

# Monopoly and capital

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ESCoE Conference on Economic Measurement

20 May 2026

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# Outline

- Capital stocks are increasingly important in national accounts
- A series of papers and a book have argued that there is substantial market power held by US nonfinancial corporations.
- **Question:** If some firms have substantial monopoly power, does that constitute a different source of capital?
- **Approach:** Use macroeconomic data to explore trends in capital income, their connection to market power and intangibles, and its sensitivity to measurement questions

# Framework

- GDP = Sum of labour and capital income:
  - (1)  $Y = wL + rK$ ,
- If  $r$  is taken from the data,  $r = (Y - wL)/K$  and (1) is true by definition: nothing to be explained
- If  $K$  and  $r$  are ‘exogenous’, then there may be residual ‘unexplained’ income  $X$ :  $Y = wL + rK + X$ , so  $X = Y - (wL + rK)$ 
  - $X$  is “factorless income” (Karabarbounis and Neiman, 2019)
  - $X$  may also be split into volume (“factorless assets=  $F$ ”) and price ( $\sim$  rate of return,  $r_F$ )
  - **Are factorless assets an embodiment of market power?**

# Preview of Results

- At least in the last 12 years, X, factorless *income*, and F, factorless *capital*:
  - Are positive and large for US even if we include new measures of intangible capital and income from them. Still subject to further investigation.
  - But evidence that F is positive is weak for some other OECD countries, while there is some evidence of X being positive for them as well.
  - This leaves a question of whether national accounts need to accommodate this evidence of positive X and F in the US, in capital accounts.

# Approaches

1. **Q theory** – Implied “factorless *assets F*” as the difference between financial valuation of corporations (equity and net debt) and measured capital assets, i.e. when  $Q > 1$
2. **User cost of capital** – Implied “factorless *income X*” as the difference between user cost of capital (measured with exogenous rate of return) and measured capital income, i.e. when endogenous  $RoR > \text{exogenous } RoR$ .
  1. For both extend capital assets to include uncaptialised intangibles (and, in future, other capital assets).

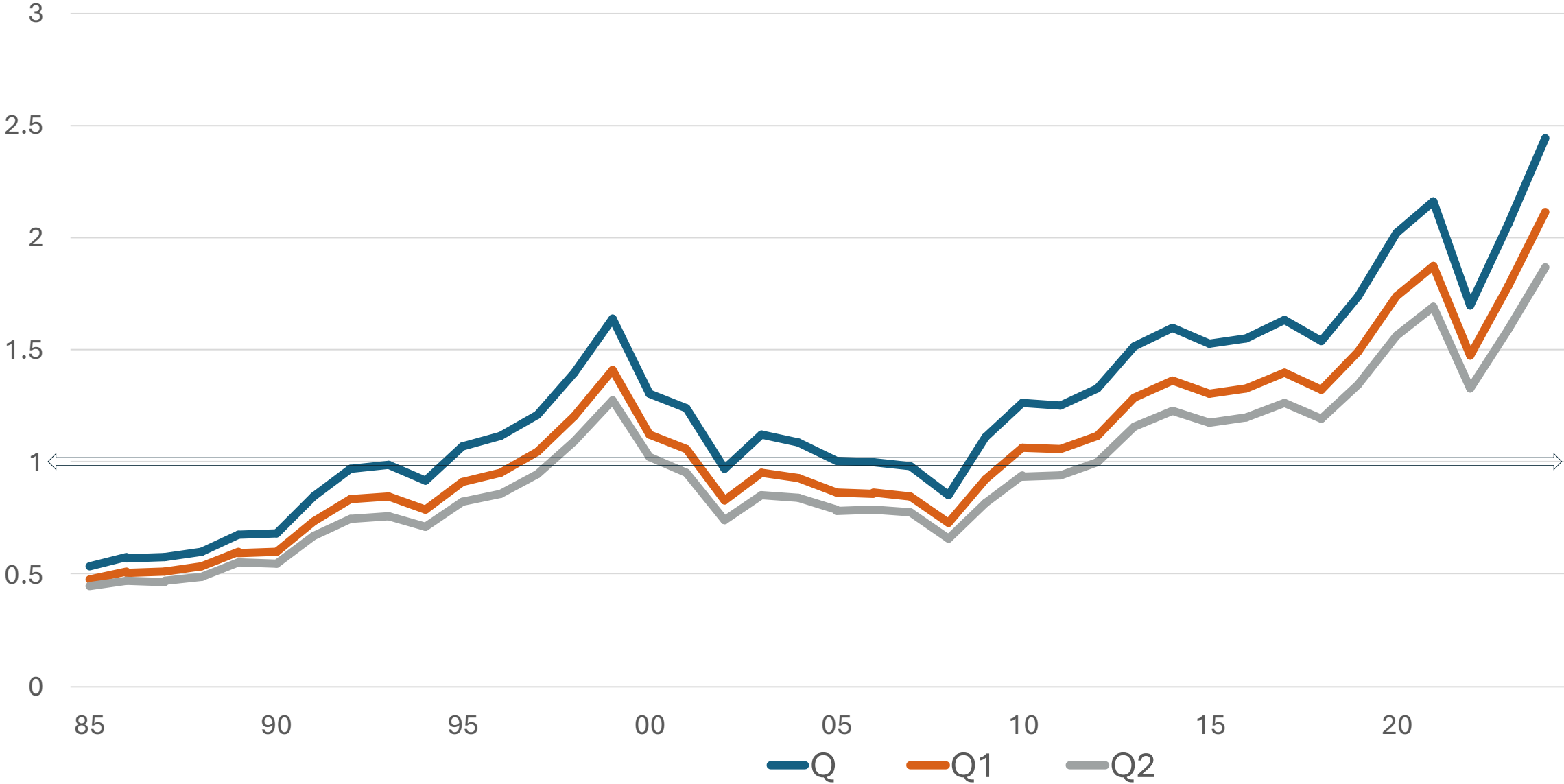
# Approach 1 – Q theory

- Firms are financed by equity (and net debt), which reflects their market valuation (of current and future revenues)
- In equilibrium, Equity (E) + Net Debt (D) = Fixed capital (K)
- Tobin's  $Q = (E+D) / K$ , where  $E+D$  is the value of the firm in the market and  $K$  is the replacement cost of capital
- $E+D > K \Leftrightarrow Q > 1$ ,
  - This implies “factorless assets”  $F$  are part of  $E$  and now unmeasured capital
  - $F=E+D-K$ ;  $Q = (E+D -K)/K + 1$
  - So  $Q - 1$  is a measure of  $F$ , scaled by  $K$
- We extend  $K$  to include uncaptialised intangibles, with any remainder attributed to “factorless assets”
  - The more intangibles we include the smaller  $F$  is.

# US Data

- Economists have recently found evidence that  $Q$  is greater than 1 during much of the 21<sup>st</sup> century for the US for nonfinancial corporations
  - Some concern that this is due to undermeasurement of intangible assets
- We show data from 1985 to 2024 for US  $Q$  and two variants.
  - $Q$  uses data from financial accounts (FRB) and SNA 2008 national accounts (BEA).
  - We add additional intangibles from IntanInvest dataset that include brands and organizational capital to create  $Q1$  for the US; updated crudely to 2024.
  - We further add recent, more encompassing estimates of marketing from Sveikauskas et al (2025) and of data from Calderon and Rassier (2023) to create  $Q2$ ; also updated crudely to 2024
- We find evidence of positive  $Q$  in past 12 years for all three variants.

# Possible Q Measures, US, 1985-2024



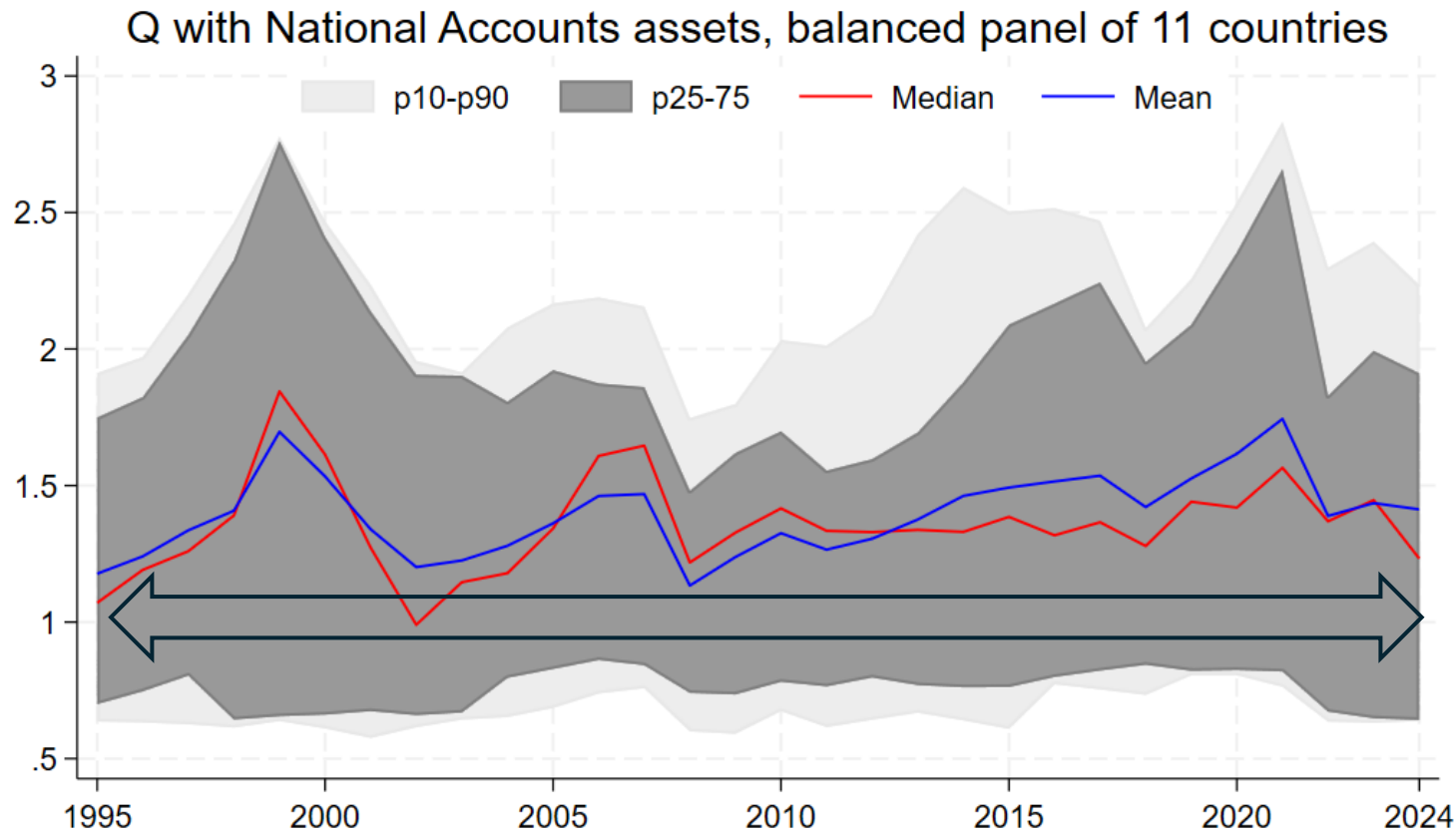


# OECD Data

- Non-financial corporations sector by country, annual 1995-2024
- Equity and Net debt – OECD "[Annual Financial Balance Sheets \(stocks\), non-consolidated](#)"
- ‘National Accounts’ capital assets – OECD "[Annual balance sheets for non-financial assets](#)"
  - Our use of US OECD data may be a bit off – we are still reconciling.
- Uncapitalised intangible assets – EUKLEMS-INTANProd (up to 2021)
  - Includes brands, organizational capital, design, etc.
  - Extended to 2024 using Global Intan-Invest investment data (total industry only, so use to extrapolate data from 2021)

# Q with OECD assets

Above 1 on average, and modestly increasing over time



1995-1997 average:

Median = 1.17

Mean = 1.25

2022-2024 average:

Median = 1.35

Mean = 1.41

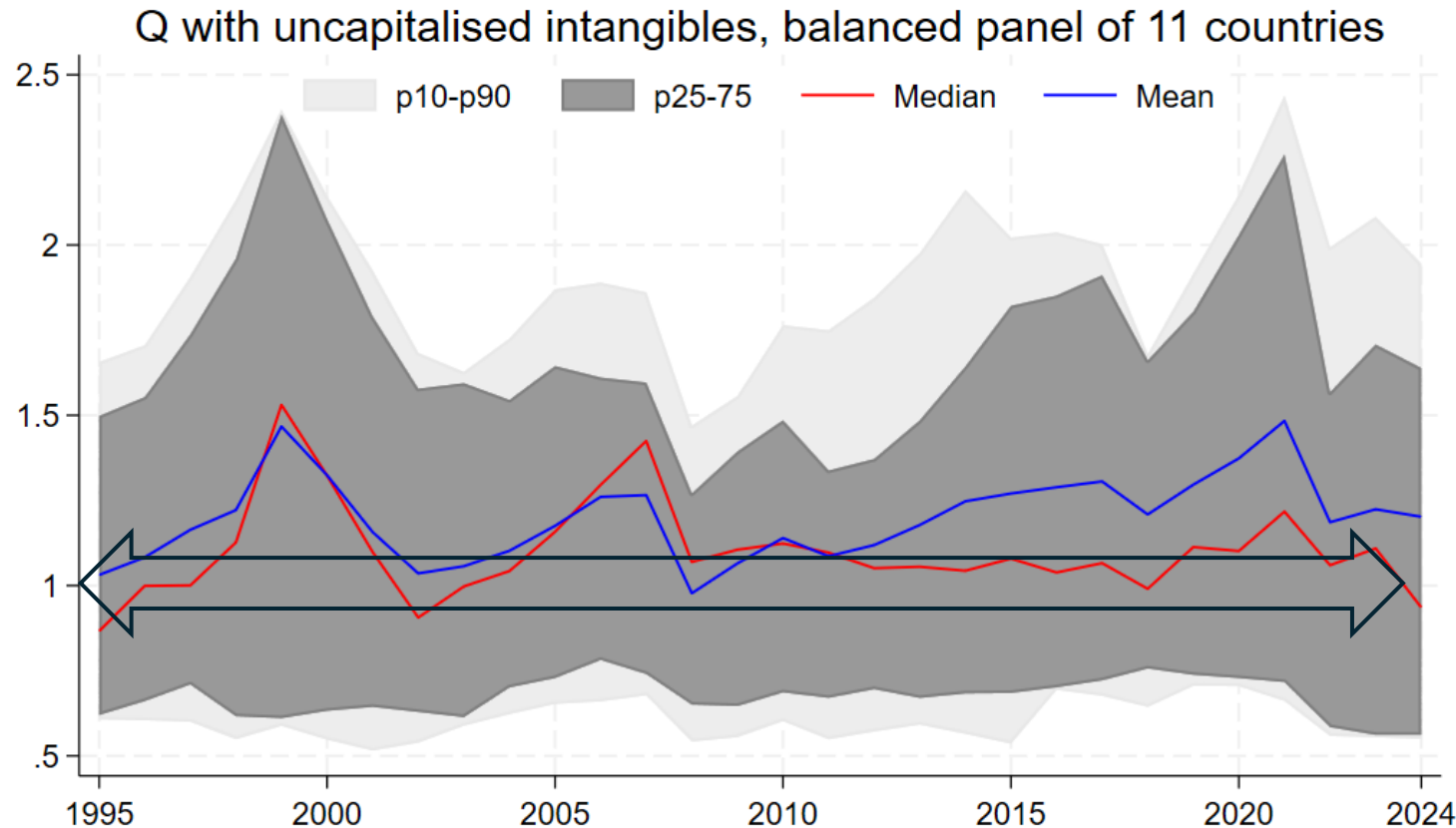
Increase:

Median = 0.18

Mean = 0.16

# Q1 with intangible assets from IntanInvest

## Close to 1 on average, and almost flat over time



1995-1997 average:

Median = 0.96

Mean = 1.09

2022-2024 average:

Median = 1.03

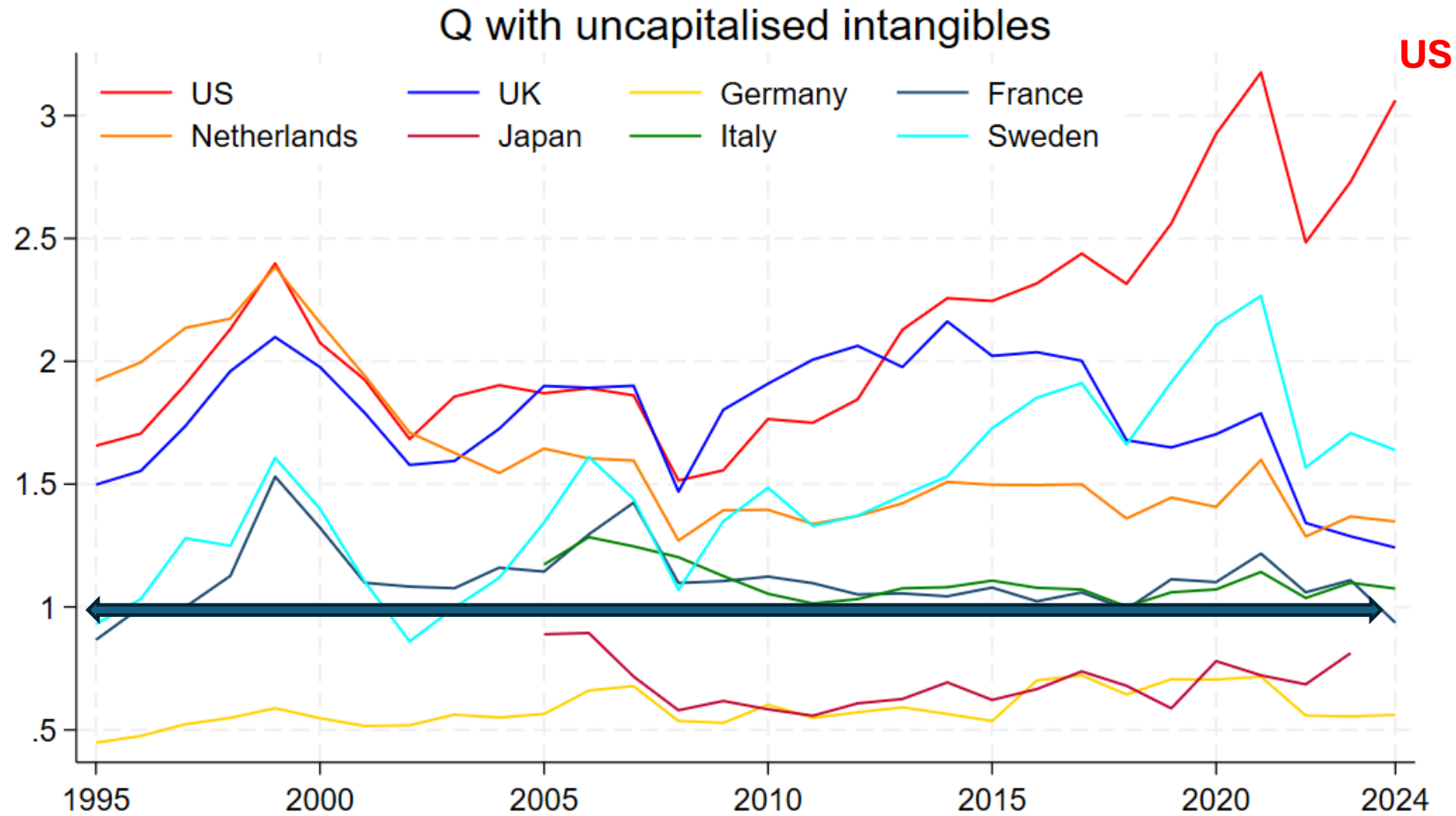
Mean = 1.20

Increase:

Median = 0.08

Mean = 0.11

# US the significant outlier with rapid growth in Q, even accounting for IntanInvest intangibles



# Approach 2 – User cost of capital

- Firms earn capital income from their capital assets
- Capital income calculated by residual (from GVA - labour costs)
- User costs of capital modelled by rental prices
  - Hall-Jorgenson equation:  $rK$  with exogenous  $r = Kq^*(r + d(1+\Delta p) - \Delta p)$
- If  $r$  is exogenous, and user costs do not match measured capital income, there is ‘excess’ capital income which may be “factorless income”: define  $X = (Y - wL - rK)$
- We extend  $K$  to include unc capitalised intangible assets, consider different exogenous rates of return, and compare with measures of concentration

# Data

- Capital stocks, depreciation rates, price trends, and capital income (including uncaptialised intangible assets) – EUKLEMS-INTANProd
  - For market sector industries only (including finance)
  - At country and industry level
  - *NB: Many small issues with the data at country-industry-asset level – drop many countries with missing, inconsistent or implausible data*
- Exogenous rates of return – MacroHistory dataset (Jordà et al, 2019)
  - “Safe” and “risky” rates
- Consumer price inflation – OECD
- Concentration measures (HHI) – CompNet

# Explorations

- We use various measures of rates of return: safe, risky and fixed real (4 %) to measure factorless income  $X$ 
  - $X$  generally positive across OECD
  - But  $X$  tends to disappear with additional measures of intangibles if we use risky rates of return from Jorda et al
- We examine  $X$  by industries
  - Some industries have more factorless income, e.g. wholesale and retail trade
  - We do not have data on additional intangibles by industry
- We correlate measures of factorless income with measures of concentration across countries
  - Some slim evidence

# Next steps and data notes

- Careful review of data and results
  - Many challenges working with cross-country data – much cleaning and/or imputation needed, or countries dropped, or else results are suspect
- Further work on link between market power and factorless income
  - Expanding industry and country coverage; checking outliers
- Long-run analysis for US using Federal Reserve data
- Incorporate “data”, inventories, land and other natural resources into OECD K measures



# Conclusions

- “Factorless assets” appear to exist (from Q measures) and rising rapidly for US (maybe not elsewhere)
  - Level reduced and trend flattened when including intangibles
  - Level differences across countries may suggest mismeasurement and/or inconsistency
- “Factorless income” appears to exist (from user cost approach) and may be flat/rising as safe rates fall
  - May be near zero on average when using “risky” exogenous rates of return and uncapitalised intangibles
  - May be correlated with measures of industry concentration and prevalence of IT and intangible assets in capital stocks
- Importance of intangibles for understanding capital income
  - Consider different “rates of return” for tangibles and intangibles – implications for measurement of capital services
- Relationship with market power remains unclear