



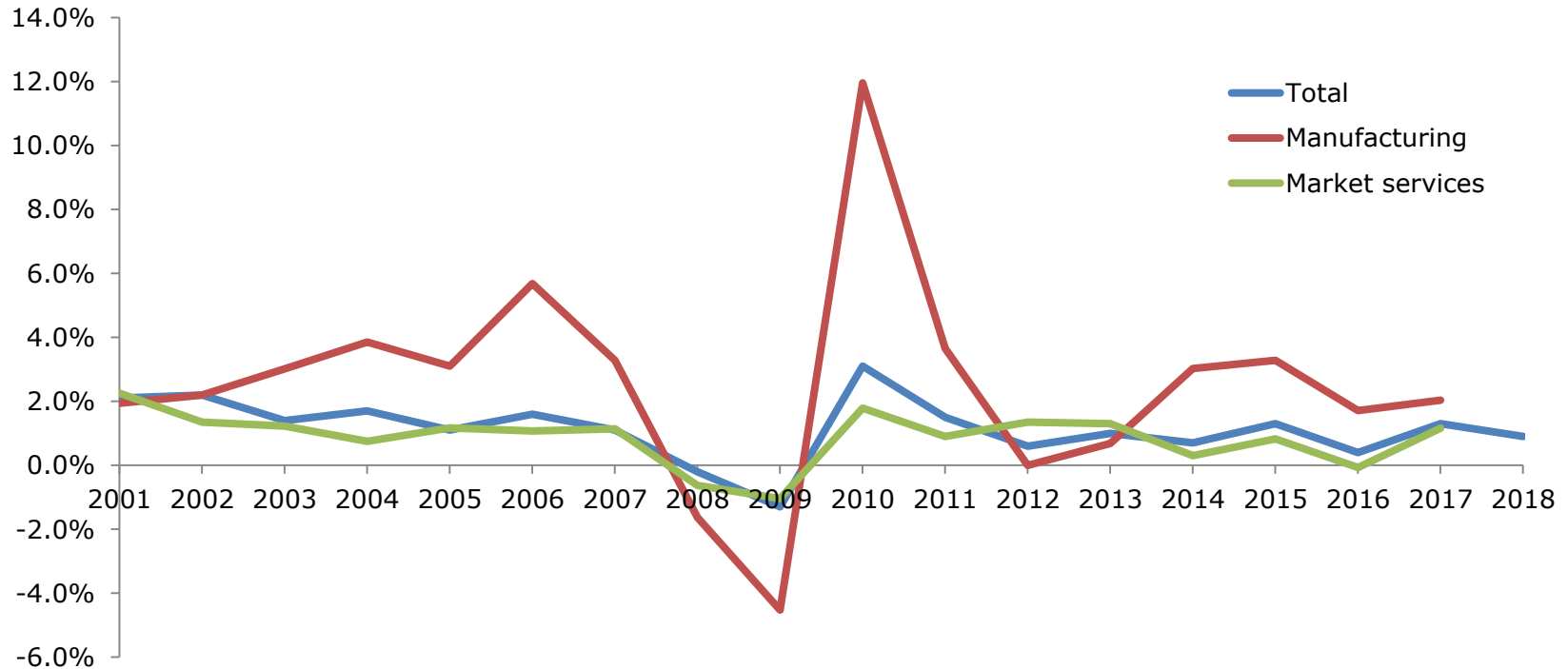
Productivity in Europe: Trends and Drivers in a Service-Based Economy

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Motivation: low and sluggish productivity growth in the EU



Source: EU KLEMS (2019) and Eurostat (2019)

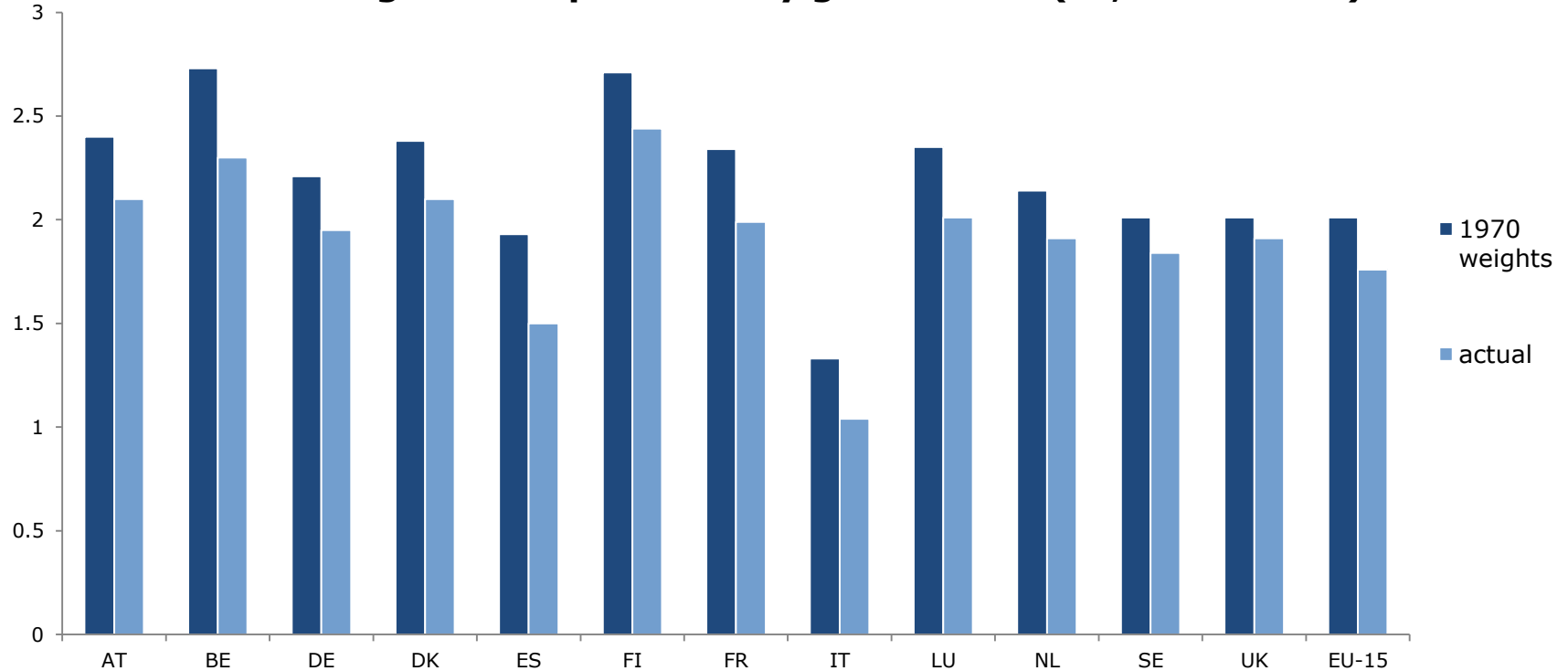
Drivers of productivity analysed

- Structural change
- Zombie firms
- Labour dynamics
- Firm size distribution
- Intangible investment
- Firm demography
- Business cycle
- Public expenditure

Presented today!

Negative impact of structural change

Average labour productivity growth rate (% , 1970-2016)



Source: STAN (2019) and EU KLEMS (2017)

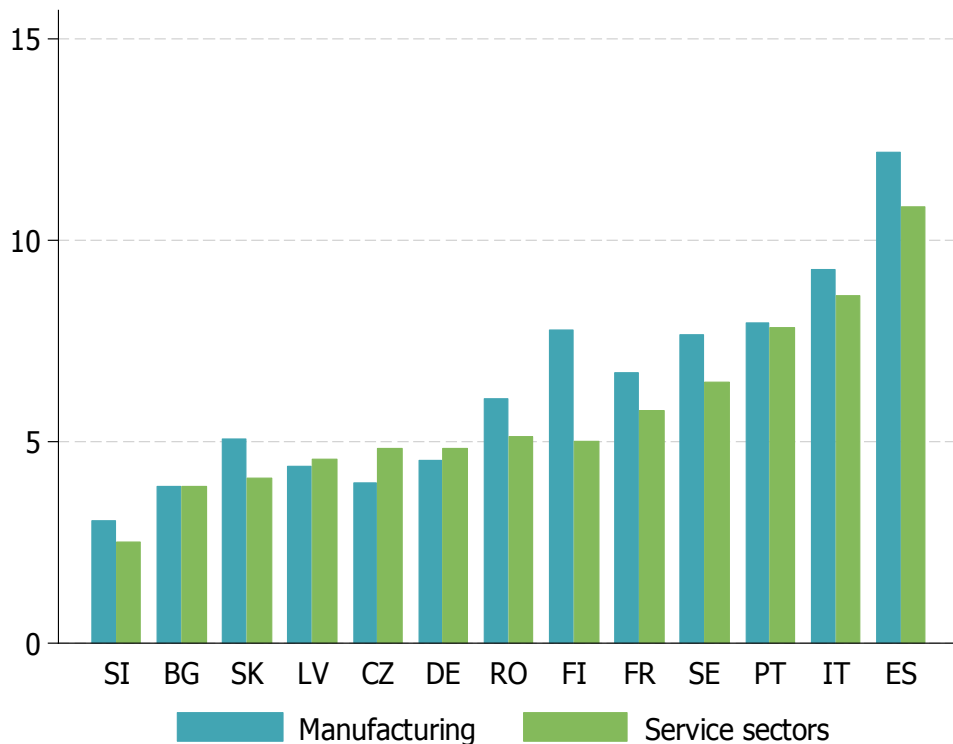
Role of services

EU-15: Average labour productivity growth with different nominal value added weights, including and excluding service (percentages)

Base year	All industries	Excl. services
1970	2.12	2.83
1980	1.98	2.80
1990	1.91	2.77
2000	1.78	2.72
2010	1.67	2.65
actual	1.89	2.76

Source: EU KLEMS (2017)

Zombie firms arise prevalently in manufacturing and services in some Member States



Zombie: ≥ 10 year old & interest coverage ratio less than one for 3 years

Average shares 2010-2015

Source: based on Orbis (BVD)

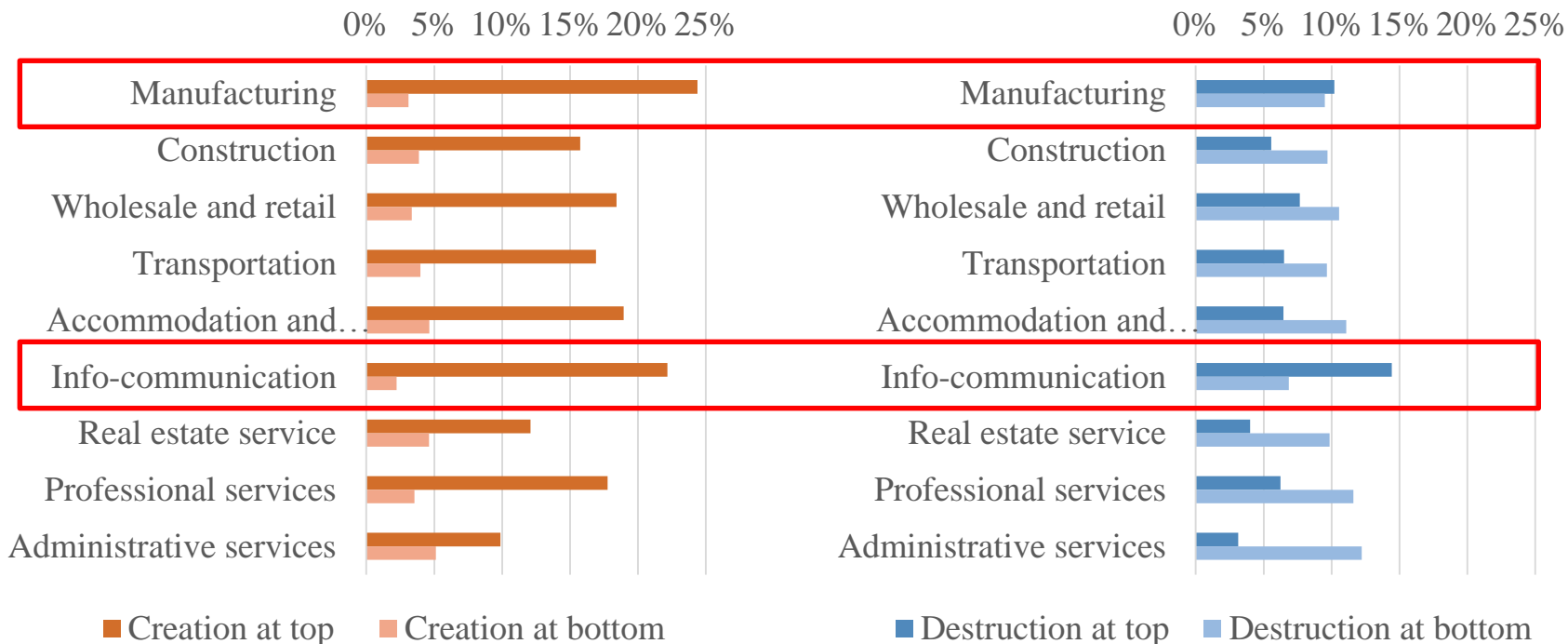
Zombie congestion on healthy firms

	Employment growth	Investment rate	Labour productivity	TFP
Manufacturing				
All firms	-0.1%	-2.7%	-3.3%	-3.2%
Young firms	-0.4%	-0.6%	-6.5%	-7.1%
Services				
All firms	-1.0%	-2.9%	-8.2%	-5.1%
Young firms	0.9%	1.5%	-11.1%	-8.2%

Note: results with zombie share of 8.3% (top quartile)

Source: based on Orbis (BvD)

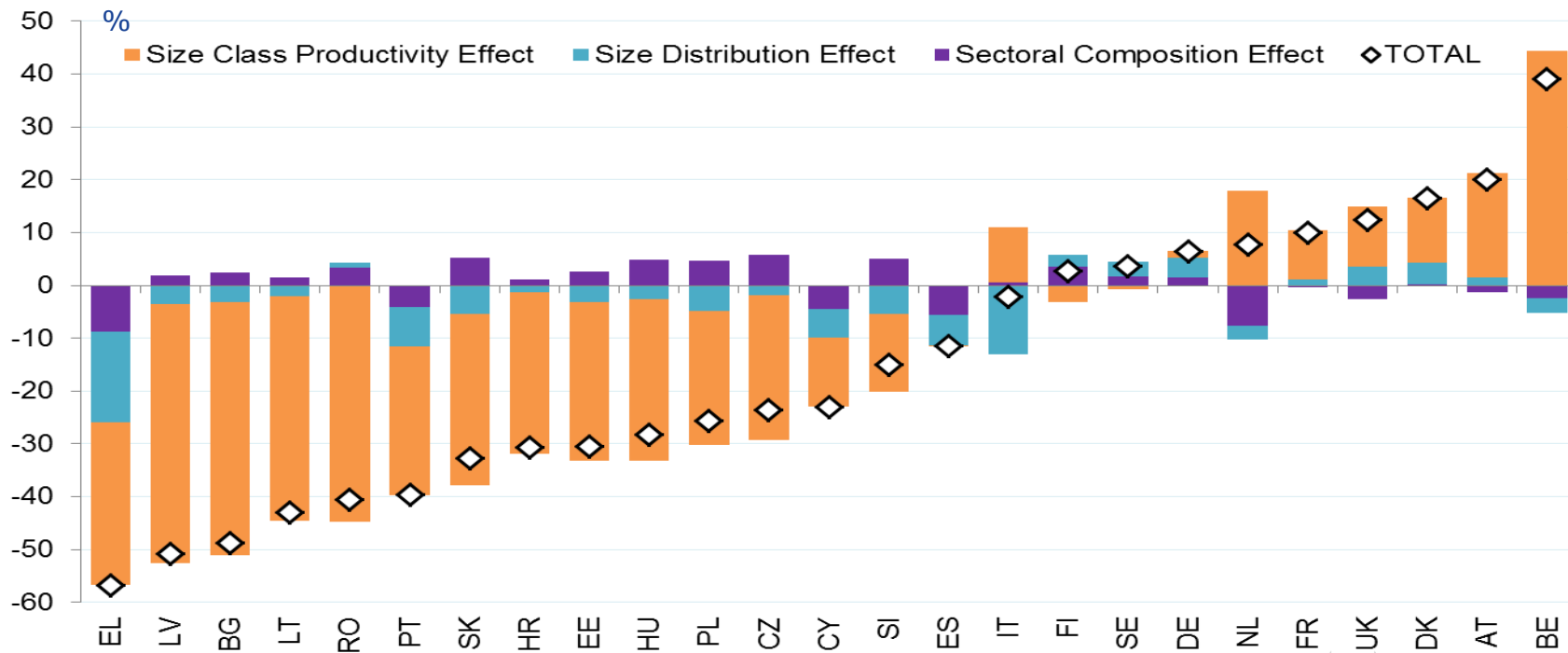
Productivity enhancing job reallocation but large heterogeneity across sectors



Source: based on Orbis (BvD)

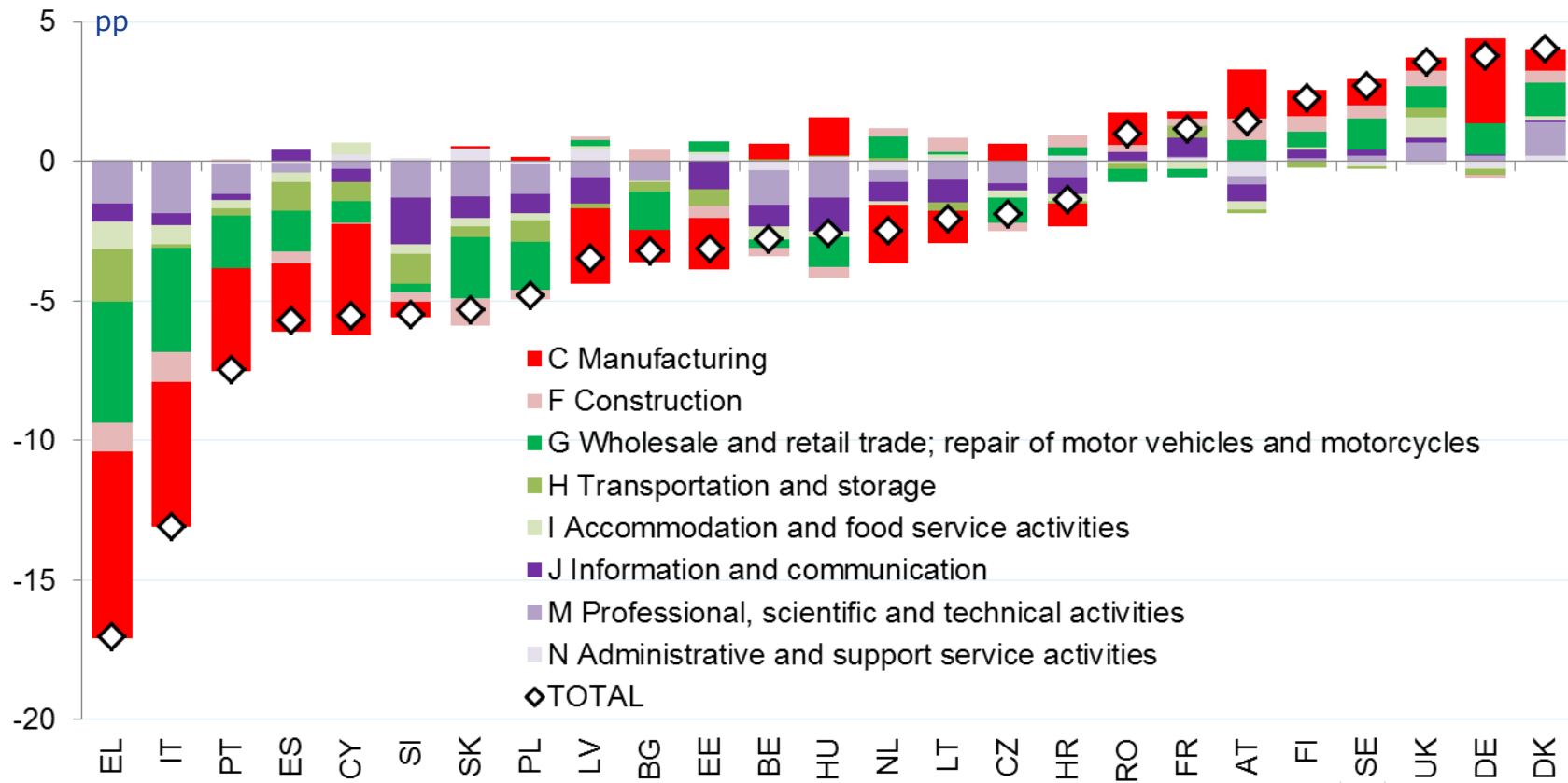
Firm size distribution and productivity

Labour productivity relative to the EU28, contribution by effect*



*Based on SBS data for 2016 (or latest); NACE sections C, F, G, H, I, J, M and N: value added figures adjusted by GDP-based purchasing power parity; IE, LU and MT not included

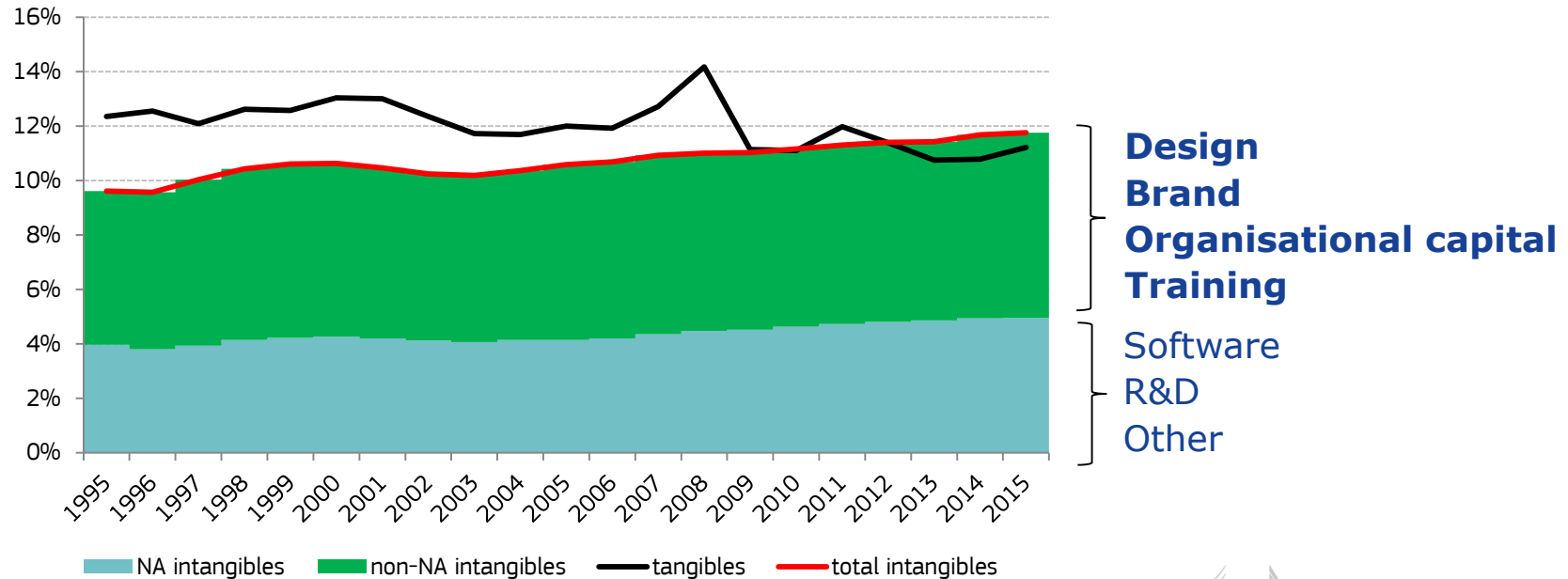
Size distribution effect, contribution by NACE section*



*Based on SBS data for 2016 (or latest); NACE sections C, F, G, H, I, J, M and N: value added figures adjusted by GDP-based purchasing power parity; IE, LU and MT not included

Intangible investments are now *higher* than investments into tangible assets

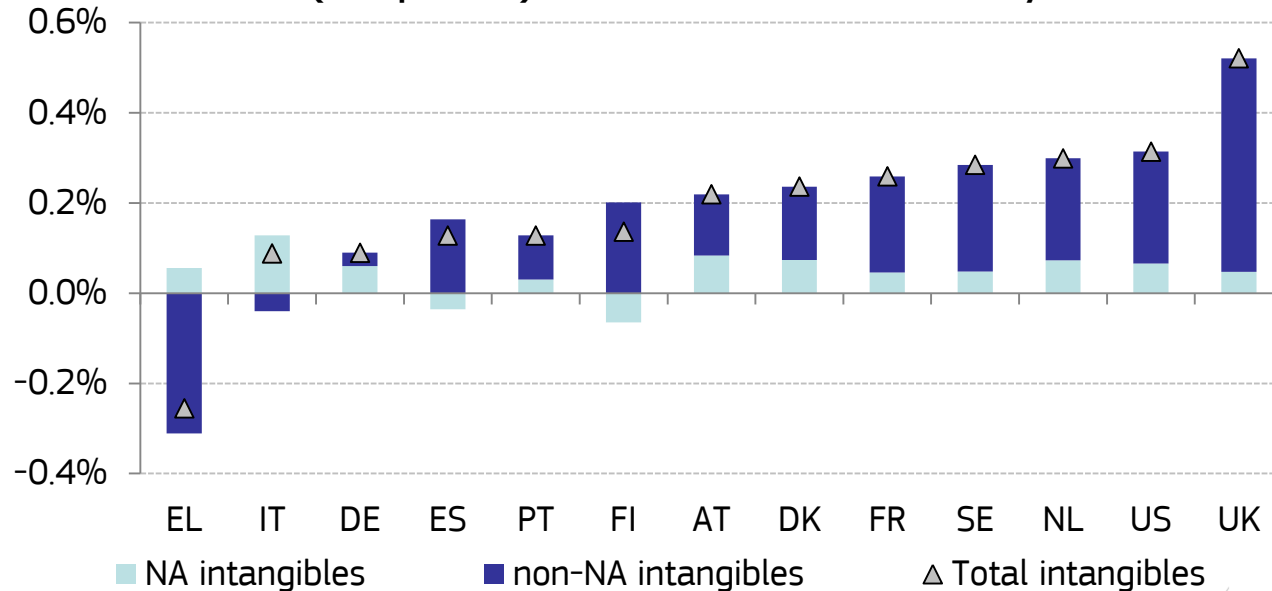
*Investment-to-value added, private sector w/o real estate
(EU15 excluding Ireland)*



Source: Intan-Invest (2018) and Eurostat

Non-NA intangibles have a major role in services and in the whole economy as well

Productivity growth explained by intangible investment in 2015
(% point) – Business economy



Source: based on Intan-Invest (2018) and Eurostat; production function estimates.

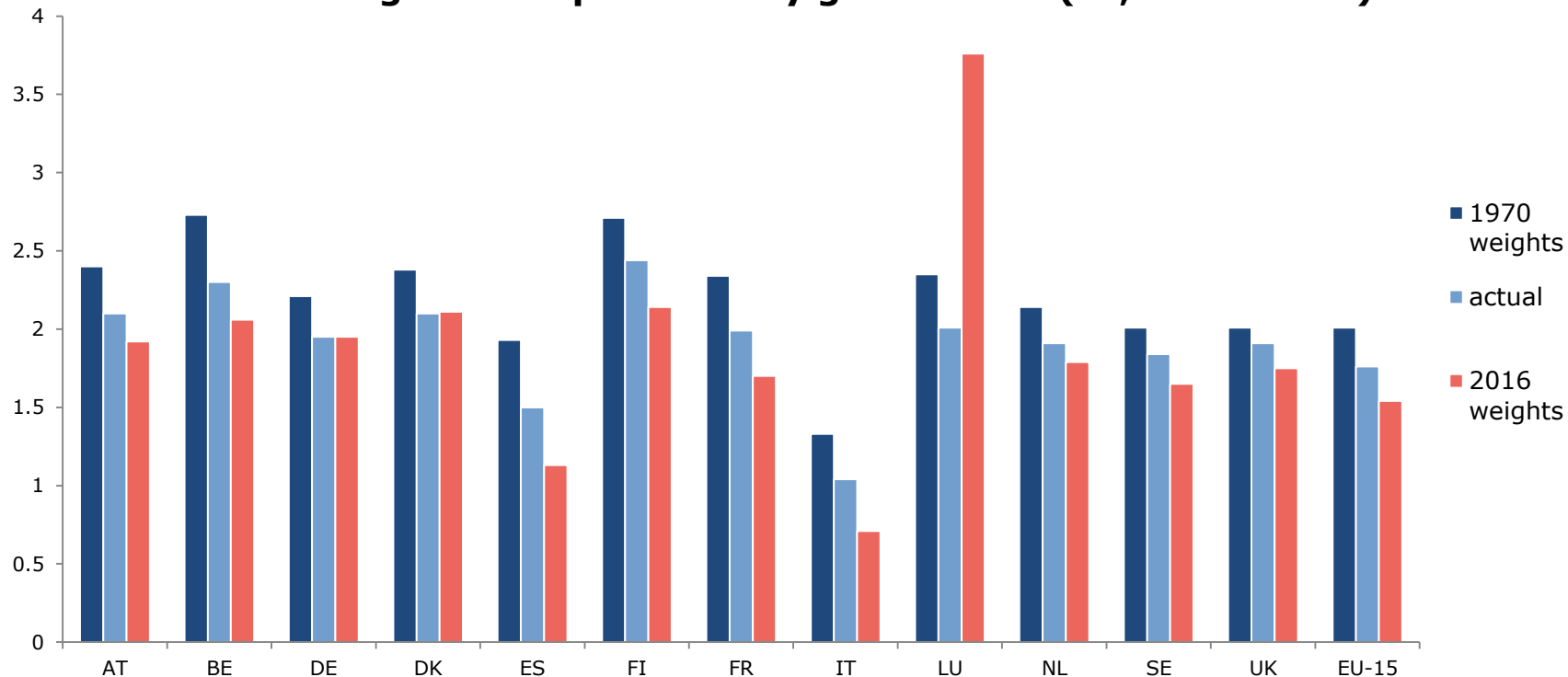
Main conclusions of the report

- Negative effect of structural change through *tertiarization*
- Concerns on zombie firms in some MS, negative effect on healthy, especially young firms
- Productivity enhancing job reallocation
- Firm size distribution has a large role for some MS
- Need to better account for non-National Accounts intangibles
- Widespread decline in entry rates in services across EU countries
- Relevant role of labour hoarding and utilisation in economic cycles
- Public expenditures for economic affairs has a positive effect in business services

Background slides

Impact of structural change – with 2016 weights

Average labour productivity growth rate (% , 1970-2016)



Source: STAN (2019) and EU KLEMS (2017)

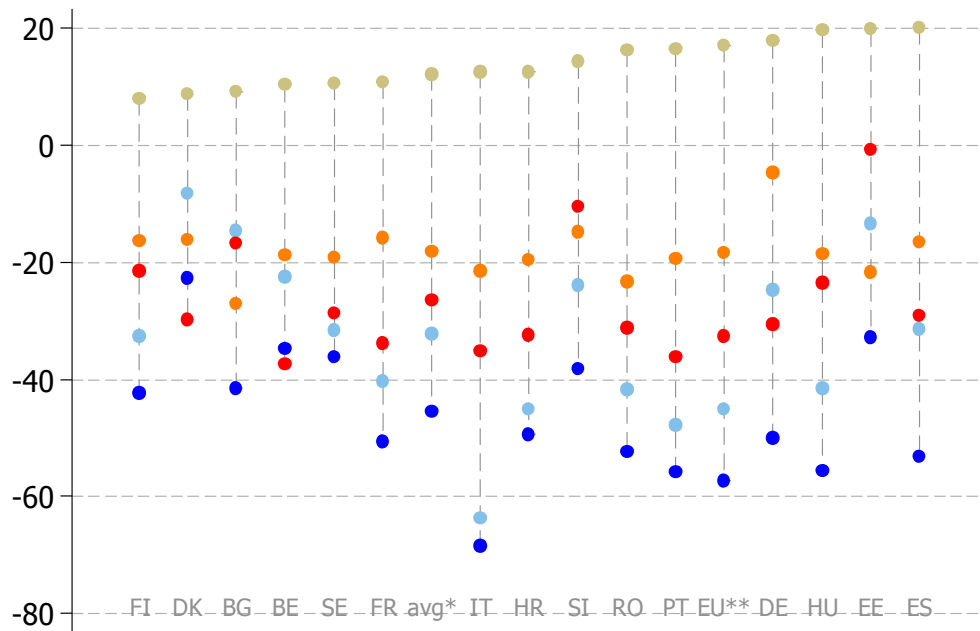
Results for the business economy

Identification: how non-zombies perform compared to zombies in differently zombie-ridden industries

	Employment growth	Investment rate	Labour productivity	TFP
Non-Zombie	0.0203*** (0.001)	0.0814*** (0.001)	0.613*** (0.003)	0.606*** (0.003)
Non-Zombie * Industry Zombie share	-0.0340*** (0.010)	-0.315*** (0.009)	-0.906*** (0.033)	-0.642*** (0.032)
Number observations	9,768,728	11,262,951	10,853,346	10,236,654

Source: based on Orbis (BvD)

Productivity enhancing job reallocation but large heterogeneity across MS



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- growing entrant
- growing
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- exiter

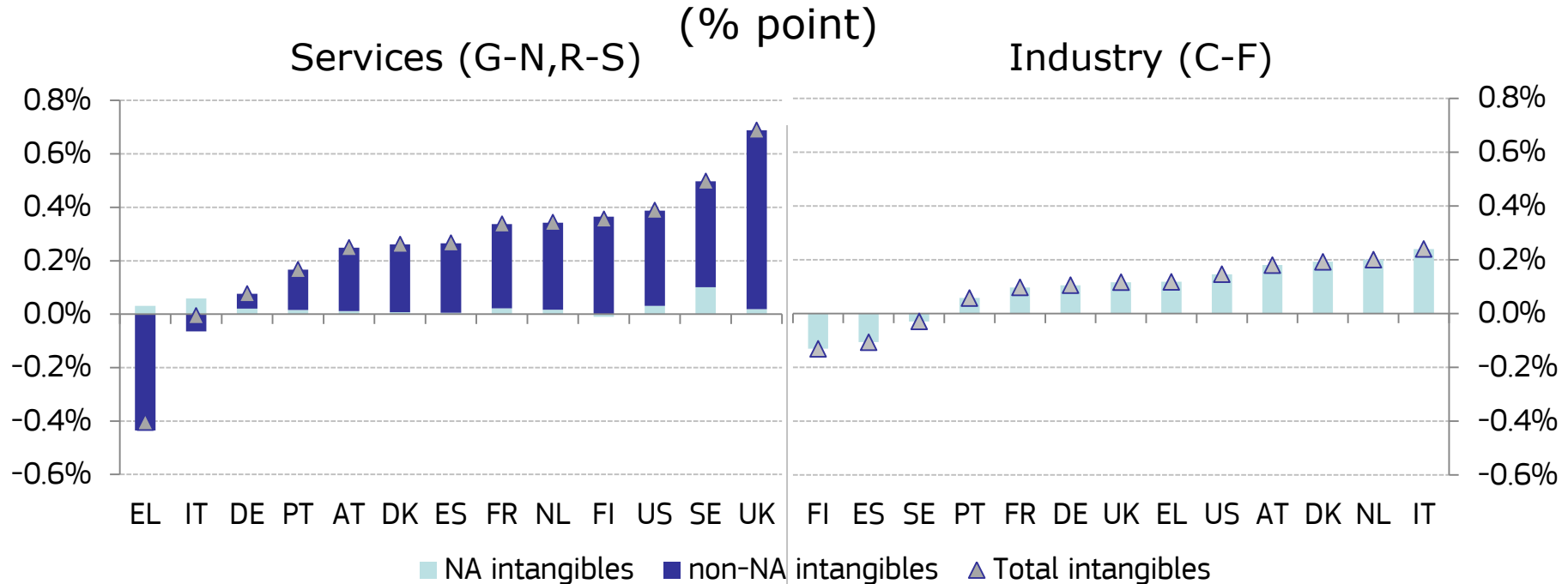
Source: based on Orbis (BvD)

Beyond R&D: different types of tangible and intangible assets as capital inputs in production

		Name of the asset	Type of asset	Included in National Accounts?	
		ICT	Tangible	Yes	
		Equipment + Machinery		Yes	
		Buildings		Yes	
NA intangible	}	Software + DB	Computerised information	Intangible	Yes
		R&D	Innovative property		Yes
non-NA intangible	}	Mineral explorations + Art		Economic competency	
		Design	No		
		Brand	No		
		Organisational capital	No		
		Training			No

Non-NA intangibles play a major role for services

Productivity growth explained by intangible investment in 2015



Source: based on Intan-Invest (2018) and Eurostat; production function estimates.