republic	124.792	61.030	-63.762	0,71
Finland	74.449	10.850	-63.599	0,71
Loss in tourist arrivals			8.919.315	100,00
China	84.306	153.808	69.502	4,67
Sudan	166.323	239.702	73.378	4,93
Belarus	0	101.807	101.807	6,84
Ukraine	0	394.293	394.293	26,49
Algeria	1.007.042	1.677.997	670.955	45,08
Gain in tourist arrivals			1.488.413	100,0

Taking into account only the 24 origins indicated in this table that represent more than 80% of the losses and 90% of the profits, we proceed to identify the possible alternative destinations that have been able to replace the three affected economies. To do this, we proceed to use information on tourist flows abroad issued by each of these 24 destinations, according to the information offered by UNWTO. To proceed with this identification, the pre-AS quota of the three affected economies (Tunisia, Egypt and Yemen) is compared in each of the indicated origins and compared with the one presented in the post-AS period. If there is a drop in the quota at the origin, the loss of quota that these three destinations have

had among the destinations that have increased their quota in the two analyzed periods is proportionally assigned.

Doing this, it is possible to estimate the possible beneficiary destinations and the amount of this deviation, as a result of the loss of quota of these three countries. The computation is carried out country by country and afterwards, the results on possible winning countries are presented in table 3. From this list, possible winners of tourists have been selected as those who have any of the following four characteristics: a) earning more than 200,000 tourists, b) earning more than 100,000 tourists and representing at least 1% of its total tourist flow; c) a profit of more than 75,000 tourists and that at least represents 2.5% of the total tourist flow; d) tourist gain that exceeds 5% of the total number of tourists. For the selection of these potential winners, not only the jump between the pre and post-AS periods has been taken into account, but also between the pre and the during and between the during and post. This has led to the exclusion of 29 potential winners: Spain, Germany, Netherlands, Portugal, USA, Croatia, Greece, Italy, Thailand, Turkey, Austria, United Kingdom, Hungary, Ireland, Qatar, Indonesia, Sri Lanka, Iceland, Malta, Albania, Slovenia, Cape Verde, Congo, Senegal, Togo, Niger, Guinea, Central African Republic.

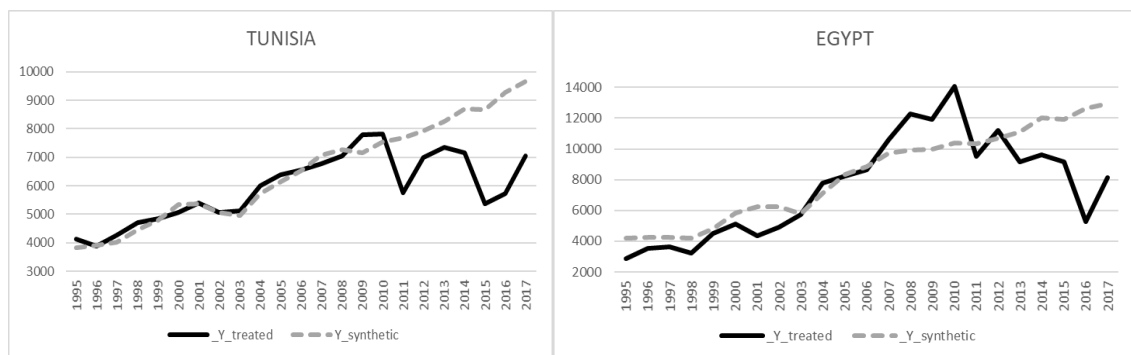
country	Estimated tourist gain	% of own tourist arrivals
Spain	1.055.590	1,47
Germany	649.539	1,84
Netherlands	503.491	3,27
Portugal	453.150	4,22
United States Of America	424.277	0,55
Croatia	337.881	2,55
Greece	317.208	1,31
Italy	299.341	0,58
Thailand	241.070	0,77
Turkey	232.187	0,67
Austria	217.681	0,79
United Kingdom	207.716	0,59
Hungary	193.706	1,31
Ireland	156.992	1,60
Qatar	110.324	3,75
Indonesia	109.735	1,04
Sri Lanka	104.155	5,41
Iceland	103.030	6,69
Malta	102.261	5,46
Albania	96.971	2,47
Slovenia	83.373	2,91
Cabo Verde	44.276	7,92
Congo	22.829	10,59
French Guiana	22.344	10,87

## 6. Results

A set of countries has been selected with the aim of capturing the effect that the AS has had on the arrival number of tourists. The time period analyzed covers from 1995 to 2016, where the period 1995-2009 represents the pre-treatment period and the years 2012-2016 the post-AS. The selected countries are the following: Egypt, Tunisia, on the side of those affected and Spain and Thailand on the side of the beneficiaries. These countries have been chosen for the following reasons:

1. Because they represent beneficiary countries as affected countries, we intend to observe the substitution effect caused by political instability.
2. The choice of beneficiary countries is due to the fact that these countries, despite their different geographical situation, represent one of the markets in which the affected countries were specialized: sun and beach tourism.

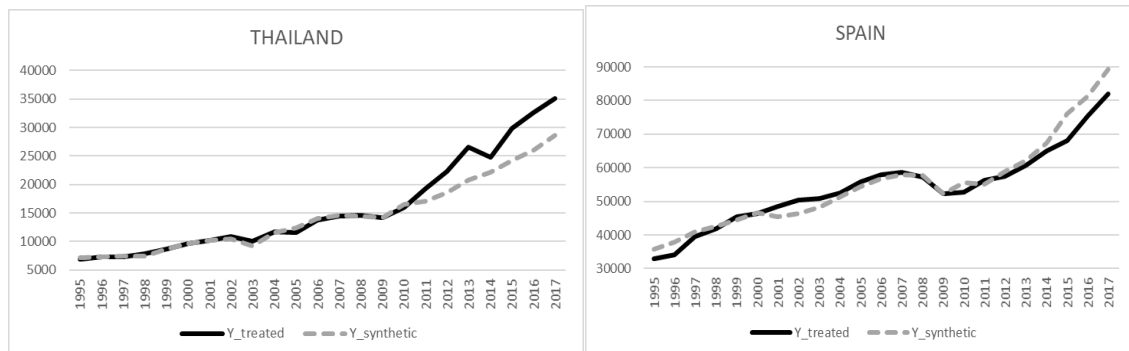
Regarding the specification of the model, various specifications have been tested for the 4 countries, choosing the one that minimizes the RMSPE corresponding to the pre-treatment period. The goal is that the synthetic country replicates as well as possible the country observed during the previous years to the conflict so that any difference caused after the conflict can be attributed to the latter. To do this, apart from the variables selected in the Basic Data and Indicators from the UNWTO, several lags of the result variable have been added as a predictor variable.



As it can be seen in the following graphs, there are three periods clearly differentiated. First, there is the period before the AS where both countries experience a constant growth of tourism, more accentuated in the case of Egypt. Second, the period in which the Arab Spring begins coincides with the period in which Tunisia and Egypt suffer the greatest drop in the number of tourists arriving in the analyzed period. Finally, once the political conflict has ended, there is an increase in the number of tourists arriving, which is truncated with a surge in terrorist attacks in both countries.

For example, in the case of Tunisia, a drop in the number of tourists in 2015 can clearly be seen as a consequence of the attacks on the National Museum of the Bardo and the attack on Susa. As a result of these political events, Tunisia has lost about 2.5 million tourists, reaching 7 million arrivals but far from the 9.5 million that it would have reached in the absence of such conflicts. Finally, in recent years there has been a rebound in the number of

tourists arriving in the Tunisian country, clearly conditioned by the absence of terrorist attacks and instability in the area.



As a consequence of the drop in the number of tourists arriving in the affected countries, it is expected to observe a displacement of those tourists to other regions or countries with similar attributes. In the case of the Southeast Asian country, the year 2010 represents a change in trend clearly influenced by political events in the MENA region. Thanks to these political events it is estimated that Thailand has gained 7.5 million tourists since the beginning of political instability.

The case of Spain deserves a separate explanation. Although at first it could seem the main beneficiary of the AS, the results obtained using the SCM indicate a negative difference with respect to the synthetic one, that is, the arrivalsof tourist to Spain should have grown more than it has happened. However, the difference between synthetic and observed is probably not significant due to the high level of RMSPE. This result coincides with previous investigations such as Perles-Ribes et al. (2016) where they find a non-significant relationship between the AS and the arrival number of tourists to Spain.

Although this result may seem paradoxical, it may actually be due to an explanation. As De la Peña et al. (2017) points out, Spain experienced a turistic crisis at the beginning of 2008, characterized by a drop in the number of tourist arrivals that does not begin to reverse until

two years later. As a consequence of this change in trend, Spain would be recovering all the tourists lost during the last period.

Therefore, the increase in tourism in Spain could be due to a recovery of lost tourism and not to an increase in tourism as a result of the Arab conflict.

## **7. Conclusion**

The Arab Spring has been a political event that has affected not only the countries of the area but also the rest of the world due to the importance of this region in terms of tourism. In order to calculate the displacement of tourism that has caused this political event, the main countries affected by the AS and potential beneficiaries have been selected through a procedure. Finally, the Synthetic Control Method (SCM) has been used to quantify the effect that this event has had on tourism. We have focused on analyzing two beneficiary countries (Spain and Thailand) and two countries affected (Tunisia and Egypt). In this way, we have found that the AS has meant a loss of 2.5 million tourists for the Tunisian country. While Thailand has benefited from this political conflict, for Spain no increase is observed.

This paper must be extended to the rest of affected countries and benefited with the objective of calculating the general effect that this conflict has had. Furthermore, to verify that the results we have obtained are true, various sensitivity analyzes must be carried out, such as the case of the falsification or placebo tests commonly used in this literature.

## REFERENCES

- Abadie, Alberto, Gardeazabal, Javier, 2003. The economic costs of conflict: A case study of the Basque country. *American Economic Review* 93(1): 112–132.
- Abadie, Alberto, Diamond, Alexis., Hainmueller, Jens, 2010. Synthetic control methods for comparative case studies: Estimating the effect of California's tobacco control program. *Journal of the American Statistical Association* 105(490): 493–505.
- Abadie, Alberto, Diamond, Alexis, Hainmueller, Jens, 2015. Comparative politics and the synthetic control method. *American Journal of Political Science* 59(2): 495—510.
- Alesina, A., and Perotti, R. (1996). Income distribution, political instability, and investment. *European Economic Review* 40(6), 1203-1228.
- Enders, W., and Todd, S. (1991). Causality Between Transnational Terrorism and Tourism: The Case of Spain. *Terrorism* 14, 49–58.
- Groizard, J.L., Ismael, M., Santana, M. (2016), The economic consequences of political upheavals: the case of the Arab Spring and international tourism, pp. 1-8
- Matta, S. (2016). The Impact of Arab Spring on the Tunisian Economy. Policy Research Working Paper
- Neumayer, E. (2004): The Impact of Political Violence on Tourism, *Journal of Conflict Resolution*, 48(2), 259-281.
- Perles, J.F., Ramón, A.B., Moreno, L. y Torregrosa, M.T. (2016). Winners and losers in the Arab uprisings: a Mediterranean tourism perspective. *Current issues in Tourism*



Wall, G. (1996). Terrorism and tourism: An overview and an Irish example. *Tourism, crime and international security issues*. In A. Pizam & Y. Mansfeld (Eds.), *Tourism, crime and international security issues* (pp. 143–158).