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DISCUSSION PAPER SERIES

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ABSTRACT

Tourism and Growth in the Local Labor Market*

This paper documents how the local labor market (LLM) responds to a change in touristic attractiveness. Leveraging largely underutilized data from several sources, we exploit a unique classification of Italian localities based on their main touristic assets and aggregate trends in foreign tourists' choices in a shift-share research design. Looking at all LLMs, we find a strong positive relationship between changes in attractiveness and changes in the local tourism-related economic activity, with a positive impact on tourism expenditure and tourism employment, but no effect on total employment. In high-unemployment LLMs, however, we find evidence of sizable total employment effects and large indirect effects generated through industries related to tourism and firms in the nontradable sector. We observe no effects on wage growth. We discuss our results in the context of the current policy debate on the role of tourism in the development of the local economy.

JEL Classification: J21, R11, R12, R23, Z30

Keywords: tourism, job growth, unemployment, local spillovers, heterogeneity

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1 Introduction

A prominent feature of the economic landscape in many OECD countries is the large heterogeneity in labor market outcomes across different localities (Moretti, 2011). What drives labor market evolution at the *local* level? Most of the existing research has addressed this question by focusing on local labor market (LLM) shocks to the manufacturing, energy, and mining sectors (e.g., Moretti, 2010; Greenstone, Hornbeck and Moretti, 2010; Marchand, 2012; Autor, Dorn and Hanson, 2013; Dauth, Findeisen and Suedekum, 2014; Gathmann, Helm and Schönberg, 2020; Helm, 2020; Giroud, Lenzu, Maingi and Mueller, 2024). However, research on the service sectors is limited. This paper is one of the first that contributes to this discussion by examining a shock to the tourism industry in Italy. Specifically, we present new evidence on the impact of a change in touristic attractiveness between 2007 and 2019 on Italian LLMs.

Tourism is likely to have a large influence on the local economy, as it is expected to promote employment growth, both directly in the hospitality sector (e.g., hotels, bars, restaurants, and tour guides) and indirectly in other sectors, such as agriculture, food production, retail, and creative industries (e.g., art, music festivals, and souvenirs) (see UNESCO, 2020, among others). According to the United Nations World Tourism Organization (UNWTO), tourism accounted for 330 million jobs worldwide in 2023, almost reaching pre-pandemic levels (UNWTO, 2024). Tourism also generates massive revenues. Taking European Union countries as an example, 4.5% of the total value added across all EU member states in 2019 was directly attributable to tourism (Eurostat, 2023).

In this context, Italy is an extremely interesting case. With a share of about 4% of worldwide tourist arrivals and expenditures, it is a global tourism powerhouse, owing to its large range of attractions with natural and cultural significance (Petrella, Torrini, Barone, Beretta, Breda, Cappariello, Ciaccio, Conti et al., 2019). Since the mid 2000s, Italy witnessed a rise of almost 50% in foreign tourist arrivals (UNWTO, 2024) and, just before COVID-19 hit the industry, tourism contributed directly to more than 6% of the country's GDP (excluding indirect impacts and spillovers), with nearly 3.5 million full-time equivalent jobs (Eurostat, 2023).

In our empirical work, we combine rich, largely underutilized, data with a compelling research design. We exploit a unique classification of Italian localities based on their main touristic asset (e.g., art, sea, or mountain) and aggregate trends in foreign tourists' choices in a shift-share framework. The intuition underlying this approach is that, if *foreign* tourism in a given category increases nationally, local labor markets where that category is relatively more important will experience a greater positive shock to touristic attractiveness. We also build on existing evidence indicating that Italy exhibits large heterogeneity in labor market outcomes across local economies (Faieta, Feng and Serafinelli, 2025).

We emphasize three main results. First, we find a strong positive relationship between changes in touristic attractiveness and changes in local tourism-related economic activity, with attractiveness exerting a positive impact on tourist nights (up by 17% following a one standard deviation increase in attractiveness) expenditure (up by 10%) and tourism employment (up by 1%), but with no significant impact on total employment. This result may be driven by crowding-out effects, offsetting spillovers in the local economy, and a high degree of effect heterogeneity across localities.[1]

This consideration leads to our second main finding. Stratifying local labor markets by the baseline unemployment rate, we find a positive impact of gains in touristic attractiveness on the overall employment growth in LLMs characterized by high unemployment rates (i.e., rates in the top quintile of the baseline distribution). A one standard deviation increase in attractiveness is associated with a 2% increase in overall employment, which is a sizable shift, considering that Italy faced negative trends in total employment over the period under analysis. This result may reflect the presence of an underutilized workforce in areas where job opportunities at the start of our period were limited, and where the tourist industry was less likely to be in competition with other industries for worker recruitment due to labor market slackness.

Third, high-unemployment LLMs display large indirect employment effects, which are generated through industries related to tourism and the nontradable sector (e.g., Moretti, 2010; Moretti and Thulin, 2013). We however cannot find any evidence of a significant relationship between changes in attractiveness in high-unemployment LLMs and wage growth, neither in the tourism industry nor across all sectors in the local labor market. This may be because tourism is a seasonal industry and, to a large extent, is likely to generate low-skill and low-pay jobs with limited career progression (Vanhove, 2022).[2] As we do not have information on wages broken down by skill level, we cannot test this possible response and leave it for future research.

We also consider the role played by the diffusion of Airbnb. Due to limited data availability, we only focus on two regions, Tuscany and Veneto, which are nevertheless extremely important in the Italian tourist industry context. We find evidence suggesting a rather limited role of Airbnb in contributing to the positive relation between changes in attractiveness and changes in outcomes. This perhaps reflects a lower response in areas that are already successful tourist destinations and may not face a substantial change in touristic attractiveness, such as Tuscany and Veneto. Finally, we detect a strong complementarity between our

[1] A similar null effect on total employment has also been found for Spain by González and Surovtseva (2025). See our discussion below.

[2] Di Giacomo and Lerch (2025) find empirical evidence to support a negative effect of tourism on education, whereby men and women affected by expansionary shocks to the Italian tourist industry (caused by terrorist attacks abroad) respond by reducing post-secondary education enrollment and completion of university degrees.

foreign-tourist-based measure and an alternative measure based on domestic tourist flows. Despite this, we argue that a domestic-based measure of touristic attractiveness is likely to omit important sources of tourist flows and their spillovers (e.g., second homes and "staycations") and relies on stronger conditions to meet the exclusion restriction required to identify our effects of interest. Better data and more research are warranted on both fronts.

Our paper contributes to a number of different research strands. First, it speaks to the burgeoning literature that analyzes the local labor market effects of economic shocks. As already mentioned, most of this body of research focuses primarily on shocks to the manufacturing, energy, and mining industries. We broaden this perspective by exploring the labor market outcomes across areas within a country in response to a shock to the tourist sector, a quintessential service industry.

This paper also adds to the recent literature on the local economic consequences of tourism. Faber and Gaubert (2019) conducted an influential study in this research area. They exploit variation generated by beach quality and archaeological sites across municipalities along the Mexican coastline and find that tourism leads to considerable local economic gains. Additional related research on the local economic consequences of tourism is presented by González and Surovtseva (2025), who analyze the short-term impact of tourist flows into Spanish provinces on the labor market, using terrorist attacks in alternative destinations to instrument tourist inflows to Spain.[3] They find a strong positive employment effect in the tourist industry but no effect on total employment. Our contribution to this body of work is that we offer a new empirical strategy that takes advantage of the time variation at the LLM level in touristic attractiveness, driven by a combination of natural and cultural features as well as trends in foreign tourists' choices.[4]

Finally, our work relates to the body of knowledge accumulated on the experience of Italian regions and cities. Using a dynamic panel data model and a Bartik-style instrumental variable based on the provincial shares of expenditure by tourists' country of origin, Bronzini, Ciani and Montaruli (2022) find that the impact of foreign tourists' spending on value added per capita growth is positive and statistically significant, but modest in economic terms. From our work, we are likely to gain a sharper understanding of how the labor market operates, as we focus on more than 600 local economies rather than 95 large provinces.

[3]The already mentioned paper by Di Giacomo and Lerch (2025) uses a similar identification strategy to analyze how temporary increases in the demand for jobs in the tourist industry impact educational choices in Italy.

[4]Our touristic attractiveness approach shares some similarities with the study by Allen, Fuchs, Ganapati, Graziano, Madera and Montoriol-Garriga (2023), who develop a methodology to estimate the impact of (small) shocks on the welfare of residents within a city. They apply their methodology to spatial data on the expenditure and income patterns of residents in Barcelona and show that shifts in tourist expenditure may crowd out local expenditure by pushing prices up, although this is partially compensated by local wage increases.

Nocito, Sartarelli and Sobbrio (2023) analyze the impact of entertainment media in attracting tourists to four filming municipalities in Sicily (a region of Italy) of a popular TV series and, in turn, the effect of tourism on local economic development. They find evidence of a large media multiplier and, exploiting the interaction between the filming locations and the time-varying share of countries in which the series was broadcast to instrument total tourist expenditure at the municipality-time level, a positive tourist multiplier. Favero and Malisan (2024) study the link between hosting a mega cultural event (the European Capital of Culture), tourism, and economic development, exploiting the variation arising from the shortlisting and subsequent nomination to the 2019 competition that was awarded to Matera, an off-the-beaten-track town in southern Italy. They find substantial increases in tourist presence, employment (even in sectors loosely connected with tourism), income, and house prices. To these last two contributions we add a geographically more comprehensive perspective, by covering LLMs in the whole country and not just one city or a small set of municipalities.

2 Research Design

To examine how the local labor market reacts to a change in its touristic attractiveness, we exploit an official classification of localities based on their main tourist attraction. We combine this classification with aggregate trends in foreign tourists' choices. Specifically, we estimate variants of the following model:

$$\Delta N_l = \alpha + \beta \Delta A_l + \mathbf{X}_l' \boldsymbol{\phi} + \varepsilon_l, \tag{1}$$

where ΔN_l is the change over time (between 2007 and 2019) in several outcomes. Among these, the main outcomes are the (log) number of total jobs in LLM l, the (log) number of jobs in industries related to tourism, and the (log) number of jobs in nontradable industries. $\mathbf{X}$ is a vector of control variables measured at the LLM level, which will be described in Section 3. ΔA_l is our measure of change in touristic attractiveness. This is given by the weighted average of nationwide foreign tourism growth by tourist attraction types, with weights reflecting the LLM-specific share in those predetermined (official) categories. As explained in Section 3, we have 14 touristic categories (e.g., localities of intrinsically high artistic significance, seaside resorts, mountain resorts, thermal baths, and lake localities). Formally, the LLM-specific changes in attractiveness are constructed as follows:

$$\Delta A_l = \sum_j \omega_{jl} \Delta F_{j,-l}, \tag{2}$$

where ω_{jl} is the share of municipalities taking into account their size (in terms of number of beds in officially recognized collective accommodation establishments in 2007) in touristic category j in LLM l; and $\Delta F_{j,-l}$ is the nationwide change in foreign tourist expenditure (deflated; base year = 2015) in category j between 2007 and 2019, excluding the expenditure observed in LLM l.

To gain some intuition into how ΔA_l works through our identification strategy, consider two local labor markets that have a different attraction category mix. If foreign tourism drawn to a given touristic category increases (decreases) exogenously at the national level, the LLM where that category represents a larger share experiences a positive (negative) shock to touristic attractiveness.

It is worth stressing two points in relation to this research design. First, we use predetermined, official information about the unique natural or cultural features of a locality when computing the shares, ω_{jl}, reducing concerns of bias due to unobservable contemporaneous LLM shocks (Goldsmith-Pinkham, Sorkin and Swift, 2020). Our exposure shares are historically determined ex ante either by the immobile geographic characteristics of a given locality (e.g., sea, mountain, or lake) or by long-established cultural hallmarks (e.g., Rome, Florence, Venice, and Naples). This component essentially corresponds to the attractiveness measure used by Faber and Gaubert (2019) (see also Weaver and Oppermann, 2000). Second, we apply a leave-one-out correction at the LLM level when computing the shocks, $\Delta F_{j,-l}$, to avoid a potential mechanical relationship (i.e., that the values of the shifts are directly affected by the focal local labor market).[5] We should emphasize that the shift component is computed at the touristic category level, j, and that, in line with Borusyak et al. (2022), we provide evidence on shock balance tests in Section 3.

3 Data and Descriptive Statistics

We combine data from a number of sources. Data on foreign tourist expenditure and nights spent in all accommodation establishments (including private dwellings, which also account for accommodations listed in Airbnb from 2008 onward) come from the Survey on International Tourism conducted since 1996 by the Bank of Italy at the Italian borders. The primary goal of the survey is to compile information required for the official balance of payments. An advantage of this survey is that it provides detailed information on the municipalities visited by foreign travelers.

An additional data source is the Italian National Institute of Statistics (ISTAT), which

[5]For similar approaches, although used to address different questions, see, among others, Autor and Duggan (2003), Goldsmith-Pinkham et al. (2020), Borusyak, Hull and Jaravel (2022), and Le Barbanchon, Ronchi and Sauvagnat (2023).

provides a classification of municipalities based on their touristic specialization in 2007 and 2019. In our analysis, we use an adjustment to the 2007 classification. The adjustment is performed in two steps. First, we use the 2019 classification to relabel those municipalities that were left without a specific touristic specialization in 2007. This leads to a reduction of the share of municipalities without specialization from 20% to less than 7% in terms of available beds in official establishments. In the second step, the remaining unspecialized municipalities are assigned the main touristic specialization of their bordering municipalities.[6] This reduces the share of unspecialized municipalities to less than 2%. The idea behind this step is that municipalities without a touristic specialization may experience a specific labor market development following the touristic vocation of their neighbors. For example, foreign tourists interested in a particular attraction in a given locality may find it convenient to spend the night in a nearby municipality, which could offer cheaper accommodations, and travel to the municipality of interest, using rented vehicles or public transports. Table A.1 shows how these two steps modify the original 2007 classification.

Data on local employment come from the business register of local establishments (known as ASIA) provided by ISTAT.[7] This register covers the universe of private non-agricultural firms active for at least six months in a given year. Employment figures are expressed as a share of worked days averaged over each calendar year. For example, an individual who is employed for three months in a year, as can be the case in seasonal jobs in the tourist industry, will add 0.25 to the total share. The data are collected at the municipality level, which we then aggregate to obtain the information required at the local labor market level. Annual averages of unemployment rates at the LLM level are computed using the Italian Labor Force Survey, collected by ISTAT.

The ASIA data are at the 3-digit industry level. This allows us to define the tourism industry precisely, using vetted Eurostat procedures after aggregating a number of sectors.[8] For details on the sectors used for this aggregation, see Appendix B. The same appendix also reports the list of industries related to tourism, which are required to estimate indirect employment effects, following UNESCO (2020).

To investigate wage responses, we use data from the Italian social security provider (INPS) on a random sample of about 1 million workers born on the first and ninth day of each month from which we can compute average wages at the LLM level. Furthermore, to analyze potential propagation effects through the nontradable sector, we classify nontrad-

[6]The main touristic specialization of bordering municipalities is defined as the *modal* category of specialization among bordering municipalities, weighted by size in terms of the 2007 number of beds in official establishments.

[7]For more details, see https://esploradati.istat.it/databrowser/#/en/dw/categories/IT1,Z0900ENT,1.0/ENT_STRU/DICA_ASIAULP.

[8]For details, see https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Tourism_industries.

able industries following the geographical concentration-based classification used by Mian and Sufi (2014). More specifically, we compute the Herfindahl index of employment over local labor markets for each 3-digit sector and label as "nontradable" the least concentrated quarter of the industries.[9]

The final dataset used in the estimation includes one observation for each of the 611 local labor markets, which are defined by ISTAT following the 2011 Census. Changes in the variables of interest are calculated over the 2007–2019 period. To limit the impact of outliers, which are typically observed in very small LLMs, both the outcome variables, ΔN, and the key explanatory variable, ΔA, are winsorized at the 5th and 95th percentiles throughout the paper. The conclusions remain unchanged if we use unwinsorized data.

Table 1 reports the summary statistics.[10] Touristic attractiveness, ΔA, improved substantially over the period, although with large variability across LLMs, with some displaying a reduction and others exhibiting a log difference greater than 0.5. The same considerations apply for the observed changes in tourist nights, tourist expenditure, and tourist employment. It is worth emphasizing that the typical LLM experienced a contraction in total employment of about 5% between 2007 and 2019.

We now focus more on the two components that define ΔA. There is large cross-sectional variation in the shares, ω_{jl}, for cultural (Figure 1), mountain (Figure A.1), and seaside localities (Figure A.2), the three largest touristic categories in terms of share of available beds in registered collective accommodation establishments. All figures display clear and markedly different geographic patterns across categories of touristic specialization. Similar pictures emerge when we consider the other main categories, which are not presented for the sake of space.

Figure 2 documents significant variation in the other component of ΔA, namely, ΔF_j, the log-difference in *foreign* tourists' expenditure from 2007 to 2019 for our 14 touristic categories, j, along with their weights expressed in terms of share of beds in official collective accommodation establishments in 2007. As mentioned above, seaside, mountain, and cultural localities are the most important. They all experienced positive growth in ΔF, with seaside resorts featuring the greatest increase. The next three categories in terms of importance are lake, hill, and thermal bath localities. Among these, only lake experienced a positive growth in ΔF (albeit lower than those recorded by seaside, mountain, and culture), while the other two categories declined. For the remaining eight categories, there is considerable variation in terms of growth (e.g., in the case of localities near lakes, those with more

[9] We obtain similar results if we use an alternative classification which defines retail and restaurant-related industries as nontradable and industries which show up in global trade as tradable (Mian and Sufi, 2014).

[10] For tourist nights and expenditure, the number of observations is not equal to 611 as for some LLMs the Bank of Italy's survey did not register any traveler in 2007. For the wage variables we drop LLMs where we do not observe more than 30 workers in the underlying micro data at the LLM level (overall wage) or in the local tourism industry (tourism wage).

than one specialization, or those with none), but they all account for a very small share of available beds.

In Figure A.3 we combine the two components, ω_{jl} and ΔF_j. We find sizable spatial variation in ΔA_l across local labor markets. The figure also highlights some of the LLMs that experienced large improvements in ΔA, some of which are in traditionally popular destinations (e.g., Salento and the Amalfi Coast), while others less so (e.g., Mantua or central Sardinia). Perhaps unsurprisingly, the variation in touristic attractiveness is markedly reduced if we focus on geographically more aggregated areas, as indicated in Figure A.4, where the median values of ΔA are roughly the same across the five standard macro-regions of the country. Of course, our focus is at the LLM level.

Finally, as anticipated in the previous section, we use the insights given in Borusyak et al. (2022) to implement falsification tests of the shift-share shock orthogonality, which provide a simple way of assessing the plausibility of our approach. Appendix Table A.2 reports the results of our balance test at local level. For this analysis, we regress our shift-share variable, ΔA_l, on pre-trend total employment, the variables included in $\mathbf{X}$, and additional potential confounders, such as indicators of the LLM's main economic specialization, whether the LLM has faced industrial decline over the period 2001–2007, and whether there are small and medium size enterprise districts in the local economy.[11] If our shocks are as-good-as-randomly assigned to local labor markets, we expect those predetermined variables not to be correlated with ΔA_l.

The estimates in Table A.2 show that we fail to reject balance for all ten potential confounders at conventional levels of statistical significance. LLMs exposed to a large touristic attractiveness shock tend to have a higher baseline unemployment rate (this is significant only at the 10% level). We argue that this imbalance is unlikely to invalidate our research design. In the next section, in fact, we find evidence supporting the lack of correlation between baseline unemployment and ε_l in equation (1). Notice that we include this and the other variables in $\mathbf{X}$ as controls in estimation, and in subsection 4.2, we perform the analysis after stratifying LLMs on the basis of their start-of-period unemployment rate.

4 Evidence

4.1 Impacts on Local Tourism Activity and Employment

Table 2 reports the estimates of equation (1), where we explore the effect of changes in touristic attractiveness on local activity and employment growth in LLM l. Our outcomes here are the changes in the log number of tourist nights, the log tourist expenditure, the log

[11] This last set of variables is not included in $\mathbf{X}$, since they do not systematically have robust predictive power for our outcomes of interest.

number of workers employed in tourist industries, and the log number of total jobs. All regressions include controls for broad regional dummy variables (NUTS 1), the baseline unemployment rate (UR_0), baseline (log) population, the baseline number of beds in official collective accommodation establishments, and the share of municipalities in each LLM (weighted by their population) classified as urban.[12]

The estimates in Column (a) in Table 2 indicate a clear positive relationship between attractiveness and nights spent in accommodation establishments. A one standard deviation rise in ΔA (i.e., 0.142, which corresponds to about one-half of its average sample value; see Table 1) is associated with a 17% increase in nights (= 1.175×0.142; $p < 0.01$). Similar evidence is found in Column (b) for the growth in tourist expenditure, although the impact is significant only at the 10% level. In this case, a one standard deviation increase in the change in touristic attractiveness is associated with a 10% growth in expenditure.

Column (c) in Table 2 reveals a positive effect, albeit statistically significant at the 10% level, on employment in tourist industries, with a one standard deviation increase in ΔA leading to a 1% growth in tourism employment. Finally, the results in Column (d) indicate that we cannot reject the null hypothesis of no relationship between changes in touristic attractiveness and overall employment growth. The combination of a positive effect on the tourism industry and no impact on total employment in local economies echoes the results shown by González and Surovtseva (2025) across Spanish regions in response to negative shocks to competing international tourist destinations.

The lack of an effect on total employment could be due to the possibility that tourism has no significant spillovers on other sectors in the local economy. Alternatively, it may reflect a greater use of seasonal or part-time work among individuals who are already employed, a case of complementarity along the intensive margin of labor supply. Although this is accounted for in our employment measure, which compounds all the employment spells in a given year, the data do not allow us to observe contract type and, thus, we cannot clearly identify this mechanism. It could also indicate that positive shocks to tourism may be absorbed simply with a contraction in employment in other sectors, a case of crowding out. Subsection 4.2 will examine some of these possibilities.

Before turning to channels, however, we ought to emphasize that there may be high levels of effect heterogeneity depending on the initial conditions of economic development in a given local labor market. The estimates in Table 2 for some of the $\mathbf{X}$ variables suggest that this is the case, especially the initial labor market thickness, proxied by population size (Glaeser and Maré, 2001; Bleakley and Lin, 2012), as well as the initial potential of the local supply of tourist services, proxied by the number of beds in registered collective

[12]Notice that the results do not change if the share of municipalities in a given LLM is weighted by area rather than by population. Baseline variables are computed for 2007.

accommodation establishments.[13] There is evidence of a positive correlation of the former with tourism employment, and a negative association of the latter.

4.2 Responses and Channels in High-Unemployment LLMs

It is plausible that the overall employment effect is larger for LLMs where job opportunities are limited at the start of the period. In these local economies, in fact, the workforce is likely underutilized, and this gives them greater chances for job growth (e.g., Buchheim, Watzinger and Wilhelm, 2020). In these same areas, the tourism industry is also less likely to be in direct competition for labor with other industries, precisely because they are characterized by slack labor markets (Bronzini et al., 2022).[14]

For this reason, we perform the rest of our analysis by distinguishing local economies with high start-of-period unemployment rates.[15] More precisely, our new regressions include an interaction term between ΔA_l and a dummy variable equal to 1 for LLMs with baseline unemployment rates in the top quintile of the distribution and 0 otherwise, denoted $\mathbf{1}\{\text{UR}_0^{[5]}\}$.[16]

The estimates are reported in Table 3 and display substantial heterogeneity. The results in Column (a) show that the positive impact of a change in touristic attractiveness on tourism employment found in Table 2 for all LLMs is driven by those with high unemployment rates (as evidenced by a positive and significant β_2). The sum of the direct effect of ΔA (β_1) and its interaction with $\mathbf{1}\{\text{UR}_0^{[5]}\}$, $\beta_1 + \beta_2$, reported at the bottom of the table, implies that one standard deviation increase in touristic attractiveness is associated with a statistically significant 2.7% increase in tourism employment in high-UR_0 LLMs.

Column (b) of Table 3 reports the estimates for overall employment growth. While the β_1 estimate is statistically and economically indistinguishable from zero, the β_2 estimate is large and significant at the 1% percent level. The sum of the two coefficients implies that a

[13] As discussed in the previous section, LLMs exposed to a large touristic attractiveness shock tend to have a higher baseline unemployment rate (significant only at the 10% level; see Appendix Table A.2). Excluding this variable from the estimation of equation (1), however, does not lead to a different β estimate; this evidence supports the lack of a strong correlation with ε_l. This turns out to be the case also for the other potential confounders in $\mathbf{X}$.

[14] Figure A.5 reveals that Italy does feature high variation in unemployment rates across LLMs. This is also true across NUTS-1 regions, as illustrated in Figure A.6.

[15] Figure A.7 presents some examples of such local labor markets, which have values above the national median for the change in total employment, the change in employment in the tourist sector, and the change in ΔA. The LLMs highlighted in the figure are all in Southern regions and belong to different touristic categories, as some are seaside resorts (e.g., Salento and Gargano in the Apulia region), while others are primarily cultural heritage localities (e.g., Val di Noto in Sicily and Paestum in Campania).

[16] As before, all specifications control for the variables in the $\mathbf{X}$ vector, including UR_0. The results are virtually identical if we use $\mathbf{1}\{\text{UR}_0^{[5]}\}$, rather than UR_0. They are also robust to different cutoff points in the baseline unemployment distribution, for example, $\mathbf{1}\{\text{UR}_0^{[4]}\}$ or $\mathbf{1}\{\text{UR}_0^{[10]}\}$, that is, indicator variables equal to 1 for LLMs with UR_0 in the top quartile or the top decile of the distribution, respectively, and 0 otherwise.

one standard deviation increase in touristic attractiveness leads to a significant rise in total employment across high-UR_0 local economies of approximately 2% ($p < 0.01$). This is a sizable shift, if one takes into account that the average local labor market in Italy faced negative growth over this period (see Table 1).[17] The estimates in column (b) are broadly consistent with those reported by Bronzini et al. (2022), who find that the effect of tourism on the growth of value added per capita is greater for provinces starting from low levels of employment rates.

The above estimates are similar in specifications with additional controls at the LLM level. These include a set of dummy variables indicating the LLM's main economic specialization, the presence of small-medium enterprise districts within the local economy, and an indicator for industrial decline. The estimates on β_1 and β_2 (not shown for the sake of brevity) are very close to those reported in Columns (a) and (b) of Table 3.

Additional evidence that upholds our research design is presented in Column (c) of Table 3, where the outcome is given by the overall job growth in the period between 2001 and 2007. This allows us to check if employment growth has been affected by pre-trends, possibly reflecting the presence of earlier local investment, which could have attracted the inflow of foreign tourists and led to greater foreign tourist expenditures. The estimates show that neither β_1, β_2, nor their sum is significant at standard statistical levels. Overall, the evidence casts doubt on any major role played by earlier investments or policy interventions in high-UR_0 LLMs and provides additional confidence in the validity of our identification strategy.[18]

To identify the possibility of indirect employment effects generated through industries related to tourism, we redefine the dependent variable as the log number of individuals employed in leisure and creative industries, food production and retail in the local economy (see Appendix B for further details). As discussed in the Introduction and Section 3, policy-

[17] Figure A.8 reports the estimates of $(\beta_1 + \beta_2)$ when the shift is constructed dynamically, i.e., with increasingly longer intervals. This sum is statistically insignificant up to the eight-year mark, when the time interval refers to 2007–2015. It becomes significant for longer time horizons instead, starting from the 2007–2016 time interval up to the 2007–2019 interval, which is the horizon we use in our main analysis. This evidence suggests that it takes time for the impacts to emerge and having a longer time perspective is the only way to identify them adequately.

[18] We also analyzed the impact of pre-2007 direct LLM investment measures on ΔA and found no effect. These results are not presented for brevity but are available from the authors. Before 2001, most initiatives intended to promote tourist activities were introduced at the national level. Thus, they would have affected all LLMs at the same point in time. In 2001, the government enacted a reform that shifted all tourist-related matters from the state to the regions, a much more aggregated geographic unit than LLMs (see https://www.senato.it/service/PDF/PDFServer/BGT/01119028.pdf). This led, among other initiatives, to region-specific marketing campaigns. Our results do not change if we control for region (rather than NUTS-1) fixed effects. Finally, some recent policies are still at the national level, such as the facilitation of issuing tourist visas introduced in 2015 (see https://www.esteri.it/it/diplomazia-economica-e-politica-commerciale/diplomaziaeconomica/focuspaese). All this evidence points to the lack of differential pre-trends and bolsters our research design.

makers usually associate these industries with the indirect impact induced by tourism (e.g., UNESCO, 2020, among others). The estimates from this analysis are reported in Column (d) of Table 3. They show clear evidence of large indirect effects. Looking at the sum of the β_1 and β_2 coefficients, we find that a one standard deviation increase in touristic attractiveness implies a 2.2% increase in employment in industries that are indirectly related to tourism. The positive effect of ΔA on the tourist sector, therefore, propagates to other tourism-related industries, in which it is unlikely to crowd out employment.

As mentioned in subsection 4.1, the null result on total employment across all LLMs could be driven by the possibility that tourism has no (or small) spillovers on other sectors in the local economy. We have already documented the presence of indirect effects to related industries. We now check whether, following a shock in touristic attractiveness, there is also an impact on employment that propagates to the nontradable sector, in the spirit of the literature on local multipliers (Moretti, 2010; Moretti and Thulin, 2013; Giroud et al., 2024). The estimates in Column (e) of Table 3 indicate strong multiplier effects in high unemployment LLMs, with a one standard deviation increase in ΔA being associated with a 2.1% growth in employment in the nontradable sector, which excludes tourist industries according to the standard Eurostat classification. [19]

We conclude by analyzing the impact on wage growth at the LLM level, considering both wages in the tourism industry and wages in all sectors in high-UR_0 local economies. Since we only have access to LLM average wages rather than individual level data or at specific points of the wage distribution, our results may mask a great deal of variability within each local labor market and should be taken with caution. The estimates are displayed in Table A.3 and show that we cannot reject the null hypothesis of no effect of changes in touristic attractiveness on wage growth. Keeping in mind the caveat about the lower disaggregation degree of the data underpinning these results, this evidence could indicate that employment growth in the tourism sector, and in other sectors affected by its expansion, may primarily affect low-skill occupations with little scope for a sizable impact on labor income. Our estimates do not support the results found by Faber and Gaubert (2019) for Mexican coastline localities, which identify a positive effect of tourism on average municipality wages, but are in line with those reported by González and Surovtseva (2025) for Spain and by Bronzini et al. (2022) for Italy.

[19] Several related studies focus on the estimation of local multipliers and on the assumptions needed to convert local into national multipliers (see, among others, Nakamura and Steinsson, 2014; Dube, Hegland, Kaplan and Zipperer, 2018; Chodorow-Reich, 2019). Performing this analysis goes beyond the scope of our work.

5 Further Results

5.1 The Role Played by Airbnb

In recent years, a prominent feature of the hospitality sector has been the exponential growth in Airbnb at the global level. Airbnb started in Italy since its inception in 2008 and, over the sample period, Italy grew to become the third-largest Airbnb market worldwide, after the United States and France.[20] It is important to determine the extent to which the growth in local employment documented in subsection 4.2 is attributable to the diffusion of Airbnb.[21]

As ΔF includes accommodations listed in Airbnb, and we cannot separate them out from other accommodations, we perform a different analysis using additional data. However, we face some data limitations. Specifically, we have information on Airbnb listings for only two regions, Tuscany and Veneto, over the period 2007–16. Airbnb presence in Italy is not homogeneous across areas. Petrella et al. (2019) show that, with the exceptions of Tuscany and Umbria, where at the time listings were already numerous and widespread, most of the available slots are concentrated in the coastline (i.e., localities that contribute to the sea category in the construction of ΔA), lakes in the North, some of the mountain destinations in the Alps, and some of the major art cities (i.e., cultural localities). Both Tuscany and Veneto host key destinations with extremely high tourist flows, such as Florence, Siena, Isola d'Elba, Venice, Verona, and the Dolomites.

Our focus on local labor markets restricts the analysis to a total of 83 local economies, 45 in Tuscany and 38 in Veneto.[22] We estimate a specification that follows equation (1), but now the outcome variable is given by $\Delta(\text{Airbnb[Beds]})_l$, namely, the change in the (log) number of beds in Airbnb accommodations available in LLM l. All changes are computed between 2007 and 2016.

The results from this estimation are displayed in Table 4. Starting with the estimates in Column (a), we find that the relationship between the gain in touristic attractiveness and the change in the number of beds available through Airbnb is negative and significant. A one standard deviation increase in the ΔA (which is 0.132 in this sample) implies a 37% reduction in the growth of Airbnb-provided beds (= –2.823 $\times$ 0.132; $p < 0.05$). Albeit sur-

[20] For an overview of the Airbnb community in 2016 in Italy, see https://www.airbnbcitizen.com/wp-content/uploads/2016/05/overview_of_the_airbnb_community_in_italy.pdf. Petrella et al. (2019) provide a comprehensive description of the official Airbnb supply in Italy against a broader backdrop of the evolution of the entire hospitality sector.

[21] An analysis of the role played by Airbnb is also useful in and of itself, with no consensus on its impact on the tourist industry. Some studies in fact find adverse effects on hotels' financial performance (e.g., Zervas, Proserpio and Byers, 2017), while others find evidence of higher employment in the hotel sector with increased Airbnb listings (e.g., Dogru, Mody, Suess, McGinley and Line, 2020).

[22] As none of the LLMs in either region has a baseline unemployment rate in the top quintile of the distribution, we cannot explore response heterogeneity in high-UR_0 LLMs as we do in subsection 4.2. More data on Airbnb listings in poorer regions are needed for this analysis.

prising, this is likely to reflect lower growth in Airbnb supply when touristic attractiveness expands in areas that are traditionally stronger tourist destinations, precisely like Tuscany and Veneto. This is confirmed by the positive correlation between the initial capacity of the hospitality sector (proxied by the baseline number of beds in the local economy) and $\Delta(\text{Airbnb[Beds]})_l$, as well as by the positive association of the share of municipalities classified as urban (which are known to be of high touristic interest in both regions, such as Pisa, Lucca, Arezzo, Viareggio, Padua, Treviso, Abano Terme, and Peschiera del Garda, as well as the other destinations already mentioned) and Airbnb growth in each LLM.

Column (b) in Table 4 adds an indicator variable that equals 1 for LLMs in Tuscany, and 0 otherwise. In this case, the relationship between ΔA_l and $\Delta(\text{Airbnb[Beds]})_l$ remains negative, but it is three times smaller in absolute value than before (implying an 11% reduction) and is not statistically significant at conventional levels. Interestingly, the average LLM in Tuscany experienced a growth in the number of Airbnb beds 200% greater than that in Veneto, which agrees with the cross-sectional distribution of listings mentioned above. Finally, Column (c) of Table 4 presents the results from a specification in which we also interact ΔA with the Tuscany dummy variable. This shows that almost the entire negative relationship between the change in touristic attractiveness and the growth in Airbnb beds found in Column (a) is attributable to Veneto, while ΔA and $\Delta(\text{Airbnb[Beds]})$ grow weakly in the same direction for Tuscany.

It is difficult to generalize this evidence to the rest of the country, especially because we cannot focus on the experience faced by high-unemployment LLMs. Overall, the growth of Airbnb in Tuscany and Veneto does not seem to contribute to the positive relation between changes in attractiveness and changes in outcomes shown in Table 2 (i.e., tourist expenditures, tourist nights, and tourism employment). This null impact may reflect heterogeneous responses across different localities. Online booking platforms like Airbnb may find it hard to impact mature tourist markets, such as those in Tuscany and Veneto, even though some of the main cities in both regions seem to have witnessed significant growth in Airbnb listings (Giallorenzo, 2022). This, however, may not be the case in areas of other regions, where an established local tourist supply could be less prepared to absorb large positive demand shocks. For example, several rural destinations (e.g., "borghi" or small villages in remote areas), which have been characterized by historical population outflows and have fewer officially recognized collective accommodation establishments, can rely on an excess supply of cheap private dwelling units to face increases in international tourism.[23]

[23] See, for example, the 2023 report of the National Research Centre available at https://www.cnr.it/sites/default/files/public/media/attivita/editoria/CNR_XXVI_Rapporto_aggiornato.pdf. Focusing on remote destinations is a promising area for future research.

5.2 Foreign- or Domestic-Based Tourism Measures?

Our analysis focuses on the employment impact of changes in touristic attractiveness induced by plausibly exogenous long-run changes in foreign tourist expenditure. A reasonable question is to ask whether we could rely on comparable changes in domestic, rather than foreign, expenditure. The exclusion restriction invoked in this case is arguably stronger due to a more direct correlation between domestic spending and domestic employment. Leaving this concern aside, it is interesting to understand what would happen if we replaced our measured ΔF_j with an alternative measure based on domestic tourist expenditure.

To address this issue, we use ISTAT data on arrivals and nights spent by both foreign and resident tourists at the municipality level.[24] As the data have been collected only from 2014 onward, we cannot refit the same models that previously we estimated, since these require longer time differences. Figure A.9 shows the scatter plot of the changes in the number of nights spent by resident and foreign tourists in each local labor market over the period from 2014 to 2019. It reveals a positive Pearson's correlation coefficient of 0.29 ($p < 0.01$). The same evidence emerges when we consider a new measure of the changes in touristic attractiveness based on domestic (rather than foreign) tourist nights (rather than expenditure). As documented in Figure A.10, the correlation between this measure and the corresponding foreign-tourist-based measure at the LLM level is higher at 0.50 ($p < 0.01$).

This descriptive evidence suggests a clear complementarity between the two measures. This is reassuring but also not surprising, given that many Italian residents choose their holiday destinations in Italy rather than abroad (approximately two-thirds as opposed to one-third over the 2008–2019 period). Despite this strong correlation, however, a domestic-based measure of touristic attractiveness is likely to omit important sources of tourist flows and their spillovers, raising issues of measurement error bias, such as those related to second homes (about one-third of Italians own a second home) and the phenomenon of "staycation", which may get heavily underreported if it is spent in family or friends' accommodations. In addition to such considerations, any domestic-based measure is likely to share a meaningful correlation with the unobservables, ε_l, influencing the outcomes of interest, ΔN_l, in equation (1). A different, more credible shift variable will have to be used in this case.

[24] Istat carries out a census survey collecting data on the number of travelers (Italian and foreign) and their overnight stays in registered establishments in Italy. It therefore considers foreigners visiting Italy as well as domestic tourism (trips made within Italy by Italian residents). The survey census looks at the supply side of tourism services, drawing on the reports of tourist accommodation establishments. Contrary to the Bank of Italy's survey, it ignores data on travelers staying in unregistered facilities (e.g., private homes) and on same-day visitors. Moreover, it does not collect data on travelers' expenditure (Bank of Italy, 2017). Data on municipalities with less than three establishments are missing to protect statistical confidentiality. These municipalities account for roughly 3% of the total nights spent by tourists at official collective accommodation establishments in Italy.

6 Conclusions

This paper documents how the local labor market responds to a change in touristic attractiveness in Italy between 2007 and 2019. Drawing on data from several sources, we find a strong positive relationship between changes in attractiveness and changes in the local tourist-related economic activity, with a positive impact on tourist nights and expenditure and tourism employment, but no effect on total employment, when we consider all local labor markets.

The strongest impacts, however, emerge in LLMs with high baseline unemployment rates (i.e., rates in the top quintile of the baseline distribution). Across these local economies, a one standard deviation increase in attractiveness is associated with a 2% increase in total employment, which is arguably a sizable shift, keeping in mind that Italy faced negative trends in the total employment rate over the period under analysis. This result may reflect the presence of an underutilized workforce in areas where job opportunities at baseline are limited, and where the tourist industry is less likely to be in competition with other industries for worker recruitment due to greater labor market slackness.

High-unemployment LLMs also display large, positive indirect employment effects, which are generated through local multipliers in industries related to tourism as well as in the nontradable sector, an important piece of evidence of significant cross-sector spillovers. We cannot find evidence of a significant relationship between changes in attractiveness and wage growth, possibly indicating that tourism is likely to generate low-skill, low-pay jobs with modest career prospects, and not just in the tourism sector.

Overall, these results are relevant to the current policy debate about the role played by tourism in the development of the local economy. Some argue that tourism expansions can have a beneficial impact on local labor markets by triggering economies of scale, private investment, and efficiency gains through greater competitiveness (e.g., Song, Dwyer and Zhengcao, 2012; Brida, Cortes-Jimenez and Pulina, 2016). Others argue that tourism is a low productivity industry, employing less skilled workers compared to other sectors and that tourism booms could shift resources (including labor) away from tradable and high-productivity sectors into nontradable industries related to the tourism sector, which are generally less productive, harming economic development (e.g., Copeland, 1991; Holzner, 2011). Our estimates seem to both support and challenge both views. A new perspective on how tourism can affect the local economy is likely needed (Faber and Gaubert, 2019; Allen et al., 2023).

Most current tourism policies are aimed at supporting sustainability across multiple dimensions (including local employment growth, affordable housing, and environmental protection) and promoting local attractiveness for tourism, namely, ΔA_l in our analysis (e.g., OECD, 2022; World Tourism Organization, 2024). Our findings are directly pertinent to

this kind of policy initiatives.

This acquires further salience in the evolving context of the competing demands, on the one hand, by local residents in many parts of the globe (e.g., Amsterdam, Barcelona, Canary Islands, Venice, Florence, Capri, Goa, and Mount Fuji), who have recently expressed dissatisfaction with the volume of tourists traveling to their local areas and posing threats to their livelihood and their environment, and, on the other hand, by vacationers (both domestic and foreign) whose volume has grown rapidly post-pandemic and does not seem to slow down (see Harvard International Review, 2024, among others). Understanding how those two demands can be met in a world with increasingly favorable propensities toward sustainable living (e.g., slow food, 15-minute cities, and livable communities), growing reliance on peer-to-peer platforms and low-fare travels, and greater pressure on local governments' finances represents a major step forward.

References

Allen, Treb, Simon Fuchs, Sharat Ganapati, Alberto Graziano, Rocio Madera, and Judit Montoriol-Garriga, "Urban Welfare: Tourism in Barcelona," Mimeo, Atlanta FED 2023.

Autor, David, David Dorn, and Gordon H Hanson, "The China Syndrome: Local Labor Market Effects of Import Competition in the United States," *American Economic Review*, 2013, *103* (6), 2121–2168.

Autor, David H and Mark G Duggan, "The Rise in the Disability Rolls and the Decline in Unemployment," *Quarterly Journal of Economics*, 2003, *118* (1), 157–206.

Bank of Italy, *Survey on International Tourism – Methods and Sources: Methodological Notes*, Roma: Banca d'Italia, <https://www.bancaditalia.it/pubblicazioni/metodi-e-fonti-note/metodi-note-2017/tourism_note_met-en.pdf?language_id=1>, 2017.

Bleakley, Hoyt and Jeffrey Lin, "Thick-Market Effects and Churning in the Labor Market: Evidence from US cities," *Journal of Urban Economics*, 2012, *72* (2-3), 87–103.

Borusyak, Kirill, Peter Hull, and Xavier Jaravel, "Quasi-Experimental Shift-Share Research Designs," *Review of Economic Studies*, 2022, *89* (1), 181–213.

Brida, J.G., I Cortes-Jimenez, and M. Pulina, "Has the Tourism-Led Growth Hypothesis Been Validated? A Literature Review," *Current Issues in Tourism*, 2016, *19*, 394–430.

Bronzini, Raffaello, Emanuele Ciani, and Francesco Montaruli, "Tourism and Local Growth in Italy," *Regional Studies*, 2022, *56* (1), 140–154.

Buchheim, Lukas, Martin Watzinger, and Matthias Wilhelm, "Job Creation in Tight and Slack Labor Markets," *Journal of Monetary Economics*, 2020, *114*, 126–143.

Chodorow-Reich, Gabriel, "Geographic Cross-Sectional Fiscal Spending Multipliers: What Have We Learned?," *American Economic Journal: Economic Policy*, 2019, *11*, 1–34.

Copeland, Brian R., "Tourism, Welfare and De-Industrialization in a Small Open Economy," *Economica*, 1991, *58*, 515–529.

Dauth, Wolfgang, Sebastian Findeisen, and Jens Suedekum, "The Rise of the East and the Far East: German Labor Markets and Trade Integration," *Journal of the European Economic Association*, 2014, *12* (6), 1643–1675.

Di Giacomo, Giuseppe and Benjamin Lerch, "Service Jobs and Education: Evidence from Tourism Shocks in Italy," 2025. Unpublished Paper, available at <https://ssrn.com/abstract=4387557orhttp://dx.doi.org/10.2139/ssrn.4387557>.

Dogru, Tarik, Makarand Mody, Courtney Suess, Sean McGinley, and Nathaniel D. Line, "The Airbnb Paradox: Positive Employment Effects in the Hospitality Industry," *Tourism Management*, 2020, *77*, 104001.

Dube, Arindrajit, Thomas Hegland, Ethan Kaplan, and Ben Zipperer, "Excess Capacity and Heterogeneity in the Fiscal Multiplier: Evidence from the Recovery Act," Unpublished Paper, University of Maryland at College Park 2018.

Eurostat, *Tourism Satellite Accounts in Europe*, Luxembourg: Publications Office of the European Union, <https://ec.europa.eu/eurostat/web/products-statistical-reports/w/ks-ft-22-011/>, 2023.

Faber, Benjamin and Cecile Gaubert, "Tourism and Economic Development: Evidence from Mexico's Coastline," *American Economic Review*, 2019, *109* (6), 2245–2293.

Faieta, Elena, Zhexin Feng, and Michel Serafinelli, "Rural Employment Evolutions," Technical Report, IZA Discussion Paper 17715, 2025.

Favero, Luca and Ilaria Malisan, "Next Job: Matera. How Tourism and Spotlight Shape the Local Labour Market," Working Paper, DONDENA Research Centre, 2024.

Gathmann, Christina, Ines Helm, and Uta Schönberg, "Spillover Effects of Mass Layoffs," *Journal of the European Economic Association*, 2020, *18* (1), 427–468.

Giallorenzo, Flavia, *Airbnb in Urban Regions*, Doctoral Dissertation: Faculty of Architecture, University of Florence, <https://flore.unifi.it/handle/2158/1277399>, 2022.

Giroud, Xavier, Simone Lenzu, Quinn Maingi, and Holger Mueller, "Propagation and Amplification of Local Productivity Spillovers," *Econometrica*, 2024, *92* (5), 1589–1619.

Glaeser, Edward L. and David C. Maré, "Cities and Skills," *Journal of Labor Economics*, 2001, *19* (2), 316–342.

Goldsmith-Pinkham, Paul, Isaac Sorkin, and Henry Swift, "Bartik Instruments: What, When, Why, and How," *American Economic Review*, 2020, *110* (8), 2586–2624.

González, Libertad and Tetyana Surovtseva, "Do More Tourists Promote Local Employment?," 2025. *Journal of Human Resources*, forthcoming.

Greenstone, Michael, Richard Hornbeck, and Enrico Moretti, "Identifying Agglomeration Spillovers: Evidence from Winners and Losers of Large Plant Openings," *Journal of Political Economy*, 2010, *118* (3), 536–598.

Harvard International Review, *The Misunderstood Rise of Anti-Tourism in Europe*, available at <https://hir.harvard.edu/the-misunderstood-rise-of-anti-tourism-in-europe/>, 2024.

Helm, Ines, "National Industry Trade Shocks, Local Labour Markets, and Agglomeration Spillovers," *Review of Economic Studies*, 2020, *87* (3), 1399–1431.

Holzner, Mario, "Tourism, and Economic Development: The Beach Disease?," *Tourism Management*, 2011, *34*, 922–933.

Le Barbanchon, Thomas, Maddalena Ronchi, and Julien Sauvagnat, "Hiring Difficulties and Firms' Growth," Discussion Paper, CEPR DP No. 17891, 2023.

Marchand, Joseph, "Local Labor Market Impacts of Energy Boom-Bust-Boom in Western Canada," *Journal of Urban Economics*, 2012, *71* (1), 165–174.

Mian, Atif and Amir Sufi, "What Explains the 2007–2009 Drop in Employment?," *Econometrica*, 2014, *82* (6), 2197–2223.

Moretti, Enrico, "Local Multipliers," *American Economic Review*, 2010, *100* (2), 373–377.

_ , "Local Labor Markets," in Orley Ashenfelter and David Card, eds., *Handbook of Labor Economics*, Vol. 4B, Elsevier, 2011, pp. 1237–1313.

_ **and Per Thulin**, "Local Multipliers and Human Capital in the United States and Sweden," *Industrial and Corporate Change*, 2013, *22* (1), 339–362.

Nakamura, Emi and Jón Steinsson, "Fiscal Stimulus in a Monetary Union: Evidence from US Regions," *American Economic Review*, 2014, *104*, 753–792.

Nocito, Samuel, Marcello Sartarelli, and Francesco Sobbrio, "A Beam of Light: Media, Tourism and Economic Development," *Journal of Urban Economics*, 2023, *137*, 103575.

OECD, *OECD Tourism Trends and Policies 2022*, Paris: OECD Publishing, available at <https://doi.org/10.1787/a8dd3019-en>, 2022.

Petrella, Andrea, Roberto Torrini, Guglielmo Barone, Enrico Beretta, Emanuele Breda, Rita Cappariello, Giuseppe Ciaccio, Laura Conti et al., "Turismo in Italia: Numeri e Potenziale di Sviluppo [Tourism in Italy: Figures and Potential for Development]," Bank of Italy Occasional Paper No. 505, Bank of Italy, 2019.

Song, H., L. Dwyer, and G.L. Zhengcao, "Tourism Economics Research: A Review and Assessment," *Annals of Tourism Research*, 2012, *39*, 1653–1682.

UNESCO, *Socio-Economic Impacts of World Heritage Listing*, UNESCO: World Heritage Centre, available at <https://whc.unesco.org/en/socio-economic-impacts/>, 2020.

UNWTO, *Yearbook of Tourism Statistics*, Madrid: United Nations World Tourism Organization, available at <https://www.e-unwto.org/doi/book/10.18111/9789284424139>, 2024.

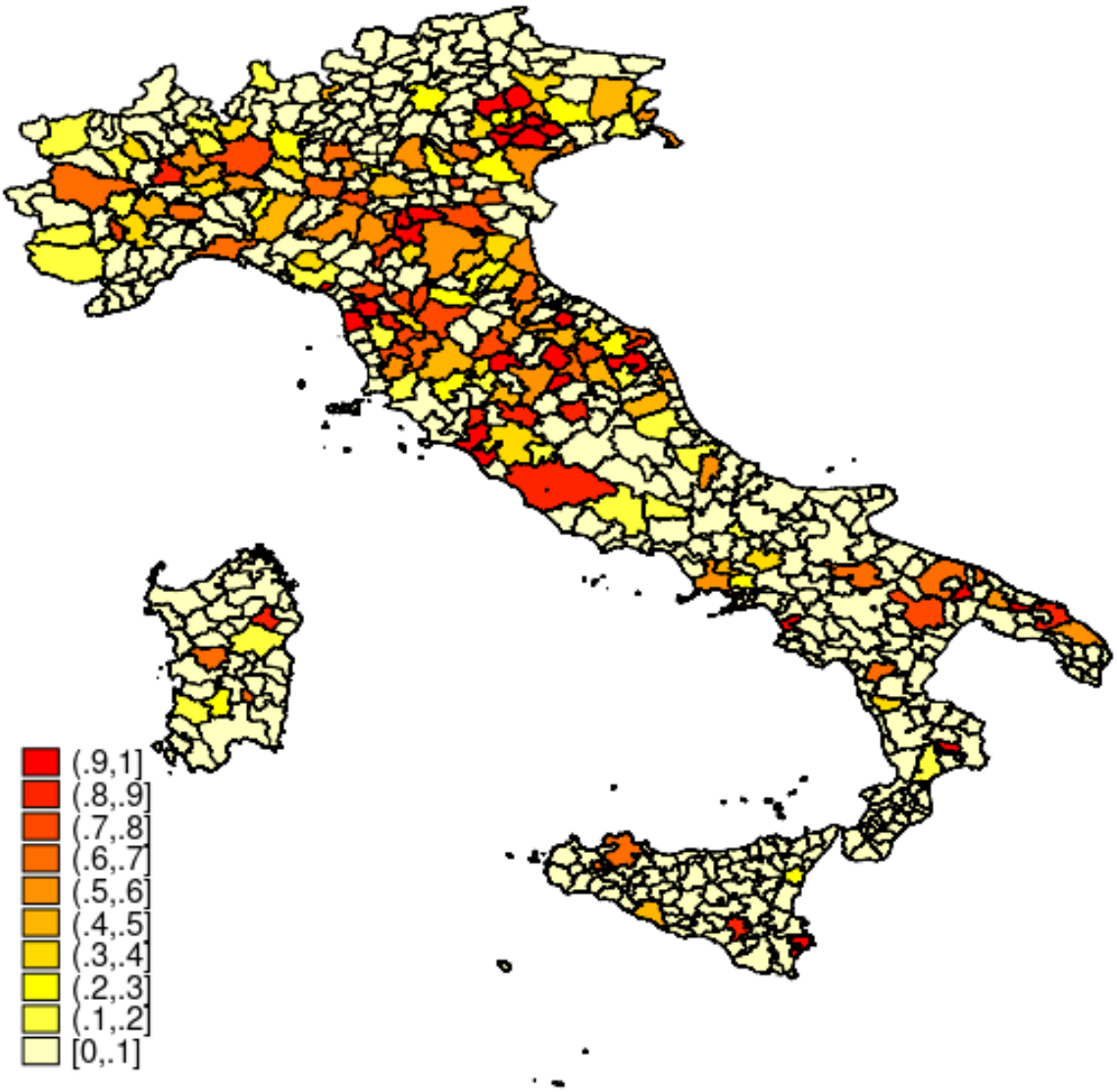
Vanhove, Norbert, *The Economics of Tourism Destinations*, 4th ed., London: Routledge, 2022.

Weaver, David and Martin Oppermann, *Tourism Management*, Hoboken, NJ: Wiley, 2000.

World Tourism Organization, *The Integration of Biodiversity in National Tourism Policies*, Madrid: UN Tourism, available at <https://doi.org/10.18111/9789284424900>, 2024.

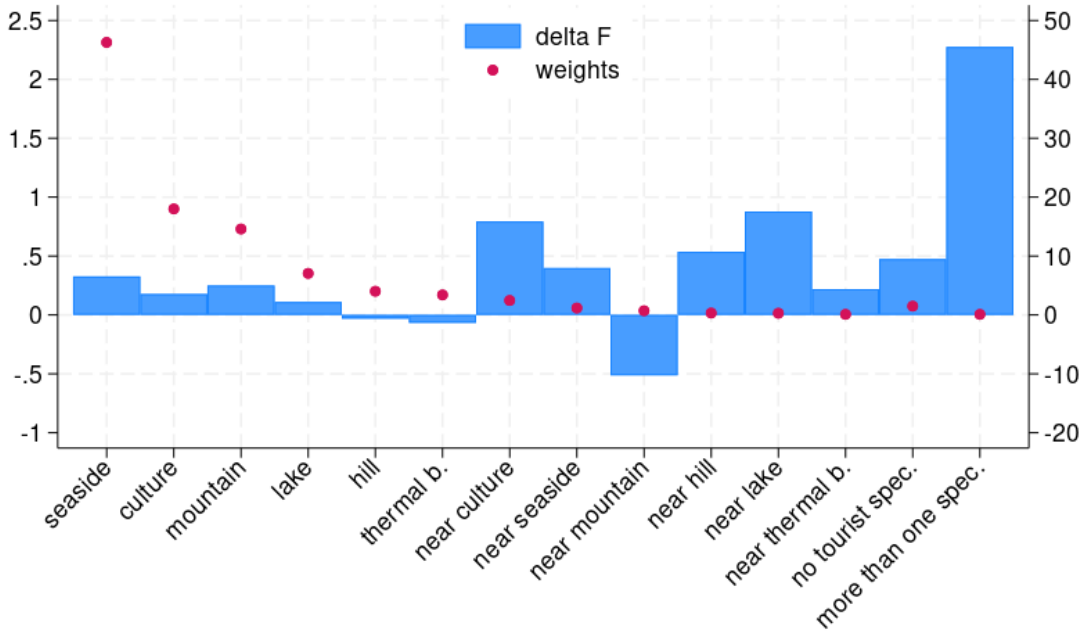
Zervas, Georgios, Davide Proserpio, and John W. Byers, "The Rise of the Sharing Economy: Estimating the Impact of Airbnb on the Hotel Industry," *Journal of Marketing Research*, 2017, *54* (5), 687–705.

Figure 1: Heterogeneity in ω_{jl}, j={culture} across LLMs



Notes: The figure shows the distribution of LLMs by decile of the share of municipalities specialized in touristic category j={culture}. The calculation accounts for municipality size in terms of number of beds in officially recognized collective accommodation establishments in 2007.

Figure 2: ΔF_j and ω_j by category of touristic specialization



Sources: Authors' calculations using data from Bank of Italy and ISTAT.
Notes: Histograms in blue display ΔF_j, namely, the log-difference in foreign tourists' expenditure from 2007 to 2019 (deflated, base = 2015) for each touristic category j (scale is shown on the left vertical axis). This component is missing for the "near religion" category as the Bank of Italy's Survey on International Tourism did not include tourists who visited any of the eight municipalities featuring this specialization in 2019. The red dots represent the share, ω_j, of each touristic category j in terms of number of beds in official collective accommodation establishments in 2007, expressed in percentage terms (scale is shown on the right vertical axis).

Table 1: Summary statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
ΔA (Change in touristic attractiveness)	611	0.272	0.142	−0.020	0.546
ΔN (Outcomes)					
Tourist Nights	540	0.219	1.112	−1.901	2.397
Tourist Expenditure	540	0.132	1.068	−2.059	2.136
Tourist Employment	611	0.221	0.154	−0.067	0.504
Total Employment	611	−0.052	0.095	−0.213	0.135
(Pre) Total Employment	611	0.224	0.135	−0.720	0.647
Indirectly Related Employment	611	0.092	0.175	−0.204	0.436
Nontradable Employment	611	−0.159	0.103	−0.349	0.041
Tourism Wage	504	0.144	0.084	−0.010	0.295
Overall Wage	603	0.181	0.053	0.079	0.275
Other variables ($\mathbf{X}$)					
Baseline Unemployment Rate (%)	611	6.595	3.809	1.421	23.048
Baseline Population (Log)	611	10.718	1.102	8.017	15.101
Baseline Nr. Beds (10,000's)	611	0.734	1.445	0.000	15.174
Urban Area Share	611	0.081	0.213	0.000	1.000

Notes: All figures are computed at the local labor market level. All changes are computed between 2007 and 2019, unless differently specified. All monetary variables are deflated and expressed in 2015 Euros. ΔA denotes the change in touristic attractiveness as defined in equation (2). 'Tourist Nights' refers to the change in the log number of tourist nights spent in accommodation establishments. 'Tourist Expenditure' is the change in the log tourist expenditure. 'Tourist Employment' is the change in the log number of workers employed in tourist industries. 'Total Employment' is the change in the log number of workers employed in all private non-agricultural firms. '(Pre) Total Employment' is the change in the log number of workers employed in all private non-agricultural firms between 2001 and 2007. 'Indirectly Related Employment' is the change in the log number of workers employed in industries related to tourism (i.e., leisure and creative industries, food production, and retail). 'Nontradable Employment' refers to the change in the log number of workers employed in nontradable industries (excluding industries classified by Eurostat as touristic industries). 'Tourism Wage' is the change in the log wage in the tourism industry. 'Overall Wage' is the change in the log wage in all sectors. 'Baseline Unemployment Rate' is the unemployment rate in 2007. 'Baseline Population' is the population of LLMs in 2007. 'Baseline Nr. Beds' is the number of beds in official collective accommodation establishments in 2007. 'Urban Area Share' is the share of population in urban municipalities.

Table 2: Touristic attractiveness, local tourism activity, and employment

	(a) Tourist Nights	(b) Tourist Expenditure	(c) Tourism Employment	(d) Total Employment
ΔA	1.175***	0.714*	0.080*	0.031
	(0.416)	(0.391)	(0.044)	(0.028)
UR_0	-0.017	-0.029	0.000	0.002
	(0.025)	(0.025)	(0.003)	(0.002)
Baseline Population	0.030	0.037	0.043***	0.009*
	(0.053)	(0.051)	(0.007)	(0.005)
Baseline Nr. Beds	0.008	0.038**	-0.016***	0.004
	(0.017)	(0.016)	(0.004)	(0.003)
Urban Area Share	-0.329	-0.275	-0.056*	0.018
	(0.238)	(0.228)	(0.034)	(0.020)
Observations	540	540	611	611
Adjusted R^2	0.050	0.045	0.125	0.099

Notes: The dependent variables are the change in the log number of tourist nights (Column (a)), log tourist expenditure (b), log number of workers employed in tourist industries (c), log number of workers employed in all private non-agricultural firms (d). NUTS-1 regional dummy variables are included in all regressions. 'Observations' corresponds to the number of LLMs in the estimating sample. Robust standard errors are in parentheses.

* p <0.1, ** p <0.05, *** p <0.01.

Table 3: Employment effects in LLMs with a high baseline unemployment rate

		(a) Tourism	(b) Total	(c) (Pre) Total	(d) Indirectly Related	(e) Nontradable
ΔA	(β_1)	0.045	−0.003	0.009	−0.028	0.041
		(0.046)	(0.028)	(0.046)	(0.051)	(0.031)
$\Delta A \times \mathbf{1}\{\text{UR}_0^{[5]}\}$	(β_2)	0.145**	0.141***	−0.041	0.180***	0.104**
		(0.067)	(0.040)	(0.051)	(0.068)	(0.043)
$\beta_1 + \beta_2$		0.190***	0.138***	−0.032	0.152**	0.145***
		(0.068)	(0.043)	(0.046)	(0.075)	(0.045)
Adjusted R^2		0.132	0.119	0.114	0.123	0.129

Notes: $\mathbf{1}\{\text{UR}_0^{[5]}\}$ is an indicator variable that takes a value 1 for LLMs with the baseline unemployment rate, UR_0, in the top quintile of the distribution, and 0 otherwise. All regressions include the same controls as in the specifications shown in Table 2. See the notes to Table 1 for the definition of the outcome variables. Robust standard errors are in parentheses.

* p $<$ 0.1, ** p $<$ 0.05, *** p $<$ 0.01.

Table 4: Touristic attractiveness and Airbnb supply

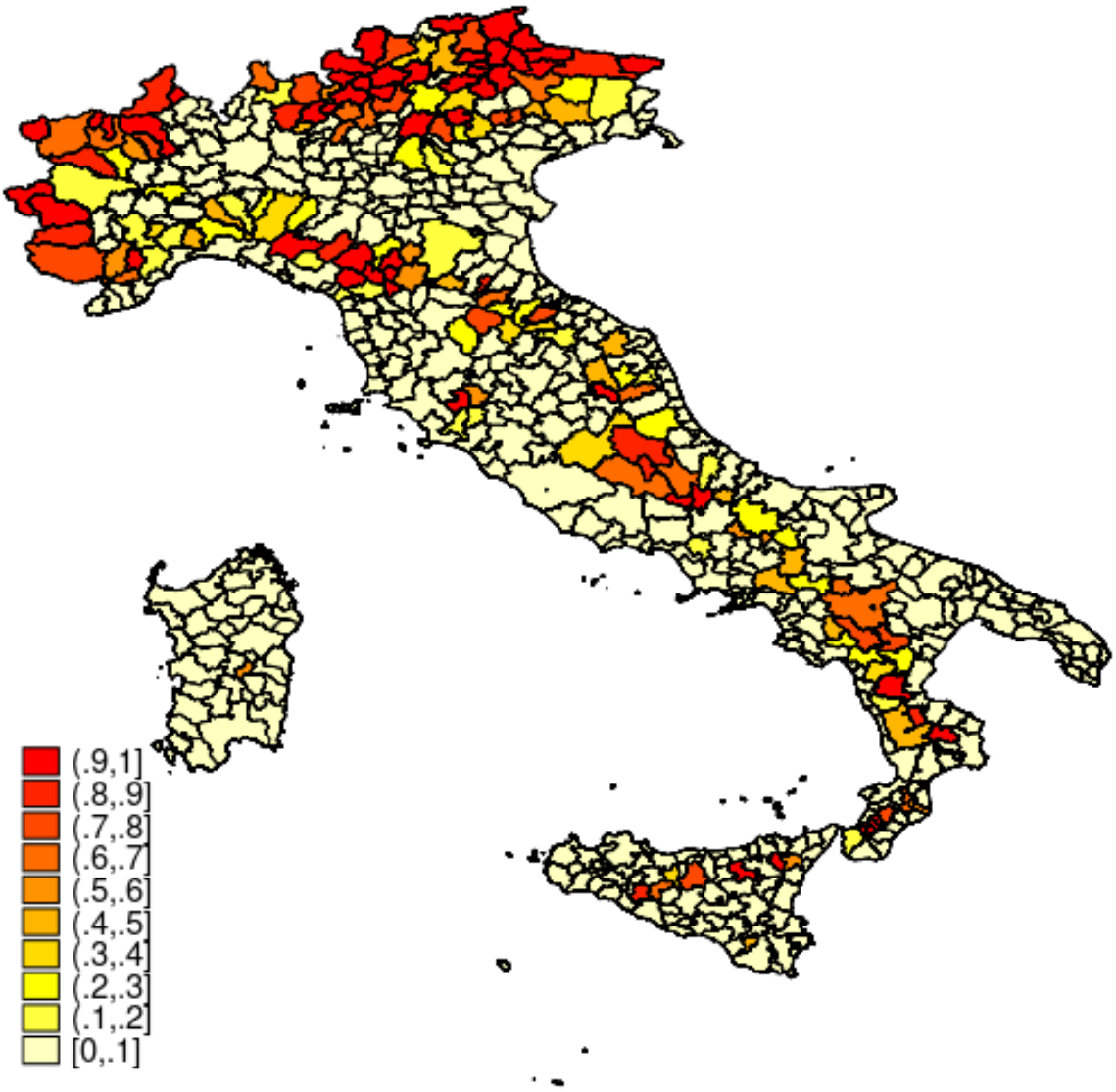
	(a)	(b)	(c)
ΔA	-2.823**	-0.861	-2.192*
	(1.102)	(0.742)	(1.322)
UR_0	0.225*	-0.114	-0.151
	(0.119)	(0.092)	(0.094)
Baseline Population	-0.072	0.304**	0.338***
	(0.128)	(0.127)	(0.124)
Baseline Nr. Beds	0.222*	0.257***	0.248***
	(0.127)	(0.086)	(0.080)
Urban Area Share	1.416**	0.304	0.183
	(0.632)	(0.488)	(0.478)
Tuscany		1.999***	1.397***
		(0.235)	(0.462)
$\Delta A \times$ Tuscany			2.864*
			(1.600)
Observations	83	83	83
Adjusted R^2	0.262	0.633	0.676

Notes: The dependent variable in all specifications (a)–(c) is the change in the (log) number of beds offered in Airbnb accommodations between 2007 and 2016. The mean (standard deviation) of the dependent variable is 5.658 (1.384). 'Observations' refers to the number of LLMs in the estimating sample. Robust standard errors are in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

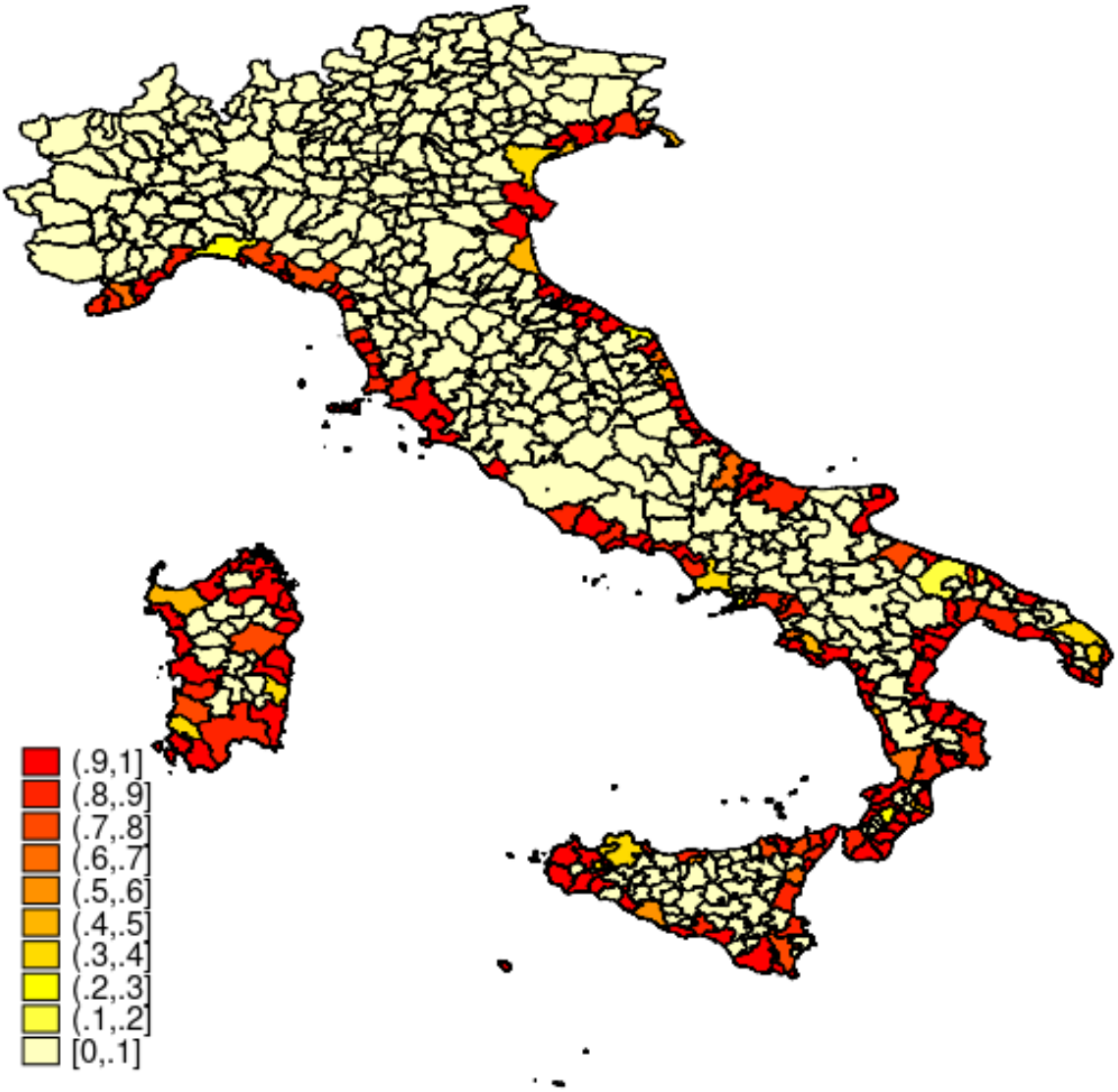
A Online Appendix

Figure A.1: Heterogeneity in ω_{jl}, j={mountain} across LLMs



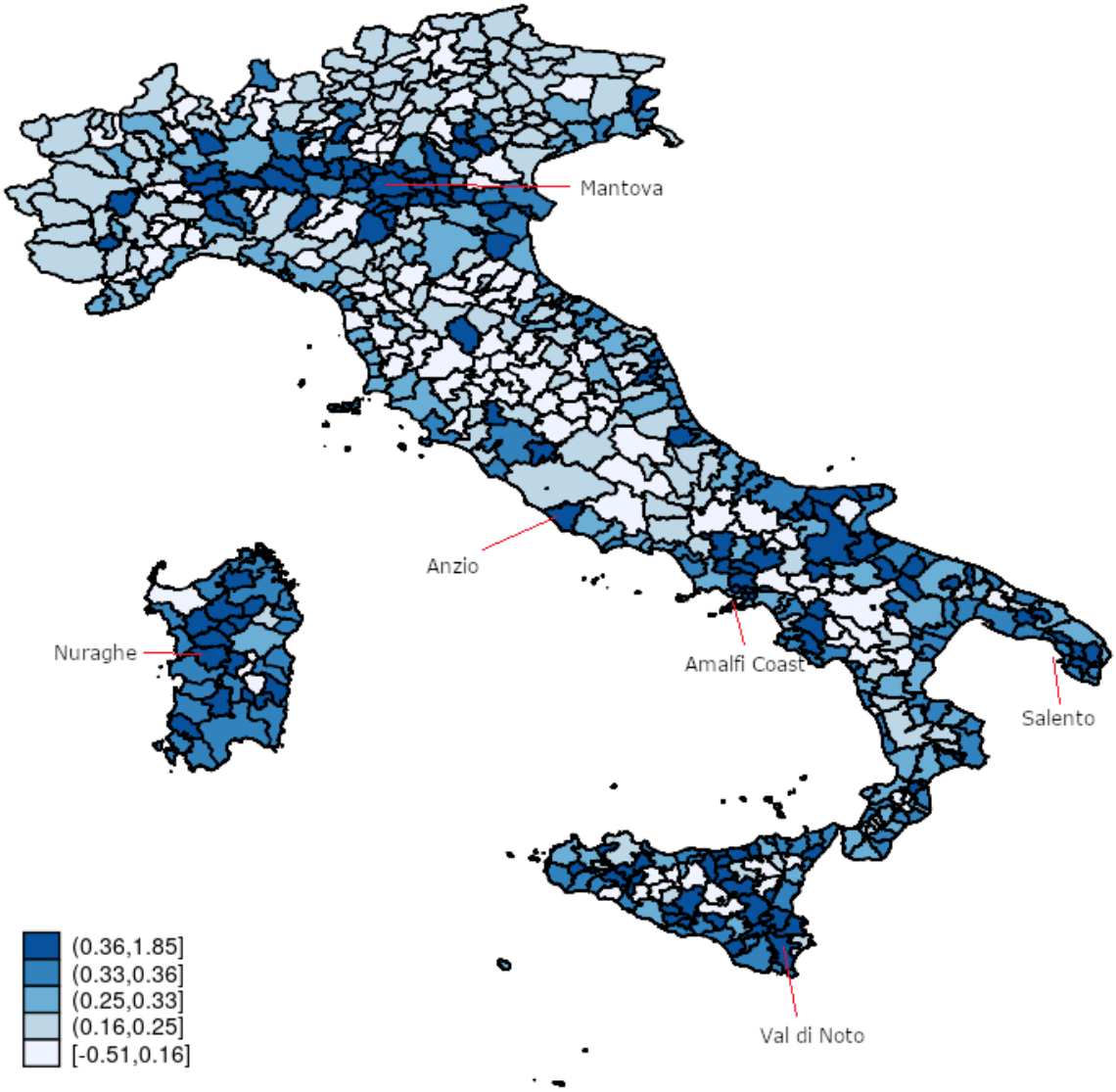
Notes: The figure shows the distribution of LLMs by decile of the share of municipalities specialized in touristic category j={mountain}. The calculation accounts for municipality size, in terms of number of beds in officially recognized collective accommodation establishments in 2007.

Figure A.2: Heterogeneity in ω_{jl}, j={seaside} across LLMs



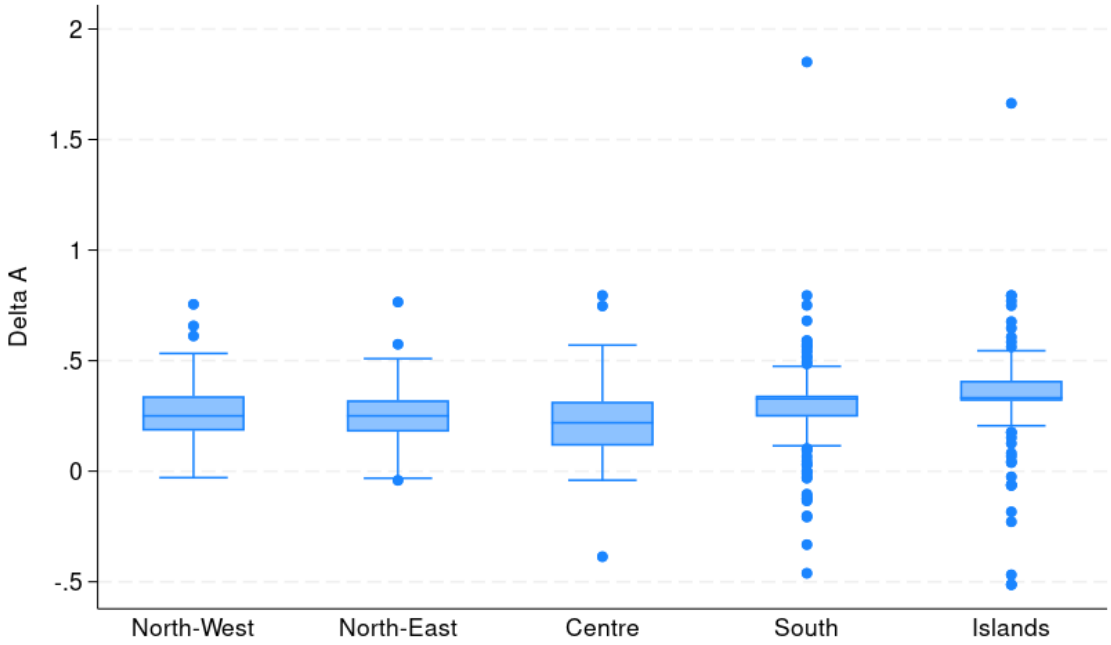
Notes: The figure shows the distribution of LLMs by decile of the share of municipalities specialized in touristic category j={seaside}. For other details, see the notes to Appendix Figure A.1.

Figure A.3: Heterogeneity in ΔA_l across LLMs



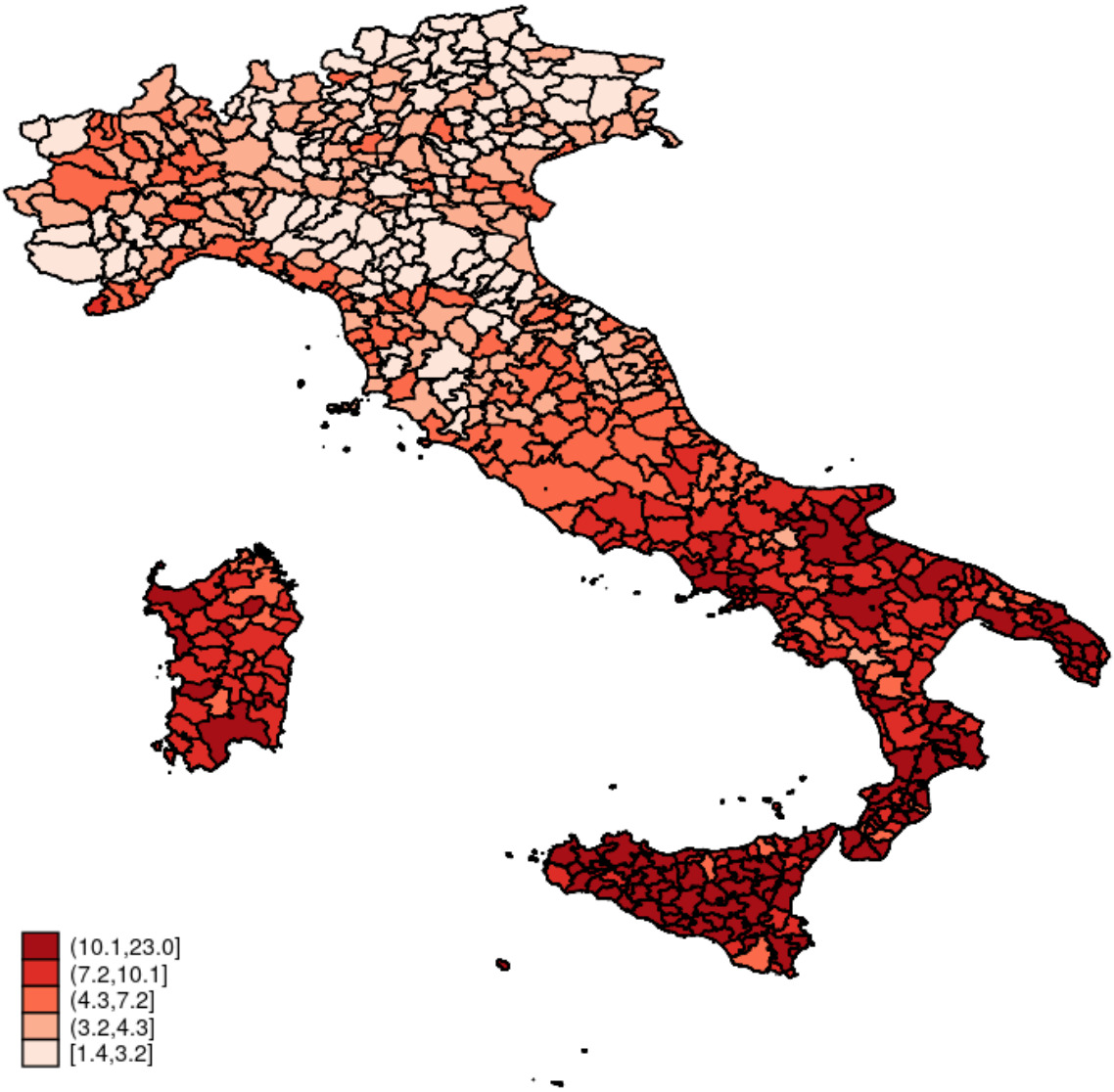
Sources: Bank of Italy and ISTAT.
Notes: The figure displays the distribution of LLMs by quintile of ΔA_l. The definition of ΔA_l is given in equation (2) in the text. Changes are calculated between 2007 and 2019.

Figure A.4: Distribution of ΔA_l by macro-regions



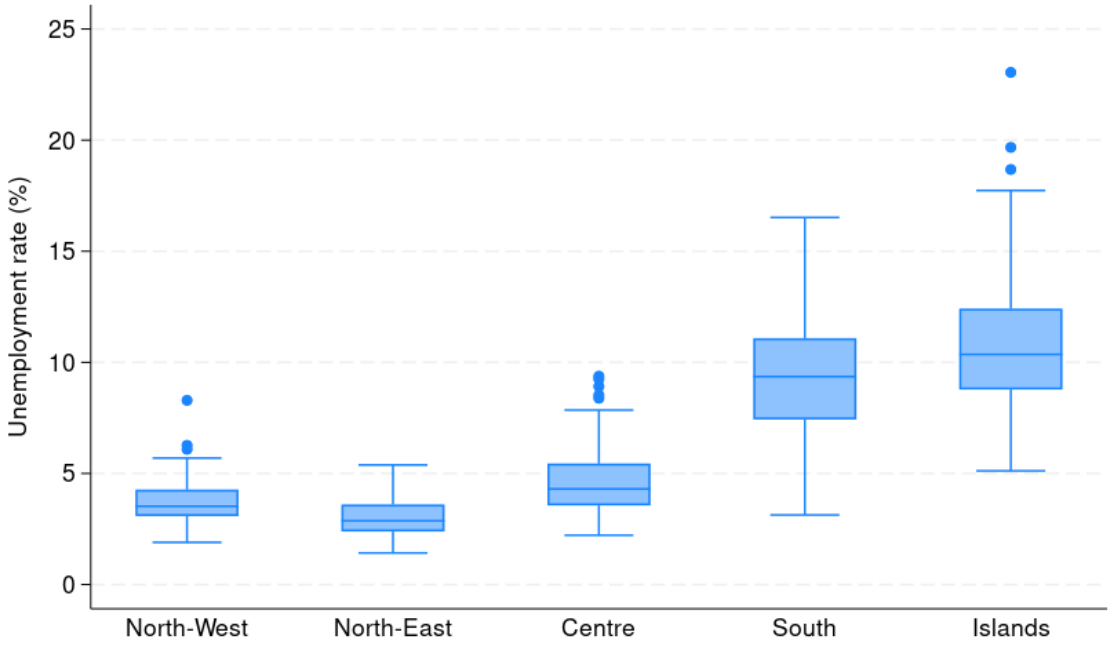
Sources: Bank of Italy and ISTAT.
Notes: For details, see the notes to Appendix Figure A.3.

Figure A.5: Heterogeneity in the baseline unemployment rate, UR_0, across LLMs



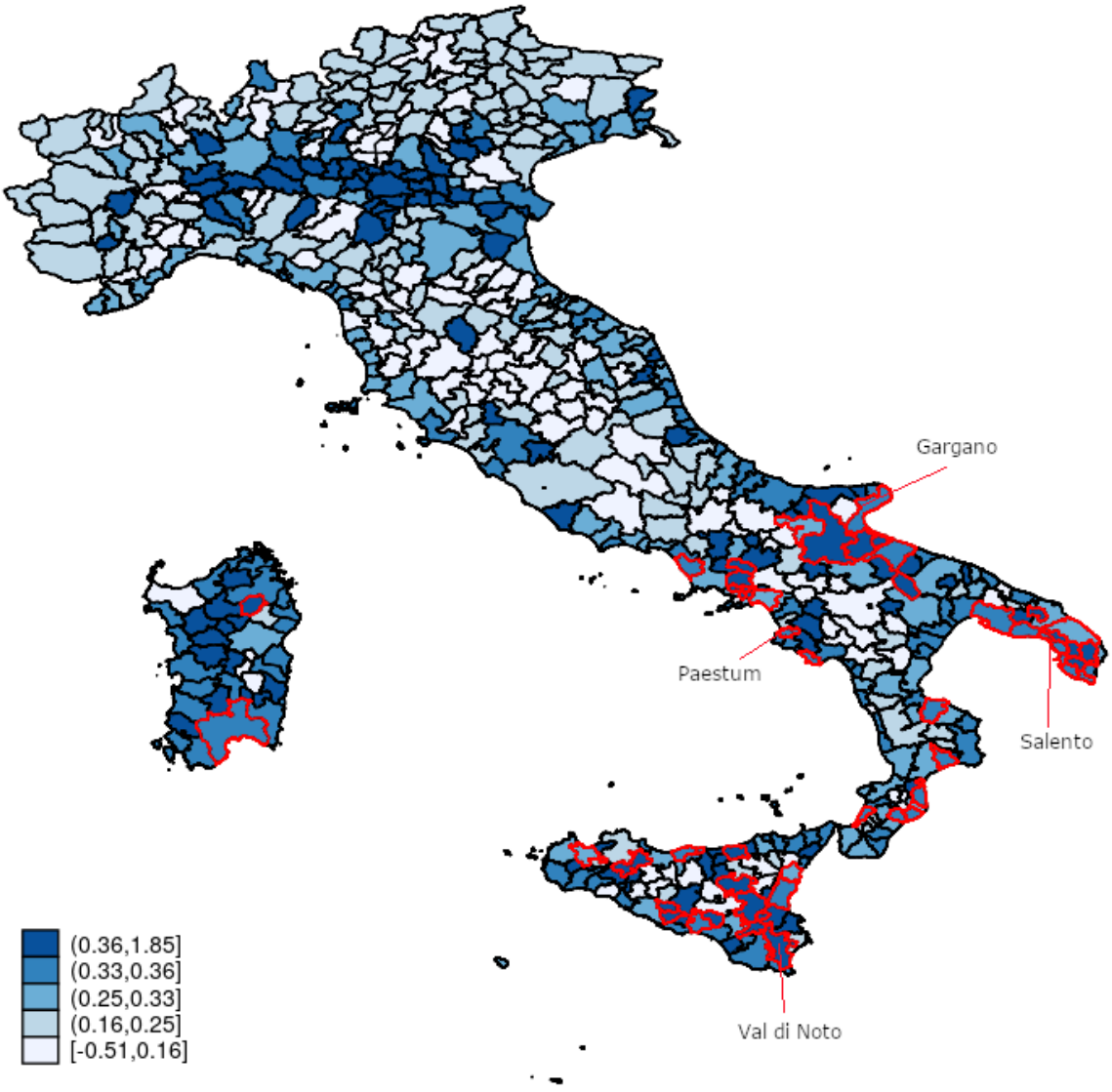
Source: ISTAT.
Notes: The figure shows the distribution of LLMs by quintile of the baseline unemployment rate, UR_0 (base year = 2007).

Figure A.6: Distribution of UR_0 by macro-regions



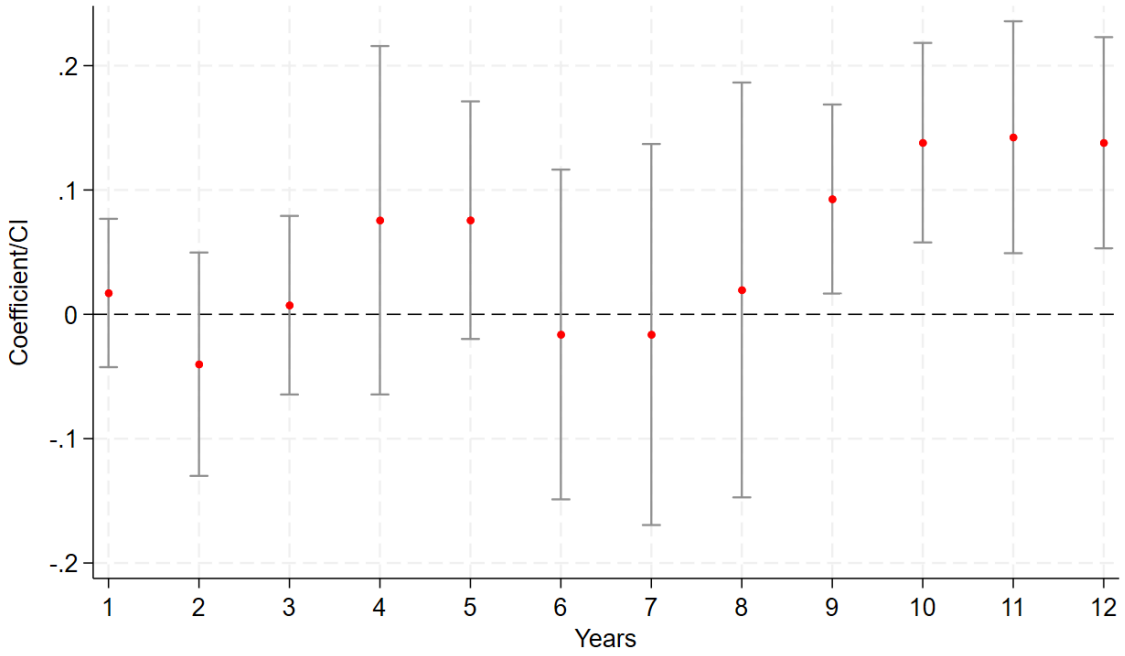
Source: ISTAT.
Notes: For details, see the notes to Appendix Figure A.5.

Figure A.7: High-UR$_0$ LLMs with above-median ΔA_l and changes in employment variables



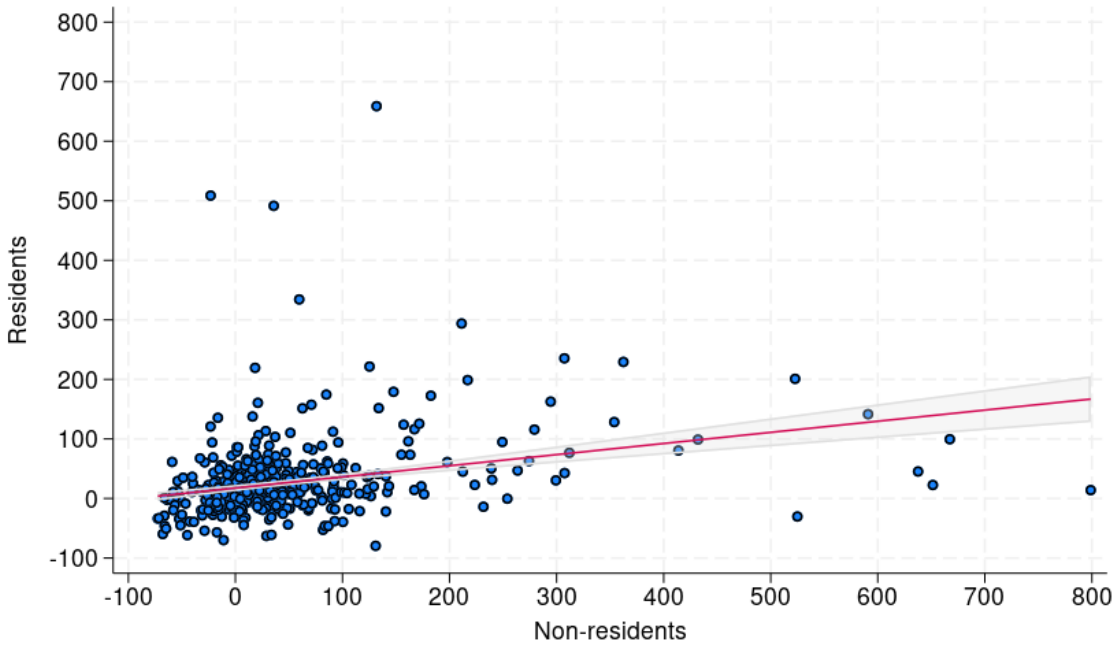
Sources: Bank of Italy and ISTAT.
Notes: The figure displays the distribution of high-UR$_0$ LLMs by quintile of ΔA_l. Highlighted in red is the perimeter of LLMs with an unemployment rate in the top quintile in 2007 (our definition of high-UR$_0$) and values above the national median for the following variables: change in total employment, change in employment in the tourist sector, and ΔA. All changes are calculated between 2007 and 2019.

Figure A.8: Sum of β_1 and β_2 when the shift is constructed dynamically



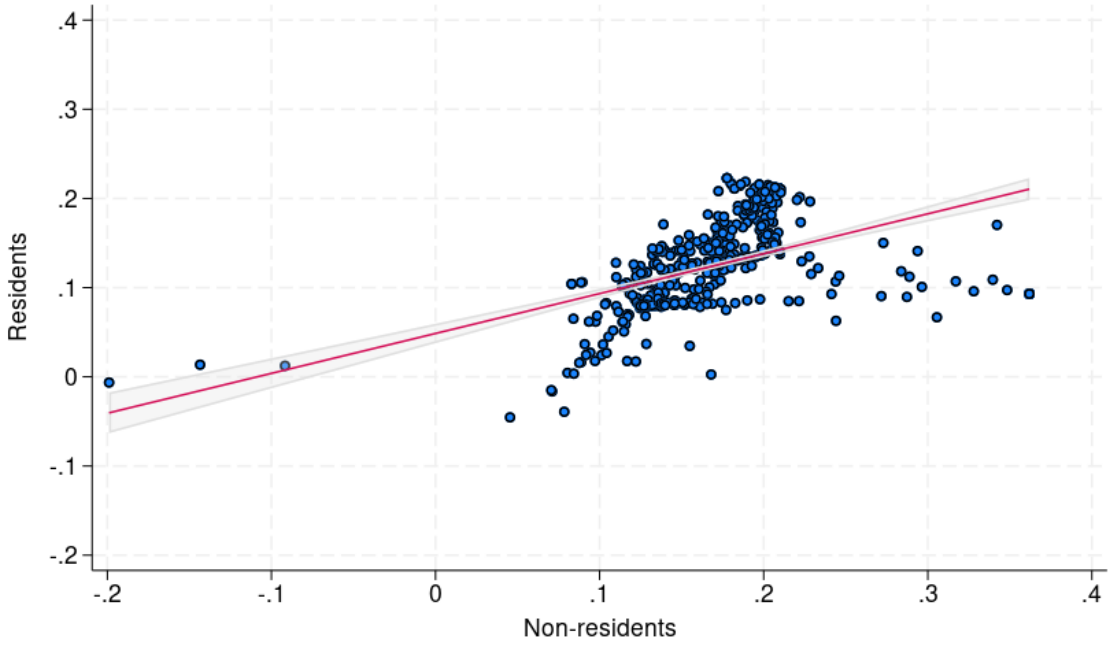
Notes: The figure shows the sum of β_1 and β_2 when the shift is constructed dynamically, i.e., with increasingly longer intervals. For instance, the value 1 on the x-axis corresponds to the interval 2007–2008, the value 12 corresponds to the interval 2007–2019, which is the interval used in our baseline analysis throughout the paper.

Figure A.9: Changes in the number of nights spent at official collective accommodation establishments by Italian residents and foreign tourists by LLM



Source: ISTAT.
Notes: Changes are calculated between 2014 and 2019. Data on municipalities with fewer than three establishments are excluded, as these are not released by ISTAT. These municipalities account for less than 3% of the total nights spent by all tourists at official collective accommodation establishments. We also exclude one outlier (Francavilla di Sicilia) whose changes were 2.5% and 410% for resident and foreign (non-resident) tourists, respectively. The final sample comprises 557 LLMs.

Figure A.10: ΔA for resident and foreign tourists by LLM



Source: ISTAT.
Notes: For details, see the notes to Appendix Figure A.9.

Table A.1: Classification of municipalities by category of touristic specialization

Categories of Touristic Specialization	Original 2007 Classification			Modified 2007 Classification (1st step)			Modified 2007 Classification (2nd step)		
	Munic.	Beds	Pop.	Munic.	Beds	Pop.	Munic.	Beds	Pop.
Seaside	4.0	35.6	9.3	8.1	46.3	15.9	8.1	46.3	15.9
Culture	4.3	16.5	26.8	6.5	18.0	31.3	6.5	18.0	31.3
Mountain	15.0	13.7	4.4	17.4	14.6	5.2	17.4	14.6	5.2
Lake	1.6	6.5	1.1	2.8	7.1	1.7	2.8	7.1	1.7
Hill	8.8	4.0	4.5	8.8	4.0	4.5	8.8	4.0	4.5
Thermal baths	1.1	3.3	1.2	1.2	3.4	1.4	1.2	3.4	1.4
Near culture	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	13.8	2.5	14.0
Near seaside	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.9	1.2	7.1
Near mountain	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	6.5	0.7	2.8
Near hill	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2.8	0.3	1.5
Near lake	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2.1	0.3	1.0
Near thermal baths	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.3	0.1	0.7
No specific specialization	65.0	20.4	52.8	55.1	6.6	40.1	22.7	1.6	12.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculations on ISTAT.

Notes: The table presents shares (in percentage) of touristic categories in terms of the number of municipalities, the number of beds in official collective accommodation establishments, and the total population. All figures are computed for 2007. Municipalities labeled "near x" (where x is a given touristic category) do not have a touristic specialization, but they are bordering other municipalities in the same local labor market with a specialization. "n.a." = not applicable. Details on how the first and second step adjustments were performed are given in Section 3 of the main text.

Table A.2: LLM level shift-share balance tests based on Borusyak et al. (2022)

Balance variable	Coeff.	SE
Start of Period Unemployment Rate (%)	0.005*	0.003
Start of Period Total Population (log)	0.010	0.006
Start of Period Nr. Beds (in 10,000)	0.0002	0.003
Start of Period Urban Area Share	−0.035	0.029
Pre-Period Total Employment (log)	0.031	0.052
LLM's Main Economic Specialization:		
Heavy manufacturing	−0.13	0.024
Non-manufacturing	−0.007	0.019
Made in Italy	0.001	0.023
SME district (1 if yes)	0.019	0.017
Industrial Decline (1 if yes)	0.010	0.022
Observations	611	

Notes: The table reports coefficients from a regression of the shift-share variable, ΔA_l, on LLM-level covariates, pre-trend log employment, and additional potential confounders, controlling for NUTS-1 regional dummy variables. SME stands for small and medium enterprise. 'Heavy manufacturing' includes metal production, motor vehicles, construction materials, pharmaceuticals, and petrochemistry products; 'Non-manufacturing' includes agriculture, tourism, and multiple specializations; 'Made in Italy' includes textile, apparel, wood and furniture, jewelry, eyeglasses and sunglasses, musical instruments, leather, and agri-food products. The omitted category in the classification of LLM specialization is 'No Specialization'. 'Industrial Decline' is measured over the period 2001–2007. 'Observations' refers to the number of LLMs in the estimating sample. Robust standard errors (SE) are reported.
* $p < 0.1$.

Table A.3: Wage effects in LLMs with a high baseline unemployment rate

		(a) Tourism Industry	(b) Overall
ΔA	(β_1)	-0.032	-0.016
		(0.031)	(0.016)
$\Delta A \times \mathbf{1}\{\text{UR}_0^{[5]}\}$	(β_2)	0.049	0.023
		(0.043)	(0.022)
$\beta_1 + \beta_2$		0.018	0.007
		(0.049)	(0.023)
Observations		504	603
Adjusted R^2		0.163	0.167

Notes: The dependent variables are the change in log average wages in tourist industries and the change in log average wages in all private non-agricultural firms in Column (a) and (b), respectively. The Eurostat classification of tourist industries is in Online Appendix B. All changes are computed between the year 2007 and 2019. $\mathbf{1}\{\text{UR}_0^{[5]}\}$ is an indicator variable that takes a value of 1 for LLMs with the baseline unemployment rate, UR_0, in the top quintile of the distribution, and 0 otherwise. All regressions include UR_0, baseline population, baseline number of beds in official collective accommodation establishments, the share of municipalities in each LLM that are defined as urban, and NUTS-1 regional dummy variables. 'Observations' corresponds to the number of LLMs in each estimating sample. Robust standard errors are in parentheses.
* p $<$ 0.1, ** p $<$ 0.05, *** p $<$ 0.01.

B Tourism and Tourism-Related Industries

As explained in Section 3, the ASIA data is at the 3-digit industry level (NACE Rev. 2 classification; ATECO 2007 in the Italian adaptation). We define the tourism industry following the Eurostat definition, which aggregates the following sectors (the numbers indicate NACE codes):[25] H4910 Passenger rail transport, interurban; H4932 Taxi operation; H4939 Other passenger land transport n.e.c.; H5010 Sea and coastal passenger water transport; H5030

[25] See https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Tourism_industries for details.

Inland passenger water transport; H5110 passenger air transport; I5510 hotels and similar accommodation; I5520 Holiday and other short-stay accommodation; I5530 Camping grounds, recreational vehicle parks and trailer parks; I5610 Restaurants and mobile food service activities; I5630 Beverage serving activities; N7710 Renting and leasing of cars and trucks; N7721 Renting and leasing of recreational and sports goods; N7910 Travel agency and tour operator activities; N7990 Other reservation service and related activities.

However, since our data on employment are defined at a 3-digit level, we made the following adjustments including: (a) the whole H493 (which also includes H4931 Urban and suburban passenger land transport) instead of only H4932 and H4939; (b) the whole N772 (which also includes N7722 Renting of videotapes and disks and N7729 Renting and leasing of other personal and household goods) instead of only N7721.

To check for potential indirect employment effects following UNESCO (2020), the industries related to tourism are defined as the aggregate of the following sectors: 10 Manufacture of food products; 11 Manufacture of beverages; 46.3 Wholesale of food, beverages, and tobacco; 47.2 Retail sale of food, beverages, and tobacco in specialized stores; 47.6 Retail sale of cultural, and recreation goods in specialized stores; 90 Creative, art, and entertainment activities; 91 Libraries, archives, museums, and other cultural activities; 92 Gambling and betting activities; 93 Sports activities and amusement and recreation activities.