

# **COINVEST: Competitiveness, Innovation and Intangible Investment in Europe**

## **French presentation**

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## French team

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  - Full-time research assistant financed by the project
- Laurence Naymann CEPII



## Concepts and objectives : background

- Implementing R&D as a fixed asset is one of the major change in the new SNA 2008
  - Implementation for EU in 2014
- Eurostat Task force on R&D prepares templates for supplementary tables of R&D
  - Compulsory for member states in due time
- New OCDE Handbook provides guidance on compiling estimates of intellectual property products (IPP)
  - By the end of 2008 or early 2009



## Concepts and objectives

- What's in and what's out of GFCF
  - Produce benefits for more than a year to the economic owner
- Seeking for service lives
  - Israel, Germany and UK have undertaken pilot surveys on R&D service lives
  - But surveys must be done on other assets service lives
- Seeking for price index
- Avoiding double counting
  - Between software and R&D for example



## Concepts and objectives : GFCF vs IC

- Most of « intangible expenditures » are taken into account in NA
  - Already considered as GFCF since SNA 1993
    - Software
    - Mineral exploration
    - Architecture and engineering
    - Copyright and license cost
  - Recorded as IC and specified as a « distinct » commodity
    - R&D
    - Advertising expenditure, market research
  - Recorded as IC but not as distinct
    - Training
    - Organizational expenditures



## First step : benchmarking methods and data

- For distinct « assets » in national account
  - Could we start from commodity flows ?
    - R&D example
- For other « assets »
  - What source of data are available item by item ?



# Starting from commodity flows (1/2)

- The « supply and use table » shows goods and services by product and by industry :
  - By type of supply :
    - Imports
    - Production
  - by type of use :
    - Intermediate consumption
    - Final consumption
    - GFCF
    - Exports



## Starting from commodity flows (2/2)

- The input-output table shows the uses of the goods or services (R&D for example) industry by industry
  - But we have to avoid double counting at the intersection (diagonal) of product and industry
  - i.e. R&D used in the process of production of R&D and/or sub-contracting



# In France, R&D is already in National Accounts

- A survey based on the Frascati Manual (FM) recommendations is made every year on units who employ at least one full-time equivalent researcher :
  - private corporations ;
  - Government units ;
  - non profit institutions.
- Two others sources are available and allow comparisons between data :
  - Enterprises' accounts and fiscal declarations for business sector ;
  - Publics accounts for the research expenditures from Government units.



# R&D in French national accounts

T1 : Production account of R&D industry

Intermediate consumption	19,1
Gross value added	14,2
<b>Output of R&amp;D industry</b>	<b>33,3</b>
market output	25,5
other non market output	7,8

T2 : Input - Output Table

Goods & services	Industries			
	R&D	Others non market industries	others market industries	TOTAL
R&D	2,2	1,5	<b>19,7</b>	<b>23,4</b>
other goods & services	16,9	45,1	1 385,2	1 447,2
<b>Total</b>	<b>19,1</b>	<b>46,6</b>	1 404,9	<b>1 470,6</b>

2004, in billions, current euro

T3 : R&D Supply and Use Table

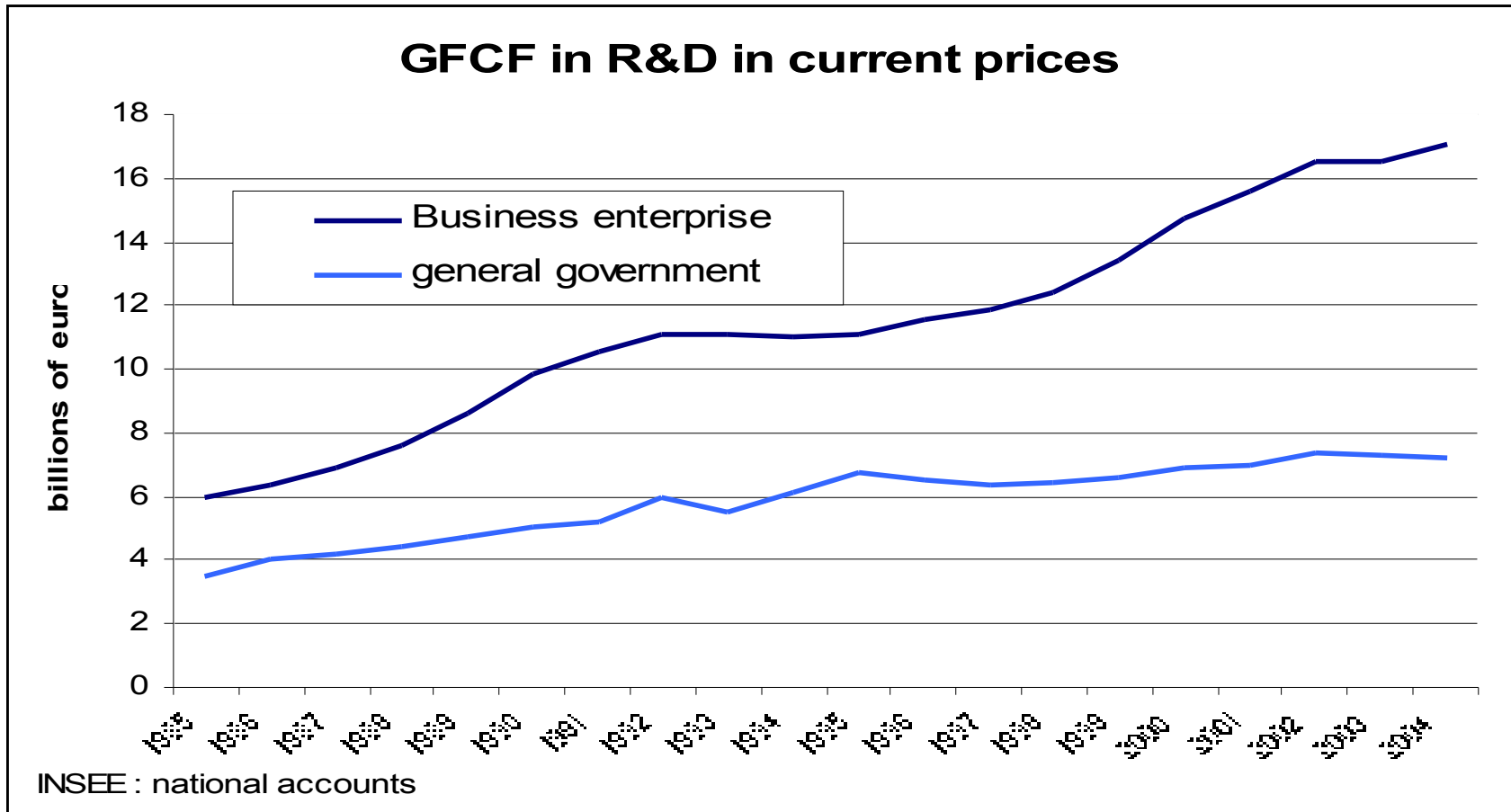
Supply	Production (1)	32,4
	Imports	1,3
	<b>Total Supply (1)</b>	<b>33,7</b>
	Taxes on products	0,2
	<i>of which VAT</i>	0,2
	subsidies on products	0,0
	<b>TOTAL SUPPLY (2)</b>	<b>33,8</b>
Use	Intermediate consumption	<b>23,4</b>
	Final collective consumption of government	<b>7,8</b>
	Exports	2,7
	<b>TOTAL USES</b>	<b>33,8</b>

(1) Basic prices

(2) Market prices



# Measurement of R&D as GFCF

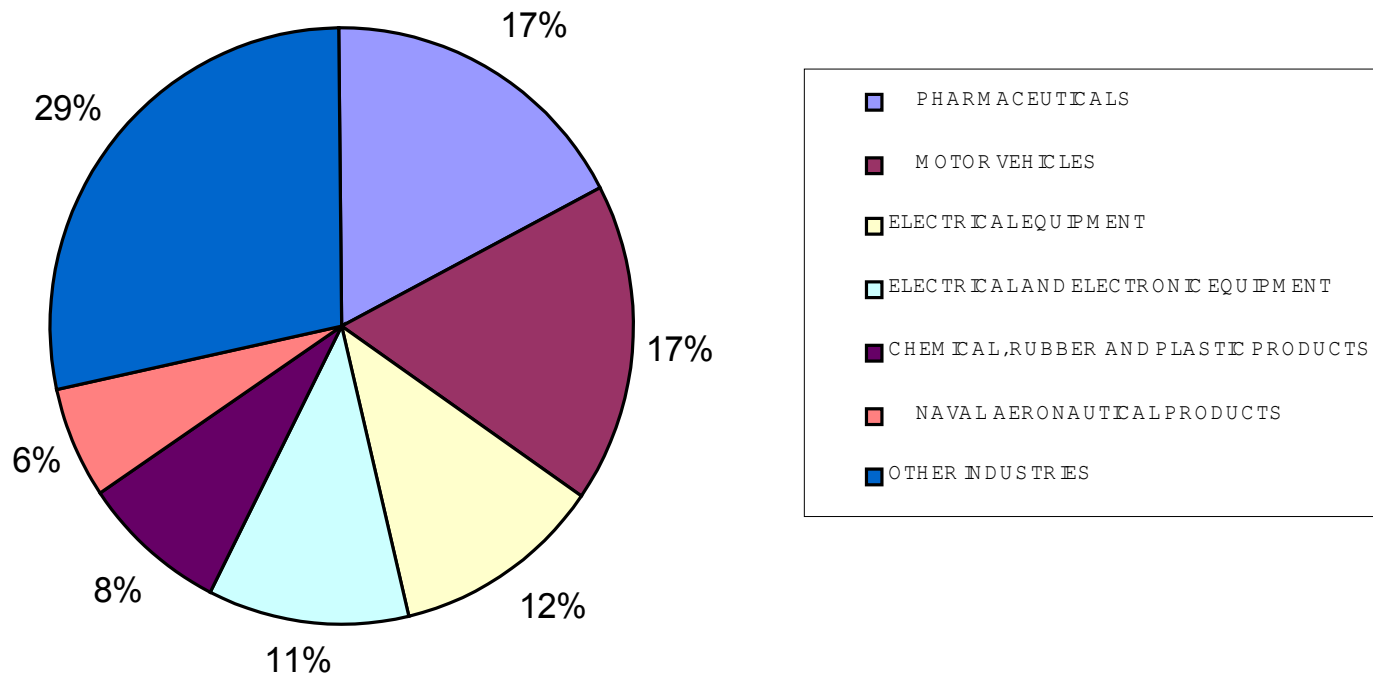




# Main industries, R&D producers

## R&D producers in 2004

%





## Starting point (1/3)

- Hao, Manole & Van Ark (2008) (HMA)
  - Following CHS (2005) methodology
  - Baseline study covering intangible investment between 1991 and 2004 in France and Germany
  - Need for:
    - Improvement in measuring GFCF
    - Homogenization of data sources



## Starting point (2/3)

- Data used in HMA for France:
  - Computer software: INSEE
  - Databases: EUKLEMS
  - R&D: EUROSTAT (excluding R&D in computing industry)
  - Mineral exploration: own calculations and Al-Attar & Alomair (2005)
  - Copyright and licence costs: Screen Digest (2005), CHS (2005) methodology



## Starting point (3/3)

- Data used in HMA for France (contd.):
  - Developments in fin. industry: STAN, CHS (2005) methodology
  - Architectural and engineering designs: EUKLEMS
  - Advertising: EUKLEMS
  - Firm-specific human capital: LCS, CVTS, EUKLEMS
  - Organisational structure: EFMCA, SES, EUKLEMS

LCS: Labour Costs Survey

CVTS: Continuing Vocational Training Survey

SES: Structure of Earning Survey

EFMCA: European Federation of Management Consultancies Associations



# Objectives

- For COINVEST
  - Homogenize data sources
  - Provide more and reliable and accurate figures for French intangible GFCF
- For INSEE and national accounting
  - Get a clear view on pre-existing GFCF accounts
  - Integrate new accounts with sound statistical bases



## Software (1/5)

- Purchased software (National accounts, EAE) from:
  - Softwares providers (722Z)

60.6% = GFCF {

- System software
- Specific software
- Computing services (60%)

39.4% = IC {

- Consulting in software development
- Maintenance
- Software support
- Computing services (40%)



## Software (2/5)

- Purchased softwares from:
  - IT consulting (721Z)

45% = GFCF {

- Software provision and installation
- Hard- and software leasing (45%)

55% = IC {

- Consulting and analysis
- Hard- and software leasing (55%)



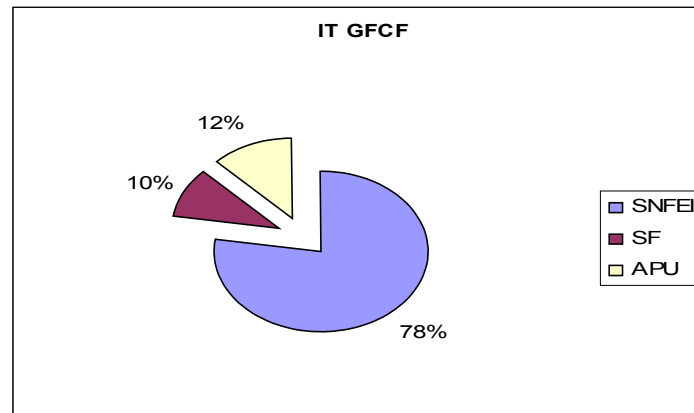
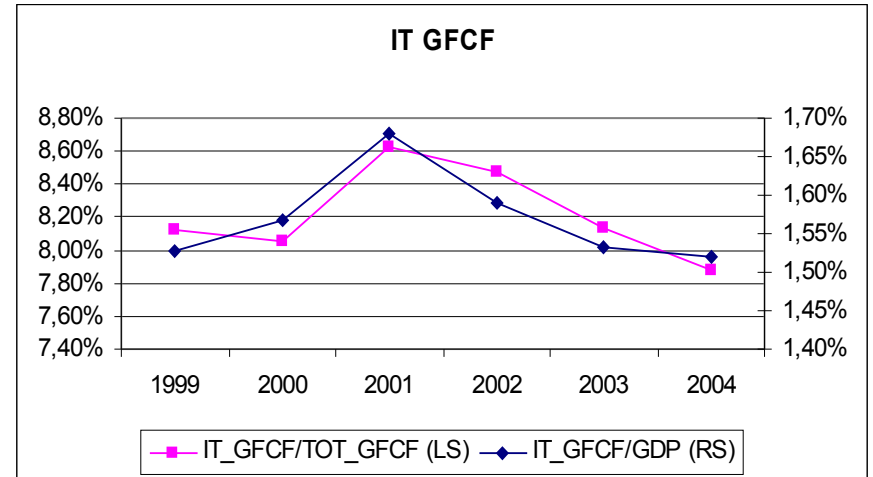
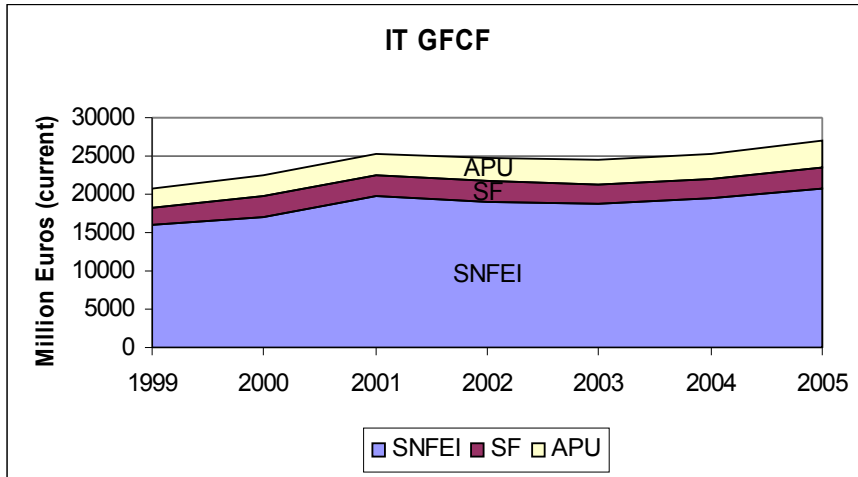
## Software (3/5)

- Own account software
  - IT employees (DADS, census) 23% own account
    - In IT firms (40% of all) → 77% to be sold
    - In non-IT firms (60%) → 85% own account  
→ 15% to be sold
  - Time spent on programming software = 50%
  - Non-labour costs = 85% of labour costs



# Software (4/5)

- Results





## Software (5/5)

- To be done
  - Assess reliability of figures and percentages used
  - Apply same methodology to database providers



## Advertising & Market research (1/4)

- IC in national accounts
  - Total in 2004 = 27 000 million Euros including:
    - 98.2% by private sector
    - 11.8% by public sector
  - 23.9% of private sector expenditures are inter-industry (sub-contracting)
  - 20 031 million euros Ad purchase



## Advertising & Market research (2/4)

- Distribution across media & non-media:
  - 34.83% = media
  - 65.17% = non-media
- Rooijen-Horsten, Bergen et Tanriseven (2008), France Pub:
  - 82% of news papers advertising are brand-forming
- 78.55% of total advertising could be brand-forming

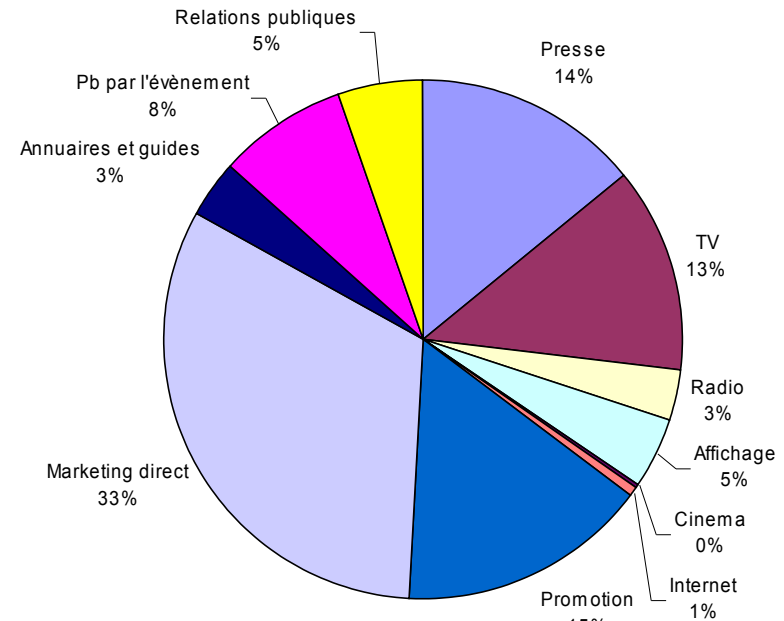
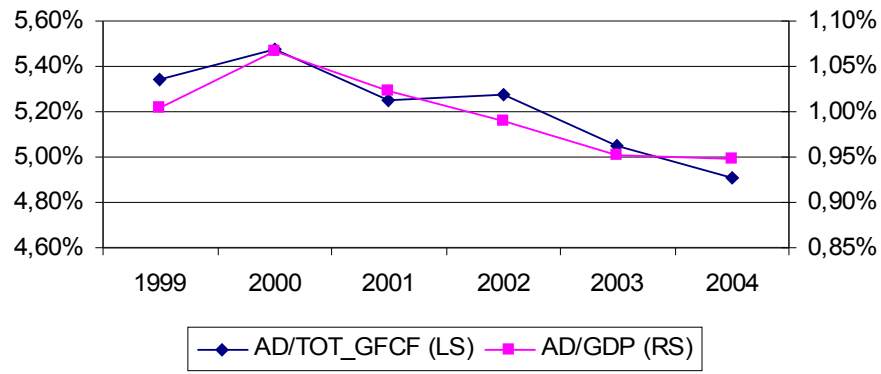


# Advertising & Market research (3/4)

- Results

*Distribution of expenditures media non-media*

**Ad & Market research**



Source : France Pub



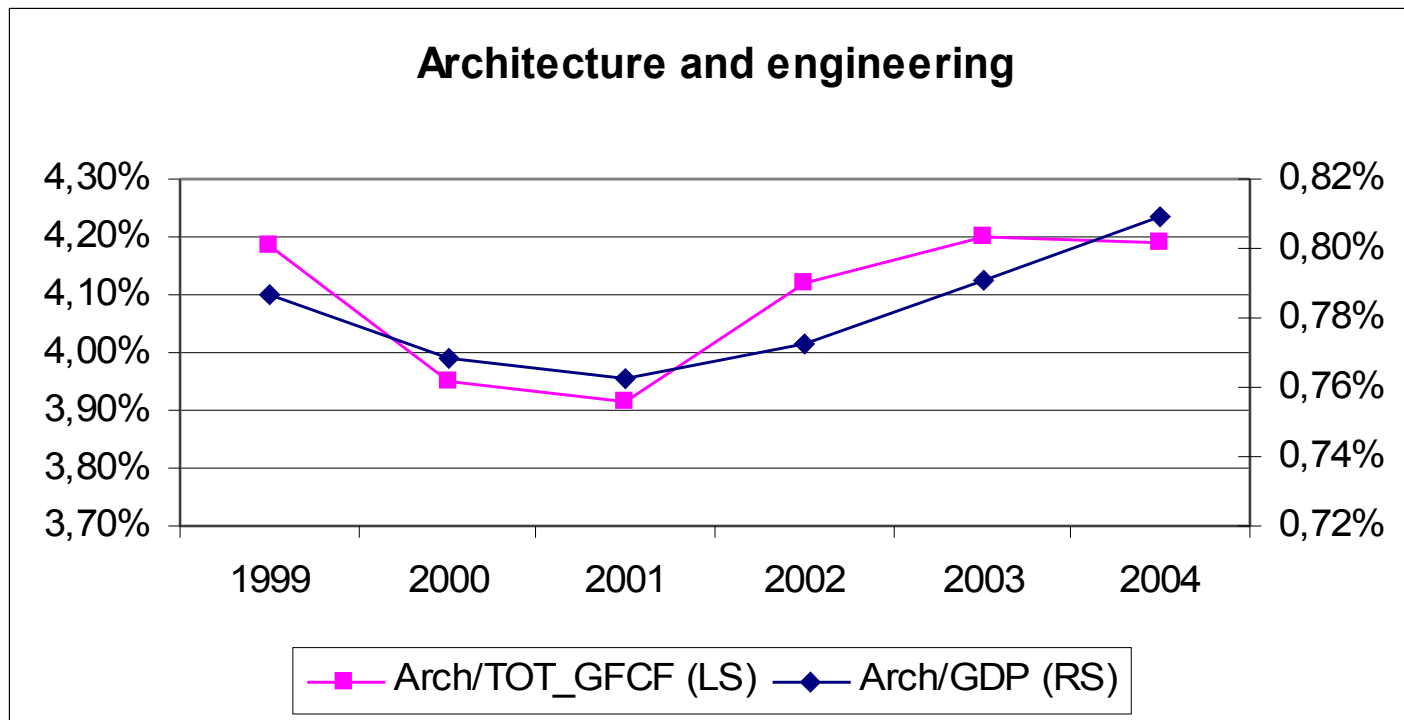
## Advertising & Market research (4/4)

- To be done
  - Disaggregate Advertising and market research
  - Evaluate in-house advertising (large part but small amounts) with employment surveys and census
  - Deepen brand-forming capacity of each type of ad.



# Architecture

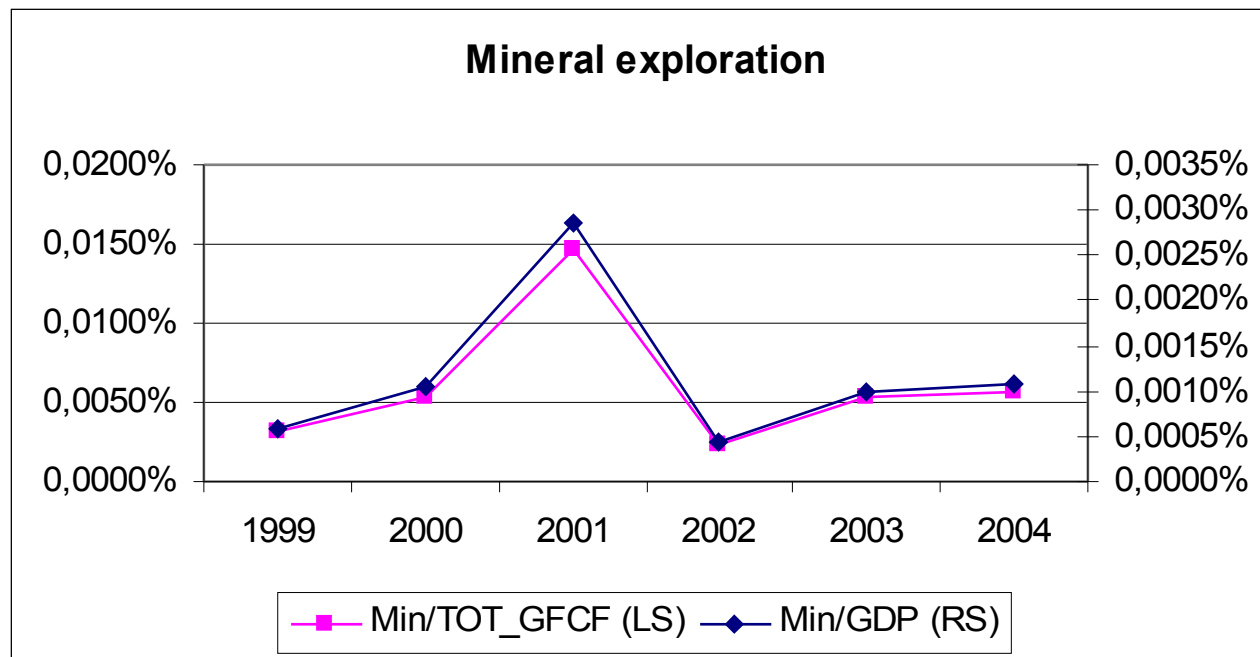
- In 2004 INSEE recorded 13 431 million euros in architecture & Engineering (Excluding households)





## Mineral exploration

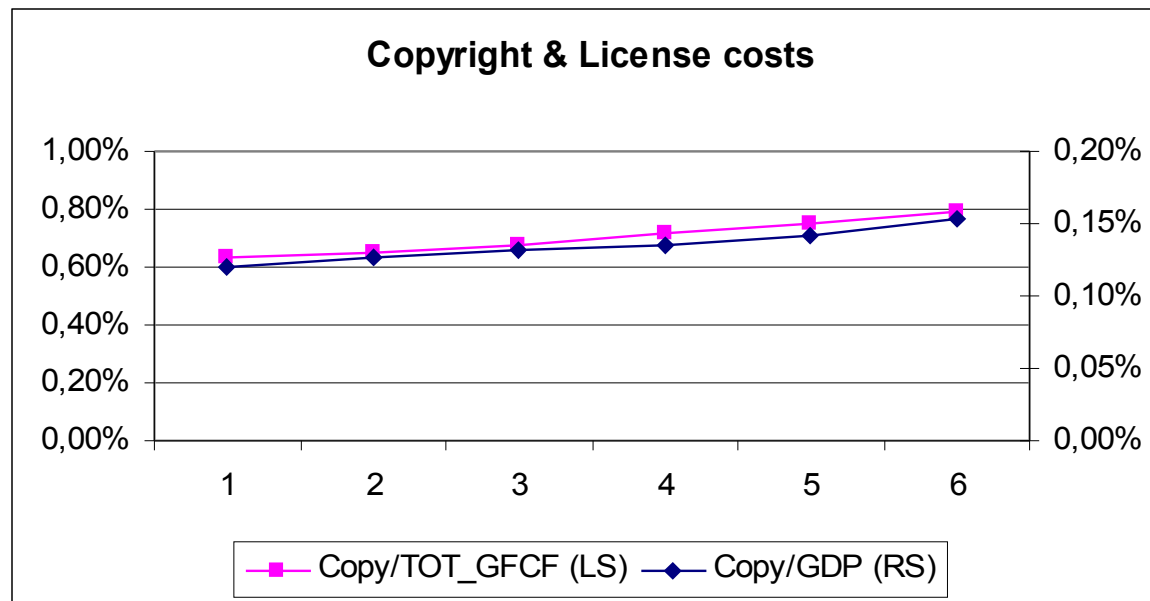
- In 2004 INSEE recorded 18 million euros in mineral exploration, 0.001% of GDP and 0.005% of total GFCF





## Copyrights & License costs

- In 2004 INSEE recorded 2,538 million euros in motion picture, radio and sound recording.
  - Copyrights GFCF is considered to be the amount of intra-industry consumption





# Results

<u>In 2004</u>	HMA (2008)		INSEE	
	Million euros	% GDP	Million euros	% GDP
Software	14 211	0.86	25 232	1.53
Databases	738	0.04	?	?
R&D	34 724	2.09	24 335	1.46
Mineral exploration	0	0	18	0.001
Copyrights & License costs	3 144	0.19	2 538	0.15
Financial innovation	9 666	0.58	?	?
Architecture & Engineering	14 927	0.90	13 431	0.81
Advertising	22 763	1.37	15734	0.95
Market research	4 444	0.27		
Human capital	24 986	1.51		
Organisational structure	37 496	2.26	?	?