Chapter 10
A Panel Data Analysis of G7 Nations With Emphasis on ICT Service Export and Sustainable Development

Rajesh Kumar
https://orcid.org/0009-0009-8281-246X
National Institute of Technology, Agartala, India

Debasis Neogi
National Institute of Technology, Agartala, India

Anand Jaiswal
New Delhi Institute of Management, India

ABSTRACT

This study explores the complex ties among ICT, foreign investment, and economic growth in the G7 nations. Using robust tests and regression analysis, it examines how these factors interplay and affect GDP swings. Surprisingly, FDI seems less impactful, hinting at other drivers for economic shifts. Notably, trade openness (ICT exports) inversely relates to GDP, suggesting a balance between international trade and local production. Moreover, GDP strongly correlates with reserves and sustainable development, underscoring their role in fostering growth. The research validates a random effects model, showcasing unobserved effects tied to the analysis. Overall, it offers vital insights into G7 economies from 1995 to 2019, emphasizing the need to consider multiple economic forces. Its implications are invaluable for discussions and policies shaping international trade and cooperation among these influential nations.

INTRODUCTION

ICT innovation is varied between countries and is vital to the growth of their economies. ICT, or information and communication technology, has changed how people interact, conduct business, and study. Furthermore, with the COVID-19 pandemic spreading quickly, digital technologies and networking

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have shown to be essential tools and the greatest replacement for physical systems and instruments. As a result, the transition to online apps during this epidemic has increased Internet usage globally and has become the new standard for everyone's way of life.

The twenty-first century has seen significant changes in the global economy as it quickly moves from a resource-based to a knowledge-based economy. Instead of conventional factors, information and communication are the primary determinants of competitiveness for businesses and nations in the knowledge-based global economy (Oshikoya & Hussain, 2000). The swift advancement of information and communication technology, along with the growing economic globalisation of the global production network, has presented emerging nations with novel avenues to engage in global production, thereby bolstering their competitiveness.

Global competitiveness takes into account both the relative importance of the ICT sector to the economy and the liberalisation of the economy. Therefore, emerging nations will face several obstacles in their efforts to grow and optimise the advantages of their ICT industries. The ICT industry has distinct features compared to other economic sectors, particularly the competitors, where product costs are still falling. Therefore, in order to succeed and take a piece of the global market, emerging nations must work to lower prices and increase efficiency (Hounie et al., 1999).

Due to the 1980s trade, investment, and intense competition obstacles that have been reduced, the United States has benefited from the ICT industry earlier than any other country. This has helped to drive down costs associated with the ICT sector.

The effects of ICT investment on economic development have been the subject of several research over the past three decades; nevertheless, the findings of these studies are inconsistent and poorly understood. However, research on the connection between FDI flows and ICT investments is scarce. Economic studies place a lot of weight on how ICT investments affect foreign direct investment (FDI) in the context of globalisation. Despite the fact that there is a causal link between FDI flows and ICT investment, the majority of research on developed nations has shown significant evidence that ICT investment affects FDI flows, while the influence of FDI on ICT investment is less well-established (Chandra, 2007).

Most nations generally agree that foreign direct investment (FDI) may boost economic growth in the receiving country. Attracting foreign direct investment has been a key policy priority for developing economies since the 1980s, which is not surprising. These economies have not only loosened restrictions on FDI inflows but also provided incentives to entice international businesses. Asiedu (2002) points out that although the continent provides a higher return on investment, strategies that are effective in other developing countries may not be as effective in Sub-Saharan Africa due to the territory's unique characteristics.

Thus far, the research has identified a variety of elements as predictors of foreign direct investment (FDI), such as natural resources, low wages, political stability, infrastructure, and human capital. But we also need to consider how the global economy is changing, especially in light of the new information and communication technology (ICT) that has been redefining the world system. A large amount of literature has been written about FDI, some of it dating back more than 40 years. But the world economy has changed dramatically over the past 20 years, so what drew foreign direct investment (FDI) in the 1970s might not be relevant now (Addison and Heshmati 2004).

Economies that successfully use contemporary ICT may be able to overcome barriers that have long kept them from fully engaging in international commerce (such as the limitations of a remote location and an inappropriate environment), claim Addison and Rahman (2005). The quick development of the Internet has made it feasible to access commercial and political information that was previously inacces-