

ERC Working Papers in Economics 25/02 May / 2025

The Impact of the Russian Sanctions on the Turkish Tourism Sector: Firm-level Evidence

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Erol Taymaz Middle East Technical University, Department of Economics, Ankara, Türkiye E-mail: <u>etaymaz@metu.edu.tr</u> The Impact of the Russian Sanctions on the Turkish Tourism Sector: Firm-level Evidence

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May 2025

Abstract

The Turkish economy is sensitive to geopolitical developments due to its geographic location and proximity to the Middle East and North Africa, where tensions are generally high. One of the most recent events is the civil war in the neighboring Syria, which began in early 2011. This war had a significant impact on the Turkish economy. In addition to the massive influx of Syrian refugees, the war had economic repercussions because it led to a political crisis with Russia. Russia and Türkiye were involved in the Syrian civil war, supporting rival parties and Türkiye shot down a Russian warplane on November 24, 2015. In response, Russia announced a package of economic sanctions including some restrictions on bilateral tourism activities. As an important trading partner of Türkiye, these sanctions had profound impact on the Turkish economy, particularly on the tourism sector. We use a rich set of establishment-level micro data and a difference-in-differences framework to examine the impact of the Russian sanctions on employment and wages. Our results show that establishments located in provinces preferred more by Russian tourists experienced a sharp decline in employment (measured by the number of days worked) and total wage payments, while the decline in the average wage rate of these establishments was limited.

JEL classification: F51, L25, L83 **Keywords**: Sanctions, Tourism, Foreign policy, Firm behavior

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1. Introduction

Sanctions have been a prominent instrument of foreign policy in international affairs. In recent years, countries have increasingly utilized restrictions on trade, financial activities, or travel to achieve foreign policy objectives. In line with this uptrend, academic interest in analyzing the economic consequences of sanctions has also increased. This paper contributes to this literature by assessing the economic impact of Russia's tourism restrictions on Türkiye using detailed establishment-level administrative data.

Türkiye's geographic proximity to the Middle East and North Africa makes the Turkish economy sensitive to geopolitical risks due to ongoing wars and tension in the region. An important event for the Turkish economy in the recent history was the civil war in the neighboring country Syria, which started in 2011. Türkiye and Russia became involved in the war in support of rival parties. Türkiye shot down a Russian warplane on the Syrian border on November 24, 2015 in response to which, Russia announced a package of economic measures against Türkiye. These sanctions restricted imports of some Turkish goods, restricted Turkish companies from operating in certain sectors in Russia, halted charter flights to Türkiye and banned Russian tour operators from selling trips to Türkiye. Russia was Türkiye's second largest trading partner and Russian tourists accounted for about 12 percent of foreign visitors coming to Türkiye in the 2012-2015 period. Therefore, these measures had an important impact on the Turkish economy especially on tourism, construction and food sectors. In this paper our aim is to assess the economic consequences of the tourism-related sanctions.

We focus only on the impact of the Russian sanctions on tourism activities, as we expect the largest impact to occur through the tourism channel for two reasons. First, tourism is one of the key sectors of the Turkish economy. Türkiye has always been a popular tourist destination attracting visitors from a wide range of countries. According to the rankings of the United Nations World Tourism Organization (UNWTO) in 2024, Türkiye ranks 4th (after France, Spain and US) in terms of international tourist arrivals. The tourism sector contributes significantly (around 3 percent) to GDP and employs a large proportion (about 9 percent) of the workforce. Moreover, tourism revenues constitute a source of foreign exchange inflow for Türkiye; a large open economy giving structural current account deficits. Second, Russia was the country that sent the second highest number of visitors to Türkiye, after Germany. In the 2013-2015 period, before the sanctions, nearly 30 percent of foreign visitors to Türkiye were German (19.3 percent) and Russian (11.2 percent). Therefore, given the importance of Russia for Turkish tourism and the importance of the tourism sector for the Turkish economy, we think that documenting the impacts of tourism-related measures would contribute to evaluate most of the overall impact of the Russian sanctions on the Turkish economy.

The political tension with Russia and the following economic sanctions were unexpected and exogenous as the two countries had been good allies except this event in 2015. For instance, Türkiye did not support international sanctions against Russia, which were imposed in 2014 due to the annexation of Crimea. Similarly, during the Russia-Ukraine war that started in February 2022, Türkiye refused to go along with the EU sanctions on Russia and moreover it was accused of acting like a "transit hub for Russia" enabling the economic blockade to be circumvented.¹ The exogenous and unexpected nature of the political shock allows us to employ a difference-in-

¹See Peters & Peters, "Turkey – a hub for Russia sanctions violations?", 5 October 2023, https://www.petersandpeters.com/2023/10/05/turkey-a-hub-for-russa-sanctions-violations/

differences framework to quantify the average impact of the sanctions on establishment-level performance indicators for the "treated" group relative to the "control" group of establishments that were not directly affected by the measures². The province in which a firm is located is defined as the location of its headquarters and does not necessarily reflect the exact location where economic activities are carried out. Therefore, we construct the data and conduct the empirical analysis at the establishment level in order to distinguish between branches of the same firm in different provinces and to obtain the correct location of activity, which is critical for our identification strategy. We use the variation in Russian tourist intensity across provinces for identification³. We identify treated and control provinces based on a metric that considers both the share of Russian tourists and the size of tourism sector in each province. Then, we compare establishments in the tourism sector in treated provinces with other establishments in the tourism and/or similar sectors in unaffected provinces in terms of total wage payments, average wage rates and total days worked (which is calculated by summing the days worked by each employee).

The establishment-level analysis in this paper contributes to the literature on the impact and effectiveness of economic sanctions by combining an administrative dataset of firms and establishments with a large political shock to examine its impact on establishment performance in the tourism sector. Although some macro-level estimates of the overall impact of the sanctions on economic growth have been conducted, to the best of our knowledge, this paper is the first to study the establishment-wise and time-varying economic impact of the Russia's tourism related sanctions. A related paper is Aytun et al. (2024) which analyzes the firm-level impacts of Russian sanctions that restrict imports from Türkiye. They estimate the impact of restrictions on imports of Turkish products on exporter firms using a different identification strategy.

Our analysis builds on a matched employer-employee dataset for the period 2013-2019 from the Entrepreneur Information System (EIS) of Türkiye which brings together large-scale confidential administrative datasets from multiple sources including the Ministry of Treasury and Finance (MoTF), the Ministry of Trade (MoT) and the Social Security Institution (SSI). We benefit from SSI records at employee level and balance sheet and income statements reported annually by firms to the MoTF. The dataset covers all registered firms in Türkiye. The detail of our data allows us to explore the role of heterogeneity in establishments on their responses to the sanctions.

In the empirical analysis, the main outcome variables of interest at the establishment level are total number of days worked, average daily wage and total monthly wage bill. Our baseline estimates show that total number of days worked in the treated (affected) group of tourism establishments decreased by about 15 percent in the first year of the sanctions and the negative differential impact gradually decreased and disappeared in three years. For robustness, we use various treatment and control groups in our analysis and the short run negative differential impact reaches to 25 percent in certain specifications. The monthly wage bill of the treated tourism establishments is estimated to be 12 to 20 percent lower in the short term, depending on the definition of the treatement and control groups. Using restaurants in unaffected regions as the control group, our results suggest that the political shock led to a loss of 11.5 million working days in the tourism sector in the two

 $^{^{2}}$ An establishment is a part of an enterprise that performs an economic activity in a geographically defined location by employing one or more people. An enterprise is a legal entity owned by one or more individuals or other legal entities. An enterprise may consist of one or more establishments operating in different locations. In this paper, we use the terms "enterprise", "company", and "firm" interchangeably.

³ Provinces correspond to NUTS-3 regions in Türkiye and there are 81 provinces.

years after the shock. This is a substantial cost given that the annual average of days worked in the three years before the shock was only about 14.8 million days.

The remainder of this paper is organized as follows. The next section provides a review of the relevant literature. Section 3 provides a brief background on the Türkiye-Russia political dispute and the Russian sanctions imposed in late 2015. Section 4 describes the establishment-level data used in this paper. In Section 5, we detail our identification scheme and present the main empirical findings on the time varying effects of the sanctions at the establishment level. Section 6 concludes the paper.

2. Literature Review

There is a rich literature that investigates the economic consequences (in terms of economic damage and costs) and political effectiveness of sanctions. Several studies have focused on the impact of sanctions on macroeconomic variables such as GDP growth (Hufbauer et al., 1997; Neuenkirch et al, 2015), international trade (Afesorgbor, 2019), foreign direct investment (Mirkina, 2018) and on income inequality (Afesorgbor et al., 2016). In general, the studies find evidence for the adverse effects of sanctions on terms of trade, income and welfare of the targeted economies (Felbermayr et al., 2021) as well as limited adverse effects for the imposing countries (Morgan et al., 2023). There are also papers studying how third countries adjust to sanctions (Corsetti et al., 2024). The number of papers that deal with micro-level impacts of sanctions have also increased recently, thanks to the availability of administrative firm level datasets. Crozet et al. (2021) investigates how exporting firms in France react to sanctions while Görg et al. (2024) assess the impact of EU sanctions on Russia on export behavior and performance of German firms. Ahn et al. (2020) focus on the effects of the sanctions on Russian in 2014 on firms' financial performance.

The political tension between Türkiye and Russia also arouse interest in the literature dealing with economic sanctions. Hall et al. (2021) discuss strategies followed by firms or states that face sanctions and point that Turkish tourism firms followed policies to attract more visitors from Turkish citizens and from other countries such as Iran and Azerbaijan to compensate for the decrease in the number of Russian visitors. Other studies focus on the net effect of the sanctions on macroeconomic aggregates (Başıhoş et al., 2015; Bilgiç-Alpaslan et al., 2015). Aytun et al., (2024) analyze the firm-level economic consequences of the Russian sanctions that restricted imports from Türkiye for some products. Using customs and firm-level data, they conclude that the restrictions resulted in a trade loss of about USD 3 billion for Turkish exporters. We contribute to the literature by assessing the establishment level impact of Russia's restrictions on tourism activities imposed in 2015 on the Turkish tourism sector. To the best of our knowledge, this is the first attempt to identify the establishment level consequences of the tourism restrictions.

3. Background of Russia-Türkiye Dispute and the Plane Crisis

Syria is Türkiye's southeastern neighbor with the longest land border. The Syrian civil war started in March 2011. Being complicated by the involvement of global powers and many neighboring countries, the war had important repercussions for Türkiye. First, it triggered a massive influx of refugees as Türkiye implemented an open-door policy toward Syrian refugees and provided them "temporary protection" status (Akgündüz et al., 2024). The number of Syrian refugees in Türkiye

is reported as 3.8 million as of 2024. The second important development was Türkiye's involvement (first diplomatically, then militarily) in the Syrian civil war in support of Syrian dissidents. On the contrary, Russia supported the Syrian government since the beginning of the conflict in 2011 and was militarily involved on 30 September 2015. As a result, Russia and Türkiye, once allies, turned against each other in the Syrian civil war.

Relations between Türkiye and Russia deteriorated when Türkiye shot down a Russian warplane on the Syrian border on November 24, 2015 due to the violation of Turkish airspace. On November 30, the Russian Government issued Executive Order 1296, outlining the sanctions on Türkiye. These measures, which came into force on January 1, 2016, restricted imports of some Turkish goods (mainly agricultural products such as fruits and vegetables), restricted Turkish companies from operating in certain sectors (such as construction, architecture, and engineering), halted charter flights to Türkiye, suspended visa-free travel for Turkish citizens, and banned Russian tour operators from selling tours to Türkiye. It was not specified how long the restrictions would last when they were announced and were eased progressively over the subsequent two years. The travel restrictions were lifted in late 2016 while it took until November 2017 for the import restrictions to be fully removed.

Before sanctions, Russia ranked the second country (with an average of 4.2 million Russian visitors in Türkiye in the period 2013-2015) in terms of the number of foreign visitors to Türkiye. In 2016, the number of visitors from Russia decreased by 76.6 percent annually due to the prohibitions, and Türkiye's travel revenues decreased by 30 percent. In 2017, the number of Russian tourists increased and reached pre-sanction averages thanks to the relaxation of the restrictions.

4. Data

The Entrepreneur Information System (EIS) is maintained by the Ministry of Industry and Technology and is available for on-site working. We use three datasets covering the universe of registered firms in Türkiye between 2013-2019. These datasets are 1) the employer-employee data, 2) the balance sheet and income statements data, and 3) the annual firm registry data from which we extract each firm's and establishment's province and four-digit activity code. The EU's statistical classification of economic activities, NACE Rev. 2, is used for activity classification.

We are mainly interested in the establishment level impact of Russian sanctions on the tourism sector. However, there is no specific "tourism sector" in the system of classification of economic activities and tourism is scattered across different industries. As defined by the UNWTO, tourism is "*people's travelling and staying at places outside their usual environment for leisure or business purposes*". Since the accommodation activities constitute the core of the sector, we proxy the tourism with the "accommodation" sector (two-digit NACE code: 55) throughout the paper.

The merged dataset includes information on firm, establishment and worker identifiers, days worked and wages earned by each employee, employee's gender and age, and firm characteristics such as province, sector, age and size. The data provides information only on formal employees registered in SSI records and lacks informal employment. We calculate the total number of days worked, the average real daily wage paid, and the total wage bill for each establishment at each quarter. Location information is available at both firm and establishment level. The firm province is based on its headquarters and biased towards big cities, while the establishment province shows

exactly where the establishment operates. As explained in the next section, the province of activity is the backbone of our identification strategy. Therefore, we construct the dataset at establishment level so that we can distinguish between establishments of the same firm in different provinces.

The annual firm registry data indicates that tourism firms witnessed an average annual fall in net sales by 10.3 percent in 2016, while 25th and 75th percentiles of change in net sales were -46.8 percent and 24.3 percent, respectively. Hit by the political shock, 832 tourism firms were closed in 2016 and those which continued operating tended to decrease employment. The annual change in employment in 2016 was -11.7 percent on average, while 25th and 75th percentiles were -36.8 and 10.0 percent, respectively.

We are interested in the impact of the sanctions on tourism establishments that were continuously active (with positive net sales) in the period 2013-2015. This way we try to select a sample of stable establishments with certain level of experience in the sector. This group of establishments were likely to continue operating in the absence of a shock and hence the changes in the dynamics of these establishments in the post-2015 period can be attributed to the political shock and the subsequent sanctions⁴. There are 7,516 such firms with 8,596 establishments. 18.2 percent of these establishments are located in İstanbul and 27 percent of them are located in Antalya, Muğla, Edirne, Kırklareli, Artvin and Ardahan provinces. As will be detailed in the next section, tourism establishments in these provinces are chosen as our treatment group for the empirical analysis. Our dataset also includes establishments in the food and beverage service sector (we refer to this sector as "restaurants" for short), which are used to construct the control group. In the period 2013-2015, there were 41,919 establishments in this sector, 32.4 percent of which were located in İstanbul.

5. Empirical Framework

This section aims to quantify the average impact of the political conflict with Russia and the subsequent tourism-related sanctions on tourism establishments. The political conflict with Russia, an important trading partner of Türkiye, was unanticipated and exogenous to Turkish firms and we assume that the shock had no causal effect prior to its realization. This allows us to adopt a difference-in-differences approach.

5.1. Identification Strategy

The treatment event is the political shock at the end of 2015 and the sanctions imposed by Russia which aimed at restricting tourism. The shock we are analyzing is sector-specific, so sector is one key variable for selecting the treated and control group of establishments. Moreover, there were other developments during the sample period that have potential to have heterogenous effects across sectors. First of all, following the general elections in 2015, the social unrest was high in Türkiye with several terror attacks and an attempted military coup in 2016. These events raised concerns about security in Türkiye and had repercussions especially on the service sectors⁵. Second, in January 2016, the minimum wage was raised by 30 percent, much higher than the level

⁴ We employ a similar idea with the job displacement literature where a group of long-tenured workers are selected for analyzing the impact of job displacement (Jacobson et al., 1993). Similarly, we choose o group of long-experienced employers by conditioning on 3 years of continuous activity in the sector when the shock happened in end-2015. ⁵ The number of foreign visitors to Türkiye fell by 25 percent in 2016. The annual decrease in the number of Russian

The number of foreign visitors to Turkiye fell by 25 percent in 2016. The annual decrease in the num visitors (77 percent) made the highest contribution

implied by inflation realizations⁶. Minimum wage affects the overall wage level and the firm behavior in all sectors⁷. Therefore, we need a control/comparison sector which was not directly exposed to the political shock (the sanctions by Russia) and iss structurally similar to the tourism sector so that the impact of these additional developments is comparable to the tourism sector. For this purpose, we conduct a cluster analysis at two-digit sector level. We compare the following variables for tourism and non-tourism sectors: (i) Herfindahl-Hirschman index of geographical concentration that shows the extent to which employment in a particular industry is distributed among provinces (ii) Average plant-size (iii) Share of female employees (iv) Geometric average of log-transformed daily wage (v) Standard deviation of log-transformed daily wage (vi) Average age of firms in that sector.

The cluster analysis suggests that the most similar sectors to tourism (accommodation) are "food and beverage service activities" (for short, restaurants, NACE 56) and "insurance, reinsurance and pension funding, except compulsory social security activities" (NACE 65, See Fig.1). The size of the restaurants sector in terms of employment is comparable to the tourism sector while the insurance sector is small. The total number of days worked in 2015 is almost 40 times higher in the tourism sector than the insurance sector. Moreover, total employment in the insurance sector grew by 1.8 percent in 2016 while it declined by 17.6 percent and 1.9 percent in the tourism and restaurants, respectively. Considering these pre-shock differences, we choose our control sector as the restaurants sector.



Fig. 1. Cluster Dendrogram. The figure plots the hierarchical relationship between sectors based on geographical concentration, average plant size, female employment share, average firm age, geometric average and standard deviation of wages at each sector. The numbers indicate the two-digit NACE codes. The accommodation sector (55) and the most similar sectors ("56-food and beverage service activities" and "65-insurance activities" are shown within the blue rectangle. Source: EIS and authors' calculations.

Having the restaurants in the control group helps us to minimize the impact of above-mentioned macroeconomic and political developments -except the political shock- on our results. First of all, similar to the tourism sector, the food and beverage sector is also sensitive to panic sentiments due

⁶ This hike was substantially higher than previous minimum wage increases, which were at levels close to the inflation rate. The increase in 2016 was nearly seven times higher than the cumulative inflation in the second half of 2015.

⁷ The share of minimum wage workers in the last quarter of 2015 was as high as 36 percent. 30 percent increase in the minimum wage pushed up the median wage (by 23 percent) of the entire sample in 2016.

to security concerns and the terror attacks in 2015 and 2016 adversely affected this sector as well. Secondly, the share of minimum wage earners in the food and beverage sector is also high⁸. Based on this, we assume that the impact of the minimum wage hike on the restaurants and tourism sectors was comparable. Thus the differences in the outcomes between the treated tourism establishments and the control group of restaurants would be free of the potential impact of the minimum wage increase.

The other dimension we need to consider when selecting the treated and control groups is the location of the establishment. The impact of the shock is expected to be heterogeneous across provinces for two reasons: First, the provinces where tourism is an important economic activity would be affected more by the tourism-related sanctions. Second, the establishments operating in provinces, where the number of Russian visitors in the pre-2015 period was higher would suffer more. We search for a metric to capture such provincial heterogeneity⁹. To account for both dimensions, we base our identification on the Russian Tourist Intensity (RTI) ratio calculated as the ratio of the number of Russian tourists to the size (total number of employees) of the tourism sector in each province. The RTI will reflect both the role of tourism as an economic activity (proxied by the total number of employees in the tourism sector) and the role of Russia in tourism activities (proxied by the number of Russian visitors) in that province. The pre-shock average of the RTI ratio ranges between 0 and 96 over 81 provinces. We group provinces as affected (treated) and unaffected (control) based on this constructed measure. The provinces where average value of the RTI in 2013-2015 period is greater than 10 (İstanbul, Antalya, Muğla, Artvin, Ardahan, Edirne and Kırklareli) are classified as affected/treated provinces. The rest of the 74 provinces form "the unaffected regions" group.

In sum, our identification strategy uses the variation in tourism intensity across 81 provinces. Tourism establishments in affected provinces form the treatment group, while restaurants in unaffected provinces are taken as the main control group. We exclude restaurants in treated provinces in the baseline estimations because they may also be affected by the political shock as the fall in number of tourists in affected provinces may also mean less customers for restaurants in this region. For robustness, we also try various treatment and control groups as presented in the Appendix B¹⁰. The sample includes nearly 8600 establishments in the tourism sector. 45.3 percent of these establishments are in the affected region. 40.3 percent (1,567) of the treated tourism establishments (3,891) are in İstanbul. The number of tourism establishments in affected provinces declined by 6.3 and 11.2 percent year-on-year, in the second and third quarters of 2016, respectively¹¹.

⁸ According to SSI data, the share of minimum wage earners in 2015 was 17.5% and 42.2% in hotels and restaurants, respectively.

⁹ There are also differences in tourism intensity among districts of same province. However we do not have data on the number and natioanlity of foreign tourists at district level. Due to this limitation we use the provincial level variation in our analysis.

¹⁰ As an alternative, we exclude establishments in İstanbul from treated sample to avoid it dominating the affected region group as it is the most important province of Türkiye in terms of economic activity. For the control group we try three more alternatives: (i) tourism establishments in the unaffected provinces, (ii) restaurants and tourism establishments in the unaffected provinces, and (iii) all restaurants.

¹¹ For Türkiye, the 2nd and 3rd quarters are the high season periods for tourism and thus the highest impact on tourism sector is expected to occur in these periods.

5.2. Parallel Trends

A key identifying assumption to be satisfied in a difference-in-differences analysis is that of parallel trends. It is often difficult to be sure of the validity of this assumption and there are problems with testing procedures in large samples where tests are inclined towards rejection (Bilinski et al, 2018). Before the testing procedures, we present a region-based comparison for some key variables.



Notes: The establishments are classified based on the calculated RTI ratio. İstanbul and 9 other provinces form the affected region. Fig. 2 plots the average real daily wage rate while Fig. 3 compares the total days worked in İstanbul, other affected and unaffected provinces. Source: EIS and authors' calculations

Figure 2 compares the average real daily wage (wage in short) paid in the tourism sector. Wages seem to be relatively higher in İstanbul compared to other regions. In 2016, the wages in the unaffected tourism establishments increased sharply probably reflecting the minimum wage hike in January 2016, which will be discussed in the next section. Wages paid by tourism establishments in İstanbul and other affected regions decreased relative to those paid by tourism establishments in unaffected region in 2016 and 2017. The deterioration in relative wages was higher in affected regions other than İstanbul. Compared to the end-2015, the wages in 2016q3 were 16 percent and 12 percent higher in the unaffected region and İstanbul, respectively; while it was 1 percent lower in other affected provinces (Fig. 2). This may be due to the decrease in the number of high-paid workers in other affected provinces or to the labor hoarding behavior of establishments in this region. The total number of days worked decreased in all regions in 2016 (Fig. 3). The annual decrease was highest in other affected provinces (-26 percent), compared to that in İstanbul (-20 percent) and in unaffected region (-11 percent).

To guarantee the validation of parallel trends assumption, we construct a matched sample of establishments using the coarsened exact matching (CEM) method. We use the k-to-k CEM method to match a treated group establishment with a control group establishment whose pre-shock (2015q2) values of age, total number of employees, proportion of female workers are similar to the treated establishments.

The parallel trend assumption in the matched sample of establishments is satisfied in all cases for baseline equations with establishment-level covariates when the treatment group is tourism establishments in all treated provinces, except when the dependent variable is the average daily real wage. We check by testing the significance of the differential trend term (Table A1). Insignificance of this term implies that trend differences between treatment and control groups are small enough to have a negligible impact on the treatment effect (Bilinski et al, 2018). Figure A1 presents a comparison of the average daily wage variable for treated and control groups. The test results are biased towards rejection because of the larges sample size. But the visual comparison also does not indicate a significant difference for the pre-treatment period.

5.3 Empirical Findings

In order to test the effect of the political shock, we use the two-way (individual and time) fixed effects framework proposed by Wooldridge (2021). This method allows the average treatment effect to differ in each quarter of the post-shock period. We focus on the years 2013 to 2019 and compare the establishment level indicators before and after the imposition of sanctions (in end-2015), for the establishments exposed to the sanctions, and those that are not. In this framework, the years 2013-2015 constitutes the pre-shock period and the years 2016-2019 the post-shock period. Our empirical specification has the following form:

$$\ln(y_{irt}) = \alpha_i + \beta_t(w_{it} \times time_t) + d_i * time + \gamma X_{i,2013} * time_t + \theta_t + \mu_{rt} + \varepsilon_{irt}$$
(1)
$$w_{it} = d_i * post_t \quad post_t = 1 \text{ if } year \ge 2016$$
$$time_t = t \text{ if } t \in [2016q1, 2019q4]$$

 y_{irt} denotes the outcome variable for establishment *i* operating in province *r* at time *t*. The dependent variables of interest are the total number of days worked, the real monthly wage bill and the average real daily wages. The treatment status variable d_i is equal to 1 for the treated group of establishments and zero otherwise. We classify an establishment as treated if it operates in tourism sector in a province with an RTI value above 10. $w_{i,t}$ is the difference-in-differences term taking value 1 if the establishment is in the treatment group and $t \in [2016q1, 2019q4]$. All the dependent variables are in log-transformed form and e^{β} -1 would give the percentage impact of the shock on the outcome of the treated establishment.

We control for establishment-level (α_i), year-quarter (θ_t), and time-province (μ_{rt}) fixed effects. The latter is to control for the possibility of establishments from different regions having different trends in performance as the regions of Türkiye vary in development levels (Akgündüz, et al., 2019). The term d_i *time is the linear trend difference included to control for pre-shock trends. X_i is the time-constant covariates for establishment characteristics including 2013 values of size and age of the affiliated firm, establishment size, average proportion of female workers and average age of workers in the establishment¹².

The main parameter of interest is β_t which shows the differential effect of the shock on the outcome variable in treated tourism establishments relative to those in the control group, for each *t* in the 2016q1-2019q4 period. Our estimation sample consists of continuously active establishments in 2013-2015, matched by the CEM method. Figures 4 to 6 show the coefficient β_t in equation (1). In the baseline, treated tourism (TT) establishments, that operate in affected provinces, form the treatment group¹³. Tourism establishments in other provinces (TO) and restaurants in other provinces (RO) are two main control groups. We also compare TT group with all restaurants (R)

¹² It is calculated as the deviation of X_i for an establishment from the mean of X in the treated sample.

¹³ We have an alternative treatment group (TT2) where we exclude tourism establishments in İstanbul.

and tourism establishments and restaurants in other provinces (TORO). The estimation results for all combinations of treatment and control groups are presented in Appendix A. The parallel trend assumption is ensured either by standard tests or by comparing the estimation results with and without the linear trend difference (d_i *time) term.



Fig. 4. Effects on the total number of days worked. The figure plots the estimated β coefficients from Equation (1). A blank marker with no color fill indicates that estimated coefficient is insignificant at 5 percent (with p-value>0.05). The vertical bars indicate the 95 percent confidence interval. Tourism and restaurants stand for accommodation and food and beverage service sectors, respectively. Treated provinces (İstanbul, Antalya, Muğla, Edirne, Artvin, Ardahan and Kırklareli) have an RTI value above 10 in the period 2013-2015. The remaining 74 provinces form the "other provinces" group. Robust standard errors are used.

Figure 4 plots the estimated coefficients that compare the total number of days worked in tourism establishments located in affected provinces (TT) to the four control groups of establishments.

This variable reflects both the change in the total number of employees in an establishment and the average length of days worked by employees. Estimation results imply negative and significant coefficients for the 2016-2017 period in all four comparisons. The impact is small in the first quarter after the shock (2016q1) and increases in the high season periods such that the total number of days worked in the treated group of establishments is lower by around 11 to 17 percent in the last three quarters of 2016. The differential adverse impact becomes the highest (around 20 percent) in 2017q1 and diminishes gradually afterwards. The magnitude of the differential impact is higher when the control group is "restaurants in unaffected provinces".



Fig. 5. Effects on average daily wage (Log-transformed, real). The figure plots the estimated β coefficients from Equation (1). A blank marker with no color fill indicates that estimated coefficient is insignificant at 5 percent (with p-value>0.05). The vertical bars indicate the 95 percent confidence interval, standard errors are clustered at establishment level. Tourism and restaurants stand for accommodation and food and beverage service sectors, respectively. Treated provinces (İstanbul, Antalya, Muğla, Edirne, Artvin, Ardahan and Kırklareli) have an RTI value above 10 in the period 2013-2015. The remaining 74 provinces form the "other provinces" group. Robust standard errors are used.

Figure 5 plots the differential impact of the political shock on the average daily real wage paid by the establishments in the treatment group. The estimated impact relative to all control groups was slightly negative for the whole sample period. Related to the seasonality in the tourism sector, the estimated impact fluctuates such that it is less negative in high-season periods (i.e. the second and third quarters). We do not observe a sharp difference between treated and untreated tourism establishments. The average daily wage paid by tourism establishments in the affected region was only 1-2 percent lower than those in unaffected provinces in each quarter. The estimated impact becomes stronger when the comparison group includes restaurants. The daily wage paid by the treated tourism establishments in unaffected provinces (RO) in 2016-2017 period. When compared to the wage paid by restaurants in unaffected provinces (RO) in 2016-2017 period. When compared to restaurants in all provinces (R), the estimated decrease in the average real daily wage paid by treated tourism (TT) establishments compared to the control group may be driven by two things. It may be because treated establishments began to offer lower wages compared to the control group or the relative number of high-paid workers may have decreased in the treatment group.

Figure 6 presents how total monthly real wage payments of the treated tourism establishments compare to those of the comparison group establishments. The monthly wage is affected both by the changes in the monthly wage rate and the number of employees. This variable may be interpreted as the monthly labor cost in real terms. In all four comparison groups, we estimate that treated establishments have persistently lower wage payments in 2016 and 2017. The magnitude of the impact is smaller when treated and untreated tourism establishments are compared.

Compared to other tourism establishments, monthly wage payments by the treated tourism establishments were lower by 10-15 percent in the first two years after the shock. When compared to the restaurants in unaffected provinces, the monthly real wage bill of the treated tourism establishments were around 16 percent lower in 2016 and 2017. The impact begins to diminish after reaching almost 20 percent in the first quarter of 2018. The estimated coefficients are similar when the control group is all restaurants or tourism establishments and restaurants in unaffected provinces. The comparison results in terms of daily wage rates indicated a relatively small impact. Combining Figures 5 and 6, we think that movements in the monthly wage bill are driven by changes in the total days worked.

The establishments in the affected provinces that usually serve Russian tourists are likely to lower their prices to attract tourists from other countries planning to visit (unaffected) provinces. This response may mitigate the impact of the political shock in the treated provinces and cause a decline in tourism activity in the control group. Therefore, our estimates can be considered as a lower bound on the true effect.



Fig. 7. Effects on the monthly wage bill (Log-transformed, real). The figure plots the estimated β coefficients from Equation (1). A blank marker with no color fill indicates that estimated coefficient is insignificant at 5 percent (with p-value>0.05). The vertical bars indicate the 95 percent confidence interval, standard errors are clustered at establishment level. Tourism and restaurants stand for accommodation and food and beverage service sectors, respectively. Treated provinces (İstanbul, Antalya, Muğla, Edirne, Artvin, Ardahan and Kırklareli) have an RTI value above 10 in the period 2013-2015. The remaining 74 provinces form the "other provinces" group. Robust standard errors are used.

Finally, we make a rough cost analysis based on our baseline estimations where the treatment group is tourism establishments in affected provinces while the restaurants in unaffected provinces form the control group. The political shock led to a decrease of 11.5 million days in the total days worked in two years after the shock (Table 1). Given the average of total days worked in the 2013-2015 period (14.8 million days), this loss is quite significant. The loss in total wage payments in tourism establishments in the 2016-2017 period is estimated as USD 126 million. It should be

noted that the total cost of the shock would be higher due to the additional indirect costs that occurred through the spillover of the shock to non-tourism sectors through trade relations.

Table I. Cost of th	ie i onucai shock în the i our	ISIII Sector III Affected 110	VIIICES
	Working Days Lost	Wage Income Lost	Wage Income Lost
	(Thousand days)	(Million TRY)	(Million USD)
2016q1	469	22.8	7.7
2016q2	1,786	63.6	22.0
2016q3	2,127	72.7	24.6
2016q4	1,005	39.8	12.2
2017q1	1,456	51.9	14.1
$2017\bar{q}2$	1,920	66.4	18.6
2017q3	1,861	63.3	18.0
2017q4	864	35.5	9.4
Total	11,489	416	126

Table 1. Cost of the Political Shock in the Tourism Sector in Affected Provinces

Notes: The losses show the impact of the political shock in tourism establishments in affected provinces and are calculated with the estimated coefficients from equation (1) when the treatment group is tourism establishments in treated provinces and control group is restaurants in unaffected provinces.

6. Conclusion

Our paper provides an estimate of the impact of the political conflict with Russia after the downing of a Russian warplane by Türkiye and the subsequent tourism-related sanctions imposed as a response by Russia in 2015. Tourism is one of the key sectors of the Turkish economy not only for its contribution to GDP and employment, but also for being a source of foreign exchange inflow. Understanding the impact of sanctions on tourism is therefore a necessary step to assess the impact of the Russian sanctions on the Turkish economy. Based on this, this paper deals only with the restrictions on the tourism sector although the sanction package included other measures such as restrictions on the import of some products from Türkiye.

We use a rich set of administrative data with a quarterly frequency covering the period 2013-2019. An important feature that distinguishes our data is that it is at the establishment level. The shock we analyze is regional, as tourism is concentrated in certain regions of Türkiye and the Russian tourists tend to visit certain provinces more often. Therefore, we define the treated and control group of establishments based on their sector and province. Provinces having Russian tourist intensity ratio (ratio of number of Russian tourists to the number of employees in the tourism sector in each province) above a certain level (10) are classified as the treated provinces. In the baseline case, the treatment group consists of the tourism sector establishments in the treated provinces while restaurants in the untreated provinces form the control group. For robustness we use alternative definitions of the control group as (i) tourism establishments in untreated provinces, (ii) restaurants in all provinces, and (iii) restaurants or tourism establishments in untreated provinces. To ensure the validity of the parallel trend assumption, we construct a matched estimation sample using the CEM method. We compare the total days worked, the average real daily wage and the total monthly wage payments in treated and control group of establishments in the matched sample.

Our results show that the total number of days worked in the treated group of tourism establishments decreased considerably compared to all four control groups. The total number of days worked in treated tourism establishments is about 11 percent lower than that in other tourism

establishments. The impact is higher (14-18 percent) when compared to the restaurants in untreated provinces. The difference in average real daily wage between treatment and control groups is smaller in magnitude (about 2-3 percent). We also compare the total monthly wage bill as it reflects changes in the daily wage as well as the number of employees and number of days they work. The deterioration in the monthly wage bill paid by treated tourism establishments is more pronounced. In the first year after the shock, the monthly wage bill of treated tourism establishments was about 12 percent lower than that of other tourism establishments, while it was 17 percent lower than that of the restaurants in untreated provinces. These estimates should be interpreted as the average effect in the group of tourism establishments in the affected provinces. It should be noted that the differential impact of the shock may not be homogeneous across provinces. Different districts in a province may also have different exposure to the shock if the number of Russian tourists differs significantly across districts. However, we cannot test it due to data limitations.

According to official price indices, the average annual prices in the "hotels and pensions" group decreased by 1.6 percent in 2016. The fall was more significant during the high tourism season period. The average prices in this group fell by 3.3 percent in 2016q2-2016q3 period compared to the 2015q2-2015q3 period. These price changes imply that companies may have tried to attract tourists by cutting prices in order to compensate for the decrease in the number of Russian tourists. Therefore, it's likely that we underestimate the differential impact on the total days worked as we cannot account for this channel.

Our analysis shows that the political shock and the following tourism restrictions on Türkiye by Russia, in response to the downing of a Russian plane in November 2015, imposed significant costs on the Turkish economy in terms of lower wages, days worked, and, consequently, value added. We calculate the loss in total days worked as 11.5 thousand days and the lost wage income as USD 126 million in the two years after the shock. The impact on average wages in the affected establishments was not significant, meaning that the adjustment was mainly through employment.

Appendix

A. Estimation Output

Table A.1. Treatment group: Tourism Establishments in Treated Provinces Control Group: Restaurants in Unaffected Provinces

	Days Worked	Daily Wage	Monthly Wage Bill
03.16	-0.048 ^a	-0.026 ^a	-0.074
06.16	-0.132ª	-0.030ª	-0.162
09.16	-0.147ª	-0.011ª	-0.158
12.16	-0.135ª	-0.030ª	-0.165
03.17	-0.184ª	-0.034ª	-0.219
06.17	-0.117ª	-0.021ª	-0.139
09.17	-0.108ª	-0.009	-0.118
12.17	-0.104ª	-0.031ª	-0.134
03.18	-0.105ª	-0.042ª	-0.146
06.18	-0.039	-0.019 ^a	-0.058
09.18	-0.016	-0.024ª	-0.041
12.18	-0.020	-0.018ª	-0.038
03.19	0.012	-0.047ª	-0.035
06.19	0.060	-0.014	0.046
09.19	0.058	-0.024ª	0.034
12.19	0.031	-0.015	0.016
Observations	179706	179706	179706
# Establishments	7356	7356	7356
Adj. R-sq.	0.878	0.869	0.899

Notes: Estimated coefficients for equation (1). Number of observations, unique number of establishments are also displayed. ^a, ^b indicates significance at 1 and 5 percent. Robust standard errors are used.

	Days Worked	Daily Wage	Monthly Wage Bill
03.16	-0.102ª	-0.027ª	-0.128 ^a
06.16	-0.229ª	-0.033 ^a	-0.262ª
09.16	-0.191ª	-0.005	-0.196ª
12.16	-0.145ª	-0.041ª	-0.186 ^a
03.17	-0.216	-0.040 ^a	-0.257ª
06.17	-0.148ª	-0.018 ^a	-0.165ª
09.17	-0.119ª	-0.005	-0.124 ^a
12.17	-0.104ª	-0.040 ^a	-0.144 ^a
03.18	-0.142ª	-0.051 ^a	-0.194ª
06.18	-0.067^{a}	-0.017 ^a	-0.084ª
09.18	-0.033	-0.039 ^a	-0.071 ^a
12.18	-0.027	-0.031 ^a	-0.058
03.19	0.029	-0.070 ^a	-0.041
06.19	0.091ª	-0.016	0.075
09.19	0.096ª	-0.037 ^a	0.059
12.19	0.021	-0.021ª	0.000
Observations	114504	114504	114504
# Establishments	4648	4648	4648
Adj. R-sq.	0.886634	0.847609	0.907248

Table A.2 Treatment Group: Tourism Establishments in Treated Provinces excl. İstanbul Control Group: Restaurants in Untreated Provinces

Notes: Estimated coefficients for equation (1). Number of observations, unique number of establishments are also displayed. ^a, ^b indicates significance at 1 and 5 percent. Robust standard errors are used.

L.	Days Worked	Daily Wage	Monthly Wage Bill
03.16	-0.017	-0.008 ^b	-0.025
06.16	-0.107 ^a	-0.013 ^a	-0.120 ^a
09.16	-0.104 ^a	-0.011ª	-0.115ª
12.16	-0.108 ^a	-0.016 ^a	-0.124ª
03.17	-0.137ª	-0.016 ^a	-0.153ª
06.17	-0.115 ^a	-0.019 ^a	-0.134 ^a
09.17	-0.091 ^a	-0.008	-0.098 ^a
12.17	-0.101ª	-0.013 ^b	-0.114 ^a
03.18	-0.082 ^a	-0.017 ^a	-0.099 ^a
06.18	-0.053	-0.017 ^a	-0.070 ^b
09.18	-0.026	-0.012	-0.038
12.18	-0.036	-0.011	-0.046
03.19	0.049	-0.021 ^b	0.028
06.19	0.073 ^b	-0.010	0.064
09.19	0.081 ^b	-0.010	0.071 ^b
12.19	0.030	-0.002	0.028
#Observations	151184	151184	151184
#Establishments	6290	6290	6290
Adj. R-sq.	0.868	0.872	0.889

Table A.3 Treatment Group: Tourism Establishments in Treated Provinces Control Group: Tourism Establishments in Untreated Provinces

Notes: Estimated coefficients for equation (1). Number of observations, unique number of establishments are also displayed. ^a, ^b indicates significance at 1 and 5 percent. Robust standard errors are used.

Table A.4 Treatment Group: Tourism Establishments in Treated Provinces excl. İstanbulControl Group: Tourism Establishments in Untreated Provinces

1	Days Worked	Daily Wage	Monthly Wage Bill
03.16	-0.052 ^a	-0.008	-0.060 ^a
06.16	-0.177ª	-0.013ª	-0.190ª
09.16	-0.124 ^a	-0.003	-0.127ª
12.16	-0.126 ^a	-0.019 ^a	-0.146 ^a
03.17	-0.153 ^a	-0.015 ^b	-0.168 ^a
06.17	-0.082 ^a	-0.015 ^b	-0.098 ^a
09.17	-0.044	-0.001	-0.045
12.17	-0.056	-0.020 ^a	-0.075 ^a
03.18	-0.077 ^b	-0.020 ^b	-0.097^{a}
06.18	-0.027	-0.014	-0.041
09.18	0.001	-0.020	-0.019
12.18	-0.038	-0.014	-0.052
03.19	0.076	-0.033 ^a	0.043
06.19	0.125 ^a	-0.008	0.117ª
09.19	0.135 ^a	-0.021	0.114ª
12.19	0.046	-0.004	0.042
#Observations	98421	98421	98421
#Establishments	4044	4044	4044
Adj. R-sq.	0.879	0.856	0.900

Notes: Estimated coefficients for equation (1). Number of observations, unique number of establishments are also displayed. ^a, ^b indicates significance at 1 and 5 percent. Robust standard errors are used.

	Days Worked	Daily Wage	Monthly Wage Bill
03.16	-0.042 ª	-0.025 a	-0.068 ^a
06.16	-0.136 ^a	-0.030 a	-0.166 ^a
09.16	-0.137 a	-0.015 a	-0.152 ª
12.16	-0.139 a	-0.034 ^a	-0.173 ^a
03.17	-0.173 ^a	-0.037 ^a	-0.210 ª
06.17	-0.103 a	-0.027 ^a	-0.130 ª
09.17	-0.097 ^a	-0.012 a	-0.109 ^a
12.17	-0.075 ^a	-0.034 ª	-0.109 ^a
03.18	-0.066 ^a	-0.044 ^a	-0.110 ^a
06.18	-0.029	-0.026 ^a	-0.055 ^b
09.18	0.003	-0.027 ^a	-0.024
12.18	0.009	-0.025 a	-0.017
03.19	0.069 ^b	-0.053 a	0.016
06.19	0.104	-0.022 a	0.082 ª
09.19	0.113	-0.028 a	0.085 ^a
12.19	0.075 ^b	-0.023 ^a	0.053
Observations	191163	191163	191163
Establishments.	7782	7782	7782
Adi. R-sa.	0.883	0.872	0.904

Table A.5 Treatment Group: Tourism Establishments in Treated ProvincesControl Group: Tourism Establishments and Restaurants in Untreated Provinces

Notes: Estimated coefficients for equation (1). Number of observations, unique number of establishments are also displayed. ^a, ^b indicates significance at 1 and 5 percent. Robust standard errors are used.

 Table A.6 Treatment Group: Tourism Establishments in Treated Provinces excl. İstanbul

 Control Group: Tourism Establishments and Restaurants in Untreated Provinces

-	Days Worked	Daily Wage	Monthly Wage Bill
03.16	-0.082 a	-0.015 a	-0.097 ^a
06.16	-0.212 ^a	-0.023 ^a	-0.235 ^a
09.16	-0.188 a	0.000	-0.189 a
12.16	-0.126 ª	-0.032 ª	-0.159 a
03.17	-0.202 a	-0.028 a	-0.230 ª
06.17	-0.108 ^a	-0.016 a	-0.124 ª
09.17	-0.073 a	-0.001	-0.074 ^a
12.17	-0.057 ^b	-0.031 ^a	-0.089 ^a
03.18	-0.084 ^a	-0.036 ^a	-0.120 ^a
06.18	-0.035	-0.016 ^b	-0.051
09.18	0.009	-0.024 a	-0.015
12.18	0.003	-0.020 ^b	-0.017
03.19	0.068	-0.053 a	0.015
06.19	0.121 ^a	-0.007	0.114 ^a
09.19	0.130 ^a	-0.025 ^b	0.105 ^a
12.19	0.054	-0.015	0.039
#Observations	114956	114956	114956
#Establishments.	4648	4648	4648
Adj. R-sq.	0.889	0.852	0.909

Notes: Estimated coefficients for equation (1). Number of observations, unique number of establishments are also displayed. ^a, ^b indicates significance at 1 and 5 percent. Robust standard errors are used.

	Days Worked	Daily Wage	Monthly Wage Bill
03.16	-0.059 ^a	-0.030ª	-0.089 ^a
06.16	-0.155 ^a	-0.031 ^a	-0.187 ^a
09.16	-0.150 ^a	-0.014 ^a	-0.163 ^a
12.16	-0.124ª	-0.034 ^a	-0.158ª
03.17	-0.171ª	-0.040 ^a	-0.211ª
06.17	-0.113 ^a	-0.024 ^a	-0.137 ^a
09.17	-0.104 ^a	-0.014 ^a	-0.118 ^a
12.17	-0.078 ^a	-0.038 ^a	-0.116 ^a
03.18	-0.088 ^a	-0.050ª	-0.138ª
06.18	-0.038	-0.031ª	-0.068 ^a
09.18	-0.019	-0.038 ^a	-0.057 ^b
12.18	0.006	-0.031 ^a	-0.025
03.19	0.042	-0.063 ^a	-0.021
06.19	0.072 ^b	-0.027 ^a	0.044
09.19	0.081 ^a	-0.041ª	0.040
12.19	0.048	-0.028 ^a	0.020
#Observations	191288	191288	191288
#Establishments	7782	7782	7782
Adj. R-sq.	0.883	0.877	0.904

Table A.7 Treatment Group: Tourism Establishments in Treated Provinces Control Group: Restaurants

Notes: Estimated coefficients for equation (1). Number of observations, unique number of establishments are also displayed. ^a, ^b indicates significance at 1 and 5 percent. Robust standard errors are used.

Table A.8 Treatment Group: Tourism Establishments in Treated Provinces excl. İstanbul Control Group: Restaurants

	Days Worked	Daily Wage	Monthly Wage Bill
03.16	-0.088 ^a	-0.027ª	-0.116ª
06.16	-0.228 ^a	-0.032 ^a	-0.260 ^a
09.16	-0.181 ^a	-0.006	-0.186 ^a
12.16	-0.125 ^a	-0.044 ^a	-0.169 ^a
03.17	-0.184 ^a	-0.042ª	-0.226ª
06.17	-0.113ª	-0.016 ^a	-0.130ª
09.17	-0.081 ^a	-0.008	-0.090 ^a
12.17	-0.061 ^b	-0.043 ^a	-0.104ª
03.18	-0.082 ^a	-0.055ª	-0.137ª
06.18	-0.034	-0.025 ^a	-0.059
09.18	-0.011	-0.043 ^a	-0.055
12.18	0.007	-0.036ª	-0.028
03.19	0.070	-0.072ª	-0.002
06.19	0.109 ^a	-0.019 ^b	0.090 ^b
09.19	0.118 ^a	-0.042 ^a	0.076
12.19	0.041	-0.027 ^a	0.015
#Observations	114523	114523	114523
#Establishments	4648	4648	4648
Adj. R-sq.	0.888	0.860	0.909

Notes: Estimated coefficients for equation (1). Number of observations, unique number of establishments are displayed. ^a, ^b indicates significance at 1 and 5 percent with robust standard errors.

B. Parallel Trends

Treatment	Control Group	Days	Average Daily	Total Monthly
Group	Control Group	Worked	Real Wage	Wage Payments
	Restaurants in Untreated Provinces	1.401	28.334	2.056
		(0.220)	(0.000)	(0.068)
Tourism	Tourism establishments in	2.748	16.912	5.292
establishments	Untreated Provinces	(0.017)	(0.000)	(0.000)
in Treated	Tourism establishments and	1.067	27.956	2.341
Provinces	Restaurants in Untreated Provinces	(0.377)	(0.000)	(0.039)
	Restaurants	1.146	26.554	1.897
		(0.333)	(0.000)	(0.091)
E .	Restaurants in Untreated Provinces	5.178	31.733	4.226
		(0.000)	(0.000)	(0.001)
I ourism	Tourism establishments in	3.222	22.016	5.076
in Treated Provinces Exc. İstanbul	Untreated Provinces	(0.007)	(0.000)	(0.000)
	Tourism establishments and	4.307	31.670	3.990
	Restaurants in Untreated Provinces	(0.001)	(0.000)	(0.001)
	Postauranta	4.679	29.881	3.983
	Restaurants	(0.000)	(0.000)	(0.001)

Table B1. Testing Parallel Pre-shock Trends

Notes: Estimated δ coefficient from the following equation with the matched sample are displayed.

Notes. Estimated o contribute from the following equation with the internet sample are displayed. $\ln(y_{irt}) = \beta_t(w_{it} \times time_t) + \delta d_i * time + Fixed effects + Covariates$ Values in parenthesis are the p-values for Wald test for parallel trend assumption. Insignificance of the trend term indicates that parallel trend assumption is validated. Tourism and restaurants stand for accommodation and food and beverage service sectors, respectively. Treated provinces (İstanbul, Antalya, Muğla, Edirne, Artvin, Ardahan and Kırklareli) have RTI (ratio of number of Russian tourists to the size of tourism sector in a province) above 10 in the period 2013-2015. Remaining 74 provinces are the untreated provinces. The last three columns indicate the dependent variable used in the regression.



Control Group: Restaurants in Untreated Provinces

Control Group: Tourism Establishments in Untreated Provinces

Figure B1. Comparison of the log-transformed average daily wage rate. The treatment group is tourism establishments in treated provinces. Shaded area shows the post-treatment period.

References

Afesorgbor, S. (2019). The impact of economic sanctions on international trade: How do threatened sanctions compare with imposed sanctions? European Journal of Political Economy, 56, 11–26.

Afesorgbor, S., & Mahadevan, R. (2016). The Impact of Economic Sanctions on Income Inequality of Target States. World Development, 83, 1–11.

Ahn, D. P., & Ludema, R. D. (2020). The sword and the shield: The economics of targeted sanctions. European Economic Review, 130, 103587.

Akgündüz, Y. E., & Fendoğlu, S. (2019). Exports, Imported Inputs, and Domestic Supply Networks. CBRT Working paper, 19/08.

Akgündüz, Y. E., Aydemir, A. B., Cilasun, S. M., & Kirdar, M. G. (2024). Propagation of immigration shocks through firm-to-firm trade networks (No. 16770). IZA Discussion Papers.

Aytun, U., Hinz, J., & Özgüzel, C. (2024). Shooting down trade: Firm-level effects of embargoes (No. 2277). Kiel Working Paper.

Başıhoş, S., Taşöz, A., & İtez, C. (2015). Rusya ile Yaşanan Krizin Ekonomiye Olası Etkilerine Nasıl Bakılabilir?. Türkiye Ekonomi Politikaları Araştırma Vakfı Değerlendirme Notu, 201538.

Bilgiç-Alpaslan, I., Markovic, B., Tabak, P., & Zildzovic, E. (2015). Economic İmplications of Russia's Sanctions Against Turkey. European Bank for Reconstruction and Development, 7.

Bilinski, A., & Hatfield, L. A. (2018). Nothing to See Here? Non-İnferiority Approaches to Parallel Trends and Other Model Assumptions. arXiv preprint arXiv:1805.03273.

Corsetti, G., Demir, B., & Smarzynska Javorcik, B. (2024). Trading around geopolitics. Robert Schuman Centre for Advanced Studies Research Paper, (2024/43).

Crozet, M., Hinz, J., Stammann, A., & Wanner, J. (2021). Worth the pain? Firms' exporting behaviour to countries under sanctions. European Economic Review, 134, 103683.

Felbermayr, G., Morgan, T. C., Syropoulos, C. & Yotov, Y. V. (2021). Understanding economic sanctions: Interdisciplinary perspectives on theory and evidence. European Economic Review, 135, 103720.

Görg, H., Jacobs, A., & Meuchelböck, S. (2024). Who is to suffer? Quantifying the impact of sanctions on German firms. Journal of Economic Behavior & Organization, 228, 106767.

Hall, C. M., & Seyfi, S. (2021). Tourism and Sanctions. Research Handbook on Economic Sanctions, 351.

Hufbauer, G., Elliott, K., Cyrus, T., Winston, E., 1997. US Economic Sanctions: Their Impact on Trade, Jobs, and Wages. Working Paper Series Working Paper Special (2), Peterson Institute for International Economics.

Jacobson, L. S., LaLonde, R. J., & Sullivan, D. G. (1993). Earnings losses of displaced workers. The American economic review, 685-709.

Mirkina, I. (2018). FDI and sanctions: An empirical analysis of short- and long-run effects. European Journal of Political Economy, 54, 198–225.

Morgan, T. C., Syropoulos, C., & Yotov, Y. V. (2023). Economic sanctions: Evolution, consequences, and challenges. Journal of Economic Perspectives, 37(1), 3-29.

Neuenkirch, M., & Neumeier, F. (2015). The impact of UN and US economic sanctions on GDP growth. European Journal of Political Economy, 40, 110–125.

Wooldridge, J. M. (2021). Two-Way Fixed Effects, The Two-Way Mundlak Regression, and Difference-in-Differences Estimators. SSRN, 3906345.