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The Impact of Natural Resources Rent on Environmental Load Capacity Factor in the MENA Region Countries in the Framework of the Load Capacity Curve (LCC) Hypothesis

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EXTENDED ABSTRACT

INTRODUCTION:

Concerns about climate change have increased over the past years.The escalating energy demands of the world's population, coupled with a reliance on fossil fuels, have resulted in environmental degradation and global warming, which is now a top priority on the international agenda. Although a growing number of countries have pledged to achieve net zero emissions by 2050, many nations have increased their reliance on coal, oil, and natural gas due to the global energy crisis and rising energy prices. As a result, environmental degradation has been affected by the use of natural resources. The MENA region is the focus of this issue due to having huge energy resources and it is worth mentioning that this region has shown a higher growth in carbon emissions per capita than GDP per capita. natural resources have the potential to degrade environmental sustainability if they are used for boosting current economic welfare by increasing consumption instead of increasing future welfare by investing in capital assets and infrastructure. On the contrary, some researchers asserted that natural resource use may not be detrimental to environmental sustainability as is envisaged, and shifts in natural resource use patterns can positively influence environmental sustainability. Moreover, natural resource abundance can increase natural resource revenues, which can be used for capital formation and infrastructure investment. Thus, the economic growth level in a given country can increase, and a higher development level could foster shifting to better technologies, advanced environmental regulations, and structural change in an economy. Hence, environmental destruction can be reduced. Therefore, the literature has different perspectives on the ecological and welfare impacts of natural resources. In this regard, the main purpose of this research is to investigate the effect of the rent of various natural resources on the environmental load capacity factor (LCF) in selected countries of the MENA region during the years 2000-2022. As a new and comprehensive indicator of environmental sustainability, LCF considers both the supply and demand sides of the ecosystem and its higher values indicate greater environmental sustainability.

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LCF is obtained by dividing the biological capacity by the ecological footprint, and the MENA region countries do not have a good situation regarding this index.

METHODOLOGY:

The empirical model of this study is framed within the Stochastic Impacts by Regression on Population, Affluence, and Technology model (STIRPAT). The data used are real gross domestic product (GDP), natural resources rent and its types, population density, renewable energy consumption, and LCF. Data on GDP (per capita, constant 2015 dollars), natural resources rent and its types (% GDP), population density (people per sq. km of land area) and renewable energy consumption (% total final energy consumption) were obtained from the World Bank. Data on biological capacity (per capita, gha) and ecological footprint (per capita, gha) are taken from the Global Footprint Network. The fundamental statistical tool for determining average effects is classical regression analysis. The classical regression analysis is based on the notion that the coefficient effects remain constant across the population. Quantile Regression (QR) with fixed effects is used in this study to rigorously investigate the dynamic relationships between Model variables.

FINDINGS:

Rresults of the estimation model in the framework of LCC indicate that, at the total level, the natural resource rent at all levels of environmental sustainability (except the middle levels) had a small and significant positive impact on LCF, and the average change in the dependent variable is more in countries with higher levels of environmental sustainability. At the disaggregated level, in the high levels of environmental sustainability, natural gas rent, and forest rent have a positive and significant impact, and mining rent has a negative and significant impact on LCF. Meanwhile, oil rent does not significantly impact LCF at all levels of environmental sustainability (except the medium level). Also, the LCC hypothesis is not rejected as a U-shaped relationship between economic growth and LCF in countries with medium and low levels of environmental sustainability. Based on other results, population density at all levels of environmental sustainability and renewable energy consumption at high levels of environmental sustainability had a negative (and significant) and positive (and significant) impact on LCF, respectively.

CONCLUSION:

In this study, by using a STIRPAT model in the field of factors affecting the environment quality and its empirical test through co-integration analysis with cross-sectional dependence and the quantile panel regression method, the relationship between the rent of natural resources and its types with environmental sustainability indicator has been investigated in the framework of the load capacity curve hypothesis (LCC). The results of this research show that natural resource rent is not only a threat to environmental sustainability in MENA countries, but it can also help to improve the level of environmental sustainability in these countries. However, it seems that the studied countries do not adopt the necessary and appropriate policies regarding environmental management, technology, and standards for the production and consumption of natural resources, which has led to the small effect of natural resource rent on environmental sustainability in the countries of the MENA region, and it seems which is far from the optimal level of its effectiveness. Therefore, these countries must promote environmentally friendly methods of exploration and extraction of natural resources using advanced technologies in line with the principles of sustainable development.

References

Abdollahi, F. & Ghaderi, S. (2023). Investigating the Impact of Natural Resources and Human Capital on Iran's Ecological Footprint. *Governance and Development Journal*, 3(1), 99-120. doi: 10.22111/jipaa.2023.399117.1124 [In Persian]

Akadiri, S.S., Adebayo, T.S., Riti, J.S., Awosusi, A.A., & Inusa, E.M. (2022). The effect of financial globalization and natural resource rent on load capacity factor in India: An analysis using the dual adjustment approach. *Environmental Science and Pollution Research*, 29(59), 89045-89062. https://doi.org/10.1007/s11356-022-22012-0

Aladejare, S.A. (2022). Natural resource rents, globalization and environmental degradation: New insight from 5 richest African *economies. Resources Policy*, 78(C). https://doi.org/10.1016/j.resourpol.2022.102909

Alexander, M., Harding, M., Lamarche, C. (2011). Quantile regression for time-series cross-section data. *International Journal of Statistics and Management System*, 6(1-2), 47-72.

Alola, A.A., Özkan, O. & Usman, O. (2023). Role of non-renewable energy efficiency and renewable energy in driving environmental sustainability in India: Evidence from the load capacity factor hypothesis. *Energies*, 16(6), 2847. https://doi.org/10.3390/en16062847

Amer, E., Meyad, E.M.A., Meyad, A.M. & Mohsin, A.K.M. (2024). The impact of natural resources on environmental degradation: a review of ecological footprint

Shahid Chamran University of Ahvaz
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(former Economic Studies)

and CO_2 emissions as indicators. *Frontiers in Environmental Science*, 12. DOI: 10.3389/fenvs.2024.1368125

Azami, A., Noferesti, M. & Arabmazar, A. (2024). Investigating the Asymmetric Effects of Factors Affecting Tax Revenues in Iran using Quantile Regression Approach. *Quarterly Journal of Quantitative Economics (JQE)*, 21(3), 115-144. doi: 10.22055/jqe.2022.39481.2451 [In Persian]

Balsalobre-Lorente, D., Shahbaz, M., Roubaud, D. & Farhani, S. (2018). How economic growth, renewable electricity and natural resources contribute to CO_2 emissions? *Energy Policy*, 113, 356-367. https://doi.org/10.1016/j.enpol.2017.10.050

Bilgili, F., Soykan, E., Dumrul, C., Awan, A., Onderol, S. & Khan, K. (2023). Disaggregating the impact of natural resource rents on environmental sustainability in the MENA region: A quantile regression. *Resources Policy*, 85. https://doi.org/10.1016/j.resourpol.2023.103825

Breusch, T. & Pagan, A. (1980). The LM test and its application to model specification in econometrics, *Review of Economic Studies*, 47(1), 239-253. https://doi.org/10.2307/2297111nalysis

Cai, X., Li. K., Wang, W., Lu, Y. & Wang, R. (2023). The role of resource rent in shaping CO_2 emissions in BRICS countries: A panel data approach. *Resources Policy*, 85. https://doi.org/10.1016/j.resourpol.2023.10385

Chiroleu-Assouline, M., Fodha, M. & Kirat, Y. (2020). Carbon curse in developed countries. *Energy Economics*, 90. https://doi.org/10.1016/j.eneco.2020.104829

Daliri, H. (2020). Relationship between ecological footprint and economic growth in D8 countries: Testing the Kuznets Environmental Hypothesis using PSTR model. *The Journal of Economic Modeling Research*, 11(39), 81-112. [In Persian]

Dam, M.M. & Sarkodie, S.A. (2023). Renewable energy consumption, real income, trade openness, and inverted load capacity factor nexus in Turkiye: Revisiting the EKC hypothesis with environmental sustainability. *Sustainable Horizons*. https://doi.org/10.1016/j.horiz.2023.100063

Damette, O. & Delacote, P. (2012). On the economic factors of deforestation: what can we learn from quantile analysis? *Economic Modelling*, 29(6), 2427-2434. https://doi.org/10.1016/j.econmod.2012.06.015

Danish, B.M.A., Mahmood, N. & Zhang, J.W. (2019). Effect of natural resources, renewable energy and economic development on CO_2 emissions in BRICS countries. *Science of the Total Environment*, 678, 632-638. https://doi.org/10.1016/j.scitotenv.2019.05.02

Degirmenci, T. & Aydin, M. (2024). Testing the load capacity curve hypothesis with green innovation, green tax, green energy, and technological diffusion: A novel approach to Kyoto protocol. *Sustainable Development*. https://doi.org/10.1002/sd.2946

Dietz, T. & Rosa, E.A. (1997). Effects of population and affluence on CO2 emissions. Proceedings of the National Academy of Sciences. 94, 175-179. https://doi.org/10.1073/PNAS.94.1.175

Djedaiet, A., Ayad, H. & Ben-Salha., O. (2024). Oil prices and the load capacity factor in African oil-producing OPEC members: Modeling the symmetric and asymmetric effects. *Resources Policy*, 89. https://doi.org/10.1016/j.resourpol.2023.104598

Dogan, E., Altinoz, B. & Tzeremes, P. (2020). The analysis of 'Financial Resource Curse' hypothesis for developed countries: Evidence from asymmetric effects with quantile regression. *Resources Policy*, 68. https://doi.org/10.1016/j.resourpol.2020.101773

Dogan, E. & Inglesi-Lotz, R. (2017). Analyzing the effects of real income and biomass energy consumption on carbon dioxide (CO_2) emissions: empirical evidence from the panel of biomass-consuming countries. *Energy*, 138, 721-727. https://doi.org/10.1016/j.energy.2017.07.136

Dogan, A. & Pata, U.K. (2022). The role of ICT, R&D spending and renewable energy consumption on environmental quality: testing the LCC hypothesis for G7 countries. *Journal of Cleaner Production*. 380, 135038

Du, J., Yang, X., Long, D. & Xin, Y. (2024). Modelling the influence of natural resources and social globalization on load capacity factor: New insights from the ASEAN countries, *Resources Policy*, 91. https://doi.org/10.1016/j.resourpol.2024.104816

Erdogan, S. (2023). Linking natural resources and environmental sustainability: A panel data approach based on the load capacity curve hypothesis. *Sustainable Development*, 1-13. https://doi.org/10.1002/sd.2836

Erdogan, S. (2024). On the impact of natural resources on environmental sustainability in African countries: A comparative approach based on the EKC and LCC hypotheses. *Resources Policy*, 88. https://doi.org/10.1016/j.resourpol.2023.104492

Ehrlich, P.R., Holdren, J.P. (1971). Impact of population growth. Science, 171, 1212-1217. https://doi.org/10.1126/SCIENCE.171.3977.1212/ASSET/703D82DC

Friedrichs, J. & Inderwildi, I. R. (2013). The carbon curse: Are fuel-rich countries doomed to high CO2 intensities? *Energy Policy*, 62, 1356-1365. https://doi.org/10.1016/j.enpol.2013.07.076

Gaies, B., Nakhli, M.S., Sahut, J.-M. (2022). what are the effects of economic globalization on CO_2 emissions in MENA countries? *Econ. Modell*, 116, 106022. https://doi.org/ 10.1016/j.econmod.2022.106022

Grossman, G.M., & Krueger, A.B. (1991). Environmental impacts of a North American free trade agreement. NBER.

Gu, Y., Deng, G. & Liu, X. (2023). None-linear nexus between natural resources dependency, foreign direct investment, and environmental sustainability in newly industrialized countries, *Resources Policy*, 90. https://doi.org/10.1016/j.resourpol.2024.104782

Galvao, A.F. & Kato, K. (2016). Smoothed quantile regression for panel data, *Journal of Econometrics*. 193(1), 92-112.

Shahid Chamran University of Ahvaz
Quarterly Journal of Quantitative Economics
(former Economic Studies)

Guloglu, B., Caglar, A.E., & Pata, U.K. (2023). Analyzing the determinants of the load capacity factor in OECD countries: Evidence from advanced quantile panel data methods, *Gondwana Research*, 118, 92-104. https://doi.org/10.1016/j.gr.2023.02.013

Huang, Y., Villanthenkodath, M. A. & Haseeb, M. (2023). The nexus between eco-friendly technology and environmental degradation in India: Does the N or inverted N-shape load capacity curve (LCC) hypothesis hold? *Natural Resources Forum*, 47(2). https://doi.org/10.1111/1477-8947.12281

Hundie, S.K., Abdisa, L.T., Legas, H.A. & Shumetie, A. (2022). The Nexus among globalization, natural resource rent, and energy consumption for environmental sustainability in Ethiopia. Policy Working Paper 05/2022.

Ibrahim, R.L. & Ajide, K.B. (2021). The dynamic heterogeneous impacts of nonrenewable energy, trade openness, total natural resource rents, financial development and regulatory quality on environmental quality: Evidence from BRICS economies. *Resources Policy*. https://doi.org/10.1016/j.resourpol.2021.10225

Kazerouni, A., Asgharpour, H., Aghamohamadi, A. & Zokaei alamdari, E. (2019). Corruption and the environmental Kuznets Curve in developed and developing countries. *The Journal of Economic Modeling Research*, 10(37), 7-38. [In Persian]

Khan, K., Zhang, J., Gul, F. & Li, T. (2022). The "carbon curse": Understanding the relationship between resource abundance and emissions. *The Extractive Industries and Society*, 11. https://doi.org/10.1016/j.exis.2022.101119

Koenker, R. (2004). Quantile regression for longitudinal data. *Journal of Multivariate Analysis*, 91(1), 74-89. https://doi.org/10.1016/j.jmva.2004.05.006

Lamarche, C. (2011). Measuring the incentives to learn in Colombia using new quantile regression approaches. *Journal of Development Economics*, 96(2), 278-288. https://doi.org/10.1016/j.jdeveco.2010.10.003

Liu, H., Alharthi, M., Atil, A., Zafar, M.W., Khan, I., (2022). A non-linear analysis of the impacts of natural resources and education on environmental quality: green energy and its role in the future. *Resources Policy*. 79, 102940. https://doi.org/10.1016/j.resourpol.2022.102940.

Majeed, A., Wang, L., Zhang, X., Muniba, and Kirikkaleli, D. (2021). Modelling the dynamic links among natural resources, economic globalisation, disaggregated energy consumption, and environmental quality: Fresh evidence from GCC economies. *Resource Policy*, 73, 1-9. https://doi.org/10.1016/j.resourpol.2021.102204

Moeinaddini, S., Zare Mehrjerdi, M. R., Amirtaimoori, S. & Mehrabi Boshrabadi, H. (2024). The Effect of Natural Resource Rent on the Environmental Quality (Case Study: A Selection of MENA Countries). *Journal of Environmental Studies*, 50(1), 97-110. doi: 10.22059/jes.2024.359287.1008413 [In Persian]

Mohammad Moradi, R., Sadeghi, S. K., & Khan Maku, M. (2023). The Interplay between Financial Development, CO_2 Emission and Economic Growth in MENA Countries (System GMM in Dynamic Panel Data Approach). *Economic Growth and*

Development Research, 13(52), 66-47. doi: 10.30473/egdr.2023.65363.6581 [In Persian]

Mohamadian Mansour, S. & Golkhandan, A. (2026). The Interactive Effect of Military Spending and Armed Conflict on Foreign Direct Investment: A Study of MENA Countries. *Quarterly Journal of Quantitative Economics (JQE)*, 22(4), 216-249. doi: 10.22055/jqe.2024.44934.2578 [In Persian]

Nwani, C. & Adams, S. (2021). Environmental cost of natural resource rents based on production and consumption inventories of carbon emissions: Assessing the role of institutional quality. *Resources Policy*, 74, 102282. https://doi.org/10.1016/j.resourpol.2021.102282

Pata, U.K. (2021). Do renewable energy and health expenditures improve load capacity factor in the USA and Japan? A new approach to environmental issues. *The European Journal of Health Economics*, 22(9), 1427–1439. https://doi.org/10.1007/s10198-021-01321-0

Pata, U.K. & Ertugrul, H.M. (2023). Do the Kyoto Protocol, geopolitical risks, human capital and natural resources affect the sustainability limit? A new environmental approach based on the LCC hypothesis. *Resources Policy*, 80. https://doi.org/10.1016/j.resourpol.2023.103352

Pata, U. K. & Isik, C. (2021). Determinants of the load capacity factor in China: A novel dynamic ARDL approach for ecological footprint accounting. *Resources Policy*, 74(C). https://doi.org/10.1016/j.resourpol.2021.10231

Pata, U. K. & Tanriover, B. (2023). Is the load capacity curve hypothesis Valid for the top ten tourism destinations? *Sustainability*, 15(2), 960. https://doi.org/10.3390/su15020960

Peng, L., Li, Y., Raza, S.A. & Shahzadi, I. (2023). Natural resources and environmental sustainability: COP26 targets from resources-based perspective. *Resources Policy*, 83(5). DOI: 10.1016/j.resourpol.2023.103623

Pesaran, M.H. (2004). General diagnostic tests for cross section dependence in panels, Cambridge Working Papers in Economics, No. 0435.

Pesaran, M.H. (2007). A simple panel unit root test in the presence of cross-section dependence. *Journal of Applied Econometrics*, 22(2), 265-312. https://doi.org/10.1002/jae.951

Pesaran, M. H., Ullah, A. & Yamagata, T. (2008). A bias-adjusted LM test of error cross-section independence. *The Econometrics Journal*. 11, 105-127. https://doi.org/10.1111/j.1368423X.2007.00227.x

Razzaq, A., Wang, S., Adebayo, T.S., Saleh Al-Faryan, M.A. (2022). The potency of natural resources on ecological sustainability in PIIGS economies. *Resour. Pol*. 79, 102941 https://doi.org/10.1016/j.resourpol.2022.10294

Sargolzaie, A., Lotfalipour, M. R., & Salehnia, N. (2022). Investigating the Impact of Natural Resource Rents and Good Governance on the Welfare of Developing Countries: The Welfare Curse Phenomenon and the Quantile Regression Approach. *Quarterly Journal of Applied Theories of Economics*, 9(2), 1-34. doi: 10.22034/ecoj.2022.46618.2904 [In Persian]

Shahid Chamran University of Ahvaz
Quarterly Journal of Quantitative Economics
(former Economic Studies)

Shi, Y., Li, J., Fang, Z., Li, Y., Hu, H., Nie, W. & Meng, F. (2024). Probing the role of natural resources and urbanization towards ecological sustainability in BRICST economies. *Resources Policy*, 91. https://doi.org/10.1016/j.resourpol.2024.104739

Schnaiberg, A. (1970). Measuring modernism: Theoretical and empirical explorations. *American Journal of Sociology*, 76(3), 399-425.

Siche, R., Pereira, L., Agostinho, F., & Ortega, E. (2010). Convergence of ecological footprint and emergy analysis as a sustainability indicator of countries: Peru as case study. *Communications in Nonlinear Science and Numerical Simulation*, 15(10), 3182-3192. https://doi.org/10.1016/j.cnsns.2009.10.027

Sun, A., Bao, K., Aslam, M., Gu, X., Khan, Z. & Uktamofv, K. F. (2023). Testing load capacity and environmental Kuznets curve hypothesis for China: Evidence from novel dynamic autoregressive distributed lags model. *Gondwana Research*. https://doi.org/10.1016/j.gr.2023.07.018

Uche, E. & Ngepah, N. (2024). How green-technology, energy-transition and resource rents influence load capacity factor in South Africa. *International Journal of Sustainable Energy*, 43. https://doi.org/10.1080/14786451.2023.2281038

Ulucak, R., Danish, & Ozcan, B., 2020. Relationship between energy consumption and environmental sustainability in OECD countries: The role of natural resources rents. Resources Policy, 69, 101803. https://doi.org/10.1016/j.resourpol.2020.101803

Usman, O., Ozkan, O., Adeshola, I. & Eweade, B. S. (2024). Analyzing the nexus between clean energy expansion, natural resource extraction, and load capacity factor in China: a step towards achieving COP27 targets. *Environment Development and Sustainability*. DOI: 10.1007/s10668-023-04399-z

Uzar, U. (2024). The dynamic effect of income distribution, natural resources, and freedom of press on ecological footprint: Theory and empirical evidence for emerging economies. *Resources Policy*, 89. https://doi.org/10.1016/j.resourpol.2024.104682

Wang, Z. & Bui, Q. & Zhang, B. (2020). The relationship between biomass energy consumption and human development: Empirical evidence from BRICS countries. *Energy*, 194(C). https://doi.org/10.1016/j.energy.2020.116906

Wang, W., Niu, Y., Gapich, A. & Strielkowski, W. (2023). Natural resources extractions and carbon neutrality: The role of geopolitical risk. *Resources Policy*, 83. https://doi.org/10.1016/j.resourpol.2023.10357

Wang, S., Zafar, M.W., Vasbieva, D.G. & Yurtkuran, D.G. (2023). Economic growth, nuclear energy, renewable energy, and environmental quality: Investigating the environmental Kuznets curve and load capacity curve hypothesis, Gondwana Research. https://doi.org/10.1016/j.gr.2023.06.009

Westerlund, J. & Edgerton, D.L. (2007). A panel bootstrap cointegration test. *Economics Letters*, 97, 185-190. https://doi.org/10.1016/j.econlet.2007.03.003

Xiaoman, W., Majeed, A., Vasbieva, D.G. & Yameogo, C.E.W. & Hussain, N. (2021). Natural resources abundance, economic globalization, and carbon emissions: Advancing sustainable development agenda. Sustainable Development, 29(5), 1037-1048. https://doi.org/10.1002/sd.2192

Xu, B. & Lin, B. (2016). A quantile regression analysis of China's provincial CO_2 emissions: Where does the difference lie? *Energy Policy*, 98, 328-342. https://doi.org/10.1016/j.enpol.2016.09.003

Xuan, D., Jiang, X., Fang, Y., 2023. Can globalization and the green economy hedge natural resources? Functions of population growth and financial development in BRICS countries. *Resour. Pol*. 82, 103414. https://doi.org/10.1016/j.resourpol.2023.103414

Ya, D., Quddos, A., Feng, M., Ullah, A. & Ameer, W. (2024). Assessing the impact of fiscal policy and natural resources on environmental degradation in BRICS countries: A resource management perspective. *Resources Policy.* 90. https://doi.org/10.1016/j.resourpol.2024.104792

Yong, Y., Ahmed, Z., Wang, S., Rjoub, H. & Bilan, Y. (2024). Minerals, natural resources, government instability, and growing ecological challenges: Can we achieve SDGs 12 and 13? *Resources Policy*, 88. https://doi.org/10.1016/j.resourpol.2023.104507

Zheng, H., Hu, J., Wang, S., & Wang, H. (2019). Examining the influencing factors of CO_2 emissions at city level via panel quantile regression: evidence from 102 Chinese cities. *Applied Economics*, 51(35), 3906-3919. https://doi.org/10.1080/00036846.2019.1584659

Zambrano-Monserrate, M.A. & Ormeño-Candelario, V. (2023). Disaggregated impact of natural resources rents on the ecological footprint: new evidence from more polluting countries. *Mineral Economics*, DOI: 10.1007/s13563-023-00407-w