

Private and Public Intangible Capital: Productivity Growth and New Policy Challenges

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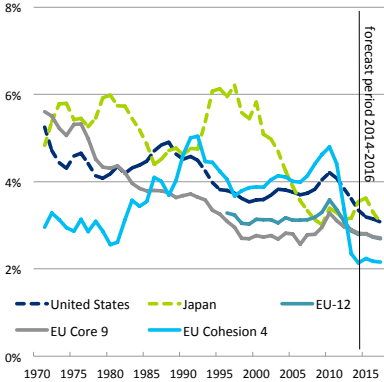
Complete the coverage of intangible investment by industry making possible analysis of productivity for the **total economy** based on a complete accounting of intangible capital inputs.

- Existing measures of intangible investment, **INTAN-Invest**, cover a subset of industries: the **market** sector
- **SPINTAN** covers the **nonmarket** sector
- New conceptual and measurement challenges
 - Identify the asset boundary in the **total economy**
 - Impute a rate of return to public capital formation
 - Investigate behavioural link public to private and vice versa (e.g. role of public sector R&D on private sector)

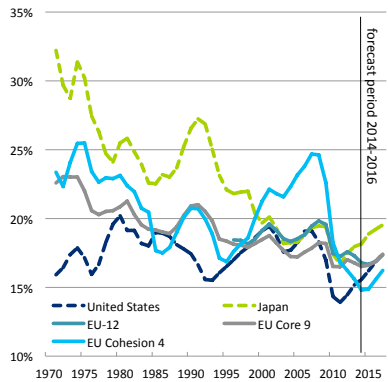
Investment slowdown: a common trend?

GFCF % of GDP, 1970-2016

General government



Private sector (includes SOEs)



Data sources: AMECO, OECD.stat

Note: EU Core 9 is Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, and the United Kingdom. EU Cohesion 4 is Greece, Ireland, Spain and Portugal. EU-12 are the 12 member states that joined the EU between 2004 and 2007.

Some education and health is a mix of private and public, market and non-market. So to do **market** sector analysis, one should really break education and health into **market** and **nonmarket**.

- And one should really do this for all other industries too.
- What do we do?
 - We focus on a number of industries that potentially have significant non-market involvement.
 - We break those industries into market and non-market.

The scope of intangible assets used by the public sector: industries of interest

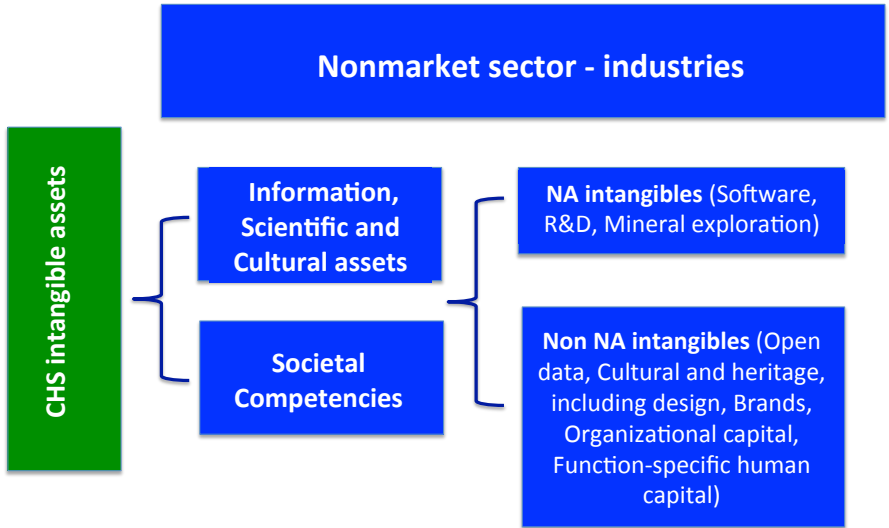
Table 1: **SPINTAN Industries of Interest**

NACE SECTION	INDUSTRY TITLE	NACE NUMBER
MB	Scientific research and development	72
O	Public administration and defence; compulsory social security	84
P	Education	85
QA	Human health activities	86
QB	Residential care and social work activities	87-88
R	Creative, arts and entertainment activities; libraries, archives, museums and other cultural activities	90-91
	Gambling and betting activities; sports activities and amusement and recreation activities	92-93

NOTE—NACE Rev. 2.

Besides Public administration and defence, other industries in the table contain a mix of **market** and **nonmarket** producers.

Multiple measurement dimensions of Public intangibles



Intangible investment in the total economy: measures developed so far

Two sets of intangible measures by industry and institutional sector:

CHS type assets (Data and Trends)

(Brands, Organizational capital, Design and Training)

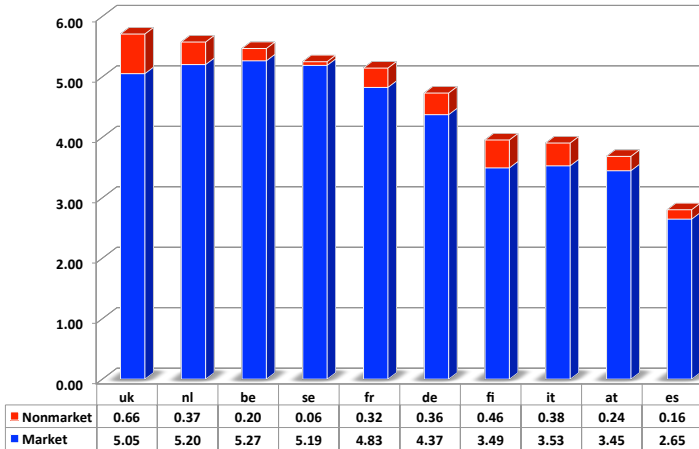
- Geographical coverage:
(AT, BE, DE, ES, FI, FR, IT, NL, SE, UK)
- Time coverage: 1995-2010

CHS type assets and NA intangibles (SOG analysis)

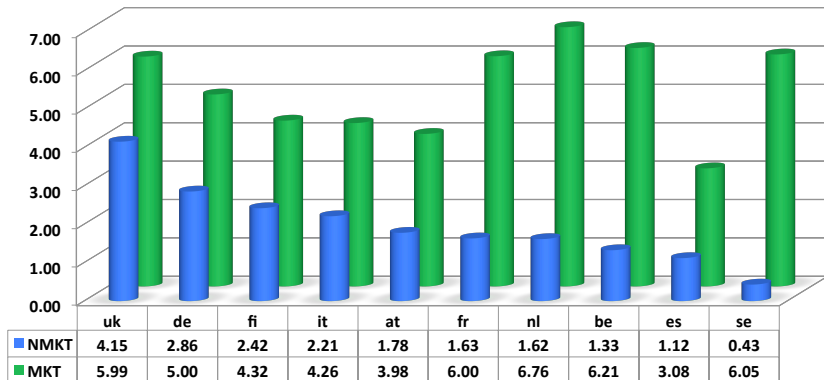
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Intangible shares of Total value added

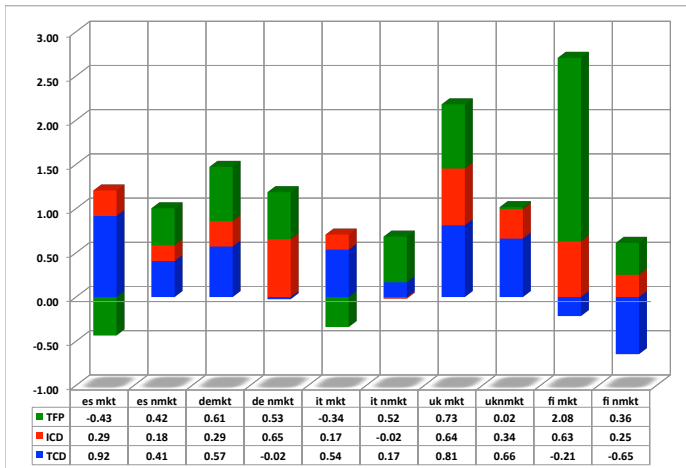
Overall selected intangible investment accounts for nearly 6% to below 3% of total value added with private and public sectors accounting on average for 4% and 0.7% respectively.



In all countries the “intensity” of intangible investment in the market sector exceeds that in the non-market sector (for these assets).
But there is also interesting variation between countries.

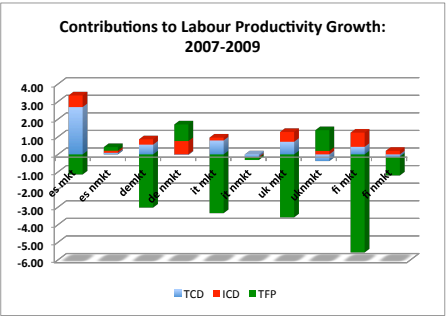
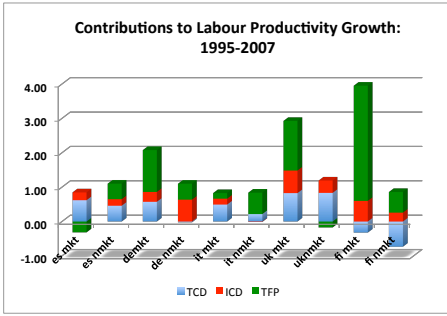


In advanced economies (Germany, UK and Finland) intangible capital provides a relevant contribution to nonmarket productivity growth.

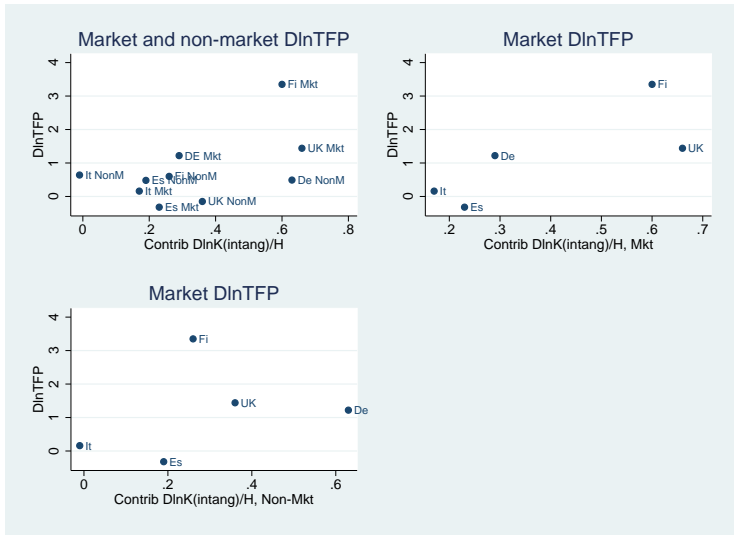


Contributions to Labour Productivity Growth: 1995-2007 vs 2007-2009

At the very beginning of the financial crisis, intangible capital positively supported labour productivity growth of both market and non-market sectors in the advanced economies.



Total Factor Productivity Growth (1995-2007) and market and non-market intangible capital deepening contributions



- A primary characteristic of intangible capital, widely supported by growth accounting exercises and macroeconomic studies, is to be growth-promoting.
- This is because intangible investments likely generate spillovers to the economic system being non-rival and possibly non-excludable. Such spillovers, if they exist, might be within the private sector and/or between the public and private sector.
- In the light in particular of the claim and counter-claim around public sector austerity and fiscal policy in Europe, it would be vital to know which, if any, public sector intangibles had positive spillovers to the rest of the economy.