Title: A green investment integration in a growth model

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Abstract

The purpose of this paper was to investigate the relationship between investment and growth from an ecological perspective. To fulfill this purpose the framework of the Bhaduri-Marglin (1990) model was extended by accounting for the role of green capital, a factor which had not been included in the model so far. This was done in the following steps: At first, capital stock was decomposed to "green" and "brown" capital. By saying green capital we refer to the capital stock that is environmental sustainable, where brown capital refers to the conventional one. Afterwards, an environmental variable (x) that indicates green capital share and captures the environmental impacts was defined. Thus, the capacity utilization as also the capital productivity of the economy were determined as a function of green capital share. Green capital share (x) was also introduced in both equations of investment and savings indirectly through capacity utilization. All the original assumptions of Bhaduri-Marglin (1990) model did not change, but in our case we also assumed that investment also depends positively to the share of green capital stock. The outcome was that in an economy where green capital stock is dominant we deal with a stangationist regime (otherwise a wage-led regime) and on the other hand in an economy where brown capital stock is dominant we deal with an exhilarionist regime (otherwise a profit-led regime). A higher green capital stock ensures greater capacity utilization but lower profit share.