

FIDIC-EFCA Consulting Engineering Industry Survey

Total demand (market - non-market; private - public)

EU (largest 20)

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Bricad Associates, Switzerland

Sofia, 2 June 2016

survey.peterboswell.net

From National Accounts

Investment (GFCF)

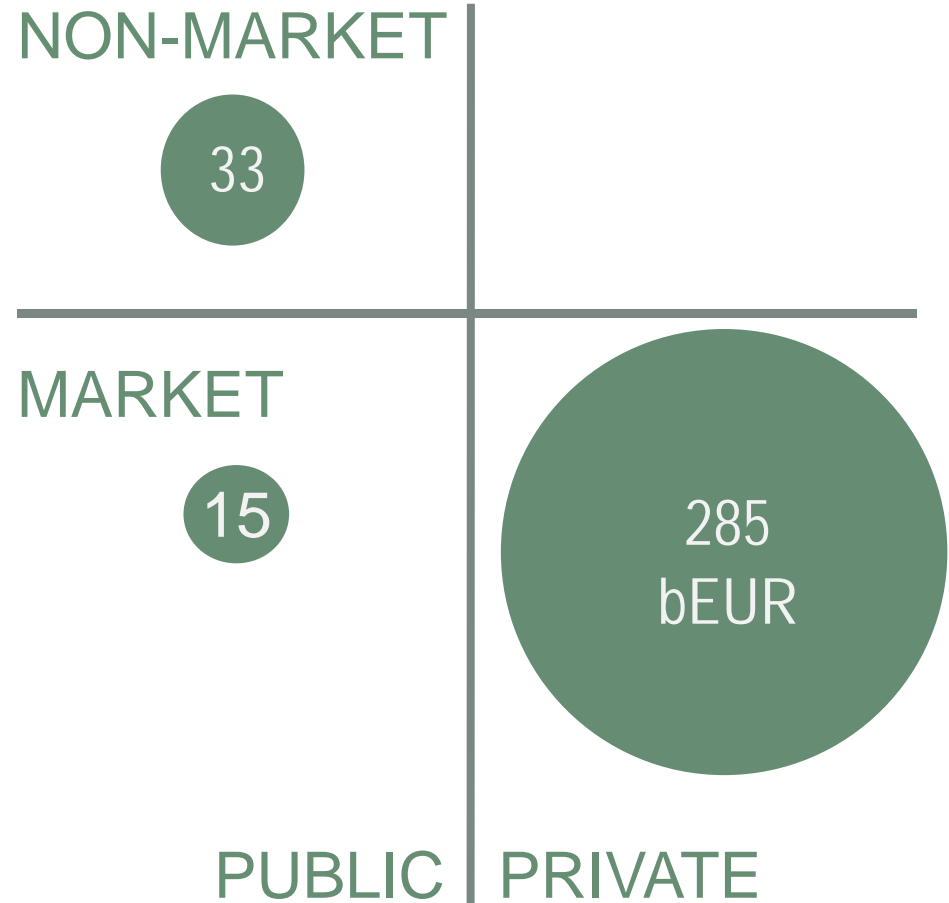
..... benchmark against

Supply (Supply-Use Tables)

Demand only (not revenue)

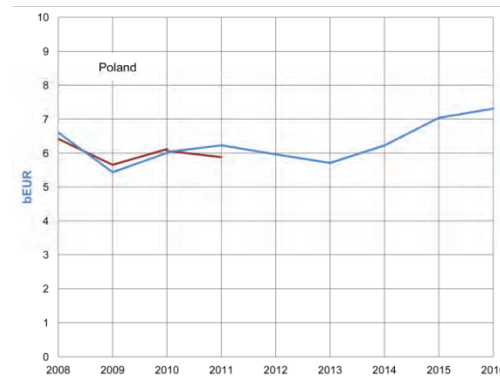
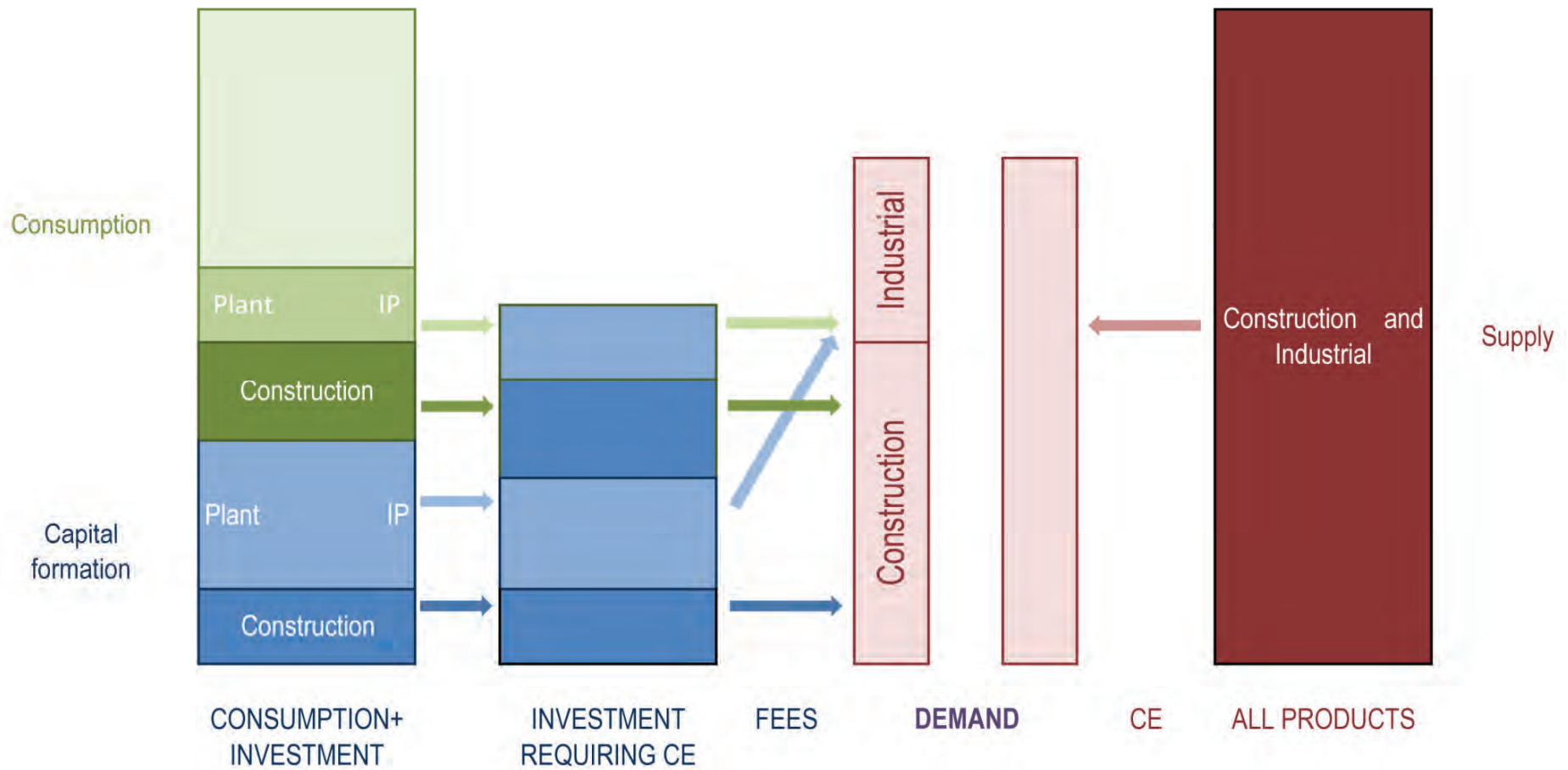
Work available

Not who meets demand

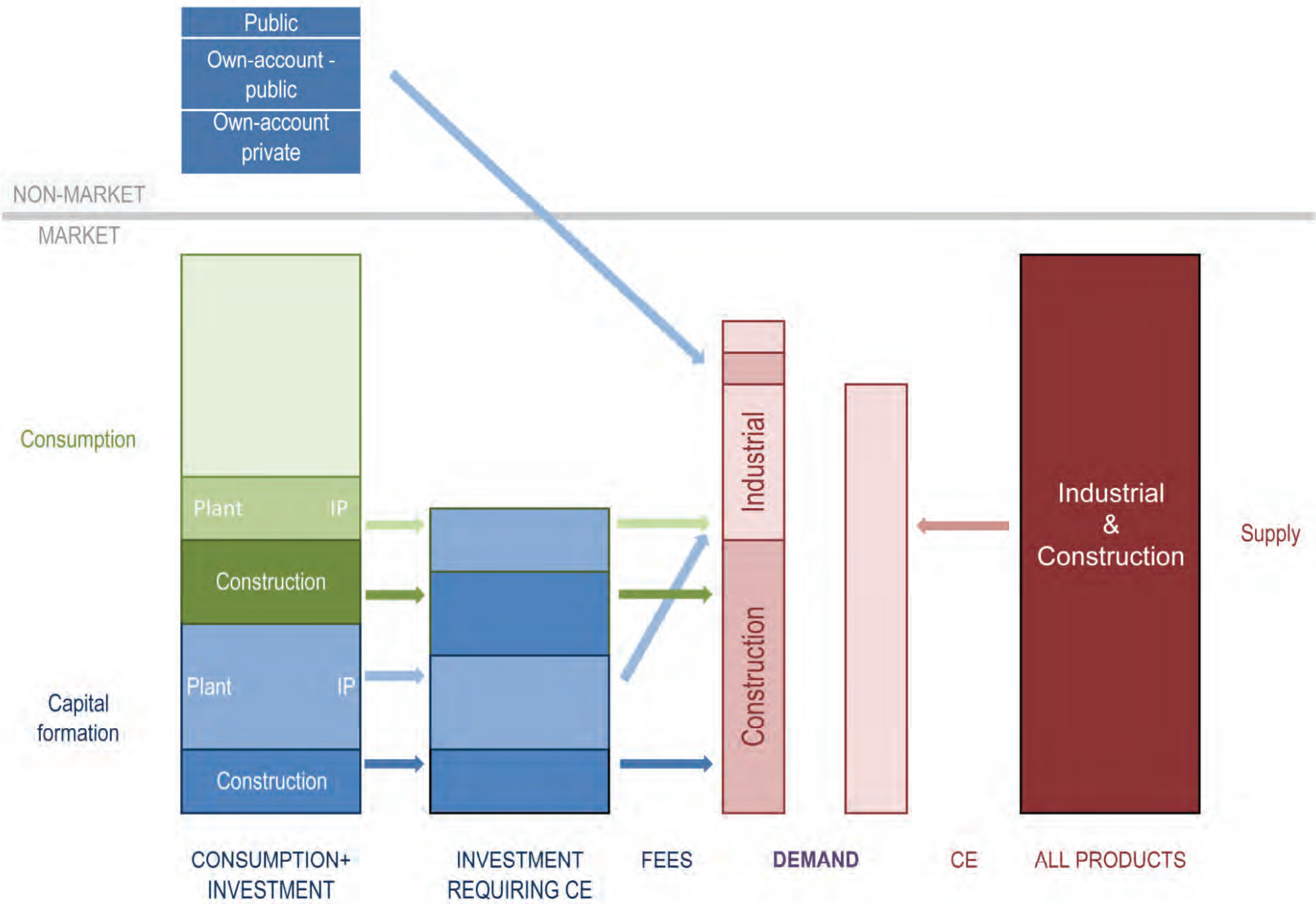


CE Industry main market activity	Other Industries	
	Secondary market activity	In-house activity
60%	20%	20%

Benchmarking



Add non-market investment



Demand forecast

Market - non-market
Public - private

Fees

Imports - Exports

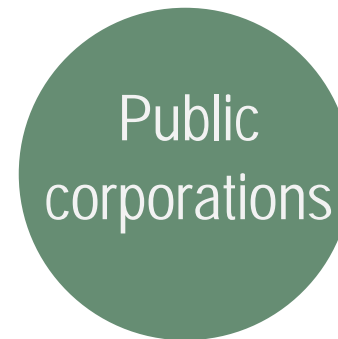
Demand share

Construction
+ M & R
Industrial
+ Own-account design
+ R&D

NON-MARKET



MARKET



PUBLIC

PRIVATE

How to value change in performance?

Construction

Basically the same.

An investment today in a modern house leads to an increased demand for services.



Industrial

Huge change.

An investment today in a phone leads to a very small increase in the demand for services.



Capture value by adding in investment for: **own-account design**
R&D

Investment

Construction (dwellings, buildings & structures, infrastructure)

- add M&R (20-50%, 30%, 55%)

Plant (transport equipment, other equipment, defense systems)

- remove ICT equipment, software
- include activities requiring design and engineering (about 64%)

Intellectual Property (R&D, licences)

- remove licences

Supply

M71 for architectural & engineering activities, without technical testing & analysis.

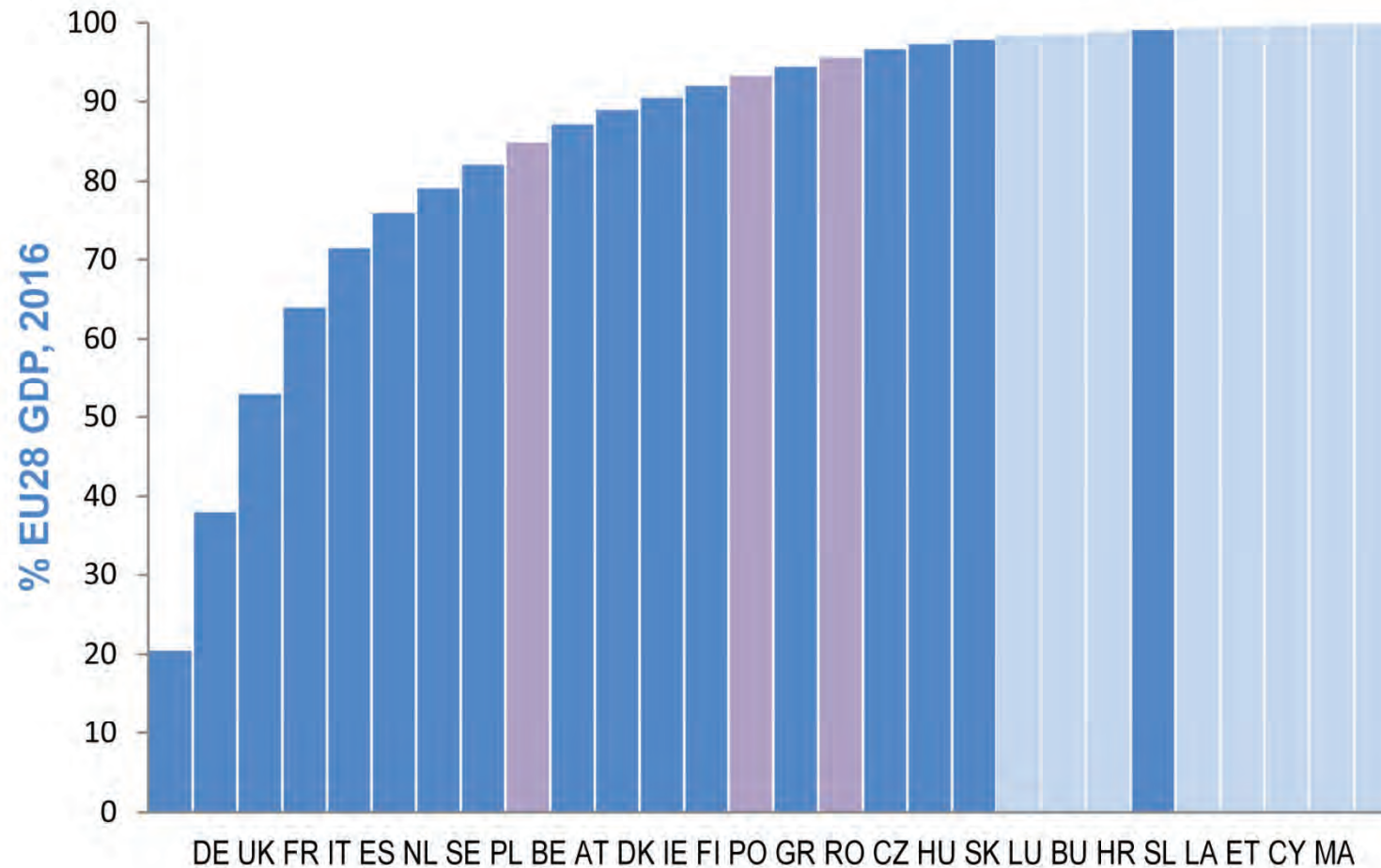
M72 for R&D for plant & equipment.

B09 for mining support for exploration.

M74 for design for advanced technical products.

M80 for services for buildings and landscape.

Data



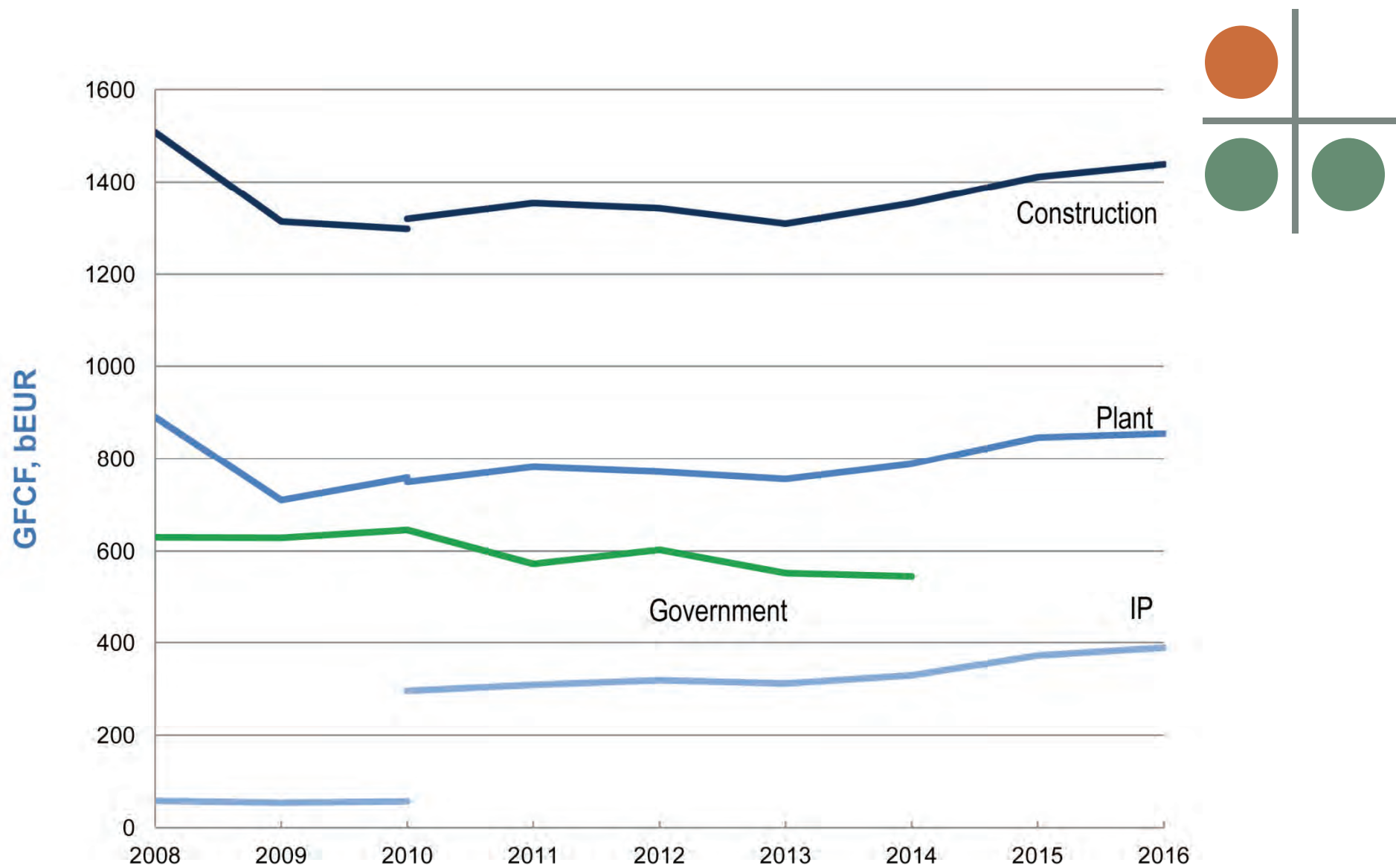
EU20

= 98% EU28 GDP

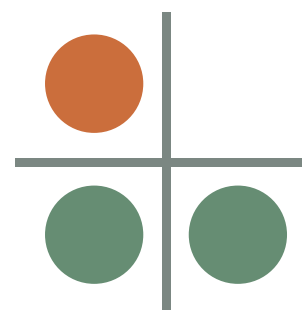
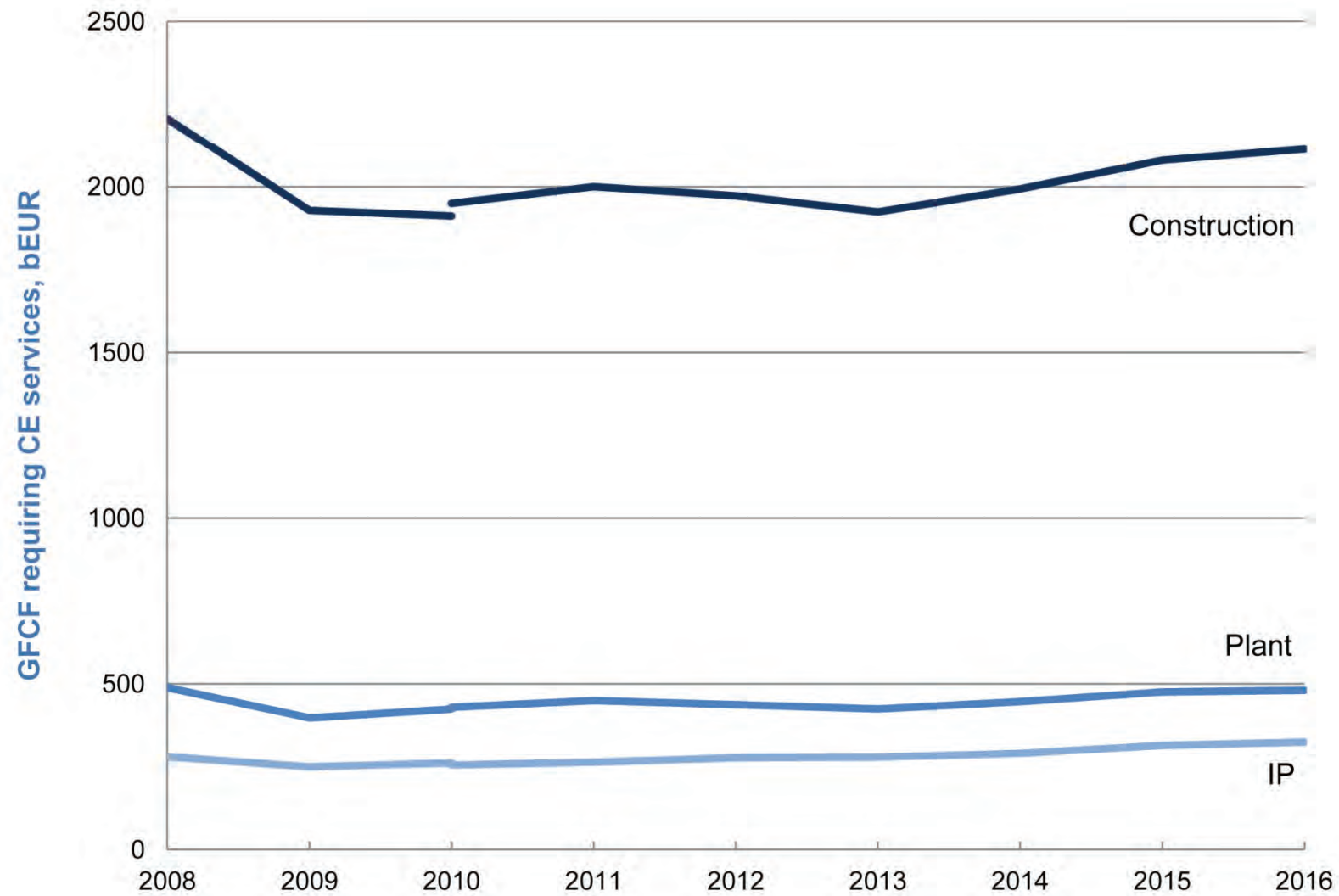
Belgium, Romania: use averages for asset breakdown

Poland: no ESA2010 accounts

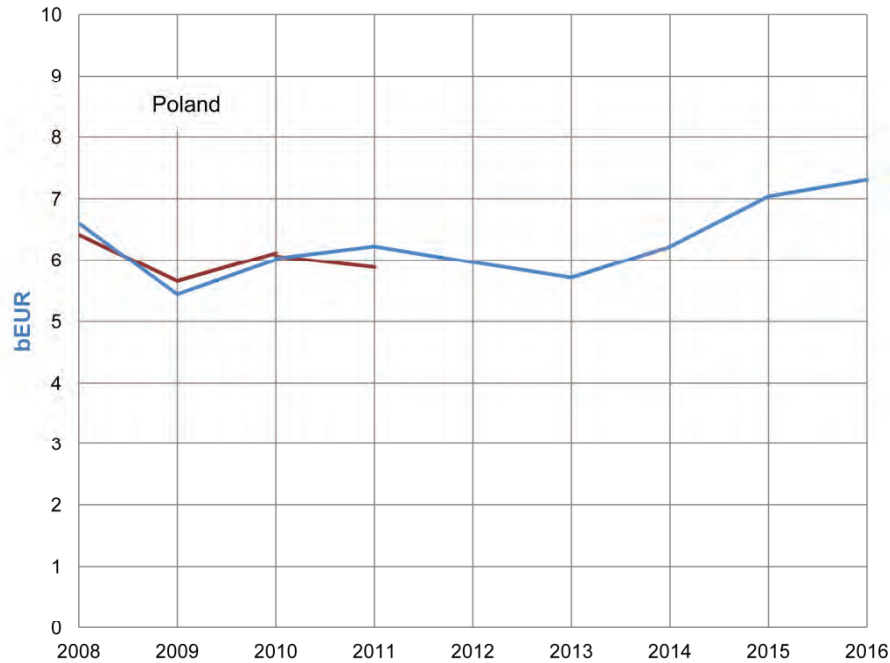
Investment



Investment requiring services



Benchmarking - Fees



Construction fee
for Construction

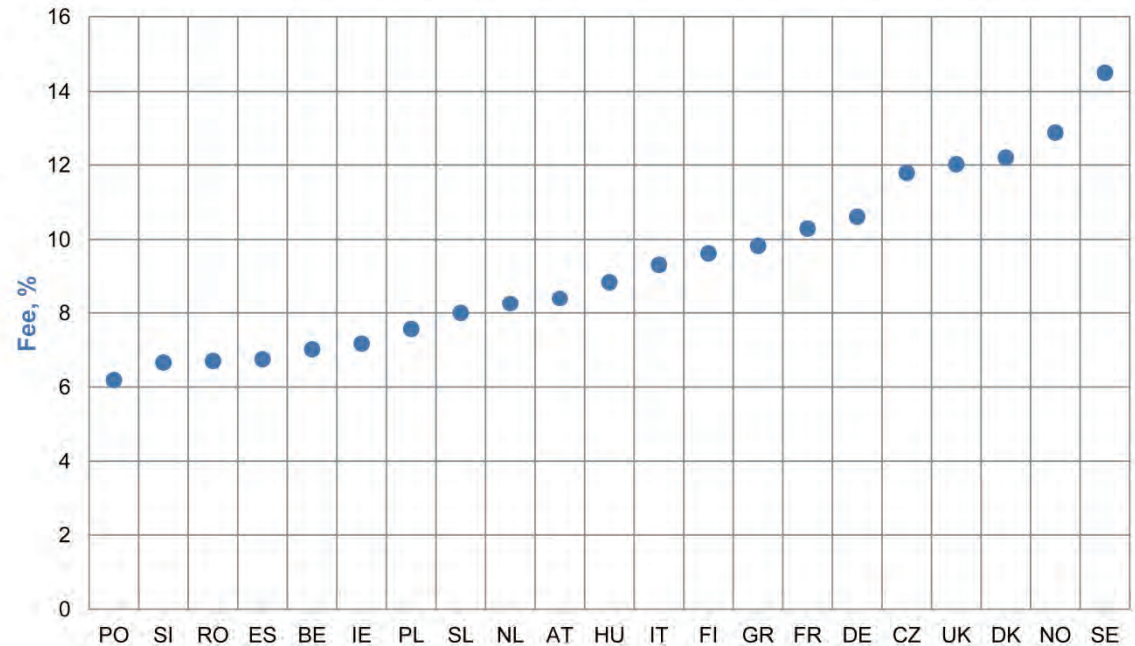
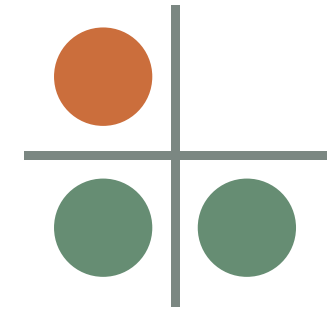
+

Industrial fee:

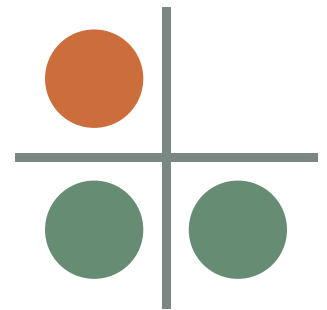
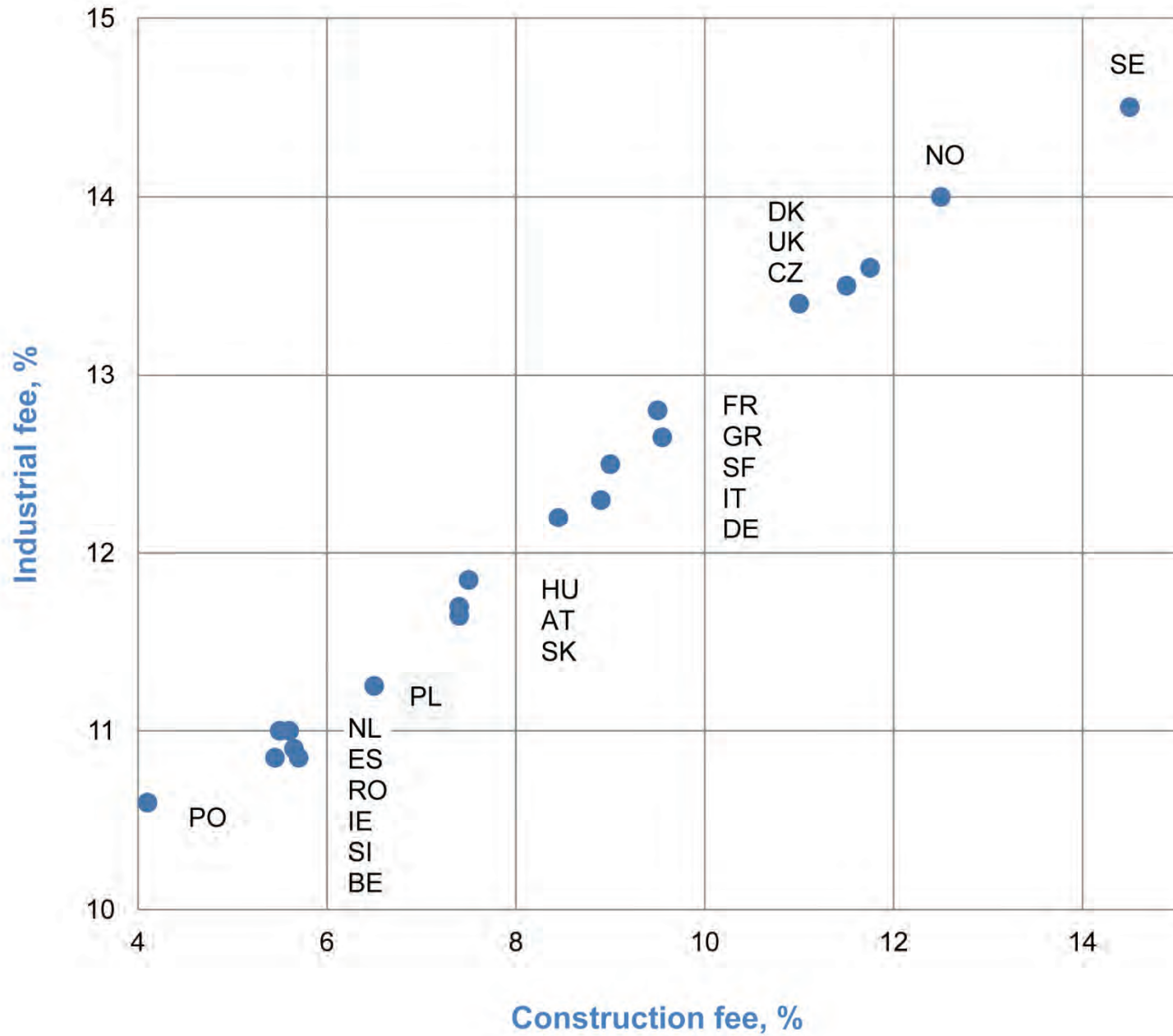
for Plant & R&D

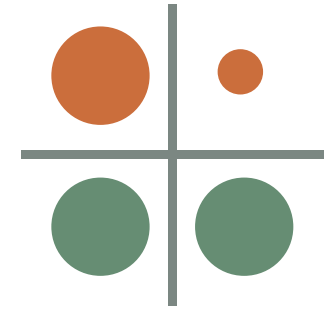
> Construction fee

<15% investment



Benchmarking - Fees





Market own-account design

EU INTAN's "own-account software" method.

Design and development engineers & architects performing CE services represent 62% of the design labour force.

Non-market own-account design

Private non-market ("non-profits") very small investment.

Public non-market:

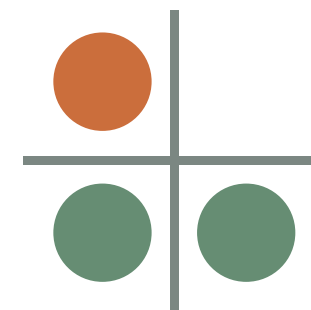
- EU SPINTAN
- 25% of market own-account design.

Non-market public investment

Add grants and other capital transfers to GFCF.
Include grants to cancel out public investment in the market sector.

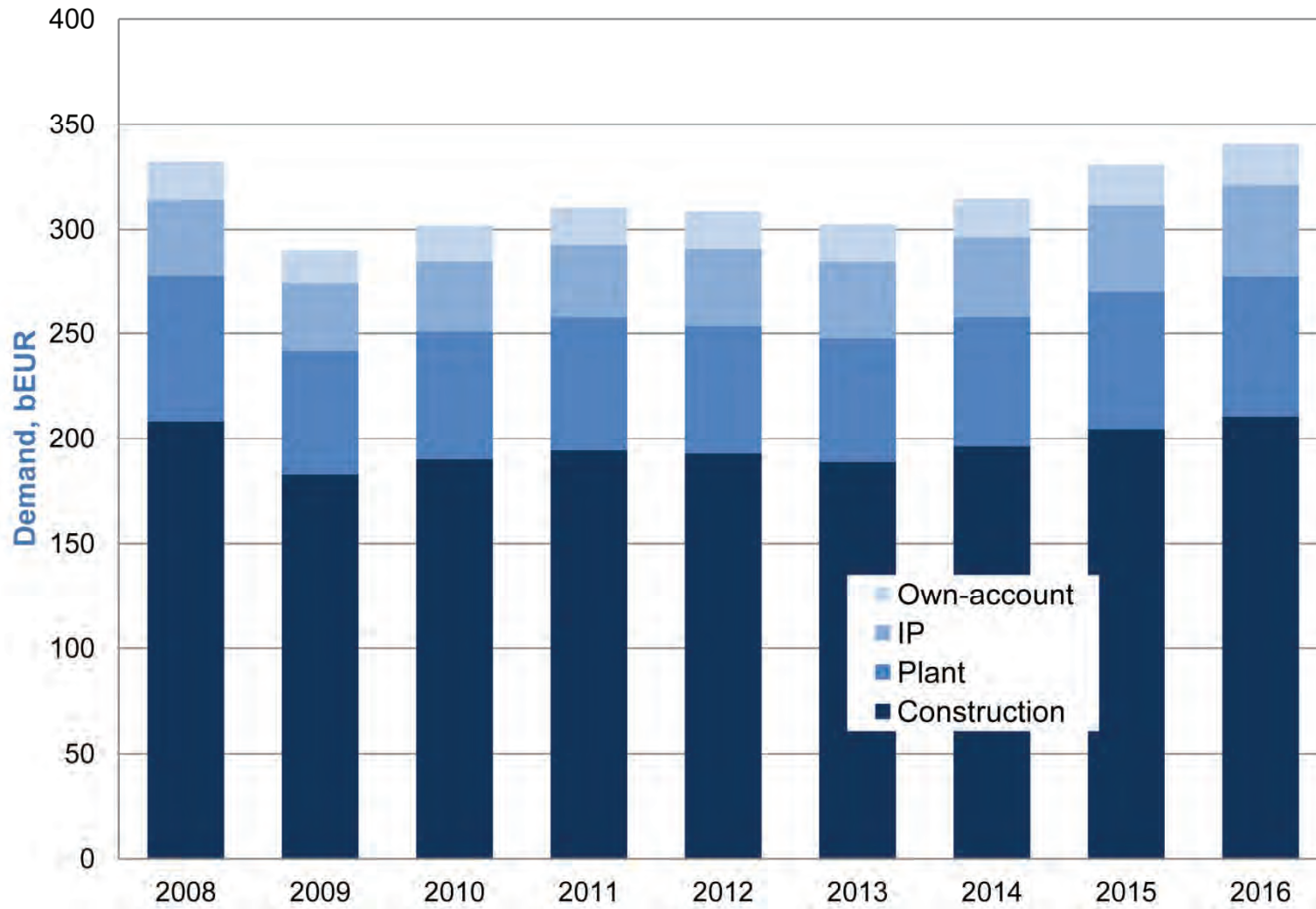
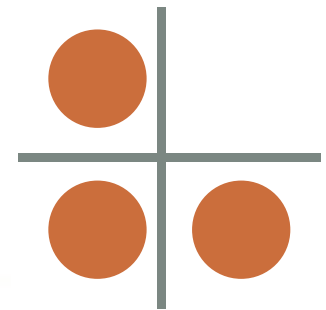
Use *Classification of the Functions of the Government* database.

Assume COFOG functions correspond to National Accounts' activities.

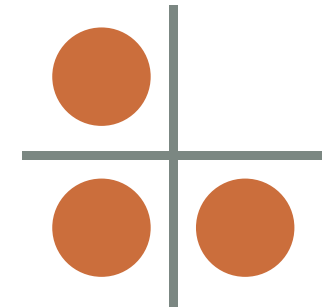
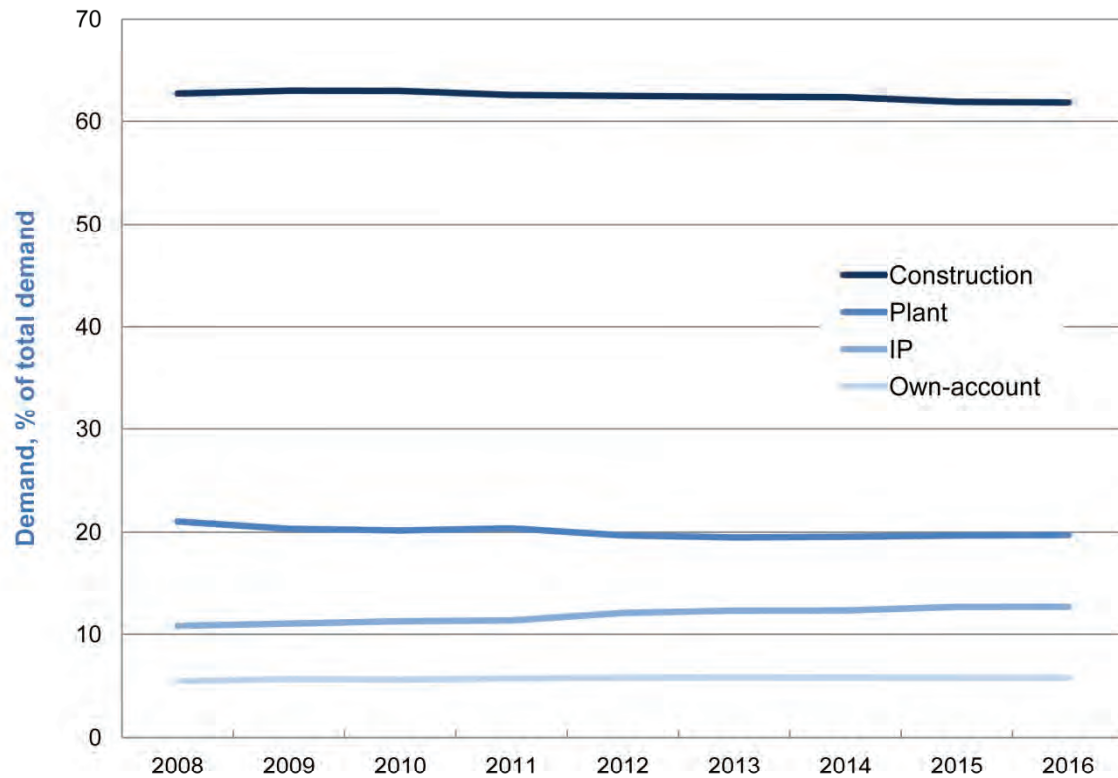


COFOG	National Accounts
Transport, Communication	Transport, Communication, Storage
Health	Health, Social services
Education	Education
Fuel and energy	Electricity, Gas
Waste, Waste water	Water supply
Dwellings	Housing & community amenities Housing & community development

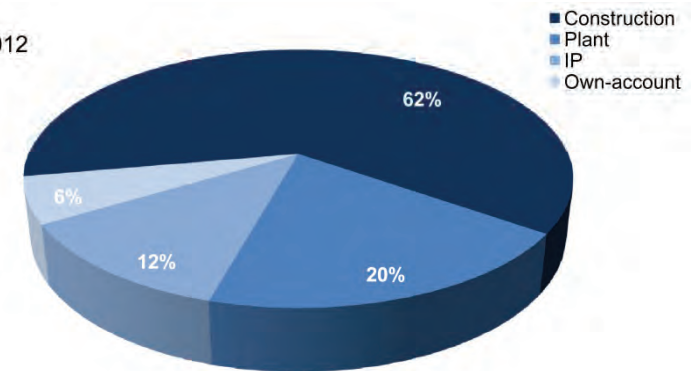
Total demand: EU20



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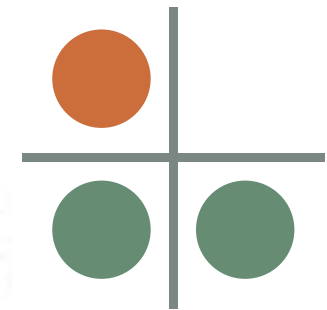
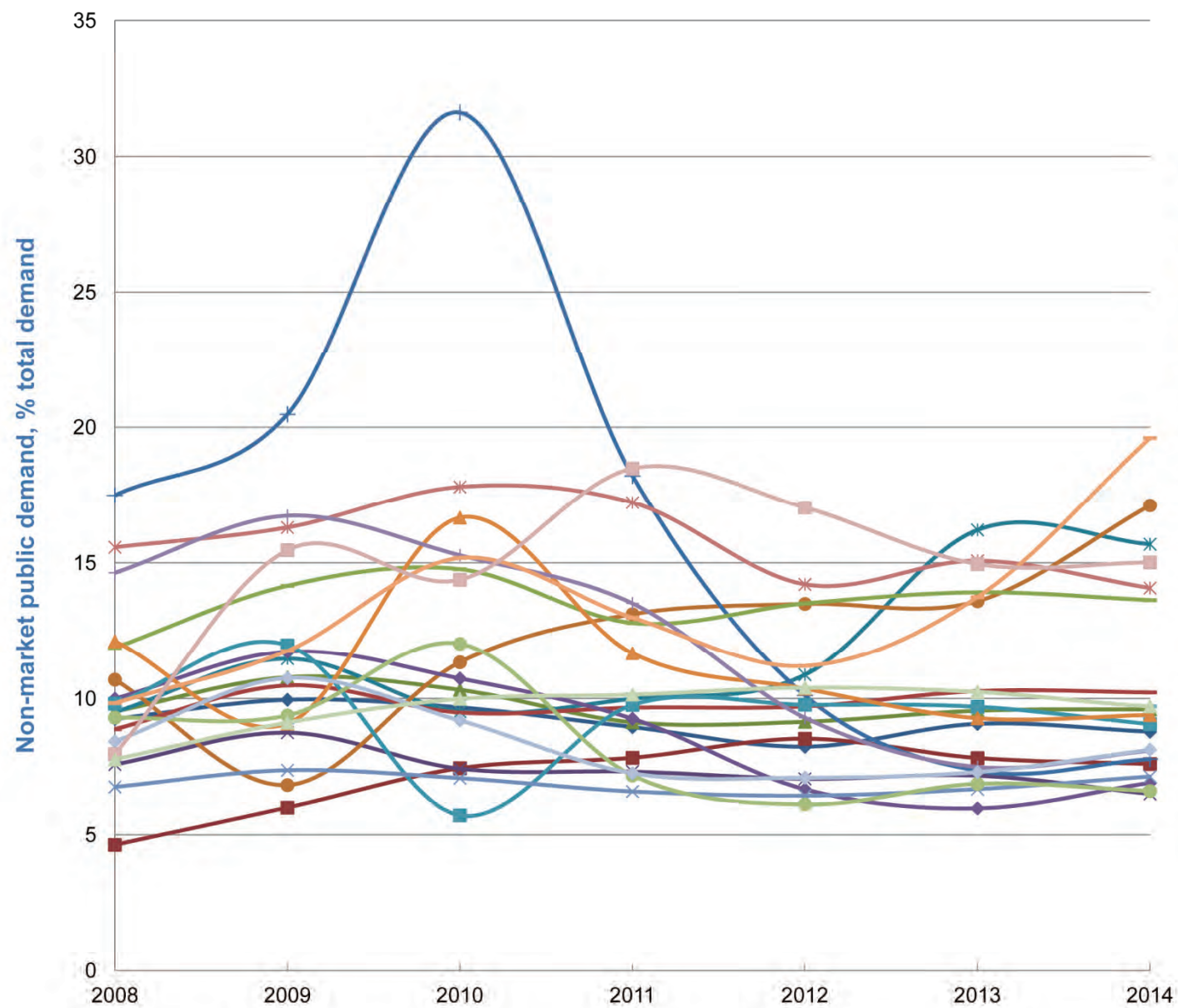
2012



Construction: Construction + 50% Own-account = 65%

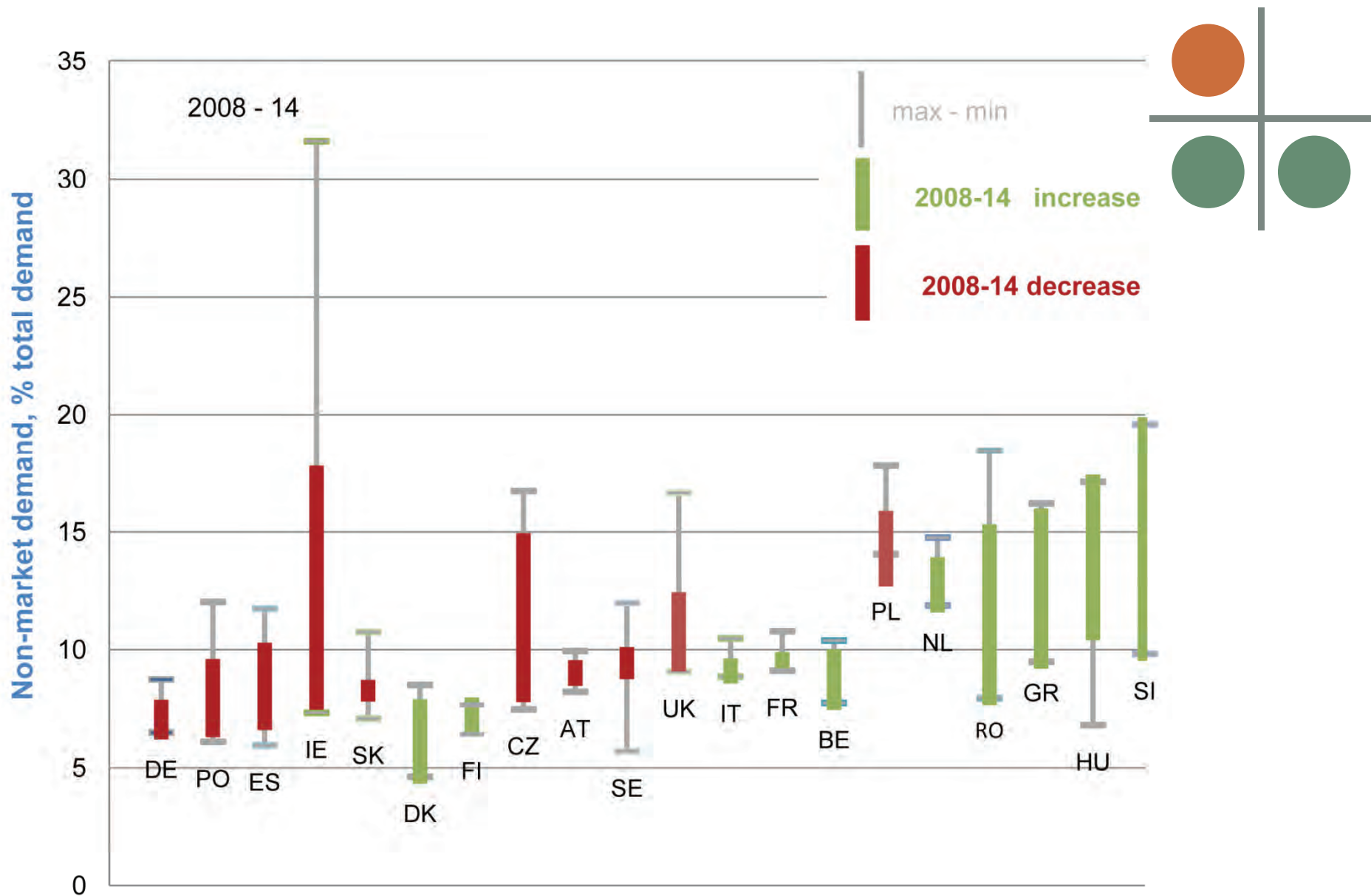
Industrial: Plant + IP + 50% Own-account = 35%

Non-market public demand: EU20

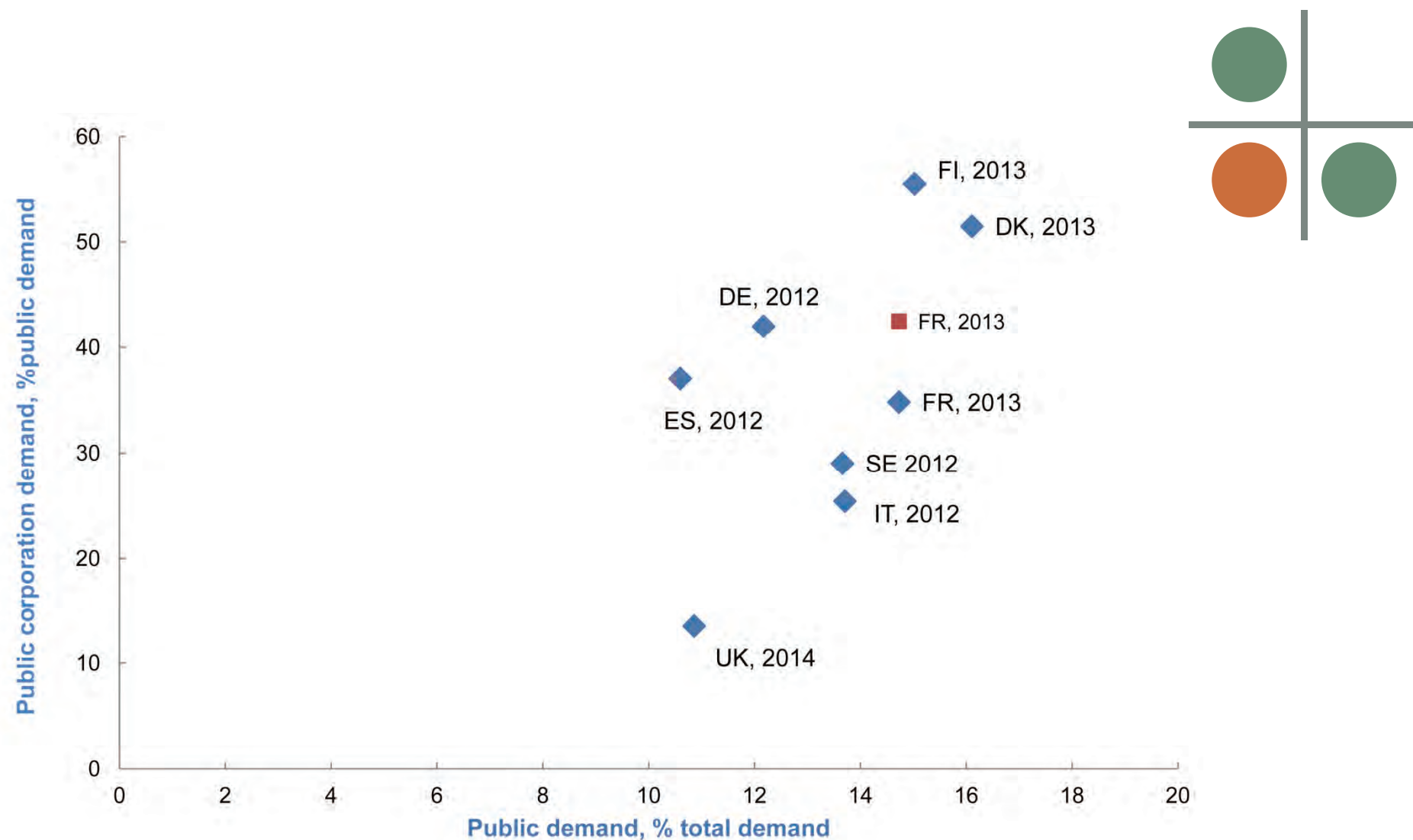


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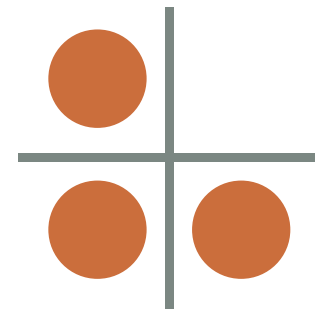
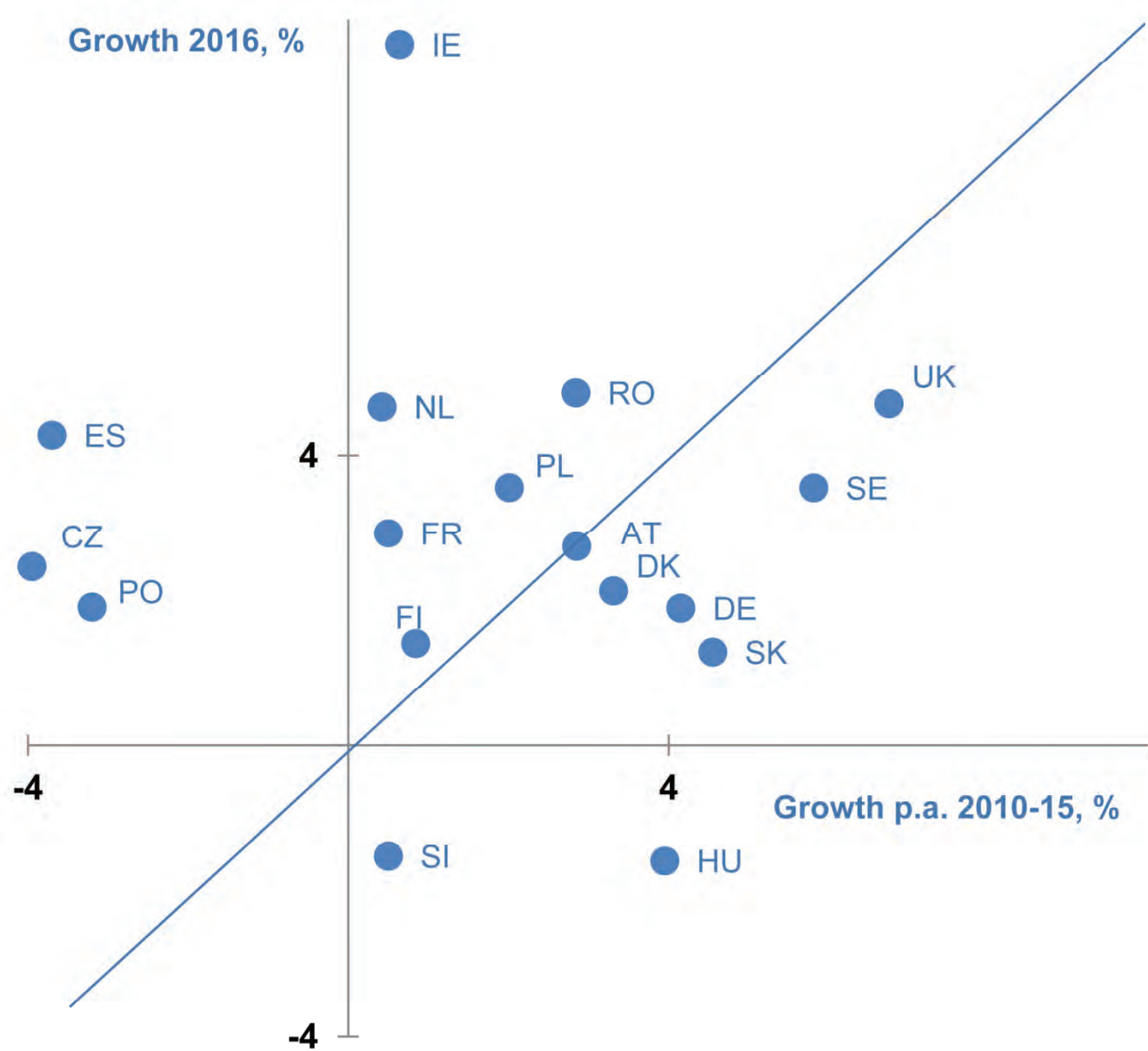
Non-market public demand: EU20



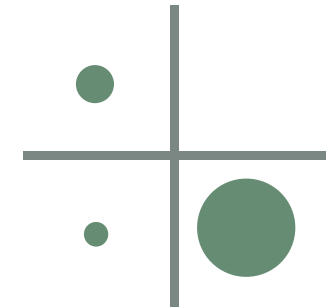
Market public demand: EU20



Growth forecasts: EU20, 2016



Benchmarking investment gives good forecasts



Total demand (market and non-market):

- recovered to 2008 level (340bEUR)
- 8.1% average fee
- 65% construction, including half of 6% own-account design
- 35% industrial, including 12% R&D
- 2016 growth above 2010-5 annual rate in 9 countries.

Non-market public demand (2014):

- 7-20% (average 10%) of total demand.
- regained 2008 level, but with slow growth.
- increase relative to 2008 in 10 countries.

Market public demand (2012-14):

- up to 55% of non-market public demand in some countries.