

# Intangible Capital, the Achilles Heel of Accounting and Macroeconomics

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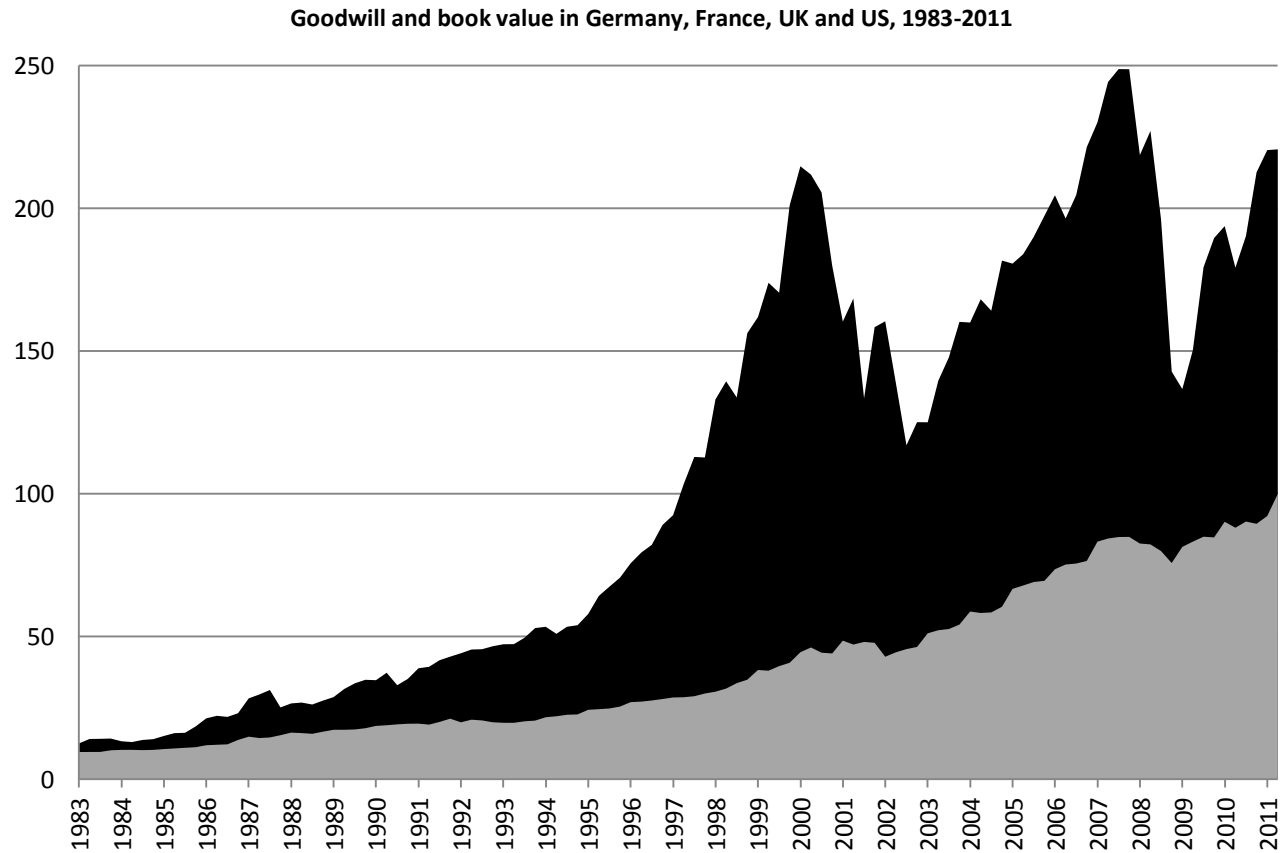
# What is Goodwill?

A gap...



...that in perfect competition, with complete information, should *not* exist.

# But Goodwill exists, and is growing...



...why?

# Goodwill = intangible assets

...which could be:

## **A. New and important non-physical factors of production (OECD)**

*[if profitability reflects productivity]*

## **B. New sources of pricing power**

*[if profitability reflects value-capture, not value-added]*

# Accounting must...

... find way to “measure” intangibles as “A” (factors of production), i.e. make assets appear prior to profit.

If intangible asset values are presented as “contracts on future profits” then 2 core pillars of Neoliberal ideology undermined:

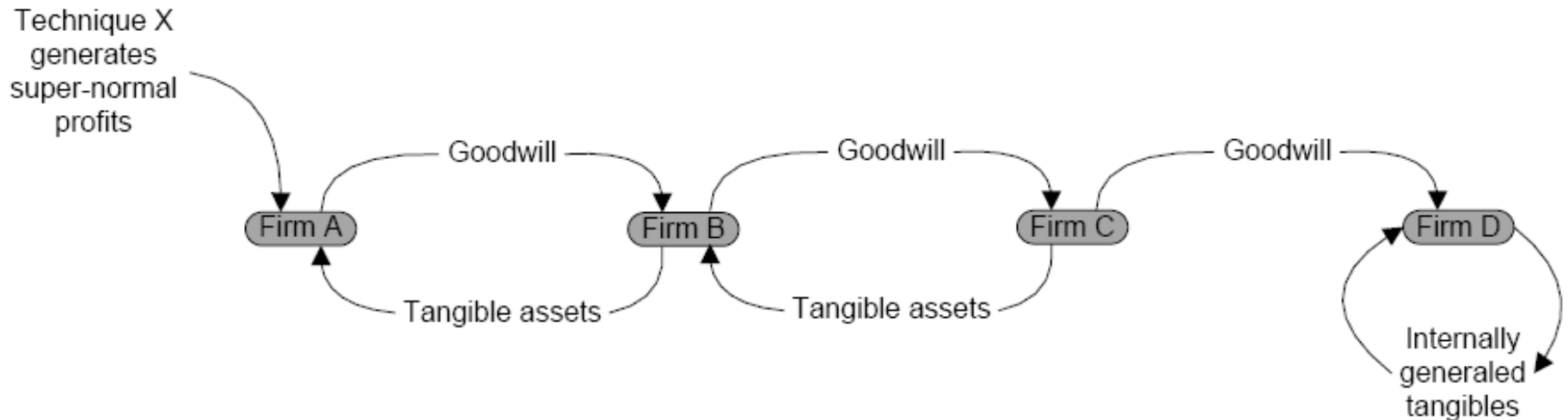
Competition theory = basis of regulation

Marginal productivity theory = basis of deregulation

$$\begin{array}{|c|} \hline \begin{array}{ccc} \text{Market} & & \text{Book} \\ \text{Value} & - & \text{Value} \\ & & (\text{Goodwill}) \end{array} \\ \hline \end{array} \approx \begin{array}{|c|} \hline \begin{array}{c} \text{Intangible} \\ \text{Capital} \end{array} \\ \hline \end{array} = \begin{array}{|c|} \hline \begin{array}{c} \text{Human Capital} \\ + \\ \text{Structural Capital} \\ + \\ \text{Relational Capital} \end{array} \\ \hline \end{array}$$

# *“Manufacturing Capitalism”*

## *Routine Conversion: Goodwill → Tangible Assets*



*Conditions for tangible assets to keep up with profits:*

- 1. Tangible assets (with observable historical costs) employed at start of value chain*
- 2. Bargaining power correlated with production of tangibles*

# Contemporary finance: capture of profit by innovation, leverage and leonine contracts.

## Figure 4 - Two indexes of the capture of profit and wealth by finance

- A - Profits appropriated by the financial sectors / GDP (1948-2007)



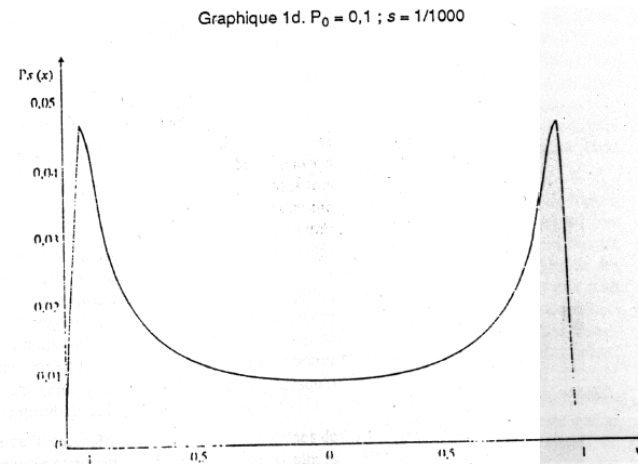
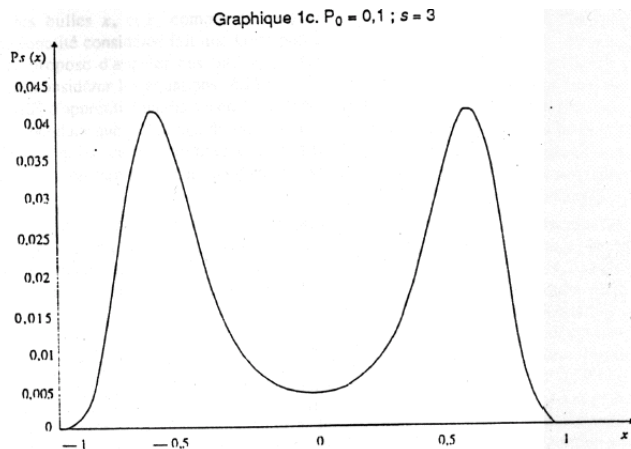
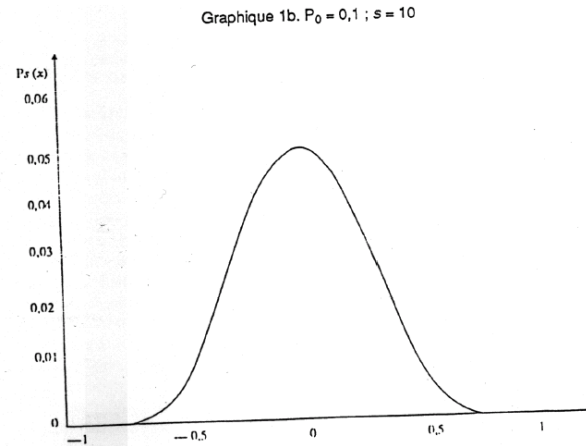
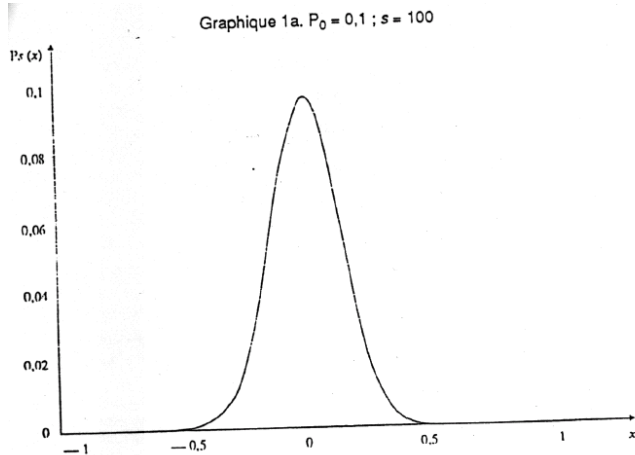
- B - Total financial assets / GDP (1948-2007)



Source : CROTTY James and Gerald EPSTEIN (2008), “The costs and contradictions of the lender-of-last resort function in contemporary capitalism: the sub-prime crisis of 2007-2008”, WP Political Economy Research Institute (PERI) University of Massachusetts, Amherst, May 2-3.



# INABILITY TO MEASURE INTANGIBLE CAPITAL → FINANCIAL VOLATILITY → FINANCIAL CRISIS MORE FREQUENT AND SEVERE



• *Source: André Orléan (1990)*

# ***C3 - A rather **fuzzy** concept: from a laundry list to a pure tautology.***

Table 1. Intangible Capital Asset Types

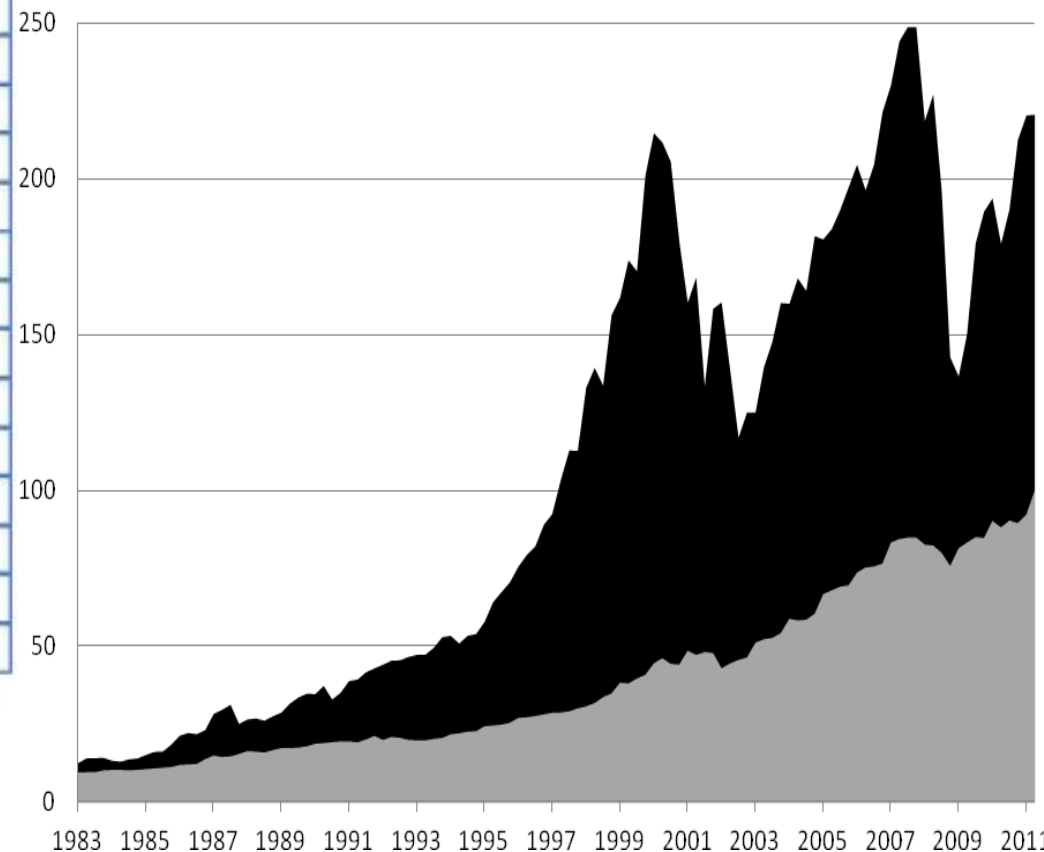
Asset type	Included in National Accounts?
<i>Computerized information</i>	
1. Software	Yes
2. Databases	? <sup>1</sup>
<i>Innovative property</i>	
3. Mineral exploration	Yes
4. R&D (scientific)	Satellite for some <sup>2</sup>
5. Entertainment and artistic originals	EU-yes, US-no <sup>3</sup>
6. New product/systems in financial services	No
7. Design and other new product/systems	No
<i>Economic competencies</i>	
8. Brand equity	
a. Advertising	No
b. Market research	No
9. Firm-specific resources	
a. Employer-provided training	No
b. Organizational structure	No

1. SNA 1993 recommended capitalizing computerized databases.

2. R&D satellite accounts are available, or under preparation many countries. Results for Finland, Netherlands, United Kingdom, and the United States are publicly available.

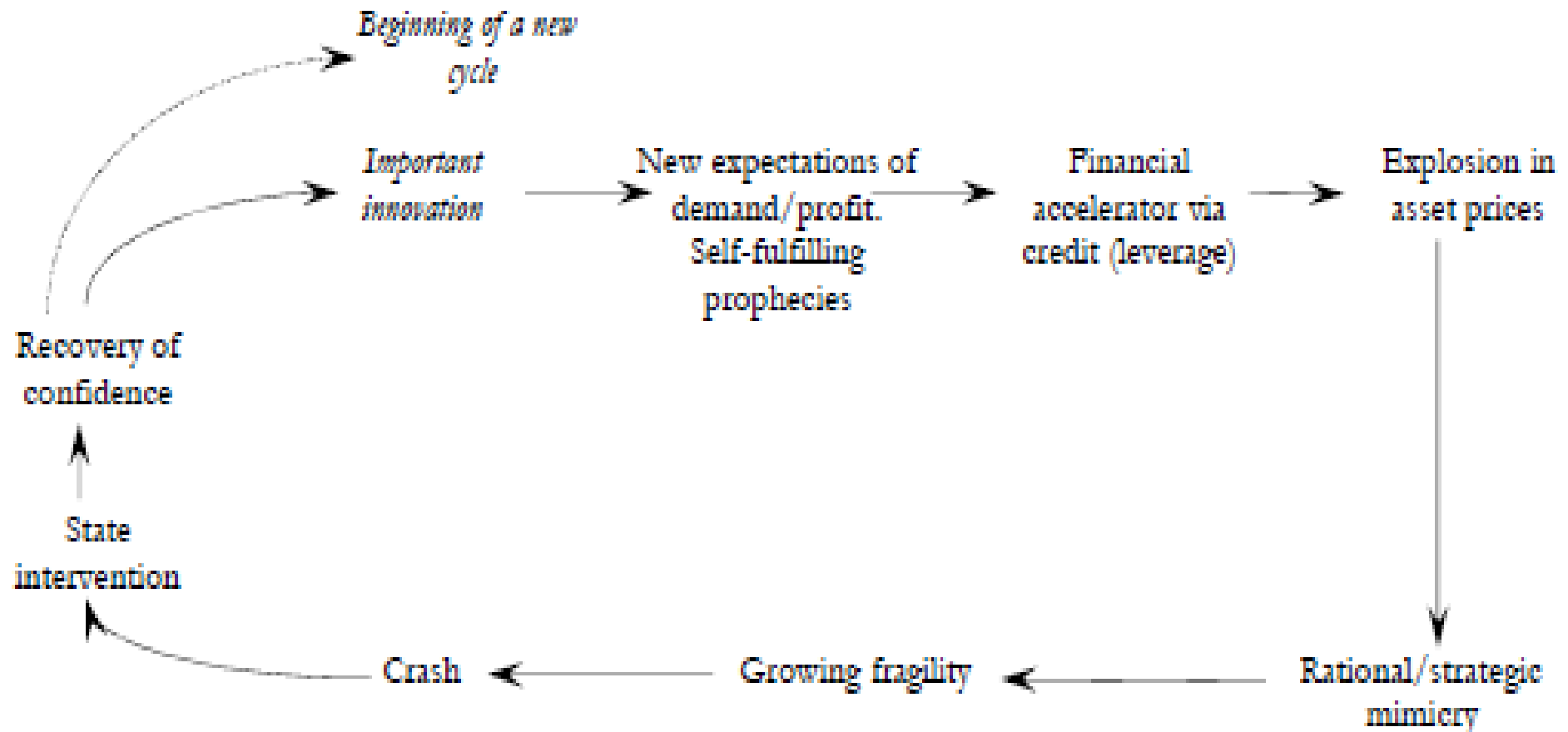
3. The US BEA plans to include entertainment and artistic originals and R&D as investment in headline GDP in a revision in 2013.

Goodwill and book value in Germany, France, UK and US, 1983-2011

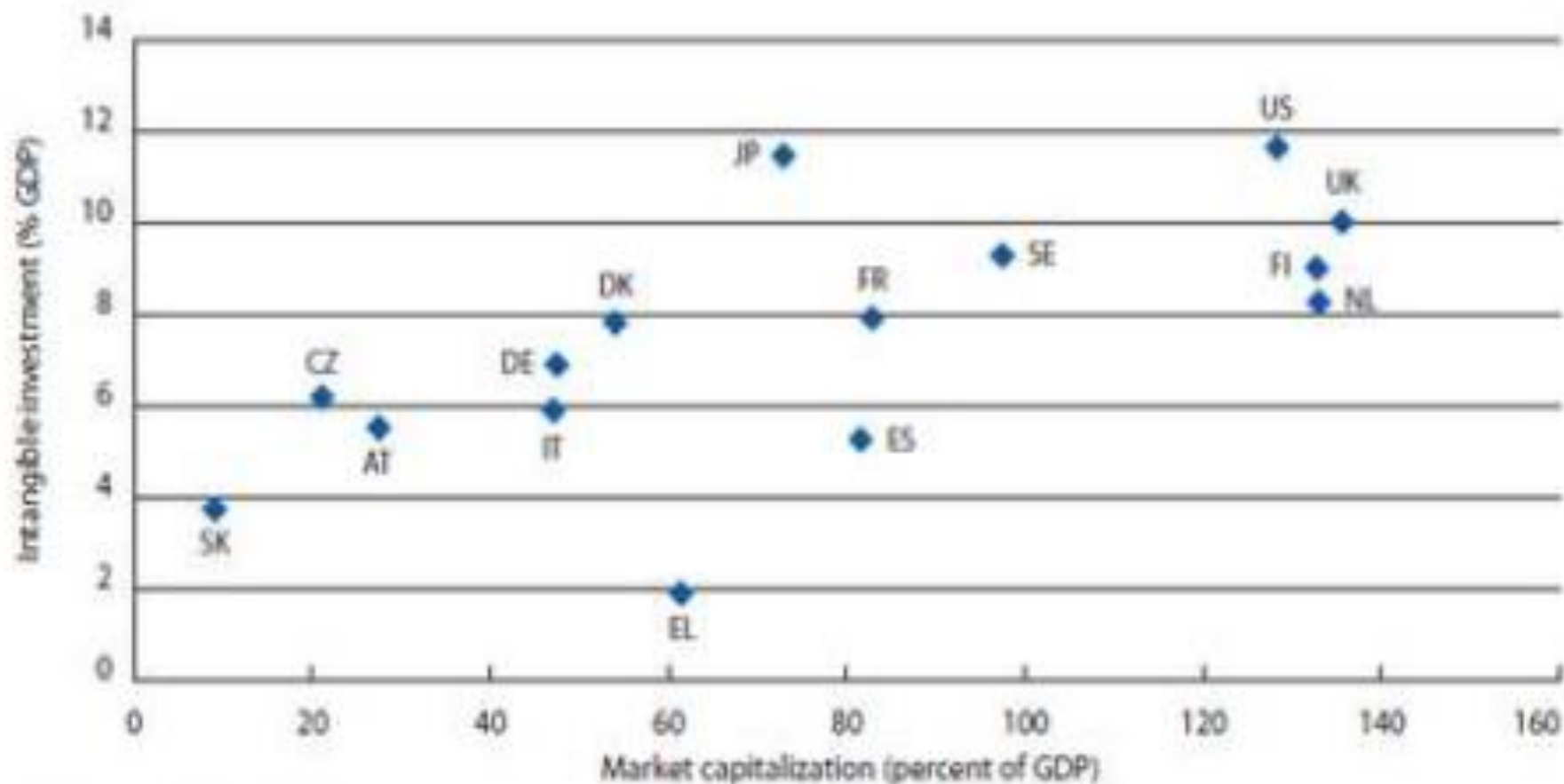


# *The mystery of intangible capital and financial fragility seem largely correlated*

- Figure 8 - From a reputedly major innovation to mimicry leading to financial
- fragility



•Figure 6 - Intangible investment and market capitalization (2001-04)

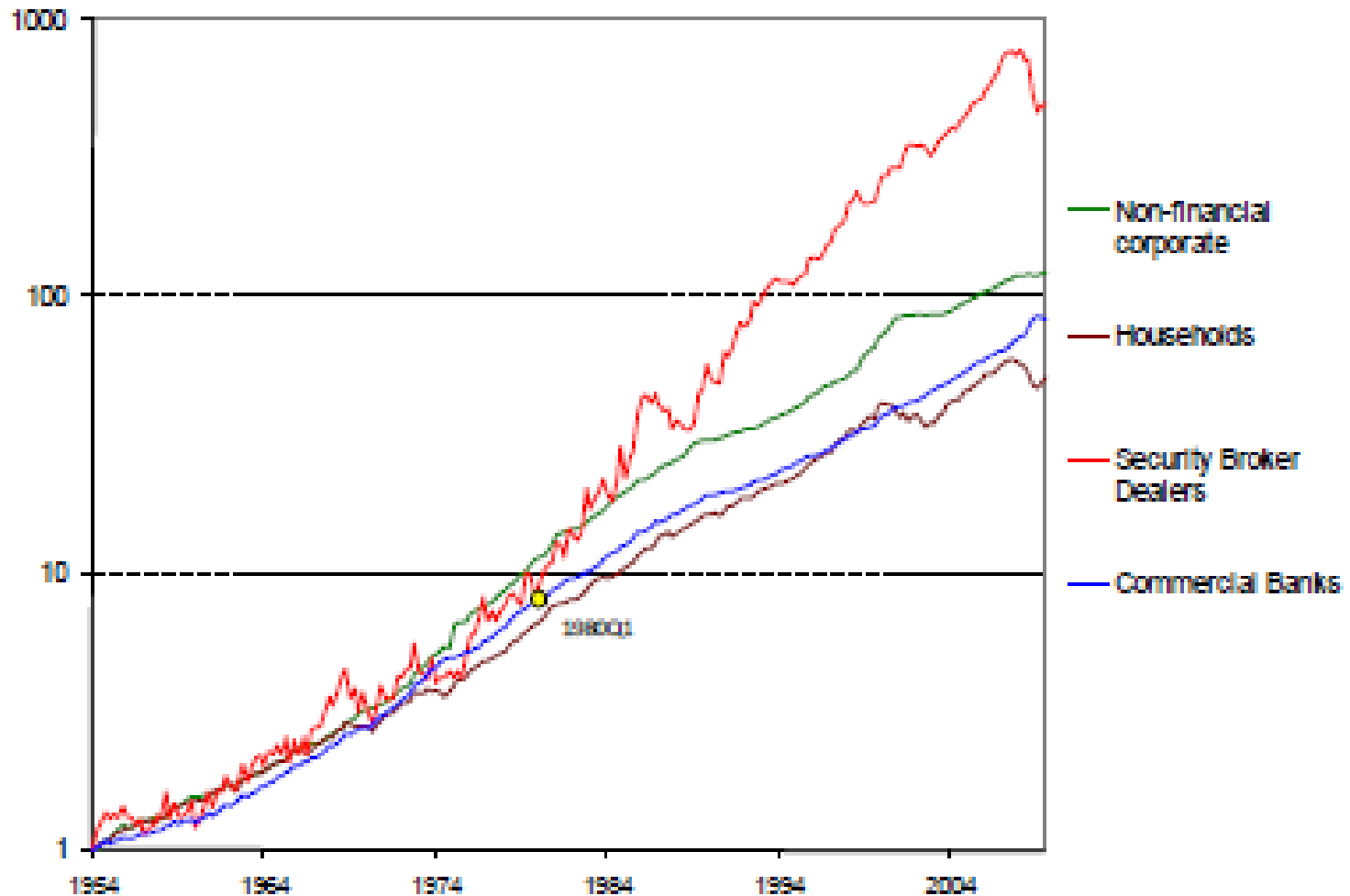


Source: See Figure 5b

Note: Market capitalization is the value of the stock market as a percentage of GDP. We use the average percentage from

*Source: Idem*

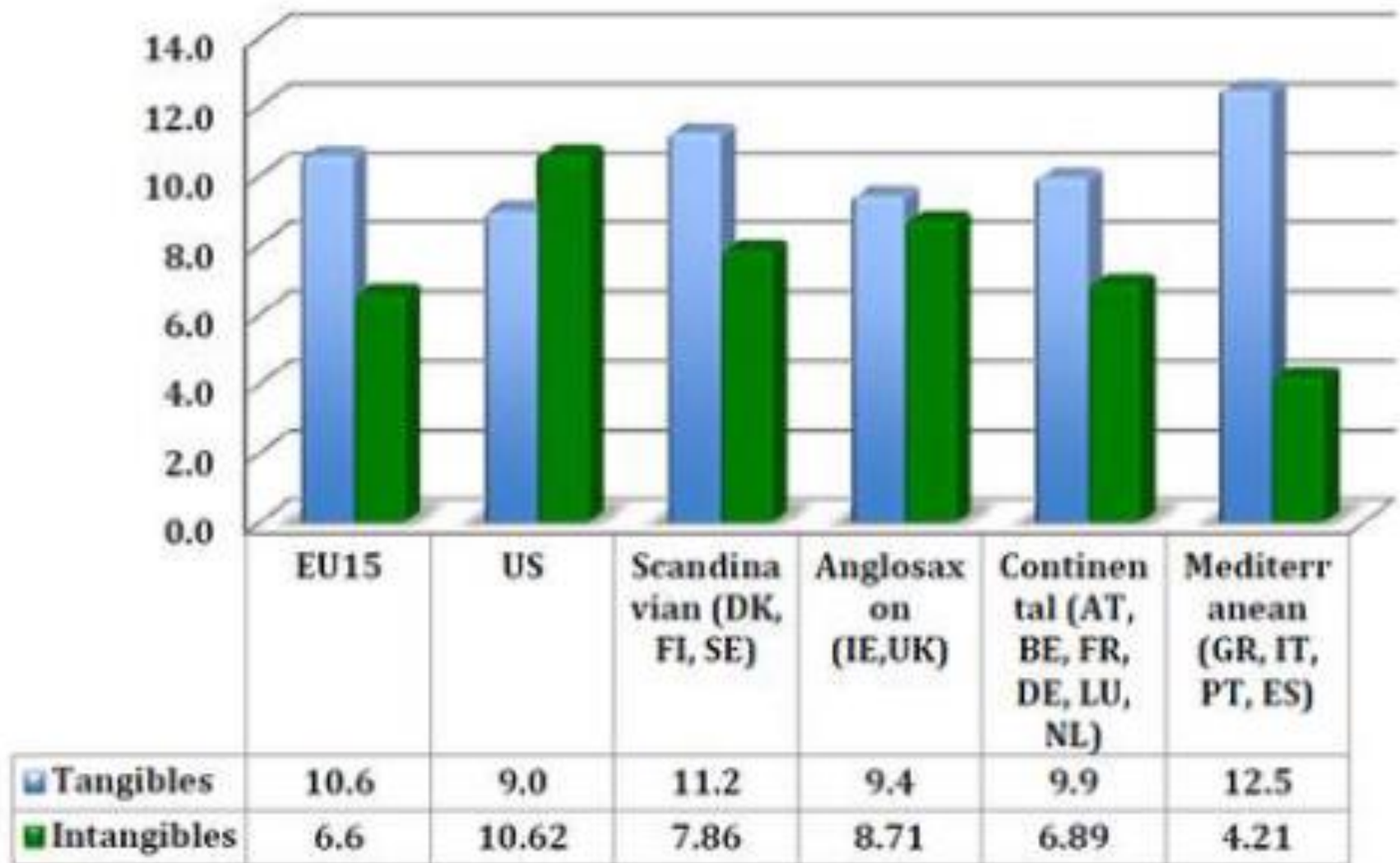
- **Figure 7 - Growth of Assets of Four Sectors in the United States (March 1954 = 1) (Log scale) (source: Federal Reserve, Flow of Funds, 1954-2009)**



Source: Tobias Adrian, and Hyun Song Shin (2010), The Changing Nature of Financial Intermediation and the Financial Crisis of 2007-2008, Staff Report n° 439, Federal Reserve Bank of New York, March-April, p. 6

•Figure 3 - Tangible vs intangible GDP shares: 1995-2009

•(Average value)



Source: Corrado et al. (2012)

- **3. Intangible capital seen by macroeconomists:**

- In search for the sources of growth and stock market valuation

$$q = s_L \cdot \ell + s_K \cdot k + a$$

with  $q, \ell, k$  rate of growth of output,  
labour, tangible capital

$s_L, s_K$  respective weight of labour and capital

$a$  = residual / contribution of technical  
change, generally  $a > 0$

$$(3) \quad q = s_L \cdot \ell + s_K \cdot k + s_R \cdot r + b$$

with  $r$  rate of growth of intangible capital

$s_R$  weight of intangible capital

$b$  = new residual / contribution of  
technical change

with the hypothesis that  $b$  is and possibly  $b$  is near 0

- (4) National Intangible Capital =
- Stock market value - value of tangible capital



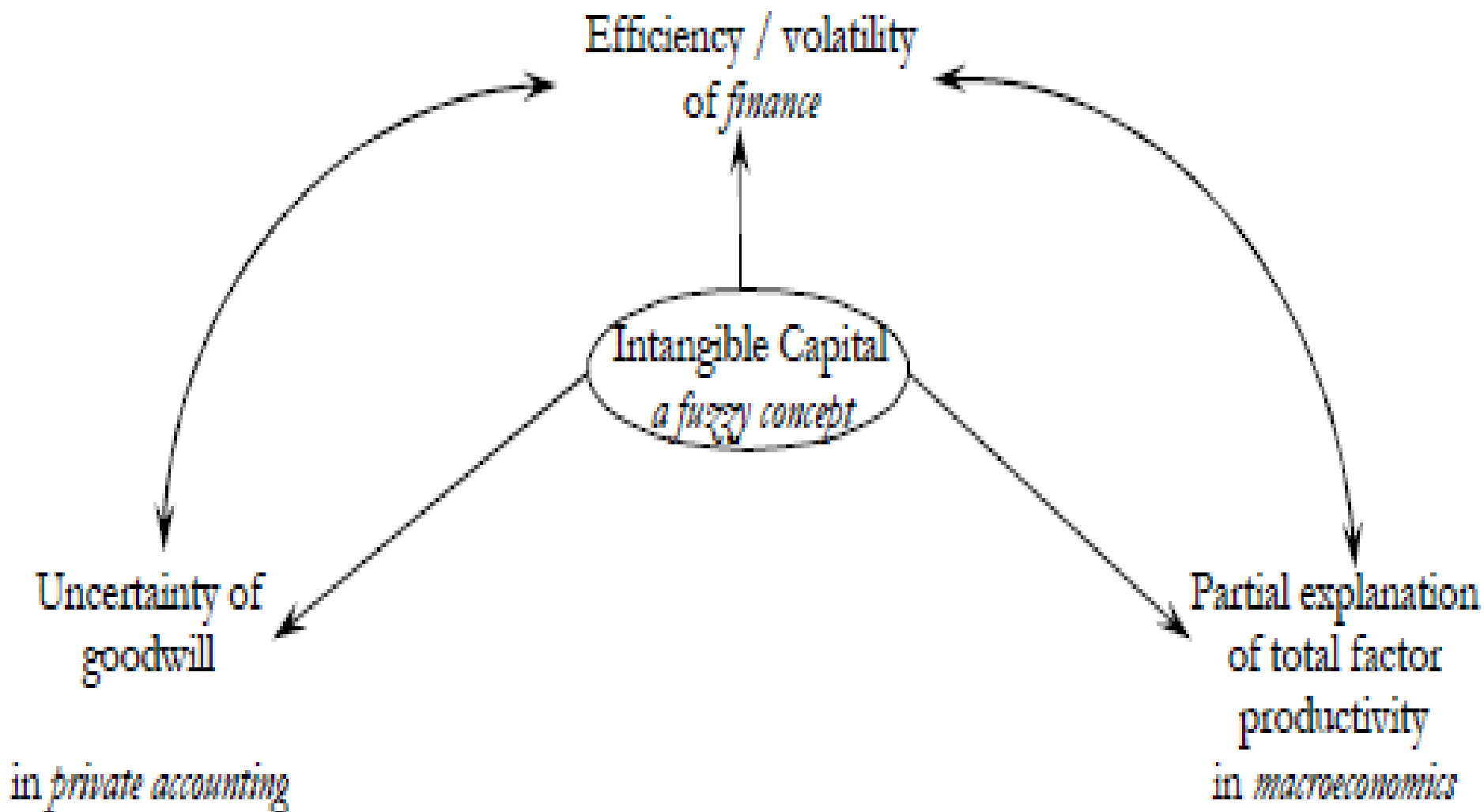
- **Table 4 - Average annual change in labour productivity in the market sector and**
- **contribution of tangible and intangible capital deepening , labour quality and**
- **MFP growth, 1995-2006.**

	Germany 95-06	France 95-06	Italy 95-06	Spain 95-06	Austria 95-06	Denmark 95-06	<b>Average 95-06</b>	Czech Rep 97-06	Slovakia 00-06	Greece 95-06	UK 95-06	USA 95-06
<i>Excluding Intangible Capital (percent)</i>												
Labour productivity growth	1.61	1.83	0.26	0.36	1.99	1.54	<b>1.18</b>	4.50	6.30	3.21	2.90	2.75
Contributions												
ICT cap. deep. (ex. software)	0.23	0.14	0.12	0.21	0.29	0.50	<b>0.20</b>	0.38	} 2.85	0.46	0.74	0.47
Non-ICT cap deep.	0.57	0.37	0.31	0.56	-0.03	0.28	<b>0.39</b>	1.76		1.52	0.36	0.30
Labour quality	-0.16	0.44	0.24	0.68	0.24	0.19	<b>0.23</b>	0.34	0.49	0.73	0.26	0.20
MFP	0.98	0.88	-0.41	-1.10	1.49	0.57	<b>0.37</b>	2.02	2.97	0.51	1.54	1.78
<i>Including Intangible Capital (percent)</i>												
Labour productivity growth	1.79	2.00	0.29	0.47	2.36	2.11	<b>1.32</b>	4.60	6.17	3.27	3.06	2.96
Contributions												
ICT-capital deepening	0.20	0.12	0.11	0.19	0.26	0.44	<b>0.17</b>	0.35	} 2.72	0.45	0.63	0.40
Non-ICT-cap deepening	0.48	0.31	0.29	0.49	-0.02	0.24	<b>0.34</b>	1.62		1.48	0.28	0.24
Intangible-cap. deepening	0.38	0.48	0.12	0.12	0.55	0.72	<b>0.30</b>	0.68	0.21	0.24	0.69	0.83
Computerized information	0.07	0.15	0.03	0.05	0.13	0.29	<b>0.08</b>	0.06	0.04	0.06	0.16	0.18
Innovative property	0.23	0.18	0.05	0.15	0.29	0.27	<b>0.16</b>	0.35	0.07	0.11	0.17	0.35
Economic competency	0.07	0.15	0.04	-0.08	0.13	0.17	<b>0.06</b>	0.27	0.10	0.07	0.36	0.29
Labour quality	-0.15	0.40	0.22	0.64	0.22	0.17	<b>0.21</b>	0.31	0.46	0.71	0.22	0.18
MFP	0.88	0.69	-0.45	-0.96	1.35	0.53	<b>0.29</b>	1.64	2.78	0.40	1.23	1.33

Sources: Employment, value added, and the stock of tangible capital for all countries from 1997 to 2005 from EUKLEMS, version March 2008 ([www.euklems.net](http://www.euklems.net)). EU KLEMS provides the deflators and depreciation rates of tangible assets and the depreciation rates of software and databases. CHS (2005) provides the deflators of all intangible assets and the depreciation rates of intangible assets excluding software and databases. For intangible investment in Austria, the Czech Republic, Denmark, Greece and Slovakia, see Annex 1; for Germany, France, Italy Spain, the UK and the US, see Table 1.

Notes: We follow the EUKLEMS definition of market sector by excluding the following industries: public administration, health, education and real estate. Measures of tangible capital exclude land and inventories.

- Figure 9 - Intangible capital, Achilles Heel of accounting, finance and
- macroeconomics



END

- **2. Most of intangible investments are typically uncertain, much more than routine production via equipment goods.**
- **3. Intangible capital is largely driving stock market capitalisation that alternates large and lasting sub-estimations with over estimations**

- Figure 1 *Relative goodwill and book value from 1983 to 2011 (indexed at 2011 book value = 100; totals for all listed non-financial corporations in France, Germany, the UK, and US; compiled using quarterly accounting and exchange-rate data from Thomson-Reuters)*



# CONCLUSION

*C1 - The concept of Intangible Capital has been coined in order to capture some of the novelties of contemporary capitalism, based upon **innovation, knowledge and learning.***

*C2 - Killing three birds with the same bullet: IC at the **crossing** of goodwill private accounting, financial theory about market efficiency and growth accounting.*

*C4 - A first cut analysis about the different **national trajectories** of mature economies and their mastering of new productive paradigms.*

- The US versus Germany
- Nordic economies versus Southern Europe
- The French configuration: not so easy to interpret

- *C4 - The need for a **new theorizing of capital and capitalism:***

•Table 5 - Understanding stock market and growth: two approaches

Hypotheses	Paradigm	Approaches	
		Intangible Capital	Economic power and radical uncertainty
1. Core explaining factor		<ul style="list-style-type: none"> <li>• Scarcity of substitutable factors of production</li> </ul>	<ul style="list-style-type: none"> <li>• Power upon remuneration within de facto cooperation, hence complementarity</li> </ul>
2. Nature of the future		<ul style="list-style-type: none"> <li>• Risk (Existence of a probability distribution)</li> </ul>	<ul style="list-style-type: none"> <li>• Uncertainty (consequence of market relations and innovations)</li> </ul>
3. Nature of expectations		<ul style="list-style-type: none"> <li>• Fully rational</li> </ul>	<ul style="list-style-type: none"> <li>• Reflexive, context related, adaptative</li> </ul>
4. Core coordinating mechanisms		<ul style="list-style-type: none"> <li>• Perfect markets (labour, capital, finance)</li> </ul>	<ul style="list-style-type: none"> <li>• Imperfect markets embedded into social norms, organizations and institutions</li> </ul>
5. Nature of economic evolution		<ul style="list-style-type: none"> <li>• Stochastic shocks on productivity</li> <li>• Random walk on stock markets</li> </ul>	<ul style="list-style-type: none"> <li>• Endogenous innovation and growth</li> <li>• Momentum of optimism / pessimism and recurring bubbles</li> </ul>



6. Type of accounting	<ul style="list-style-type: none"> <li>• Growth accounting at the national level</li> <li>• Mark to market, mark to model: private accounting</li> </ul>	<ul style="list-style-type: none"> <li>• Surplus method: interdependence creation / distribution</li> <li>• Stick to actual transactions</li> </ul>
7. Nature of formalizations and models	<ul style="list-style-type: none"> <li>• Neoclassical growth model with exogenous technical change</li> <li>• Dynamic Stochastic General Equilibrium Models</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple heterogeneous agent models</li> <li>• Evolutionary models of emergence of norms, techniques</li> </ul>

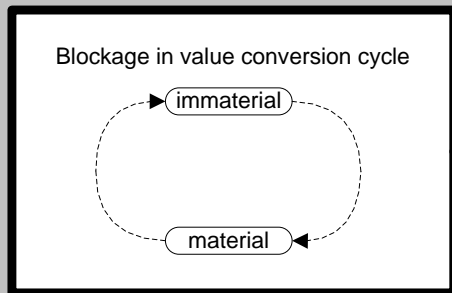
# So what are intangibles?

- Like tangible assets, intangible assets are also scarcity rents
- However, *unlike* tangibles, intangibles represent scarcity that cannot – for the most part – be separated and traded at the *sub-firm level*
- Why did this not happen before?
- In manufacturing capitalism, scarcity rents were institutionalised into tangible assets because bargaining power correlated with tangible manufacture
- This correlation is breaking down in post-manufacturing capitalism

# But accounting can't measure intangibles...

- ...because intangibles are found to be firm-level emergent properties (an accounting residual)
- Does not fit with atomistic ontology of balance sheet accounting
  - Makes neoliberal practice practically untenable (PERF. COMP. – comp policy)
  - Makes neoliberal ideology intellectually untenable (MPT)

## International Organization of Production



Value chain capture  
by firms controlling  
immaterial processes

Inter-firm, inter-national  
vertical disintegration of  
production  
(Geographical segmentation  
with functional integration)

Export-oriented  
industrialization  
in emerging  
economies

Liberalized  
capital/trade flows  
Deindustrialization  
in OECD

## Financialization

Broader processes  
of financialized  
accumulation

Use of Derivatives  
(inter-spatial binding  
of accumulation)

Transport, Information  
& Communication  
Technologies

Financial Market  
Deregulation

## Accounting

Growing goodwill gap

(Historic Cost Accounting ideas  
unable to generate enough  
'prior' capital assets)

Fair Value  
Accounting  
for financial  
assets

Fair Value  
Accounting  
for external  
goodwill

Fair Value  
Accounting  
for internal  
goodwill

Historic Cost Accounting  
provides illusion of capital  
being 'prior' to profit  
Neoclassical economic  
logic retains credibility

Political programs built on Neoclassical economic logic