Towards A Resolution of the Capital Conundrums of Trade Theory

Topic: International trade (2)
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Abstract
Four and half decades ago Steedman et.al. (1979) launched a powerful critique of the then, dominant Heckscher-Ohlin-Samuelson (HOS) theory of international trade based on the capital theory debates of the earlier decades and Sraffa's (1960) monograph. The principal theme of their critique was the treatment of capital as a factor of production. They argued that treating capital as an exogenously given endowment (on the same footing as land or labour) is fraught with ambiguities and logical difficulties. The term capital is usually employed in economic theory in a dual sense viz, as a vector of the physical quantities of produced commodities or as the aggregate value of those commodities. In which sense precisely is the term capital meant in HOS theory? If it is considered in the physical sense why are the activities that result in the production of capital goods not spell out in the model? And if the capital endowment is considered in the value sense it implies that quantities and prices of capital goods are predetermined both under condition of autarky and trade. And either way why are capital goods prohibited from trade?
Steedman et. al. (1979) went on to demonstrate that questions of this kind lead to a formal breakdown of the HOS trade theory and raise serious doubts about its ability to explain real world trade. It is true of course that other scholars have from time to time made serious attempts to incorporate intermediate capital goods. Vanek (1963), Sanyal and Jones (1982), and more recently Shiozawa (2017) contain theoretical treatments of the subject. Eaton and Kortum (2002) represent an attempt to incorporate capital goods in the form of a composite capital good, an idea that is now widely employed in the literature. But none of them give explicit treatment to the fact that profits are earned on the value of the heterogenous intermediate (and fixed) capital goods that constitute the capital stocks of the industries. Entirely apart from the purely theoretical drawbacks of HOS theory the late eighties pose new challenges in the form of unprecedented policy initiatives of several nations towards international trade liberalization. Naturally policymakers have been deeply concerned about the consequences of these policies for the economic outcomes in their countries. The HOS apparatus was clearly inadequate for estimating them. Because all that HOS theory concludes is that free trade improves the "welfare" of the trading countries; welfare understood in abstract utility terms. It is unable to translate welfare into objectively measurable economic magnitudes like national income, physical outputs, growth rates, standard of living, etc., which is what policymakers want to know. New methods have therefore been devised relying on the technique of applied and computable general equilibrium theory, which has brought new quantitative trade theory (NQTT) into being.
Method used :
Our quest in this paper is to provide satisfactory treatment of capital and trace its implications for the formulation of trade theory. We propose to achieve this by treating capital in both physical and value senses as unknowns of the system of equations. The system of equations of international general equilibrium include (a) the Sraffa system of prices and income distribution (b) the dual of the Sraffa system to determine the growth rate and the outputs of capital goods (c) fixed share consumption demand equations; (d) Kaldor-Pasinetti model of income distribution and growth; (e) international market clearing equations for tradable goods and domestic market clearing equations for non-tradable goods.
Data used :
Inferences drawn from the model have been illustrated by extensive secondary literature that has employed GTAP, WIOD, IIOD, EU-KLEMS, UNCTAP, and other databases. Reference may be made here to the empirical studies of Marjit, Basu and Veeramani (2024), Caliendo and Parro (2015) and Walters (2022).

Novelty of Research:
Some of results obtained from the model are as follows:.

1. Two-country two-commodity trade equilibrium in indeterminate when one or both of the commodities are capital goods.
2. Trade in capital goods leads to greater rates of growth and profit than trade in consumption goods.
3. It is perfectly possible for a country to export (import) commodities in adherence to the Heckscher-Ohlin theorem (Leontief paradox) at one and the same time.
4. Trade invariably benefits capitalists more than workers.
5. It is quite possible that gains of trade may be negative for workers as measured in terms of prices of exportable and non-tradeables.
6. It is quit possible that capitalists and workers in one country may gain disproportionately at the expense of capitalists and workers in the other country.