

# Some results on the critical point of an aggregate growth model with a convex-concave production function\*

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**Abstract:** With an intermediate discount rate, an aggregate growth model with a convex-concave production function has a critical level of capital stock, such that if the initial stock is smaller than the level, then an optimal capital path converges to the origin; otherwise, an optimal capital path converges to the interior optimal steady state. We investigate the properties of this critical point. Our main results are: (a) the critical stock level is not an optimal steady state; and (b) the critical point is increasing in the discount rates from zero stock level to the stock level of the maximum average productivity.

Keywords: Aggregate growth model, convex-concave production function, critical stock level

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