

# **Discussion of Kiyotaki and Zhang's "Intangibles, Inequality and Stagnation"**

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  - ▶ Financial frictions → Misallocation of talents → Lower intangible capital accumulation & higher inequality.

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  - ▶ Financial frictions and misallocation of capital
  - ▶ Intangible capital accumulation
  - ▶ Wealth and occupational choices
- ▶ Main message.
  - ▶ Financial frictions → Misallocation of talents → Lower intangible capital accumulation & higher inequality.
- ▶ This discussion:
  1. Review the main mechanism.
  2. Empirical evidence
  3. Testable predictions, and other comments.

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- ▶ inputs in the production of  $k'$  : managerial skill  $k$ , trainee talent  $\kappa$ , training cost  $i$  (endogenous).
- ▶ Manager chooses  $n^n, n^m$  and the career package to maximise profits:

$$Ak^\alpha(n^n + n^m)^{1-\alpha} - wn^n - w^m n^m - \text{training cost}$$

- ▶ such that participation constraint of trainees is satisfied:

$$V(\text{trainee}) \geq V(\text{simple worker})$$

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  - ▶ More skilled managers attract less talented but rich workers.
  - ▶ Poor very talented workers still get trained, but by less talented managers, and less intensively.
- ▶ After a negative financial shock: more misallocation of talents; lower accumulation of human capital; lower output and productivity; more inequality.

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TABLE I  
BUSINESS INVESTMENT IN INTANGIBLES (BILLIONS OF DOLLARS, ANNUAL AVERAGE FOR PERIOD SHOWN)

	1950–59 (1)	1960–69 (2)	1970–79 (3)	1980–89 (4)	1990–99 (5)	2000–03 (6)
1. Total CHS intangibles	19.4	41.9	103.4	349.3	749.8	1,226.2
2. Computerized information (mainly computer software)	—	0.8	4.5	23.2	85.3	172.5
3. Innovative property						
(a) Scientific R&D	7.7	16.9	34.0	104.6	157.7	230.5
(b) Non-scientific R&D	0.5	1.7	10.9	58.4	145.2	237.2
4. Economic competencies						
(a) Brand equity	5.3	9.5	18.2	54.4	105.7	160.8
(b) Firm-specific resources	5.9	13.0	35.7	108.7	255.9	425.1
<i>Related series<sup>1</sup></i>						
5. Computer software, NIPAs	—	0.7	4.5	22.7	83.6	169.6
6. Industrial R&D, NSF <sup>2</sup>	5.2	14.1	25.3	75.8	136.9	196.0
7. Advertising, Coen report	8.6	15.0	30.6	89.6	165.0	240.3
8. Business fixed investment, NIPAs	38.2	71.5	188.4	485.7	807.1	1,141.9
8a. Tangibles	35.6	67.3	171.4	421.1	676.5	893.4
8b. Intangibles <sup>3</sup>	2.5	4.2	17.0	64.6	130.7	248.5
<i>Memo:</i>						
9. CHS intangibles, ratio to NIPA tangibles	0.54	0.62	0.60	0.82	1.10	1.36

### 3) The nature of the financial friction

Testable predictions? What is the nature of the financial friction?  
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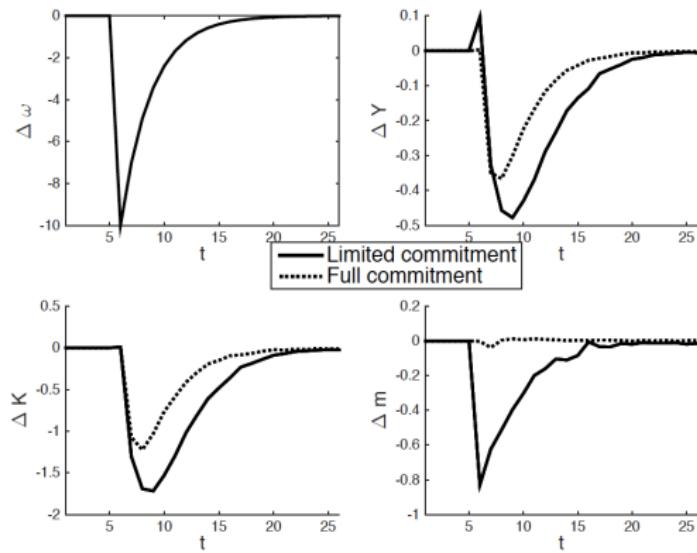
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Firm specific human capital investment is a long term project, is less valuable for financially constrained firms (because they discount more heavily future cash flows).
- ▶ → After a financial shock, misallocation of human capital **more severe** in industries with **more** firm specific human capital.
- ▶ So it is important to define the nature of the friction.

## Other comments:

1. Wealth shock has a negative effect also in the competitive equilibrium without financial constraints:

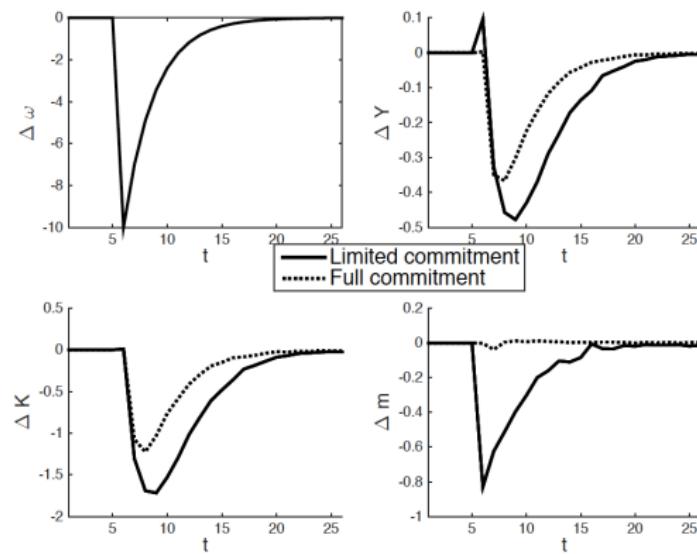
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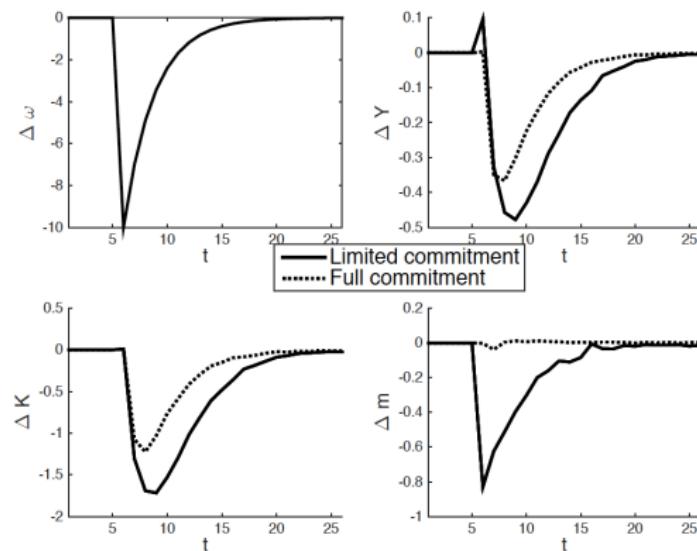
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I think that young agents have to borrow more,  $R$  increases and this reduce net present value of investing in managerial intangible capital. Consider a model where a deleveraging shock reduces  $R$ : opposite effects on constrained and unconstrained equilibria?

## Other comments (2):

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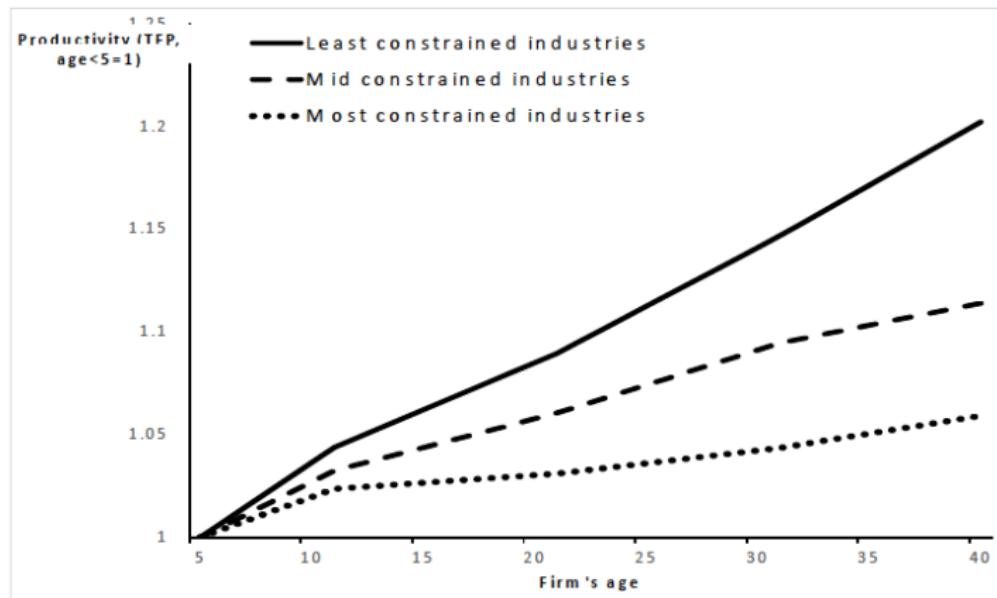
2. Income inequality or wealth inequality?
3. Steady state results? Endogenous endowment and poverty traps?
4. How much persistence? What happens with a one time shock and endogenous endowments?

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Productivity growth over the firms life cycle, from Caggese (2016).