




Threshold Effects of Gross Fixed Capital Formation in the Relationship Between Healthcare Infrastructure and Life Expectancy Index in Iran

Ali. Atashak Maman¹, Lotfali. Agheli^{2*}, Gholamreza. Abbasi³

¹ Department of Economics, SR.C., Islamic Azad University, Tehran, Iran

² Department of Economics, Economic Research Institute, Tarbiat Modares University, Tehran, Iran

³ Department of Economics, CT.C., Islamic Azad University, Tehran, Iran

* Corresponding author email address: aghelik@modares.ac.ir

| E d i t o r | R e v i e w e r s |
|--|--|
| Davood Feiz ^{id} Affiliation: Professor of Management Department, Semnan University, Iran feiz1353@semnan.ac.ir | Reviewer 1: Mohammad Esmail Fadaeinejad ^{id} Associate Prof., Department of Financial Management and Insurance, Shahid Beheshti University, Tehran, Iran. Email: m-fadaei@sbu.ac.ir Reviewer 2: Ali Choori ^{id} Assistant Professor of Sports Management, Faculty of Humanities and Sports Sciences, Gonbadkavos University, Gonbadkavos, Iran. Email: choori@gonbad.ac.ir |

1. Round 1

1.1. Reviewer 1

Reviewer:

You state: “In line with the studies of Hu and Wang (2024), Mbaou et al. (2023), and Yang et al. (2022), the following model and variables were employed...” However, Yang et al. (2022) does not appear in the reference list. Please correct this inconsistency and ensure all cited studies are included in the references.

In the Methods section, the regression equation is referenced but not displayed (“Where gross fixed capital formation (CAP)... are included as variables”). The functional form of the model is missing. Please insert the explicit mathematical specification of the baseline linear model and the LSTR1 formulation to ensure reproducibility.

The threshold value is reported as -0.2111 . Since CAP is presumably measured as a growth rate or ratio, please clarify the unit of measurement and provide economic interpretation. What does -0.211 represent in practical macroeconomic terms?

The slope parameter γ is statistically significant, but no economic interpretation is provided. Please explain whether $\gamma = 3.3314$ implies a rapid or gradual transition between regimes and compare it with values commonly found in LSTR literature.

Authors revised the manuscript and uploaded the new document.

1.2. Reviewer 2

Reviewer:

You write: “According to the results, all model variables become stationary at the first difference...”. However, no critical values are reported in Table 1. Please include the 1%, 5%, and 10% critical values or clearly justify the decision rule used for stationarity assessment.

The PP statistic for D(LF) is reported as -68.5995 . This magnitude is unusually large compared to other differenced variables. Please verify whether this is a typographical error or provide an explanation for this extreme value.

Table 2 reports different numbers of cointegrating vectors across models (e.g., Trace = 4, 6, 6, 3, 4). However, the text concludes broadly that “at least one cointegrating vector” exists. Please justify which deterministic specification was ultimately selected and why, and clearly state the final number of cointegrating vectors used in estimation.

In Table 4 (Linearity Test), only F-statistics are reported (F2, F3, F4). The p-values are not provided. Without p-values, it is unclear how the null of linearity was rejected. Please report exact p-values and specify the significance level used.

Figure 1 presents the transition function graphically, but the figure lacks axis labels and a detailed explanation in the text. Please describe the functional shape (e.g., steepness around the threshold, symmetry) and explain its economic interpretation more thoroughly.

Authors revised the manuscript and uploaded the new document.

2. Revised

Editor’s decision after revisions: Accepted.

Editor in Chief’s decision: Accepted.