Inattentive Network: Evidence and Theory

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Abstract

Firms acquire information about their suppliers and customers to form expectations and make input-output choices. Using novel data sets of firms' website browsing activities, which identifies information acquisition along the production network, we find firms pay more attention to sectors with stronger input-output linkages and with higher volatilities. The empirically-constructed "attention matrix", in turn, affects firms' forecast errors and propagation of sectoral shocks. We develop a production network model with rational inattention to rationalize our empirical findings. In our model, firms' attention allocation motives are dictated by tradeoffs among (i) their direct input-output linkages, (ii) the indirect, general equilibrium network structure, and (iii) volatilities of sectoral shocks. Facing these trade-offs, optimal information choices of firms produces endogenous, network-driven expectations among different sectors. Equilibrium sectoral attentions also features strategic complementarity that creates attention linkages in the production network. Methodologically, we provide a novel sufficient condition that ensures the general equilibrium uniqueness of multi-sector model under rational inattention. Calibrated to the U.S. data, our quantitative model is able to parsimoniously capture the cross-sector distribution of forecast errors and nominal rigidity observed in the data. Finally, the policy analysis show that the optimal monetary policy in our model is substantially different from its counterpart under exogenous information frictions. Under plausible parameter restrictions, complete price-stabilization policies are suboptimal compared to a corner-solution policy in which monetary authority manages expectations by inducing some sectors to pay zero attention (complete rigidity).

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