

# Endogenous Input-Output Linkages and Structural Changes

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## Abstract

This paper presents a two-sector model of economic growth with endogenous input-output linkages to study the interplay between structural changes and the evolution of production networks. In order to sell products as final goods or intermediate inputs, firms must first form linkages with households or other firms, subject to fixed costs. Motivated by the observation that products differ in their codifiability, i.e., the easiness with which product specifications can be standardized and communicated, I allow sectors to differ in the fixed costs of forming linkages. Specifically, there are larger congestion-induced negative spillovers across sellers in linkage creation for the sector with less codifiable products. In a constant growth path equilibrium, costly linkage formation results in sectors having different rates of firm entry and output growth, leading to structural changes. The less codifiable sector, i.e., services, experiences faster growth of firm mass while supplying a growing share of the economy's intermediate inputs, a prediction consistent with the empirical patterns in the United States. Comparing the decentralized equilibrium to the solution of the social planner's problem, I find that, despite suboptimal static allocation, the asymptotic growth rates coincide with the social optimum.

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