

# Data Economy and Market Concentration in a Model of Firm Dynamics

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## Abstract

A common view suggests that the data feedback loop, in which large firms generate more data, improve efficiency, and further expand, is expected to lead to winner-takes-all markets. This paper analyzes how data technology affects market concentration by embedding the data economy model of Farboodi and Veldkamp (2025) into the canonical Hopenhayn (1992) firm dynamics framework. I find that data does not necessarily lead to market concentration. Instead, the calibrated model shows that data technology has an inverted-U relationship with the top firms' sales share, the Herfindahl–Hirschman Index (HHI), and the entry rate. Since data is a by-product of economic activities, large firms obtain more data. When data savviness is sufficiently high, however, decreasing returns to data use dominate, and top firms lose their advantage. An inverted-U relationship between the entry rate and data savviness amplifies an inverted-U relationship between data technology and market concentration because a high entry rate implies a large fraction of small and young firms, which raises the relative sales share of top firms.

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