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Effect of Iron and Steel Industry on the Gross Domestic Production in the GCC States for the Period 2010-2020: Gobb Doglas Function

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Abstract

This study examines the impact of the iron and steel industry on the Gross Domestic Production (GDP) of the Gulf Cooperation Council (GCC) states from 2010 to 2020, utilizing the Cobb-Douglas production function to quantify its contribution amidst economic diversification efforts. The review underscores the industry's significance and evolving role within the GCC economies, identifying a literature gap correlating the sector's growth with GDP impacts. Employing a quantitative approach, the research analyzes secondary data, including GDP. Iron and steel production volumes, labor inputs, and capital investments, using regression analysis in SPSS. Findings indicate weak correlations between the industry's output and GDP, with the regression model explaining less than 4% of GDP variance, suggesting minimal direct impact. The study challenges the perceived economic influence of the iron and steel industry on the GCC's GDP, highlighting the need for a broader examination of economic drivers beyond traditional sectors. Acknowledging limitations in data scope and economic indicators, the study calls for extended research incorporating diverse variables and longer-term analyses.

Keywords: *GCC, iron and steel industry, GDP, Cobb-Douglas production function, economic diversification.*

1.0 Introduction

As the Middle East countries used to be dependent on oil and gas revenues, the Gulf Cooperation Council (GCC) countries – Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE – are experiencing the process of variation on the economic level, iron, and steel industry being among the primary industries (Al-Kodmany, 2020). Here the industry is of paramount significance for expanding the economies, provisioning crucial physical infrastructure and being a signal to the move away from traditional oil dependence. The iron and steel sector GDP is also a matter of clarification, its contribution to GDP is very important. This observation is significant because it improves our ability to track its evolving role in the changing economic horizon of GCC by the transformative decade (Trivedi et al., 2023). What have been the impacts of the iron and steel industry on the Gross Domestic Product of GCC countries during the ten years, i.e., 2010-2020? This research aims to evaluate the effects of the iron and steel sector on the GDP of this region of the Middle East through the Cobb-Douglas production function in the years 2010-2020. The fact that the GDP of the GCC studies and the impact of the iron and steel industry on the GDP of GCC states is significant for too many reasons. It is a basis for the empirical data that policymakers and other actors need to assess the status of a sector in the overall economy and diversification strategies (El et al., 2020). This