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Tourism and externalities in an urban context: Theoretical model and empirical evidence

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ABSTRACT

Although the majority of economists defend the positive role of tourism growth in global development, a number of tourism geography studies present divergent views on the local impact of tourism overgrowth on host communities. To examine the issue, this study develops a simple theoretical framework to illustrate that liberal economic doctrines shape host communities' policy-making towards a higher degree of inbound tourism than is optimal without considering the externalities accompanying tourism booms. Evidence from Macao and Hong Kong shows that massive inflows of tourists in the face of greater tourism openness tend to generate divergent impacts on both cities depending on their physical and socioeconomic conditions and thus lend support to the theoretical predictions.

1. Introduction

Based on the assumption that inter-destination competition is escalating, liberal tourism economists encourage emerging tourism destinations to create market conditions that attract tourist arrivals for host communities' survival and prosperity (Gan & Smith, 1992; Shackleford, 1979; Tribe, 1997; Wood, 2000). Although the desirability of inbound tourism is backed by much of the tourism economics literature (Kantarci, 2007; Lee & Jang, 2011; Li, Huang, & Song, 2017), some tourism geography studies have indicated the serious externalities of host communities that accompany the overgrowth of tourism. These externalities are largely driven by massive tourist arrivals. The economic externalities of tourism such as leakage, increased cost of living, and asset bubbles are documented in Copeland (1991), Sheng (2016a), Sheng and Tsui (2009a) and Williams and Hall (2000). In addition, the environmental externalities of tourism such as air pollution, noise pollution, and the overuse of natural resources are analyzed in Briassoulis (2002), Brohman (1996), Saenz-de-Miera and Rosselló (2014), and Sheng and Tsui (2009b). The social externalities of tourism such as increased crime, social polarization, and cultural alienation are illustrated in Castells (1978), Harvey (2008), and Sheng (2016b).

A tourism destination is a geographical area consisting of a set of resources and attractions that is visited by tourists. Whereas a developed destination is characterized by widespread tourism infrastructure, advanced technology and high living standards, a developing one is relatively less developed with the potential for strong growth. The destructive effects of tourism overgrowth, characterized by spectacular economic growth in tourist arrivals that induces significant negative economic, social, environmental and political impacts (Boukas & Ziakas, 2016) on a region's welfare, are evident across small developing destinations (Sheng, 2017). However, the situation appears to be the opposite in large developed destinations. Because the tourism sector may play a relatively minor role in a large economy, the expansion of the tourism industry will not lead to mono-structure and over-reliance. Additionally, the overheating of a real estate market driven by booming inbound tourism will only be present in certain areas of the economy and will only account for a small portion of its large territory. Furthermore, a large economy may be able to formulate its tourism policies without giving much consideration to outside influences, as it may be largely independent of multinational enterprises, foreign governments or international organizations.

In considering destinations' geographical sizes, natural endowments, development levels and unique socio-economic mixes, this paper particularly emphasizes the deep concerns of tourist cities with weak physical, economic and institutional infrastructure because of the externalities that arise from massive tourist arrivals. Tourist cities understand that booming inbound tourism provides them with opportunities for economic growth, but these opportunities are coupled with the risks of externalities. The simple model developed in this paper theoretically proves that tourist cities with managed openness, i.e.,

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managing the level of openness to visitors, guest workers and international capital, may have better performance in terms of sustainable local development that balances growth and externalities. Conversely, imprudent openness is likely to end in failure, with greater externalities and more volatile growth in the long run. Moreover, a city index has been incorporated into the model, indicating that differing natural endowments and carrying capacity cause diverging vulnerability and optimal openness across cities. Comparative statics analysis has been conducted to illustrate the long-term development of cities with different policy options. Graphical illustrations also have been provided to better communicate the findings to readers. The theory's predictions have been tested in the context of Hong Kong and Macao, using water supply and traffic congestion as measures of externalities associated with tourist inflow. These two variables have been used extensively to evaluate externalities induced by booming inbound tourism (Chen & Teng, 2016; Salerno et al., 2013; Sevegnani, Giannetti, Agostinho, & Almeida, 2017; Zhang, Li, & Su, 2017).

This research also has significant practical relevance. In terms of visitor arrivals, Hong Kong ranks 6th worldwide. As a world-class shopping paradise and a role model of customer services provision, Hong Kong has long been imitated by neighboring regions. Despite its success, Hong Kong has suffered from tourism-boom-induced externalities since China's launching of its free individual travel (FIT) scheme in 2003. Macao has been experiencing rapid economic growth since its gaming liberalization in 2002 and China's FIT policy. Macao has created an economic miracle since then, with a nine-fold increase in its gross domestic product (GDP). Currently, Macao is the world's largest casino city in terms of gaming revenues, successfully transforming itself into a world-class leisure and tourism center. While enjoying the enormous success, the area experienced serious externalities accompanying the tourism boom. More recently, China's anti-corruption campaign also has deeply shaken the city's pillar industry. Furthermore, as a fast-growing mega economy, China's outbound tourism is experiencing an unprecedented boom. China is expected to soon become the world's largest traveler origin country, deeply influencing the world tourism market. In fact, Hong Kong and Macao ranked 1st and 2nd respectively, as targeted tourism destinations for Chinese tourists. Thus, analyzing the impacts of the massive inflow of Chinese tourists into both cities may also generate valuable policy recommendations and managerial implications for other tourist cities that are eager to host Chinese tourists.

2. Theoretical model

A simple model has been designed to describe how a tourism destination attempts to maximize its welfare by balancing economic growth and externalities induced by a massive inflow of tourists. In fact, natural endowments, infrastructure development and social-political cultures largely differ across tourism destinations. Consequently, destinations differ significantly in the tradeoffs of economic growth and externalities; therefore, they show differing levels of openness towards inbound tourism and follow different development and growth paths.

Suppose that the openness of a tourist city towards visitors can be measured using a ($0 < a < 1$), with $a = 0$ describing the minimal openness and $a = 1$ the maximal openness. Assume that b measures the vulnerability of a tourism city, where a higher b represents, for example, limited land space, underdeveloped infrastructure, superstructure and facilities, and immature economic and financial institutions. In such a case, this tourism city cannot optimally absorb visitors while keeping externalities at a tolerable level. Suppose that σ, as an index of externalities, is positively correlated with b, as is evident in the extant literature (Sheng, 2010, 2012; Stonich, 2003 and Wilkinson, 1999). Logically, we may derive $\sigma = \sigma(a, b)$, where $\partial\sigma/\partial(a, b) > 0$, and $\sigma = \sigma(a, b)$ may be converted to $a = a_\sigma(b)$. This means that openness can be formulated as a function of vulnerability given a certain magnitude of externalities. Economic growth g is accelerated with

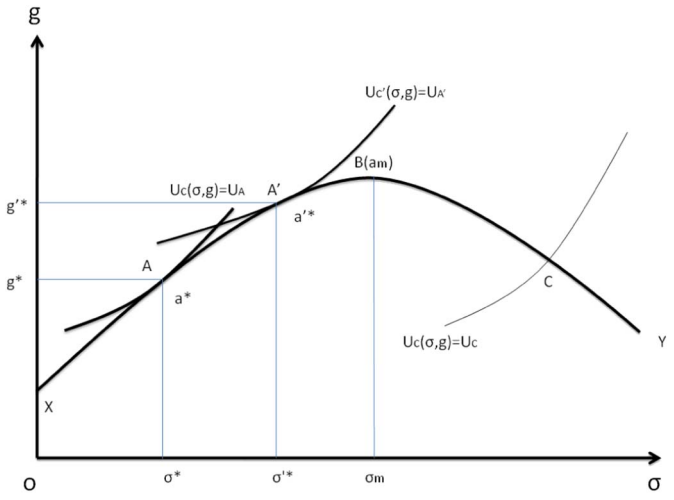

Fig. 1. Policy preference in terms of growth-externalities tradeoff.

the inflow of tourists if a destination pursues wider openness, as is evident in the extant literature (Jimenez, 2002; Sheng, 2017 and Walpole & Goodwin, 2000). However, this positive dependency follows the law of diminishing marginal return. We may also convert $g = G(a)$ to $g = g_b(\sigma)$, which means that a positive correlation between economic growth and openness actually implies a positive correlation between economic growth and externalities. The risk opportunity curve $g = g_b(\sigma)$ is shown in Fig. 1, illustrating that wider openness induces rapid economic growth, which is accompanied by greater externalities because of the destination's vulnerability to visitors.

Both economic growth and externalities must be adopted in the destination's utility function, $u = u_c(\sigma, g)$. A utility curve IC, as shown in Fig. 1, represents growth-externalities tradeoffs. If IC moves downward or to the right, we may expect smaller overall welfare because of lower economic growth or larger externalities. Different tourist cities indicate differing perceptions of externalities as indexed by c, and consequently, their utility curves diverge. Optimal openness a* with a corresponding level of externalities σ* and economic growth g* can be obtained in the tangency point of the opportunity curve and utility curve, as shown in point A in Fig. 1. Growth-externalities tradeoffs differ across tourism cities because of differing natural endowments, stages of development, and socio-political cultures.

Tourist cities normally have only limited freedom to reach a sensible tradeoff between economic growth and externalities, because the world in the era of globalization is interconnected and interdependent. A mature, developed and large tourism city with modern tourism infrastructure and well-trained tourism sector employees may attempt to attract as many tourists as possible. Conversely, an immature, developing and small tourism city with limited natural and human resources and limited capital stock, but which relies significantly on the tourism sector, may rationally want to regulate the inflow of visitors at a certain threshold. In addition, influential transnational companies and powerful international organizations such as the International Monetary Fund, the World Bank, and the United Nations World Tourism Organization often attempt to force or incentivize developing tourism cities to ensure the free entrance of tourists (Sheng, 2017), which can be shown as Y in Fig. 1. After negotiation and bargaining, the compromised equilibrium C shown in Fig. 1 may occur, implying an inefficient tradeoff with more externalities and lower economic growth as a result of irrational tourism policymaking due to foreign pressure.

Assume two tourist cities, A and A′, where A′ has a much more serious problem of unemployment in comparison with A. As a result, A′ is much more willing to widen its openness to tourists to create jobs, even though the induced rapid economic growth will be accompanied by a number of unfavorable externalities. Graphically, A has a much steeper utility curve than A′, as shown in Fig. 1, reflecting the latter's