

Technical Change, Cost and Productivity Criteria, and the Organic Composition of Production in the Global Economy -An Empirical Study Using the World Input–Output Database

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Abstract :

This chapter examines different types of technical change, as categorized by the productivity and cost criteria proposed in previous theoretical studies, using data from the World Input–Output Database (WIOD). The empirical results confirm that, in some sectors, the cost criterion is satisfied whereas the productivity criterion is not. Such technical changes are associated with the large amount of labor embodied in imported intermediate goods and with international wage differentials between importing and exporting countries. These findings provide an important qualification to previous theoretical studies based on closed-economy models.

The chapter further extends the analysis by examining changes in the organic composition of production associated with different types of technical change. Using the WIOD, it investigates whether cost-reducing technical change contributes to a systematic increase in the organic composition of production and discusses its implications for the maximum value rate of profit. On this basis, the chapter reassesses the law of the tendency of the rate of profit to fall from the perspective of a globally fragmented production system.