THE RELATIONSHIP BETWEEN INTERNATIONAL TOURIST ARRIVALS AND FOREIGN DIRECT INVESTMENT: A GRANGER CAUSALITY ANALYSIS

Ly-Pham ThiMinh, Hieu-LeMinh, Phung-Tran ThiPhi*

Abstract

It is widely recognized that a rapid increase in foreign direct investment leads to an increase in tourism at different levels. This paper applied a Granger Causality test to investigate the causal relationship between International Tourist Arrivals (ITA) and Foreign Direct Investment (FDI) across countries. By using time series data from six countries in the top ten European destinations (France, Spain, Italy, Germany, Turkey, and the United Kingdom) for the 1980–2014 period, the findings reveal that there is a unidirectional causality between ITA and FDI. The results are strongly proven with the same results when the lag between FDI and ITA is lengthened at lag 1. Moreover, the outcome evidence has a unidirectional relationship running from FDI to ITA when GDP is added as the controlling variable.

Keywords: international tourist arrivals, foreign direct investment, granger causality

JEL Classification: C23, F21, L83, O57

Introduction

Tourism has recently intensified to become the prevailing industry that attracts substantial support from governments [Lashkarizadeh, Gashti & Shahrivar, 2010] and generates a vast income for many nations. In fact, Foreign Direct Investment (FDI) plays a crucial role in the global economy, which in turn, has had a colossal impact on domestic economies and contributed to the growth of the tourism industry. The United Nations Conference on Trade and Development (UNCTAD) in 2007 indicated that FDI has promoted basic tourism sector facilities, especially in hotels, restaurants, and recreational centres. In addition, FDI has also connected the physical infrastructures and standard services from developed nations (NM) to the tourism industry in developing nations (NSM).

Current modern research on the pragmatic relationship between FDI and ITA is still limited and reveals contradictory results although researchers discovered that tourism is a catalyst for FDI growth in the case of Turkey. This finding is supported by Gunduz and Hatemi [2005], Ongan and Demiroz [2005], Salih [2011] and Ongan and Demiroz [2005]. However, a further revision revealed a negative result [Katircioglu, 2009]. In

* Faculty of Business Administration, Ton Duc Thang University, Vietnam (phamthiminhly@tdt.edu.vn).

fact, it has been widely requested to have more observed works in literature in order to examine the relationship between tourism and FDI. We can affirm that to the best of our knowledge, this paper is the first to examine the relationship between FDI and ITA in the group of the highest number of international tourist arrivals in European countries (France, Spain, Italy, Germany, Turkey, and the United Kingdom) by using time series data from 1980 to 2014.

Secondly, most researchers use tourism-led growth, tourist expenditure or a tourism receipts hypothesis to examine the impact on FDI. This paper takes a different approach by using the numbers of international tourist arrivals (ITA) across countries as a key explanatory variable.

Various types of optimal lag length from one to four were tested for the causality relationship between international tourist arrivals and FDI by using the Augmented Dickey-Fuller unit-root test, and the Johansen cointegration approach. In addition, unidirectional causalities between tourism and FDI are examined via Granger causality tests.

Correspondingly, all results remained with strongly supported proof. One of the most important findings is that the relationship between two variables changes when totalling up the gross domestic growth as a controlling variable. The finding also indicates that only the unidirectional relationship running from FDI to tourism completely differs from the research by Salih Katircioglu [2011].

The rest of the paper is organized as follows: Section 2 provides a literacy review on the comprehensive relationship between FDI and ITA; Section 3 introduces samplings and methodologies; Section 4 examines the overall empirical research findings and the concluding remarks are in section 5.

1. Literature Review

Previous research on the relationship between FDI and tourism is limited. A number of studies from Asian countries show that there is a causal relationship between FDI and tourism, which is supported by the study by Haley and Haley [1997] in the case of Vietnam. International business travel has recently increased as the result of the reinforcement of FDI and it has been argued that this trend has had the tendency to diminish the diversity of cultures, and economic and political structures. A further argument regarding the unidirectional connection from FDI to tourism is the claim that FDI generates the expansion of new tourist attractions and venues, which, in turn, also leads to an increase in tourists. Some of the evidence also highlights that export-oriented FDI also boosts trade, which can lead to the growth of awareness and the demand for goods from business and holiday travellers [Haley & Haley, 1997]. Moreover, Tang and Selvanathan [2007] used quarterly data from 1987 to 2001 in a unit root test, where cointegration and causality found that FDI and tourism has a one-way causal relationship in the direction of FDI to tourism. More noteworthy is that their research was found to dispute the affiliation between tourism industry development and FDI in China using quarterly timed series data from 1985 to 2003. The result shows that there is a unidirectional causal correlation between FDI and ITA, which provides details of the rapid growth of the tourism industry in China over the past decade [Tang et al., 2007].

On the contrary, the opposite results suggested that there is a bidirectional causality relationship between two variables. According to Katircioglu [2011], the causality

relationship between international tourism and net FDI inflow growth was empirically investigated by using the bounds test in the case of Turkey. The results imply that these two variables are at a level relationship only when net FDI inflows are dependent variables in the Autoregressive Lag *Model* (ARDL) model. Likewise, the results of the causality test using VEC models propose unidirectional causation from international tourism growth to net FDI inflow growth in Turkey [Katircioglu, 2011].

In addition, Salleh [2011] found that the number of tourist arrivals has increased the growth of FDI in Malaysia and Thailand at a significant level. The number of tourist arrivals is more significant for influencing FDI and Malaysia and Thailand are no exception. However, for Hong Kong, there is a bidirectional relationship between both variables. The study also claimed that in order to stimulate sustainable economic and tourism development in countries, the increase in the number of tourist arrivals must be considered as a potential source for boosting the economy and attracting overseas investment [Salleh et al., 2011].

2. Sample Selection, Research Methodology

2.1 Sample selection

Derived from two well-known currently available databases at the Immigration Department and the World Bank, and updated in December 2015 for International Tourist Arrivals and Foreign Direct Investment, the time series data for the three variables applied in this study cover the historical statistics from 1980 to 2014. The data length was determined based on the availability of the data values at the time this research began. Both variables are conducted on an annual basis and expressed in their natural logarithms in order to capture growth effects where FDI and ITA variables are at current rate of the US dollar and per million people, respectively [Thi Minh Ly Pham & Thi Phi Phung Tran, 2015].

To differentiate between the previous studies, alternative measurements for international tourism including tourism receipts and international tourist arrivals were discussed. While Gunduz and Hatemi [2005] pointed out that a multicollinearity problem emerges when tourism receipts are used (since income from tourist destinations can be included in FDI), the annual volume of international tourist arrivals was measured using data from the World Bank for 2015 and the immigration departments of a group of countries (France, Spain, Italy, Germany, Turkey, and the United Kingdom in 2015).

In addition, we used annual FDI data with an approximated assessment by using the ratio of FDI inflows to a country at time t over the Gross Fixed Capital Formation (GFCF) in the country at time t . This proxy was chosen to capture the significance of FDI in the investment activity of a country [Moudatsou & Kyrkils, 2011].

2.2 Research Methodology

In order to empirically examine the fundamental correlation between ITA and FDI, the Granger causality is used with two controlled variables for testing the impression of tourism on FDI and vice versa. Granger causality is considered to be a powerful tool to investigate the contributory effect and functional relation from numerous temporal data [Luo, Ge & Feng, 2011].

Hence, we specified the following bivariate vector error correction (VAR) system of order p for the pair of the FDI and ITA variables. This particular VAR system was recommended as it provides more robust estimates. In this study, the following models are considered to observe the relationship between tourism and FDI by using the Johansen test and the Granger causality test [Kim, Chen & Jang, 2006]:

$$FDI_t = \mu_1 + \sum_{i=1}^p \alpha_i FDI_{t-i} + \sum_{j=1}^q \beta_j ITA_{t-j} + \varepsilon_{1t}; \quad (1)$$

$$ITA_t = \mu_2 + \sum_{k=1}^p \alpha_k FDI_{t-k} + \sum_{i=1}^q \beta_i ITA_{t-i} + \varepsilon_{2t}; \quad (2)$$

where: μ is intercept; t is time trend; α, β are coefficients; p, q is optimal lag length and ε_t is residual.

The null hypothesis of “ITA does not Granger cause FDI ($ITA \neq > FDI$)” was tested using a standard Johansen test and the Granger causality test for the joint hypothesis:

$$H_0: \beta_1 = \beta_2 = \dots = \beta_p = 0.$$

ITA was said to cause FDI in the Granger sense if the above null hypothesis was rejected (that is, at least one of the s for $i = 1, \dots, p$ was statistically significant). Similarly, the null hypothesis of “FDI does not Granger cause ITA ($FDI \neq > ITA$)” was tested by defining the null hypothesis:

$$H_0: \alpha_1 = \alpha_2 = \dots = \alpha_p = 0.$$

FDI was said to cause ITA in the Granger sense if the null hypothesis was rejected.

For the above hypotheses testing, it was assumed that the FDI and ITA time series involved in models (1) and (2) is stationary. If the time series is non-stationary, then the stationary differenced form of the time series could be used. Sims [1980] and Doan [1992] recommend against differentiating, even if the time series is non-stationary. They argue that the goal of the VAR analysis is to determine the inter-relationships between the variables, not the parameter estimates [Enders, 1995]. However, if the two FDI and ITA time series are non-stationary (or contain a unit root), it is important to test whether they are cointegrated, as this affects the causality test results as per Engle and Granger [1987], Sims, Stock and Watson [1990], Mosconi and Giannini [1992], and Toda and Phillips [1993].

The cointegration of FDI and tourism variables was then formally tested by employing the Engle and Granger [1987] procedure, which was based on testing a unit root in the residual series of the estimated equilibrium relationship by employing the Dickey-Fuller test. The co-integration method was developed by Granger [1969] as a tool to investigate the long-term equilibrium relationship among variables. Engle and Granger [1987] later formed a linear combination of two or more non-stationary series that might be stationary. When such a stationary linear combination endures, the series are contemplated to be cointegrated and long-term equilibrium relationships

among them exist. Because of the existence of cointegration, although the series is originally unstationable, they cannot advance away from each other's durability. Cointegration entails being stationary.

A significant note about the Granger causality test is that the results depend on the lag length. Thus, it is assumed that the lag length is long enough to reflect the effects of the past values of these time series on the current value. For a robust estimation of VAR, optimal lag length is compulsory to capture autoregressive correction in the residuals of the estimated model [Schwert, 1987]. The proper optimal lag length should be determined in order to avoid an error as much as possible. explained that overfitting (selecting a higher order lag length than the true lag length) causes an increase in the mean-square forecast errors and that underfitting the lag length often generates autocorrelation errors.

3. Empirical Results

3.1 Unit root test

As a starting point, we investigated whether or not the two time series were stationary. The unit root test is used to investigate whether the time series data contains a unit root and is of unquestionable importance because if the time series data is not stationary, the findings may contain a “spurious regression problem” [Granger & Newbold, 1974]. To validate these findings statistically, the stationary of these two series was formally tested using the Augmented Dickey-Fuller (ADF) unit-root test.

Table 1 | Augmented Dickey-Fuller unit root test for cointegration of the residual series

Cross section	FDI		ITA	
	level	1st difference	level	1st difference
FR	1.0000	0.0088	0.9561	0.0242
GE	0.1099	0.0000	0.8498	0.0014
IT	0.0003	0.0000	0.2599	0.0000
SP	0.1961	0.0000	0.6295	0.0000
TU	0.0987	0.0000	0.4078	0.0000
UK	0.0811	0.0000	0.0635	0.0009
ADF-Statistic	33.6124	112.430	10.4647	92.5491
ADF-Pro	0.0008	(0.0000)***	0.5753	(0.0000)***

Source: authors' own calculations

*Note: This table uses the Augmented Dickey-Fuller test to analyse the time series stationary. The null hypothesis is H_0 : and the data has a unit root with H_0 to indicate foreign direct investment (FDI) or international tourist arrivals (ITA). If the test statistic (p value) is less than the significance level, then the null hypothesis is rejected and no unit root is present. The time series is stationary. If H_0 is insignificant, the time series has a unit root. Notes *, **, *** show the significance at 10%, 5%, and 1% respectively.*

In Table 1, the results show that both series are stationary in their first difference, which means both series are integrated into orders one, $I(1)$. Even if the two variables, FDI and ITA, individually are $I(1)$, it may be possible that a linear combination of the two variables may be stationary. If modelling a linear relationship between FDI and ITA, in the case that each is individually non-stationary (that is, $I(1)$), then providing they are cointegrated, the regression involving the two series may not be spurious. Thus, we investigated whether the two series are cointegrated and have a causality relationship. The existence of cointegration between two variables means that there is an effect preventing the two series from drifting away from each other and forcing the series to converge.

3.2 Cointegration test

The second test of multivariate cointegration applied to examine whether ITA and FDI have a long-running relationship between tourism and FDI was estimated at the same order one $I(1)$. The test was conducted using five different models. Specifically, when the series do not have cointegration and no long-run equilibrium relation among the time series, the Vector Auto-Regression (VAR) model is applied to measure the Granger causality effect. On the contrary, if there is an interrelation among the time series, the Vector Error correction model is used to examine Granger causality.

In this paper, in order to thoroughly explore the causal relationship between ITA and FDI, we respectively checked the impact of ITA on GDP and vice versa with optimal lag length lag 1 to 4. The results are as follows:

Table 2 | Cointegration Tests based on the Johansen Approach between FDI and ITA

	Null Hypothesis	Trace Statistic	5% CV	Probability	Max-Eigen Statistic	5% CV	Probability
Lag 1	$H_0: r = 0$	27.04076	18.39771	0.0024	18.76364	17.14769	0.0289
	$H_0: r \leq 1$	8.277121	3.841466	0.0040	8.277121	3.841466	0.0040
Lag 2	$H_0: r = 0$	21.66127	18.39771	0.0169	13.04140	17.14769	0.1796
	$H_0: r \leq 1$	8.619866	3.841466	0.0033	8.619866	3.841466	0.0033
Lag 3	$H_0: r = 0$	21.44164	18.39771	0.0182	13.89365	17.14769	0.1401
	$H_0: r \leq 1$	7.547983	3.841466	0.0060	7.54798	3.841466	0.0060
Lag 4	$H_0: r = 0$	14.93193	18.39771	0.1430	9.989881	17.14769	0.2982
	$H_0: r \leq 1$	4.942044	3.841466	0.0262	4.942044	3.841466	0.0262

Source: authors' own calculations

Note: Table 2 shows the results of the Johansen test in which H_0 means foreign direct investment (FDI) and that the international tourist arrivals (ITA) have cointegrated. In Table 2, r shows the number of co-integrating vectors; column 1 lists the optimal lag length; column 2 lists the null hypotheses of zero and at least one co-integrating vector; column 3 lists the trace statistics; column 4 lists the critical values for trace statistics at 5% significant level; columns 5 and 8 list the probability values; column 6 lists the maximum Eigen statistics; and column 7 lists the critical value for maximum Eigen statistics at the 5% significance level.

The results presented in Table 2 clearly indicate that there is a cointegrated series between FDI and ITA. This demonstrates that there is a relationship between FDI and tourism in the group of selected countries. The results of the Max-Eigen Statistic and Trace Statistic tests also show that all the series are not cointegrated in the long run. In other words, long-run equilibrium did not exist between all the series, tested at 5% critical values. Thus, we can conclude that there is no long-run relationship between FDI and ITA in the research sample.

3.3 Granger causality testing procedure for causality

The causality between FDI and tourism ITA was enhanced by using the recent Granger causality testing procedure for causality [1988] for testing whether or not two series are cointegrated, and that there must be Granger causality in at least one direction. The theory is that if changes in X precede changes in Y, then X could be a cause of Y or vice versa. As the cointegration test indicates that the time series are cointegrated, the causality relationship can be controlled. Hence, checking for the causal relationships as well as the directions of the series could be conducted directly through the Granger causality test. As all these variables are integrated in order one I (1), their initial differences are used in the Granger-causality test, which requires the use of a stationary process.

Table 3 | Granger causality relationship between ITA and FDI time series

Lag	Null Hypothesis	Probability	Conclusion (Hypothesis)
1	ITA ---/---> FDI	0.0948*	Rejected
	FDI ---/---> ITA	0.4064	Accepted
2	ITA ---/---> FDI	0.2253	Accepted
	FDI ---/---> ITA	0.0295**	Rejected
3	ITA ---/---> FDI	0.2078	Accepted
	FDI ---/---> ITA	0.0618*	Rejected
4	ITA ---/---> FDI	0.3390	Accepted
	FDI ---/---> ITA	0.0205**	Rejected

Source: authors' own calculations

*Note: This table illustrates the Granger causality test between ITA and FDI. The test was conducted for the whole sample period. For each ITA measure, the null hypothesis that ITA does not Granger cause the FDI was tested and the probability reported for each test. We chose the optimal lag length 1 to 4, respectively, to prove strong causal relation results and denote the rejection of the null hypothesis. The notes: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.*

Consistent with our prediction and previous results, the table demonstrates the mutual impact on the data variables of the chosen countries. It is evident that the result of the Granger testing can assume that there was only a negative relationship running

from FDI to ITA at lag 1. There is also strong evidence to support that movement of FDI will affect the fluctuations of ITA from lags 2 to 4 with p-value equal to 0.0295, 0.0618, and 0.0205 respectively. All of these are less than the significance level of 10%.

Surprisingly, we are primarily interested in the predictive power of tourism for FDI but from the above-mentioned test results, there is also the existence of the possibility of causality from the opposite direction with the change in FDI affecting tourism with a p value equal to almost 10%. Even though the results are mixed, they still contribute strong evidence to the literature on causality between tourism and FDI among the selected countries.

In previous studies by Dunning and McQueen [1981], Contractor and Kundu [1995], Kundu and Contractor [1999], and Dunning and Kundu [1995], the authors only focused their analysis on the international hotel industry and did not discuss the relationship between overall FDI and international tourist arrivals.

As analysed in the previous section on the causal relation between foreign direct investment and international tourist arrivals from 1980 to 2014 using time series data, some variables may affect both ITA and FDI. Thus, we have extended this finding by using GDP as a controlling variable when running Granger causality tests. We tested the Granger causality relationship among ITA, FDI, and GDP to expand our results. It is extremely difficult to prove that international tourist arrivals impact Foreign Direct Investment in the group of countries.

Table 4 | Granger causality of the ITA, FDI, and GDP time series

Lag	Null Hypothesis	Probability	Conclusion (Hypothesis)
1	ITA ---/--> FDI	0.0948*	Rejected
	FDI ---/--> ITA	0.4064	Accepted
2	ITA ---/--> FDI	0.2253	Accepted
	FDI ---/--> ITA	0.0295**	Rejected
3	ITA ---/--> FDI	0.2078	Accepted
	FDI ---/--> ITA	0.0618*	Rejected
4	ITA ---/--> FDI	0.3390	Accepted
	FDI ---/--> ITA	0.0205**	Rejected

Source: authors' own calculations

*Note: This table reports the Granger causality test between ITA, GDP and FDI. For each ITA measure, we first tested the null hypothesis that ITA does not Granger cause FDI. In addition, when FDI is calculated, we have checked the null hypothesis that FDI does not Granger ITA and reported the probability for each test. We chose the optimal lag lengths at 2 and 3, respectively, to prove strong causal relation results and denote the rejection of the null hypothesis at the 1%, 5%, and 10% levels. Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.*

The result clearly shows that there is unidirectional causality running from FDI to ITA with three lags because the p-values (proportionally 0.0295, 0.0618, 0.0205) are significant and less than the 10% percent level. This is the same with previous research, such as Haley and Haley [1997], Tang et al. [2007] who found a one-way causal relationship in the direction of FDI to tourism. In addition, we also removed the evidence to describe the relationship between tourism and FDI proven at lag 1 (p value equal to 0.0948).

Conclusion

This paper has investigated the causal relationship between International Tourist Arrivals and Foreign Direct Investment for a group of European countries using the Granger causality analysis by taking into account the variables from a group of EU countries from 1980 to 2014. The findings suggest that the outcomes of these countries reveal optimistic results, which have been provided by three important effects between two variables.

The results first show a persistent impression on the relationship between International Tourist Arrivals and Foreign Direct Investment in those countries. Moreover, this paper also highlights the important role of the authorities who should play an active role in promoting international tourism due to their economies benefiting from both FDI and ITA. We have confirmed further evidence that tourism could be considered as an easy, effective, and reasonable tool to attract more Foreign Direct Investment as a core principle of the economy. More importantly, these findings imply that future economic policies should focus more on strengthening the relationship between tourism and FDI, which will contribute significantly to the GDP growth of these countries. Finally, this issue deserves further attention from researchers for comparison with those authors mentioned in the literary review as the current study draws different conclusions.

References

- CONTRACTOR, F. J. and KUNDU, S. K., 1995. Explaining Variation in the Degree of Internationalization Across Firms: The Case of the Hotel Industry. *Journal of International Management*, 1(1), 87–123. ISSN 1075-4253.
- DOAN, T. A., 1992. *RATS Software Package, User's Manual, Version 4.0*. Estima, Evanston Illinois.
- DUNNING, J. H. and MCQUEEN, M., 1981. The Eclectic Theory of International Production: A Case Study of the International Hotel Industry. *Managerial and Decision Economics*, 2(4), 197–210, <https://doi.org/10.1002/mde.4090020401>
- ENDERS, W., 1995. *Applied Econometric Time Series: Wiley Series in Probability and Mathematical Statistics*. New York: John Wiley and Sons. ISBN 978-0471039419.
- ENGLE, R. F. and GRANGER, C. W., 1987. Co-integration and Error Correction: Representation, Estimation, and Testing. *Econometrica: Journal of the Econometric Society*, 55(2), 251–276, <https://doi.org/10.2307/1913236>
- GRANGER, C. W. and NEWBOLD, P., 1974. Spurious Regressions in Econometrics. *Journal of Econometrics*, 2(2), 111–120, [https://doi.org/10.1016/0304-4076\(74\)90034-7](https://doi.org/10.1016/0304-4076(74)90034-7)
- GUNDUZ, L. and HATEMI-J, A., 2005. Is the Tourism-Led Growth Hypothesis Valid for Turkey? *Applied Economics Letters*, 12(8), 499–504, <https://doi.org/10.1080/13504850500109865>

- HALEY, U. C. and HALEY, G. T., 1997. When the Tourists Flew in: Strategic Implications of Foreign Direct Investment in Vietnam's Tourism Industry. *Management Decision*, 35(8), 595–604, <https://doi.org/10.1108/00251749710176091>
- KATIRCIOGLU, S., 2011. The Bounds Test of the Level Relationship and Causality Between Foreign Direct Investment and International Tourism: The Case of Turkey. *E+M Ekonomie a Management*, 1, 6–13. ISSN 2336-5604.
- KIM, H. J., CHEN, M.-H. and JANG, S., 2006. Tourism Expansion and Economic Development: The Case of Taiwan. *Tourism Management*, 27(5), 925–933, <https://doi.org/10.1016/j.tourman.2005.05.011>
- KUNDU, S. K. and CONTRACTOR, F. J., 2000. Country Location Choices of Service Multinationals: An Empirical Study of the International Hotel Sector. *Journal of International Management*, 5(4), 299–317, [https://doi.org/10.1016/S1075-4253\(99\)00017-4](https://doi.org/10.1016/S1075-4253(99)00017-4)
- LASHKARIZADEH, M., GASHTI, H. P. and SHAHRIVAR, R. B., 2010. Evaluation of the Relationship between Tourism Industry and Economic Growth in Iran. *Asian Journal of Business and Management Sciences*, 1(9), 88–97. ISSN 2047-2528.
- LÜLTKEPOHL, H., 1993. *Introduction to Multiple Time Series*. Berlin: Springer Verlag. ISBN 978-3-540-56940-4.
- LUO, Q., GE, T. and FENG, J., 2011. Granger Causality with Signal-Dependent Noise. *Neuroimage*, 57(4), 1422–1429, <https://doi.org/10.1016/j.neuroimage.2011.05.054>
- MOSCONI, R. and GIANNINI, C., 1992. Non-causality in Cointegrated Systems: Representation Estimation and Testing. *Oxford Bulletin of Economics and Statistics*, 54(3), 399–417, <https://doi.org/10.1111/j.1468-0084.1992.tb00009.x>
- MOUDATSOU, A. and KYRKILIS, D., 2011. FDI and Economic Growth: Causality for the EU and ASEAN. *Journal of Economic Integration*, 26(3), 554–577, <https://doi.org/10.11130/jei.2011.26.3.554>
- ONGAN, S. and DEMIROZ, D. M., 2005. The Contribution of Tourism to the Long-run Turkish Economic Growth. *Journal of Economics*, 53(9), 880–894. ISSN 0013-3035.
- SALLEH, N. H. M., OTHMAN, R. and SARMIDI, T., 2011. An Analysis of the Relationships between Tourism Development and Foreign Direct Investment: An Empirical Study in Selected Major Asian Countries. *International Journal of Business Social Science*, 2(17), 250–257. ISSN 2219-1933.
- SANFORD, D. M. and DONG, H., 2000. Investment in Familiar Territory: Tourism and New Foreign Direct Investment. *Tourism Economics*, 6(3), 205–219, <https://doi.org/10.5367/000000000101297596>
- SCHWERT, G. W., 1987. Effects of Model Specification on Tests for Unit Roots in Macroeconomic Data. *Journal of Monetary Economics*, 20(1), 73–103, [https://doi.org/10.1016/0304-3932\(87\)90059-6](https://doi.org/10.1016/0304-3932(87)90059-6)
- SIMS, C. A., 1980. Macroeconomics and Reality. *Econometrica: Journal of the Econometric Society*, 48(1), 1–48, <https://doi.org/10.2307/1912017>
- THI MINH LY PHAM and THI PHI PHUNG TRAN, 2015. The Granger Causality Relationship between International Tourist Arrivals and Foreign Direct Investment: Empirical Evidence from Turkey. In LÖSTER, T. and PAVELKA, T. (eds.). *The 9th International Days of Statistics and Economics, Conference Proceedings*, 1291–1300. Prague: Melandrium. ISBN 978-80-87990-06-3.