

Spatial analysis of the effect of terrorism on attracting foreign direct investment in the middle east

Vahid Nikpey pesyan *¹⁰, Kiumars Shahbazi **

* PhD student in Economic Development, Faculty of Economics and Management, University of Urmia, Tabriz. Iran (Corresponding Author)
Email: v.nikpey@urmia.ac.ir
<u>0000-0002-1665-0548</u>
Postal address: Faculty of Economics and Administrative Sciences, Department of Economics, University of Urmia, Urmia, Iran.

** Professor, Department of Economics and Management, Faculty of Economics and Management, University of Urmia, Urmia, Iran. Email: k.shahbazi@urmia.ac.ir

| ARTICLE HISTORY | JEL CLASSIFICATION | KEYWORDS |
|--|---|---|
| Received: 15 July 2021 revision: 27 January 2022 acceptance: 27 January 2022 | <i>C</i> 31, <i>F</i> 52, <i>E</i> 22, <i>O</i> 4 | Terrorism, FDI, Middle East, Spatial econometrics. |

Further Information

Acknowledgments: Acknowledgments may be made to individuals or institutions that have made an important contribution.

Conflict of Interest: The authors declare no conflict of interest.

Funding: The authors received no financial support for the research, authorship, and publication of this article.

34 Spatial analysis of the effect of terrorism on attracting foreign direct investment in the Middle East



How to Cite:

Nikpey Pesyan, Vahid & Shahbazi, Kiumars. (2023). Spatial analysis of the effect of terrorism on attracting foreign direct investment in the Middle East. *Quarterly journals of Quantitative Economics (JQE)*, 20(2), 129-164.

²<u>10.22055/jge.2022.37973.2392</u>

© 2023 Shahid Chamran University of Ahvaz, Ahvaz, Iran. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0 license) (http://creativecommons.org/licenses/by-nc/4.0/)

EXTENDED ABSTRACT

INTRODUCTION

The Middle East is one of the regions with a wide range of ethnic and religious diversity. The high share of energy supply has also led to the concentration of regional and supra-regional powers in the region. In recent years, a large share of terrorist attacks has taken place in the Middle East, which in addition to human losses, has had a major negative impact on investment, tourism and economic growth in the Middle East. Therefore, identifying the effect of terrorist activities on attracting foreign direct investment of these countries in the economic and security policies of these countries is important and necessary. Foreign investors are often reluctant to be aware of all the risks involved. The risks posed by terrorist incidents are no exception to this principle, especially when the target of terrorist attacks is to intimidate a foreign investor. The risks of terrorism increase the cost of starting a business by spending a lot of money on security and insurance of economic activity, the cost of preventive measures, and the high wages of employees who are at risk. These costs reduce the expected performance of investment activity, and as terrorist risks rise above a certain level, the foreign investor will move its capital to a safer area. Political factors are slightly different from their conditions and function in terms of economic factors. The economic base of countries, especially developing countries, is very vulnerable in the face of unacceptable domestic factors. Political instability, as the main internal factor, has the closest reaction to the content of economic security in terms of effectiveness on factors of production. In developing countries, uncertainties that arise in the face of political instability and the perpetration of violent norms (such as terrorist attacks) lead to declining investment, the country's inability to successfully attract foreign investment, and capital flight. د گردد.



The manifestation of terrorism is one of the indicators of political instability that is considered as one of the serious problems of the international community, especially in developing countries, and its consequences are broad on the development of global economic and political ties.

METHODOLOGY

The purpose of this study is to investigate the relationship between terrorism and the inflow of foreign direct investment in the Middle East using spatial econometrics during the period 2008-2019 using the space autocorrelation model (SAC). Statistics and information required for the three variables of foreign direct investment, inflation rate and degree of trade openness from the World Bank website and for the variable of terrorism, from the global database of terrorism and for the index of political instability, property rights and democracy from The ICRG site affiliated with PRS GROUP has been extracted for the period 2008-2019 in 15 Middle Eastern countries.

FINDINGS

First, to investigate the spatial dependence of Moran and Jerry C tests, the spatial dependence of countries was confirmed and based on the significance of Moran test, the research model was estimated in the framework of spatial autocorrelation. According to the research results, terrorist activities show negative and destructive effects on attracting foreign direct investment in these areas and this result is consistent with the results of other studies such as Panahi (2013) and Salmani (Salmani, 2014) is. According to the research results, the variables of degree of trade openness and democracy have a positive and significant effect on attracting foreign direct investment in the study areas, while the variables of political instability, property rights and inflation have an impact. Negative and significant on attracting foreign direct investment in the study areas, among which the number of terrorist attacks has the most negative impact on attracting foreign direct investment, as well as property rights index, political instability, degree of trade openness., Democracy and inflation rate have the greatest impact on the economic growth of these countries, respectively.

CONCLUSION

Foreign direct investment is one of the main components of economic development and its flow has great effects on a country's economy. In other words, terrorist activities reduce the security and confidence of investors in countries exposed to terrorist activities and reduce the flow of foreign direct



investment. On the other hand, the anti-terrorist security costs imposed on the economy reduce the economic potential. The economic effects of international terrorism can be analyzed in the short and long term. In the short run, terrorism leads to financial losses, losses and the creation of an insecure investment environment, and in the long run, international terrorism diverts capital resources by increasing national security spending and counter-terrorism activities. The transition to these costs and tax increases. To explain why spatial regression is used in this study, it can be added that the variable of terrorist activities in area j will not be affected only by internal factors in that area. When the number of terrorist activities in the neighboring country increases, it has a negative effect on attracting foreign direct investment to neighboring countries (spillover effects) and also if the terrorist activities are effective in region j, it indicates the phenomenon of spatial dependence that conventional econometrics is possible. Does not estimate and identify these effects and factors.

Reference

- Akabari, N. (2005). The Concept of Space and its Measurement in Regional Studies. *Iranian Journal of Economic Research*, 7(23), 39-68. Available at: <u>https://ijer.atu.ac.ir/article_3765.html</u> (in persian).
- Azarbayjani, K., Shahidi, A., Mohammadi F. (2009), Examination Of Foreign Direct Investment, Trade And Growth Relationship: Using Autoregressive Distributed Lag (Ardl) Approach *Quarterly Journal of Economic Research*, 2(4): 1-17 Available at: <u>http://ensani.ir/fa/article/83719/</u>. (in persian)
- Dargahi, H. (2006), The Effective Determinants For Encouraging Foreign Direct Investment: Lessons For The Economy Of Iran; *Sharif Scientific and Research Quarterly*, 36(4):57-73 Available at: <u>http://sjie.journals.sharif.edu/article_4886.html</u>. (in persian)
- Davoodi, P., Shahmoradi, A. (2004), Reinvestigation of the FDI Determinants Using Panel Data Model, *Iranian Economic Research Quarterly*, 20(3): 81-113 Available at: <u>https://ijer.atu.ac.ir/article_3803.html</u>. (in persian)
- Drakos, K. (2004). Terrorism-Induced Structural Shifts in Financial Risk: Airline Stocks in the Aftermath of the September 11th Terror Attacks. *European Journal of Political Economy*. 20(3): 435–46 Available at: https:// econpapers. repec.org/article/eeepoleco/ v_3a20_3ay_3a2004_3ai_3a2_3ap_3a435-446.htm

- Elhorst, J. (2010). Spatial panel data models. In: Fischer MM, Getis A (eds) Handbook of applied spatial analysis, Springer, Berlin, *Heidelberg and New York*, 32(11): 377-407 Available at: <u>https://www.york.ac.uk/media/economics/documents/seminars/20111</u> 2/Elhorst_November2011.
- Enders, W., Sachsida, A., Sandler, T. (2006) The Impact of Transnational Terrorism on U.S. Foreign Direct Investment; *Political Research Quarterly*, 59(4): 517–31 Available at: <u>https://mpra.ub.unimuenchen.de/82006/</u>.
- Enders, W., Sandler, T. (1996) Terrorism and Foreign Direct Investment in and Greece; *Kyklos*, 49(1): 331–52 Available at: <u>https://www.jstor.org/stable/4148055</u>.
- Gammoudi, M., Cherif, M., & Asongu, S. (2016). FDI and Growth in the MENA countries: Are the GCC countries Different? *African Governance and Development Institute WP/16/015*. Available at: <u>https://ideas.repec.org/p/abh/wpaper/16-015.html</u>.
- Institute for Economics & Peace. Global Terrorism Index 2019: Measuring the Impact of Terrorism, Sydney,November 2019
- Stecklov, G., & Goldstein, J. R. (2004). Terror attacks influence driving behavior in Israel. *Proceedings of the National Academy of Sciences*, 101(40), 14551-14556.. Available at: https://www.pnas.org/doi/abs/10.1073/pnas.0402483101
- Hamidi Rozi, D. (2017), Identification of Factors that Influence Iran's Provincial Energy Intensity Index: A Spatial Dynamic Panel Data Approach, *Quarterly Journal of Energy Economics Studies*, 13(53): 61 -103. Available at: <u>http://iiesj.ir/browse.php?a code=A-10-215-1&slc_lang=fa&sid=1</u>. (in persian)
- Ito, H., Lee, D. (2004). Assessing the Impact of the September 11 Terrorist Attacks on U.S. Airline Demand. *Journal of Economics and Business*. 57(12): 75–95 Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7112671/.
- Jani, S., Nikpey pesyan, V., Safizadeh, S. (2019 Analyzing Tourism Industry Effect on Employment among Provinces by Spatial Econometric Panel Data Approach, *Quarterly Journal of Economic Research and Policies*, 93 (28)99: 233-266 Available at: <u>https://elmnet.ir/article/2235356-74152/</u>.(in persian)
- Kang, S. J., & Lee, H. S. (2007). Terrorism and FDI flows: Cross-country dynamic panel estimation. *Journal of Economic Theory and*



Econometrics, 18(1), 57-77. Available at: https://dergipark.org.tr/tr/pub/cumuscij/issue/45132/564669.

Karimi, M., Heidarian, M., Dorbash, M. (2019), Effect Of Internal And External Conflicts On Economic Growth In Middle East Countries, *Journal of Economic Growth and Development Research*, 10(39): 113 -132 Available at: https://egdr.journals.pnu.ac.ir/article 6049 4c7c43f8d6c4e64603e29e

7520ef2a60.pdf (in persian)

- Keefer, P., & Loayza, N. (2008). Terrorism, economic development, and political openness. Cambridge University Press. Available at: <u>https://doi.org/10.1017/CBO9780511754388</u>.
- Kefayat, M., Ebrahimi, M., Zare, H., Aminifard, A. (2021). The Effect of Terrorism on Economic Growth in Middle Eastern Countries: Spatial Econometric Panel Data Approach, *Quarterly Journal of Quantitative Economic (JQE)*, Available at: <u>https://jqe.scu.ac.ir/?lang=en</u> [In Persian]
- Lesage, J, P. (1999). Spatial Econometrics. University of Toledo. Getis, A, Ord, J. K. (1992). The Analysis of Spatial Association by Use of Distance Statistics. *Geographical Analysis*, 24(3): 189-206, Available at: <u>http://journals.openedition.org/rei/3887</u>.
- Mahdavi Adeli, M., Hosseinzadeh Bahreini, M., Javadi, A. (2008), The effect of good governance on attracting foreign direct investment in middle-income countries, *Journal of Knowledge and Development*, 24(4):89-105. Available at: <u>http://eco.iaufb.ac.ir/article_557912.html</u>. (in persian)
- Metaxas, T., & Kechagia, P. (2017, September). FDI and terrorism in the developing Asian countries: a panel data analysis. In *Proceedings of 2 nd International Conference on Scientific Cooperation for the Future in the Economics and Administrative Sciences* (Vol. 64). Available at: https://hrcak.srce.hr/file/358024.
- Mohammadzadeh, Y., Jahangiri, Kh., Rafah Kahriz, A., Valizadeh, E. (2017), The effect of property rights and political risk to attract foreign direct investment using with PVAR approach, *Quarterly Journal of Applied Economics Studiesin Iran*, 7 (26): 115-144 Available at: <u>https://aes.basu.ac.ir/article_2317.html</u>. (in persian)
- Moshiri, S., & Kian Poor, S. (2012). Determinants Of Foreign Direct Investment (FDI), A Cross Country Analysis (1980-2007) Quarterly Journal of Quantitative Economic,9(2): 1-30, Available at: 10.22055/JQE.2012.10563.



- Najarzadeh, R., Kermani, M. S., & Shahri, V. S. (2005). Estimation of Investment Supply Function in Organisation of Islamic Cooperation Member States. *Iranian Journal Of Trade Studies*, 35, 177-212. Available at: <u>http://pajooheshnameh.itsr.ir/article 28986</u> 97380ecb56dda3402f18f1f8baf80c0f.pdf. (in persian)
- Panahi, H., Mohammadzadeh, P., & Jamshidi, A. (2015). The Effect of Terrorism on Foreign Direct Investment in the Selected Middle East Countries. Quarterly Journal of Economic Research (Sustainable Growth and Development); 14(4):149-175 .Available at: <u>http://ecor.modares.ac.ir/article-18-6837-en.html.</u> (in persian)
- Pfaffermayr, M. (2009). Conditional β-and σ-convergence in space: A maximum likelihood approach. *Regional Science and Urban Economics*, 39(1), 63-78. Available at: https://erd.um.ac.ir/article/view/57958/article 26040.html.
- Pizam, A., & Fleischer, A. (2002). Severity versus frequency of acts of terrorism: Which has a larger impact on tourism demand?. *Journal of Travel research*, 40(3), 337-339. Available at: <u>https://doi.org/10.1177/0047287502040003011</u>.
- Kechagia, P., & Metaxas, T. (2017). FDI and Terrorism in the developing Asian countries: A panel data analysis. Available at: Online at <u>https://mpra.ub.uni-muenchen.de/80945/</u>MPRA Paper No. 80945, posted 26 Aug 2017 08:32 UTC.
- Polyxeni, K., & Theodore, M. (2019). An empirical investigation of FDI inflows in developing economies: Terrorism as a determinant factor. *The Journal of Economic Asymmetries*, 20, e00125. Available at:

https://ideas.repec.org/a/eee/joecas/v20y2019ics1703494919300647.html.

- Salmani, B., Panahi, H., Jamshidi, O. (2014), The Effect of Terrorism Shocks on Foreign Direct Investment in the Middle East and North Africa Countries, *Journal of Regional Economics and Development*, 21 (8): 180-204. Available at: <u>https://ecor.modares.ac.ir/article-18-6837-fa.html</u>. (in persian)
- Shah, M. H. (2015). Terrorism and foreign direct investment: An empirical analysis of SAARC countries. *City University Research Journal*, 5(2). Available at: <u>https://mpra.ub.uni-muenchen.de/82008/8/MPRA_paper_82008.pdf</u>



- Stanišic, D. (2013). Terrorist attacks and foreign direct investment flows between investors and hosts. 19th Dubrovnik Economic Conference, Dubrovnik, Available at: <u>https://doi.org/10.3390/economies7020038</u>.
- Tavares, J. (2004). The open society assesses its enemies: shocks, disasters and terrorist attacks. *Journal of monetary economics*, *51*(5), 1039-1070. Available at: <u>http://www.sciencedirect.com/</u> <u>science/article/pii/S0304-3932(04)00060-1</u>.
- Taybi S., K., & Azarbayjani, K., Ruhollah Babaki (2008), The effect of foreign direct investment on foreign trade of selected countries in Asia and the Pacific, *Research Journal of the University of Isfahan* (*Humanities*), 3(2):129-150.Available at: http://ensani.ir/fa/article/journal-number /29540/31. (in persian)
- Tobler. W. R. (1979). Smooth pycnophylactic interpolation for geographical regions, *Journal of the American Statical Association*, 74(367): 519-530 Available at: <u>https://www.tandfonline.com/doi/abs/10.1080/01621459.1979.10481</u>647.
- Bandyopadhyay, S., & Younas, J. (2014). Terrorism: A threat to foreign direct investment. *Doing Business Abroad Policy Report*, 25-50. Available at: <u>https://s3.amazonaws.com/real.</u> stlouisfed.org/wp/2011/2011-004.pdf.

Younos, Javed. Bandyopadhyaya Subhaya." Terrorism (2011): A Threat to Forgein Direct Investment "*The Regional Economic*, 25(3): 25-50 Available at: doi:10.1093/oep/gpt026.



Autors Name (TimeNewsRoman, Left, Regular, 9point) Quarterly Journal of Quantitative Economics(JQE) (year) issue(volume) p-p