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Discussion of
"Is Generative AI coming for intangibles?"

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The Economics of Data and Digital Infrastructures. Evidence and Policy

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Key messages

Generative AI shifts the value and structure of intangible assets within firms

- **New Intangibles Classification is needed**: supplementary framework that divides intangibles into knowledge capital (codified and transferable i.e. software) and organizational capital (tacit and firm-specific i.e. operating models) to monitor AI's structural impacts.
- **AI as a Catalyst for Organizational Transformation:** AI is not merely a tool; it is a "process innovation" that fundamentally reshapes how firms are structured and how expertise is utilized.
  - **Redefining Expertise**: AI may substitute for routine cognitive tasks while augmenting abstract or expert tasks, potentially shifting wages and employment structures.
  - **Organizational Capital:** Sustained competitive advantage comes from "organizational capital"—the tacit, firm-specific capabilities like supply chain networks and unique operating models.
  - **Centralization vs. Decentralization:** There is an ongoing debate about whether AI will centralize power by codifying knowledge or decentralize it by uncovering patterns humans cannot easily articulate

Key messages (cont) and main questions

But despite its potential, AI adoption is slowed by high implementation costs, firm internal barriers and a lack of change in management that often lead to a misallocation of resources.

→ **Barriers to Productivity Gains**

Two main questions:

- ✓ **What does available evidence suggest about the impact of AI on intangibles and productivity ?**
- ✓ **Can the intangible framework be helpful?**

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AI impact on productivity growth: existing evidence

- **Broad Range of Projections:** Current research offers a wide spectrum of projections for AI's impact on annual labor productivity growth, with estimates ranging from **0.12** to **3.5** percentage points over the next decade (Chui et al, 2023; Acemoglu, 2025; and for a review see Filippucci, Gal, and Schief, 2024)

- **Prevailing Method:**"task accounting" approach (Acemoglu and Restrepo, 2018,2019, 2020).

  - ✓ Appealing bottom-up approach that involves identifying worker tasks (not jobs) that can be automated using gen AI and determining the resulting cost savings

  - ✓ The framework focuses on an important mechanism through which AI impacts productivity and illustrates the nature of **AI as a general-purpose technology (GPT)**.

- **Much previous research on productivity growth and GPTs uses growth accounting**

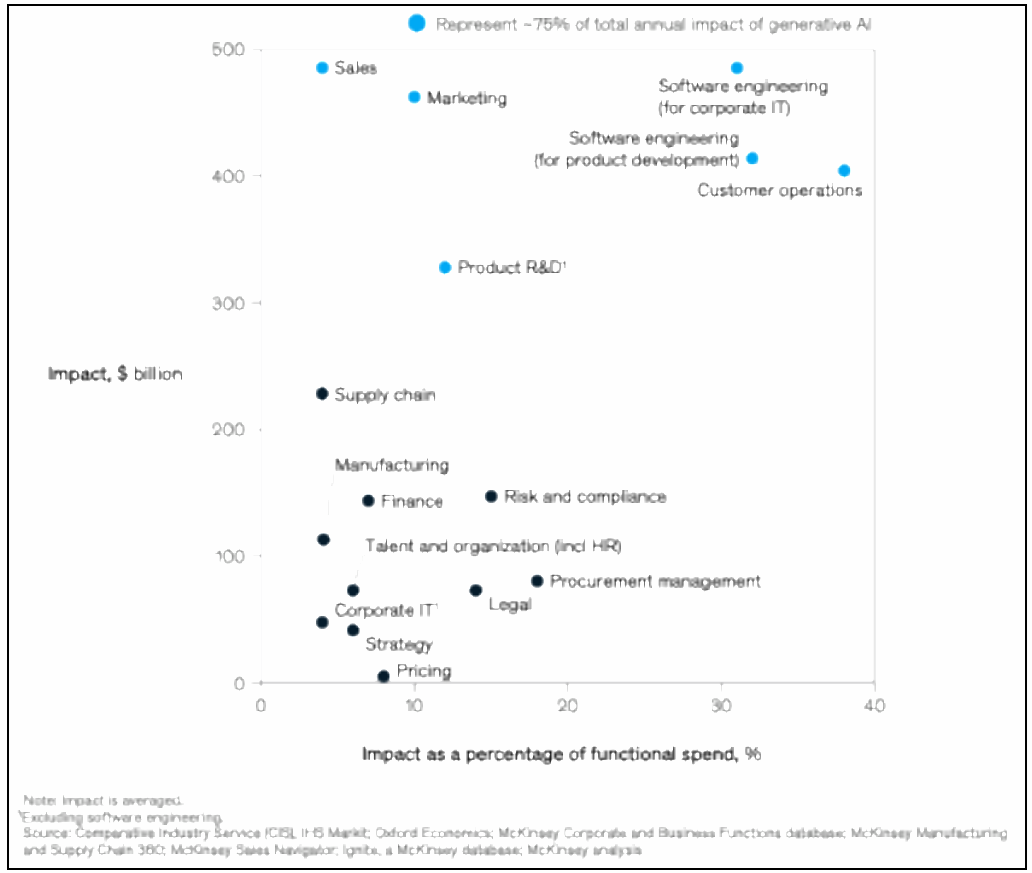
  - ✓ GA measures the impact of a new technology by evaluating the **production** and **use effects** of the **capital** that embodies it (summarized in Crafts 2021)

AI impact on intangibles

McKinsey survey evidence on the impact of genAI through the lens of business functions:

- ✓Suggests AI is broader than automation…
  - AI affects many (mostly intangible) business functions
  - AI especially helps with product R&D and marketing/customer facing functions
- ✓Consistent with AI as an IMI as well as a GPT

Impact of Gen AI by business function



Source: McKinsey (Chui et al. 2023)

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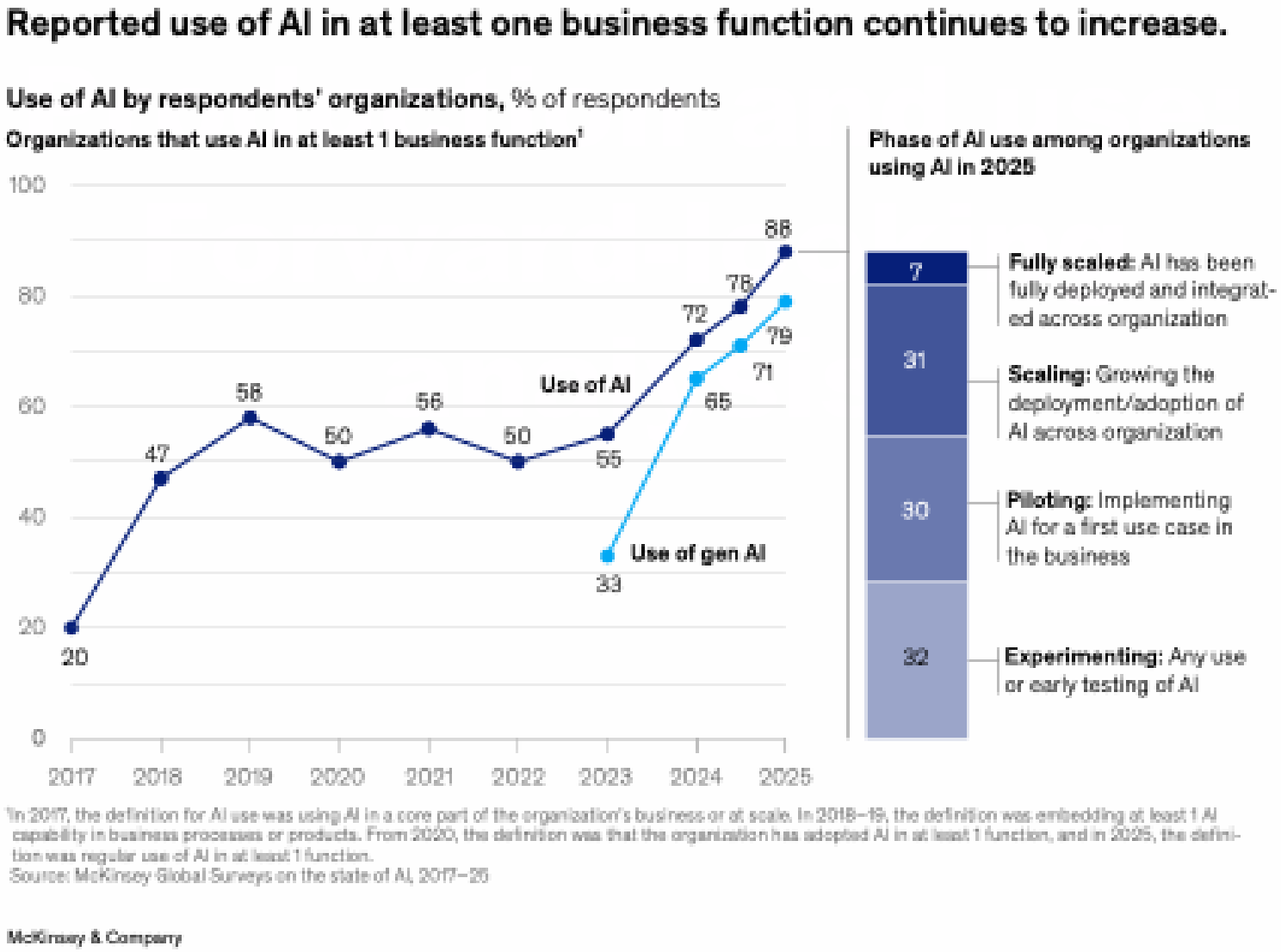
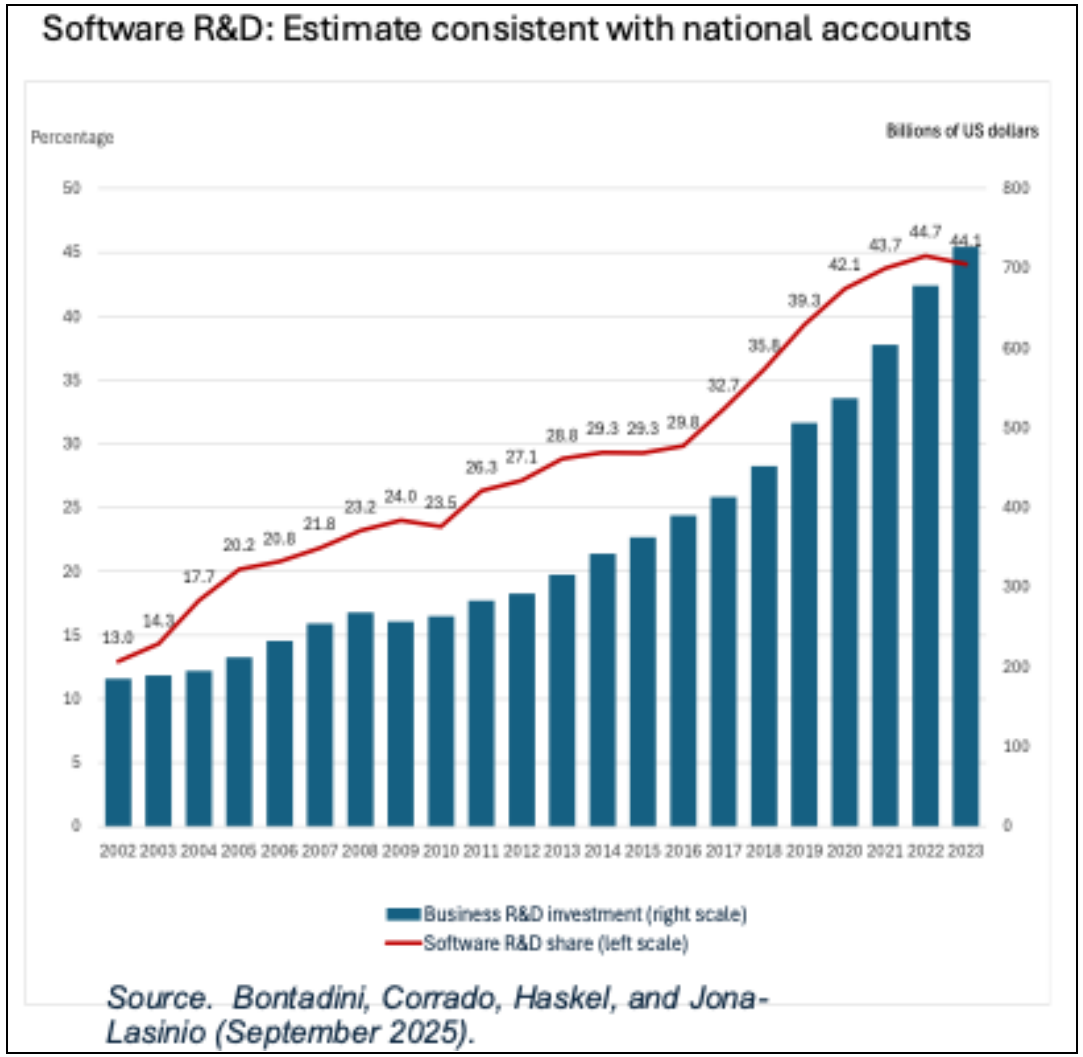
But despite the widening scope of AI applications, full-scale deployment remains limited



AI as an Innovation in the Method of Innovation: need to look at software

AI is both a "**general-purpose technology**" and an **'innovation in the method of innovation' (IMI)** —a technology that systematically enhances the process of invention itself and makes innovation processes more productive (Cockburn, Henderson, and Stern, 2019, Whitehead, 1925 and Griliches, 1957).

- ✓ AI requires more data & software [scientific R&D, marketing…..]= more intangible capital deepening (Brynjolfsson et al, 2023; Chui et al. 2023; Baily, Byrne et al 2025)



Source. Bontadini, Corrado, Haskel, and Jona-Lasinio (September 2025).

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Software capital and US productivity growth

Table 1. Productivity Growth and Software: Summary

US Nonfarm Business Sector	2012 to 2017 (1)	2017 to 2024 (2)	Acceleration (3)
1. Labor productivity growth (LPG)[1,3]	.8	2.0	1.2
2. Contribution of software production and use[2,3]	.4	1.0	.6
2a. *(percentage share of line 1)*	.50	.51	.51
of which:			
3. Contribution of software industries	.2	.6	.4
3a. *(percentage share of line 1)*	.28	.30	.30
4. *Total factor productivity growth (TFPG)*[1,3]	.4	.9	.5
of which:			
5. Contribution of software industries	.1	.4	.2
5a. *(percentage share of line 4)*	.30	.37	.43

Notes. Software industries are the 2017 NAICS 511, 518-9, and 5415 industries. Software capital is the software component of Intellectual Property Products (IPP) and software product and embedded software R&D component of Business R&D.

1. Percent change
2. Percentage points
3. Based on natural log differences/points

Sources. Authors' elaboration of BLS productivity data files and NSF/NCSES BERD Survey data.

Taking the production and use of software capital as a reflection of the impact of AI technologies, their combined contributions indicate that AI has already had a significant impact on US productivity growth.

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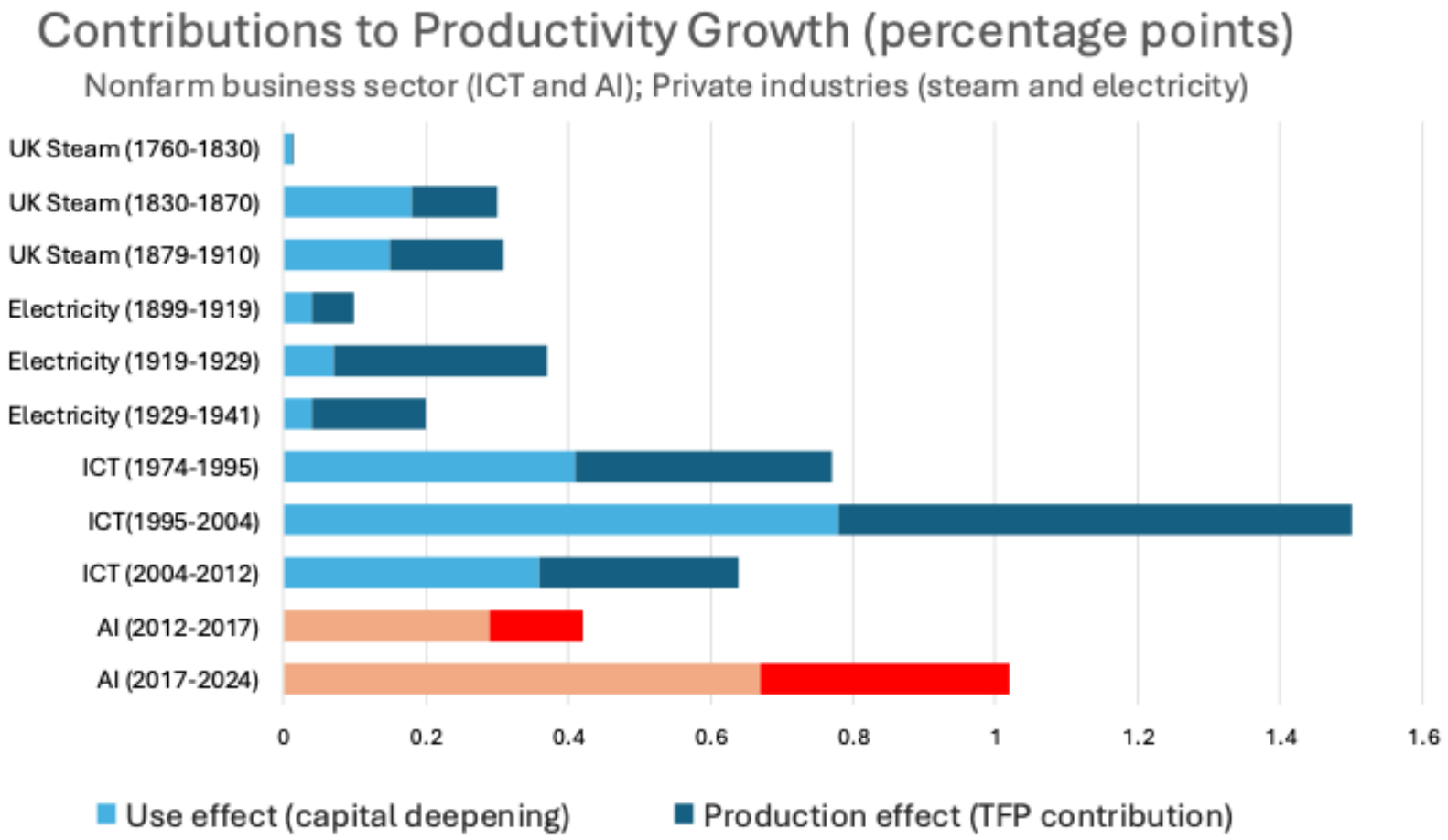
Results in historical perspective: AI is still in early days



Source for blue bars: Crafts (2021, table 1); electricity includes spillovers. Source for red bars, this paper..

Bontadini, Corrado, Haskel, Jona-Lasinio (2026), forthcoming in ***AEA Papers and Proceedings***

Thank you