



Oil prices, tourism income and economic growth: A structural VAR approach for European Mediterranean countries

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H I G H L I G H T S

- ▶ This paper examines the effects of oil price shocks on tourism income and economic growth.
- ▶ This is the first study that considers the origin of the oil price shocks with respect to tourism studies.
- ▶ This paper focuses on four oil-importing European countries, which are dependent on the tourism sector.
- ▶ Demand-side oil price shocks have a significant impact on tourism and economic variables.
- ▶ Supply-side oil price shocks do not exert any significant impact on tourism and economic variables.

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In this study, a structural VAR model is employed to investigate the relationship among oil price shocks, tourism variables and economic indicators in four European Mediterranean countries. In contrast with the current tourism literature, we distinguish between three oil price shocks, namely, supply-side, aggregate demand and oil specific demand shocks. Overall, our results indicate that oil specific demand shocks contemporaneously affect inflation and the tourism sector equity index, whereas these shocks do not seem to have any lagged effects. By contrast, aggregate demand oil price shocks exercise a lagged effect, either directly or indirectly, to tourism generated income and economic growth. The paper does not provide any evidence that supply-side shocks trigger any responses from the remaining variables. Results are important for tourism agents and policy makers, should they need to create hedging strategies against future oil price movements or plan for economic policy developments.

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1. Introduction and review of the literature

Recent hikes in oil prices have necessitated the investigation of the relationship among tourism sector developments, economic growth and oil price movements. This investigation is considered very typical for the tourism industry given its energy-intensive nature (Becken, 2008; Gössling et al., 2005; Patterson & McDonald, 2004). Oil price changes could harm economic and tourism activities due to the effect they exert on transportation,

production costs, economic uncertainty and disposable income (Becken, 2008). Especially for tourism dependent countries, income derived from the tourism sector could potentially help them facilitate future development strategies and goals or help them forge a resilient economy. In this regard, it is understood that tourism may very well serve as the engine for boosting aggregate demand and thus leading to economic growth.

In the light of recent developments in economic conditions in Europe that consequently brought the matters of 'short-run stability' and 'medium-run economic growth' to the fore, identifying potential sources of growth constitutes a great challenge for any European country, but especially for the EMU periphery. The latter countries need to focus on the aggregate demand side of their

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economy in order to find ways to increase consumption and tourism sector could constitute an important driver of economic growth, since it represents an important component of their economy. Nevertheless, emphasis should be put upon the fact that countries with a high dependency on tourism activity are unevenly exposed to sudden fluctuations in oil prices (Becken & Lennox, 2012). This entails careful planning as potential benefits of the tourism sector's developments could be diminished by higher oil prices.

In this regard, the purpose of the following analysis is twofold. Initially, we review the literature associated with the relationship between economic growth and the tourism industry. Next, we highlight past findings related to the effects of oil prices on the economy.

1.1. Tourism and economic growth

Building on the seminal theoretical work of Hazari and Sgro (1995), Lanza and Pigliaru (1999), as well as, Copeland (1991), many authors have conducted research in order to provide empirical findings regarding the interaction between the tourism sector and the broader economy. Nevertheless, the causality between the tourism sector and economic growth is a matter yet open to question. To be more explicit, research on the field can empirically support four main views on the said relationship:

- First, there is evidence that causality indeed runs from the tourism sector to the broader economy – a hypothesis known as the *tourism led economic growth* (TLEG) hypothesis (see, *inter alia*, Ballaguer & Cantavella-Jorda, 2002; Blake & Sinclair, 2003; Brida, Lanzilotta, Lionetti, & Rizzo, 2010; Carrera, Rizzo, & Brida, 2008; Croes & Vanegas, 2008; Fayissa, Nsiah, & Tadesse, 2011; Kim, Chen, & Jang, 2006; Lee & Chang, 2008; Schubert & Brida, 2011; Soukiazis & Proenca, 2008; Vanegas & Croes, 2003; Zortuk, 2009).
- Then, there is the view that economic growth is instead a crucial factor to the increase in tourism income – the so-called *economic-driven tourism growth* (EDTG) hypothesis (Narayan, 2004; Oh, 2005).
- A third strand of literature provides evidence that there exists bidirectional causality between tourism and economic growth (Chen & Chiou-Wei, 2009; Cortes-Jimenez, Pulina, Prunera, & Artis, 2009; Dritsakis, 2004; Durberry, 2004; Kassimati, 2011; Lee & Chang, 2008, among others).
- Finally there are some authors reporting no significant evidence for causality (Eugenio-Martin, Morales, & Scarpa, 2004; Katircioglu, 2009).

In particular, the overriding assumption underpinning the TLEG hypothesis is that rising tourism income has multiple advantages for a country's economy, including *inter alia*, rising employment in the tourism sector, development of other business sectors related to tourism activities and a positive effect on the national balance of payments due to higher tourism receipts.

Pertaining to the view that economic growth leads to tourism growth, the argument is that any policy initiatives that promote overall economic development should take precedence over measures that directly promote tourism growth. Under this view, this growth will result in the expansion of the tourism sector.

Nevertheless, as aforementioned, other findings do not provide support either in favour of the TLEG or the EDTG, whereas some studies opine in favour of bidirectional causality between tourism income and economic growth. Table 1 summarises previously reported empirical results.

1.2. The effects of oil prices

Nevertheless, all aforementioned findings could be significantly influenced by oil price fluctuations. Previous research has indicated that higher oil prices exert a negative impact on tourism (Becken, 2011; Becken & Lennox, 2012; Yeoman et al., 2007). In testament to that, the current global economic turbulence and political events in the Middle East have created uncertainty in commodity markets and oil prices are expected to peak in the following years. The United Nations World Tourism Organisation (UNWTO) has also expressed its concern regarding the negative effects of oil prices on tourism (WTO, 2006). In addition, the UNWTO has concluded that high oil prices are affecting certain tourism industry segments (e.g. airlines, cruise lines, etc.) disproportionately more than others.

Furthermore, Becken (2011) distinguishes between macroeconomic and microeconomic effects of oil prices. For oil-importing countries (such as the countries in our sample) this translates as follows. With reference to macroeconomic effects, higher oil prices generally lead to higher inflation, while they negatively influence the country's income. From a microeconomic perspective, positive oil price shocks lead to a decline in disposable income. These developments will have an immediate and negative impact on tourism, mainly due to the fact that tourism is regarded as a luxury good (Dritsakis, 2004; Lim, Min, & McAleer, 2008; Nicolau, 2008).

The oil-literature further distinguishes oil price innovations in virtue of their origin. Indicatively, we quote Hamilton (2009a, 2009b) who draws a distinctive line between demand-side oil price shocks (due to the industrialisation of countries such as China) and supply-side shocks (due to interruptions in the supply of oil). Kilian (2009), in addition to Hamilton's origins of oil price shocks, further identifies the so-called precautionary oil price shock or oil specific demand shock (this is a shock associated with the uncertainty about the future availability of oil).

The consideration of the origin of oil price shocks is rather important as the literature has shown that different shocks impose different effects on economic variables and thus they may possibly yield different effects on the tourism sector (authors who have considered the origin of the oil price shock in their studies include Kilian and Lewis (2011), Filis, Degiannakis, and Floros (2011), Apergis and Miller (2009), Lescaroux and Mignon (2008), Kilian (2008) and Barsky and Kilian (2004)). In short, the consensus is that supply-side shocks, in general, exert either insignificant or negative impacts, whereas demand-side shocks appear to have both short-run and long-run positive effects (Baumeister & Peersman, 2012; Hamilton, 2009a, 2009b; Lippi & Nobili, 2009). This established, Kilian and Park (2009) suggest that only aggregate demand-side shocks exert a positive effect, whereas oil specific demand shocks trigger negative responses from economic variables.

Given this vast pool of different approaches and findings, the effects of oil price shocks on countries that heavily rely on tourism have been under-researched (Becken, 2011). In addition, as tourism is an oil-intensive industry, the literature has remained particularly silent on this relationship. For this reason, Becken (2011) urges for more research in this specific area.

1.3. Purpose of study

Having established that the interaction between tourism income and economic growth should also encompass the effects of oil price shocks, this paper examines the relationship between oil price shocks, tourism income and economic growth, taking under consideration the origin of the oil price shocks (i.e. whether it is a supply-side oil price shock, an aggregate demand-side oil price shock or an oil specific demand shock).

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