Rents and Intangible Capital: A Q+ Framework

Nicolas Crouzet[1] Janice Eberly[2]

[1]Kellogg and Chicago Fed

[2]Kellogg and NBER

Question

Why is PPE investment weak ?

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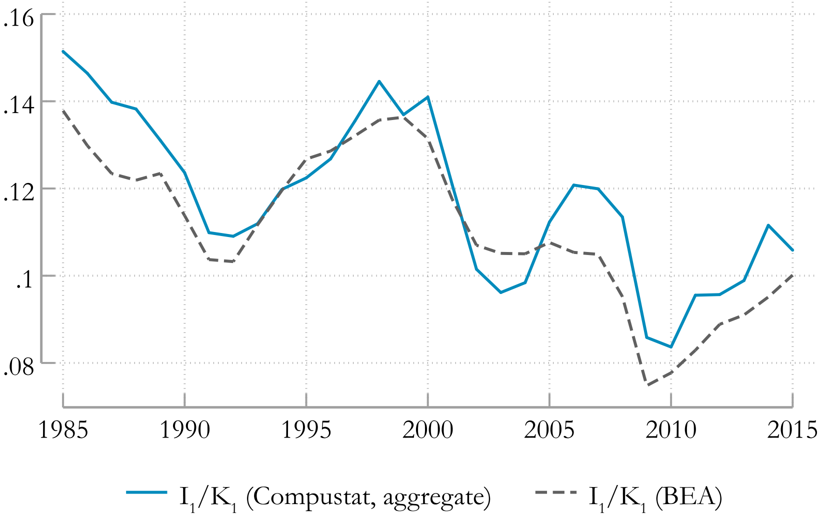
PPE investment is weak



Sectoral data

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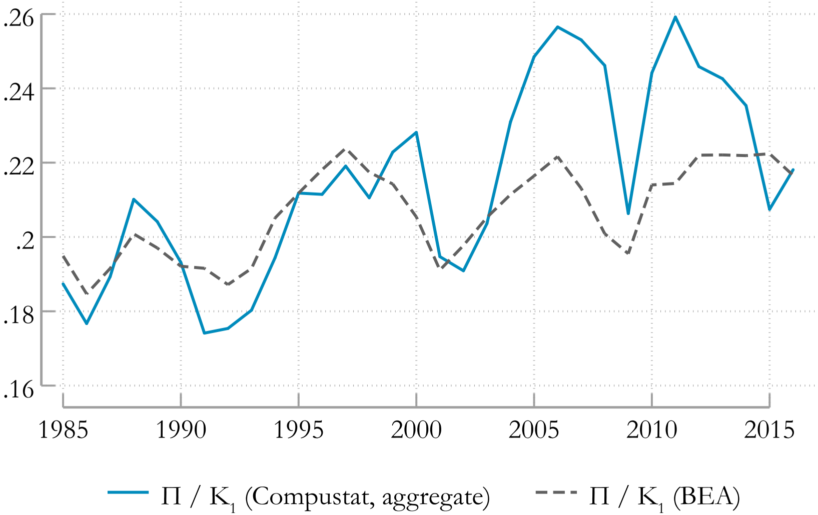
Why is PPE investment weak ?

- ... ***despite*** high returns ?

PPE investment is weak despite high returns



Sectoral data Investment-Q

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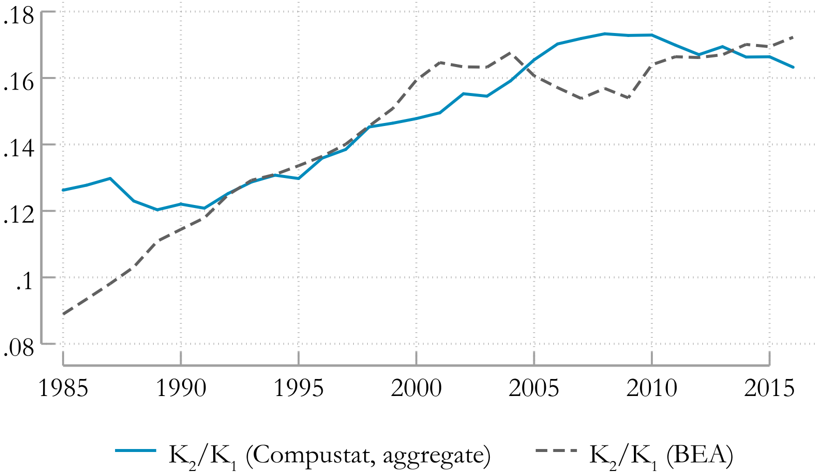
The growing importance of intangible capital



K_1 = PPE and K_2 = R&D capital.

Sectoral data

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This paper

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  "Q+": Lindenberg and Ross (1981) + Hayashi and Inoue (1991)

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   $+$ (**Rents** $\rightarrow$ **intangibles**) $\times$ (**Omitted capital effect**)

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3. **Sectoral data:** no common trends; intan $>$ 2/3 of gap in high-growth sectors

1. Theory

A (fairly) general Q-theory model

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$$
\begin{aligned}
V_t^c\left(\mathbf{K}_t\right) = \quad & \max_{\mathbf{K}_{t+1}} \quad \Pi_t(K_t) - \tilde{\Phi}_t\left(\mathbf{K}_t, \mathbf{K}_{t+1}\right) \quad + \quad \mathbb{E}_t\Big[M_{t,t+1} V_{t+1}^c\left(\mathbf{K}_{t+1}\right)\Big] \\
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The value of the firm

Lemma

$$V_t^e \quad = \quad q_{1,t}K_{1,t+1} + q_{2,t}K_{2,t+1} \quad + \quad \sum_{n=1}^{2}\sum_{k\geq 1}\mathbb{E}_t\left[M_{t,t+k}(\mu-1)\Pi_{n,t+k}K_{n,t+k}\right]$$

$$V_t^e = \mathbb{E}_t\left[M_{t,t+1}V_{t+1}^c\right], \quad q_{n,t} \equiv \frac{\partial V_t^e}{\partial K_{n,t+1}}, \quad \Pi_{n,t} \equiv \frac{\partial \Pi_t}{\partial K_t}\frac{\partial K_t}{\partial K_{n,t}}.$$

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- $\mu > 1$: $\quad V_t^e = q_{1,t}K_{1,t+1} + q_{2,t}K_{2,t+1}$ + **rents** (Lindenberg and Ross, 1981)

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$$(\mu-1)\Pi_{n,t} = \underbrace{\left(\frac{\Pi_t}{K_t} - \frac{\partial \Pi_t}{\partial K_t}\right)}_{\text{gap btw. average and marginal product}} \times \frac{\partial K_t}{\partial K_{n,t}} \quad = \text{ flow value of rents from } K_n$$

The investment gap

$$Q_{1,t} - q_{1,t}$$

The investment gap

$$Q_{1,t} - q_{1,t} = 0$$

No intan + no rents ($\mu = 1$): no investment gap, $Q_{1,t} = q_{1,t}$ (Hayashi, 1982)

The investment gap

$$Q_{1,t} - q_{1,t} \quad = \quad \sum_{k \geq 1} \mathbb{E}_t \left[M_{t,t+k} (\mu - 1) \, \Pi_{1,t+k} (1 + g_{1,t+k}) \right]$$

No intan + rents ($\mu > 1$): $Q_{1,t} > q_{1,t}$ due to **rents** (Lindenberg and Ross, 1981)

The investment gap

$$Q_{1,t} - q_{1,t} \quad =$$

$$q_{2,t} \times \frac{K_{2,t+1}}{K_{1,t+1}}$$

Intan + no rents ($\mu = 1$): $Q_{1,t} > q_{1,t}$ due to **ommitted intangibles** (Hayashi and Inoue, 1991)

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Intan + rents ($\mu > 1$): additional term: **omitted intangibles** $\times$ **rents**

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Balanced growth: productivity grows at rate g; constant discount rate r

The investment gap

$$
\begin{aligned}
Q_1 - q_1 \quad &= \quad \frac{(\mu - 1)R_1}{r - g} && \text{(rents} \rightarrow \text{physical capital)} \\
&+ \quad q_2 \times \frac{K_{2,t+1}}{K_{1,t+1}} && \text{(intangibles)} \\
&+ \quad q_2 \frac{(\mu - 1)R_2}{r - g} \times \frac{K_{2,t+1}}{K_{1,t+1}} && \text{(rents} \rightarrow \text{intangibles)}
\end{aligned}
$$

Balanced growth: $R_n \equiv r + \delta_n + \gamma_n g r, \quad n = 1, 2$

2. Measurement: aggregate data

Constructing the investment gap

$$Q_1 - q_1 \quad = \quad \frac{\mu - 1}{r - g} R_1 \quad + \quad q_2 S \quad + \quad \frac{\mu - 1}{r - g} R_2 S$$

Scope: non-financial corporate business (NFCB) sector, 1947-2017

What data moments do we need to construct this decomposition?

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$\{S,$

Ratio of intangible to physical capital

BEA — $K_{2,t+1}$ = only R&D capital

$$S = \frac{K_{2,t+1}}{K_{1,t+1}}$$

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Rents parameter μ

BEA — Π_t = operating surplus

$$\mu \quad = \frac{ROA_1}{R_1 + SR_2}$$

$$ROA_1 \quad = \frac{\Pi_t}{K_{1,t}}$$

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$\{S, ROA_1, i_1, i_2,$

User costs $\quad R_1, R_2$

BEA — i_n = gross investment rate

$$\begin{aligned} R_n &= r + \delta_n \\ &= r - g + g + \delta_n = r - g + i_n \end{aligned}$$

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$\{S, ROA_1, i_1, i_2, Q_1\}$

Gordon growth term $r - g$: Flow of Funds — $Q_1 = V_t / K_{1,t+1}$, $V_t =$ m.v. of debt + equity

$$r - g \quad = \frac{ROA_1 - (i_1 + S i_2)}{Q_1}$$

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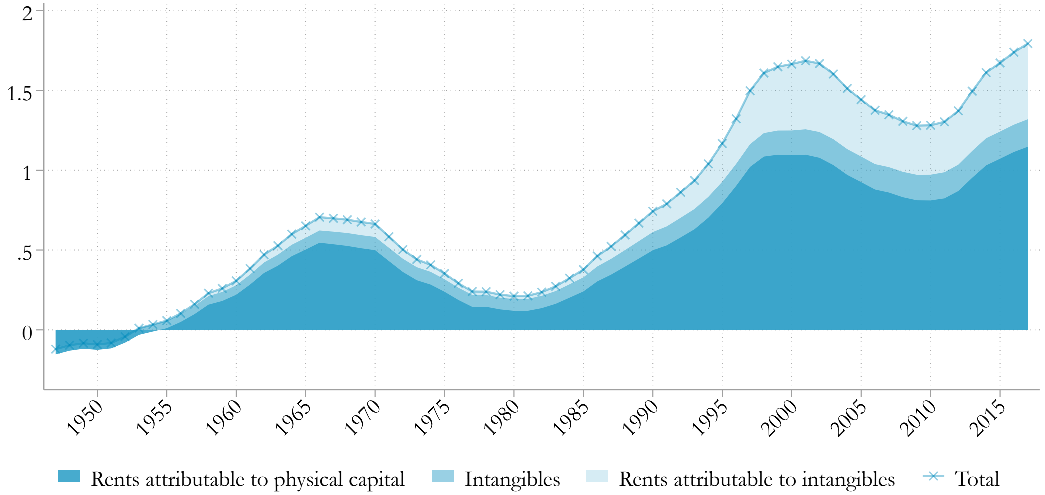
$$r - g \quad = \frac{ROA_1 - (i_1 + S i_2)}{Q_1}$$

No adjustment costs: $q_1 = q_2 = 1$; otherwise, $q_1 = 1 + \gamma_1 g$, $q_2 = 1 + \gamma_2 g$.

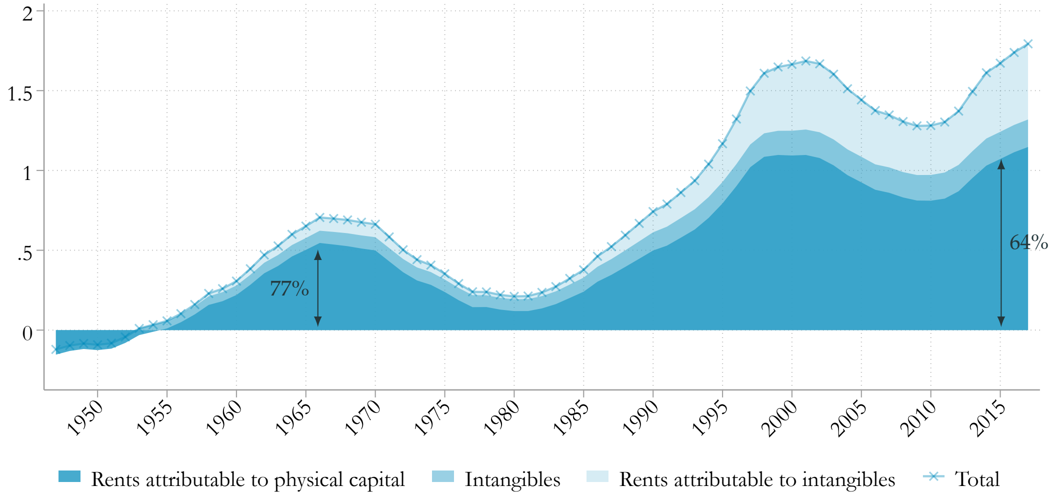
The investment gap in the non-financial sector

(adj. costs = 0)



Adjustment costs

The investment gap in the non-financial sector (adj. costs = 0)



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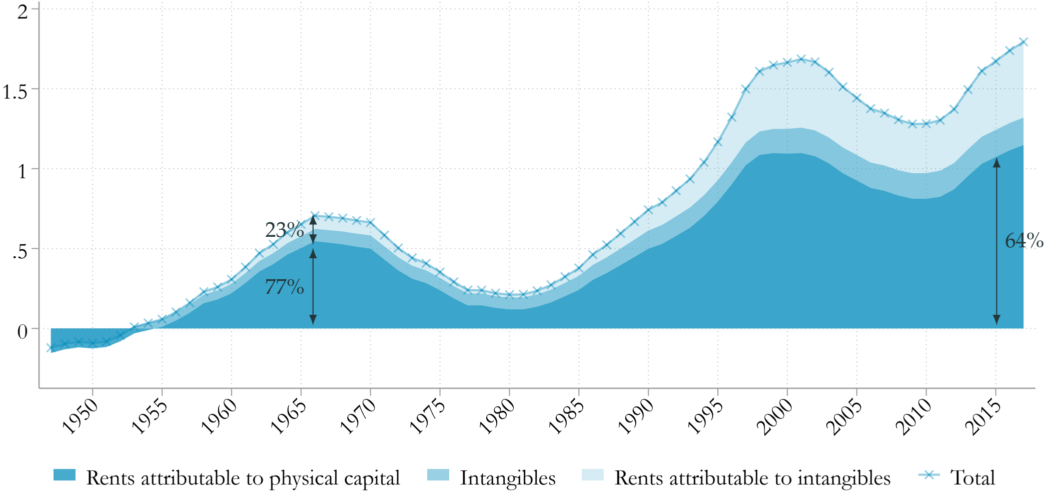

Adjustment costs

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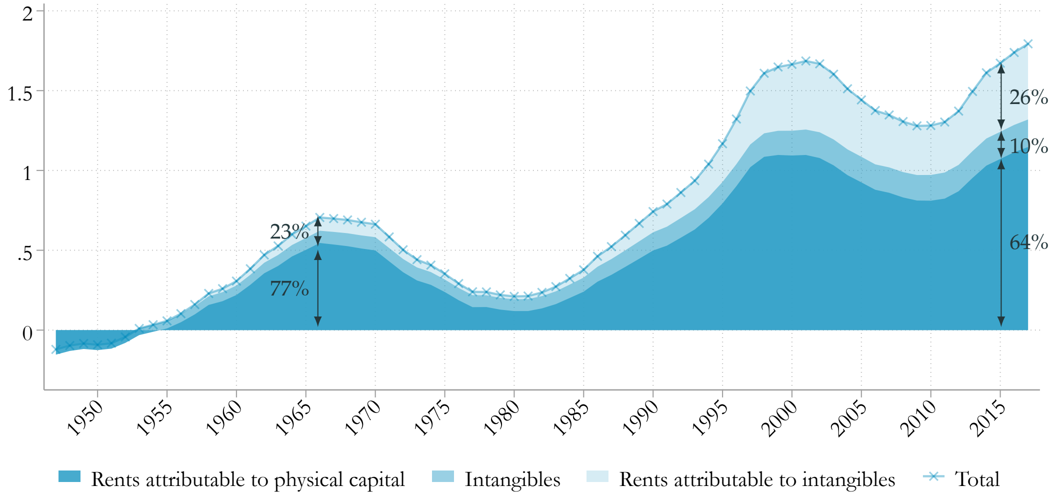
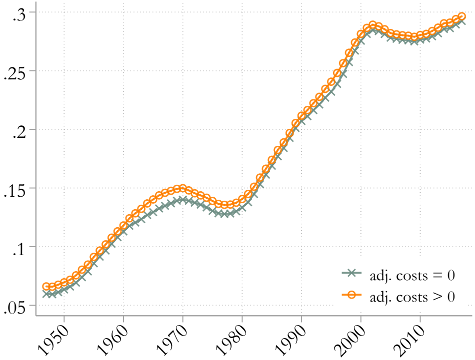


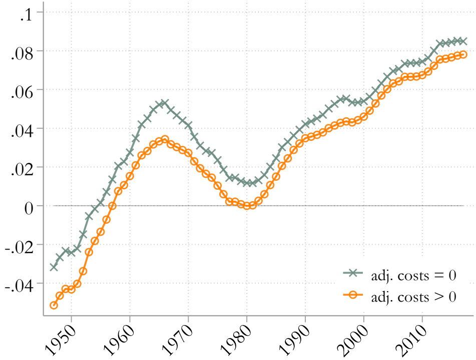
Adjustment costs

Underlying structural changes

Cobb-Douglas intan share $K_t = K_{1,t}^{1-\eta} K_{2,t}^{\eta}$



Rents/v.a. $s = (1 - WL/PY)(1 - \frac{1}{\mu})$



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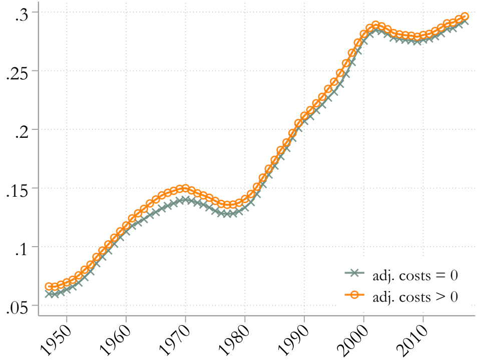

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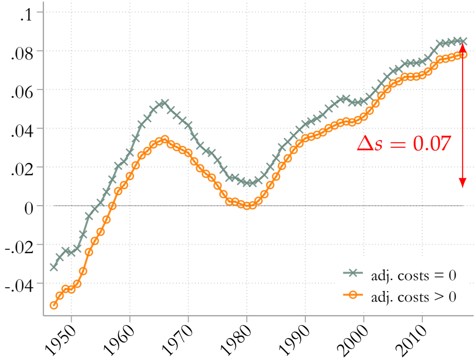

	Barkai (2019)	KN (2019) case π	DLE (2017)	Hall (2018)	This paper (intan=R&D)
Rents 1985 $\rightarrow$ 2015 (% v.a.)	-5 $\rightarrow$ 7.5	0 $\rightarrow$ 13	17 $\rightarrow$ 38	26 $\rightarrow$ 57	1 $\rightarrow$ 8

Underlying structural changes

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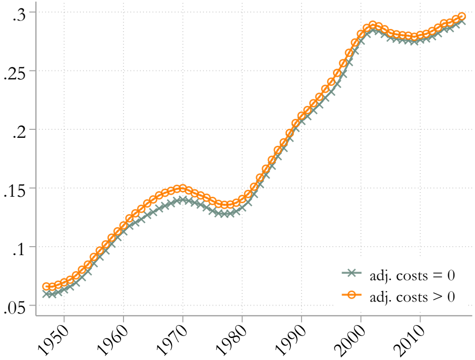

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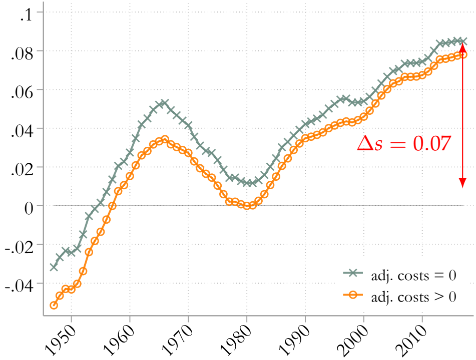

- Mild discount rate decline (7.9% → 5.6%), consisent with small rise in risk premia

  Caballero, Gourinchas and Farhi (2017), Farhi and Gourio (2018)

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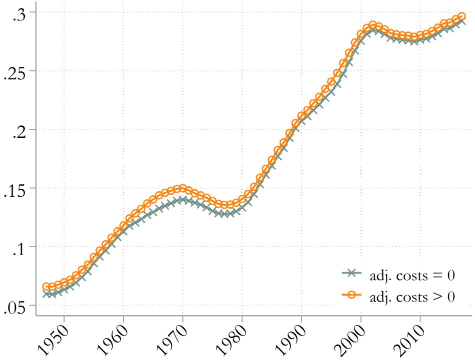
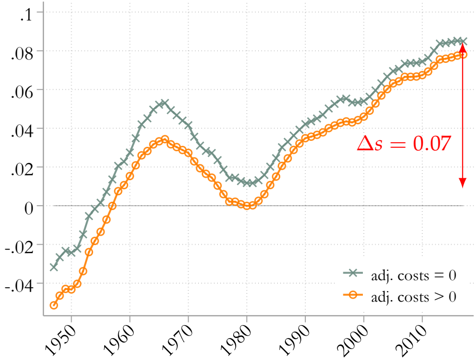


Rents/v.a. $s = (1 - WL/PY)(1 - \frac{1}{\mu})$



- Mild discount rate decline (7.9% → 5.6%), consisent with small rise in risk premia

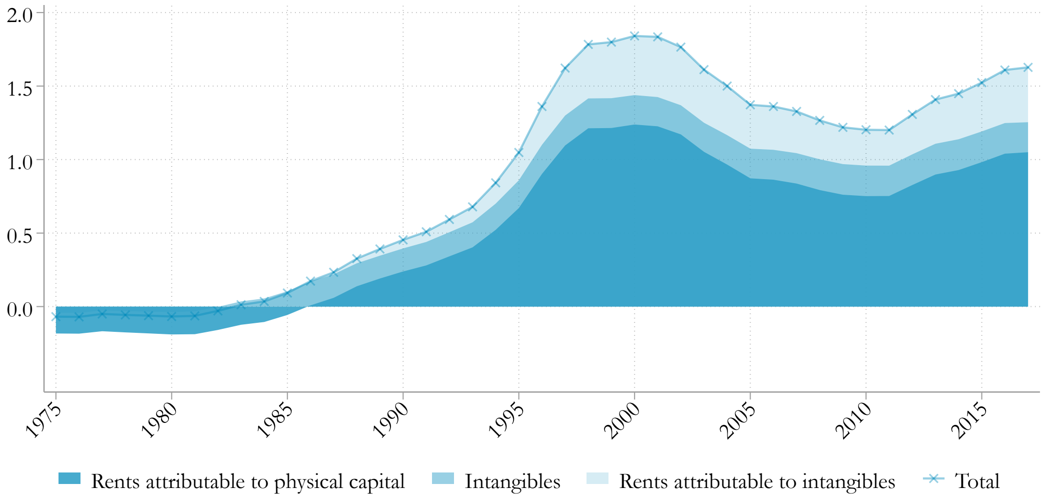
  Caballero, Gourinchas and Farhi (2017), Farhi and Gourio (2018)

User costs Counterfactuals Robustness

3. Measurement: firm-level data

The investment gap: publicly traded firms

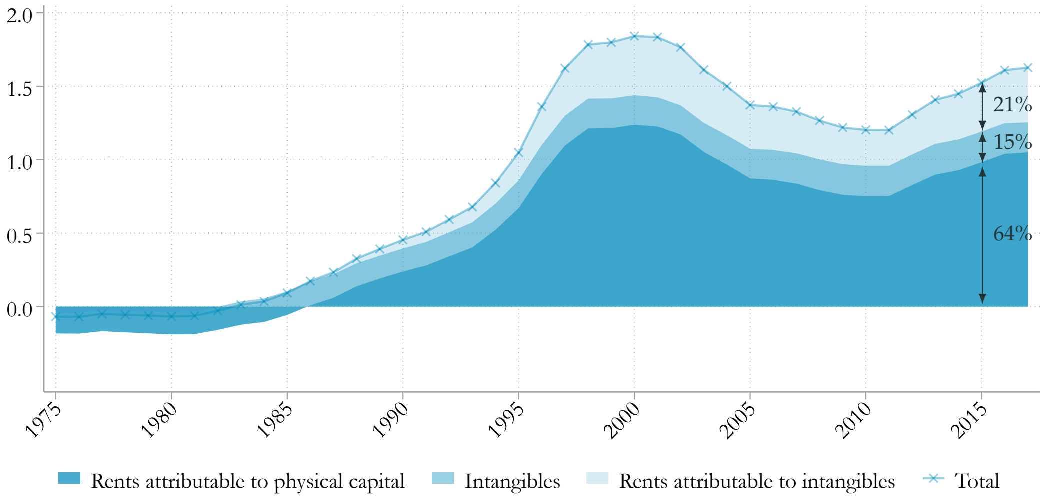
(intan = R&D)



Structural changes

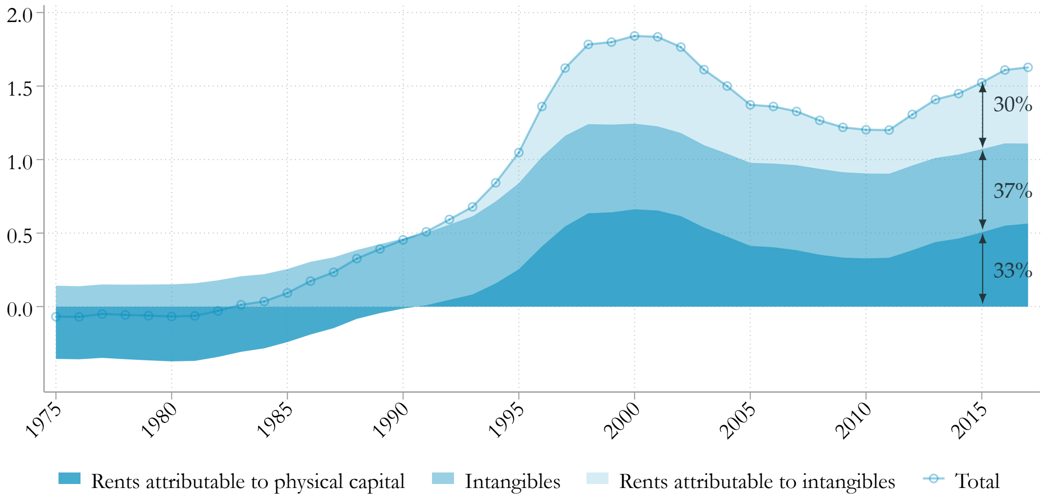
The investment gap: publicly traded firms

(intan = R&D)



Structural changes

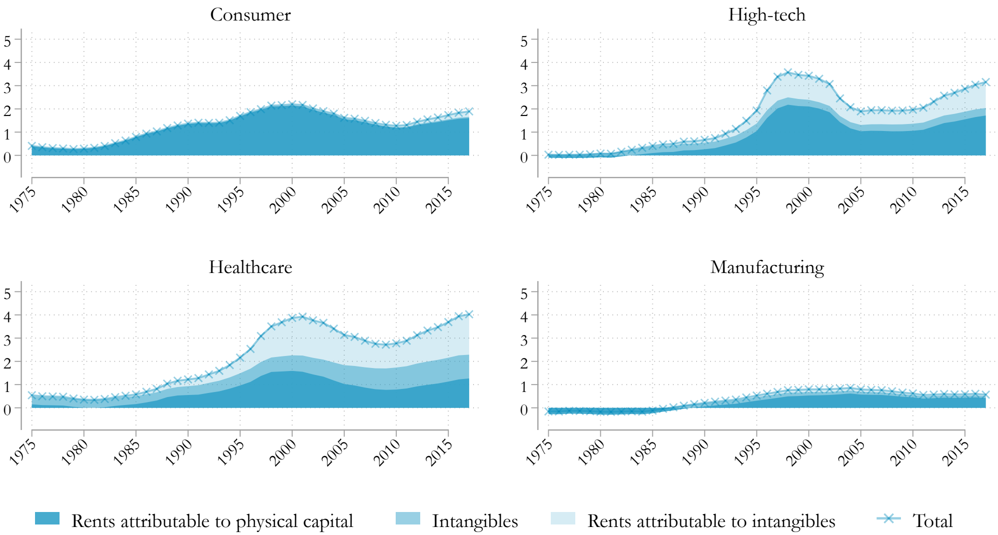
The investment gap: publicly traded firms (intan = R&D + org. cap.)



Structural changes

The investment gap across sectors

(intan = R&D)



Rents vs. intangibles by sector
Consumer sector

Key take-aways

Key take-aways

1. General decomposition of the investment gap:

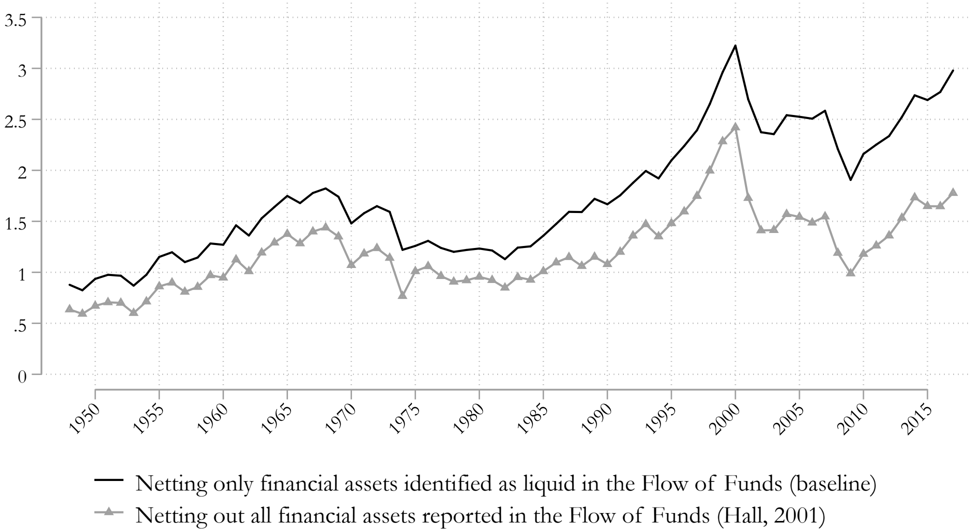
$$\begin{aligned} Q_1 - q_1 &= \text{Rents} \to \text{physical capital} \\ &+ \text{Omitted capital effect} \\ &+ (\textbf{Rents} \to \textbf{intangibles}) \times (\textbf{Omitted capital effect}) \end{aligned}$$

2. Aggregate: intan is $1/3$ to $2/3$ of the gap; $\Delta s = 0.07$ instead of 0.12

3. Sectoral: heterogeneous trends; intan is $> 2/3$ of the gap in Health, Tech

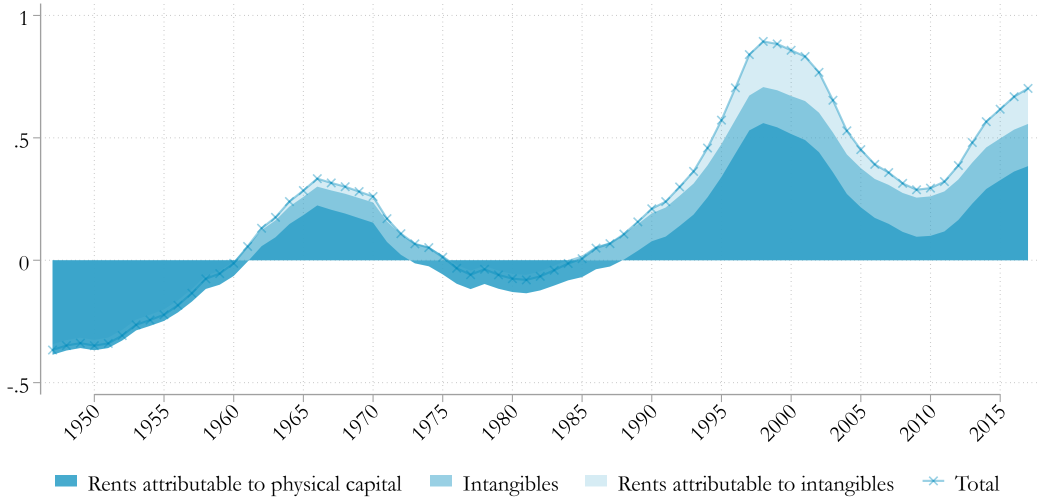
Additional slides

Alternative measures of Q



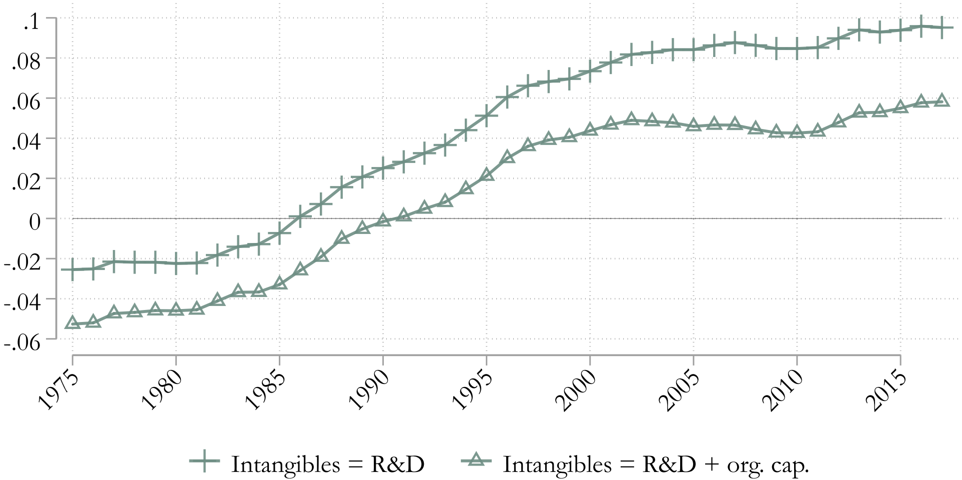
Robustness

The investment gap with the alternative Q measure (Hall, 2001)



Robustness

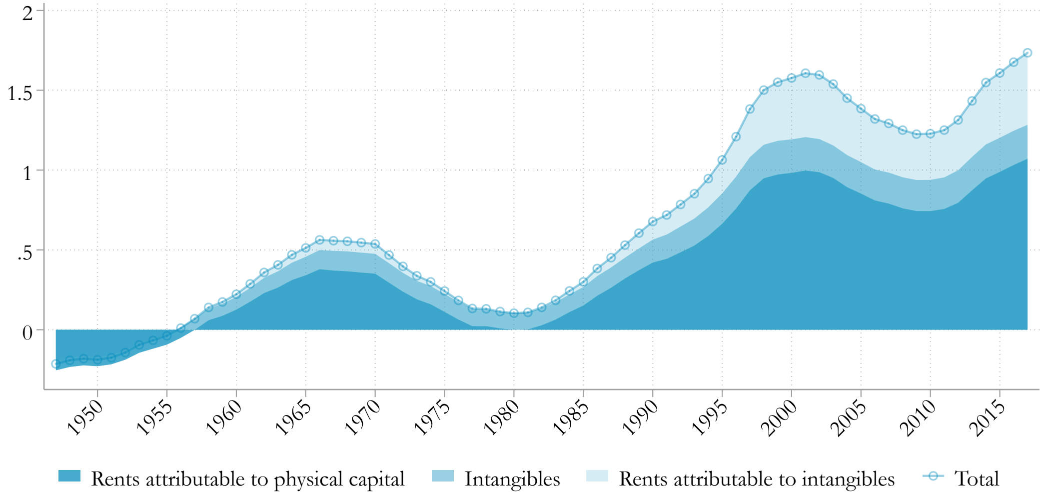
Implied rents with expanded measures of intangibles



Robustness

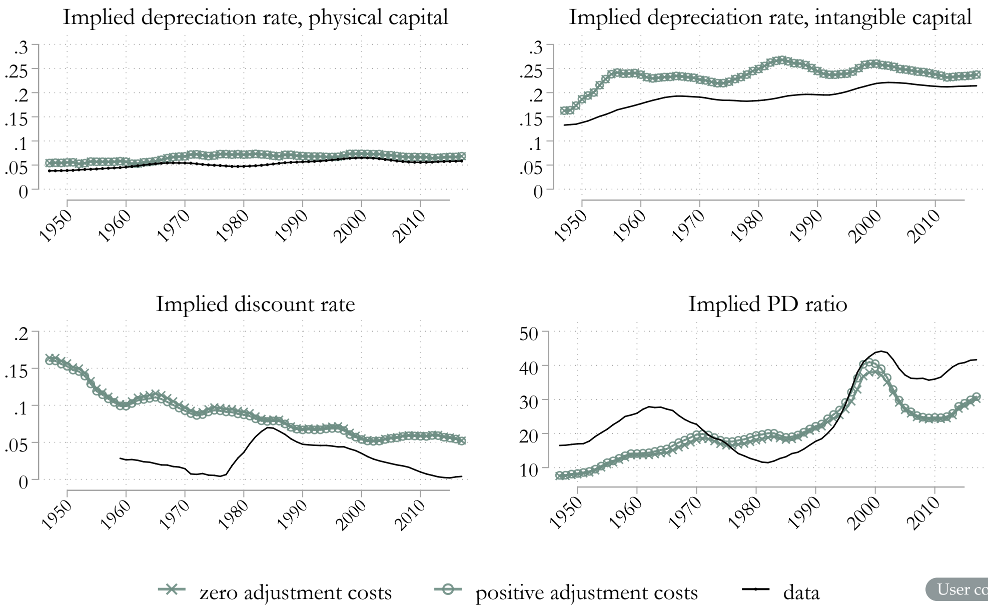
The investment gap in the non-financial sector

(adj. costs $>$ 0)



$\gamma_1 = 3, \quad \gamma_2 = 12$ (Belo et al., 2019)

Back


Implied depreciation rate, physical capital
.3
.25
.2
.15
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1950
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1990
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2010
Implied depreciation rate, intangible capital
.3
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.1
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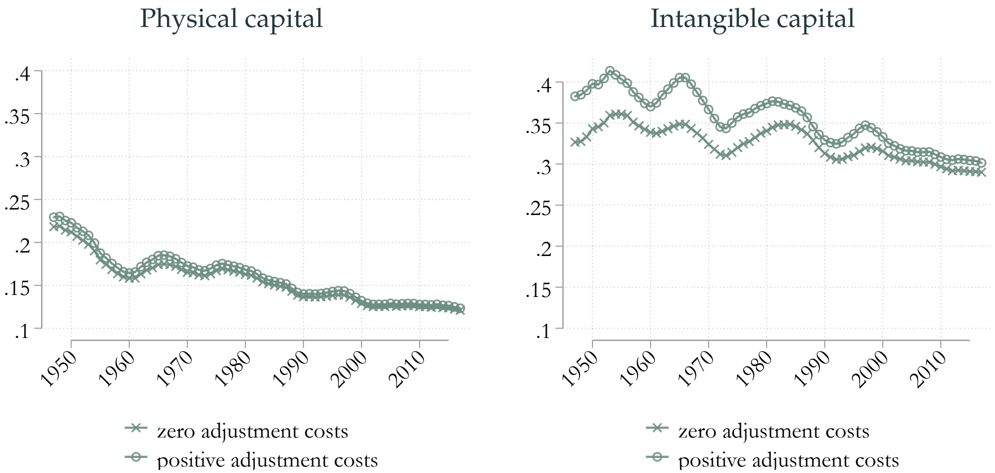
2010
Implied discount rate
.2
.15
.1
.05
0
1950
1960
1970
1980
1990
2000
2010
Implied PD ratio
50
40
30
20
10
1950
1960
1970
1980
1990
2000
2010
zero adjustment costs
positive adjustment costs
data

User costs

User costs $R_n = r + \delta_n + \gamma_n r g$



Back

Related literature

1. Aggregate implications of rising rents:
    - **Gutierrez and Philippon (2017, 2018), Farhi and Gourio (2018), Barkai (2019), Karabarbounis and Neiman (2019)**, Autor et al. (2019), Caballero, Farhi, and Gourinchas (2017), Caballero and Farhi (2018), Eggertsson, Robbins and Wold (2018), Hall (2018), De Loecker and Eeckhout (2019), Basu (2019)

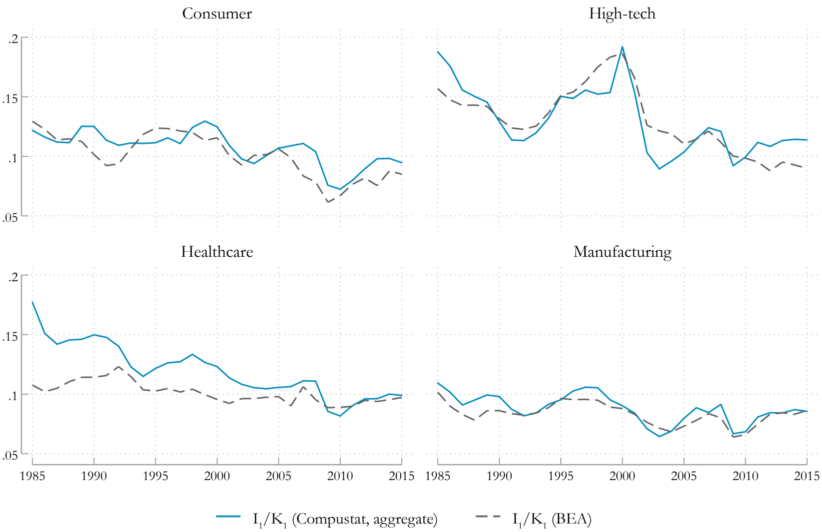
   This paper : investment-Q; new approach for estimating of rents; sectoral heterogeneity

2. Q theory and firm value:
    - Lindenberg and Ross (1981), Hayashi and Inoue (1991), Chirinko (1993), Abel and Eberly (1994), Cooper and Ejarque (2003), Hansen, Heanton and Li (2005), Abel and Eberly (2011), Eisfeldt and Papanikolaou (2013), Ai, Croce and Li (2013), **Hall (2001), Prescott and McGrattan (2010), Peters and Taylor (2017), Andrei, Mann, Moyen (2019), Belo, Gala, Salomao, Vitorino (2019)**

   This paper : general decomposition of $Q - q$, including market power

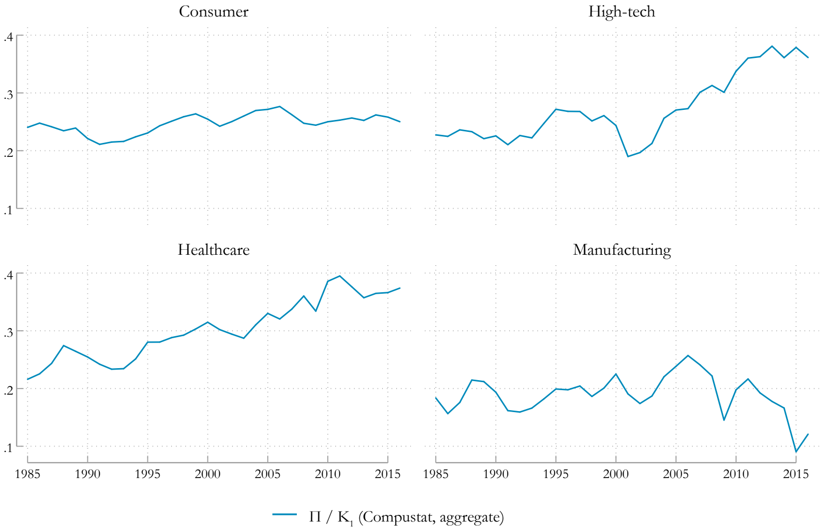
Back

PPE investment is weak: sectoral data



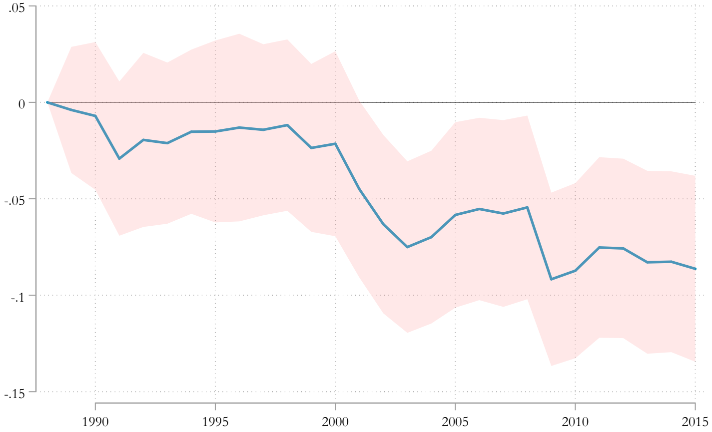
Aggregate data

PPE investment is weak despite high returns: sectoral data



Aggregate data

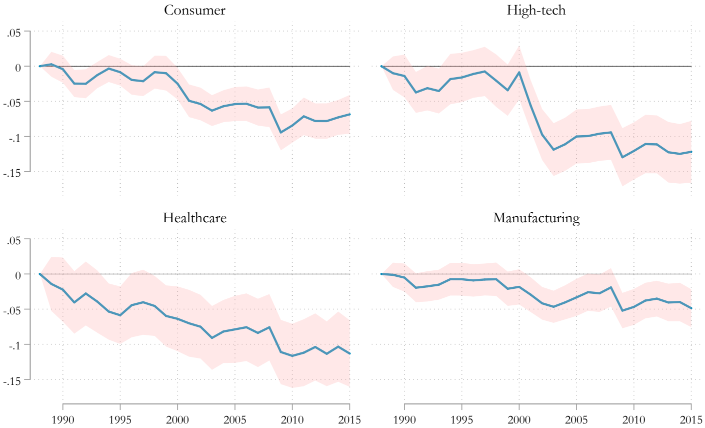
Investment is weak relative to Q



$$i_{j,t} = \alpha_j + \gamma_{\mathbf{t}} + \delta Q_{j,t} + \beta CF_{j,t} + \epsilon_{j,t}$$

Back to returns
Sectoral data

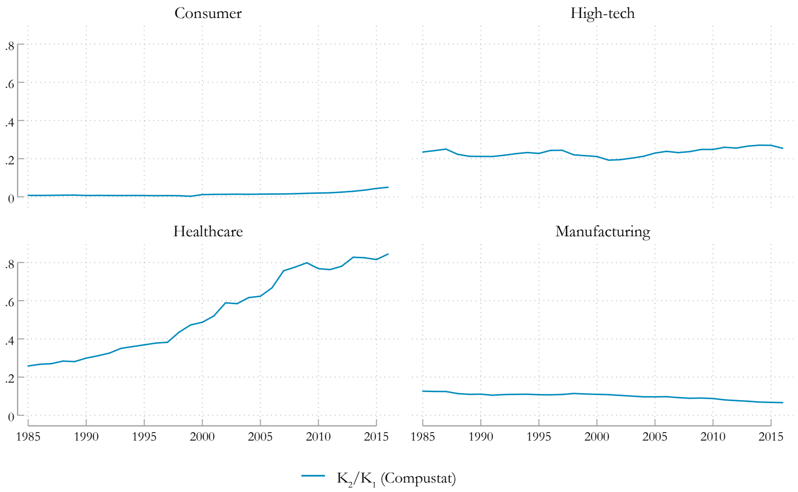
Investment is weak relative to Q: sectoral data



$$i_{j,t} = \alpha_j + \gamma_{\mathbf{t}} + \delta Q_{j,t} + \beta CF_{j,t} + \epsilon_{j,t}$$

Back to returns

The growing importance of intangibles: sectoral data



K_1 = PPE and K_2 = R&D capital.

Aggregate data

How general is this model?

- No restrictions on exogenous shifters to Π_t, F_t, and $\Phi_{n,t}$
- Particular cases of this framework:

  Lindenberg and Ross (1981), Hayashi (1982), Abel (1983), Abel and Blanchard (1986), Hayashi and Inoue (1991), Abel and Eberly (1994, case I), Abel and Eberly (2011), Peters and Taylor (2017), ...

- What about labor?

  The model can accommodate any flexible input: $\mu = \dfrac{\tilde{\mu} - \alpha}{1 - \alpha}$

- Which cases does this model **not** fit?
  - Non-homogeneous and/or non-smooth adjustment costs
  - Endogenous markups
  - Financial frictions

Model

The investment gap in the general case

The first-order condition for investment is:

$$g_{n,t+1} = \Psi_{n,t}\left(q_{n,t} - 1\right)$$

where:

$$\Psi_{n,t}(y) = \left(\Phi'_{n,t}\right)^{-1}(1+y) - 1.$$

Since $\Phi_{n,t}$ is convex, $\Psi_{n,t}$ is strictly increasing. Therefore:

$$\begin{aligned} g_{n,t+1} &= \Psi_{n,t}\left(q_{n,t} - 1\right) \\ &= \Psi_{n,t}\left(Q_{n,t} - 1 - G_{n,t}\right) \\ &< \Psi_{n,t}\left(Q_{n,t} - 1\right) \qquad \text{iff} \qquad G_{n,t} > 0 \end{aligned}$$

Investment gap

Total Q

Define the total investment rate as: $i_t^{(tot)} = \frac{\sum_{n=1}^N I_{n,t}}{\sum_{n=1}^N K_{n,t}} = \sum_{n=1}^N w_{n,t} i_{n,t}.$

In the quadratic adj. cost case:

$$i_t^{(tot)} = \tilde{\delta}_t + \sum_{n=1}^N \frac{w_{n,t}}{\gamma_n} (q_{n,t} - 1), \quad \tilde{\delta}_t = \sum_{n=1}^N w_{n,t} \delta_n.$$

Let $Q_t^{(tot)} \equiv \frac{V_t^e}{\sum_{n=1}^N K_{n,t+1}}$. Then:

$$i_t^{(tot)} = \tilde{\delta}_t + \frac{1}{\gamma} \left(Q_t^{(tot)} - 1 \right)$$

if and only if $\mu = 1$, and:

- $\gamma_n = \gamma$ for all n;
- or, $q_{n,t} = q_t$ for all n.

Stochastic growth

Suppose A_t follows the "regime-switching process":

$$\frac{A_{t+1}}{A_t} = 1 + g_t = \begin{cases} 1 + g_{t-1} & \text{w.p. } (1-\lambda) \\ 1 + \tilde{g} & \text{w.p. } \lambda \end{cases}, \qquad \tilde{g} \sim F(.).$$

Then:

$$\begin{aligned} G_{1,t} = \quad & \frac{(\mu - 1)}{r - \nu(g_t)} R_1 & & \text{(Rents} \rightarrow \text{physical capital)} \\ + \quad & S & & \text{(Ommitted capital effect)} \\ + \quad & \frac{(\mu - 1)}{r - \nu(g_t)} R_2 S & & \text{(Rents} \rightarrow \text{intangibles)} \end{aligned}$$

where: $$\frac{1}{r - \nu(g_t)} = \frac{1}{r - \mathbb{E}(\tilde{g})} \left(1 + \frac{g_t - \mathbb{E}(\tilde{g})}{1 + r} \right) \quad \text{if} \quad \lambda = 1.$$

Complete expression for $\nu(.)$ Analytical example

Stochastic growth

The expression for $\nu(.)$ is:

$$\nu(g_t) = g_t + \lambda(1+g_t)\frac{(r-g_t)\zeta^* - (1+r)}{(1+r) + \lambda(1+g_t)\zeta^*}$$

where ζ^* is a constant that only depends on $F(.)$,, λ and r.

Analytical example

A microfoundation for Example 1 (1/2)

Representative household:

$$U_t = \max \frac{C_t^{1-\sigma}}{1-\sigma} + \beta U_{t+1}, \tag{1}$$

implying $M_{t,t+1} = \beta \left(\frac{C_{t+1}}{C_t}\right)^{-\sigma}$.

Final goods producer

$$Y_t = \left(\int_0^1 Y_{j,t}^{\frac{1}{\tilde{\mu}}} dj\right)^{\tilde{\mu}}, \quad \tilde{\mu} > 1. \tag{2}$$

Intermediate goods producer: $Y_{j,t} = Z_{j,t} K_{j,t}^{\alpha} L_{j,t}^{1-\alpha}$, implying the profit function:

$$\begin{aligned}
\Pi_{j,t} &= A_{j,t}^{\frac{1}{\mu}-1} K_{j,t}^{\frac{1}{\mu}} \\
\mu &= 1 + \frac{\tilde{\mu}-1}{\alpha}, \\
A_{j,t} &= (\alpha + \tilde{\mu} - 1)^{1+\frac{\alpha}{\tilde{\mu}-1}} \tilde{\mu}^{-\frac{\tilde{\mu}}{\tilde{\mu}-1}} (1-\alpha)^{\frac{1-\alpha}{\tilde{\mu}-1}} D_t W_t^{-\frac{1-\alpha}{\tilde{\mu}-1}} Z_{j,t}^{\frac{1}{\tilde{\mu}-1}}, \\
D_t &\equiv P_t^{\frac{\tilde{\mu}}{\tilde{\mu}-1}} Y_t.
\end{aligned}$$

A microfoundation for Example 1 (2/2)

Rest of the solution to the problem is:

$$
\begin{aligned}
P_{j,t} &= \tilde{\mu} MC_{j,t} \\
L_{j,t} &= \left(\frac{(1-\alpha) MC_{j,t} Z_j}{W_t} \right)^{\frac{1}{\alpha}} K_{j,t} \\
MC_{j,t} &= (1-\alpha)^{-\frac{(1-\alpha)(\tilde{\mu}-1)}{\tilde{\mu}-1+\alpha}} \tilde{\mu}^{-\frac{\alpha\tilde{\mu}}{\tilde{\mu}-1+\alpha}} D_t^{\frac{\alpha(\tilde{\mu}-1)}{\alpha+\tilde{\mu}-1}} W_t^{\frac{(1-\alpha)(\tilde{\mu}-1)}{\tilde{\mu}-1+\alpha}} Z_j^{-\frac{\tilde{\mu}-1}{\tilde{\mu}-1+\alpha}} K_{j,t}^{-\frac{(\tilde{\mu}-1)\alpha}{\tilde{\mu}-1+\alpha}}.
\end{aligned}
$$

This implies:

$$
LS_{j,t} \equiv \frac{W_t L_{j,t}}{P_{j,t} Y_t} = \frac{1-\alpha}{\tilde{\mu}}.
$$

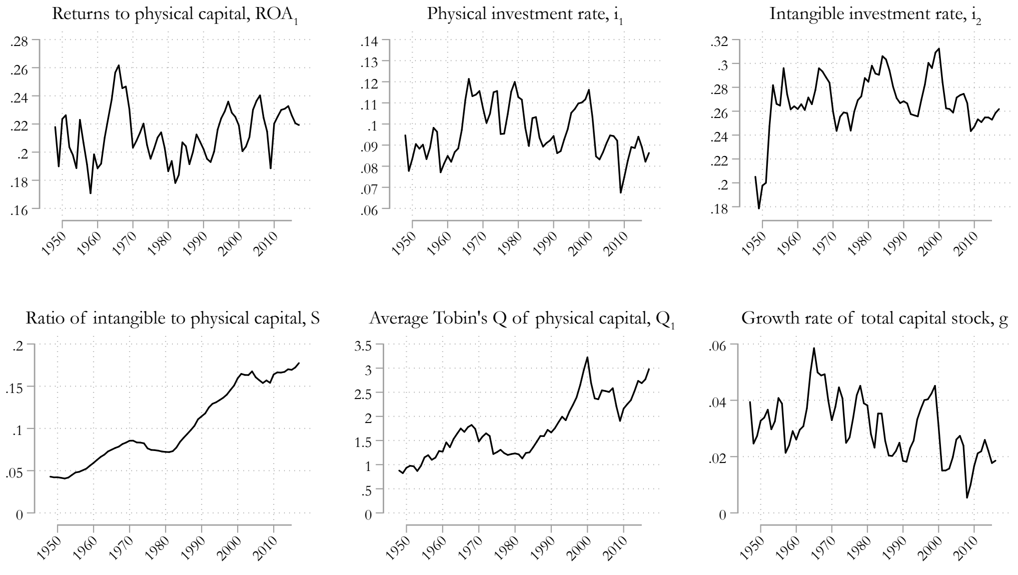
We have:

$$
\tilde{\mu} = \alpha(\mu - 1) + 1 = (1 - \tilde{\mu} LS_{j,t})(\mu - 1) + 1,
$$

and so, solving for $\tilde{\mu}$:

$$
\tilde{\mu} = \frac{\mu}{\mu LS_{j,t} + (1 - LS_{j,t})}.
$$

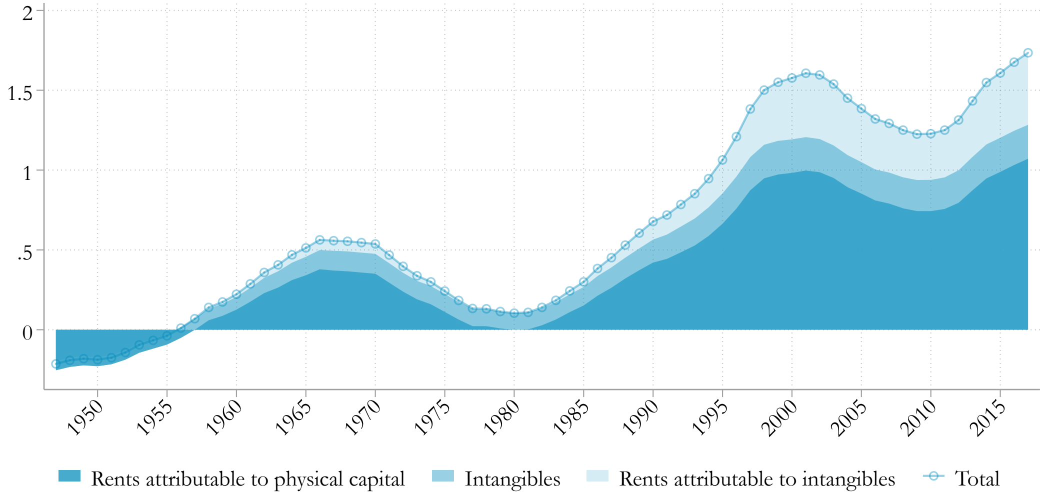
Example 1



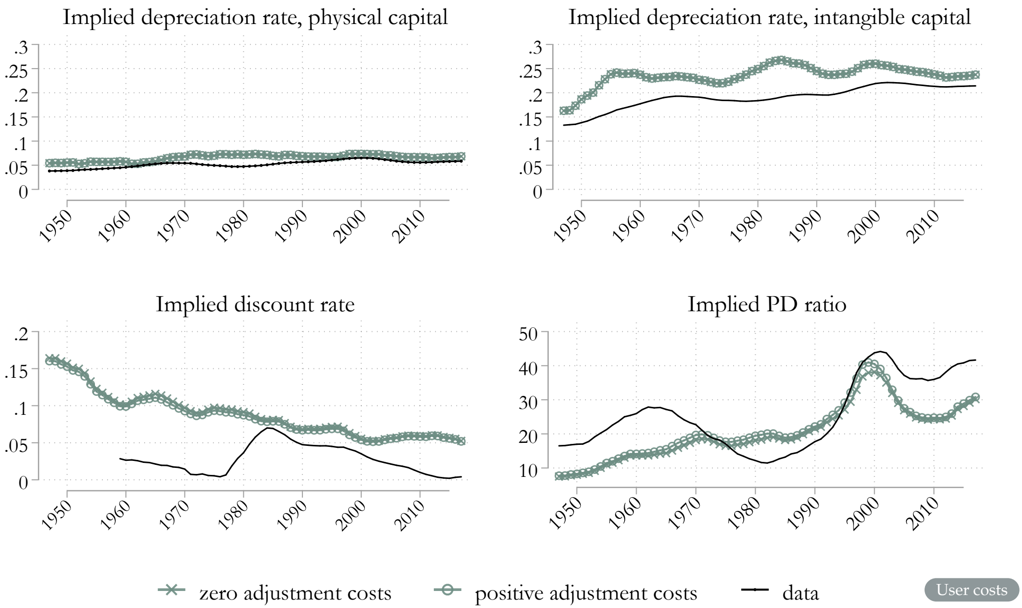
Data sources

The investment gap in the non-financial sector

(adj. costs > 0)



$\gamma_1 = 3, \quad \gamma_2 = 12$ (Belo et al., 2019)


Implied depreciation rate, physical capital
Implied depreciation rate, intangible capital
Implied discount rate
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1950
1960
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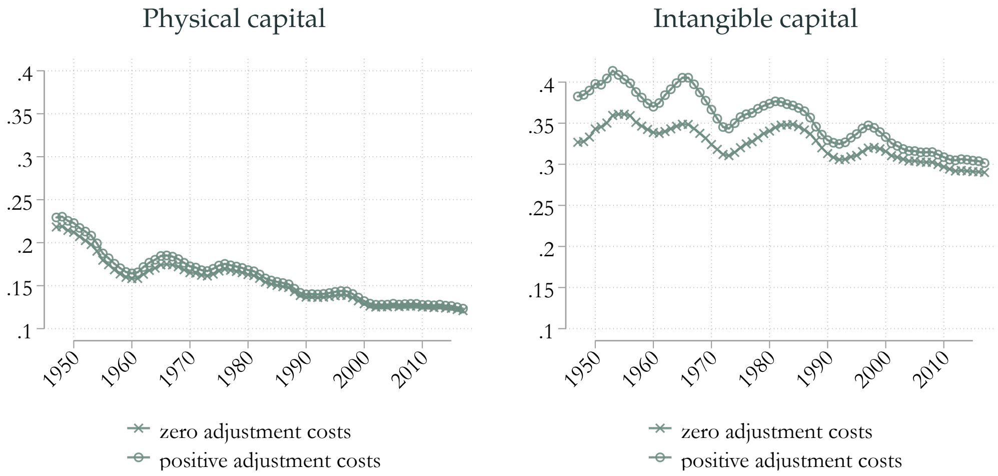
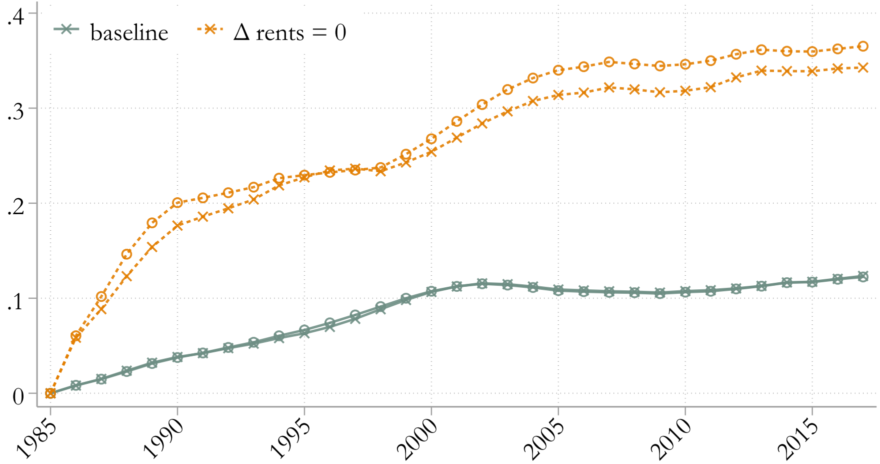
zero adjustment costs
positive adjustment costs
data
User costs

User costs $R_n = r + \delta_n + \gamma_n r g$



Back

Counterfactual: intan share η with no change in rents



$S_t^{cf} = (K_{2,t}/K_{1,t})^{cf}$: 9% → 39%, vs. 9% → 17% in the R&D data

Back

Robustness

Robustness

- Adjustment costs $\gamma_1 \in [0, 10]$ and $\gamma_2 \in [0, 20]$

Ajdustment costs

Robustness

- Adjustment costs $\gamma_1 \in [0, 10]$ and $\gamma_2 \in [0, 20]$

Ajdustment costs

$\gamma_1 = \gamma_2 = 0$: lowest contribution of intan to $Q_1 - q_1$; highest rents

Robustness

- Adjustment costs $\gamma_1 \in [0, 10]$ and $\gamma_2 \in [0, 20]$

  Ajdustment costs

  $\gamma_1 = \gamma_2 = 0$: lowest contribution of intan to $Q_1 - q_1$; highest rents

- Alternative measure of net claims on NFCB sector

  Using net NFCB claims

Robustness

- Adjustment costs $\gamma_1 \in [0, 10]$ and $\gamma_2 \in [0, 20]$

  Ajdustment costs

  $\gamma_1 = \gamma_2 = 0$: lowest contribution of intan to $Q_1 - q_1$; highest rents

- Alternative measure of net claims on NFCB sector

  Using net NFCB claims

  lower Q_1;

Robustness

- Adjustment costs $\gamma_1 \in [0, 10]$ and $\gamma_2 \in [0, 20]$

Ajdustment costs

  $\gamma_1 = \gamma_2 = 0$: lowest contribution of intan to $Q_1 - q_1$; highest rents

- Alternative measure of net claims on NFCB sector

Using net NFCB claims

  lower Q_1; lower rents; same contribution of intan to $Q_1 - q_1$

Robustness

- Adjustment costs $\gamma_1 \in [0, 10]$ and $\gamma_2 \in [0, 20]$ Ajdustment costs

  $\gamma_1 = \gamma_2 = 0$: lowest contribution of intan to $Q_1 - q_1$; highest rents

- Alternative measure of net claims on NFCB sector Using net NFCB claims

  lower Q_1; lower rents; same contribution of intan to $Q_1 - q_1$

- Match PD ratio $= (r - g)^{-1}$ instead of Q_1 Matching PD ratio

Robustness

- Adjustment costs $\gamma_1 \in [0, 10]$ and $\gamma_2 \in [0, 20]$ Ajdustment costs

  $\gamma_1 = \gamma_2 = 0$: lowest contribution of intan to $Q_1 - q_1$; highest rents

- Alternative measure of net claims on NFCB sector Using net NFCB claims

  lower Q_1; lower rents; same contribution of intan to $Q_1 - q_1$

- Match PD ratio $= (r - g)^{-1}$ instead of Q_1 Matching PD ratio

  larger investment gap, particularly 1965-1975;

Robustness

- Adjustment costs $\gamma_1 \in [0, 10]$ and $\gamma_2 \in [0, 20]$ Ajdustment costs

  $\gamma_1 = \gamma_2 = 0$: lowest contribution of intan to $Q_1 - q_1$; highest rents

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- Implications for the labor share Labor share

Robustness

- Adjustment costs $\gamma_1 \in [0, 10]$ and $\gamma_2 \in [0, 20]$ Ajdustment costs

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- Match PD ratio $= (r - g)^{-1}$ instead of Q_1 Matching PD ratio

  larger investment gap, particularly 1965-1975; same contribution of intan; higher rents

- Implications for the labor share Labor share

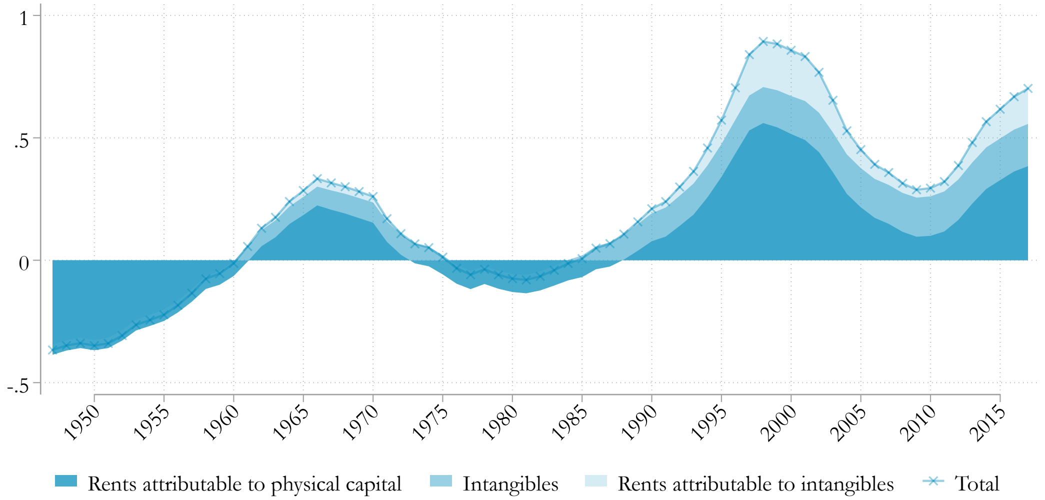
  implied labor share $0.69 \to 0.64$, but earlier than in the data

Back


1985-2015 change in Q_1-q1
2015 contribution of intangibles to Q_1-q_1
2015 intangible share
2015 rents as a fraction of value added
γ_1
γ_2
1.34
1.33
1.32
1.31
1.3
1.29
.41
.4
.39
.38
.37
.36
.35
.31
.3
.29
.28
.27
.085
.08
.075
.07
.065
.06

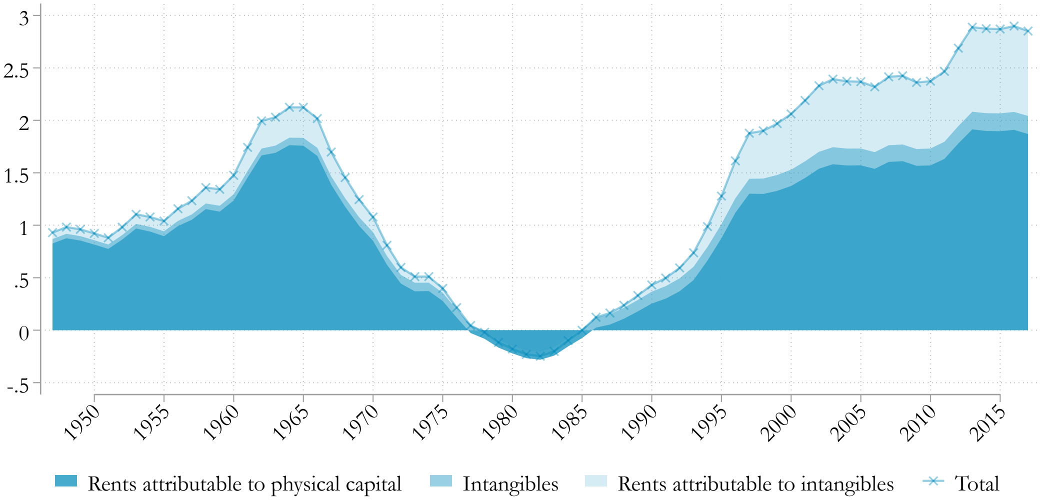
Robustness

Netting out all financial assets (Hall, 2001)



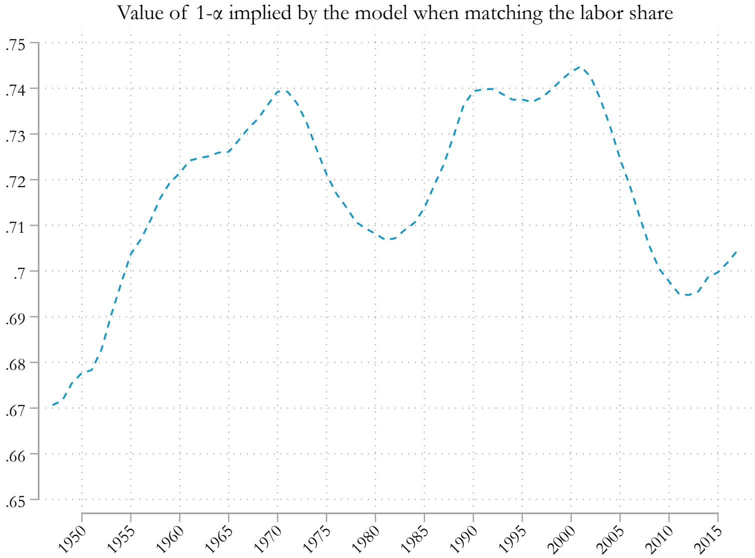
Robustness

Matching the PD ratio



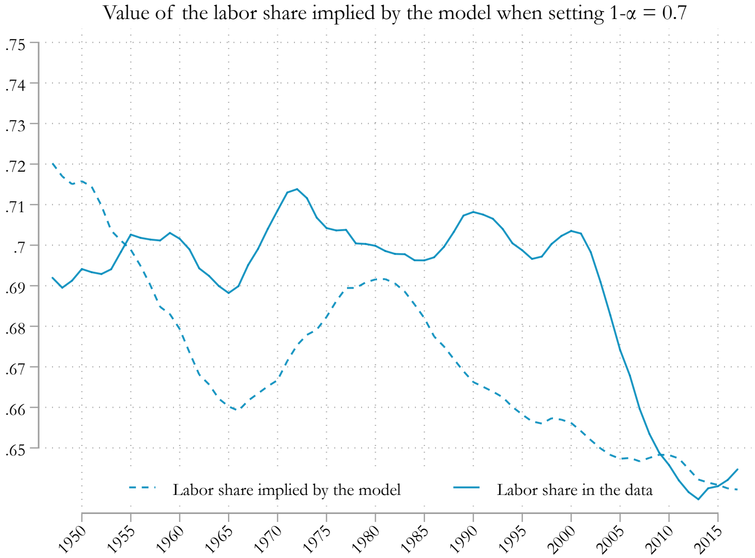
Robustness

Implications for the labor share (1/2)

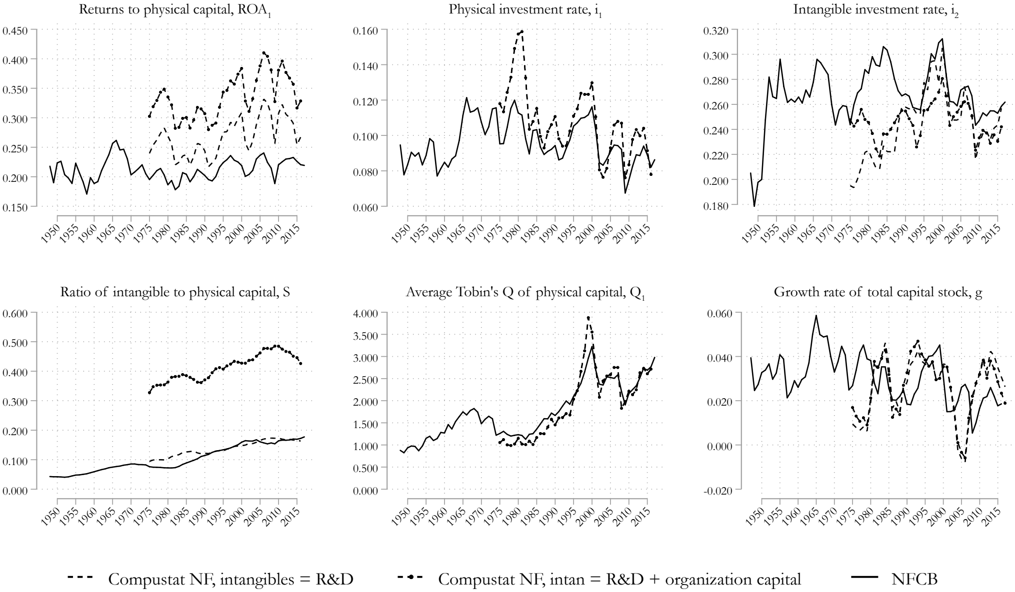


Robustness

Implications for the labor share (2/2)

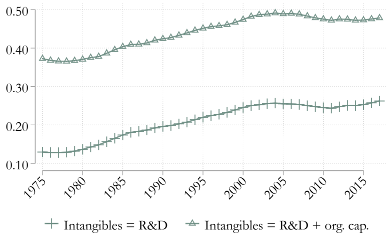


Robustness

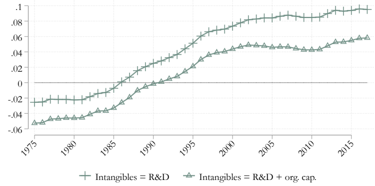


Data sources

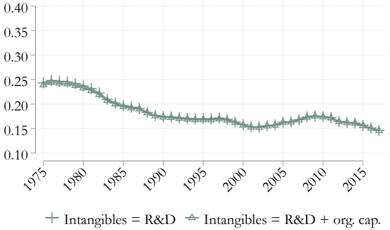
Intangible share



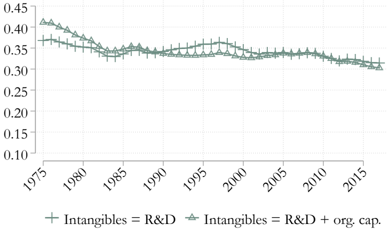
Rents as a fraction of value added



User cost of physical capital

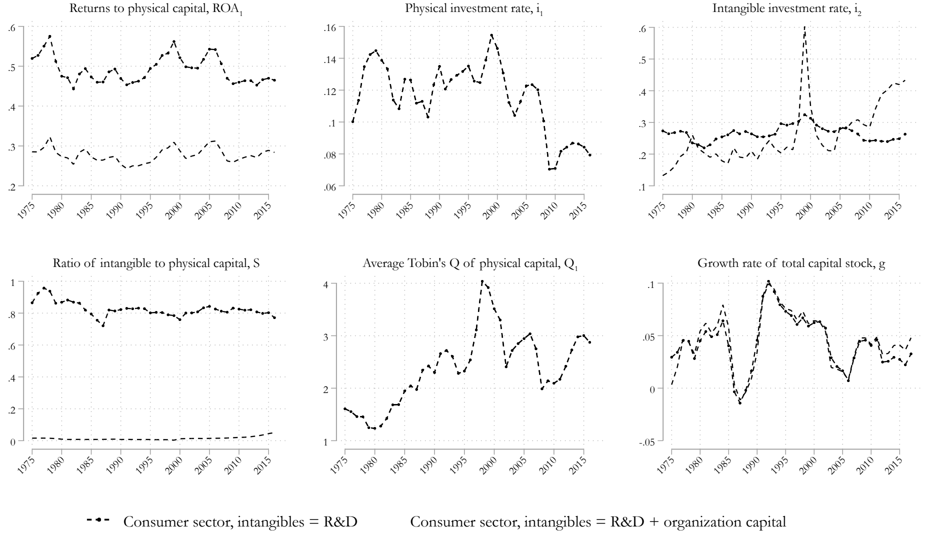


User cost of intangible capital

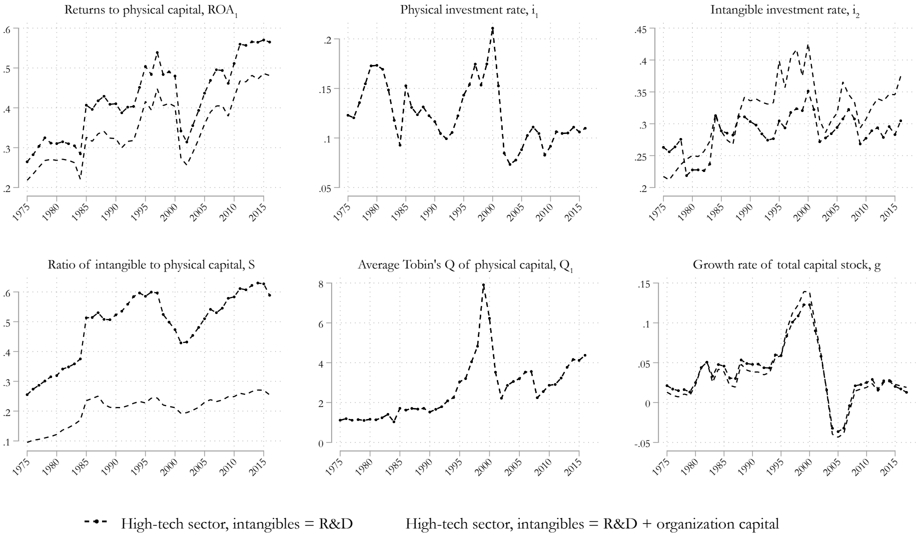


Investment gap in Compustat

Consumer sector

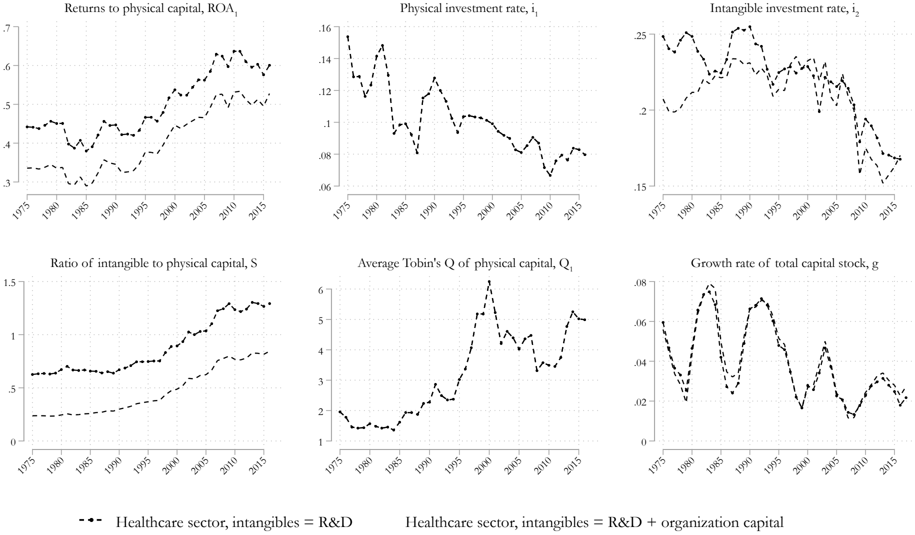


High-tech sector



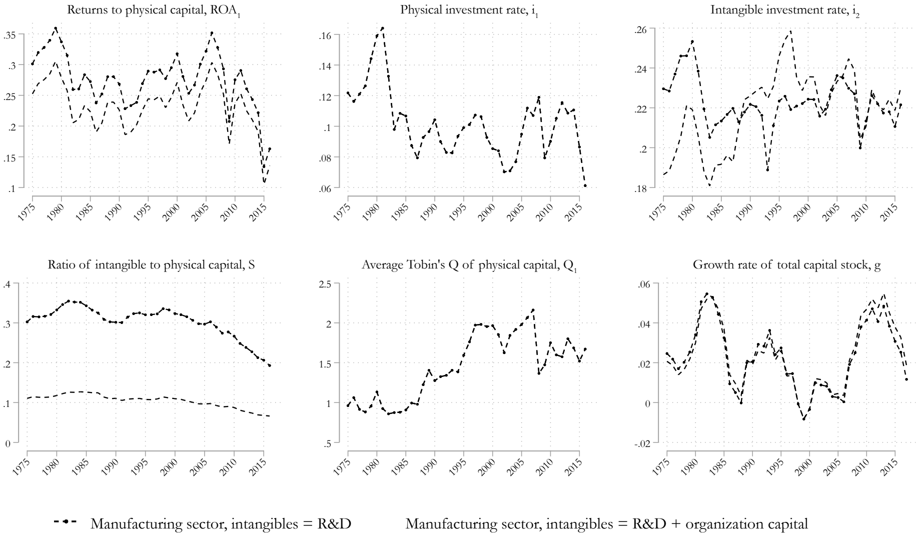
Sectoral heterogeneity

Healthcare sector



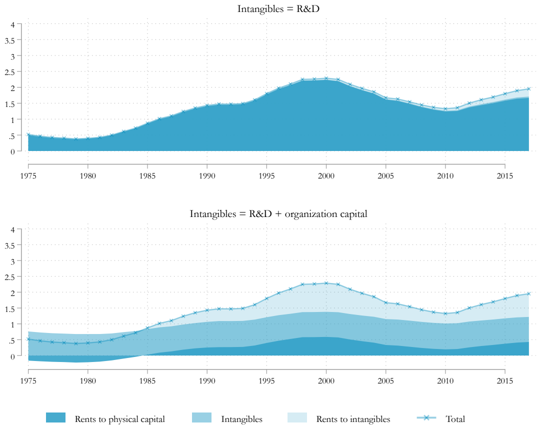
Sectoral heterogeneity

Manufacturing sector



Sectoral heterogeneity

The consumer sector: intangibles or rents?



- organization capital: no discernible ***trend***, but high ***level***
- still, including organization capital $\Longrightarrow$ smaller markup trend after 1985

Sectoral trends

Rents vs. intangibles by sector

	Consumer	High-tech	Healthcare	Manufacturing
Intan share (η; 2015)	0.11	0.39	0.57	0.12
Rents/v.a. (s; 2015)	0.14	0.13	0.12	0.02

- Intangibles = R&D

Rents vs. intangibles by sector

	Consumer	High-tech	Healthcare	Manufacturing
Intan share (η; 2015)	0.63	0.56	0.69	0.30
Rents/v.a. (s; 2015)	0.03	0.09	0.07	0.02

- Intangibles = R&D + org. cap.

Sectoral trends