



AI and the Labour Market

Essays on Transformative Technology, Occupations, and Firms

av

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Abstract

The topic of this thesis is the economics of transformative technology, with the impact of artificial intelligence (AI) on the labour market as the primary focus.

Analysing German data, Essay I shows that occupational AI exposure was associated with wage gains, and an increased focus on knowledge-intensive tasks. There is a clear contrast between the types of work that are exposed to AI, versus robotics.

Essay II finds that AI exposure is associated with AI adoption and increased labour demand, as measured by job vacancy postings, in Swedish establishments/workplaces.

Essay III develops a novel measure of occupational AI exposure, called Dynamic AI Occupational Exposure (DAIOE). AI exposure is shown to be associated with upskilling at the firm level in Sweden, Denmark, and Portugal.

Essay IV analyses the labour market implications of the growing social and verbal capabilities of large language models (LLMs). Analysis of occupational data from O*NET and job ads provides a map of the most important types of social work tasks. Among social tasks, verbal communication tasks have the strongest association with occupational exposure to LLMs.

Essay V is about the impact of venture capital (VC) on start-up firms. Investment from both private and governmental VCs is found to increase sales with a 2-3 year delay, driven primarily by efficiency gains, and to some extent, capital investment. Governmental VCs are more likely to make follow-on investments in non-growing firms.

Keywords: Artificial intelligence, Technology, Labour market, Entrepreneurship