Finance and Innovation

(based on M. Fransman, *The New ICT Ecosystem*, 2008.)

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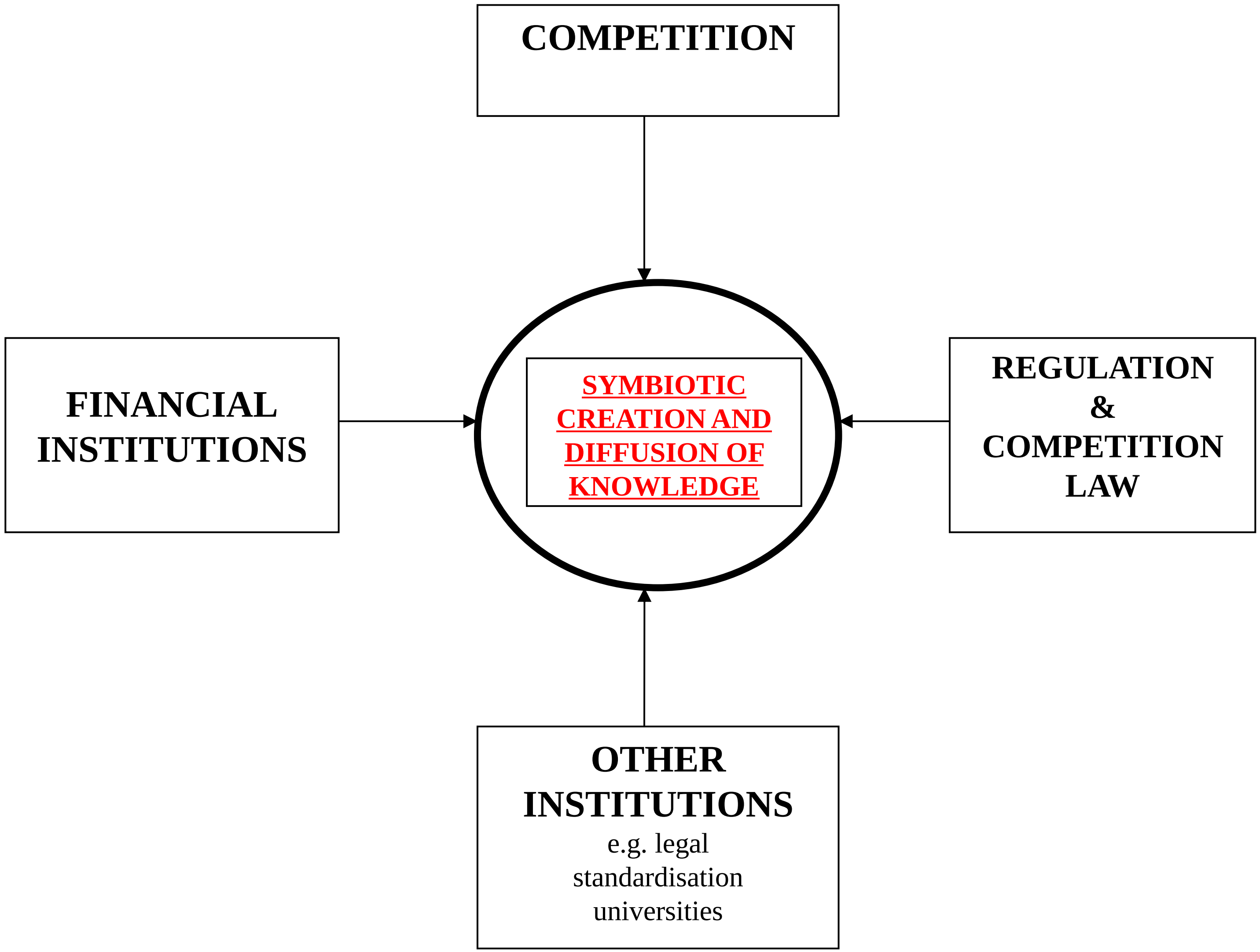
Institutions Shaping Innovation



Some Questions

- How does finance affect innovation?

a. Does venture capital stimulate innovation? (i.e. **VC-first Hypothesis),** or

b. Do innovations induce venture capital investments? (i.e. **Innovation-first Hypothesis**)

- What impact is the financial crisis having on VC funding?

- How may Schumpeter complement Keynes in dealing with the financial crisis?

The Information Problem in Financing Innovation

How and at what cost does the provider of funds get the information necessary to assess the returns and risks involved in funding the innovator (involving issues such as the uses to which the funds will be put and the returns that will be generated from these uses)?

Asymmetric information, uncertainty, and the possibility of opportunism complicate the problem.

The Information Problem in Financing Innovation

"I call my invention 'The Wheel', but so far I've been unable to attract any venture capital."

Solutions to the Information Problem

- The <u>informational advantages of the angel investor</u>;

  <u>but</u> the constraints on the supply of angel investors (c.f. Silicon Valley).

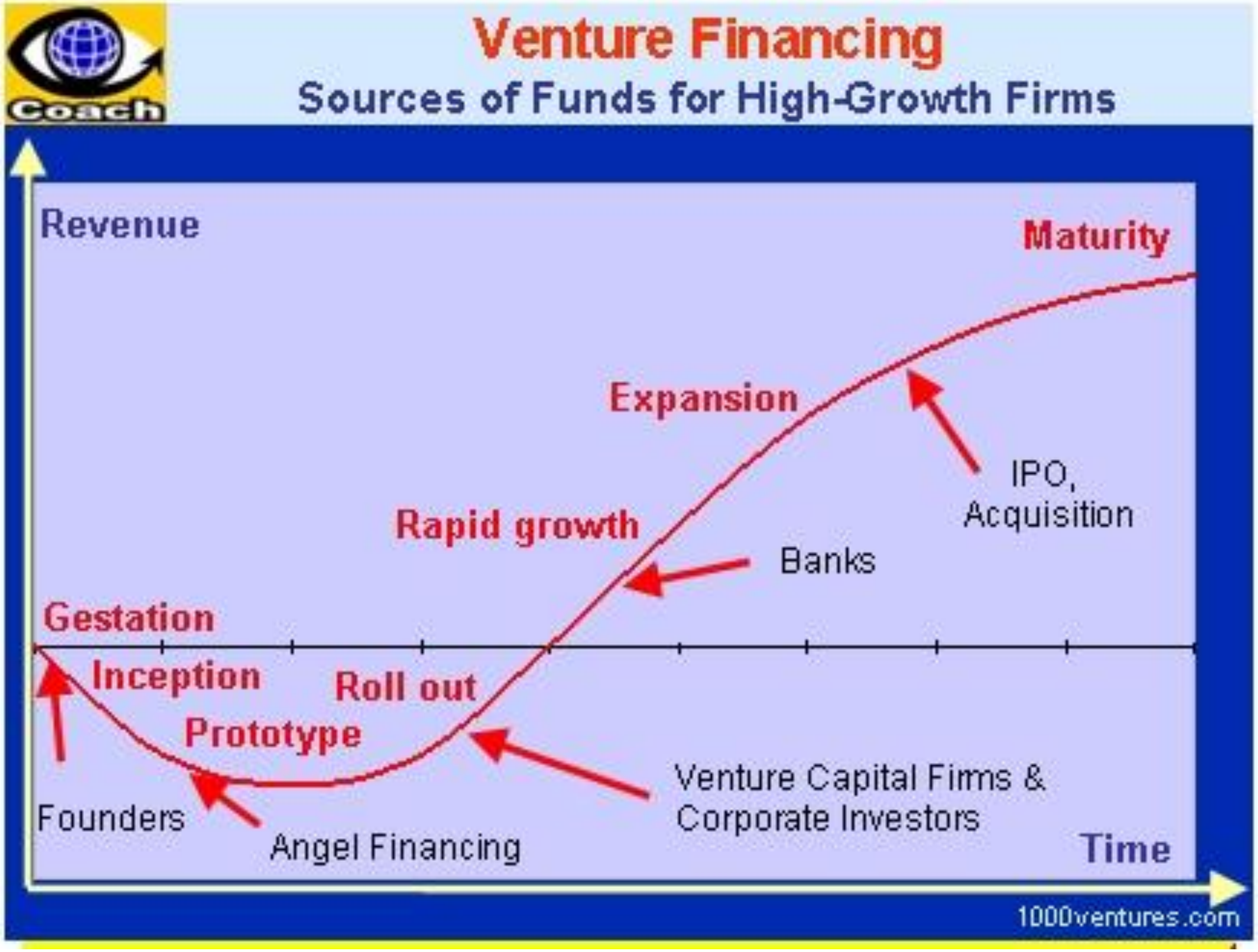
- Japanese <u>*keirets*</u>u and Korean <u>*chaebol*</u> – <u>intra-group capital markets</u>;

  <u>but</u> possible inefficient allocation of capital.

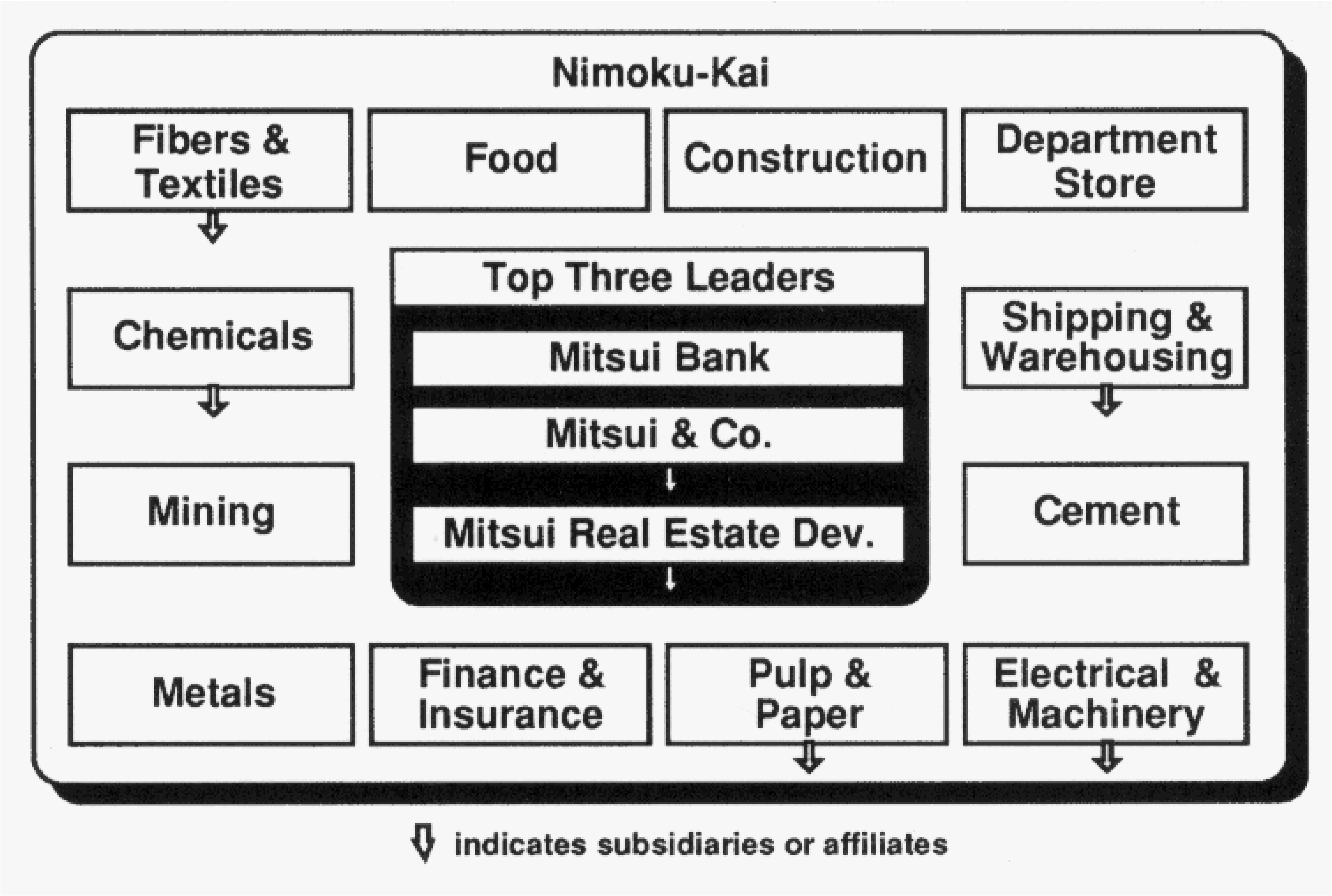
- The <u>role of government</u> in dealing with information imperfections;

  <u>but</u> govt allocation may be too permissive.

Different sources for different stages



Japanese Keiretsu: Mitsui



But does venture capital <u>cause</u> or merely <u>facilitate</u> innovation?

Necessary to <u>distinguish between</u>:

- <u>Hypothesis 1</u>: Venture capital investments stimulate innovation (i.e. **<u>VC-first Hypothesis</u>**)
- <u>Hypothesis 2</u>: Innovations induce venture capital investments (i.e. **<u>Innovation-first Hypothesis</u>**)
- "We find little evidence that supports the VC-first hypothesis" (Ueda and Hirukawa, September, 2008). They <u>support the Innovation-first Hypothesis</u>.
- However, Samuel Kortum and Josh Lerner (2000) find "the amount of <u>venture capital activity in an industry significantly increases its rate of patenting</u>". (Patenting can be an attractor and performance indicator for VC funding.)

The Financial Crisis and the Supply of Venture Capital

Based on my informal investigations for this talk:

- The supply of VC has been negatively affected by the credit crunch.
- Some VCs are preferring to concentrate available resources on existing investment rather than launching new ones.
- Macroeconomic uncertainty has added to firm-level uncertainty in making VCs more cautious about investing.
- However, innovation, by creating exciting new opportunities, may incentivise VC investment.

The Contribution of Schumpeter

- Writing slightly before Keynes in 1933 (in *The Theory of Economic Development*), Schumpeter's main aim was to understand the processes of capitalist long term economic development.

- Schumpeter emphasised the importance of innovation: new products, processes and technology, forms of organisation, markets.

- Innovation incentivises investment and consumption by creating enthusiastic expectations for new products, processes and markets. (However, innovation may also lead to financial bubbles.)

- Keynes' was a theory of the short-term focusing on aggregate demand (neither 'innovation' nor 'technical change' appear in his index). (This was understandable since the immediate problem of the depression was to re-unite workers with their efficient means of production.)

- However, Keynes and Schumpeter are complementary, coming together in the problem of stimulating investment and entrepreneurship, at least in part through innovation.

Conclusions

- A reliable supply of reasonably-priced finance is important for entrepreneurial activity and innovation.

- Information problems must be overcome to ensure this supply.

- But innovation also drives financial market activity, sometimes through booms and busts.

- However, innovation, by incentivising investment and consumption, may help recovery from the bust.

- Finance and Innovation are necessary, if not always happy, fellow-travellers.