Wealth and Investment in Mature Societies

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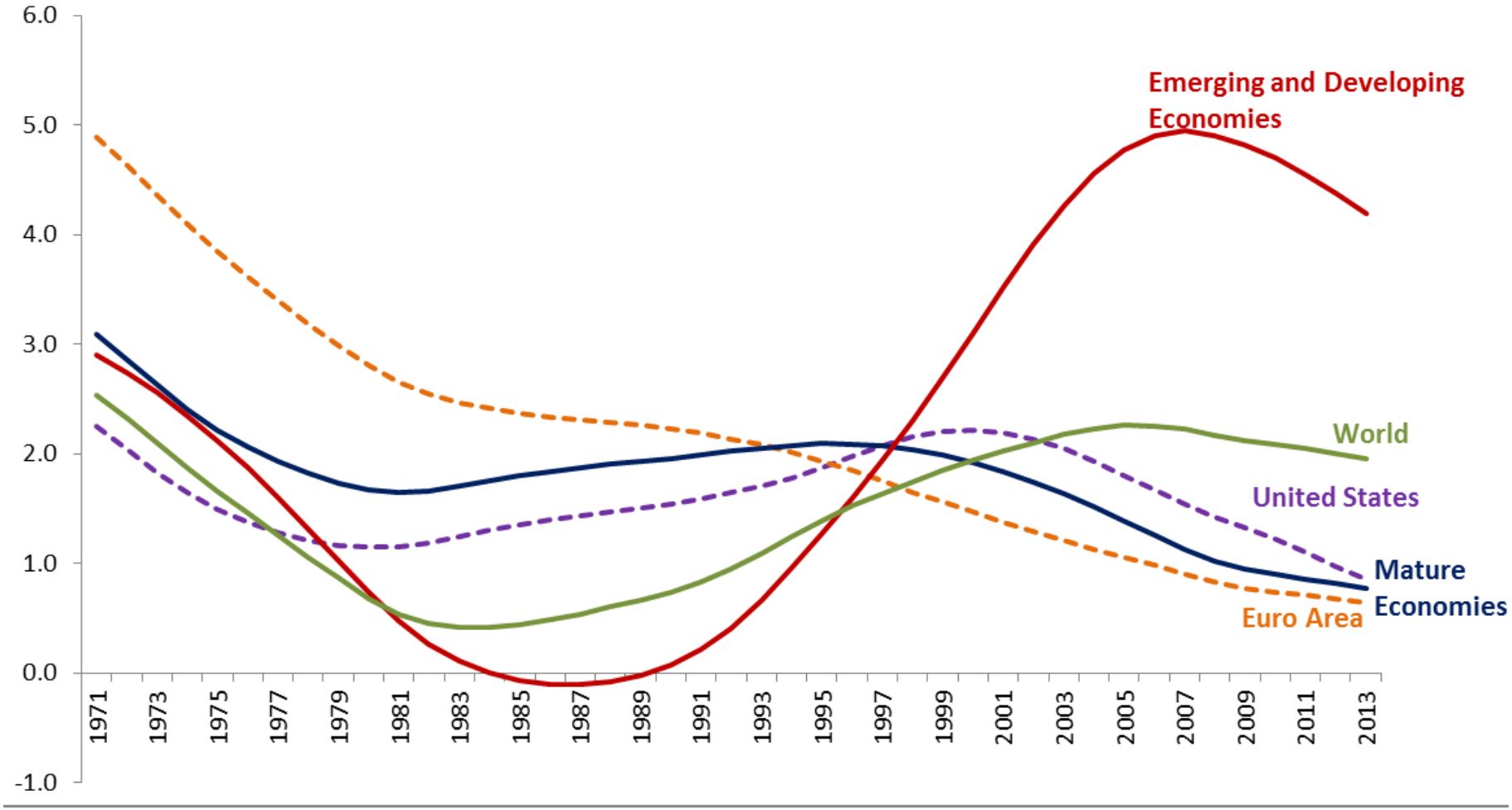
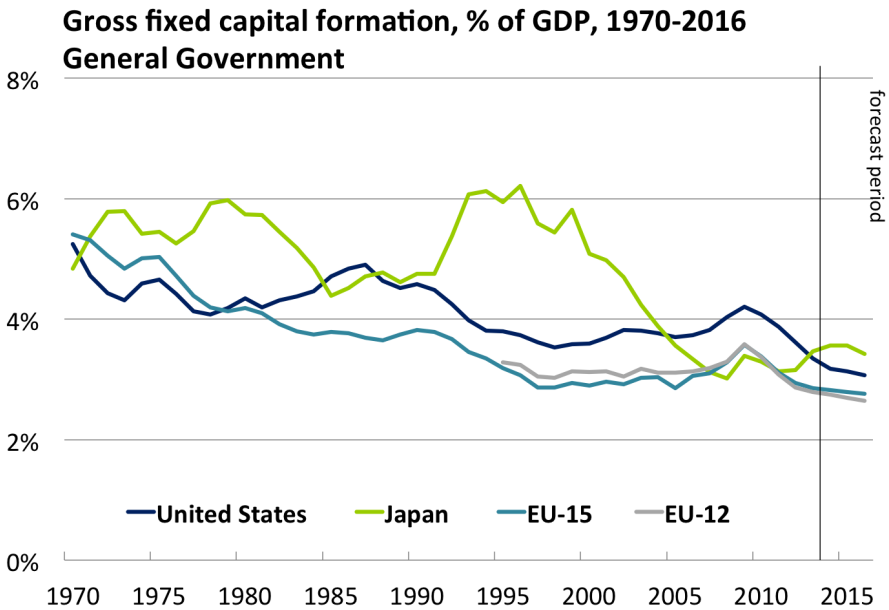
- Feedback on framework paper (Martin, Nick, ASSA and IARIW)
- Feedback on SRTP as return to public capital (Matilde)
- Preliminary total economy intangible investment estimates now available for the United States from 1977 to 2014 (public sector components correspond to EU estimates presented at December meeting)
- Build out of INTAN-Invest is planned/under way. EUKLEMS?
- Christian and Fraumeni will supply prices for schooling- produced assets (i.e., with impact of aging held constant) for US through 2011. See papers in 2014 CRIW volume edited by Jorgenson, Landefeld, and Schreyer. Other countries?

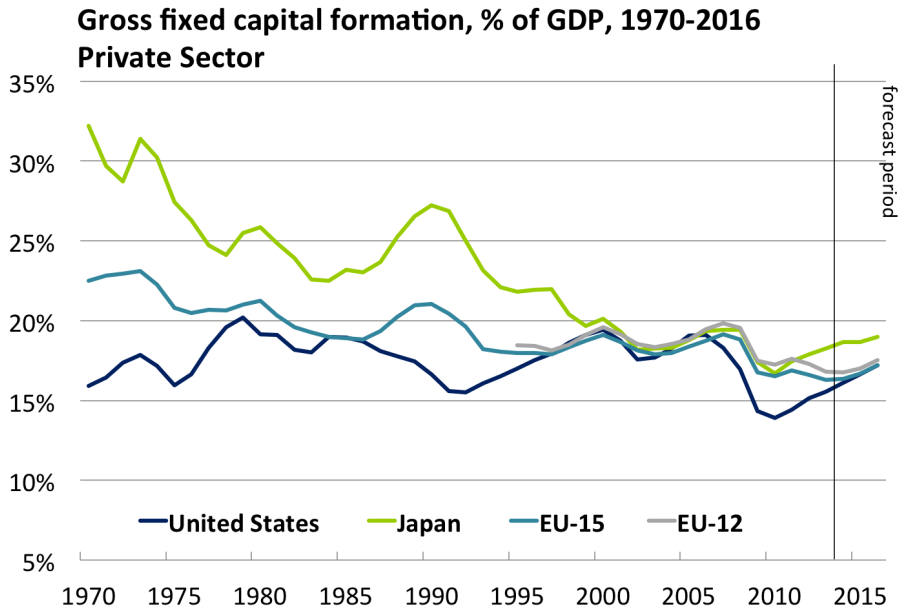
Labor productivity growth trend



Source: The Conference Board Total Economy Database™, *January 2014 (https://www.conference-board.org/data/economydatabase/)*

Investment pattern in mature economies





Notes. EU12 are the 12 accession countries. Private sector investment includes housing.
Source: Authors' elaboration of AMECO database, accessed April 2015.

Why look at wealth and investment?

- Stiglitz, Sen, and Fitoussi (2009) counseled policymakers to avoid confusing GDP (production) with societal welfare
- In SPINTAN we address this concern from the perspective of an **expanded asset boundary**

Identify the aggregate **real savings** that is proportional to the rate of change of (aggregate) social welfare

Three pieces to analysis:

- Determine the asset boundary of the **total economy** by fully accounting for intangible capital used in the production of public services
- Treat education and certain types of health spending as **societal investments** and determine the appropriate price deflator for treatment as assets
- Include consistently defined returns to public and societal assets in GDP

Production and asset boundary

- Keep existing GDP production boundary
- Consider, and expand as necessary, CHS assets as inputs to public sector production
- Consider the production of social infrastructure

Asset boundary: knowledge capital in a total economy

Market Sector		Nonmarket Sector	
Computerized Information		Information, Scientific, and Cultural Assets	
1	Software	1	Software
2	Databases	(2)	Open data
Innovative Property			
3	R&D	3	R&D
4	Entertainment & artistic originals	(4)	Cultural and heritage, incl. design
5	Design	5	Mineral exploration
6	Mineral exploration		
Economic Competencies		Societal Competencies	
7	Brands	6	Brands
8	Organizational capital	(7)	Organizational capital
	(a) Manager capital		(a) Professional and manager capital
	(b) Purchased organizational services		(b) Purchased organizational services
9	Firm-specific human capital (employer-provided training)	8	Function-specific human capital (employer-provided training)

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Social Infrastructure	

- Follows Jorgenson-Landefeld (2006), which incorporates social welfare into accounting and productivity
- Consider both sources and uses of economic growth
- Evaluates to what extent they are affected by inclusion of private **and** public intangible assets

$$\underbrace{V(C, I)}_{\text{PPF for C and I}} = A \cdot X(L, K)$$

where $A = TFP$, which measures productive efficiency.

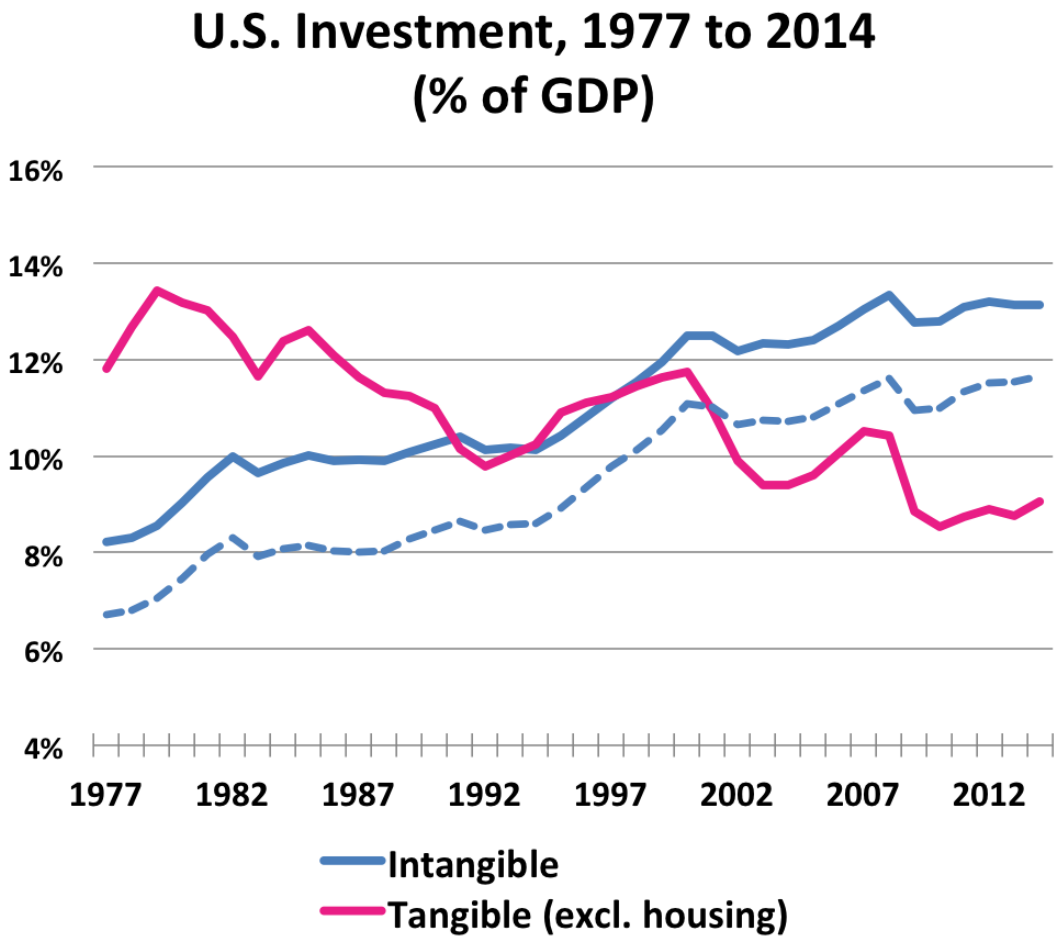
- Economic growth creates opportunities for future and present consumption (real net expenditures, Z) though:
- ...the expansion of real national income Y (labor and net property income, N), augmented by changes in the level of living, B

$$Z(C, S) = \underbrace{B}_{\text{Level of living}} \cdot \underbrace{Y(L, N)}_{\text{Real NI}}$$

where S is the addition to future consumption in the current period and Z is aggregate social welfare.

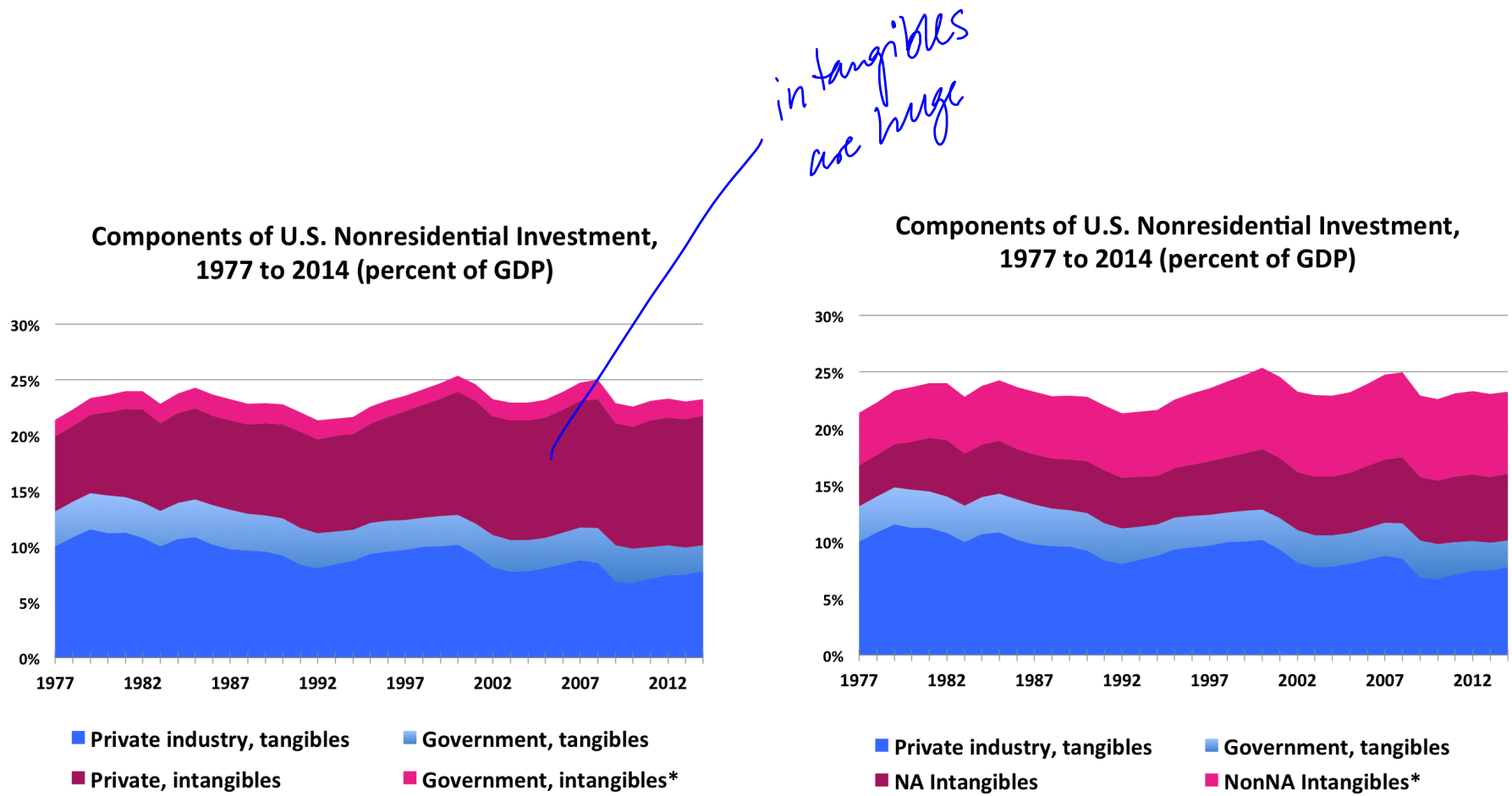
U.S. Productivity Results

Intangible investment for total economy, 1977-2014



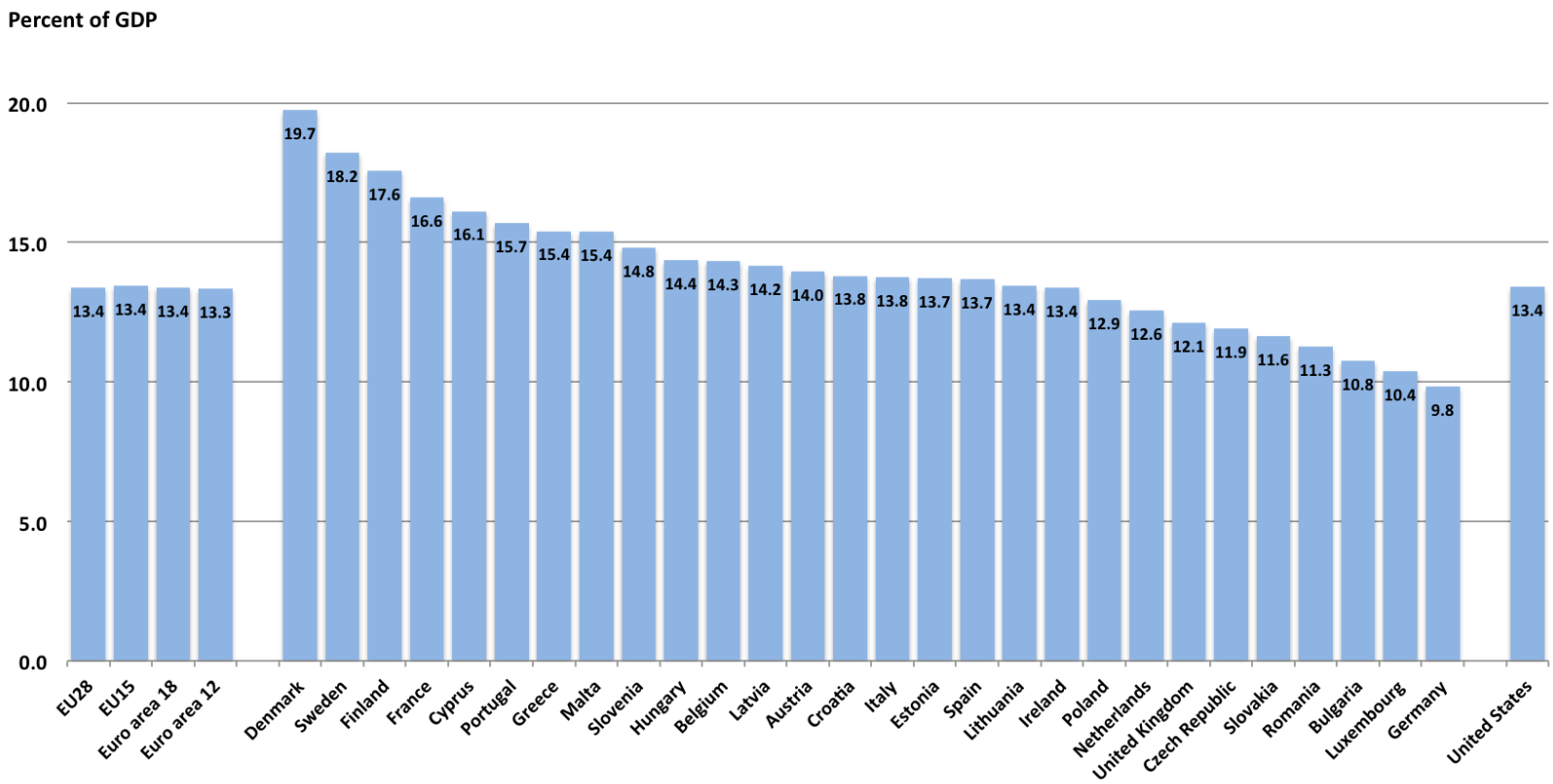
Preliminary; dashed blue line is private industry. Government intangible investment (the difference between the solid and dashed blue lines) includes purchased components only.

Alternative perspectives



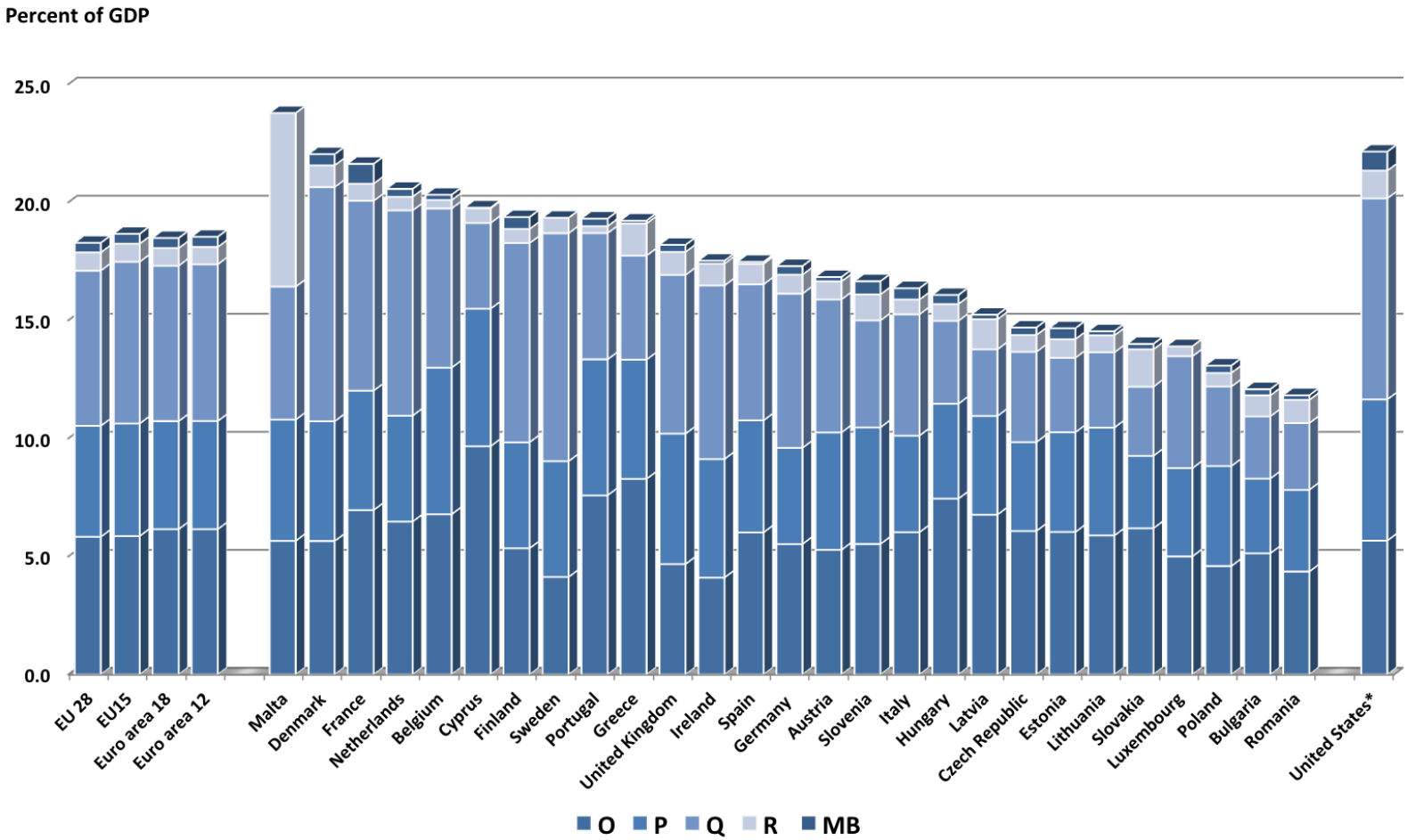
Notes. Preliminary. NA=National Accounts
*Government intangibles include purchased components only.

Government, size in value added terms



Notes. Data are for 2008 to 2013. U.S. is on a SNA basis

"Nonmarket" industries, size in value added terms



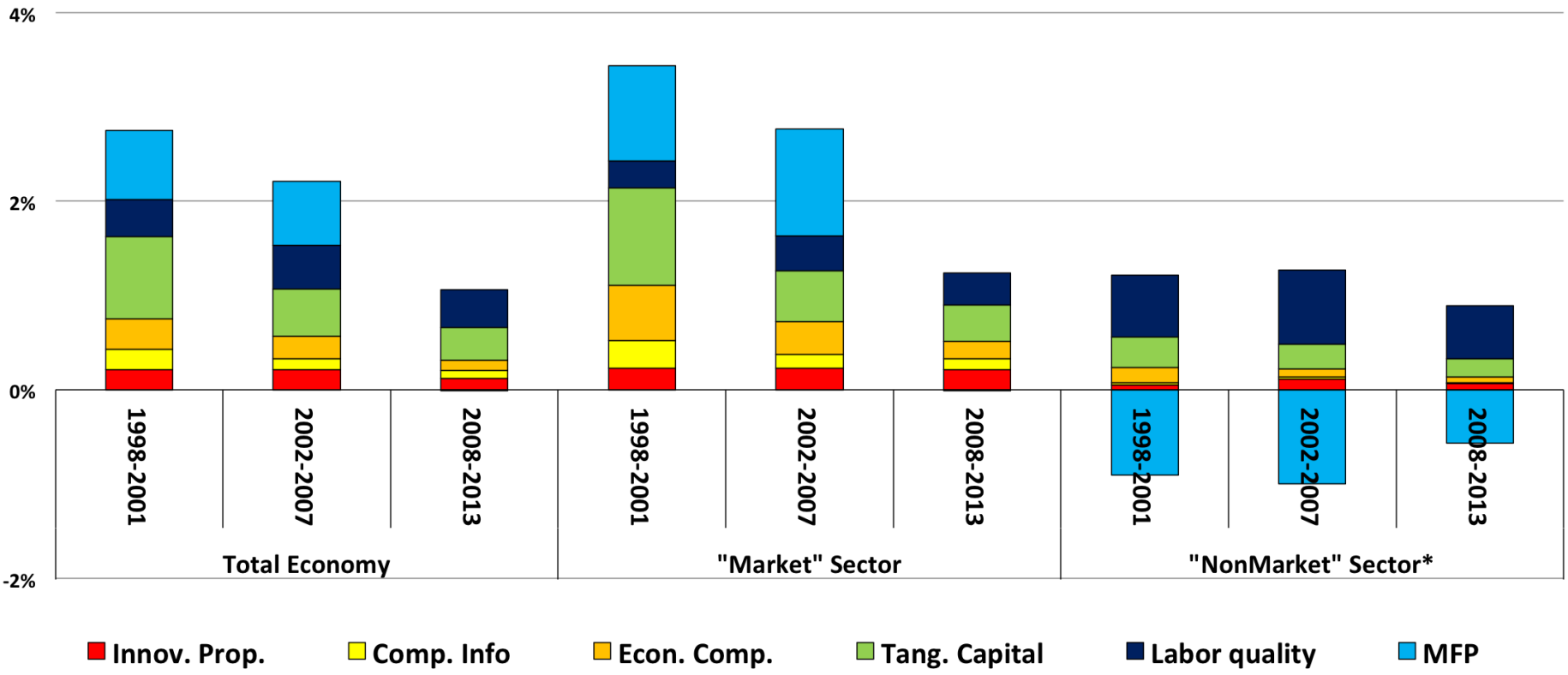
Notes. Data are for 2008 to 2013

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.

U.S. labor productivity decomposition, 1998-2013

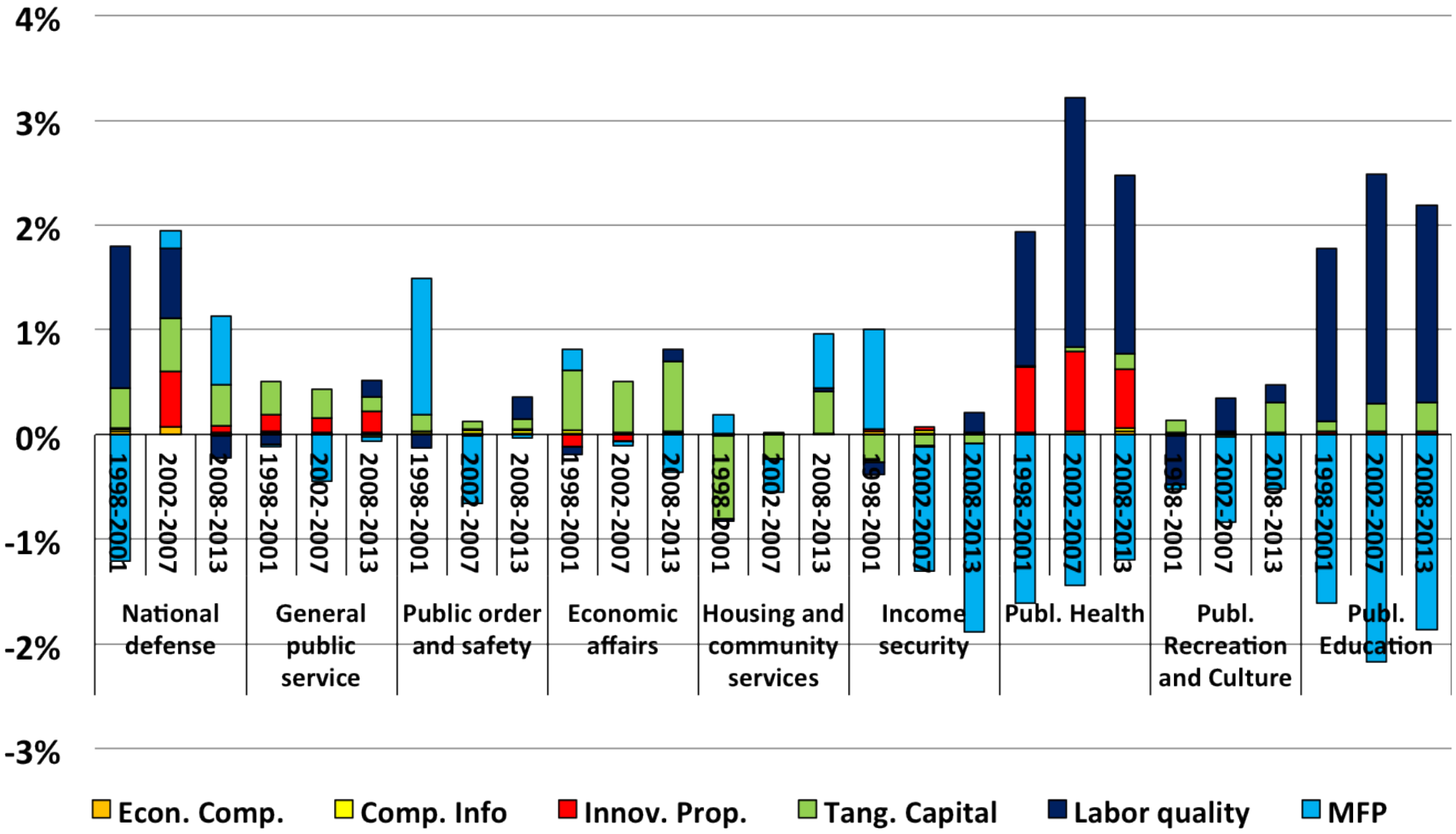


*Preliminary; excludes real estate.

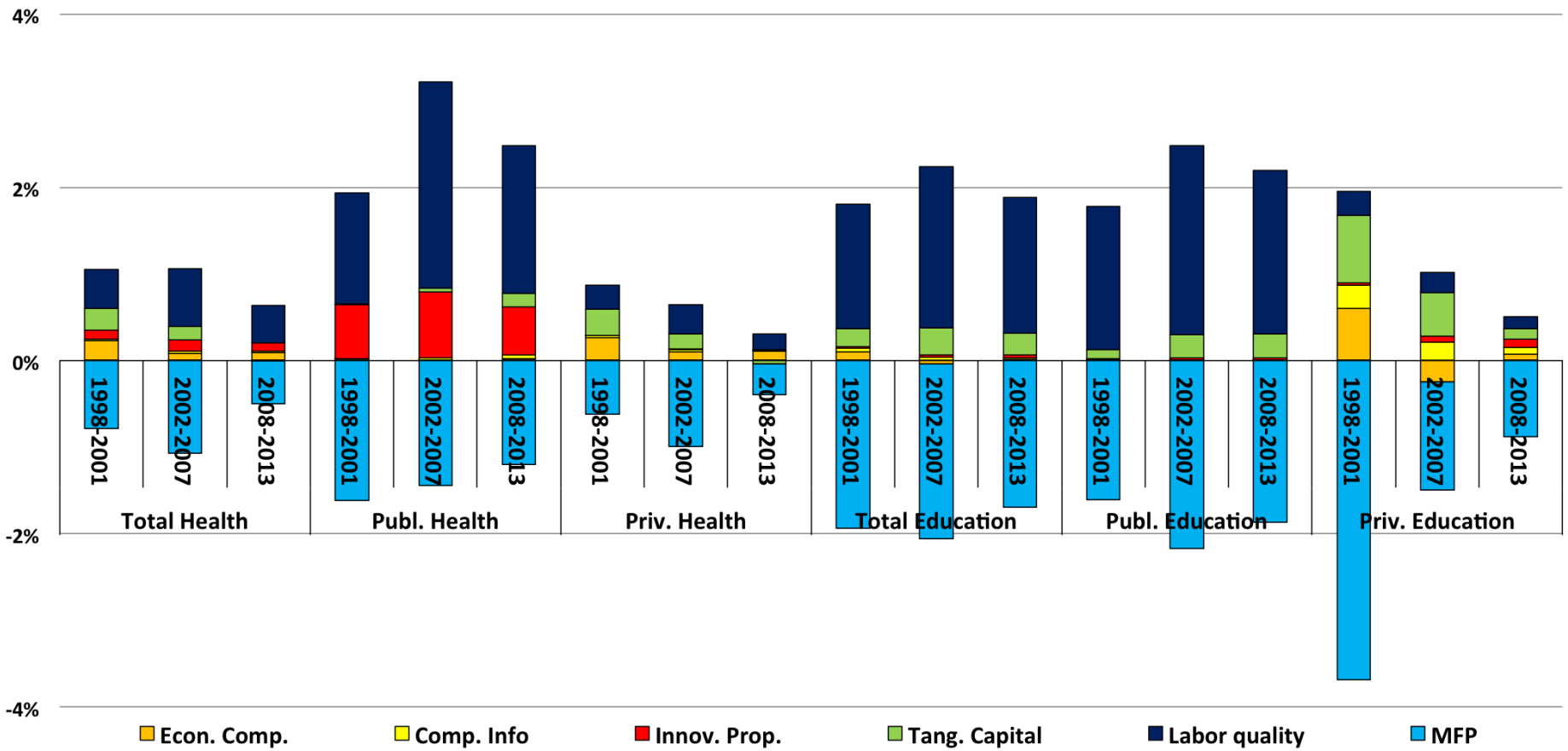
A few words about the U.S. data

- NAICS industry accounts report private activity, i.e., for-profit and not-for-profit
- For government, reports are by type of organization: full production accounts for federal GG (defense, nondefense), state&local GG, federal GEs, and state & local GEs
- COFOG data and detailed Fixed Assets data are available, from which production accounts can be estimated
- COFOG production accounts can then be allocated to relevant industries and internationally comparable sectors O, P, and R can be formed

FOG labor productivity decomposition, 1998-2013



Health and education labor productivity decomposition, 1998-2013

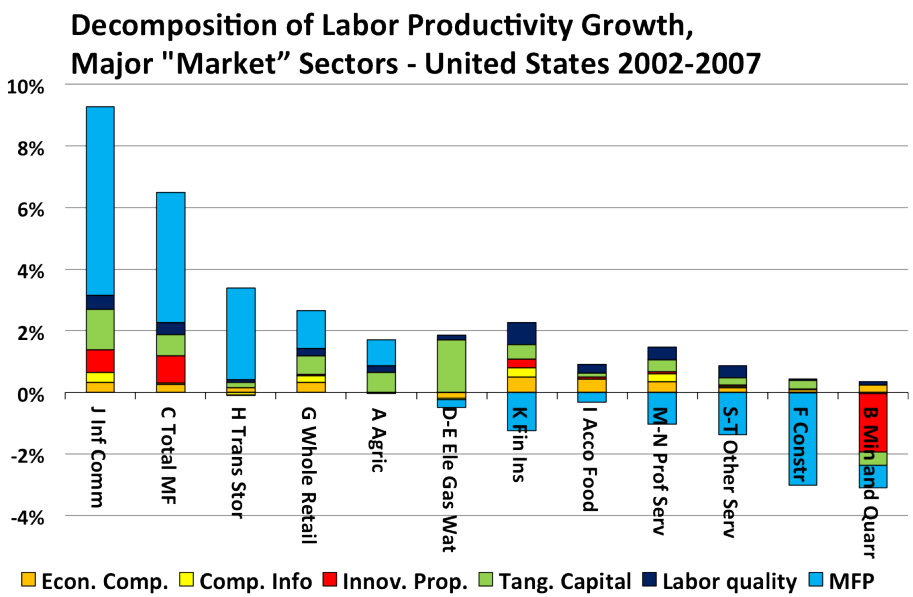


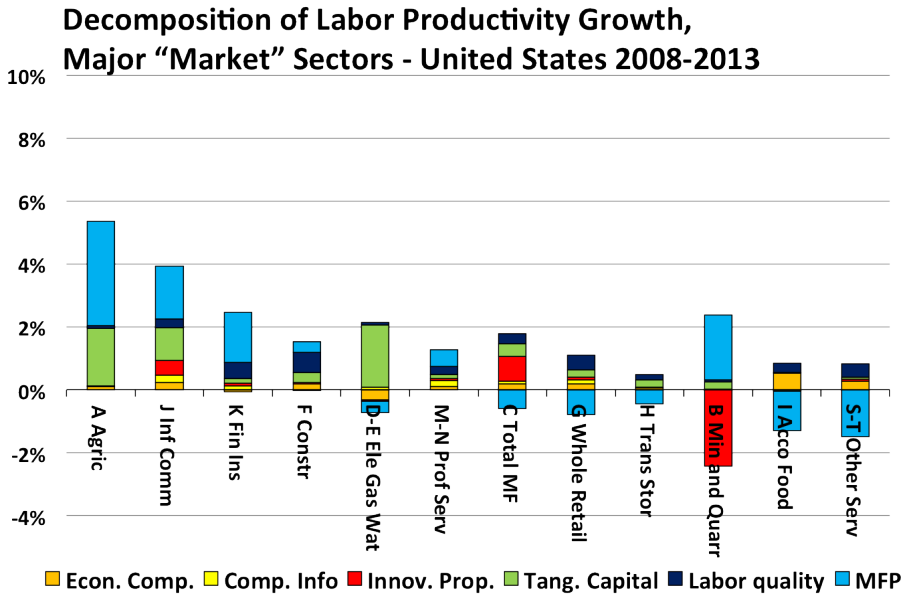
Preliminary.

- The U.S. share of VA in general government (SNA basis, 2008 to 2013) is the same as the average in the EU, and the U.S. share of "nonmarket" industries (sectors O, P, Q, R and MB) is a bit larger
- Labor productivity in health and productivity (P and Q) has shown little change since 1998 whereas multifactor productivity has been rather negative.
- MFP change in **both** the private and public segments of P, Q, and R is negative, although the private segments have been somewhat less negative since 2008
- Results are very preliminary
- Results may change if asset valuations are used to develop price deflators.

Back-up slides.

Industry productivity before and after 2008





Notes. Preliminary.
Source. Authors' elaboration of data issued by the U.S. BEA.