

CO₂ Emissions, Urbanization, and Exports as Determinants of Economic Growth in Afghanistan: Evidence from the ECM-ARDL Model (1970–2021)

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ABSTRACT

Afghanistan is a clear example of the paradox of structural growth and decline. Although after 2001, the country has experienced significant economic growth, at the same time, it has faced structural weaknesses, environmental degradation, and rapid and unplanned urbanization. Therefore, considering this paradox, the study investigates the impact of CO₂ emissions, urbanization, and exports on economic growth over the period of 1970–2021, using the ECM-ARDL model.

The results show that, in both the short and long run, CO₂ emissions have a significant positive effect on economic growth. Importantly, the result challenges the Environmental Kuznets Curve hypothesis (growth first, then environmental improvement) in the context of Afghanistan and highlights that economic growth in Afghanistan remains carbon-based.

Moreover, regarding urbanization, the results indicate that an increase in urban population significantly reduce economic growth in both periods, short and long run. This negative effect is the result of rapid and unplanned expansion of urbanization which has occurred because of urban challenges rather than productive urban economic activities. In addition, the finding demonstrates that there is a significant relationship between export and economic growth in the short term, while this relationship is not confirmed in the long term.

The results also reveal that Afghanistan entered a phase of growth and expansion after 2001; however, the effect of gross capital stock on economic growth has declined in the post-2001 period, primarily due to inefficiencies, corruption, and other structural challenges. These findings offer valuable insights for policymakers in designing and implementing sustainable development strategies.

Keywords: CO₂ Emissions, Economic Growth, Urbanization, Exports, ARDL Model

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