Lingnan University 嶺南大學 香港 Hong Kong

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Market Structure and Firm Outcomes in the AI Supply Chain

Using new firm-level data in the US, we identify AI firms in the US and trace their outcomes between 2000 and 2025. We assign AI firms into different markets within the AI supply chain based on textual analysis of their business descriptions and patent filings. We document the rise of six "AI giants" that increasingly shape the AI ecosystem and broader US capital markets. By end-2024, these firms accounted for 31% of total listed equity value, 23% of capital expenditure, and 39% of R&D among publicly listed US companies. Next, we assemble and integrate new firm-level datasets to quantify AI market structure and link it to firm outcomes. Our firm-year panel combines textual analysis of business descriptions, input-output matrices, and patenting data for all AI firms in the US. We use this to construct firm-specific measures of upstream supplier concentration in the AI supply chain. We find that AI firms that face more concentrated upstream markets also have disproportionately lower return on assets and lower innovative activity compared to non-AI firms.

Dr Vatsala Shreeti

Vatsala Shreeti is an Economist working with the Innovation and Digital Economy team in the research department of the Bank for International Settlements since September 2022. Her main areas of interest are digital economics, industrial organisation and financial technologies. Her recent work has focused on the adoption of digital technologies in emerging markets, design of fast payment systems, pricing fast payments, artificial Intelligence, and incentives for innovation in high-technology industries. Previously, she has held positions at the World Bank and OECD. She holds a PhD in Economics from the Toulouse School of Economics and a Masters in Economics from the London School of Economics and Political Science.

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