



# **Discussion of “Low Interest Rates, Market Power and Productivity Growth”**

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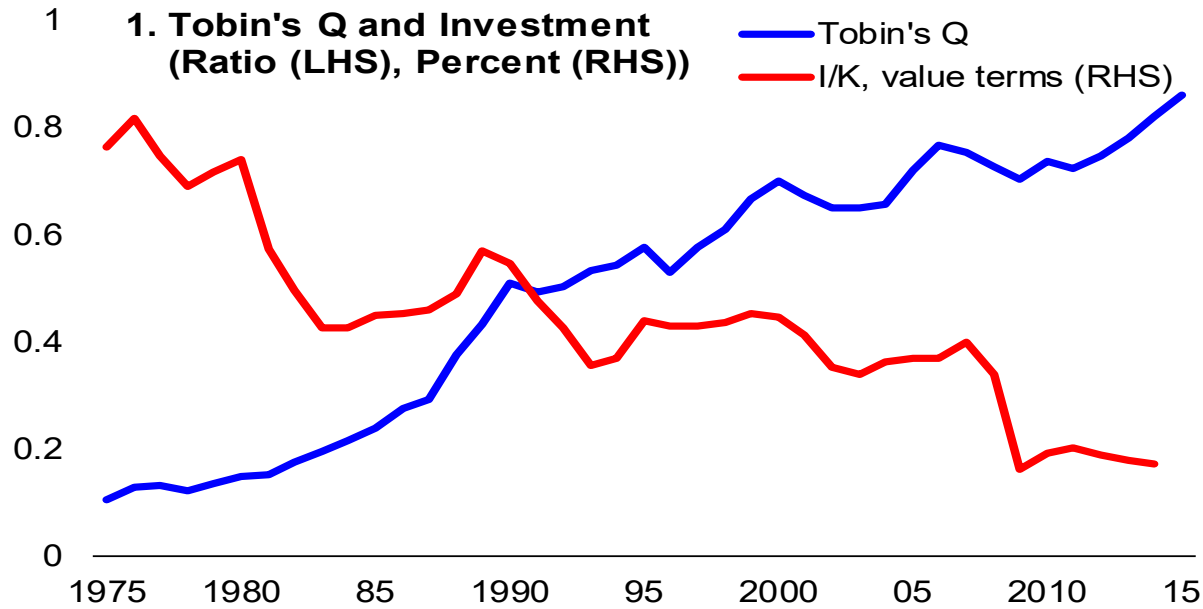
# Background: macro puzzles

- **Macro puzzles**

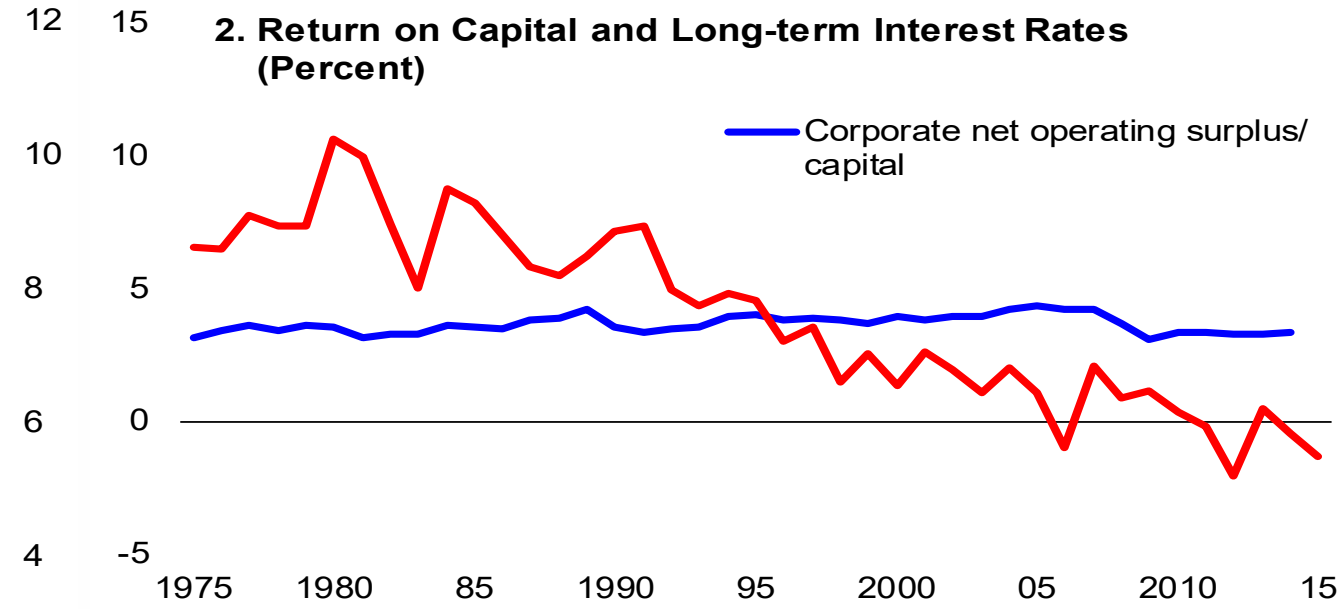
- ▶ Stable returns on productive capital vs falling returns on safe assets
- ▶ Rising Tobin's Q vs falling investment
- ▶ Faster rise in financial wealth relative to “productive” wealth
- ▶ Falling labor income shares
- ▶ Productivity slowdown—although rise (1990s) and fall (2000s) also needs to be explained



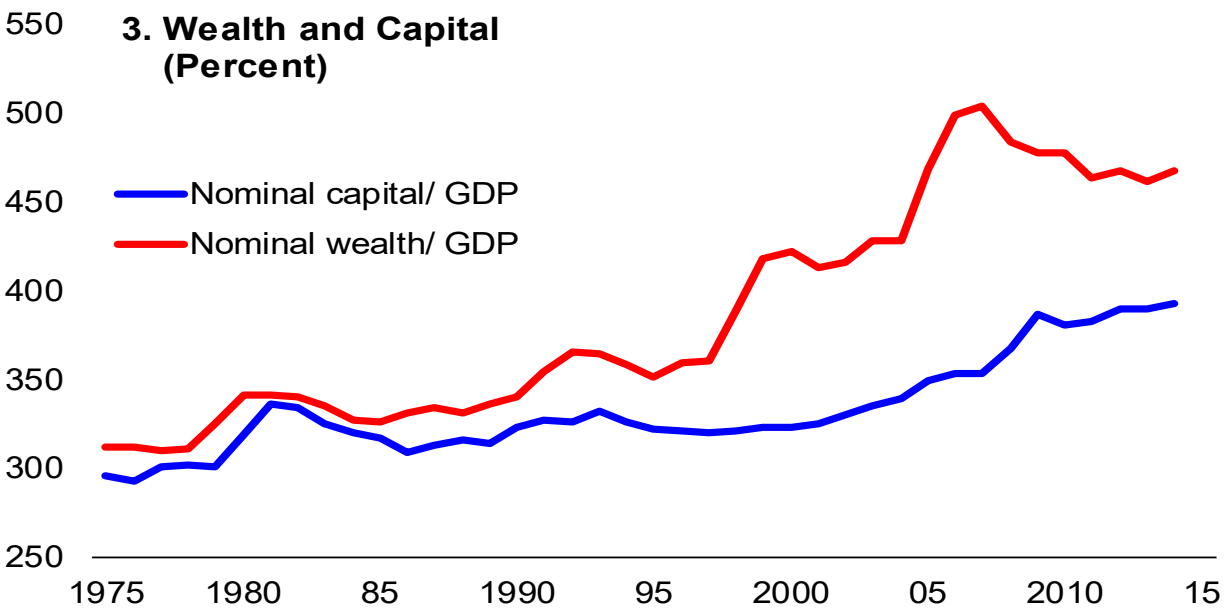
## Sluggish investment despite rising expected returns



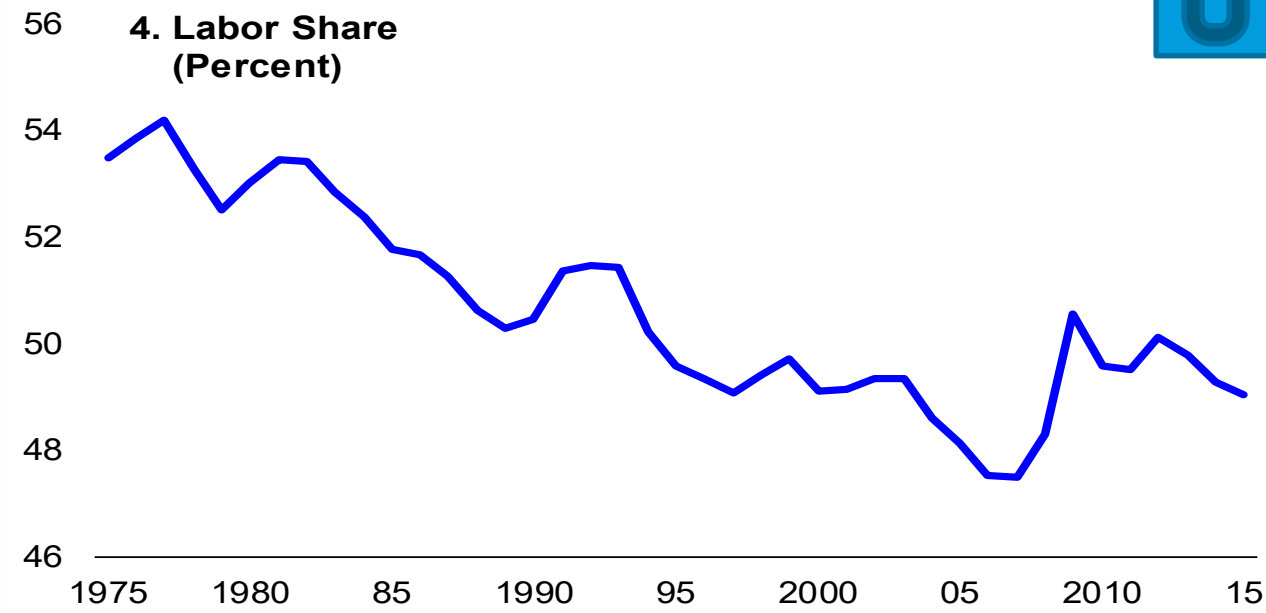
## Disconnect between productive capital and safe asset returns



## Disconnect between financial wealth and productive capital



## Falling labor income shares



# Market power as unifying explanation?

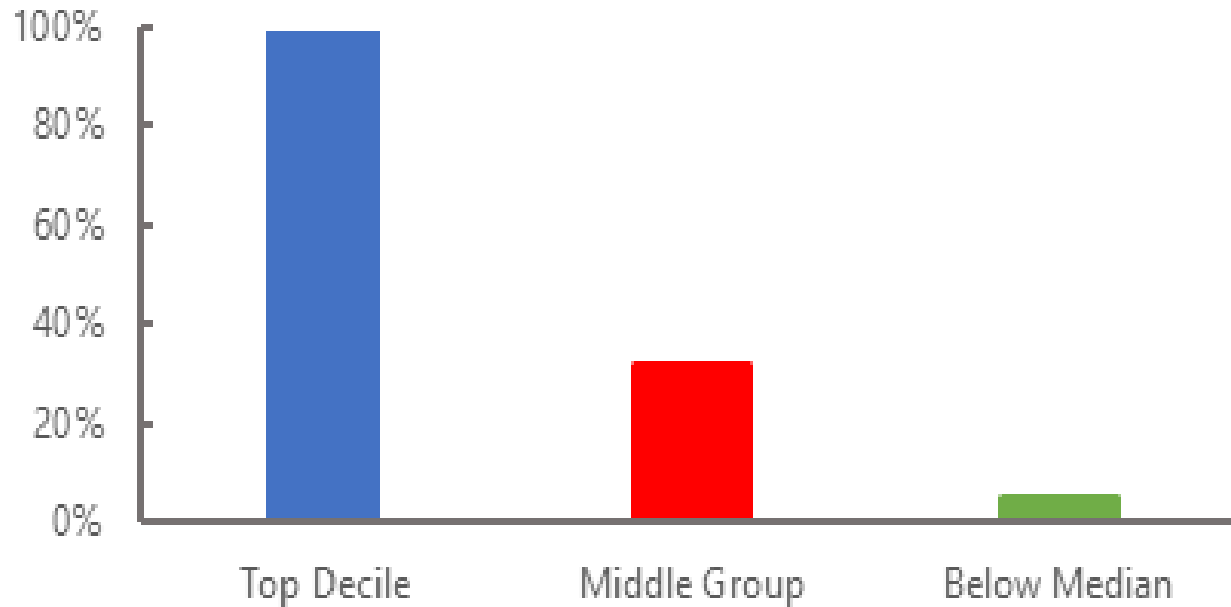
- **Theory: rising market power could account for these macro puzzles—together with falling natural rate**
    - ▶ Other relevant explanations, but incomplete (e.g. intangibles; safe assets)
  - **Data: rising market power concentrated among small fraction of stable firms**
    - ▶ Adverse effects on investment, innovation, productivity growth, labor shares (De Loecker, Eeckhout & Unger, 2020; Diez, Leigh & Tambunlertchai, 2018; IMF, 2019; Philippon & Gutierrez, 2018)...
  - **Issue: unclear what lies behind rising market power**
    - ▶ Technology/superstars (Aghion et al., 2019; Autor et al., 2018; Baqaee and Farhi, 2017; Calligaris et al., 2018; Syverson, 2018; Van Reenen, 2018)
    - ▶ Policies: antitrust and lobbying (Philippon, 2020); IPRs (Akcigit and Ates, 2019)
- ➔ ***This paper: secular decline in interest rates as 3rd driver***



# Large markup increases and lower churn at the top

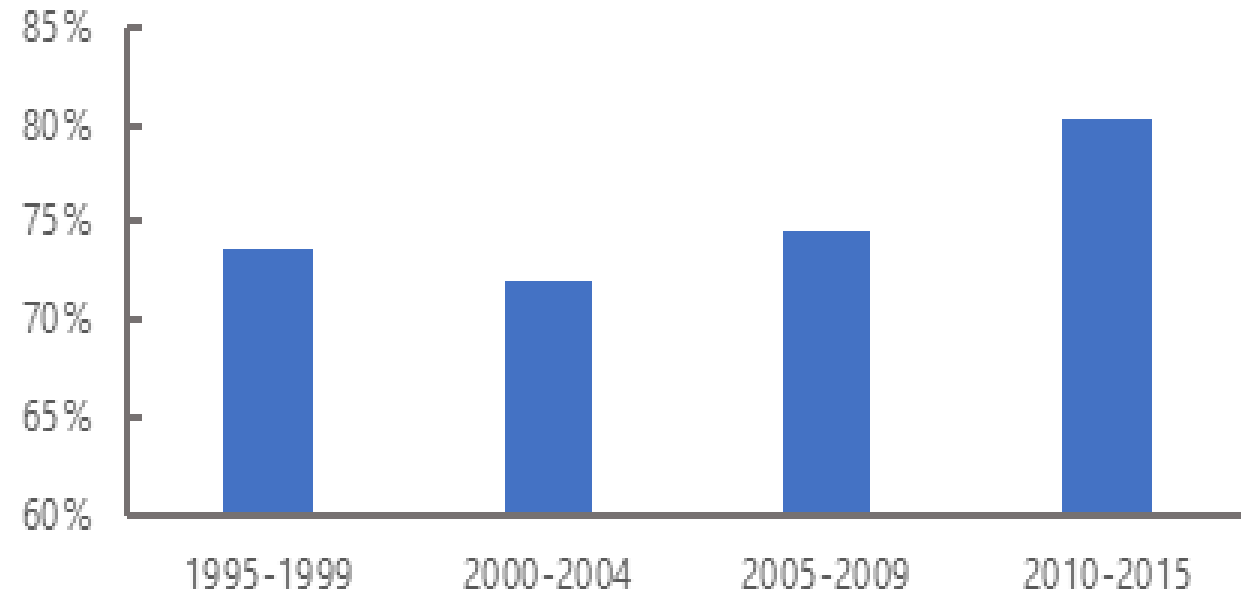
## Markup Increase by Markup Level

(Cumulative percent change since 1980)



## Persistence at Top Decile

(Probability of remaining in the top decile the following year, averaged)



Source: IMF Staff Discussion Note, forthcoming. Calculations following approach of De Loecker, Eeckhout and Unger (2020) using all firms for a large sample of countries in Worldscope.

Notes: In Panel 1, bars plot the cumulative percent change in markups since 1980 for firms: in the top decile of the markup distribution (blue bar); between the median and 90th percentile (red bar); below the median (green bar). In Panel 2, bars plot the probability that a firm remain in the top decile of markups in the following year, averaged over 5-year periods. These probabilities are computed at the industry level and aggregated using weighted averages.



# The paper in a nutshell

- **Theory: Lower  $r \rightarrow$  weaker competition, investment, growth—more so when  $r$  low**
  - ▶ Endogenous (2<sup>nd</sup> generation Schumpeterian) growth model à la Aghion et al. (2001)
  - ▶ Key idea:  $|\partial(V_L)/\partial(r)| > |\partial(V_F)/\partial(r)|$  when  $r$  low

NB: Not a trivial result!

  - $\rightarrow$  Higher  $(I_L - I_F)$  and  $(Y_L - Y_F) \rightarrow$  In SS: smaller share of competitive industries; higher concentration and markups; lower business dynamism, I and Y growth
  - $\rightarrow$  Offsets conventional effect of  $r$  as  $r$  approaches zero  $\rightarrow$  inverted-U relationship between  $r$  and  $g \rightarrow$  as  $r$  falls, rise and fall in growth?
- **Empirics:  $|\partial(V_L)/\partial(r)| > |\partial(V_F)/\partial(r)|$ —more so when  $r$  low**
  - ▶ Model predictions also consistent with macro puzzles and micro facts (declining churn among leaders, rising patent concentration, rising  $(Y_L - Y_F)$  within industries)

# An important and thought-provoking paper

- **Important and thought-provoking paper**
  - ▶ Important: novel explanation for key macro and micro puzzles
  - ▶ Thought-provoking:
    - Low  $r$  unlikely candidate—orthogonal to market power in all papers on puzzles (e.g. Caballero, Farhi & Gourinchas 2017; Eggertsson, Robbins & Wold 2018; Stiglitz 2015)
    - Medium/long-run non-neutrality of money with *negative* impact of expansion
- **How important?**
  - ▶ How appealing is a common global driver?
    - ➔ Global  $r$  decline vs cross-region and -industry heterogeneity in market power trends
  - ▶ Theory: stylized model (competition ends under  $r = 0$ ; no calibration/quantification)
    - ➔ Could it be taken to the data? (e.g. à la Akcigit and Ates 2019)
  - ▶ Empirics: only one direct piece of evidence, not yet fully convincing



# Theory and empirics: comments

## ■ Theory

- ▶ Leap-frogging can co-exist with incremental catchup (Akcigit and Ates 2019) → Could undo  $|\partial(V_L)/\partial(r)| > |\partial(V_F)/\partial(r)|$  ?
- ▶ Financial constraints: (hopeful) followers = younger credit-constrained firms more responsive to given change in  $r$  (e.g. Cloyne et al. 2019); intangible investment particularly responsive to financial constraints (Duval, Hong and Timmer, 2020)

## ■ Empirics

- ▶ Builds on prescient market participants
- ▶ Interpretation:  $|\partial(V_L)/\partial(r)| > |\partial(V_F)/\partial(r)|$  under basic Gordon formula with higher  $g$  for leaders, or if lower  $r$  lowers  $(r_L - r_F)$  as paper finds
- ▶ Need to instrument (or at least purge)  $r$
- ▶ Competing evidence that higher-markup firms are *less* responsive to MP shocks (Duval, Furceri, Lee and Mendes Tavares 2020)



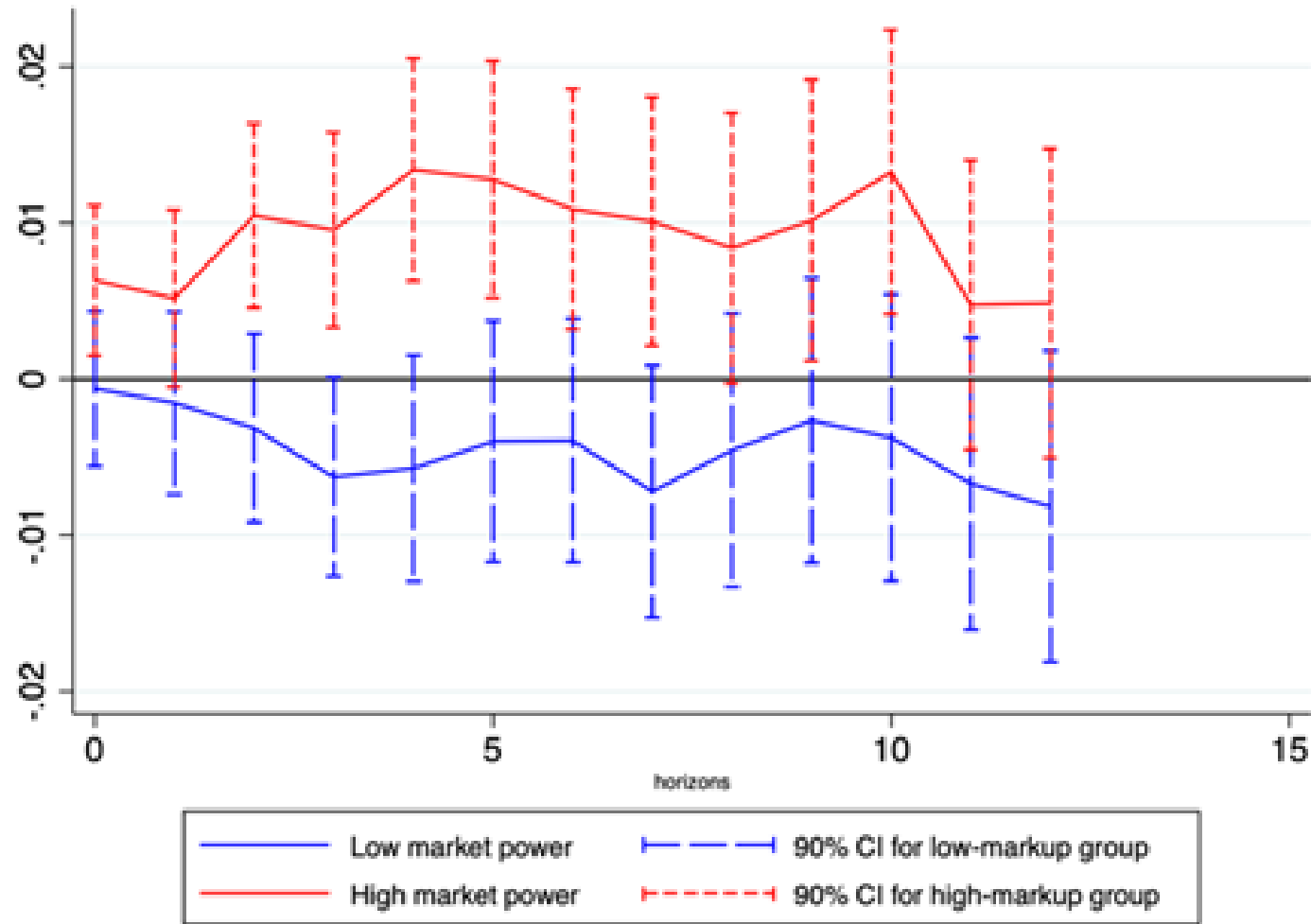
# Response of low- and high-market-power firms to MP shocks

- Firm-level (Compustat) analysis of response of firm output (real sales) to US MP shocks
- US MP shocks: follow the approach of Gertler and Karadi (2015)
- Local projection of (log) output on MP shock by bins of market power, controlling for firm, sector-year FEs, and firm characteristics:

$$\tilde{y}_{i,t+h} = \alpha_i^h + \alpha_{s,t+h} + \sum_{g \in \mathcal{G}} \beta_{g,m}^h \mathbb{1}_{i \in g} \epsilon_t^m + \rho^h X_{i,t} + \varepsilon_{i,t+h}$$

- $\tilde{y}_{i,t+h}$  = change in log output between t-1 and t+h; = MP shock
- $\beta_{g,m}^h$  = response of dependent variable at horizon t+h to MP shock in t-1 for firms in bin g of market power (“high” (“low”) = 75<sup>th</sup> (25<sup>th</sup>) percentile of (average) markup level distribution
- $X_{i,t}$  = firm-level characteristics (age, size, leverage, ST liability ratio, asset tangibility ratio)—in some specifications, also by bins and interacted with MP shock

# Response of (log) real sales to US MP shocks: high-markup vs low-markup firms (deviation from sector-level response)



Source: Duval, Furceri, Lee and Mendes Tavares, forthcoming.

NB: Does not reflect price deflator issue—no change in relative markup of high- vs low-markup firms after shock

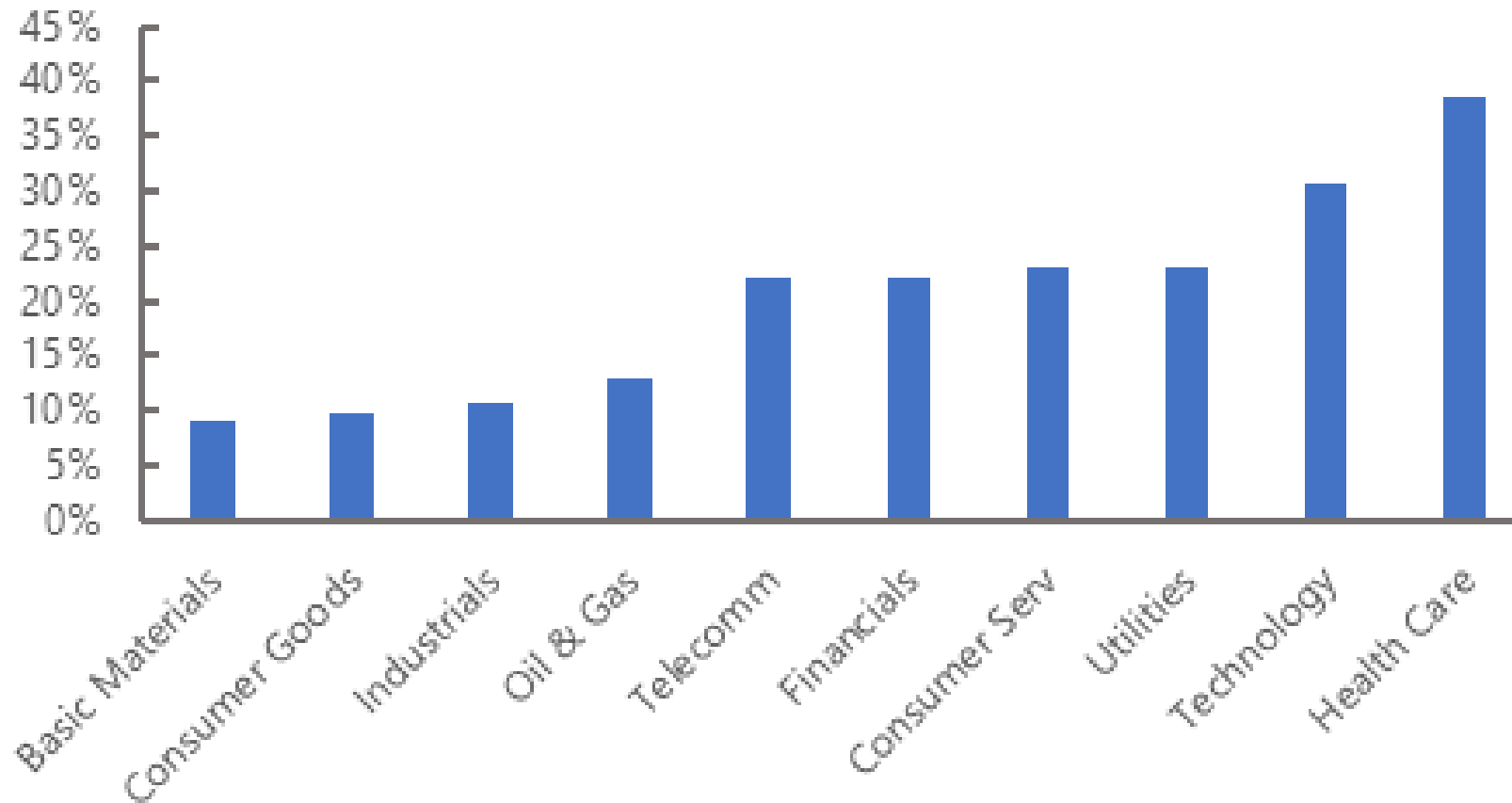


**Thank you!**



# Extra slides

## Markup Increase by Industry (Cumulative percent change)



Source: IMF Staff Discussion Note, forthcoming. Calculations following approach of De Loecker, Eeckhout and Unger (2020) using all firms for a large sample of countries in Worldscope.

Notes: The Figure plots the cumulative markup increase between 1995 and 2016 for each 1-digit industry according to the International Classification Benchmark.