

Chapter 33

Manufacturing vs. Services and the Role of Information Technology

Arnab Adhikari

Indian Institute of Management Ranchi, India

Shromona Ganguly

Indian Institute of Management Calcutta, India

ABSTRACT

The role of information technology is often debated in the context of economic development of the developing countries. In order to understand the role technology plays in the structural change of the economy, the chapter analyzes the case of India, which, according to many researchers, has experienced an “idiosyncratic” pattern of structural changes since its independence compared to many countries. This is evident from the fact that the growth of Indian economy has been driven by the services sector rather than manufacturing, which prompted many researches to conclude that India has leapfrogged the phase of industrialization. This chapter examines the impact of services-led growth and the role of information technology in India through a comparative analysis of manufacturing versus services in export performance and employment scenario. The chapter concludes that India needs a more broad-based policy of technology adoption, not only to sustain its services-led growth but also to boost its manufacturing sector as well as make the economic development more inclusive.

INTRODUCTION

The role of technology in the context of structural changes of economies is often debated, mainly due to the mixed empirical evidence on the relationship between the technology adoption and productivity enhancement across countries. This has led to a policy debate regarding technology adoption by countries. In the context of developing countries, the debate is more on the appropriate set of technologies to be adopted rather than whether increased use of technology should be embraced. The endogenous growth theories (Romer, 1986; Rebelo, 1990) explain the role of technology as set of externalities which offsets

DOI: 10.4018/978-1-5225-7661-7.ch033

the diminishing returns to capital. However, it is widely recognized that modern information technology (IT) is distinctly different from some of the past technological breakthroughs like industrial revolution. This difference comes from the unique feature of the use of IT which results in increased separation of the economics of information from the economics of things (Negroponte, 1995). In recent times, a number of studies have explored the role of IT in explaining the convergence of growth rate among countries (Rodrick, 2012; Greiner et al., 2016). However, there is a dearth of adequate studies on the impact of information technology revolution on the broader socio-economic context or structural transformation of a country. The present chapter aims to understand the same by analyzing the rather unique pattern of structural transformation of the Indian economy, which is characterized by predominance of services sector mainly led by IT services.

The services sector, which now accounts for close to 60 percent of total GDP of India, has been playing an instrumental role in stimulating the growth of the country. A closer look at the GDP composition of India since independence reveals that while the share of agriculture declined and that of industry stagnated, services sector's share has exhibited an increasing trend to reach at 58 percent in 2009-10 from around 30 percent in 1950-51. The stagnating share of manufacturing and in contrast to that, rising share of services in GDP, is something noteworthy if one compares it with the structural change of countries comparable to India in terms GDP per capita. In most of these countries, the structural change has taken place in a common manner where an initially agrarian economy goes through the phase of industrialization, and then at a more advanced stage, services sector predominates. Many researchers concluded that India has leapfrogged the phase of industrialization and instead directly moved to a service-led growth phase. In the case of India, the stagnating share of manufacturing in national output as well as its reduced share in organized sector employment during the last two decades presages a phenomenon of de-industrialization (Chaudhuri, 2015). Does technology play a role in explaining the strange structural change of India? What is its impact in terms of employment generation and export performance? The chapter analyses some of these questions in detail. The analysis presented in the chapter adds country-specific insights to the literature on the role of technology in economic development and structural change.

The remaining part of the chapter is organized as follows: the next section of this chapter presents a brief discussion of the existing literature on structural change and the role technology plays in it, followed by a description of the Indian experience of structural change in section 3. The later part of the section 3 also delineates the services sector in its present form in India. Section 4 and 5 provide an assessment of the consequences of services-led growth that India has experienced regarding employment and export performance, respectively. Finally section 6 concludes the chapter with policy implications that follows from the analysis and aims at making the technology services driven growth of India sustainable in the longer run.

BACKGROUND

In this section, first, we present a summarized description of existing scholarly works on structural changes of the economy. The second half of this section traces out the role of technology in the context of structural transformation.

13 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/manufacturing-vs-services-and-the-role-of-information-technology/215881

Related Content

The Global Digital Divide and its Impact on E-Governance

Michael Howell-Moroney (2012). *E-Governance and Civic Engagement: Factors and Determinants of E-Democracy* (pp. 189-209).

www.irma-international.org/chapter/global-digital-divide-its-impact/60079

Understanding Crowdsourcing of Agricultural Market Information in a Pilot Study: Promises, Problems and Possibilities (3Ps)

Musa Fadhili Juma, Kadege Goodluck Fue, Alcardo Alex Barakabitze, Neema Nicodemus, Mawazo Mwita Magesa, Fredy Timothy Mlyavidoga Kilimaand Camilius A. Sanga (2019). *Crowdsourcing: Concepts, Methodologies, Tools, and Applications* (pp. 898-913).

www.irma-international.org/chapter/understanding-crowdsourcing-of-agricultural-market-information-in-a-pilot-study/226771

The Importance of Authoritative URI Design Schemes for Open Government Data

Alexei Bulazel, Dominic DiFranzo, John S. Ericksonand James A. Hendler (2016). *International Journal of Public Administration in the Digital Age* (pp. 1-18).

www.irma-international.org/article/the-importance-of-authoritative-uri-design-schemes-for-open-government-data/146804

Performance Information Artifacts: Boundary Objects to Facilitate Performance Dialogue

(2021). *International Journal of Public Administration in the Digital Age* (pp. 0-0).

www.irma-international.org/article/279229

The Link Between Green Sukuk and Financial Development: Which Comes First?

Aysegul Aytac Eminand Dogus Emin (2023). *Governance Quality, Fiscal Policy, and the Path to a Low-Carbon Future: Perspectives From Developing Economies* (pp. 220-234).

www.irma-international.org/chapter/the-link-between-green-sukuk-and-financial-development/329087