

The effect of EU membership on tourism in Croatia

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Abstract

This study examines the impact of EU membership on tourism in Croatia, one of the most important economic sectors in the country. Using the counterfactual synthetic control method, the causal effect of EU membership on overnight tourists in Croatia in the period from 2013 to 2021 is estimated. The results suggest there is a large, positive, and long-term effect of the EU joining on overnight visitors in Croatia, with European tourists being the main contributors to tourism growth. In the period before COVID-19, the maximum discrepancy between the observed number of tourists and the synthetic value was achieved in 2017, with Croatia receiving an additional 3 million visitors, or 23 percent more than the value of the synthetic. Although these results are context-specific, the resemblance of Croatia to some EU candidate countries provides insights into possible tourism outcomes of integration in Europe.

Keywords: Croatia, EU membership, synthetic control method, tourism

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1. Introduction

The European Union (EU) is one of the largest examples of voluntary integration in human history which stands out as a prime example of supra-national institutional integration in modern times. In addition to a rather large number of countries (27), the total population (approximately 447 million people) and the share in global trade (around 15 percent), its modern-day importance lies in the fact that the integration process is ongoing, troubled by disintegration tendencies and uncertainties surrounding future EU enlargements and the future of further integration of existing member states.

In the light of Brexit (Sampson, 2017), turbulence in Catalonia and possibly Scotland (Vollaard, 2014), halted European Union accession negotiations with the Western Balkans (Marangos et al., 2019), but also accelerated negotiations with Ukraine (Anghel and Džankić, 2023), European political (dis)integration became increasingly challenging in the last couple of years. Contrary to the United Kingdom case, which recently left the EU, six Western Balkan countries together with Ukraine are, arguably, dedicated to the efforts to join the EU. There is a discrepancy in what economic integration materialized within the EU can offer. Additionally, with six EU member states, on the road to adopting the euro as their official currency, attitudes on further EU economic integration come into focus once again and will decide on the future of Eurozone enlargement and of the integration process. As such, a lot of recent political and economic debate in Europe has been concerned with the causes and implications of the integration and disintegration efforts. How these tendencies will resolve undoubtedly rests on the estimated costs and benefits of integration, which are measured by their economic, political, and social outcomes.

Integration implies losing a part of policy autonomy for individual countries in exchange for some benefits that economic integration can offer. Therefore, there are inherently both costs and benefits involved with economic integration. De Campos (1995) explains that in an economic and monetary union certain national policies, such as industrial, competition or regional policies, are substituted by common norms. The only way further from that would be a political union in which member states become one nation with a central authority (Deutsch, 1957). El-Agraa (1989) finds the most significant potential benefits to be economic growth driven by economies of scale and specialisation, increased bargaining power with third countries, economic efficiency benefits caused by larger competition on the common market, lower foreign exchange, and transport costs, and for the case of the EU also full employment, favourable income distribution, and increased growth rates.

Most studies explore the effects of EU accession on per capita income, but one can also look at specific economic sectors or segments of the economy. Tourism is an extremely important economic sector in Croatia since it was responsible for 19.5 percent of GDP in 2022, 24.4 percent of gross value added and 11.8 percent of overall GDP formation in 2019 (Central Bureau of Statistics, 2022). Due to its importance, this paper estimates the economic effect of EU accession on tourism in Croatia. For that purpose, the methodology originally proposed by Abadie and Gardeazabal (2003) is used, but improved by the use of more recent algorithms to construct weights that define the synthetic unit, and the donor dependence exercise (Abadie et al., 2010; Becker and Klößner 2018; Campos et al., 2019). For the baseline, more recent methods proposed by Ben-Michael et al. (2021) are used as well. Data from multiple sources are analysed and state-of-the-art identification and estimation strategies are used to estimate the economic effects of EU accession on the tourism sector in Croatia. The most important characteristic of this research study is in using the date of EU accession as a quasi-natural experiment to analyse the economic effects of EU integration. Such an approach gives a causal interpretation of the obtained results, which so far have only been encountered in the work by Campos et al. (2019). To establish the causal impacts of EU accession on tourism, it is necessary to consider credible counterfactual scenarios and causal inference which imply an appropriate econometric approach. The main contributions of this

paper are extensive data from multiple sources, emphasis on identification strategies, and the fact that it covers one of the most important sectors of the Croatian economy, tourism, to explain and understand the patterns of economic integration and disintegration. The purpose of the paper is not only to offer an *ex-post* evaluation of the economic effects of EU accession, but also to provide a sort of *ex-ante* evaluation of the possible effects of integration of other Western Balkan countries, and integration in general. Although it is not possible to give exact projections, the Croatian case can be informative and provide general guidance for future members.

The innovative nature of the research is that it tries to circumvent endogeneity issues and detect causal relationships using empirical research. The direction of causality in social sciences research is often unclear, and incorrect identification of the direction and source of causality leads to poor policy recommendations, which can have far-reaching social consequences. This research gains a deeper understanding of integration attitudes and provides useful policy recommendations. Given that this study relies on a set of econometric techniques such as the synthetic control approach, the challenge lies in enabling proper identification with extensive evidence to support the validity of the empirical approach. As typical in this type of research, it includes significant robustness analyses including numerous control variables, testing assumptions on different subsamples, and placebo tests. Finally, the results undergo a test of the reasonableness of the quantitative effects to further verify that the effects found are plausible.

To the best of found knowledge, the proposed research question has not been addressed in the literature. The intention is to fill the gap and provide causal interpretations for the economic effects of EU accession on the Croatian tourism sector. Using the proposed design, this research covers the tourism sector, hugely important for the Croatian economy. First, endogeneity issues are circumvented and a causal impact of EU accession on tourism is trying to be detected. Second, since microeconomic techniques and identification strategies are rarely used in tourism economics, the approach taken in this paper can be useful in tourism economics (as shown in Tkalec et al., 2017).

The rest of the paper is organized as follows. In the following chapter, the literature on the effects of EU joining on tourism and the use of the synthetic control methodology in tourism is reviewed. The third chapter introduces the data and describes the methodology used. The results of the empirical exercise and robustness analysis are presented in section four and the results discussion together with conclusions can be found in the last section.

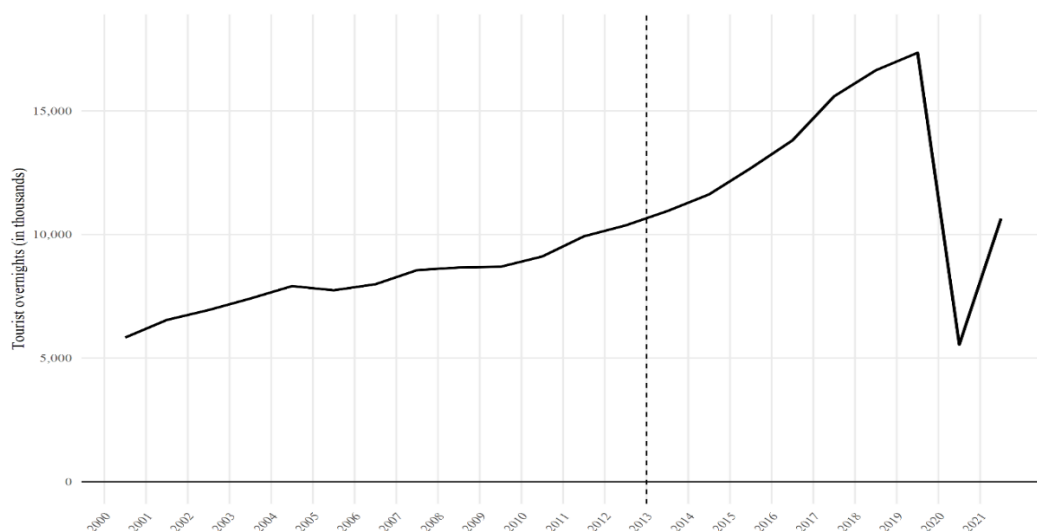
2. Literature review

Economic integration refers to a voluntary process in which economies increase their interdependence by removing economic barriers between member states (Balassa, 1961; Jovanovic, 1998; Molle, 2006; Piggott and Cook, 2006; Pinder, 2017; Robson, 1998; Swann, 1996; Tsoukalis, 1997; Wallace, 1990). There are various forms of economic integration: free trade areas, customs unions, common markets, and economic and monetary unions. The EU is an example of an economic and monetary union, representing the most advanced type of economic integration that involves a supranational authority. The European integration process is traced back to the Treaty of Paris in 1951, which established the European Coal and Steel Community. Subsequent milestones, such as the Treaty of Rome in 1957 and the Single European Act in 1993, furthered economic integration within the EU. The effects of free trade were amplified by cycles of EU enlargements in 1973, 1981, 1986, and 1995. In 2004, the EU welcomed eight post-communist countries together with Cyprus and Malta, followed by Bulgaria and Romania in 2007, and finally Croatia in 2013. The introduction of the common currency in 1999 further integrated EU member states in terms of monetary policy, while common fiscal policy and a complete political

union have been held up by the Great Recession in 2008 – 2009 and the European sovereign debt crisis in 2012.

Apart from aggregate economic outcomes such as GDP or international trade, European economic integration impacts specific sectors as well. Tourism is a good example because it is a sector of growing importance. World Travel & Tourism Council estimates that 10.4 percent of the global GDP and 10 percent of global employment (or 319 million people) in 2019 can be attributed to tourism, while the travel and tourism GDP increased by 3.9 percent in 2018 (Manzo, 2019).

Mervar and Payne (2007) explore foreign tourism demand for Croatian destinations using the ARDL approach and find that the demand is positively related to and highly elastic to the income levels of the countries generating tourists. This suggests that as the income of these countries increases, the demand for Croatian destinations also rises significantly. Their study also highlights that political conflicts during the 1990s had an adverse effect on tourism demand suggesting that political stability, or lack of it, is an important attractiveness factor for Croatian tourism. Tourism in Croatia is well-developed. Even before joining the EU, the number of tourist arrivals and overnight stays was increasing (Figure 1), but the trend after EU accession picked up even more. Payne et al. (2023) report that in 2019, before the pandemic, there were 17 million tourist arrivals generating almost 40 percent of export revenues and nearly 11 percent of GDP in Croatia. Due to its small population size, most of these tourists are EU-based foreign nationals.



Note: the dashed line presents the year of EU joining, the exact date is July 1, 2013.

Figure 1. Tourist overnights in Croatia

Source: UNWTO

Payne et al. (2023) use unit root and causality tests to study the causality between economic policy uncertainty and tourist arrivals in Croatia and they find a unidirectional causality, indicating a cause-and-effect relationship, from both Croatian and European economic policy uncertainty to international tourist arrivals. This means that fluctuations and uncertainty in economic policies, both domestically and across Europe, influence the number of international tourists visiting Croatian coastal counties and the country overall. Interestingly, the study found that European economic policy uncertainty had a more pronounced adverse effect on international tourist arrivals compared to Croatian economic policy uncertainty.

Theory suggests that widening and deepening of integration creates more demand for tourism through increasing per capita disposable income of EU citizens, but also develops the supply side through the implementation of targeted policies for the creation of jobs in tourism, and building infrastructure (Richter, 1994). Cecchini et al. (1988) claim that a common EU market would help tourism because the EU's income is higher when compared to other world regions, because geographical distances in Europe are relatively small, transport infrastructure is good, and car ownership in the EU is relatively high. The EU also put into effect protection policies for tourism, enabling the removal of health, legal, and safety barriers for travellers (Van Kraay, 1993).

Hughes and Allen (2009) discuss that EU membership has several positive effects on tourism, including facilitating travel, improving the image of member countries, and increasing security and stability, which can attract more tourists. Additionally, the harmonization of policies and air transport can lead to further tourism growth. They point out that freedom of movement, particularly through the Schengen area, simplifies the movement of people within the EU. It allows for borderless travel, eliminating the need for border checks. Also, the adoption of the common currency in EU member countries is seen as beneficial for tourism because it eliminates the need for costly currency conversions, making it easier for tourists to plan and budget their trips. But besides these two most common factors behind the integration-tourism nexus, there are additional factors to consider while examining the effect of sole EU membership. First, EU membership can raise awareness about and renew interest in the newly acceded country. It signifies quality, potentially generating tourism flows through positive publicity. Second, EU membership can signal security and stability, attracting tourists who seek these qualities in their travel destinations. Third, the opening up of air transport due to EU membership can lead to lower fares, more flights, and services from various locations, potentially increasing the number of visitors. Finally, Hughes and Allen (2009) also suggest that the impact of EU membership on tourism is not a sudden "step-jump" but rather a gradual consolidation and reinforcement of existing tourism trends. It is expected to contribute to the growth of the tourism industry in the long term.

Since tourism can have a disproportionately large economic effect on small, open, tourism-oriented economies, the effect of EU accession has been specifically studied for some countries. Cardoso and Ferreira (2000), for example, claim that the European integration process positively affected the development of the tourism sector in Portugal, while Blake et al. (2003) use computable general equilibrium models to show potential positive effects of EU entry on tourism in Malta and Cyprus. Jarvis and Kallas (2008) found a strong and positive EU accession effect on Estonian tourism. Using qualitative data, namely interviews, Hughes and Allen (2009) studied eight post-transition economies that joined the EU in 2004 and found favourable tourism outcomes. Kapera (2013) uses simple descriptive statistics to claim that tourism in Poland developed significantly after EU entry. However, possible confounding factors with EU accession remain an issue in these studies, and the goal of their research was not to estimate the causal effect of EU accession on the outcomes in the tourism sector.

The benefits and costs of integration are, although challenging to estimate, relatively well documented, but mostly inconclusive (Crafts, 2016; Eichengreen, 2007). For example, Henrekson et al. (1997) estimate EU membership to be worth about 0.6 to 0.8 percent of GDP per capita per year, while Badinger (2005) claims that had there not been EU integration at all, GDP per capita of the entire EU would have been 25 percent lower. Crespo et al. (2008) find overall large positive growth effects that are heterogeneous among member states (for a survey on the literature please see Crafts, 2016, and Sapir, 2011). Common to all these studies are the difficulties in presenting a credible counterfactual scenario on which they base their evaluation, a problem that Campos et al. (2019) managed to overcome by solving the methodological difficulties of the task and considering country heterogeneity before and after the EU

accession. In their paper (Campos et al., 2019), the authors managed to build counterfactuals for EU member states and estimated the gap between the realized outcomes and the counterfactual, synthetic, or “what if” scenarios that would have happened if the countries had never joined the EU. For that purpose, they borrowed from the policy evaluation literature and used the synthetic control method (SCM) developed by Abadie and Gardeazabal (2003) and Abadie et al. (2010, 2015) which essentially overcomes the endogeneity issue and enables a causal interpretation of the estimated effects. The authors conclude that EU integrations from 1973 to 2004 had positive effects on countries entering (with Greece being an exception), namely through trade openness, financial integration, and euro adoption (Campos et al., 2019).

The SCM has so far rarely been used in tourism literature, but an increasing trend is being developed. Castillo et al. (2015) for example employ the SCM in two distinct ways to assess the impact of a tourism development policy on employment in the Argentinian province of Salta. By combining data from other Argentinian provinces, they construct a synthetic Salta and find a positive overall impact on employment in the province. They also run a sectoral analysis focusing on tourism-related employment by combining data from various non-tourism sectors in Salta and other provinces. Biagi et al. (2017) implemented the method to study the introduction of a visitor tax in a town on the island of Sardinia. By using other parts of the island to construct the synthetic, they found negative effects on domestic tourism demand but not on international tourism inflows. Tkalec et al. (2017) construct the synthetic Dubrovnik-Neretva country from other Croatian Adriatic counties and look at the effect of Game of Thrones filming in Dubrovnik on tourist arrivals in the county. They found strong positive effects after the treatment year 2012. Addessi et al. (2019) applied the SCM to the euro introduction in 2002 as the treatment for 12 EU countries. They look at outbound tourist overnight stays on a bilateral flow basis and use countries that have not adopted the euro as the donor pool. Their results suggest that only some of the treated countries gained positive effects from the common currency, meaning that the effect is heterogeneous. Another application can be found in infrastructure as highlighted in the paper by Doerr et al. (2020) in which they study the effect of new airport infrastructure on tourism in a region in Bavaria. Using counties in Bavaria that are not affected by the treatment, they construct synthetic counterfactuals for the treated counties and find that the new airport increased tourism from abroad. Belleville and Jolley (2022) study the effect of two newly accredited UNESCO sites in Texas and Louisiana on employment and wages in the food and accommodation industries. Their SCM results suggest there are positive effects for one of the sites, but no evidence for the other. Lahura and Sabrera (2023) use the SCM to show that the visits to Kuelap, an archaeological site in Peru, roughly doubled due to infrastructure work on an airport and a cable car system close to the site. They use other archaeological sites in Peru to construct the synthetic Kuelap.

3. Data and methodology

To examine the effects of joining the EU on tourism in Croatia an extension of the Campos et al. (2019) approach of synthetic control methodology developed in Abadie and Gardeazabal (2003) and Abadie et al. (2010) is proposed. This approach is widely used to examine the causal effects of policy changes or interventions more generally (see for example Billmeier and Nannicini, 2013, Imbens and Wooldridge, 2009, Miguel and Roland, 2011, or Pinotti, 2015). Intuitively, this method constructs a counterfactual, synthetic outcome for the treated unit in the absence of the treatment, using a linear combination of outcomes from a set of donors, with weights estimated from a pre-selected set of covariates which match, in the pre-treatment period, the outcomes observed for the treated unit. This empirical part, aside from the computational method proposed in Abadie and Gardeazabal (2003), will also include the use of more recent algorithms to construct weights that define the synthetic unit (see Becker and Klößner, 2017, 2018), as well as the donor dependence exercise, as suggested in Campos et al. (2019) and implemented in Monastirirotis and Zilic (2020). For the baseline estimation, an augmented version of

the SCM proposed by Ben-Michael et al. (2021) is used.ⁱ Similar to the bias correction approach used for imperfect matching, the augmented SCM incorporates an outcome model to estimate and rectify the bias arising from less-than-ideal pre-treatment fit, ultimately refining the original SCM estimate. Ridge regression is employed as the outcome model, which not only directly manages the pre-treatment fit but also minimizes extrapolation beyond the convex hull. This estimator can also be framed as a solution to a modified synthetic controls problem that permits the inclusion of negative weights for certain donor units.

The synthetic control approach ensures building a trajectory for Croatia in the case it did not join the EU in 2013. First, a linear combination of countries that did not join the EU in 2013 is obtained, which is then able to closely follow the performance of Croatia in the years up to the joining. This synthetic construction is then used to create the counterfactual trajectory for Croatia in the years following the EU joining. These synthetic values are used to calculate the gap between the observed values and the counterfactual or synthetic ones. This gap can be interpreted as the causal effect of the treatment, i.e., the EU joining effect.

The SCM requires two key components: the set of covariates on which the pre-treatment synthetic is created, and the donor pool or countries that give weights to the synthetic. The outcome of interest is the number of overnight visitors (tourists) obtained by the United Nations World Travel Organization (UNWTO). A large number of covariates is used to explain the variation in the dependent variable, following Mervar and Payne (2007) and Addessi et al. (2019). The covariates used are gross domestic product per capita, real gross domestic product, population density, population growth, real exchange rate, unemployment, employment, inflation, the share of household consumption, the share of exports, share of imports, share of agriculture, share of industry, secondary school enrolment, and tertiary school enrolment.ⁱⁱ Although some of these variables are available before 2000, those are excluded mostly due to the conflict in Croatia in the first half of the 1990s and the Kosovo conflict in 1999, both of which affected tourism in Croatia to a large degree (for more detail on the latter, see Tkalec and Žilić, 2021). The main source of data for this empirical part comes from Penn World Tables (Feenstra et al., 2015) that provide possible predictors, for Croatia, but also the broad set of countries defined as the donor pool. Where necessary, this database was supplemented with World Bank world development indicators. As there are a lot of missing values in some of the years for a big number of possible donor countries, there is a total of 20 donor countries.ⁱⁱⁱ

Results present country weights and the observed and synthetic outcome for overnight tourist stays in Croatia. Placebo testing is implemented by running the same analysis on the non-treated countries in the donor sample. If the estimated gap for Croatia is larger than the ones found for other countries, the estimated effects may be driven by factors idiosyncratic to Croatia. For an additional robustness check, 1,000 replications of the exercise from the donor pool were run and the effect for different combinations and weights of donor countries was estimated (Campos et al., 2019). This provided a distribution of gaps in the observed and synthetic overnight stays. If there is randomness in this gap formation, there is reason to believe that donor-dependency is not an issue.

4. Results

Figure 2 presents the top five country weights obtained by following the augmented SCM (Ben-Michael et al., 2021) on a sample of 20 donor countries. As expected, more than 50 percent of weighting comes from Bulgaria (37 percent) and North Macedonia (26 percent), two small post-transition European countries, of which one is an EU member (Bulgaria), and the other is a candidate. Austria has the highest weighting factor of 73 percent, while Denmark is in fourth place with 13 percent. In fifth place is Finland

with a negative weighting factor of -19 percent. Figure 3 presents the results of the augmented SCM from the donor pool of 20 countries and country weights from Figure 2. In the pre-treatment, or the fitting period (2000 – 2012), the synthetic series closely follows the observed series of overnight visitors, making the selected donor sample and its weights appropriate. Throughout the observed period, the number of overnight visitors in Croatia is growing up to the COVID-19 pandemic in 2020, with an increase in the growth rate following the EU joining in 2013. And while the observed series is growing in the post-treatment period, 2014 – 2019, slumping down in 2020, and recovering in 2021, the synthetic overnight visitors are growing at a slower rate up to 2019, falling in both 2020 and 2021. Figure 3 demonstrates the positive effect of EU joining on overnight visitors in Croatia. The gap between the synthetic and observed series is positive from 2013 onwards, except for the pandemic 2020, and it reaches its maximum in the last year of the reference period, in 2021. The gap in 2021 amounts to 3,307,563 visitors, and it is mostly the result of somewhat looser containment measures^{iv} in Croatia than in the rest of the world which led to a quicker recovery of services. In the period before COVID-19, the maximum value was achieved in 2017 in the amount of 2,977,999 visitors, more than 23 percent above the value of the synthetic.

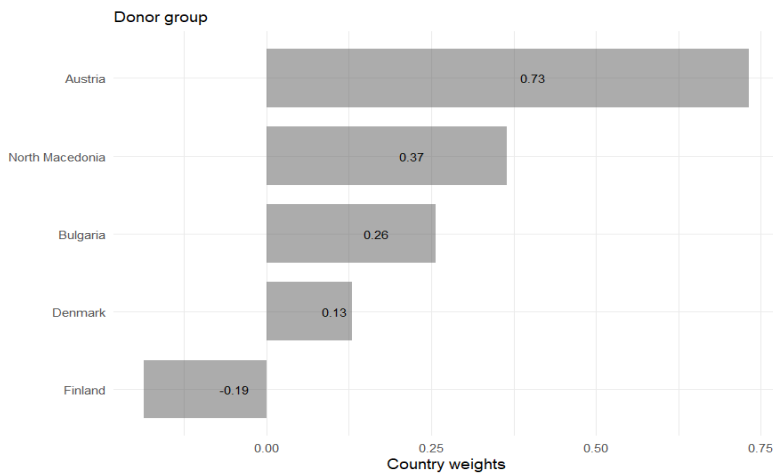
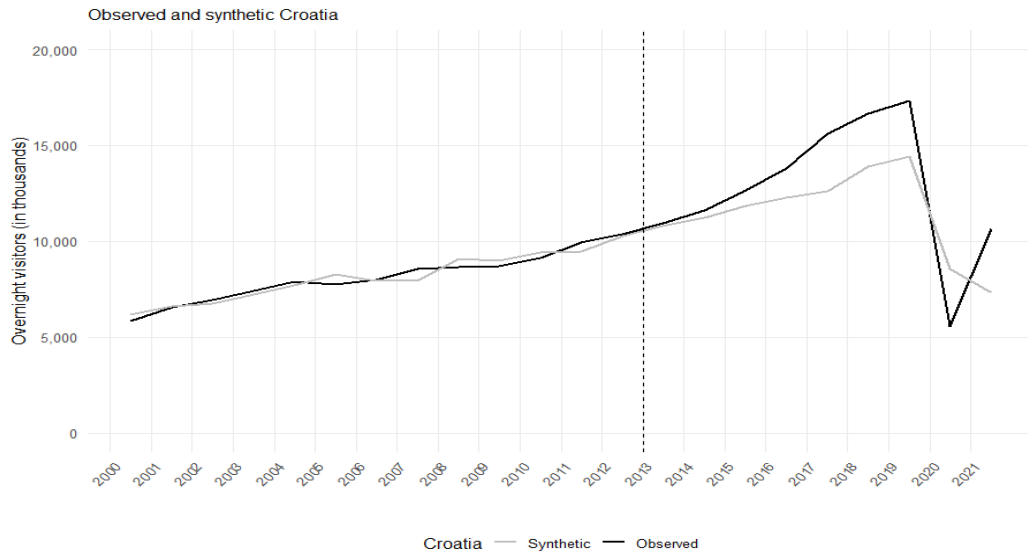


Figure 2. *Top five country weights to construct synthetic Croatia*

The results of the original synthetic proposed method (Abadie et al., 2003), where donor weights are restricted to positive values and add up to 1 are presented in the Appendix, Figures A1 and A2. There are only three donor countries, North Macedonia, Bulgaria and Austria each roughly providing a third of the counterfactual. The pre-treatment fit is not perfect, especially in the 2010 – 2012 period, but the post-treatment results are much in line with the results presented in the baseline.

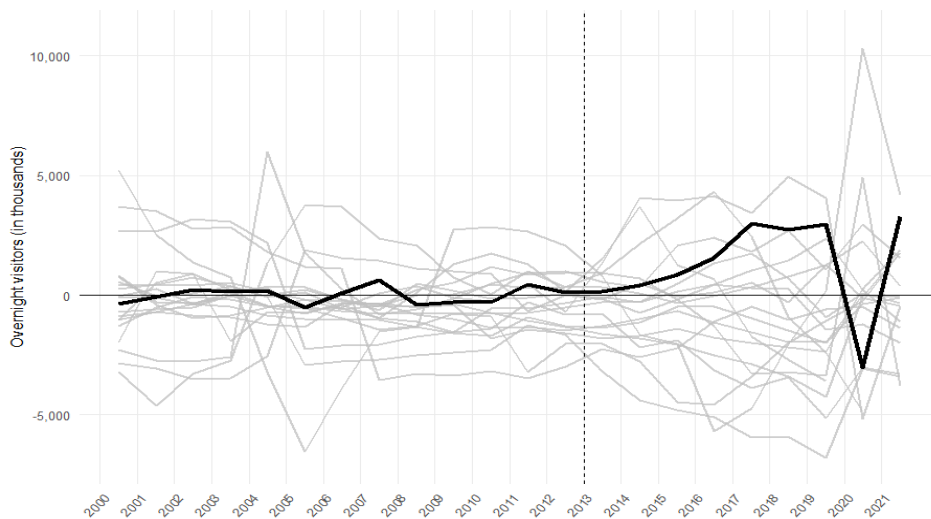
To examine whether the results are driven by EU Member States in the donor pool, the examination has been rerun using a donor pool of non-EU Member States only. Results are presented in the Appendix, Figures A3 and A4, and they corroborate baseline results, although the gap appears somewhat later. Synthetic Croatia is now composed of mostly Tunisia (89 percent), but the pre-treatment fit is sub-perfect since it is almost impossible to find a combination of non-EU countries that would provide a credible pre-treatment fit for Croatia in terms of size, development level and share of the tourism sector in the economy. It is therefore difficult to claim that the gap around the treatment is statistically significant. Appendix, Figures A5 and A6, with Becker and Klößner (2017, 2018) computational method paint a similar picture to the baseline estimate. Bulgaria now obtains a larger weight (47 percent), and the positive gap is even larger than in the baseline.



Notes: the dashed line presents the year of the treatment so that the observations to the left correspond to the fitting period (2000 – 2012), and the observations to the right correspond to the treated period (2014 – 2021).

Figure 3. *Tourist overnights: observed and synthetic Croatia*

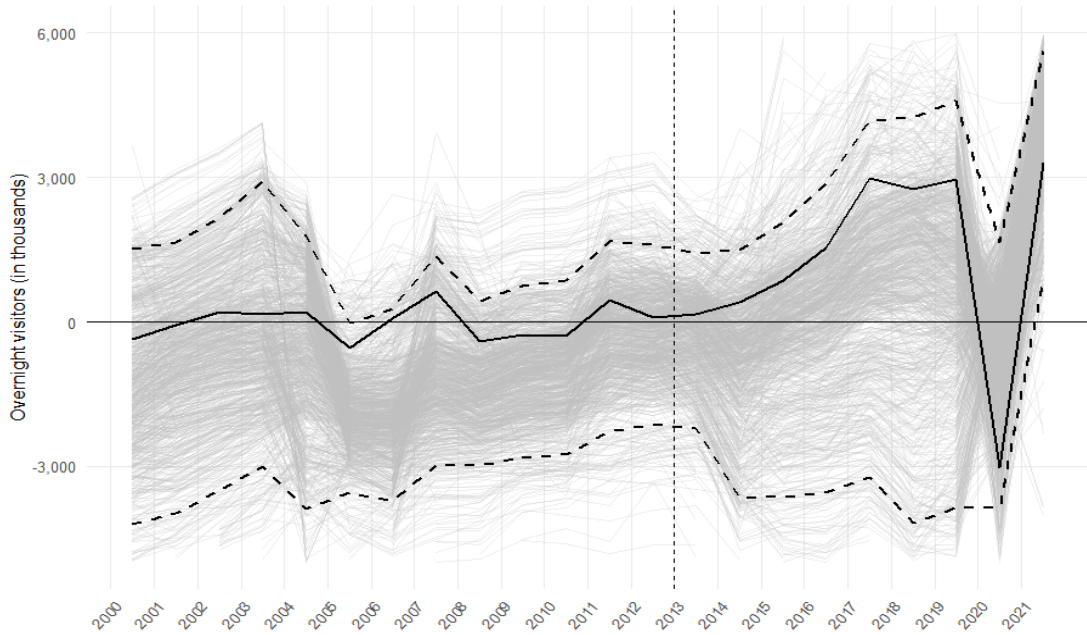
Abadie and Gardeazabal (2003) propose placebo testing to examine if the effect of the EU joining on tourism could have happened randomly as if coincidentally overlapping with the date of the EU joining. To run this exercise, treatment status was assigned to each country in the donor pool, the synthetic control estimation was run, the gap was calculated, and the results for all 20 replications were presented in Figure 4 together with the baseline for Croatia. The gap for Croatia is in the group of estimations with the biggest gap after the treatment, in 2013, indicating that this realization of Croatian tourism is not random.



Notes: the black line represents the baseline estimate for Croatia and the light grey lines represent estimates for the 20 countries in the donor pool.

Figure 4. *Placebo testing*

The other test for the validity of results is proposed by Campos et al. (2019). To run this exercise, the synthetic control estimation was repeated 1,000 times, each time resampling the set of chosen donors. The gap was then calculated and the results for all replications were reported together with the baseline estimate (Figure 5). Results show that the baseline estimate is roughly in the upper middle between the 5th and 95th percentile of the resampling results up to the pandemic when the preferred estimate moves closer to the lower bounds of results, but bounces back already in 2021. The latter is probably due to Croatia having much looser containment measures in 2021. At the 95th percentile, the gap reaches 5,632,535 visitors in 2021, while the gap is at 911,697 visitors at the 5th percentile. For the median case, the gaps are positive after 2014, except in 2020. There is no significant divergence in the predictions, they follow the same evolution—an upward trend up to 2020, a large decrease in 2020, followed by a recovery in 2021. At the median, the gap in 2021 is more than seven times that of the gap observed in 2014, while only 1.9 percent of realizations have a negative gap in 2021. In 2021 the zero-gap lies outside the 5 percent (pseudo-) confidence interval.



Notes: the light grey lines represent 1,000 replications, the black line represents the original estimate and the dashed lines represent the 5th and the 95th percentile of the resampling results.

Figure 5. *Donor resampling*

As expected, the majority of tourists in Croatia come from other European countries (Figure 6), followed by East Asia and Pacific, Americas, and Africa. Besides Africa, these regions exhibit similar upward trends in tourist arrivals. However, a change in the growth rate for Europe can be observed roughly from 2015, just two years after Croatia joined the EU. Most of the effect therefore can be attributed to European tourists, as one would expect since EU integration first and foremost affects citizens directly affected by integration.

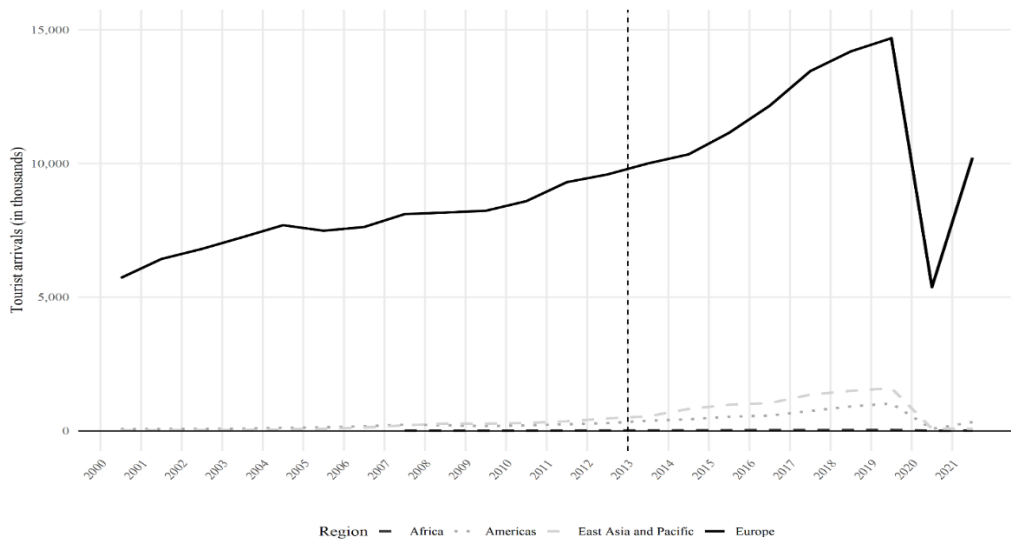


Figure 6. Arrivals from world regions

Source: Author's calculations from UNWTO data.

5. Discussion and conclusions

This paper provides a comprehensive analysis of the impact of EU membership on the tourism industry in Croatia. The study focuses on estimating the economic effect of EU accession on tourism in Croatia, which is an essential sector of the country's economy. Estimates show that joining the EU had a positive impact on the Croatian tourism industry, measured by overnight tourists, which has resulted in significant economic benefits for Croatia. The results of the SCM suggest that the synthetic series closely matches the observed series of overnight visitors during the pre-treatment period (2000 – 2012), indicating the appropriateness of the chosen donor sample and weights. While the observed series of overnight visitors in Croatia shows growth, particularly after joining the EU in 2013, the synthetic series grows at a slower rate. The gap between the synthetic and observed series starts to grow from 2013 onwards, reaching its maximum in 2021. Results are robust when non-EU Member States are used as a donor pool, or when a different method is applied, placebo testing corroborates that the effect is not random, and the resampling method yields similar findings. Overall, the study suggests a positive and long-term effect of the EU joining on overnight visitors in Croatia, with European tourists being the main contributors to the tourism growth. The total effect in the whole post-treatment period amounts to 11.8 million more overnight tourists in Croatia when compared to the synthetic in which EU accession did not happen. According to the UNWTO data on tourism expenditure, 77.8 billion USD was spent in Croatia by inbound tourists in the 2014 – 2021 period, most of it on travel, and only 1.8 percent on passenger transport. The same source cites that 103.9 million overnight visitors stayed in Croatia in that period leading to the average expenditure by overnight tourists in Croatia to 749 USD per visitor. The accumulated effect in terms of expenditure can therefore be estimated at 8.8 billion (11.8 million more visitors times the average expenditure of 749 USD). Just to put it into perspective, that is the equivalent of 14.9 percent of Croatia's total GDP in 2013, and this is just the direct expense of tourism.

Other studies that measure the effects of EU entry on tourism do not use counterfactual methodologies, making a direct comparison to this research unattainable. But still, one can argue that all these studies have in common a positive effect of EU entry on tourism in different countries. For example, Kapera (2013) reports that the number of tourist arrivals in Poland increased by 1.5 million or 10.8 percent in

the first year after EU entry when compared to the pre-treatment year. Similar is found for Croatia and overnight tourists, 1.3 million and 12.1 percent (for arrivals the figures are much larger, 4 million and 8.4 percent). Hughes and Allen (2009) report that six out of the eight post-transition countries that joined the EU in 2004 experienced higher tourist arrivals growth rates when compared to the pre-treatment period. The same is found for Croatia, although the growth rates are somewhat smaller, mostly to do with base effects since the number of tourists to Croatia is much larger to start with. Jarvis and Kallas (2008) suggest that tourism expanded by one-third in two years after Estonia joined the EU. Such a large effect is not found for Croatia, partially because of the base effect, but also because the Estonian treatment was not unique since the country also joined NATO in the same year, just a month apart.

Although not explored in this paper, there are potential challenges for tourism in Croatia that are also associated with EU membership. For example, increased competition from other EU member states could pose a threat to Croatia's tourism industry. Additionally, changes to visa requirements and regulations could make it more difficult for non-EU tourists to visit Croatia. Although there are some potential challenges associated with joining the EU, that could manifest sometime in the future, it is clear that the first nine years of membership have had a positive impact on this important sector of Croatia's economy.

There are some limitations to the study that should be noted. First, the study focuses solely on the economic impact of EU membership on the Croatian tourism industry. While this is an essential aspect of the industry, other factors such as cultural, ecological, and social impacts are not considered in this study. Second, the study relies on secondary data sources, such as the World Bank, Penn World Tables, and the UNWTO. While these sources are reliable, they may not provide a complete picture of the impact of EU membership on the tourism industry in Croatia. Third, the study does not consider the impact of external factors, such as global tourism demand or political stability in the region, as potential confounding factors for the Croatian tourism industry. These factors could have a significant impact on the industry and should be considered in future research. Finally, the study only focuses on the impact of EU membership on the tourism industry in Croatia and does not consider the impact on other sectors of the economy. A more comprehensive analysis of the impact of EU membership on the Croatian economy as a whole would provide a more complete picture of the effects of EU membership on the country.

There are several areas where further research could be conducted to build on the findings of this study. First, future research could explore the impact of EU membership on other sectors of the Croatian economy. While this study focuses on the tourism industry, it would be interesting to see how other sectors have been affected by EU membership. Especially in the sense of sectors that have lost especially because of tourism, such as manufacturing (Tkalec and Vizek, 2014). Second, other factors that could have affected tourism should also be looked at. For example, COVID-19 restrictions or war in Ukraine. This would provide a more complete picture of the factors that influence the industry. Third, future research could explore the cultural and social impacts of EU membership on the Croatian tourism industry, besides the economic ones. This would provide a more comprehensive understanding of the effects of EU membership on the country as a whole. Finally, Croatia introduced the Euro and entered the Schengen area in 2023, both of which are expected to have positive effects on tourism, so one would want to also examine the impacts of these integrations on the tourism industry. This would provide valuable insights into the broader effects of EU membership on the tourism industry in Croatia.

Appendices

Table A1: Descriptive statistics

Variable	Mean	Standard deviation	Period	Source
Number of overnight visitors (in thousands)	13,409.36	15,932.42	2000 – 2021	United Nations World Travel Organization
Gross domestic product per capita (at chained PPPs, in 2017 US\$)	22,232.08	15,459.96	2000 – 2021	Penn World Tables
Real gross domestic product (at chained PPPs, in billion US\$)	451.40	699.49	2000 – 2021	Penn World Tables
Population density (people per sq. km of land area)	470.20	1,480.47	2000 – 2020	World Bank World Development Indicators
Population growth (annual, in percent)	0.58	2.57	2000 – 2019	Penn World Tables
Real effective exchange rate index (2010 = 100)	98.57	10.75	2000 – 2021	World Bank World Development Indicators
Unemployment, total (percent of total labour force, modelled ILO estimate)	10.38	6.55	2000 – 2021	World Bank World Development Indicators
Employment (number of persons engaged, in millions)	7.97	8.38	2000 – 2019	Penn World Tables
Inflation (consumer prices, annual, in percent)	2.49	2.23	2000 – 2021	World Bank World Development Indicators
Share of household consumption (at current PPPs)	0.88	0.33	2000 – 2019	Penn World Tables
Share of merchandise exports (at current PPPs)	0.31	0.57	2000 – 2019	Penn World Tables
Share of merchandise imports (at current PPPs)	-0.34	0.57	2000 – 2019	Penn World Tables
Agriculture, forestry, and fishing, value added (percent of gross domestic product)	3.99	3.04	2000 – 2013	World Bank World Development Indicators
Industry (including construction), value added (percent of gross domestic product)	24.15	7.14	2000 – 2013	World Bank World Development Indicators
School enrolment, secondary (percent gross)	101.01	18.53	2000 – 2013	World Bank World Development Indicators
School enrolment, tertiary (percent gross)	56.69	19.07	2000 – 2013	World Bank World Development Indicators

Note: Mean and standard deviations represent respective statistics for 21 countries in the denoted time frame.

Baseline results using Abadie et al. (2003) original method

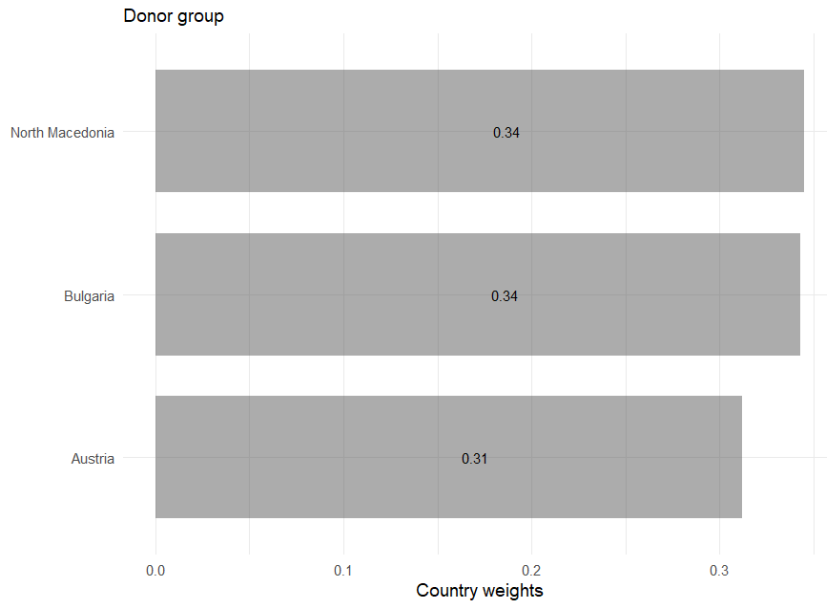
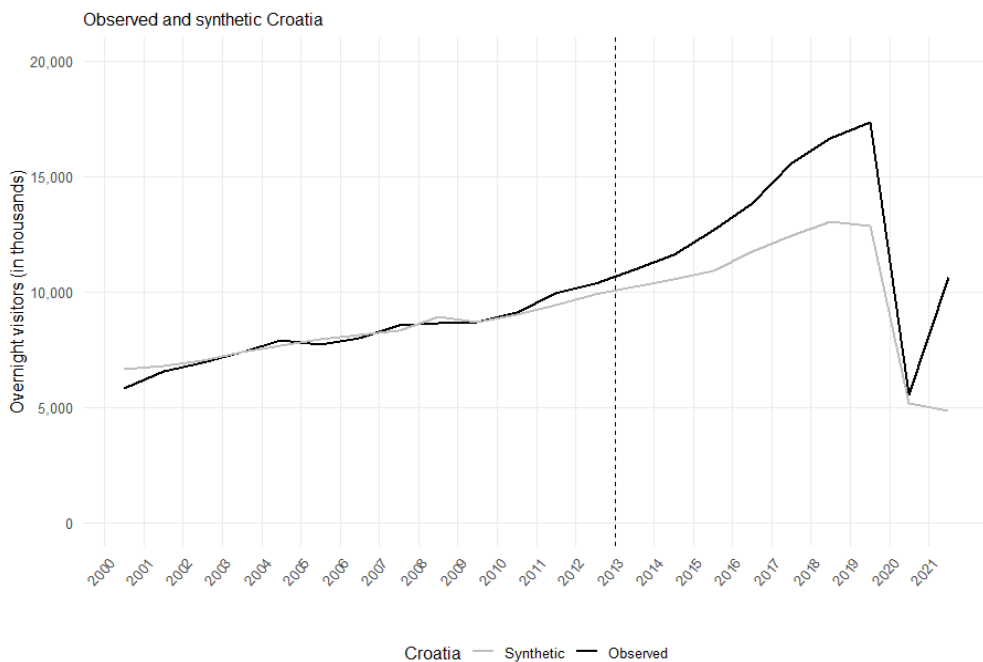


Figure A1. Country weights to construct synthetic Croatia



Notes: the dashed line presents the year of the treatment so that the observations to the left correspond to the fitting period (2000 – 2012), and the observations to the right correspond to the treated period (2014 – 2021).

Figure A2. Tourist overnights: observed and synthetic Croatia

Baseline results excluding EU countries from the donor pool

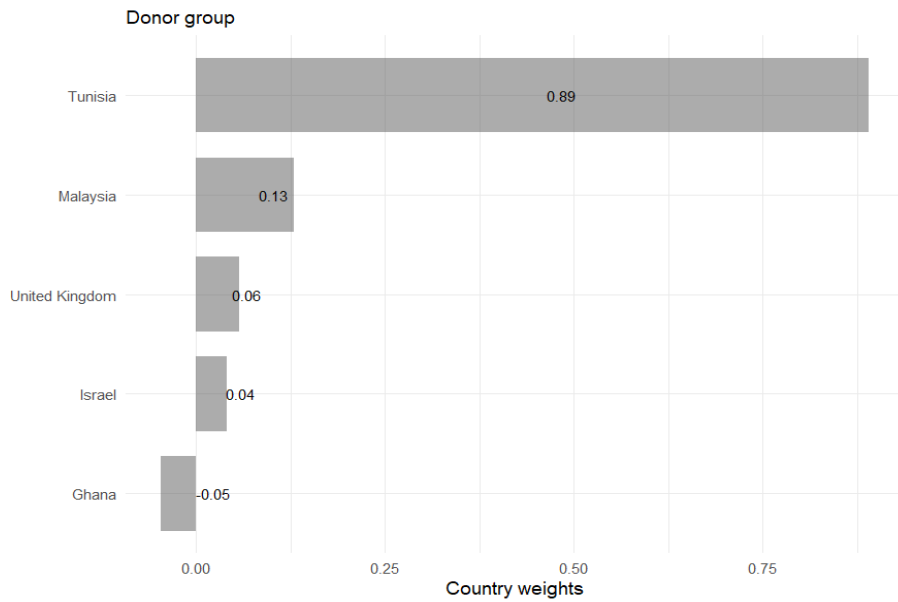
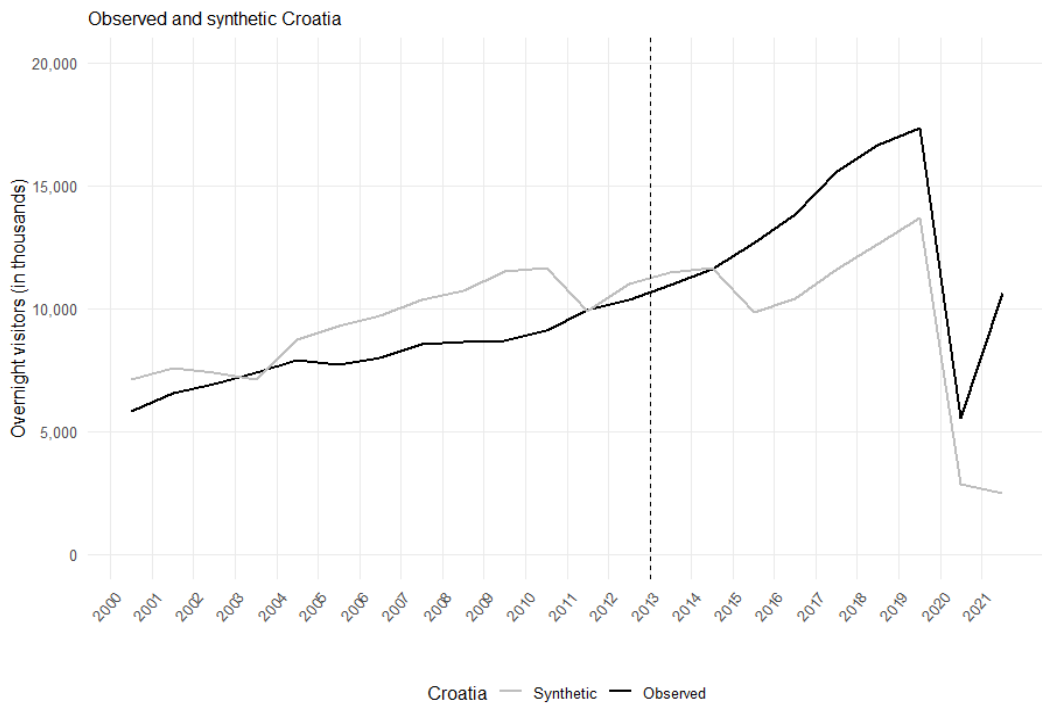


Figure A3. Top five non-EU country weights to construct synthetic Croatia



Notes: the dashed line presents the year of the treatment so that the observations to the left correspond to the fitting period (2000 – 2012), and the observations to the right correspond to the treated period (2014 – 2021).

Figure A4. Tourist overnights: observed and synthetic Croatia

Baseline results using Becker and Klößner (2018) methods

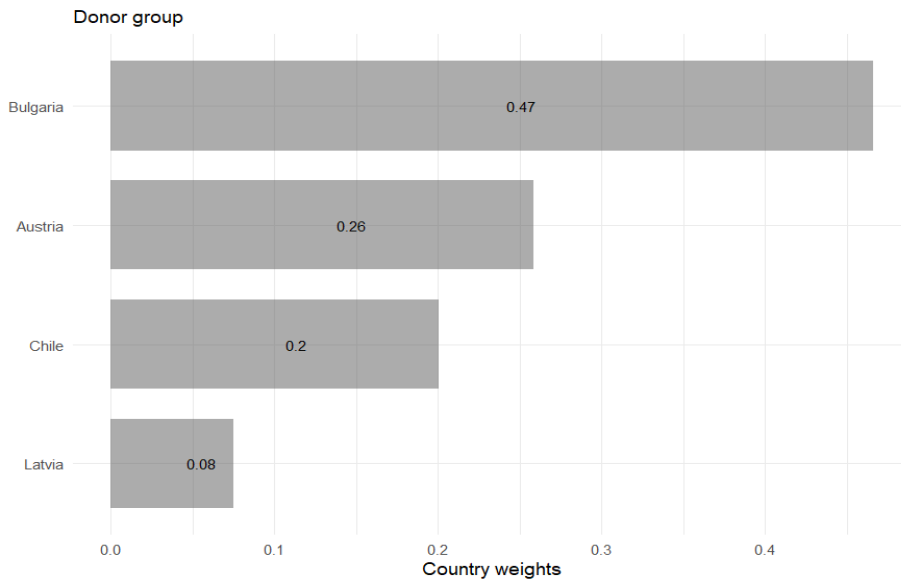
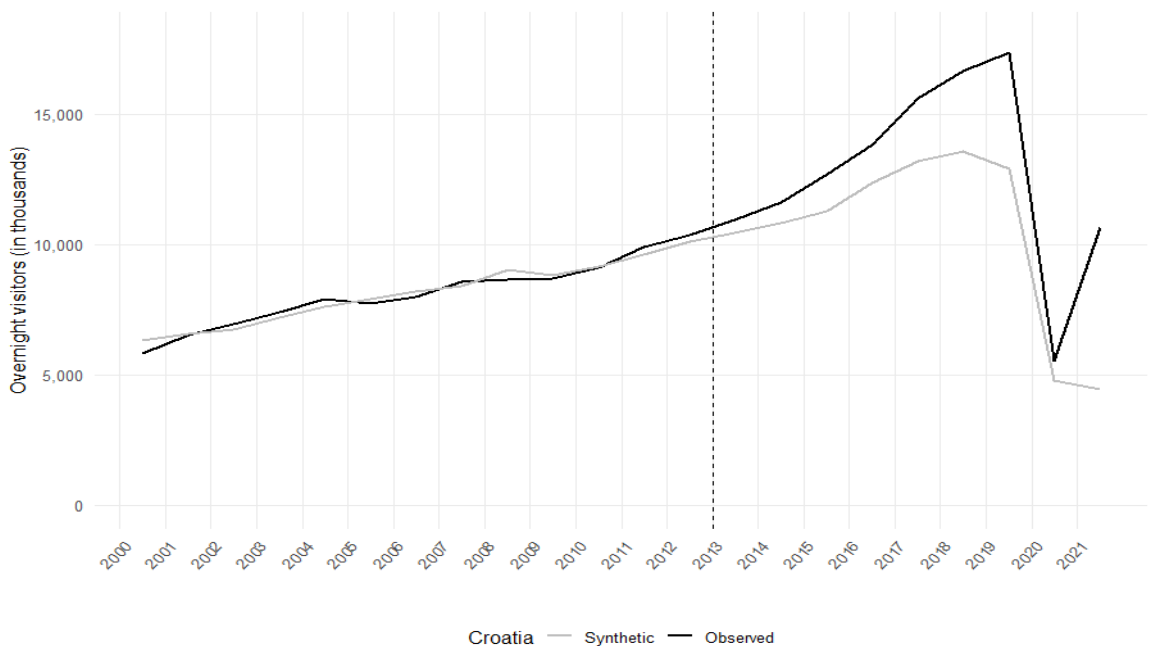


Figure A5. *Weights to construct synthetic Croatia*



Notes: the dashed line presents the year of the treatment so that the observations to the left correspond to the fitting period (2000 – 2012), and the observations to the right correspond to the treated period (2014 – 2021).

Figure A6. *Tourist overnights: observed and synthetic Croatia*

References

- Abadie, A., Diamond, A., & Hainmueller, J. (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. <https://doi.org/10.1198/jasa.2009.ap08746>
- Abadie, A., Diamond, A., & Hainmueller, J. (2011). Synth: An R package for synthetic control methods in comparative case studies. *Journal of Statistical Software* 42(13), 1–17. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1958891
- Abadie, A., Diamond, A., & Hainmueller, J. (2015). Comparative politics and the synthetic control method. *American Journal of Political Science* 59(2), 495–510. <https://doi.org/10.1111/ajps.12116>
- Abadie, A., & Gardeazabal, J. (2003). The economic costs of conflict: A case study of the Basque country. *American Economic Review* 93(1), 113–132. <https://doi.org/10.1257/00028280321455188>
- Addessi, W., Biagi, B., & Brandano, M.G. (2019). Evaluating the effect of the introduction of the euro on tourist flows: A synthetic control approach. *The World Economy* 42(5), 1554–1575. <https://doi.org/10.1111/twec.12763>
- Anghel, V., & Džankić, J. (2023). Wartime EU: consequences of the Russia–Ukraine war on the enlargement process. *Journal of European Integration* 45(3), 487–501. <https://doi.org/10.1080/07036337.2023.2190106>
- Badinger, H. (2005). Growth effects of economic integration: evidence from the EU member states. *Review of World Economics* 141(1), 50–78. <https://doi.org/10.1007/s10290-005-0015-y>
- Balassa, B. (1961). *The Theory of Economic Integration: Limits and Prospects*. London: Allen & Unwin. <https://www.routledge.com/The-Theory-of-Economic-Integration-Routledge-Revivals/Balassa/p/book/9780415681247>
- Becker, M., & Klößner, S. (2017). Estimating the economic costs of organized crime by synthetic control methods. *Journal of Applied Econometrics* 32(7), 1367–1369. <https://doi.org/10.1002/jae.2572>
- Becker, M., & Klößner, S. (2018). Fast and reliable computation of generalized synthetic controls. *Econometrics and Statistics* 5(2018), 1–19. <https://doi.org/10.1016/j.ecosta.2017.08.002>
- Belleville Jr, D. E., & Jolley, G. J. (2022). Estimating cultural heritage sites effect on food and accommodations with synthetic controls. *Annals of Tourism Research Empirical Insights* 3(1), 100045. <https://doi.org/10.1016/j.annale.2022.100045>
- Biagi, B., Brandano, M. G., & Pulina, M. (2017). Tourism taxation: A synthetic control method for policy evaluation. *International Journal of Tourism Research* 19(5), 505–514. <https://doi.org/10.1002/jtr.2123>
- Billmeier, A., & Nannicini, T. (2013). Assessing economic liberalization episodes: A synthetic control approach. *Review of Economics and Statistics* 95(3), 983–1001. https://doi.org/10.1162/REST_a_00324
- Blake, A., Sinclair, M. T., & Sugiyarto, G. (2003). Tourism and EU accession in Malta and Cyprus. Christel DeHaan Tourism and Travel Research Institute, Nottingham University Business School. <https://tinyurl.com/2k9f8a2t>
- Campos, N.F., Coricelli, F., & Moretti, L. (2019). Institutional integration and economic growth in Europe. *Journal of Monetary Economics* 103(2019), 88–104. <https://doi.org/10.1016/j.jmoneco.2018.08.001>
- Castillo, V., Garone, L. F., Maffioli, A., & Salazar, L. (2015). Tourism Policy, a Big Push to Employment: Evidence from a Multiple Synthetic Control Approach. IDB Working paper series No. 572. <https://www.econstor.eu/bitstream/10419/115526/1/IDB-WP-572.pdf>
- Cardoso, C., & Ferreira, L. (2000). The effects of European economic integration on tourism: challenges and opportunities for Portuguese tourism development. *International Journal of Contemporary Hospitality Management*, 12(7), 401–409. <https://doi.org/10.1108/09596110010347248>
- Cecchini, P., Catinat, M. & Jacquemin, A. (1988). *The European Challenge 1992: The benefits of a Single Market*. Aldershot: Wildwood House.

- Central Bureau of Statistics (2022). Tourism Satellite Account for the Republic of Croatia, 2019. Available at: <https://podaci.dzs.hr/hr/priopcenja/2021/hr/nr-2021-bdp-i-nacionalni-racuni/nr-2021-6-satelitski-racun-turizma/nr-2021-6-1-satelitski-racun-turizma-za-republiku-hrvatsku-u-2019/nr-2021-6-1-satelitski-racun-turizma-za-republiku-hrvatsku-u-2019> (accessed 23 November 2023).
- Crafts, N. (2016). West European economic integration since 1950. In Badinger, H., & Nitsch, V. (Eds.) (2016). *Routledge Handbook of the Economics of European Integration*. London: Routledge, pp.3–21. <https://doi.org/10.4324/9781315796918.ch1>
- Crespo, C.J., Ritzberger-Grünwald, D., & Silgoner, M.A. (2008). Growth, convergence and EU membership. *Applied Economics* 40(5), 643–656. <https://doi.org/10.1080/00036840600749524>
- De Campos, J.M. (1995). *Direito Comunitário*. Lisbon: Fundação Calouste Gulbenkian.
- Deutsch, K.W. (1957). *Political Community and the North Atlantic Area*. New Jersey: Princeton University Press. <https://press.princeton.edu/books/paperback/9780691622668/political-community-and-the-north-american-area>
- Doerr, L., Dorn, F., Gaebler, S., & Potrafke, N. (2020). How new airport infrastructure promotes tourism: evidence from a synthetic control approach in German regions. *Regional Studies* 54(10), 1402–1412. <https://doi.org/10.1080/00343404.2020.1714022>
- Eichengreen, B. (2007). *The European Economy Since 1945: Coordinated Capitalism and Beyond*. New Jersey: Princeton University Press. <https://doi.org/10.1515/9781400829545>
- El-Agraa, A. (1989). *International Economic Integration*. London: Macmillan. https://doi.org/10.1007/978-1-349-10206-8_11
- Feenstra, R.C., Inklaar, R., & Timmer, M.P. (2015). The Next Generation of the Penn World Table. *American Economic Review* 105(10), 3150–3182, available for download at www.ggdc.net/pwt.
- Henrekso, M., Torstensson, J., and Torstensson, R. (1997). Growth effects of European integration. *European Economic Review* 41(8), 1537–1557. [https://doi.org/10.1016/S0014-2921\(97\)00063-9](https://doi.org/10.1016/S0014-2921(97)00063-9)
- Hughes, H.L., & Allen, D. (2009). Central and Eastern Europe and EU accession 2004: Views of the impact on tourism. *Tourism and Hospitality Research* 9(3), 185–198. <http://dx.doi.org/10.1057/thr.2009.9>
- Imbens, G.W., & Wooldridge, J.M. (2009). Recent developments in the econometrics of program evaluation. *Journal of Economic Literature* 47(1), 5–86. <https://doi.org/10.1257/jel.47.1.5>
- Jarvis, J., & Kallas, P. (2008). Estonian tourism and the accession effect: the impact of European Union membership on the contemporary development patterns of the Estonian tourism industry. *Tourism Geographies* 10(4), 474–494. <http://dx.doi.org/10.1080/14616680802434080>
- Jovanovic, M. (1998). *International Economic Integration: Monetary, fiscal and factor mobility issues*. London and New York: Routledge. <https://www.routledge.com/International-Economic-Integration-Limits-and-Prospects/Jovanovic/p/book/9780415164511>
- Kapera, I. (2013). Tourism in Poland following EU entry. *Bulletin of Geography. Socio-economic Series* (22), 55–63. <http://dx.doi.org/10.2478/bog-2013-0031>
- Lahura, E., & Sabrera, R. (2023). The effect of infrastructure investment on tourism demand: a synthetic control approach for the case of Kuelap, Peru. *Empirical Economics* 65(1), 443–478. <https://doi.org/10.1007/s00181-022-02334-1>
- Manzo, G.G. (2019). Travel & tourism economic impact 2019. Report, World Travel & Tourism Council, UK, March. <https://www.slovenia.info/uploads/dokumenti/raziskave/raziskave/world2019.pdf>
- Marangos, J., Triarchi, E., & Anthrakidis, T. (2019). Political Economy, Inward foreign Direct Investment and EU Accession of the Western Balkans. In Vasileios, V., & Bitzenis, A. (Eds.) (2019). *European Union: Post Crisis Challenges and Prospects for Growth*. London: Palgrave Macmillan, 149–171. http://dx.doi.org/10.1007/978-3-030-18103-1_8

- Mervar, A., & Payne, J.E. (2007). Analysis of foreign tourism demand for Croatian destinations: long-run elasticity estimates. *Tourism Economics* 13(3), 407–420. <https://doi.org/10.5367/000000007781497764>
- Miguel, E., & Roland, G. (2011). The long-run impact of bombing Vietnam. *Journal of Development Economics* 96(1), 1–15. <http://dx.doi.org/10.1016/j.jdevco.2010.07.004>
- Molle, W. (2006). *The Economics of European Integration*. London: Routledge. <https://www.routledge.com/The-Economics-of-European-Integration-Theory-Practice-Policy/Molle/p/book/9780754648123>
- Monastiriotes, V., & Zilic, I. (2020). The economic effects of political disintegration: Lessons from Serbia and Montenegro. *European Journal of Political Economy*, 65(2020), 101938. <https://doi.org/10.1016/j.ejpoleco.2020.101938>
- Payne, J.E., Nazlioglu, S., & Mervar, A. (2023). Economic policy uncertainty and international tourist arrivals: A disaggregated analysis of the Croatian Adriatic coast. *Tourism Economics* 29(4), 986–1004. <https://doi.org/10.1177/13548166221078807>
- Piggott, J., & Cook, M. (2006). *International Business Economics: A European Perspective*. London: Palgrave Macmillan.
- Pinder, D. (2017). *Regional economic development and policy: Theory and practice in the European Community*. London: Routledge. <https://www.routledge.com/Regional-Economic-Development-and-Policy-Theory-and-Practice-in-the-European/Pinder/p/book/9781138102453>
- Pinotti, P. (2015). The economic costs of organised crime: Evidence from Southern Italy. *The Economic Journal* 125(586), F203–F232. <https://doi.org/10.1111/ecoj.12235>
- Richter, L.K. (1994). The Political Dimension of Tourism. In Brent Ritchie, J.R., & Goeldner, C.R. (Eds.) (1994). *Travel, Tourism and Hospitality Research: Handbook for Managers and Researchers*. New York: John Wiley & Sons, 219–232. <https://www.wiley.com/en-us/Travel,+Tourism,+and+Hospitality+Research:+A+Handbook+for+Managers+and+Researchers,+2nd+Edition-p-9780471582489>
- Robson, P. (1998). *The Economics of International Integration*. London: Routledge. <https://www.routledge.com/The-Economics-of-International-Integration/Robson/p/book/9780415148771>
- Sampson, T. (2017). Brexit: the economics of international disintegration. *Journal of Economic Perspectives* 31(4), 163–184. <https://doi.org/10.1257/jep.31.4.163>
- Sapir, A. (2011). European integration at the crossroads: a review essay on the 50th anniversary of Bela Balassa's theory of economic integration. *Journal of Economic Literature* 49(4), 1200–1229. <https://doi.org/10.1257/jel.49.4.1200>
- Swann, D. (1996). *European Economic Integration: The Common Market, European Union and Beyond*. Cheltenham: Edward Elgar.
- Tkalec, M., & Vizek, M. (2014). Real estate boom and export performance bust in Croatia. *Proceedings of Rijeka Faculty of Economics, Journal of Economics and Business* 32(1), 11–34. <https://hrcak.srce.hr/en/file/181865>
- Tkalec, M., Žilić, I., & Recher, V. (2017). The effect of film industry on tourism: Game of Thrones and Dubrovnik. *International Journal of Tourism Research* 19(6), 705–714. <http://dx.doi.org/10.1002/itr.2142>
- Tkalec, M., & Žilić, I. (2021). Does proximity to conflict affect tourism: Evidence from NATO bombing. *PLoS one* 16(10), 1–21. <https://doi.org/10.1371/journal.pone.0258195>
- Tsoukalis, L. (1997). *The New European Economy Revisited*. Oxford: Oxford University Press. <https://global.oup.com/academic/product/the-new-european-economy-revisited-9780198774778?q=tsoukalis&lang=en&cc=hr#>

- Van Kraay, F. (1993). *Tourism and the Hotel and Catering Industries in the EC*. London: Athlone Press.
<https://www.cabdirect.org/cabdirect/abstract/19931859525>
- Vollaard, H. (2014). Explaining European Disintegration. *Journal of common market studies*, 52(5), 1142–1159. <https://doi.org/10.1111/jcms.12132>
- Wallace, W. (1990). *The Dynamics of European Integration*. London: Royal Institute of International Affairs.

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ⁱ For the Abadie and Gardeazabal (2003) computation, the Synth R package developed by Abadie et al. (2011) is used, for the Becker and Klößner adaptation the MSCMT R package was used, while for the Ben-Michael et al. (2021) augmented version of the SCM the augsynth R package was used.

ⁱⁱ More information on the variables used can be found in the Appendix, Table A1.

ⁱⁱⁱ Austria, Belgium, Bulgaria, Chile, Colombia, Denmark, Finland, Ghana, Greece, Hungary, Israel, Italy, Latvia, Malaysia, North Macedonia, Philippines, Portugal, Spain, Tunisia, and the United Kingdom.

^{iv} Information on containment measures can be obtained from Oxford's COVID-19 Government Response Tracker (OxCGRT).