

Early estimates of environmental accounts

Session 11

1 June

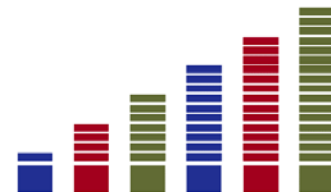
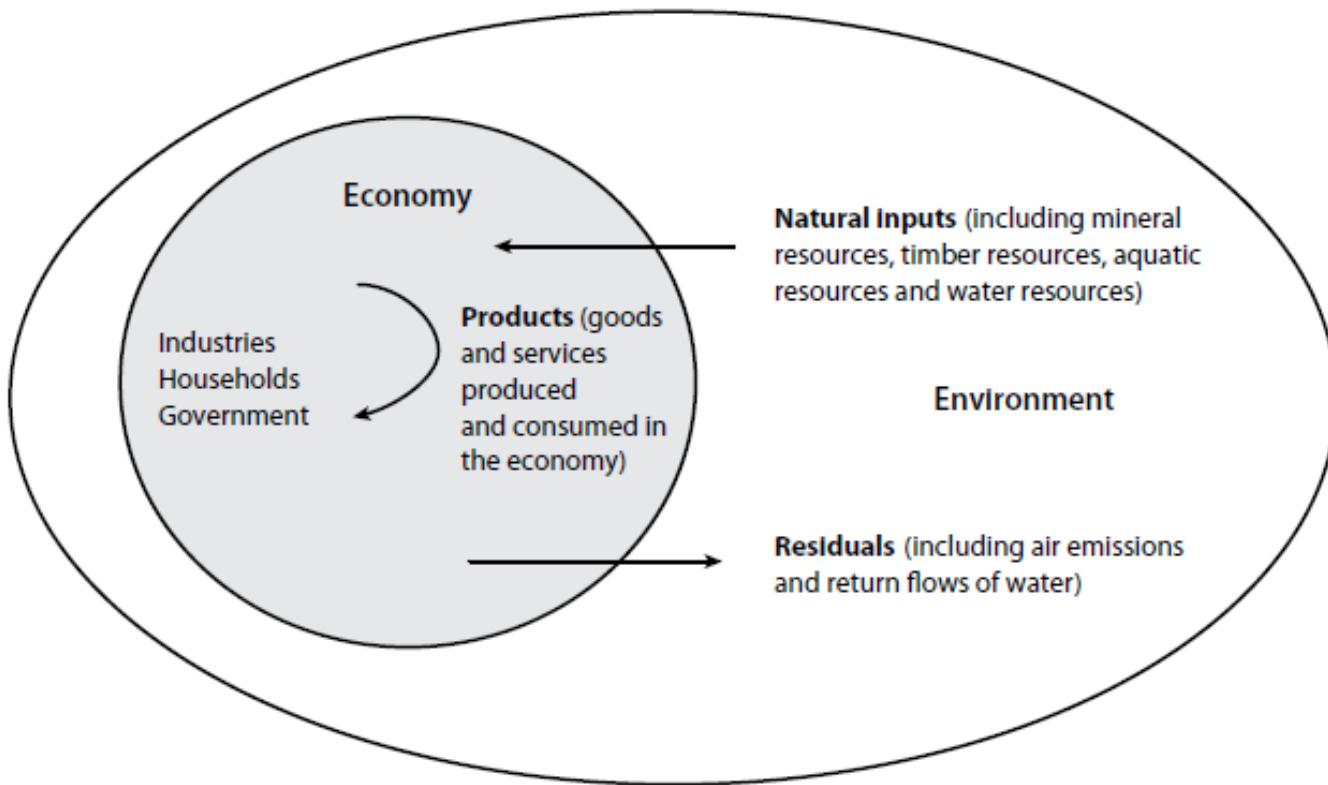
Arturo de la Fuente & Renato Marra

Eurostat

arturo.de-la-fuente@ec.europa.eu

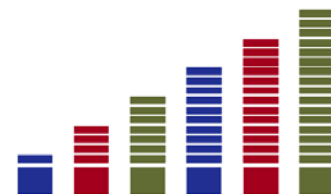
renato.marra-campanale@ec.europa.eu

Environmental accounts

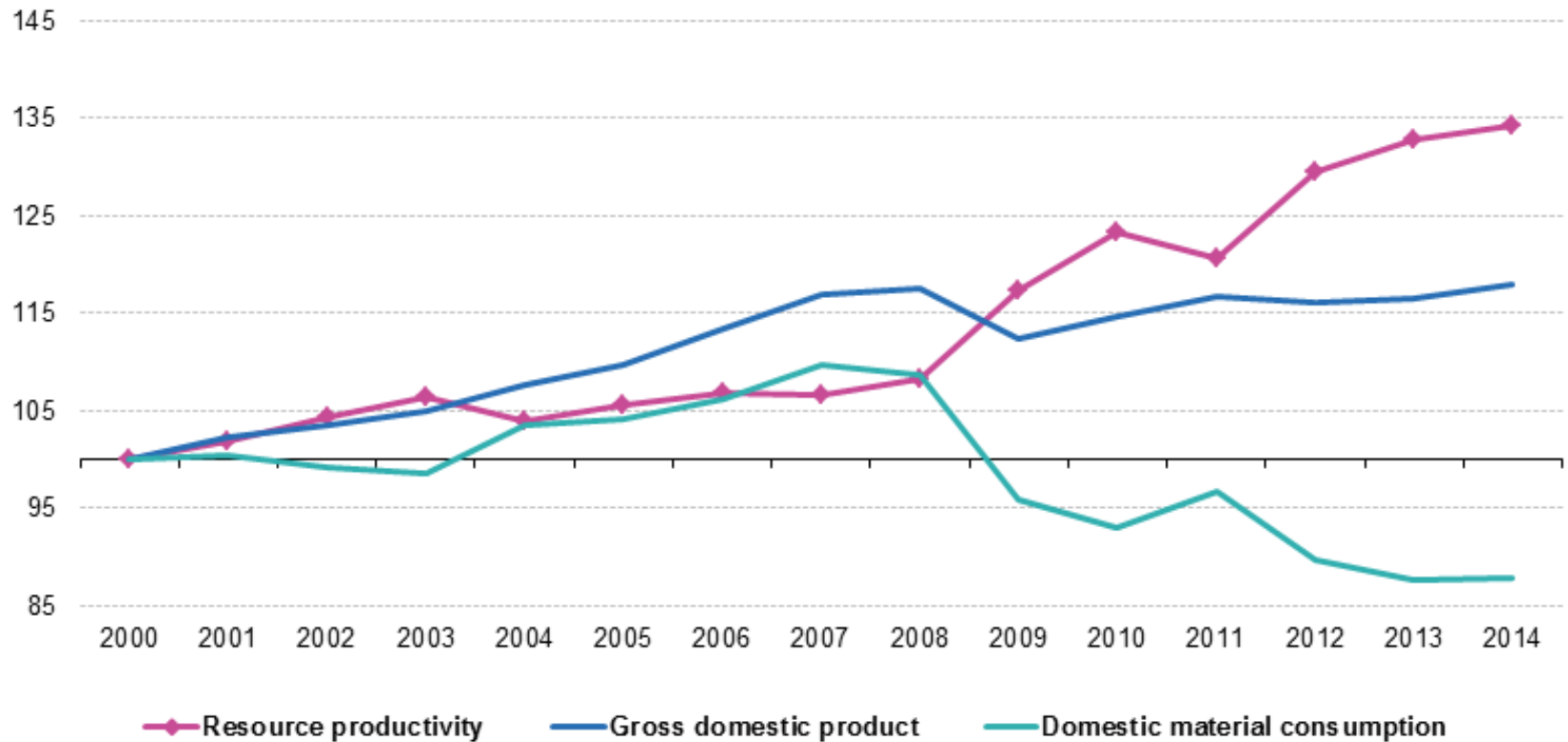


Economy-wide material flow accounts (EW-MFA)

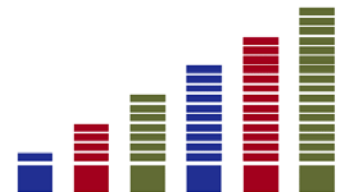
- EW- MFA is one of the environmental accounts
- They trace the amounts of materials entering the economy
 - Biomass, metal ores, non-metallic minerals and fossil energy materials
- Domestic extractions, imports and exports of materials
- EW-MFA used to derive resource productivity
 - Headline indicator of flagship initiative Europe 2020
 - Decoupling GDP growth from use of natural resources



Example EW-MFA figures



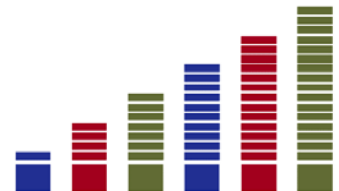
(*) GDP in chain-linked volumes, reference year 2010.



Regulation (EU) 691/2011

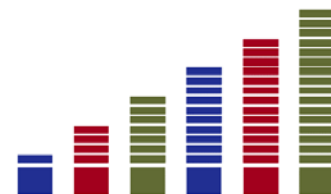
- Common framework for the collection, compilation, transmission and evaluation of environmental accounts
- Specifies domains for environmental accounts data collections in EU
- Transmission of EW-MFA at T+24 months

 Need for earlier estimates of resource productivity



Data production cycle

	Standard release	Early estimates	
Release	T+27	T+18	T+9
Date of release	March 2016	June 2016	September 2016
Reference year	2013	2014	2015
Summary method	Legal country transmission in December 2015 (i.e., T+24)	Based on voluntary data transmitted in December 2015 plus available data sources	Based on T+27 and T+18 data at Eurostat plus modelling



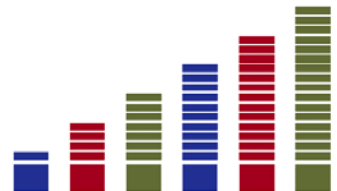
Early estimates methods

Estimate T+18 months

- Circa 2/3 countries transmit one extra year beyond legal obligation in Reg. 691/2011
- Other countries estimated by Eurostat
 - Domestic extraction: use of national, EU or international data sources (online)
 - Physical trade: Eurostat's foreign trade statistics

Estimate T+9 months

- Physical trade: Eurostat's foreign trade statistics
- Domestic extraction: use of different predictive models for the four main material categories (see next slide)



Predictive models for estimate T+9

Regression of absolute values

$$DE^p_{(t)} = a + bP_{(t)}$$

Regression of absolute changes

$$DE^p_{(t)} = DE_{(t-1)} + \{a + b[P_{(t)} - P_{(t-1)}]\}$$

Regression of relative changes

$$DE^p_{(t)} = DE_{(t-1)} + 1 - \{a + b[P_{(t)} - P_{(t-1)}]/P_{(t-1)}\}$$

Annual relative change in predictor

$$DE^p_{(t)} = DE_{(t-1)} P_{(t)}/P_{(t-1)}$$

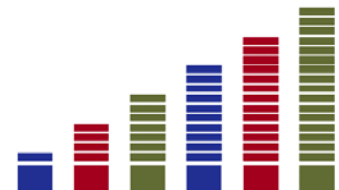
Sum of individual fuels
(fossil energy materials only)

$$DE^p_{(t)} = \sum i [DE_{(t-1)} F_{i(t)}/F_{i(t-1)}]$$

Value of previous year

$$DE^p_{(t)} = DE_{(t-1)}$$

- Used with circa 30 predictors about production of agriculture, manufacture, construction, etc.
- Integrated in tailor-made IT tool



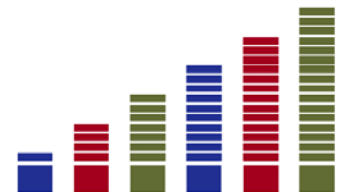
Quality assessment (1/4)

Revision size: EU-28 2013 estimate

	Total	Biomass	Product categories		
			Metal ores	Non-metallic	Fossil fuels
Revision size (%)	0.05	-0.4	-11.9	1.3	-0.9
Outturns (million tonnes)	5 795.5	1 710.8	196.3	3 129.8	758.5

T+9 months (September 2014) compared to T+18 months (June 2015)

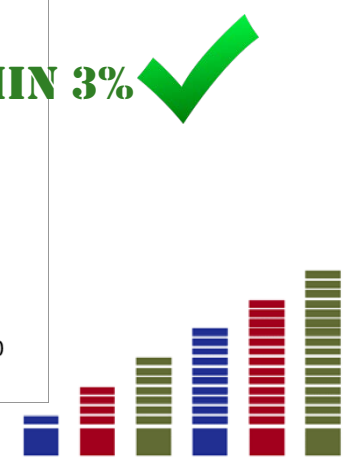
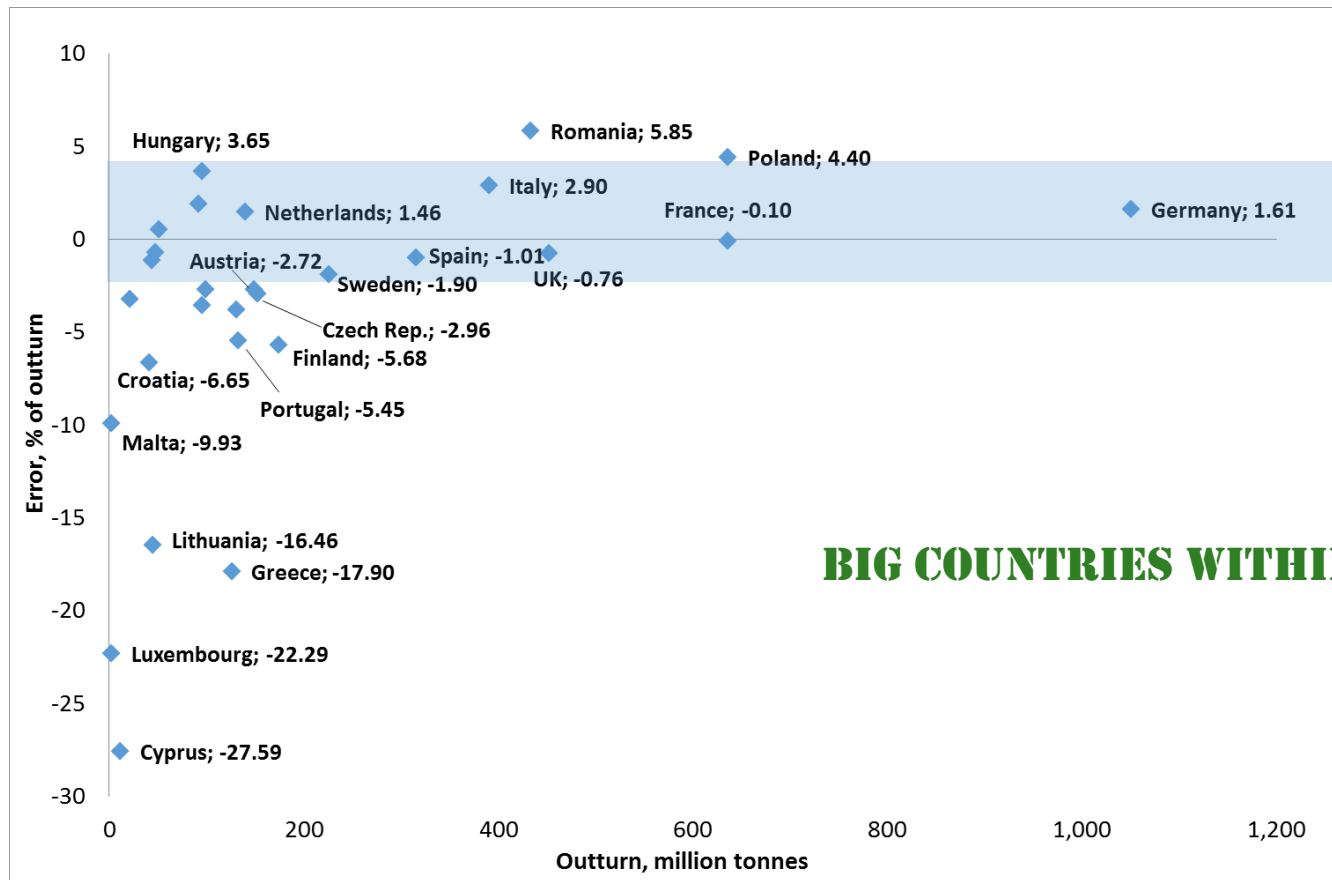
SMALL REVISIONS FOR EU



Quality assessment (2/4)

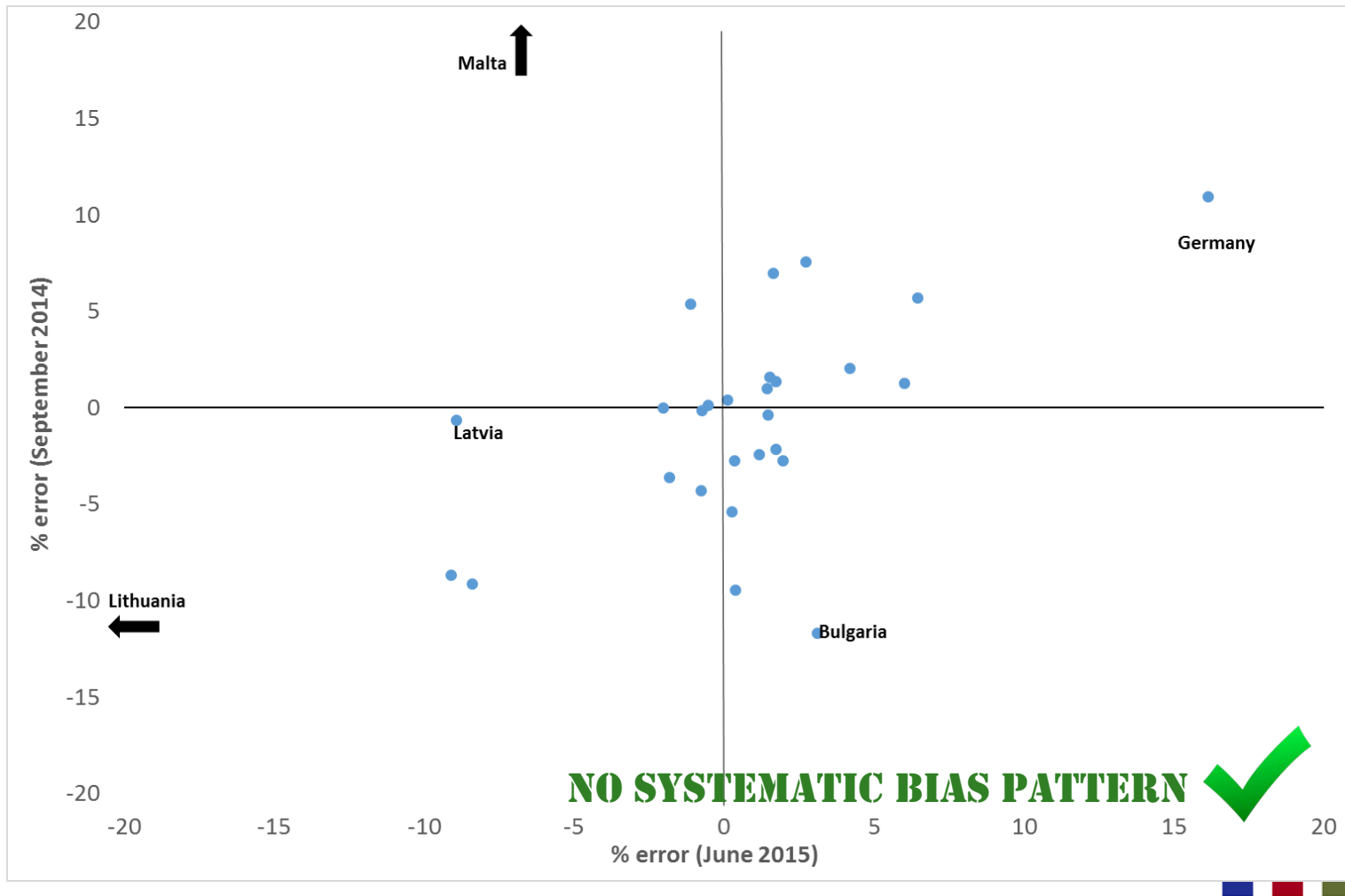
Revision size: country estimates

T+9 months (September 2014) compared to T+18 months (June 2015)



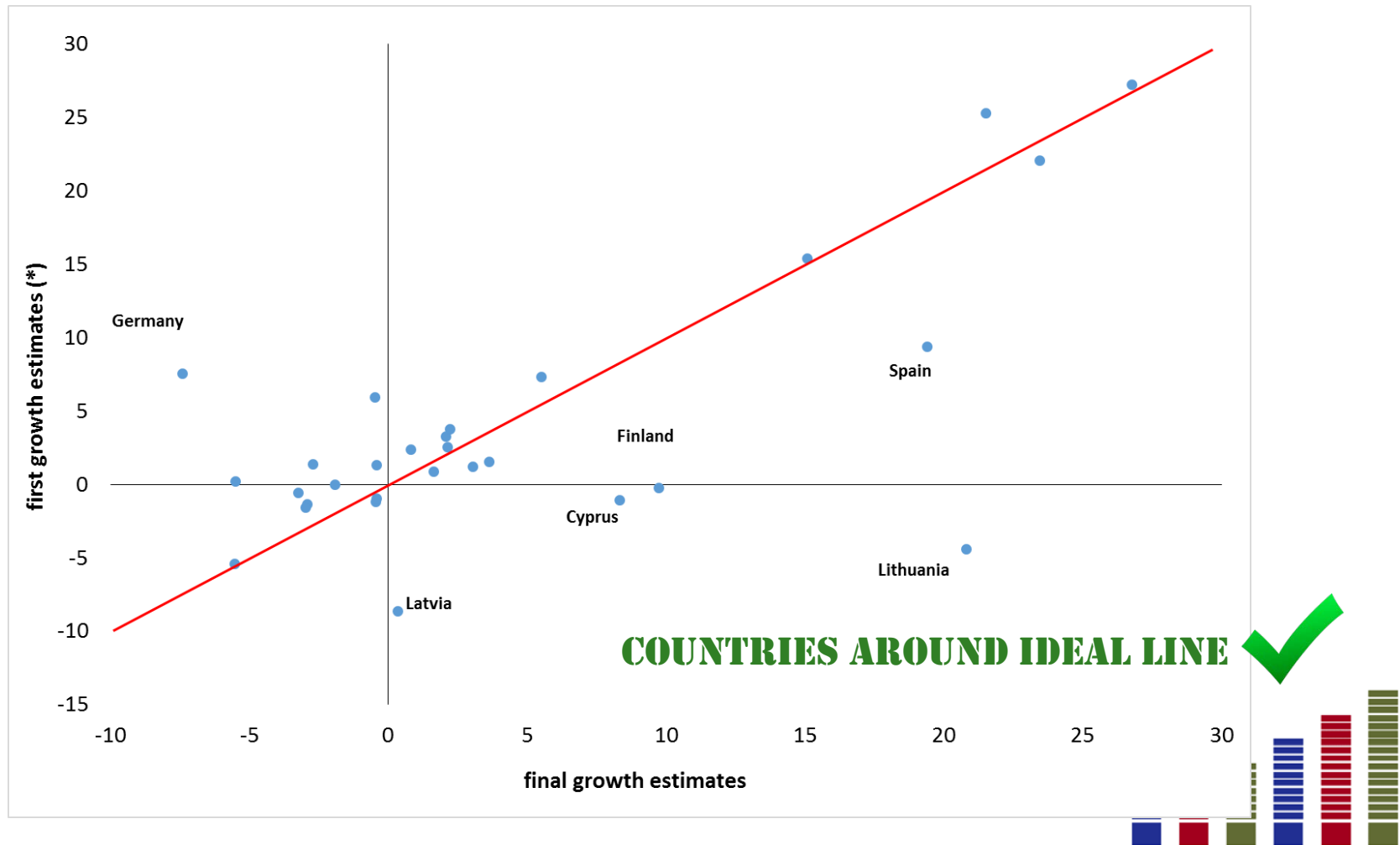
Quality assessment (3/4)

Effect of revisions in underlying data



Quality assessment (4/4)

Effect of predictive model specification



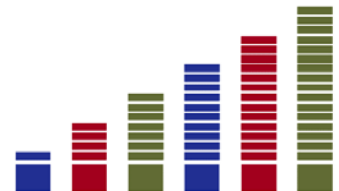
Costs & benefits

Costs:

- 12 person-days/year of Eurostat staff
- 30 person-days/year of contractor company

Benefits:

- Early estimates T+9 used in new press release
- Institutional users very happy
- Non-institutional users appreciated improvement too (online satisfaction survey)



Conclusions

Early estimates at T+9 and T+18 months

- on top of regular estimate T+27 months

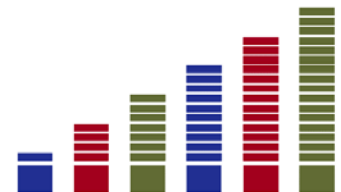
Quality of early estimates is fit for purpose

Costs reasonable

- No additional country transmissions required
- NSIs willing to co-operate

Early estimates for other environmental accounts will be developed

- EGSS (Green growth and green jobs)



Thank you!

arturo.de-la-fuente@ec.europa.eu

renato.marra-campanale@ec.europa.eu

