CORPORATE TAXES IN THE ITALIAN TOURISM INDUSTRY: A MICROSIMULATION ANALYSIS.

2016, Vol. 2016(1) 15–23
DOI: 25.1234/0123456789
www.ejoir.org

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Abstract

After discussing the classification of the main types of taxes and fees existing in the tourism sector, this paper centres on taxes on corporations of the tourism sector (hotels, restaurants). In particular, effective corporate tax rates are calculated for the Italian tourism industry in order to study the effects of the tax system on enterprise cash flows and to focus on distributional burdens at sectoral level. Calculation of the effective corporate tax rates uses micro data of year 2010 and a microsimulation model for the business sector which allows precise computation of effective tax rates.

Keywords: Tourism Industry, Corporate Taxes, Effective Tax Rates, Italy

Giriş

As well known, the impact of tourism on the economy has great importance in most countries. According to the recent estimates for the OECD area (OECD, 2016), on average the tourism sector contributes to 4.1% of GDP, 5.9% of employment and 21.3% of services exports to the OECD countries. International tourism arrivals increased by 4.2% in 2014 and receipts from the tourism industry reached 1,249 billion dollars in 2014 with an increase in real terms of 3.7%.
The global tourism industry continues to demonstrate remarkable strength in spite of the slow recovery from the 2008 economic crises and geopolitical events and on which developments of the tourism sector strongly depends upon. Indeed, tourism globally has registered a positive trend since 2009 and this trend is expected to continue (OCED, 2016).
Following the Authority of World Travel and Tourism Council (WTTC, 2014) the overall impact of tourism can be decomposed in a direct, an indirect and an induced contribution of the tourism industry to GDP.
The fist share comprises spending of residents and non-residents for leisure purposes along with public spending for cultural or recreational activities.
The indirect effects include also the impact of capital investments undertaken both by the private and the public sector (for instance building of new hotels, development of passenger transport equipment or leisure facilities) on GDP, as well as domestic purchases of goods and services by sectors connected with the tourism industry and used as inputs to their final tourism output.
The induced impact of tourism on the economy also includes the effects of spending of individuals who are directly or indirectly employed in the tourism industry.
The overall contribution of tourism on GDP is meant to capture the global (direct, indirect, induced) effects of the tourism industry on the economy.
According to the WTTC (2014) report, Italy ranks among the countries in Europe where the overall effects of tourism on GDP is highest. For instance, in 2013 the total effects of tourism on GDP is 10.3% in Italy compared to 8.7% for Europe, whereas the weight of directs and indirect/induced contributions to GDP is 4.2% and 6,1% for Italy, 3.1% and 5,6% in Europe. Also in terms of contribution to employment the impact of tourism is higher in Italy (11.6%) than in Europe (8.5%).
Given the relevance of tourism in stimulating economies by creating employment, generating value added, as well as earning foreign currencies, it is clear that reforms to improve attractiveness and competitiveness of the tourism industry are advocated by both domestic policy makers as well as by the international institutions (European Commission, OECD). In this respect there is a growing interest on the role of tourism-related taxes and the main question is whether taxes discourage attractiveness of the destinations as well as the overall competitiveness of the tourism industry. Therefore, measuring the actual burden of taxes in the tourism industry can be of great importance.
In this paper we centre on profit taxes on corporations of the tourism sector. Using a microsimulation model for the corporate sector we compute effective corporate tax rates that give a precise measure of the effects of corporate taxes on firms cash-flow. The microsimulation

model[1] is based on a specific dataset obtained by integrating survey data on firms with company accounts data which makes it possible to have a complete representation of the corporate tax system. In the analysis we use data of the years 2009-10.
The paper is organized as follows. Section 2 describes the main types of taxes existing in the tourism industry according to the OECD classification (OECD, 2014). Section 3 then turns to the data and the methodology and shows the main results of the empirical analysis. Section 4 concludes.

The OECD classification of taxes in the tourism sector

The term tax refers to a compulsory payment to the general government (central, state, local governments, including agencies whose operations are under control of the central administration and autonomous government entities).
Taxes can be divided into two broad categories: direct taxes, levied on income and wealth of individuals and firms, indirect taxes levied on a variety of goods and services. Fees and charges are usually considered as taxes levied for the use of a specific service, although in principle they are not compulsory payments. As well known, the composition of the tax mix can differ substantially from country to country (see for instance the Reports of the European Commission, 2014 and 2015).
Table 1 reports the type of taxes existing in the tourism industry according to the OECD classification.

Table 1: *The OECD classification of taxes in the tourism sector*

Indirect taxes
1. Taxes on arrivals, departures
2. Air travel taxes
3. Taxes on hotels, accommodations
4. Value added tax (VAT)
5. Environmental taxes
Direct taxes
1. Taxes on personal income (partnerships, family firms)
2. Corporation income tax (corporations)
3. Property taxes

Indirect taxes are grouped into five broad categories.
Taxes on arrival and departure comprise levies on individuals entering or leaving a specific country. The most relevant type of such taxes are visas.

[1] The author originally developed the microsimulation model as part of the DIECOFIS project financed by the Information Society Technologies Programme (IST-2000-31125) of the European Commission. The model has been updated by the author to incorporate the fiscal rules for the years 2009 and 2010.

Air travel taxes take the form of charges relating to airport departures or arrivals (i.e. aircraft landing, aircraft parking fees, various airport fees, air ticket tax). The role of these taxes has increased in the past decades due to the greater costs of providing services for the passengers.
Hotel and accommodation taxes comprise generic tourist taxes paid by individuals for accommodation facilities.
The VAT represents the main form of taxing consumption in most OECD countries. We note that most European countries apply reduced rates for hotel and restaurants activities in order to foster development of this sector and job creation (OECD, 2014).
Finally, environmental taxes respond to the general principle of taxing activities that generate a negative externality (pollution) representing a welfare cost for the society. In the tourism industry such taxes have been introduced in order to protect environmentally sensitive areas. Most countries also apply subsidies for the purchase of equipment that reduce pollution generated by specific activities, or to increase energy efficiency as well as conservation of biodiversity.
Lastly, companies (hotels, restaurants) operating in the tourism industry are subject to profit taxes and property taxes.
Starting from the mid-80's many OECD countries reformed their business tax systems under the general purpose of reducing the nominal tax rates on firms. Indeed, reductions of the statutory corporate tax rates were deemed desirable in order to reduce the distortionary effects of corporate taxation on investments, to foster firms' competitiveness, as well as to attract foreign investments.
Although the downward trend has been quite general, corporate tax rates vary substantially in Europe. In 2015 (European Commission, 2015) the overall statutory rate, including the statutory corporate tax rate and eventually other types of taxes on profits or surcharges levied at the local level, varies between a minimum of 10 % in Bulgaria to top statutory rates equal to or above 30% in many continental countries such as Belgium, Germany, Spain, France, and Portugal. Overall rates comprise the statutory corporate tax rate and
In 2010 Italy's corporate tax regime contemplated a statutory rate of 27.5%.

Data description

The empirical analysis uses an integrated dataset. More precisely, data combine survey data on firms with administrative data on firms (balance sheets, tax returns)[2] .
The main statistical sources are two surveys conducted yearly by ISTAT (Italy's Statistical Office): the survey of small and medium-sized enterprises (acronym PMI) regarding firms with fewer than 100 workers, and the survey of large enterprises (acronym SCI) concerning firms with more than 99 workers.
The SCI survey is exhaustive, embracing the universe of large firms (of which 8 thousand corporations), whereas the PMI survey is carried out on a sample of firms (of which 18 thousand corporations).
The integrated dataset compounds two main administrative sources, the company accounts database containing information about assets and economic accounts for the firms covered by the surveys, and tax returns data containing information about differences between the balance sheets profits and the corporate tax base. Fiscal data are available for all large corporate firms and for a sample of small and medium sized firms (PMI survey sample).

[2] The dataset was developed under the Diecofis project (see note 1). Data have been updated by the author to the year 2010. For an in-depth description of the methodology used to build the dataset see Oroapallo, Parisi (2007).

1. Table 2 displays the total number of companies present in the final dataset by business sector, comprising 18,187 small and medium-sized companies and about 8,000 large corporations; overall, the dataset includes 26,196 companies out of a population of about 556,000.
2.

Table 2: Number of companies present in the database by sector of activity. Year 2010.

Sector of activity	Small and medium-sized firms	Large firms	Total
Products of mining and quarrying	218	13	231
Manufacturing	6,978	4,443	11,421
Electrical, energy, gas, steam and water	245	74	319
Construction	705	299	1,004
Wholesale and retail trade	3,243	711	3,954
Hotel and restaurant services	326	197	523
Transport, storage and comm. services	1,248	673	1,921
Real estate renting and business services	3,634	1,037	4,671
Education services	250	11	261
Health and social work services	373	387	760
Other social and personal services	967	164	1,131
Total	**18,187**	**8,009**	**26,196**

Source: ISTAT

3.

4. The majority of firms belong to the manufacturing industry (about 46% of the total), the transport and communication sector (25% of the total), the retail trade sector (15% of the total).
5. The tourism sector numbers 523 firms, of which 326 (62.3%) are large enterprises, 197 (37.7%) small and medium sized firms.
6. Table 3 offers some economic indicators for the corporate sector, separately for small-medium sized and large companies and obviously for the total. Firms are disaggregated in the industry sector and in the services sector which includes the tourism industry. Indicators are also reported for the tourism sector.

Table 3: Main economic indicators by economic activity and size. Values in Euros, year 2010.

Economic Activity	Size	Average size	Value added per worker	Labour cost per employee	Investment per worker
Industry	Small-Medium	12.2	45,284	29,845	8,613
	Large	345.5	77,984	42,008	18,343
	Total	*21.3*	59,790	35,647	12,929
Service activities	Small-Medium	6.1	42,460	28,955	8,298
	Large	468.6	55,125	34,915	16,943
	Total	*10.8*	48,001	31,899	12,079
	Small-Medium	9.0	36,116	29,868	7,490

Hotels, restaurants	Large	400	41,255	34,337	16,302
	Total	*14*	41,190	30,894	11,571
Total		**14.6**	**54,188**	**33,930**	**12,525**

Source: ISTAT

7.

As it might be expected, large companies have higher productivity in terms of value added per worker. Also, if we look at the investment expenditure per worker we see that their performance is above the small-medium sized firms.

Furthermore, the figures show that both productivity and the investment per worker are higher in the industry sector compared to the services sector and the tourism sector.

The corporate tax microsimulation model

Tax policy analysis and tax revenue forecasting can be carried out by using either macro or micro models[3].

Macro models are typically based on the use of aggregate data. Therefore, simulations of tax policy changes and revenue forecasting are usually obtained by modelling economic relationships among different institutional sectors. Micro models are usually based on disaggregated data, such as household budget surveys and firm surveys and clearly the availability of disaggregated data marks the possibility of using microsimulation models.

The usual classification of microsimulation models distinguishes between *static* or *behavioural* models. Static models analyse the effects of tax policy changes without taking into account the agents (individuals, firms) behavioural responses. In this respect they consider only the direct effects of fiscal policy changes that is first-round impact of tax policies. On the opposite, behavioural models incorporate also indirect (or second-round) effects of the agents behavioural responses which are obviously endogenous to the fiscal policy changes.

Since the 1990s EU countries have increasingly shared their experiences in developing microsimulation models for the household sector (Harding, 1996). Under the EU sponsored EUROMOD work a microsimulation model for the EU countries has been developed and is currently used to study on a comparable basis the impact of fiscal and social policy on the household welfare.

In recent years the growing empirical research in this field permitted to extend microsimulation techniques to the behavioural (in order to study distortionary effects, i.e. on the labour supply-leisure trade off, of the tax-benefit system) as well as to the dynamic (typically to analyse the effects of reforms of the pension system) environment for the household sector. Household microsimulation models have been a success, as indicated by their widespread use within governments, policy think thanks, academia and research institutions.

On the opposite, experience with enterprise microsimulation modelling remains infrequent both in the EU and outside Europe. This is mostly due to data unavailability and to the need of more elevated requirements for inter-temporal and international comparisons. Therefore, the scientific endeavour of building a microsimulation model for firms involves this challenging aspect.

In evaluating the impact of business taxation on enterprise activity, the empirical literature offers two type of *effective tax rates*, ex-post (or implicit) tax rates and ex-ante (or marginal) tax rates. The first relate taxes paid by the company to some aggregate item of the company accounts (gross profit or gross operating profits). As they use ex-post real-life data, they are often

[3] This section draws on Bardazzi, Parisi, Pazienza (2004).

described as backward-looking indicators reflecting the fact that measures of effective taxation imply past investment decisions. By contrast, marginal tax rates follow a forward-looking approach focussing on the enterprise's marginal decisions and are based on computations of the impact of taxes on the cost of capital. Specifically, marginal rates measure the theoretical tax burden on a hypothetical marginal investment (giving no extra-profits) that produces cash-flow subject to tax and, therefore, are calculated to analyse how the tax system affects a marginal investment undertaken by the company, using alternative financial sources (equity, debt, retained earnings).[4] Such rates have also been used to analyse tax burdens within the EU (European Commission, 2001).

Furthermore, computation of forward-looking indicators do not take into account the complexity and the interaction of all elements of the tax system (definition of profits for tax purposes, carry-forward losses provisions, allowances, tax credits and so on) that crucially alter effective company taxation. Also, when computing marginal tax rates planning techniques are ignored and the assumption that investors pay taxes according to the nominal rates is made. Taxpayers usually pay lower effective rates, as already explained.

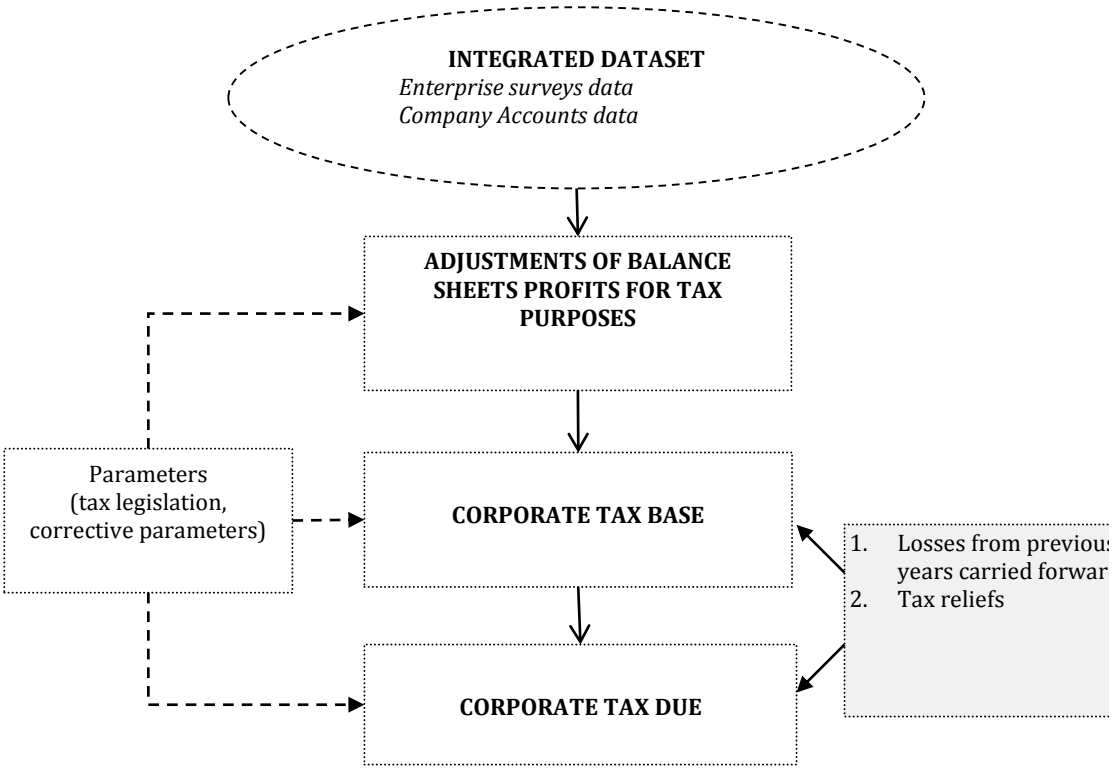
By contrast, implicit tax rates can be derived considering the various features of the tax system and therefore give a precise measure of the effective tax burden supported by the firm. Such indicators are especially appropriate if the objective is to study the effects of the tax system on enterprise cash flows and to focus on distributional burdens (for instance, at sectoral level or on firms of different size).

Microsimulation models are therefore very important tools to evaluate the *effective* impact of business taxation on enterprise activity and to study policy alternatives impacts.

The data described in section 1.1. are used to develop a microsimulation model reproducing the Italian corporate tax system. The model is built following a modular structure described in Figure 1 and reflecting the corporate income tax rules described below.

[4] The methodology to derive ex-ante marginal tax rates was first developed by King and Fullerton (1984) and then extended by Devereux and Griffith (1998) to infra-marginal investments, i.e. investments with different rates of profitability. In the latter case the literature refers to ex-ante average tax rates.

Figure 1: The structure of the corporate tax microsimulation model



The model is static in that it does not incorporate endogenous behavioural responses of firms (for instance regarding investments).

In order, the model simulates the adjustments of balance sheets profits reflecting the difference between the conventional accounting rules and business accounting for tax purposes, the corporate tax base (obtained from adjusted corporate profits by deducting losses from previous periods that according to the Italian tax law can be brought forward up to five years), the gross tax calculated by applying the prevailing tax rates to the tax base, and the corporate tax due, or the tax actually paid by the company, obtained by subtracting the main tax reliefs from the gross tax. The structure of the model is flexible enough to possibly incorporate changes of the various tax rules in order to analyse the direct impact of alternative scenarios on company cash-flows.

Model output (aggregate amounts, eligibility to the various tax credits, reliefs) is validated against tax returns micro data, available for a sample of firms. Oropallo and Parisi (2007) report a very good fit of the model.

In this paper the model is used to calculate the company effective tax rates obtained by dividing the simulated corporate tax by the operating surplus. The purpose of the analysis is to study tax burdens at the sectoral level.

Analyses and Results

Table 4 reports the operating surplus and the corporate tax rates for the year 2010 by sector of activity.

Table 4: Operating surplus (thousands of Euros) and effective corporate tax rates (% values) by business sector. Year 2010.

Sector	Operating surplus	Corporate tax rate

Mining	403,468	12.61
Manufacturing	380,678	16.55
Electrical, energy	922,350	19.96
Construction	76,453	15.85
Wholesale and retail trade	130,750	16.48
Hotel and restaurants	92,133	11.56
Transport, communication	372,297	15.53
Real estate	130,354	17.44
Education services	41,591	10.53
Health and social work services	154,914	12.28
Other social services	88,537	12.46
Total	186,873	16.13

Source: own simulations

The figures show that the effective corporate tax rate is 16.13. The sectors Electricity, Real estate, Wholesale and retail trade exhibit a higher tax rate than the mean one (respectively, 19.96, 17.44, 16.48).
Hotels and restaurants record a lower tax rate, 11.56. Education services is the sector reporting the lowest tax rate.
These results obviously depend the size of taxable profits reported by firms of the various sectors. As said in Italy the corporation tax is proportional which means that more profitable firms are expected to pay higher corporate taxes and therefore to report a higher tax rate. In this respect the lower tax rate reported by companies of the tourism sector is consistent with lower profitability (operating surplus) of companies of this sector compared to the other sectors.
Furthermore, the results also depend on the distribution of firms incurring in losses[5] (and therefore paying no corporate taxes) and to a lesser extent on the distribution of firms eligible to the tax reliefs, by business sector. Indeed, in both cases the company tax rate lowers.
To go deeper into the analysis, Table 5 reports the corporate tax rates respectively for small-medium sized and large firms.

Table 5: Effective corporate tax rates (% values) for small-medium sized and large firms by business sector. Year 2010.

Sector	**Small-medium sized firms**	**Large firms**
Mining	13.07	13.89
Manufacturing	18.42	16.61
Electrical, energy	27.30	20.01
Construction	18.56	16.42
Wholesale and retail trade	19.13	17.12
Hotel and restaurants	20.36	15.00
Transport, communication	14.33	17.61
Real estate	19.79	16.39

[5] This is a peculiar feature of the Italian corporate sector. For instance in 2010 5,573 company of the dataset incurred in losses of which 115 in the tourism sector.

Education services	13.17	12.75
Health and social work services	21.43	13.55
Other social services	16.25	14.50
Total	**18.55**	**16.47**

Source: own simulations

The figures in Table 5 show a well known result: on average corporate taxation on large firms (16.47) is lower compared to small and medium sized firms (18.55) by about 2 percentage points. The same result holds for companies of the tourism sector where small and medium sized companies record a rate of 20.36 percentage points compared to 15 percentage points for large firms.

Lastly, Table 6 reports the effective corporate tax rates by sectors and quintiles of operating surplus.

Table 6: Effective corporate tax rates (% values) by business sector and quintiles of operating surplus. Year 2010.

Sector	I	II	III	IV	V
Mining	0,00	10,81	18,01	19,72	18,95
Manufacturing	0,00	16,71	17,96	18,42	20,91
Electrical, energy	1,63	21,25	21,86	20,33	26,43
Construction	0,00	21,05	18,42	20,12	19,37
Wholesale and retail trade	0,00	17,79	20,62	19,23	20,48
Hotel and restaurants	1,06	17,15	15,13	18,34	20,87
Transport, communication	0,05	23,02	21,07	18,91	21,51
Real estate	1,22	19,47	18,84	19,42	22,39
Education services	0,57	16,66	18,85	19,03	18,46
Health and social work services	0,99	12,50	22,58	19,81	22,78
Other social services	2,07	20,07	18,69	18,63	20,66
Total	**0,42**	**18,50**	**19,08**	**18,97**	**21,09**

Source: own simulations

As expected, tax rates generally increase if we move to upper deciles of firm profitability. This result also holds for companies of the tourism sector, as shown by the figures in Table 6.

An extension of the analysis to a longer period, and possibly to a panel of firms, would be helpful in order to get a clearer picture of the distributional impact of corporate taxes at the sectoral level. This represents a possible future development of the empirical analysis if micro data for longer periods are available.

Conclusions

This paper has analyzed the effects of corporate taxes in the tourism industry. In particular, using a microsimulation model for the corporate sector, effective corporate tax rates have been calculated for the year 2010. Such rates take into account the various items of the corporate tax system (definition of the tax base, statutory tax rates, various allowances and tax reliefs) as well as the interaction among these items.

The results show that the tourism industry exhibits lower tax rates compared to the other sectors. Given the restricted period considered in the empirical analysis, this result can be traced to the

distribution of profitable firms by business sector as well as the operation of the various elements (definition of the tax base and tax allowances) of the corporate tax systems that have a different impact on enterprises of different sectors. An in-depth investigation of this result requires availability of data for longer periods, and possibly availability of a panel of firms, in order to extend the analysis of the distributional tax burdens at the sectoral level. Furthermore, the same methodology can be also applied to other countries, again given the availability of data, in order to compare the effective corporate tax burden for firms of different countries

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