

The effects of holiday vouchers on domestic tourism: evidence from a voucher program in Romania *

Ioana Ortan[†], Smaranda Pantea[‡] and Madalina Zamfir[§]

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Abstract

Voucher programs have emerged as key policy instruments for supporting sectors hit by the COVID-19 crisis. Despite high policy interest, there is limited econometric evidence on their effectiveness. We provide evidence on the impact of holiday vouchers on the development of the domestic tourism sector, based on a legislative change which made mandatory the provision of holiday vouchers for all public sector employees in Romania in 2018. Public sector employees represent 19% of all employees and, for the most part, had not received holiday vouchers since 2009, when they were first introduced. This provision led to a sudden, eight fold, increase in the value of holiday vouchers issued. We estimate the effects of this policy on firms in eligible accommodation and travel agency sectors using differences-in-differences methods and data on holiday voucher payments from the three issuing units and administrative data on the balance sheets of the firms in eligible sectors. We find that this program had large, positive effects on revenues and smaller, but significant effects, on employment of the exposed firms. The benefits were widespread in the economy, but differed across regions. In the most touristic regions, the provision of holiday vouchers mainly increased firms' revenues, while in the other regions it increased both revenues and employment. We also find evidence that it increased income declaration in the firms more exposed to informal economy.

Keywords: tourism, holiday vouchers, public policy, firm growth, regional differences.

JEL Codes: L83, D22, O38, R11, Z32

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[†]Ministry of Finance of Romania. Email: ioana.ortan@mfinante.gov.ro

[‡]Prague University of Economics and Business. Email: smaranda.pantea@vse.cz

[§]Ministry of Finance of Romania. Email: madalina.zamfir@mfinante.gov.ro

1 Introduction

Voucher programs have emerged as key policy instruments to support sectors hit by COVID-19 crisis, like tourism and culture. Currently, the scope of their use has increased significantly to address high prices of food and energy and access to educational, health, cultural and recreational services (Cvelbar and Ogorevc, 2020; European Commission, 2021b,c). Despite the widespread use of vouchers, there is limited econometric evidence on their effectiveness in addressing these issues (OECD, 2021b). This paper provides evidence on the effects of the provision of holiday vouchers for public sector employees on the domestic tourism sector in Romania.

Holiday vouchers are optional benefits provided by employers to employees and can be used to buy domestic touristic accommodation and travel agency services. They are intended to: (i) increase real disposable income and welfare of employees, (ii) increase the compensation of employees with limited fiscal costs for employers, which should improve productivity and employment stability, (iii) increase the demand for tourism and direct it towards domestic suppliers and (iv) help reduce informal economy. This paper focuses on the latter two effects on firms in domestic tourism sector. This is a relevant policy question given the increased popularity of holiday vouchers, often adopted with the aim to support the development of the domestic tourism sector¹, and the importance of tourism for local economy (Sequeira and Maçãs Nunes, 2008; Arezki et al., 2009; Faber and Gaubert, 2019) and reducing local unemployment (Leduc and Tojerow, 2020).

To assess the impact of holiday vouchers, we estimate the effects of a legislative change introduced in Romania in 2018, which made mandatory the provision of holiday vouchers for all public sector employees. This setting is useful to illustrate the effects of voucher programs for several reasons. First, this legislative change provides a quasi-experiment, which allows to estimate the causal effect of an exogenous increase in the holiday vouchers on firms in domestic tourism. While legislative framework for their provision existed since 2009, the decision to provide them or not for public sector employees was taken annually based on budget availability and the majority of public sector employees have not received them since 2009. Second, the large scale of this quasi-experiment makes its results directly relevant for policy making. Public sector employees represent more than one million employees and approximately 19% of all employees. Third, this policy had a specific focus on tourism related services, as vouchers could be used only on accommodation and travel agency services, which makes it easier to measure its impacts, and the policy design was such that it was easy to adopt for employers, employees and firms accepting the vouchers, which led to fast adoption. Indeed, this legislative change led to an eight fold increase in the value of holiday vouchers issued in 2018, the year of the policy change, and an additional doubling in the following year. Finally, Romania is a middle-

¹Currently, among EU countries, France, Czech Republic, Greece, Hungary and Slovakia use these vouchers. In some cases, the motivation was related to the negative effect of the COVID-19 crisis on tourism sector, but in the most cases, these programs predate the COVID-19 crisis (OECD, 2021b)

income, emerging economy, where income elasticity of tourism demand tends to be highest (Waqas-Awan et al., 2021; Rosselló Nadal and Santana Gallego, 2022) and where a large share of households cannot afford one week of holidays away from home (Eurostat, 2022a). In this context, it is, likely, that this measure has solved a real need and increased demand for tourism, rather than substituted private expenditure.

We estimate the effects of this policy on firms providing eligible, accommodation and travel agency services, using differences-in-differences methods and data on payments in holiday vouchers from the three firms licensed to issue holiday vouchers and administrative data on the balance sheet of firms. We do this by comparing the evolution of eligible firms that accepted holiday vouchers as a payment method in or after 2018 to firms that did not use them and, thus, were not affected by their provision to public sector employees. We also provide evidence that the two groups of firms followed parallel trends before the provision of holiday vouchers to public sector employees, and, thus, that the latter group provides a suitable counterfactual for the treated group. The results are robust to different definitions of the treatment based on the intensity of the use of holiday vouchers and to different definitions of the control group.

Our results show that the policy had positive effects on firms' revenues and employment. Two years after the mandatory provision of holiday voucher for public sectors employees, treated firms had, on average, 9% higher revenues and 4.6% more employees than non-treated firms. For firms that use holiday vouchers intensively these effects are even larger. We also assess to what extent these effects are driven by specific groups of firms. We find that the benefits from the holiday vouchers program were widespread in the economy. With the exception of the accommodation firms based in the two main cities on Romania, Bucharest and Cluj, where foreign and business tourism are prevalent, we find positive and significant effects for firms in all other regions. However, in the most touristic regions, the provision of holiday vouchers, mainly, increased firms' revenues, without affecting employment, likely, due to firms in these regions already operating close to their capacity before the provision of holiday vouchers to public sector employees. In the previously less touristic regions, the provision of holiday vouchers increased both revenues and employment. We also find that it helped reduce informal economy by increasing income declaration in firms more exposed to informal economy.

This study contributes to several strands of literature. First, it contributes to the literature on the effects of social vouchers, recently surveyed by (OECD, 2021b). The effects of vouchers have been extensively analyzed in the context of education (Epple et al., 2017). However, there is limited econometric evidence on their effects in other areas. Several studies find positive effects of meal vouchers on employees (Janský and Röhryová, 2016; Torres et al., 2020). The existing evidence on holiday vouchers is mostly descriptive (Puczkó and Rátz, 2011; Kouřilová and Kratochvílová, 2014). These studies describe programs that promote access to tourism for specific social groups in Czech Republic and Hungary and show that their introduction was associated with increases in the number of tourists and a development of the tourism sector, but without estimating econometrically their effects. They also highlight potential problems

of such programs, like, the disproportional benefits going to already very touristic regions. We contribute to this literature by providing the first econometric evaluation of the effects of holiday vouchers on the firms in tourism sector based on a quasi-experiment.

Second, it contributes to the literature on the effects of policies that aim to help the development of local or domestic tourism sector. This literature documents the importance of the exchange rate (Addessi et al., 2019), prices, in particular, price of transport (Garín-Muñoz, 2009), European Capital of Culture programs (Falk and Hagsten, 2017; Srakar and Vecco, 2017; Gomes and Librero-Cano, 2018), local fiscal (Garsous et al., 2017) and financial incentives (Srhoj et al., 2021). We add to this literature by providing empirical evidence on an increasingly popular demand side policy instrument – holiday vouchers, in contrast to previous studies that focused mostly on supply-side policies.

Third, the paper relates to the extensive literature on the determinants of tourism demand. This literature, based mostly on aggregate data, shows that personal income in the source market is a key determinant of tourism demand (Peng et al., 2014, 2015; Waqas-Awan et al., 2021; Rosselló Nadal and Santana Gallego, 2022). Moreover, it shows that income elasticity of tourism demand is often above one, implying that tourism is a luxury good, and that demand is most elastic in middle income countries (Waqas-Awan et al., 2021). These surveys also highlight a need for micro level evidence on this topic. This study addresses this gap in the literature by providing evidence on the firm level effects of an exogenous increases in income of a large share of employees on the demand for tourism in a middle-income country, where these effects tend to be highest.

From a policy perspective, the findings of this study suggest that holiday vouchers can be an effective instrument to support the development of domestic tourism. These findings can be relevant for countries where tourism demand is temporarily reduced, for instance by the COVID-19 crisis, and for countries where tourism demand is limited by low household income. In addition, they provide insights on the effectiveness of voucher programs in stimulating demand for similar domestic services and in reducing informal economy.

The paper is organized as follows. Section 2 describes the tourism sector in Romania and the holiday voucher program. Section 3 describes the empirical strategy used to estimate the effects of holiday vouchers. Section 4 describes the data used in the empirical analysis. Section 5 presents and discusses the main results and robustness checks. Section 6 examines the heterogeneity of the effects by region and section 7 the effects on informal economy. Section 8 discusses the main findings and their policy implications.

2 Holiday voucher program in Romania

2.1 Tourism sector in Romania

Romania has rich and varied natural touristic resources, owning the Danube Delta reserve, Black Sea coast, Carpathian Mountains, and historic and artistic heritage, such as, Bukovina monasteries, Transylvania historical region and balneary resorts, among others. Despite this potential, the development of the tourism sector in Romania has lagged behind.

The sector faces many challenges, reflecting a lack of collective vision and strategy for the local development. On the supply side, significant challenges are underdeveloped infrastructure, insufficient promotion, limited financial resources, high share of informality and shortage of skilled workers² (Horodnic et al., 2016; OECD, 2021a). On the demand-side, a key constraint is limited domestic demand. A large share of the population cannot afford one week of annual holiday away from home. Before granting holiday vouchers to public sector employees, more than 2/3 of Romanian citizens could not afford a one-week annual holiday away from home and this share was gradually reduced to 54% in 2019, but still remains the highest in the EU (Eurostat, 2022a). Likely, the large extension of holiday voucher program contributed to this decrease, but other factors, mainly double-digit increases of real wages, also have contributed to this decrease. At the same time, an increasing tourism deficit suggests that those who can afford such holidays often choose foreign destinations. The deficit of tourism trade had constantly worsened since 2007, reaching 1.0% of GDP in 2019, partly, due to easing travel conditions once Romania joined the EU, strengthening the catching-up process and improving purchasing power (GDP per capita has increased from 44.1% of EU average in 2007 to 72.9% in 2021, PPS), but also, likely, due to the problems of local tourism sector discussed above.

Over the last years, several steps have been taken towards a sustainable development of the sector and a higher added value model, including: the adoption of the Master Plan for investments in tourism, the introduction of holidays vouchers and since 2018 the provision of holiday vouchers to all public sector employees, certification of eco-products, training programs for employees, active collaboration with other stakeholders at regional or European level (OECD, 2021a). The sector also benefits from several tax incentives. Since 2017 until the end of the period studied, firms in accommodation sector benefit from a specific tax instead of the standard corporate income tax. This specific tax is a lump-sum tax and it is largely perceived as more favourable (Dănilă and Horga, 2017). Additionally, seasonal employees in tourism sector have been exempted from the personal income tax since 2017. Similar to other EU countries, a reduced VAT rate 5%, instead of standard VAT rate of 19% for hotel accommodation and food sectors was introduced in 2018 and extended in 2019 to other tourism related activities³.

²The outward migration has generated significant labor shortages and continues to represent a persistent challenge for the tourism sector in Romania. Over the last two decades, population fell from 22.5 million to 19.5 million, with emigration accounting for more than 75% of this decline. According to the World Bank's estimations, working age emigrants in OECD countries represent 19% of Romanian total working population (World Bank, 2018).

³More details on these measures are provided in appendix A

As a result of these measures and the economic growth in Romania, the sector has developed. The contribution of the tourism sector to total gross value added had increased from 1.6% in 2007 to 2.6% in 2019, before the outbreak of the pandemic. At the same time, the number of employees in the accommodation sector had grown by 13.5% (Eurostat, 2022b). On average, during 2007 – 2019, the number of total tourists visiting Romania almost doubled, from 6.9 million to 13.4 million (National Institute of Statistics, 2022). The dynamics of foreign tourists was similar, although milder, their number increasing by 73%, from 1.5 million to 2.7 million (National Institute of Statistics, 2022). Data indicates high seasonality – threatening the viability of businesses in this sector - and a strong geographical concentration, with more than 55% of total tourists visiting the capital city, seaside, mountainside, few historical counties (Cluj, Sibiu, Iași) and balneary resorts (Vâlcea). The large majority chooses hotels, tourist and agritourism pensions. A large share of foreign tourists visit the capital city (more than 40% of them - indicating not necessary leisure, but business trips). The small number of foreign tourists at the seaside indicates a lack of competitiveness at regional level (Costea et al., 2016), while few foreign tourists in the other regions is mainly due to insufficient promotion (Postelnicu and Dabija, 2016) and underdeveloped transport infrastructure. The majority of foreign tourists come from Hungary, Moldova, Bulgaria, Ukraine, Germany and Italy.

Another important problem of the sector is informality. The share of undeclared work is higher in tourism sector than in the rest of the economy due to several reasons, such as: (a) large number of tourist businesses are small-scale businesses and individuals, (b) financial transactions often consist of small amounts, (c) large fluctuations of customers depending on the seasons, (d) many accommodation units are located in rural or isolated areas. According to some estimations over 20% of all accommodation services provided at the Romanian seaside are informal (Jaliu and Răvar, 2019). All these features make detection difficult for enforcement authorities and income declaration is an important problem of the sector (Horodnic et al., 2016; Williams and Horodnic, 2020), .

In this context, the provision of holiday vouchers for public sector employees has the potential to reduce several constraints to the development of Romanian tourism. First, it increases the affordability of one week of annual holiday, which can be paid in holiday vouchers. Moreover, as vouchers can be used only for domestic touristic accommodation or travel agency services, they direct this demand towards domestic tourism. Given the high dependence on the domestic tourism, more than 80% of the tourists (National Institute of Statistics, 2022), and the low affordability of holidays away from home for a large share of the population, this measure is likely to have an important impact on increasing demand for domestic tourism. Figure 1 provides supportive evidence. It shows that in 2018 there was a steep decrease in the share of households that cannot afford of one week of holiday (left panel) and of the expenditure on tourism accommodation in Romania (right panel), that did not occur in the rest of the EU, consistent with a sizable impact of holiday vouchers on affordability of holidays away from home. Second, they may address another important challenge for the sector – informality. One of the

aims of the holiday vouchers was to encourage companies in the tourism sector to request legal authorization and to engage in formal transactions. (Williams and Horodnic, 2020) provide descriptive evidence showing an increase in requests for legal authorization after the holiday voucher program for public sector employees in 2018.

2.2 Institutional context of the holiday voucher program

Among EU member states, holidays vouchers are currently used in Czech Republic, France, Greece, Hungary, Romania and Slovakia. More recently, in the context of the fast-increasing prices of staples and energy, the governments extended the use of vouchers by granting social vouchers for vulnerable households in order to buy staple food and for students to buy food, school supplies and clothes (European Commission, 2021a). In the case of Romania, several other types of vouchers are used, including: food, eco, gift and cultural (OECD, 2021b). Thus, the results of this study might be informative for other countries using or considering adopting holiday vouchers and for other types of vouchers.

Holiday vouchers were introduced in Romania in 2009 through ordinance 8/2009. Holiday vouchers are optional benefits provided by employers for employees, which can be used to buy domestic touristic accommodation and/or services from travel agencies. Vouchers are solely subject to personal income tax (10% flat rate), which makes them attractive for both employers and employees. In addition, the value of holiday vouchers is a deductible element within the corporate income tax computation. As a rule, holiday vouchers have a validity of one year and in case an employee does not use them, then the personal income tax is reimbursed⁴. The package of tourist services that can be purchased using holiday vouchers includes accommodation services, meals, transport, spa treatment and leisure from firms in accommodation and travel agency sectors. The very specific focus of this program makes it easier to measure its market outcomes.

The aim of this measure was fourfold: (i) to promote domestic tourism, (ii) to reduce seasonality, (iii) to tackle the high level of informality in this sector, and (iii) to reduce the emigration towards Western countries. In a nutshell, this measure intended to provide employers with an option that allows them to increase the real income and welfare of their employees with limited additional fiscal costs. Offering these benefits may help employers to reduce employment turnover, which was an important problem for many companies, especially for small and medium size firms (SMEs), and increase employees' motivation and performance. Thus, it was expected that they would help improve employment stability and labor productivity. As the aim of this measure suggests, holiday vouchers' effects are complex, affecting at the same time the employees, the employers and the firms providing eligible services. This study focuses on their effects on the firms in tourism sector.

⁴However, given the travel restrictions imposed during the pandemic, the validity of all vouchers issued for public servants during 2019-2020 was extended until mid-2022 and no further vouchers were issued in 2021. For 2022, new holiday vouchers were granted to public employees.

For the public sector employees, the conditions of granting holiday vouchers included the availability of public funds. Most public sector employees have not received holiday vouchers since 2009 due to fiscal consolidation efforts in the aftermath of the financial crisis. However, a legislative change introduced in 2018, Law 165/2018, made mandatory the provision of holiday vouchers for all public sector employees. The value of the holiday voucher package in the public sector was decided at the level of 2017 minimum gross wage, which was 1450 RON, or approximately 310 EUR at the time and this value was maintained fixed during the period 2018-2022. Private companies can grant holiday vouchers equivalent to six minimum gross wages per employee in one fiscal year. According to the Ministry of Finance data, public sector employees represent more than one million employees and approximately 19% of all employees ⁵, thus, had a sizable effect on the total holiday vouchers issued and on the domestic tourism demand. Moreover, the intend of the provision of the holiday vouchers to public sector employees was to increase the provision of holiday vouchers also in the private sector, either by demonstrating their benefits or by anchoring employees' expectations and competition in labor market. Figure 2 shows descriptive evidence that the value of holiday vouchers provided by private sector employees has also increased after 2018, although slower, suggesting that such effects took place.

Several aspects of this policy are worth highlighting. First, the use of vouchers creates quasi-markets and should lead to a more efficient allocation of financial resources than direct of government support measures through bureaucratic processes (Le Grand, 1991). In the quasi-markets, the suppliers of eligible services compete for the vouchers and for the final customers based on cost-efficiency and quality of services, which improves allocative efficiency and rewards firms that provide the most cost-efficient and high quality services. Over time, this may also stimulate firms to increase their efficiency and quality of services (Le Grand, 1991). Moreover, tourism sector is a suitable sector for such markets, as it fulfills many of the requirements for the quasi-markets to work well, including: a competitive structure, prevalence of a large number of small firms, low minimum efficient scale and low switching costs (Lewis, 2017).

Second, the policy design facilitated easy and fast adoption of vouchers by employers, employees and firms accepting the vouchers. Holiday vouchers can be issued by three companies that were licensed to issue them (called issuing units). A firm providing accommodation or travel agency services has to be affiliated with one of these three firms in order to be able to accept and process payments in holiday vouchers for its services. According to the legislation, issuing units can charge a cumulative commission from the employer and the affiliated units of maximum 1% of the total value of vouchers. On the other hand, travel agencies, as affiliated units, can charge from customers a maximum of 10% of the value of tourism services. Thus, vouchers are more advantageous from a cost perspective. The affiliation process is fully digitized and involves mainly the provision of documents related to legal authorization and can be performed within hours. Once signed, the contract of affiliation is perpetual. Overall, the

⁵Source: mfinante.gov.ro/domenii/bugetul-de-stat/numar-salariati-bugetari

affiliation process is low cost, timely and easy to use.

3 Empirical Strategy

As the adoption of this legislative change has the characteristics of a quasi-experiment, we use differences-in-differences methods to estimate the impact of the holiday vouchers program for the public sector employees on firms providing eligible accommodation and travel agency services. This strategy compares the evolution of firms exposed to the provision of holiday vouchers for public sector employees and started receiving them as payment in or after 2018, to the evolution of firms that did not use holiday vouchers as payment throughout the period studied. The period used for the estimation of the effects is 2016 to 2019. It includes two years before the legislative change, and two years after the legislative change. We exclude the year 2020 due to the COVID-19 crisis and movement restrictions imposed by authorities⁶.

The main equation takes the form of the standard difference in difference equation when treatment occurs at different times (Goodman-Bacon, 2021), because firms started accepting the holiday vouchers at different times in the 2018-2019 period, as shown in Table 1. The equation takes the following form:

$$\log(Y_{it}) = \lambda_i + \lambda_t + \lambda_s \times \lambda_t + \beta_{DD} T_{vouchersit} + \varepsilon_{it} \quad (1)$$

Y_{it} denotes revenues and employment of firm i in year t . We focus on these measures of firm performance because they are most likely to be directly and immediately affected by the policy. In addition, data on these variables is available for most firms in the sector⁷. λ_i denotes firm fixed effects, which control for firm fixed unobserved characteristics. λ_t denotes time fixed effects, which control for common shocks that affected all firms supplying eligible accommodation and travel agency services, such as, contemporaneous wage increases. λ_s are sector specific fixed effects and the interaction term $\lambda_s \times \lambda_t$ controls for sector specific trends. Sector specific trends control for different trends in accommodation and travel agency sectors and for the effects of other supporting measures introduced during the period studied, such as, the introduction of specific lump-sum tax in 2017 and reduced VAT in 2018 for firms in accommodation sector, described in appendix A.

$T_{vouchersit}$ is the treatment variable. It is defined as receiving at least 14500 in RON (approximately 3100 EUR) of holiday vouchers in payment during one calendar year, which is equivalent to 10 public sector employees using all their holiday vouchers at the given firm. This

⁶In 2020, the sector was severely affected by the COVID-19 crisis and, despite receiving new vouchers, a small share of public servants used them given the lockdown and moving restrictions imposed by authorities. The validity period of 2019 and 2020 vouchers was prolonged, and no additional vouchers were granted for 2021. Due to these changes, it is likely, that the effects during 2020-2021 differ from those for the period 2018-2019, and, therefore, we exclude the 2020-2021 period.

⁷Many firms in accommodation and travel agency sectors are very small and use simplified accounting.

threshold aims to capture a non-trivial payment in holiday vouchers in a year, and, thus, exposure to the provision of holiday vouchers ⁸. In Section 5, we examine the sensitivity of the results to these choices. The control group comprises firms in the same eligible sectors, accommodation and travel agencies, that did not receive any payment in holiday vouchers during the period studied.

The main coefficient of interest is β_{DD} , which shows the pooled effect of the provision of vouchers for public sector employees in the period 2018-2019, when holiday vouchers were provided to all public sector employees, compared to the preceding period, 2016-2017 and to the control group of firms not exposed to this measure. If the holiday vouchers only substituted private expenditure of households or firms substituted foreign tourists for domestic tourism, this effect should be statistically insignificant. While both of these effects are possible, given the large share of households who could not afford holidays before 2018 and the large share of public sector employees in total number of employees, our hypothesis is that the provision of holiday vouchers to public sector employees increased demand for domestic tourism. This should reflect in higher economic activity in the treated firms and, thus, a positive and significant coefficient in equation 1.

A causal interpretation of this coefficient requires that the legislative change was unexpected for the firms in eligible sectors and that the control group represents a suitable counterfactual for the exposed group. The first condition is likely fulfilled. As discussed in Section 2.2, the possibility to offer holiday vouchers to public sector employees existed since 2009, but between 2010 and 2017, they were provided to only a small share of public employees working, mainly, in local administration. The decision to provide them or not was taken annually and was based on the availability of public funds and for eight consecutive years, very few public employees received holiday vouchers. Therefore, it is plausible that the decision to provide them in 2018 and the scope of the provision, to all public sector employees, were unexpected. Regarding, the second condition we provide two arguments. First, selection effects are likely limited due to the easiness and timeliness of the affiliation process, which can be done within hours and it is based mainly on providing documents related to legal authorization through an online platform and its low costs. This makes vouchers accessible to all firms in the sector ⁹. Second, we test whether the two groups of firms followed parallel trends before the legislative change in 2018, after controlling for firm fixed unobserved characteristics. We test this hypothesis by estimating an event study version of the equation 1, which explores the staggered adoption of the holiday vouchers as means of payment by firms in accommodation and travel

⁸This value is based on all holiday vouchers received. This choice was made for two reasons. First, it reflects the purpose of the policy, which aimed to increase the use of holiday vouchers in both sectors and used the provision of vouchers to public sector employees as way to demonstrate their benefits. Second, the data shows that holiday vouchers increased in both sectors, but the increase was much faster in public sector as shown in Figure 2. For firms, it is irrelevant where the vouchers come from as long as they are issued by affiliated firms and most received holiday vouchers from both sectors, although the public sector accounts for the majority of the vouchers.

⁹When asked for reasons of using the vouchers, many firms indicate that it was motivated by a request from the clients, especially when it came from a large group and the firm had spare capacity during the requested period

agency sectors. The equation takes the standard event study form:

$$\log(Y_{it}) = \lambda_i + \lambda_t + \lambda_s \times \lambda_t + \sum_{t=-3}^{+1} \beta_t \times D_{it}^t + \varepsilon_{it} \quad (2)$$

D_{it}^t denotes a set of dummy variables that indicate the time relative to the event. The event is defined, similar to equation 1, as the year when the firms first received a payment in holiday vouchers equivalent to at least 14500 RON. The reference period is the year proceeding the event ($t = -1$). The year of the event is $t = 0$. The coefficients for the years preceding the event show whether there were significant differences in the performance of exposed and not exposed firms in the years preceding the event, thus, whether the treated and the control groups followed parallel trends before the holiday vouchers program. The coefficients for the year of the event and following year and show the difference in the performance in the year of the event and in the following year. These coefficients also provides information on the timing of the effects. Finally, another benefit of equation 2 is that it addresses some of the criticism directed towards the use of the standard difference in difference research design in a setting with staggered adoption (Goodman-Bacon, 2021).

There are several remaining concerns. First, it is possible that firms that do not directly use the vouchers as a means of payment may benefit indirectly from this measure if accommodation is booked through a travel agency that accepts holiday vouchers. Travel agencies account for 17% of the total value in 2018 and 2019 and not all the services acquired through these agencies represent accommodation services. They can include, for instance, transport or leisure services. Even in this case, the estimated effects could be interpreted as the difference in the performance of highly exposed firms, for whom attracting holiday vouchers users is a priority and who affiliated directly with firms issuing the vouchers, and less exposed firms, for whom attracting such tourists is not a priority, but who may still incidentally benefit indirectly from it. The presence of this indirect effects is likely to decrease the effect, so the estimated effected could be interpreted as a lower bound of the effect. Another concern is that the effect of the vouchers may reflect not a real increase in the economic activity of the firms, but an increase in the declaration of revenues, as vouchers improve tracing of the payments and may increase inspections and monitoring (Williams and Horodnic, 2020; OECD, 2021b). This is a relevant concern because the informal economy in the sector is widespread (Jaliu and Răvar, 2019). In section 7 we examine whether the effects of the program differ for firms with different exposure to informal economy. It is important to notice that a reduction in the informal economy is a positive effect from the policy point of view, because it improves tax collection and employees' welfare. Finally, there is a concern that the estimated effects on revenues may reflect an increase in prices without increasing economic activity. We address this concern, by analyzing the effects on different outcomes (revenues and employment) and by examining how these effects differ between regions with different tourist intensity.

4 Data description

The main data sources are the three issuing units and the Ministry of Finance of Romania (Centrul Național de Informații Financiare). Data on payments in holiday vouchers to affiliated firms was provided by the licensed firms to the Ministry of Finance. This data is complemented by administrative data from the balance sheets of firms ¹⁰ in accommodation sector defined as NACE rev. 2 sector I55 and travel agency sector defined as NACE rev. 2 N79 from Ministry of Finance of Romania (Centrul Național de Informații Financiare). All variables in monetary values are expressed in 2010 prices, obtained using the implicit price deflator from National Accounts.

The use of differences-in-differences method restricts the sample to the firms that were active continuously during the period 2017 (the year before the change in legislation) and until 2019 (one year after the change in legislation) and who did not record during this period zero, negative or missing information for revenues or average number of employees. Additionally, given the definition of the control and treated groups, the sample is restricted to firms that before 2017 did not receive any holiday vouchers.

Table 2 provides descriptive statistics on the characteristics of firms that were exposed to the provision of vouchers, as defined in equation 1 and those that never used holiday vouchers during the period studied. The table shows that the exposed firms are larger in terms of number of employees and revenues, older and less likely to be micro enterprises. However, the empirical methodology used controls for these differences, by controlling for fixed characteristics of the firms.

Next, we examine the take-up of holiday vouchers, from the point of view of employees and firms. For employees in both private and public sectors, the share of returned vouchers¹¹ was very low, between 2% in 2017 and 4% in 2019. This suggests that these benefits are valuable for the employees and that they fill a real need. This is consistent with the high share of households that could not afford one week of holidays away from home.

Figure 2 shows the evolution of the value of all vouchers, including both paper and electronic vouchers, issued during the period 2017 - 2019 in absolute and relative terms, defined in relation to total revenues of the firms in the accommodation sector (NACE rev.2 I55) and travel agency sector (NACE rev.2 N79), taken from Structural Business Statistics (Eurostat, 2022b). The left panel of Figure 2 shows that, in absolute terms, the value of the holiday vouchers increased eight fold between 2017 and 2018 and more than doubled between 2018 and 2019. The evolution of their value in relative terms (right panel of Figure 2) shows a rapid increase of the importance of the holiday vouchers for the sector, from representing less than 1% of the total turnover in 2017 to accounting for more than 10% in 2019. Another interesting aspect is the

¹⁰Both physical authorized persons and firms in these sectors are eligible. However, we only have access to balance sheet of firms that have the obligation to provide an annual balance sheet. This is an important limitation as physical authorized persons represent a large share of the total businesses in the sector according to (Eurostat, 2022c)

¹¹We can compute this share only for the paper vouchers.

increasing importance of vouchers issued to public sector employees in total value of vouchers. In 2017, few public institutions could issue holiday vouchers, and the public sector represented around 10% of the value of the holiday vouchers issued. After the mandatory provision of holiday vouchers to public sector employees started in 2018, their share increased rapidly reaching 83% of the value of holiday vouchers issued by 2019. Overall, the figure shows that the decision to provide holiday vouchers to all public sector employees represented a large shock for the sector.

Table 2 shows descriptive statistics on the adoption of holiday vouchers by the firms in accommodation and travel agency sectors. The left panel shows the share of firms that received different amounts of holiday vouchers for all sample and the right panel the same statistics for those that did not receive vouchers before 2017. The descriptive statistics for the whole sample show a three fold increase in the share of firms that received one holiday voucher package and five fold increase in the share of those that received the equivalent of the holiday voucher packages of ten public sector employees. The right panel shows the same statistics for the sample of firms that did not use holiday vouchers in 2017, which is used in the empirical analysis. It shows that 25% of the firms that did not use holiday vouchers in 2017, used them in 2019 and that 20% used them intensively, having received payment equivalent to at least ten public employee packages of holiday vouchers. It also shows that a large part of the increase in the use of vouchers took place in the year of the adoption, in 2018, consistent with the affiliation process being easy and timely, which facilitated the fast adoption of holiday vouchers as a means of payment. They also show a further expansion in 2019, likely reflecting, learning among firms about the benefits of using holiday vouchers. Overall, these statistics suggest that over the period, there was a rapid increase in the adoption of the holiday vouchers by firms in accommodation and travel agency sectors and also an increase in the firms that use them intensively.

5 Estimation Results

Table 3 presents the results of the estimation of equation 1. In these estimations treatment $T_{vouchers}$ is defined as receiving payment of at least ten holiday voucher packages and the control group are firms in the same sectors, which never used holiday vouchers during the period studied, 2016-2019. The average effects of the provision of the holiday vouchers of public sector over the period 2018 - 2019 on treated firms were 9% higher revenues and around 4.6% more employees¹² than firms in the same sector that did not use holiday vouchers. These results suggest that the provision of holiday vouchers for public sector employees increased the demand for domestic tourism, which led to higher revenues and employment for firms that used holiday vouchers as means of payment than for firms that did not. This is consistent with vouchers enabling employees receiving them to increase their expenditure on tourism in Romania. This may reflect either a reduction in the budget constraint of households who could not afford such

¹²Calculated as $\exp(\beta_{DD})-1$

expenditure before or a redirection of the demand from foreign destinations towards domestic ones. We cannot investigate this further based on the available data, but the large reduction at national level of share of households that could not afford one week of holidays shown in Figure 1, points to the importance of increasing affordability of domestic holidays.

The significant effect on employment in firms in eligible sectors also suggests that this effect is not only due to improved income declaration or increases in prices. This measure led to an increase in the economic activity and to the creation of new jobs in the sector. It is important to notice that employment is measured as the average number of employees and therefore, it does, not capture increases in hours worked, which may occur due to increased economic activity, thus could be considered a lower bound of the effect on employment.

A key assumption for the validity of the differences-in-differences method used is that the two groups of firms followed parallel trends before the legislative change. We examine its validity by estimating an event study version of equation 1. Table 4 presents the results on this estimation. In line with the baseline equation 1, the event (t) is defined as receiving at least ten holiday voucher packages as payment. The reference year is the year preceding the event. Table 4 presents the estimation of equation 2 on two samples. The first two columns show the results of the estimation of equation 2 on the full sample, which includes firms that never used holiday vouchers during the period studied and the last two columns show the results of the estimation of equation 2 on the sample of firms that eventually adopted holiday vouchers. The latter estimations provide a comparison between early and later adopters of holiday vouchers.

The results in Table 4, show that after controlling for firm, year and sector-year fixed effects, there were no significant differences in the trends of the revenues and employment of the firms in the treated and the control group before starting to use holiday vouchers. The two groups followed parallel trends before the holiday voucher program. These results lend support to the chosen empirical strategy.

These estimates also provide new information on the timing of the effects. They show that the effects were immediate and took place in the first year of using holiday vouchers. Likely this is due to the effective policy design, in particular, the easiness of affiliation process. The magnitude of the effects is similar to those obtained in equation 1 and is stable over time, at least for revenues. The results from the two samples are similar both qualitatively and quantitatively, suggesting that the results are not driven by the choice of the control group. The results for employment are weaker. For the full sample, they are significant only in the year of the event and for the restricted sample they have similar magnitudes, but are not statistically significant.

We also examine whether the baseline results are sensitive to the definition of the treatment - the payment in holiday vouchers above which a firm is considered treated. Table 5 reports the results of estimations where firms are considered treated if, after 2018, they received payments equivalent to at least one full package of holiday vouchers of a public employee, in columns (1) and (2), at least 20 packages, in columns (3) and (4), and at least 50 packages, in columns (5) and (6). The results for the first threshold are qualitatively similar to the baseline re-

sults for revenues, showing a positive, but lower, effect of the payments in holiday vouchers on the firms' revenues. Likely, this reflects the inclusion of firms that are not focused on attracting holiday voucher users, but accepted a few incidental payments in holiday vouchers. The results for employment are statistically insignificant indicating a small increase in economic activity among firms that use vouchers incidentally, which may not justify hiring additional employees. In contrast, the results for higher thresholds, of at least 20 and 50 public sector packages of holiday vouchers, show large and significant increases in both revenues and employment, suggesting that a more intensive use of holiday vouchers is associated with higher effects. Overall, these results show that there were positive effects even on firms that used holiday vouchers incidentally, but the highest effects were among those that used them intensively.

6 Regional heterogeneity

A potential concern about this program was that it would lead to congestion and overcrowding in already very touristic regions, as shown by (Kouřilová and Kratochvílová, 2014) for a comparable program for vulnerable persons in Czech Republic. Firms in these regions already operated close to full capacity during the high season before the holiday vouchers program. The short-time dimension and uncertainty about the continuation of the program limited adjustments though increased accommodation capacity. In this situation, the provision of holiday vouchers may increase prices rather than economic activity.

To examine this hypothesis, we estimate the baseline specification on firms in three different groups of regions, defined at NUTS III level based on their tourism intensity in 2017: the regions including the two main cities, Bucharest and Cluj, the five most touristic regions and the remaining regions. The two main cities, Bucharest and Cluj, are the main business centers and the main points of entry for foreign tourists, as discussed in Section 2, thus, less likely to be affected by the availability of holiday vouchers. We consider them as a separate group and a benchmark for other effects. The most touristic regions are defined as the five regions who attracted most tourists in 2017, as shown in Figure 3, except for the regions that include the two main cities. They are: Brasov, Constanta, Mureș, Prahova and Sibiu. The remaining regions are all the other regions. Given that travel agencies can sell package holiday in any regions, we carry out this analysis only on the sample of firms in the accommodation sector. Table 6 presents the estimates of equation 1 separately for each of these groups of regions.

The results show insignificant effects of the holiday voucher program on revenues and employment of firms in accommodation sector in Bucharest and Cluj. Likely, this result reflects the importance of business tourism and foreign tourism in these two regions. These insignificant effects confirm that our results do not capture other changes that may have affected tourism sector in all regions and that occurred at the same time as the holiday voucher program. The results for the five most touristic regions, show a large effect on firms' revenues, but insignificant effects on employment. These results are consistent with the hypothesis that they were already

operating close to the capacity before the holiday voucher program and it resulted mainly in price increases in these regions. For the remaining regions, we find significant and positive effects on both revenues and employment, suggesting that for these regions the holiday voucher program had led to real increases in the economic activity in accommodation sector.

7 Effect on the informal economy

Informal economy is widely widespread in the tourism sector (Horodnic et al., 2016; Williams and Horodnic, 2020). Reducing the informal economy in the sector was also one of the aims of the policy. However, the spread of the informal economy in the sector is likely to influence the effects of this policy on the sector in several ways.

At the recipients' (employees') level, there is a possibility of the vouchers being used in other ways or by other persons than those intended. The vouchers are not transferable and can only be used to buy eligible tourism related services. However, there were media reports, about their sale or transfer to other persons¹³. While such uses are illegal, they do affect the estimated effects on the tourism sector, as even in these cases the vouchers are ultimately used to purchase eligible tourism-related services.

Second, holiday vouchers may help reduce informal economy. Indeed, one of the aims of the program was to reduce informal economy by improving income declaration due to improved tracing of payments. At the extensive margin, this measure might lead to more informal firms obtaining the relevant authorizations to provide tourism-related services and to be able to accept vouchers as means of payment. Our analyses focuses only on firms that operated formally in the tourism sector already in 2016, so it does not capture this effect. However, Figure 4 shows descriptive evidence that there was an increase in the entry of new firms in the eligible sectors starting with 2019, one year after the provision of holiday vouchers to all public sector employees. It is likely that some of these new entrants are firms from informal economy who applied for authorization with the aim to benefit from holiday vouchers. The fact that the increase in the entry occurred with one year delay support the lack of anticipation effect of the provision of holiday vouchers for public sector employees. At the intensive margin, it is possible that firms already in the formal economy may increase their income declaration, due to the use of holiday vouchers. The payments in holiday vouchers leave a trace. Thus, it should improve income declaration. If this effect is important, the program would have a higher effect on the revenues of the firms who are more exposed to informal economy.

To examine this hypothesis, we estimate the effect of the voucher programs separately for firms who are more exposed to informal economy, defined as micro firms or firms with less than 10 employees, and for firms less exposed to informal economy, defined as firms with 10 or more

¹³For instance, this article www.digi24.ro/magazin/timp-liber/vacante/cum-fac-romanii-bani-din-voucherele-de-vacanta-ministerul-turismului-anunta-controale-in-perioada-urmatoare-2046321 discusses their sale for cash at discounted prices.

employees. The results are reported in Table 7. The results show that the provision of holiday vouchers to public employees had positive effects on the revenues and employment of both micro firms and larger firms, suggesting that the benefits from this program are widespread across different size categories of firms. However, the effects on the revenues are larger for micro firms, consistent with an increase in the declaration of the income for these firms, who are more exposed to informal economy. Moreover, the effects of holiday vouchers are larger for micro firms only for revenues, while for employment they are similar. This points to an additional effect due to increased income declaration for micro firms, rather than a larger effect on smaller firms. Even if this additional effect represents only the increase in the declared income, this is still a positive effect for the local economy, as it implies a higher contribution to the local public revenues, which can help improve the provision of public services.

Overall, these results suggest that the provision of holiday vouchers for a large share of employees has reduced informal economy by providing incentives to operate formally in the sector and by improving income declaration.

8 Conclusions

This paper provides empirical evidence on the economic impact of the provision of holiday vouchers for employees in public sector on the domestic tourism sector in Romania. Despite significant potential, the development of the tourism sector in Romania has lagged behind compared to other EU countries. While tourism sector accounts for a small share of the economy and tax collection and the jobs it creates are mostly seasonal and low wage, it fulfils important social functions and plays important roles in supporting local development (Faber and Gaubert, 2019) and job creation (Leduc and Tojerow, 2020).

Whilst the sector faces many challenges, a key constraint is related to low domestic demand. In particular, a large share of households, almost 2/3, could not afford one week of holiday away from home in 2017, the year before the provision of holiday vouchers for all public sector employees. Additionally, among those that could afford such holidays a large share preferred foreign destinations, as shown by an increasing tourist deficit, which reached 1% in 2019. To address this challenge, holiday vouchers were introduced as optional benefits in 2009 and one of the aims of this policy was increasing demand for tourism and directing it toward domestic tourism. However, due to the financial crisis and fiscal consolidation efforts that followed it, only few public sector employees had received them until 2018, when a legislative change made mandatory their provision. This legislative change led to a sudden, eight fold, increase in the value of holiday vouchers issued in 2018 and an additional doubling in the following year.

We estimate the effects of this measure using differences-in-differences methods and confidential data from the three companies licensed to issue these vouchers and administrative data on the balance sheet of the firms in accommodation and travel agency sectors in the period

2018-2019. Our results show that, on average, firms that started using holiday vouchers during the period 2018-2019 had 9% higher revenues and hired around 4.6% more employees than firms in the same sectors that did not use holiday vouchers. Our results are robust to different definitions of the treatment and the control group and they are widespread across firms in regions with different tourism intensity and across different size categories. With the exception of firms based in the two main cities on Romania, Bucharest and Cluj, where tourism tends to be linked mainly to foreign and business tourism, we find positive and significant effects for firms in all regions. However, in the most touristic regions, the provision of holiday vouchers, mainly, increased firms' revenues, without affecting employment. In the less touristic regions, the provision of holiday vouchers increased both revenues and employment. We also find positive effects on firms in all size categories, but larger effects on the revenues of micro firms, consistent with a reduction in the informal economy.

From a policy perspective, our results suggest that providing holiday vouchers for all public sector employees was effective in increasing demand for domestic tourism and supporting the development of the sector. Moreover, the program led not only to increases in revenues, but also to creation of new jobs. These results also imply that this voucher program enabled employees who received these vouchers to take holidays that would not take otherwise or to spend more on these holidays. We provide suggestive evidence that at least part of this effect is due to this program reducing the budget constraint on households. The heterogeneous effects of the policy across regions suggest it would be useful to provide incentives to use of these vouchers in less touristic regions or outside pick seasons, where they are more likely to increase employment. Finally, this policy helped reduce the demand constraints on the sector, but it still faces important supply-side constraints. To ensure a sustainable development of the sector, this policy should be complemented by place-based policies that improve accessibility and attractiveness of domestic touristic destinations.

Outside tourism sector, our results suggest that vouchers can be an effective policy instrument to increase and direct demand towards domestic suppliers in specific sectors. We also find empirical evidence supporting their use as a way to reduce informal economy in sectors where it is wide spread, in line with (OECD, 2021b). While not providing directly evidence on the policy design, it is likely, that fast and wide spread effects of the program are due to its design. In particular, the allocation of vouchers through a market mechanism, based on the preferences of the employees and quality and costs of the services provided, which stimulates competition and rewards high quality and cost-efficiency, and easy, fast and low cost affiliation process.

Finally, it is important to mention several caveats of the study. Holiday vouchers are complex instruments with effects on employees, employers and firms providing eligible services. Our study examined only the market effects of the holiday vouchers on suppliers of eligible tourism related services. Future research should examine also the effects on employees receiving the vouchers as high take up by employees and the increase in demand for domestic tourism suggest that they fill a real need. Similarly, it would be useful to study their effects on em-

employers, in line with the objectives of the program to increase performance and employment stability, which is an important challenge for many employers. Even the analysis of the market outcomes of the vouchers has several limitations. We focused only on units that operated as firms, although self-employment is widespread in the sector, and only on those firms that were already in the formal economy in 2016, despite evidence ([Williams and Horodnic, 2020](#)) that entry in the sector and in the formal economy were important responses to this measure. Another interesting avenue for future research is assessing the impact of digitization of vouchers, which is a major trend regarding voucher programs ([OECD, 2021b](#)).

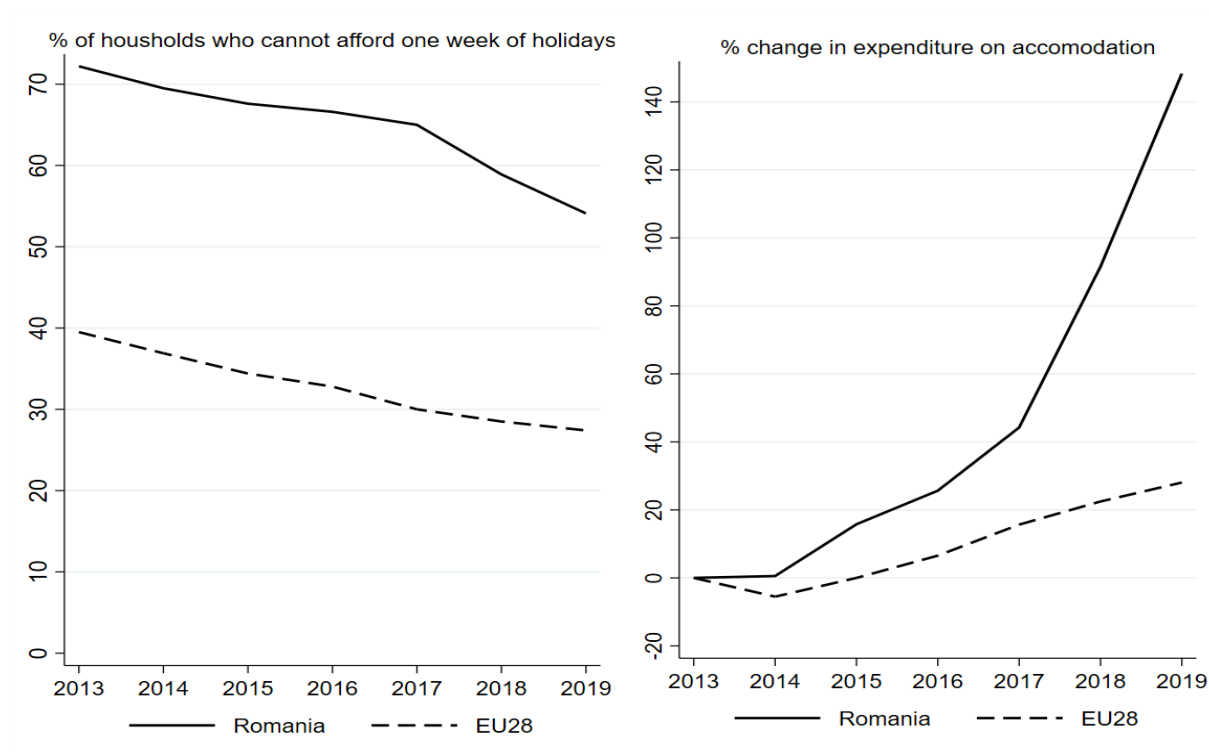
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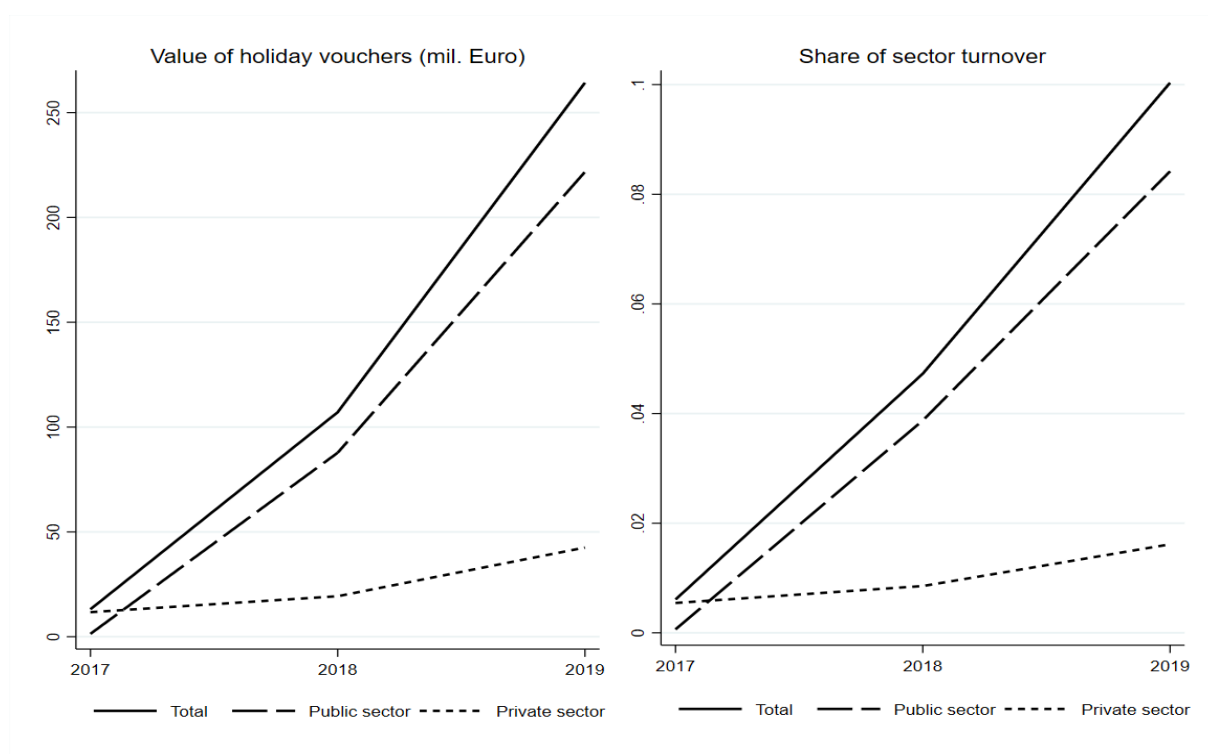
Figures

Figure 1: Evolution of tourism affordability and expenditure in Romania



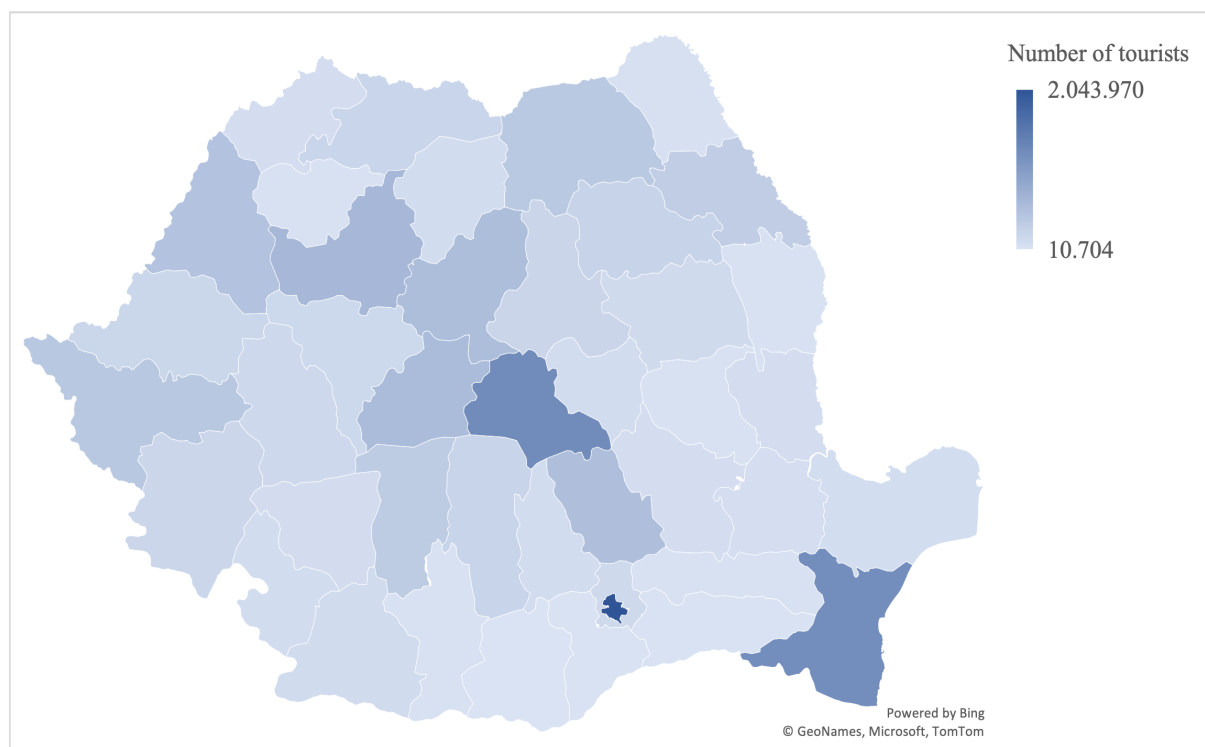
Notes: Evolution of the share of households that could not afford one week of annual holidays away from home (Eurostat, 2022a) and expenditure on accommodation for personal reasons (Eurostat, 2022d).

Figure 2: Evolution of holiday vouchers in absolute and relative terms



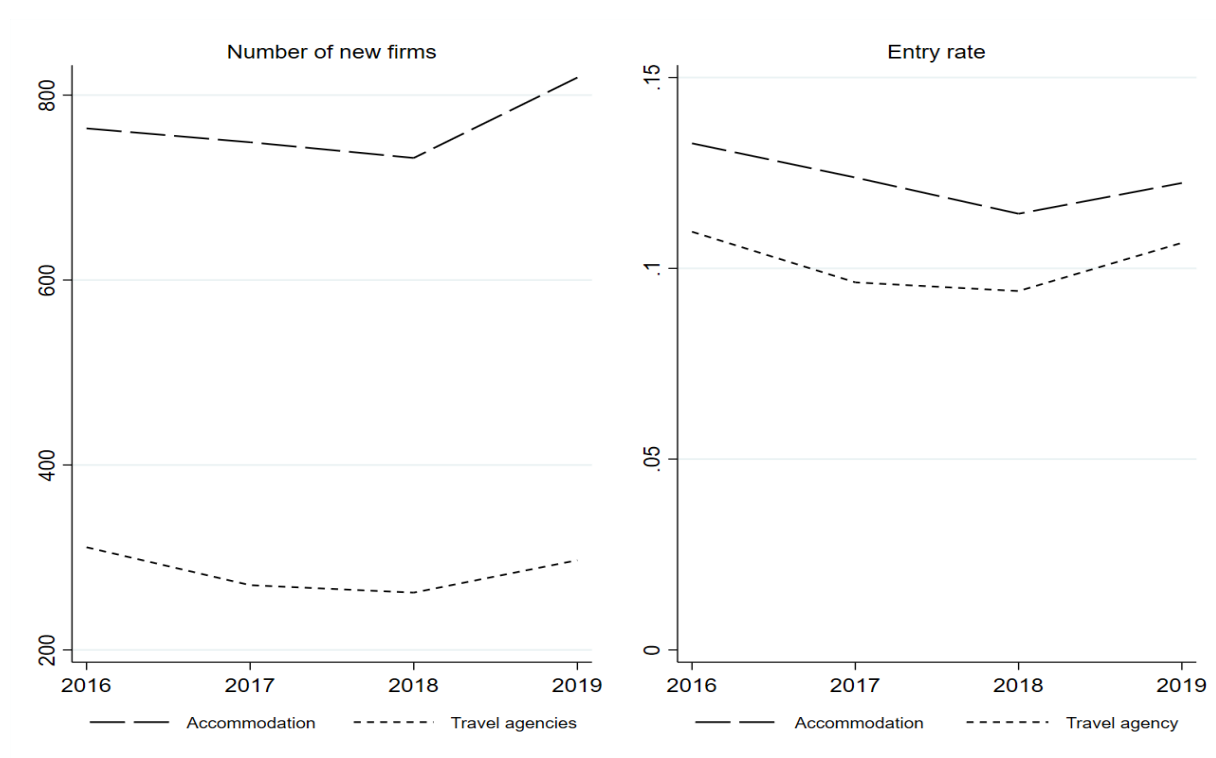
Notes: The value of holiday vouchers issued in the period 2017-2019 in mil. Euro and relative to the turnover in the eligible sectors ([Eurostat, 2022d](#)).

Figure 3: Touristic intensity at county level in 2017



Notes: Touristic intensity is measured based on the number of inbound tourists at county level (NUTS III) in 2017 (National Institute of Statistics, 2022).

Figure 4: Entry on new firms in the eligible sectors



Notes: Number of new firms (limited liability enterprises) and entry rates of new firms in eligible sectors ([Eurostat, 2022c](#)).

Tables

Table 1: Descriptive statistics of treated and control group firms in 2017

Sample Variable	Treated		Control	
	Mean	Std. Dev.	Mean	Std. Dev.
Employees	13.69	34.13	7.43	23.46
Revenues	362712.5	1071947	246591	1048270
Age	14.85	7.52	9.49	7.27
Young (< 5 years)	0.09		0.30	
Micro	0.67		0.83	
Small	0.28		0.15	
Medium	0.05		0.02	
Large	0.00		0.00	
Obs.	877		3198	

Notes: Authors' calculations. Treated firms received at least ten holiday vouchers packages. Firms in the control group did not receive any payment in holiday vouchers during the period studied. All values refer to 2017, the year before the provision of holiday vouchers to all public sector employees.

Table 2: Vouchers take-up by firms

Dep.var	All		Non users	
	1 pkg	10 pkgs	1 pkg	10 pkg
2017	0.12	0.06	0.00	0.00
2018	0.28	0.22	0.16	0.11
2019	0.34	0.31	0.24	0.20
Firms	4952	4952	4272	4272

Notes: Authors' calculations based on data on payments in holiday vouchers by firms in the main sample used in the empirical analysis. 1 pkg indicates that a firm received at least the one package of holiday vouchers. 10 pkgs indicates that a firm received at least ten holiday vouchers packages.

Table 3: Baseline results

Dep.var	Revenues	Employment
$T_{vouchers}$	0.086*** (0.023)	0.045*** (0.017)
Adj. R-squared	0.865	0.912
Obs.	15767	15767
Firms	4075	4075

Notes: All specifications include firm, year and sector-year fixed. Standard errors are clustered at firm level. *** p<.01, ** p<0.05, * p<0.1. $T_{vouchers}$ is defined as receiving at least ten holiday vouchers packages.

Table 4: Event study estimates

Sample Dep.var	Full		Restricted	
	Rev	Empl	Rev	Empl
$t - 3$	0.032 (0.048)	-0.008 (0.029)		
$t - 2$	0.027 (0.024)	-0.008 (0.015)	-0.005 (0.022)	-0.011 (0.014)
t	0.081*** (0.020)	0.039*** (0.014)	0.086* (0.047)	0.035 (0.030)
$t + 1$	0.108*** (0.034)	0.019 (0.026)	0.081 (0.093)	-0.004 (0.063)
Adj. R-squared	0.865	0.912	0.890	0.920
Obs.	15767	15767	3441	3441
Firms	4075	4075	877	877

Notes: All specifications include firm, year and sector-year fixed effects. Standard errors are clustered at firm level. *** p<.01, ** p<0.05, * p<0.1. $t-3$ to $t+1$, indicate years since the event (t). Event is defined as receiving at least ten holiday vouchers packages. The first two columns present the results for the full sample and columns (3) and (4) present the results for the restricted sample.

Table 5: Robustness to different thresholds

Treatment Dep.var	1 pkg Rev.	1 pkg Empl.	20 pkgs Rev.	20 pkgs Empl.	50 pkgs Rev.	50 pkgs Empl.
$T_{vouchers}$	0.044* (0.023)	0.024 (0.015)	0.114*** (0.025)	0.061*** (0.018)	0.141*** (0.028)	0.084*** (0.022)
Adjusted R^2	0.866	0.913	0.865	0.913	0.863	0.912
Obs.	16463	16463	15269	15269	14287	14287
Firms	4251	4251	3949	3949	3698	3698

Notes: All specifications include firm, year and sector-year fixed effects. Standard errors are clustered at firm level. *** p<.01, ** p<0.05, * p<0.1. $T_{vouchers}$ is defined as receiving at least one package of holiday vouchers (columns 1 and 2), at least 20 packages (columns 3 and 4) and at least 50 packages (columns 5 and 6).

Table 6: Heterogeneity across regions

Regions	Bucharest, Cluj		Most touristic		Less touristic	
Dep.var	Rev	Empl	Rev	Empl	Rev	Empl
$T_{vouchers}$	0.020 (0.060)	0.035 (0.066)	0.174*** (0.052)	0.047 (0.040)	0.094*** (0.030)	0.067*** (0.022)
Adj. R-squared	0.916	0.938	0.865	0.902	0.865	0.907
Obs.	1590	1590	2249	2249	7323	7323
Firms	412	412	581	581	1895	1895

Notes: All specifications include firm, year and sector-year fixed effects. Standard errors are clustered at firm level. *** p<.01, ** p<0.05, * p<0.1. $T_{vouchers}$ is defined as receiving at least ten holiday vouchers packages. The first two columns present the effects on firms in Bucharest and Cluj. Columns (3) and (4) present the results for the five most touristic regions and columns (5) and (6) present the results for the remaining regions.

Table 7: Heterogeneity across firm size groups

Firm size	Micro		Non-micro	
Dep.var	Rev	Empl	Rev	Empl
$T_{vouchers}$	0.117*** (0.029)	0.054*** (0.020)	0.080** (0.034)	0.063** (0.032)
Adj. R-squared	0.814	0.852	0.891	0.897
Obs.	13166	13166	2601	2601
Firms	3417	3417	658	658

Notes: All specifications include firm, year and sector-year fixed effects. Standard errors are clustered at firm level.*** p<.01, ** p<0.05, * p<0.1. $T_{vouchers}$ is defined as receiving at least ten holiday vouchers packages. The first two columns present the effects on micro firms (firms with less than 10 employees) and columns (3) and (4) present the results for firms with at least 10 employees.

A Fiscal facilities for the tourism sector during 2016-2019

Specific tax instead of corporate tax

From January 1st, 2017, all firms except micro enterprises (firms with a maximum turnover of € 1 million) in accommodation, restaurants and bars sectors were subject to a specific tax instead of 16% profit tax rate. Law 170/2016 stipulates specific tax formulas for different NACE codes. For firms in accommodation related sectors (NACE codes: 5510, 5520, 5530, 5590), the specific tax is calculated as:

$$T = k \times N \quad (3)$$

k represents a standard tax value, which depends on star rating system of hotels / guest houses and location (capital city, large city, towns, villages and touristic importance of the region) and N is the number of accommodation seats. For firms in food and beverage sectors (NACE codes: 5610, 5621, 5629, 5630), it is calculated as:

$$T = k \times (x + y \times q) \times z \quad (4)$$

k is 1400 RON in the food sectors and 900 RON for bars and other beverage sectors. x is defined according to the rank of areas where companies are located, y is a variable indicating whether the area is commercially usable / serving / activity area, q is 0.9 and z is the seasonality coefficient.

Generally, it is perceived that specific taxation is more favourable than general corporate taxation. A detailed description and comparison between the two tax regimes is provided by (Dănilă and Horga, 2017). Importantly, law 170/2016 applies to companies from accommodation, restaurants and bars sectors, but not for travel agencies.

Personal income tax exemption for seasonal employees in tourism

From January 1st, 2017, seasonal employees employed in sectors subject to specific tax are exempted from personal income tax, which is a flat rate tax of (10%). The exemption applies irrespective of the type of contract (full time or part-time).

Reduced VAT rate

As of November 1st, 2018, accommodation in hotels or similar facilities (including renting of camping sites), restaurants and catering services (except alcoholic beverages) have benefited from a reduced VAT rate of 5%, instead of standard VAT rate of 19%. Additionally, since January 1st, 2019, the reduced VAT rate was extended to transportation for touristic or leisure purposes, such as: (i) transport of persons by historic trains or vehicles with steam; (ii) transportation of persons using cable transport facilities (cable car, gondola, chairlift, ski lift); (iii) transport of persons with vehicles with animal traction, used for tourist or recreational purposes; (iv) transport of persons with boats.