

# Transport efficiency, downstream R&D, and spillovers

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## Abstract

This paper examines the effects of higher transport efficiency on cost-reducing R&D investment and welfare in a two-way duopoly trade model with an imperfectly competitive transport sector. We show that, corresponding to the degree of the R&D spillover, higher transport efficiency can affect investment in a U-shaped fashion. We also show that higher transport efficiency can reduce total output and consumer surplus. By comparing the two cases of firm-specific carriers and duopoly carriers, we demonstrate that total output in the case of duopoly carriers is lower than that in the case of firm-specific carriers if the spillover is sufficiently large. Higher transport efficiency and competition in the transport sector may harm consumers.

**Key words:** Transport efficiency; Imperfectly competitive transport sector; Cost-reducing R&D; R&D spillover

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