“Should we tax tourism? Theoretical justifications from the economics of non-renewable resource use”

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Abstract

In this work the author discusses the theoretical foundation for the introduction of a taxation mechanism at tourism destinations with the aim of indicating an opportune policy implementation for the use of local tourism assets. In fact, the justification of this kind of policy proposal requires the identification of specific reasons, which, according to the economic literature, are mainly represented by the need to internalise tourism external costs and to capture tourism rents, in order to reinvest and ensure the sustainability of the local economy, while facing non-renewable and scarce natural resources exploitation. To this aim, strong support comes from a reflection on the theory on Pigovian tax and the consideration of other issues such as to the "rent capture" concept and Hartwick's prescription. This economic theoretical framework can give us the opportunity to identify appropriate arguments, which can play an enforcing role in justifying the implementation of a taxation mechanism at tourism destinations.

Keywords: tourism taxation, non-renewable resources use, externality pricing.
JEL Classification: D62, H23, H41, Q32, P48.

Introduction

Natural degradation of the local environment, generated by over-development of tourism activities in association with a general lack of specific and integrated management programs for the preservation of natural resources within tourist areas has resulted in economic decline in many tourism destinations (Travis, 1980; Lozato-Giotart, 1991; Hall, 1998; Sardá, 2004). In particular, the progressive depletion of natural resources, generated by the impact of mass tourism practices in coastal areas, has shown limits, which confirms what is stated in the theory of the life cycle of tourism destinations, proposed by Butler (1980). Thus, traditionally mature destinations are now facing progressive difficulties in competing in a growing and increasingly wider tourism offer scenario, generally characterized by new destinations with a better preserved and more appealing natural environment. To avoid further economic decline in new and expanding tourist areas as well as to preserve traditional areas, it would be necessary to implement systematically, with the help of efficient municipal authorities and private entrepreneurs, environmental programes, based on the sustainable management of tourist services in accordance with common territorial resources. Due to the pressure for further development and the difficulty in conciliating this with the preservation of natural resources, sustainable development of tourism seems to be the best strategy in achieving long-term tourist economic benefit (Coccossis & Parpairis, 1995; Briassoulis, 2002).

The success of public and integrated management to safeguard natural resources on a local scale initially depends on the efficiency of public authority in obtaining the necessary financial resources to develop specific environmental planning for its territory[1]. Thus, different measures, either at local or regional level, are adopted in order to implement a series of tourism tax collection systems that guarantee long-term tourist economic revenues, when, in turn, these are partially employed to sustain the local community's future environmental and economic needs.

With the aim of strengthening the validity of such a tool to improve the quality and the experience of the tourism product, this article focuses on the theoretical foundation for the introduction of a taxation mechanism at tourist destinations with the aim of setting an appropriate policy for the use of local tourism assets. Of course, some specific reasons must be identified to justify a proposal of this nature[2]. These can be mainly represented by the need to internalize tourism external costs and to capture tourism rents in order to reinvest and ensure the sustainability of the local economy, while facing non-renewable and scarce natural resources exploitation[3]. The first aspect is related to the idea that

[1] For example, over the last decades, much effort has been made by the various public authorities in Spain to avoid local tourism economic decline. This has been achieved, using the gains from specific tourism income taxes to launch environmentally-friendly mechanisms for a more balanced management of natural resources.

[2] Taxation is essential to provide governments, both national and local, with the finance to meet their institutional obligations in the provision and maintenance of public goods and services. For this reason, governments are always looking for new tax bases. As stressed by some authors, since tourism is one of the fastest growing elements of world trade, this already seems a good enough reason for tourism taxation (Forsyth, 1997, p. 2). However, as we will argue, more specific reasons can be seen to justify the implementation of tourism taxes.

[3] In the literature the rent concept has various meanings. In land use studies rent can be referred to as the Ricardian idea, which is associated with variations in land quality. Furthermore, it can also be understood in von Thunen's terms, which are associated with variations in land accessibility. In this work, we refer to the economic rent concept – the residual or surplus arising from the difference between the price of goods produced using a natural resource and the unit costs (labor, capital, material and energy inputs) of turning that natural resource into a good – which gives the value of the resource itself (Hartwick et al., 1998, p. 57).

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tourists, who are generally considered large users of local resources, consistently generate external costs for the local host communities. In fact, the latter often bear financial expenditure aimed at organizing their territories for adequate tourism reception, while very little contribution comes from the tourism sector. The final aspect, which refers to the issue of capturing rent, is particularly important if we consider the impact tourists have on the local resources and specifically on those of the natural environment. If we think of the natural environment as a non-renewable resource, then the rules, set in some theories, coming from the economics of natural resources, should be followed, especially if the sustainable management of the local economy is to be pursued. To do this, as we will see later in this work when Hartwick's prescription is analysed, we are advised to periodically save a set amount of money to reinvest in maintaining or improving the local environmental quality.

Some examples should help to clarify the concerns of the external costs internalization issue. Let us consider a tourism destination, where hundreds and hundreds of tourists arrive every day. It is easy to see why the local government needs more financial resources than normal, since it is required to provide extra public goods and services for the large number of tourists. Hence, we can see that the presence of tourists generates various external costs, which are very often unjustifiably dispersed in the local communities. In light of this, we may fairly state that where governmental obligations in maintaining and providing public goods and services arise from the presence of tourists, it should naturally call for their contribution. It becomes evident, in this example, that there is an uncomplicated justification for tourism taxation. However, when environmental goods are also taken into account, then further considerations must be made. In fact, taxation is not only a tool that aims to recover costs generated by the presence of tourists. It can also represent a sort of pricing mechanism through which it is possible to assign an economic value to normally unpriced environmental goods. In this way, it would be possible to rationalize their accessibility with the consequence of avoiding their wild exploitation. In fact, tourism per definition is generally based on an unlimited use of local environmental assets, whose damage and degradation are mainly the result of them, being public goods[1].

[1] Most environmental resources are not subject to property rights and even in the case they exist, they are not well defined. This is why, they are defined as public, free or common goods. Such goods have no markets, where they can be exchanged and it is not possible to give any price to them. This case of market failure can give the impression that they have little or no value with the consequence that usually they are quickly depleted and lost forever. Hence, the open access condition brings an inefficient allocation of resources due to the fact that they are subject to more consistent depletion. In fact, it is unlikely that under such conditions resources can be sensibly managed for an original treatment of the common goods problem (Coase, 1960; Bromley, 1995, p. 45-60).

This condition results in their overuse and abuse, therefore generating social costs or, more generally, a lack of welfare for host communities. In a context like this, the application of a tax would be desirable as, in agreement with the thinking of many environmental economists, the identification and placement of a "price" on non-marketed environmental goods can be one of the possible solutions to this problem. A tax policy to assign prices to environmental assets can internalize environmental external effects by confronting users with the full cost of environmental resources.

The second aspect, we are considering, is "rent capture". As we know from the theory, open access resource exploitation drives resource rents to zero and leads to the overuse of the resource (Barbier et al., 1994, pp. 106). The lack of resource rents constrains investment opportunities to somehow rejuvenate or substitute the exploited resource. In this way, once the resource has been thoroughly depleted, the community, whose existence it was based on, finds itself impoverished and with no other possibilities of productively exploiting that resource or finding other alternatives.

It is generally recognized that tourism unavoidably generates economic rents that are much higher than the marginal social cost of the locally provided services (Bird, 1992, p. 1147). Furthermore, it is also quite normal for private suppliers of tourist services to try to maximise these rents above a normal level. As a result, a policy, aimed at drawing out as much rent as possible by taxing economic agents, involved in tourism activities, would be a practical option. In this way, it would be possible to generate a flow of money from the tourism sector to the local government, which in turn can be employed to meet the local community's needs[2].

To develop the issues so far introduced, this work will proceed as follows. Firstly, we will examine the aspect related to the internalization of external costs, which leads us to an examination of the theory on Pigovian tax. Then, in the second section, we will move on to considering the non-renewable resources depletion theory with a specific focus on the "rent capture" issue and Hartwick's prescription. Finally, some concluding considerations will be made.

1. The theory of externalities pricing: the Pigovian tax

From the discussion above, it is clear that, in addition to financial benefits, tourism normally gener-

[2] It can be observed, how, in principle, taxing economic rents is an ideal source of revenue. It does not negatively affect price or production decision for profit-maximising firms (Perman et al., 1996, p. 159).

ates the overuse of local resources at transit and destination areas, whose costs are almost always dispersed into the local communities. However, these costs are particularly perceptible in the reduction of welfare of that section of the local population which takes no part in the tourism production processes, and does not receive any compensation for this loss[1]. Among economists, it is a general opinion that when markets present these kind of external effects, then some form of intervention, such as the introduction of tax-based principle tools, should be considered to the aim of internalizing the external costs and so reaching the socially optimal level of degradation or pollution. Economists generally state that when the production or consumption of some goods generate negative externalities, which are not reflected in their market price, then the imposition of a tax can improve social welfare by using resources more efficiently and internalising external costs. In economic theory, the most famous work that first propose this idea is that of the British economist Arthur C. Pigou, who suggested an indicative policy to gain an optimal level of externality achieved by a tax imposition (Pigou, 1920; Tindale & Holtham, 1996, pp. 16). In formal terms, the optimal Pigovian tax can be illustrated as a problem of maximising the net social benefits (NSB). These are made equal to the gross benefits ($P \cdot q$) achieved from the degrading or polluting activity minus the private costs (C) and the external costs (EC)[2]:

$$NSB = Pq - C(q) - EC(q). \quad (1)$$

After setting the first-order condition ($\partial NSB/\partial q = 0$) and simple algebraic manipulations, we obtain:

$$P - \frac{\partial C}{\partial q} = \frac{\partial EC}{\partial q}, \quad (2)$$

where the left-hand side ($P - \partial C/\partial q$) represents the marginal net private benefits ($\partial NPB/\partial q$), and the entire Equation (2) represents the optimization rule to find the optimal level of degrading activity q^*: the marginal net private benefits must equal marginal external costs. This can be achieved if a tax t^* is imposed and made equal to the marginal external cost:

$$t^* = \frac{\partial EC}{\partial q^*}, \quad (3)$$

which defines the price as follows:

$$P = \frac{\partial C}{\partial q^*} + t^*. \quad (4)$$

Graphically, having found a desirable optimal level of externality q^*, if a tax t^* on each level of damaging activity is imposed, then the curve MNPB will shift downward to the left because the marginal net private benefit is reduced by the tax amount (Pearce & Turner, 1990). With this tax constraint, the "polluter" will maximise its private net benefit in correspondence of q^* and reduce its activity level from q_π.

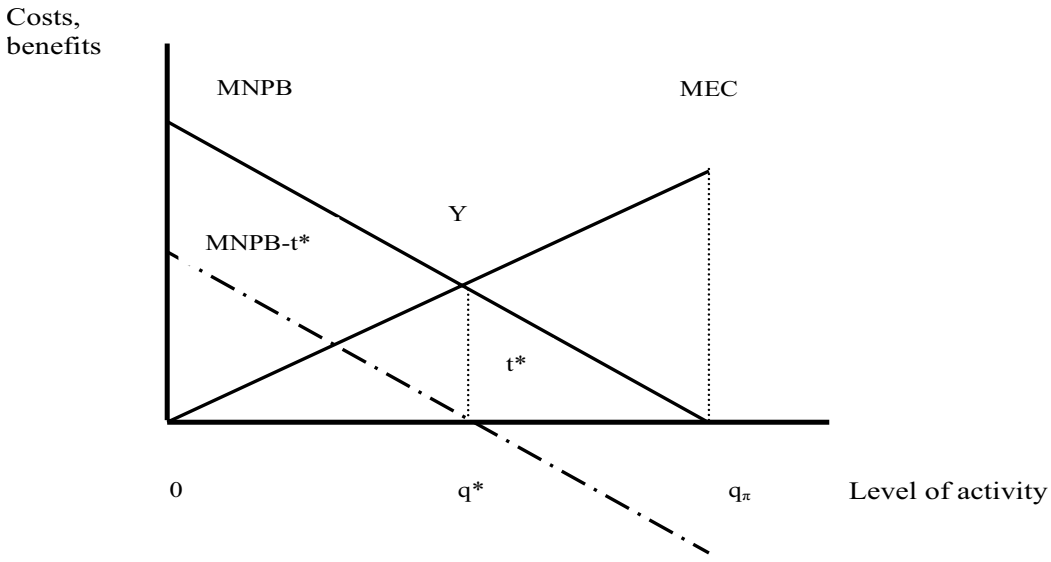

Fig. 1. The optimal tax

[1] An external cost arises when two conditions occur: an activity practised by one agent causes the loss of welfare of another agent; the loss of welfare remains uncompensated (Pearce & Turner, 1990, p. 61).

[2] In this context q represents the output generated by the polluting activity and P is its price per unit. The price P is defined here as non-dependent by the quantity q as it would be under imperfect competition (Pearce & Turner, 1990, p. 86).

On the optimality condition of the Pigovian tax, the literature also refers to other conceptualizations. As highlighted in some studies, focusing on the level of land use for tourism purposes, however, tax alone does not lead to the social optimum condition. Only if combined with another policy tool (i.e., the introduction of a quota), the tax reaches an optimal level of resource use (Piga, 2003). Further discussions focus on whether the implementation of a taxation tool in the tourism sector can be considered welfare enhacing or welfare reducing. With regard to this, some authors comment that tourism taxes are welfare enanching since the host country can largely shift the tax burden to international tourists (Gooroochurns & Sinclair, 2005). A different view is expressed by other authors, who state that destinations, implementing eco-taxes on tourism, may suffer from welfare loss, because it seems that destinations' gevernments consider tourism taxes as "easy money", which leads them to deviate from economic rationality (Jensen & Wanhill, 2002; Gössling et al., 2005). The above discussion seems to come to an end in a more recent work, where it is stated that taxing tourism may increase or decrease economic benefit (that is welfare enhancing or welfare reducing), depending on the destination's market power. Broadly speaking, considering the social context, taxing tourism is welfare enhancing. In fact, although taxing tourism seems to reduce a destination's benefit in terms, for example, of GDP reduction, the total welfare of a destination can still increase. Speacifically speaking, from a political economy view, the actual effect of the taxation policy may not be welfare enhancing because it heavily depends on the political system and power relations in the destination. In other words, the interest of certain social groups can lead to a decision system, where taxation does not result in a welfare enhancing tool (Sheng & Tsui, 2009).

To summarise for the purpose of policy indication, a taxation mechanism based on the Pigovian principle would be useful to reach two aims. First, it would help to reduce the existing level of environmental degrading activity, by bringing it to a level of socially desirable q^*. Second, it would also be useful to generate financial resources to be used in maintaining and ameliorating the environmental quality and the economic context at destinations, according to the methods and indications which will be better represented in the next section.

2. The non-renewable resources depletion theory and Hartwick's rule: concepts and implications

When we speak about non-renewable resources, we normally refer to resources that are characterized by a finite stock of their reserves in the ground, since they are formed by lengthy geological processes. As a result, once these resources are removed from the ground they cannot be replaced. We should not have any difficulty in thinking of a tourism destination in the same way. To support this fact, it is enough to consider that tourism destinations are often characterized by unique and often fragile local environments. As a consequence, and similar to mines, once they are depleted they cannot be restored[1]. From the point of view of an economic analysis, the non-renewability condition brings some problems to the management of resources. These are mainly seen in aspects such as how quickly the resource is depleted. Indeed, reasoning in terms of the exploitation of a mine, a unit of resource, extracted today, implies that a smaller amount of that resource will be available tomorrow. For this reason, an efficient resource exploitation path (the amount extracted or exploited in each period of the resource lifetime) must be identified.

The theory on non-renewable resources use basically refers to a very remote analysis (Gray, 1914; cited in Hartwick & Olewiler, 1998). In that work he analysed how the hypothetical manager of a non-renewable resource, a mine is his specific example, decides on the quantity of resource to extract and for how long, on the basis of certain assumptions[2]. The result of his analysis showed that a firm, in deciding how to extract a certain resource stock, must choose an extraction path represented by (q^*_t, q^*_{t+1}, ..., q^*_T), that is quantity q at each point of the resource lifetime (t, $t + 1$, ..., T) which maximises its profits. Since extraction takes place over more than one period of time, then what has to be maximised is the present value of profits, which can be expressed as follows:

$$\pi = pq_0 - TC(q_0) + \frac{[pq_1 - TC(q_1)]}{(1+r)} + \\ + \frac{[pq_T - TC(q_T)]}{(1+r)^T}, \qquad (5)$$

where p is the market price of a resource unit extracted; TC represents the total costs of extracting a quantity q_t of resource. The problem finds its solution in correspondence with the condition for which the

[1] The point is that such resources may be renewable, but if put under too much stress they will collapse. As a result, they can turn into non-renewable resources because their regeneration capacity has been compromised.

[2] Such assumptions were related to the following considerations: the resource is managed under perfectly competitive market conditions; the resource manager knows perfectly well the exploitable resource amount; the real price of a resource unit remains constant over its resource life; the extractions or exploitation costs increase as the resource stock decreases for a more detailed account on Gray's analysis (Hartwick & Olewiler, 1998, pp. 269-274).

extraction rate $[(q_{t+1} - q_t)/q_t]$ must satisfy the *r percent* extraction rule on $[p - MC(q_t)]$ which is given by:

$$\frac{\left[p - MC\left(q_{t+1}\right)\right] - \left[p - MC\left(q_t\right)\right]}{\left[p - MC\left(q_t\right)\right]} = r\,, \qquad (6)$$

where the new notation *MC* is the marginal cost of extraction. In addition, as will also be highlighted later in this section, when we refer to the value decline of the resource, $[p - MC(q_t)]$ is the rent at time *t* which we know corresponds to any gap between price and marginal cost. In other words, on the basis of marginal profits equality across periods, the *r percent* rule tells us that across two periods the rent $[p - MC(q_t)]$ increases at a *r percent* rate. Hence, the extraction firm's problem finds its solution in correspondence with that extraction rate $[(q_{t+1} - q_t)/q_t]$ so that $[p - MC(q_t)]$ increases at *r percent*.

This can be represented in the following figure:

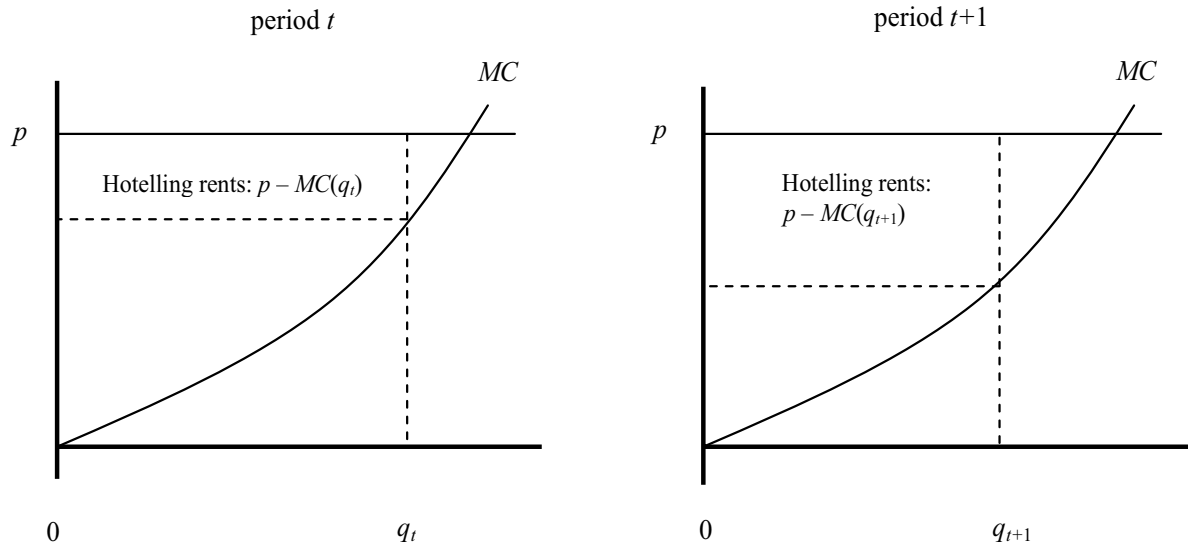

Fig. 2. R percent rule across two time periods

The *r percent* rule can also be interpreted as rent on the marginal resource quantity extracted in period *t*, which equals the discounted rent on the marginal resource quantity extracted in the next period[1].

The rent issue is strictly related to the value of the non-renewable resource. From what we have said, the use of a non-renewable resource stock is managed on the basis of a profit-maximising reasoning, based on an agreed extraction programe, which in turn implies an agreed current value of the resource. In green accounting studies, which have focused on computing values associated with natural capital stocks, such as mineral deposits and timber stocks, there is general agreement on how to define the value of such natural assets.

In fact, the current value (or selling price) V_t is given by the discounted future profit along a maximising extraction path (q^*_t, q^*_{t+1}, …, q^*_T), which can be formally written in the following way:

$$V_t \equiv \left[pq^*_t - TC\left(q^*_t\right)\right] + \frac{\left[pq^*_t - TC\left(q^*_{t+1}\right)\right]}{\left(1 + r\right)} + \frac{\left[pq^*_T - TC\left(q_T\right)\right]}{\left(1 + r\right)^{T-t}}\,, \qquad (7)$$

where once again *p* is the market price of a unit of extracted resource, *q** is the optimal quantity extracted at each point in time, *TC* is the total extraction cost and *r* is the discount rate. From this expression, and on the basis of the consideration that the resource value in the next period V_{t+1} is less because a certain quantity q_t has been removed, it follows that a change in the value of the natural asset is given by:

$$\Delta V_t \equiv V_{t+1} - V_t = \frac{rV_{t+1}}{\left(1 + r\right)} - \left[pq^*_t - TC\left(q^*_t\right)\right], \qquad (8)$$

where $V_{t+1} - V_t$ is the capital decreasing variation due to the extraction of quantity q^*_t (which is negative since $V_t > V_{t+1}$), $rV_{t+1}/(1 + r)$ is the discounted interest on the resource value, and $[pq^*_t - TC(q^*_t)]$ represents the current income, achieved by the actual resource use. Following the "net-price method" for valuing non-renewable resources, a consequence of the above expression representing the "correct" extraction is the following:

$$\Delta V_t = -\left(p_t - MC_t\right)q^*_t\,, \qquad (9)$$

[1] As adequately highlighted, in this case rent is seen in various ways (user cost, royalty, dynamic rent or Hotelling rent) to mean the same thing. The reason why rent exists is that, while the overall resource supply is fixed, this is exceeded by the overall demand (Hartwick & Olewiler, 1998, p. 271). So, what happens is that the demand pressure makes the price increase, although this is not accompanied by any production expansion (because the resource stock is fixed). Hence, a gap between the market price and the marginal cost of extraction is generated which, as we have already said, represents the resource rent.

where *MC* is the marginal cost. What is expressed by this last equation is the fundamental relation between the decline in value of a non-renewable resource and the rent associated with the current extraction level[1]. Indeed, the decline in the resource value (that is its *economic depreciation*) is equal to the rent associated with q^*_t.

The intuitive explanation between economic depreciation and rent lies in the consideration, proposed by Hartwick in an analysis of 1977. In this work he presented what is generally known as Hartwick's rule. This is an analysis framework which plays an enforcing role in the argument for tax implementation (Hartwick, 1977, 1978). Hartwick says that, under certain conditions, an economy, which extracts and makes use of a non-renewable resource in its economic processes, can pursue a non-declining consumption over time. Supposing that the non-renewable resource stock is not addressed to direct consumption (in the sense that it can be used as an input factor in a production process together with physical capital) and the output of this process can be either consumed or accumulated as capital, by respecting certain conditions, which will be considered later, a positive amount of consumption over time can be maintained. Broadly speaking and for the sake of synthesis, Hartwick's rule states that if the owner of a non-renewable resource (e.g., a mine or a tourism resource, according to the similarity we propose) each year invests the rents, obtained from the resource, use in an interest-bearing account, then by the time the resource is completely exhausted, he will have accumulated enough money to acquire another equally valuable mine and sustain his mining business. In other words, and this is the important point, by acting in this way he will be able to guarantee his economic sustainability, although, at the same time, face up to resource depletion.

Without entering into the mathematics, which can be observed in other relevant works[2], it is the case to highlight that, in general terms, to achieve the result, provided by Hartwick's theory, three basic conditions must occur. The first two are strictly linked to each other. At each point in time, the extraction of an exhaustible resource should be based on an efficient and non-wasteful program.

This provided the generation of rents (that is revenue surplus over production costs) in hotelling sense would be possible. When this first condition is satisfied, then the second one (Hartwick's rule) can take place: all generated rents should be saved and reinvested in man-made (or physical) capital. Finally, although the third condition has not been expressly reported, it lives implicitly in the model, since it represents the basic theoretical assumption for the existence of Hartwick's idea. This condition is based on a very weak sustainability idea, referring to the high substitutability degree between the exhaustible resource (the natural resource) and the man-made capital, since these are thought to be perfect substitutes for one another. In other terms, this condition requires that, while the exhaustible resource is depleted, a compensating increase of the man-made capital must take place, and that the latter substitutes the former in the production processes so that the output does not decrease.

As it is easy to see, Hartwick's rule is based on assumptions that are difficult to support. In particular, the third condition, which refers to the perfect substitution between natural and man-made capital, cannot be considered true in the real world. For this reason, Hartwick was subject to criticism (Barbier & Markandya, 1990; Common & Perrings, 1992; Hanley et al., 1997, p. 427). Even though, Hartwick's rule is not feasible as the real world works differently from the conditions in his model, it makes sense to look for and implement a tool to develop a certain balance between natural and man-made capital, whilst the former is exploited and depleted. To this purpose, Hartwick argued that governments could establish a tax on resource rents to the aim of reinvesting its revenues in enlarging the man-made (physical) capital stock. So, in agreement with what is stressed by some authors, Hartwick's rule can be seen "… as a prescription for sustainability, not just a condition of it" (Toman et al., 1995, p. 147).

Hence, by investing rents, which are obtainable by introducing some form of "rent capture" taxation, generated each year by the tourism use of the local resource it would be possible to gain a certain degree of local economic sustainability through actions of investment, which will be better presented in the next concluding section.

[1] As referred by Vincent, although this conclusion is theoretically correct, it is based on very strong assumptions which are not very often met in non-renewable resource management. These assumptions are mainly represented by: optimal resource management, endogenous price costs. Indeed, to show the weakness of such assumptions, it is argued that the earlier assumption does not hold because many non-renewable natural resources are complete or partial open access ones, so that they cannot be optimally managed. The second condition fails to be valid if we consider that most countries are takers of fluctuating international prices. Furthermore, technological advances have affected extraction costs which have been driven downwards. For this reason, more recent empirical studies try to give more contribution, while investigating the "net-price method" for valuing mineral reserves under alternative assumptions (Vincent, 1997; 2000, pp. 20-21).

[2] Other works refer to the formal treatment of this theoretical framework (Perman & McGilvray J., 1996, p. 78).

Conclusions

In agreement with authors such as Fennell and Ebert (2004), without a system based on taxation mechanisms, aimed at planning and managing tourism development and management at destinations, an unavoidable risk remains that, natural resources will continue to be depleted by an unlimited and unplanned growth. However, tourism taxation is not easy to implement. Although, an appropriate way of taxing tourism should be based on the daily spending capacity of tourists, it is difficult to identify each stage of tourist, spending activity on a tax basis. Hence, a more realistic way of taxing tourists must be found. Broadly speaking, tourism can be taxed in two different ways: either indirectly through the general tax system, particularly profits and sales taxes, or directly through the introduction of special taxes imposed on tourism activities, in particular arrival and departure taxes and hotel taxes[1]. Among the many forms of taxation, relevant attention in literature is paid to the hotel tax, or bed-night tax, because it best responds to some good taxation principles[2]. In fact, the hotel tax is important because it is roughly proportional to the use of tourism resources, since it is related to length of stay, and has a discriminatory nature, in that it falls on visitors and not on residents. Furthermore, it generates various other advantages, such as that, if taxation is considered within a certain percentage (i.e., 5%), of showing no statistically significant negative impact on tourist arrivals with the result of not harming the competitiveness of the travel industry (Fujii et al., 1985; Bonham, 1991; Bird, 1992, p. 1145; Wicks et al., 1994; Bonham & Byron, 1996). For this reason, the hotel tax is often nominated as the best tool for tourism taxation, although it is not easy to administrate as tax on arrivals and departures.

This also explains why the hotel room tax is widely applied. Table 1 below gives an idea of the various hotel room taxes that are applied at different worldwide destinations.

Table 1. Some examples of hotel/tourism charges

Countries	Hotel tax as a share of total hotel bill (in %)
Denemark	25.0
Iceland	14.0
Sweden	12.0
France	5.9
Portugal	5.0
Singapore	4.0
Switzerland	3.5

Source: http://www.worldtaxpayers.org/statvat.htm, visited in August 2010.

We can now move on to considering another important aspect, represented by the assignment of the financial resources, arising from tax application. It is important to remember that the form and level of taxation are sensibly dependent on how the tax revenues are spent. The specific literature firstly refers to strong evidence, suggesting that in particular activities, and tourism belongs to this bracket, it may be possible to levy higher tax levels if a consistent portion of the obtained revenues are employed to benefit the taxpayers (Bird, 1990, pp. 263-267).

The introduction of a tax on tourism would be more generally accepted by both the industry and tourists, if there was tangible evidence that a consistent proportion of its revenue was used for the realization/improvement of tourism reception facilities, existing in or near the tourism destination (i.e., roads, camping areas and other accommodation, ports and marinas, airports and so on), or personnel training, both of which represent valid strategies in increasing the quality level of the local tourism area. Furthermore, literature has also stressed how important that local communities, living in tourism areas, receive their portion of tax revenues generated by the tourism activities. In fact, as Britton and Clarke point out, there is an unequivocal conflict between the maintenance of a natural system and the exploitation of that system for tourism purposes. As we have extensively discussed above, such conflict is clearly mirrored in a wider context and also affects the well-being of the local population (Bird, 1992, p. 1152; McNamara & Gibson, 2008). As a consequence, it is worth compensating the local population for the loss of unrestricted access to the resource, and for the unavoidable discomfort and sense of deprivation, arising from the mix of people and lifestyles. In other words, tax revenue should be redistributed on a basis that ensures the local tourism industry does not lose out, but at the same time guarantees the provision of social benefits. This would also mean that the local tourism industry is not economically disadvantaged and the local communities better off.

[1] Where tourism taxation has been implemented, it has taken many forms. In a recent study, the WTO business council reviews all types of taxation which affect the tourism sector. They can be divided into two broad categories: directly charged to tourists and charged to user business. Taxes of the first type refer to: entry taxes (visas); terminal charges at airports, seaports and road borders; accommodation VAT; sales tax, hotel levy and bednight tax; taxes on transport, food and beverages; environmental taxes and visitor attraction taxes. Taxes of the second type are: fuel taxes; duties on the import of equipment used in tourism business; property taxes on hotel and resorts; corporation tax (World tourism organisation, 1998). However, other types of tax can also be identified such as those related to activity licences.

[2] The hotel tax (bed-night tax) is an ad valorem tax which is computed as a percentage of the price of an occupied room.

The use of tax revenues for the enlargement of the carrying capacity of those physical facilities (such as field sites for garbage disposal, sewage purifying systems, parking places, etc.), which provide support to the tourism sector, could, therefore, be supported, as they avoid problems of soil and water pollution, and traffic congestion in urban areas. One might consider them as investments in maintaining the environmental quality of places and, thus, enabling tourism destinations to continue to attract visitors. Such investments should be guaranteed, since undoubtedly they can be seen as a common policy for tourism operators and local communities. Furthermore, investments in personnel training for the tourism sector and marketing promotion of the tourism area are other important points. The promotion of the area should particularly try to reach specific target markets. In fact, depending on the type of tourists, arriving to the area in question, tourism sustainability can eitherbe further promoted or compromised. Also important is the funding of research activities looking to improve and modernize destination management strategies. As it is, therefore, easy to perceive, investments of this kind would generate benefits for both the tourism sector and local communities.

Finally, referring back to our provocative hypothesis of considering tourism destinations as mines with a finite resource stock, we could also consider the extreme case of investing in other branches of local economic life which can be developed, thanks to tax revenues, with the aim of ensuring a diversification of the production possibilities in the destination area. In fact, when the natural capital is completely depleted as a result of "tourist exploitation" and tourists become reduced or inexistent, the local population can change its economic activities, moving from the tourism sector to others which have been organized during the depletion of their natural capital[1]. This would also be the case in which we could say that the sustainability of the local economy had been achieved.

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[1] This unhappy hypothesis, which still seems unlikely to happen to most people, is not far from reality, if we consider what is generally reported in more recent studies, focusing on the relationship between tourism dynamics and climate change, and referring to problems such as coastal erosion at destinations (Phillips & Jones, 2006).

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