



Independent Authority
for Fiscal Responsibility

The impact of discretionary measures on revenue elasticities

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SUMMARY

1. Motivation

2. DRM database and descriptive analysis

3. Elasticities vs. Buoyancies: results

4. Takeaways

1. Motivation

How should we define Elasticity? Separate from Buoyancy



Proportional changes in revenues (R) to tax base movements

$$B = \frac{\Delta R / R}{\Delta GDP / GDP}$$



Proportional changes in adjusted revenues (R') to tax base

$$E = \frac{\Delta R' / R'}{\Delta GDP / GDP}$$

Why the focus on Elasticities?

Forecasting	Medium-term macro-based projections vs. high-frequency execution data
Policy Formulation	Track long-run consequences in terms of sustainability and short-run stabilization properties
Effort Assessment	Identify Discretionary Measures and decompose the response of revenues into an economic factor vs. discretion



Relevant dimensions

DRM

Typologies

Accum.
methods

Data
treatment

Rev.

Separate
revenue
items

Country-
specific

Including
effective
rates

Analysis

Static vs.
dynamic
approach

Structural
changes
(TVC)

Partitioned
vs. direct

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2. DRM database and descriptive analysis

Novel database on DRMs

Goal	Isolate the impact of the tax and social contribution legislative tax changes
Individual revenue items	Personal Income Tax , Corporate Income Tax ; Value Added Tax, Excise taxes and Social contributions
Varied sources	Spanish Tax Agency, Budget, Stability Programme, Draft Budgetary Plan, Ministry of employment and Soc. Sec.
Data	2000-2017, annual and quarterly data Cash and accrual basis (after individual reclassification)

Cleaning up of the revenue series

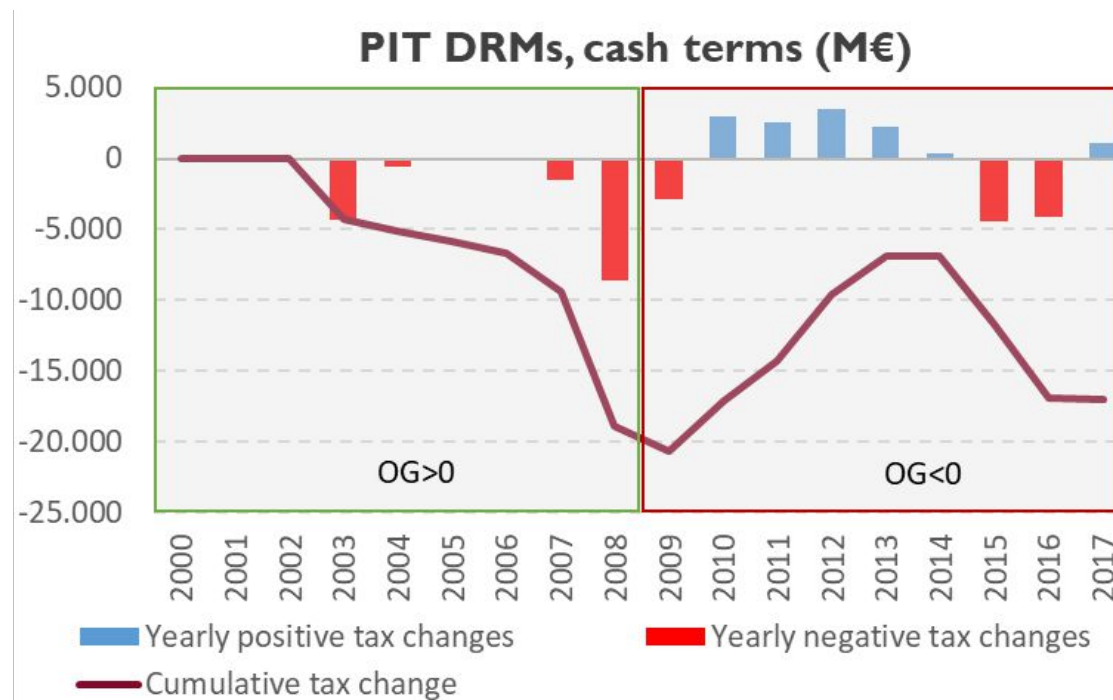
Series adjusted according to the DRM classification

- Proportional measures: Proportional Adjustment Method (Barrios and Fargnoli, 2010)

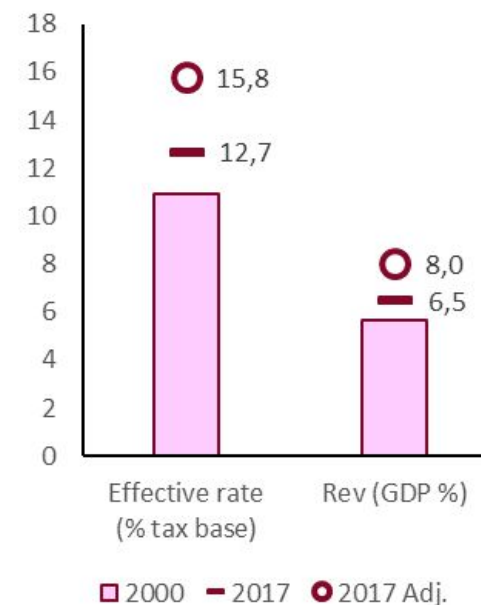
$$T'_j = T'_1 \prod_{i=2}^j \frac{T_i - DM_i}{T_{i-1}} \quad \forall j = 2, \dots, n$$

- Non-proportional, cumulative measures: level shift
- Non-proportional, non-cumulative: not carried forward

Direct taxation: Personal Income Tax

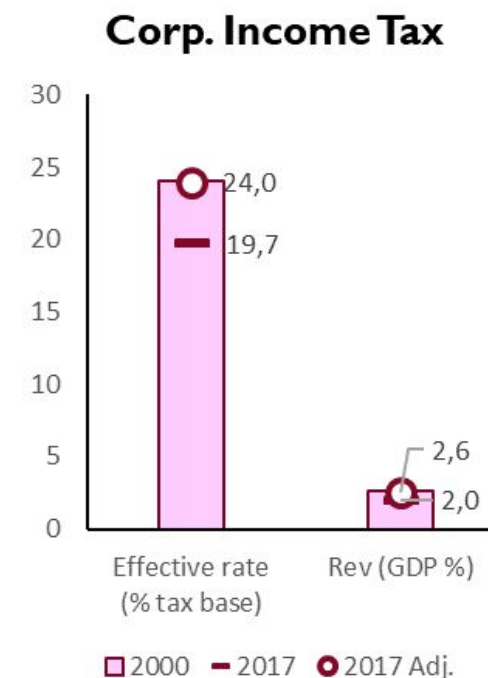
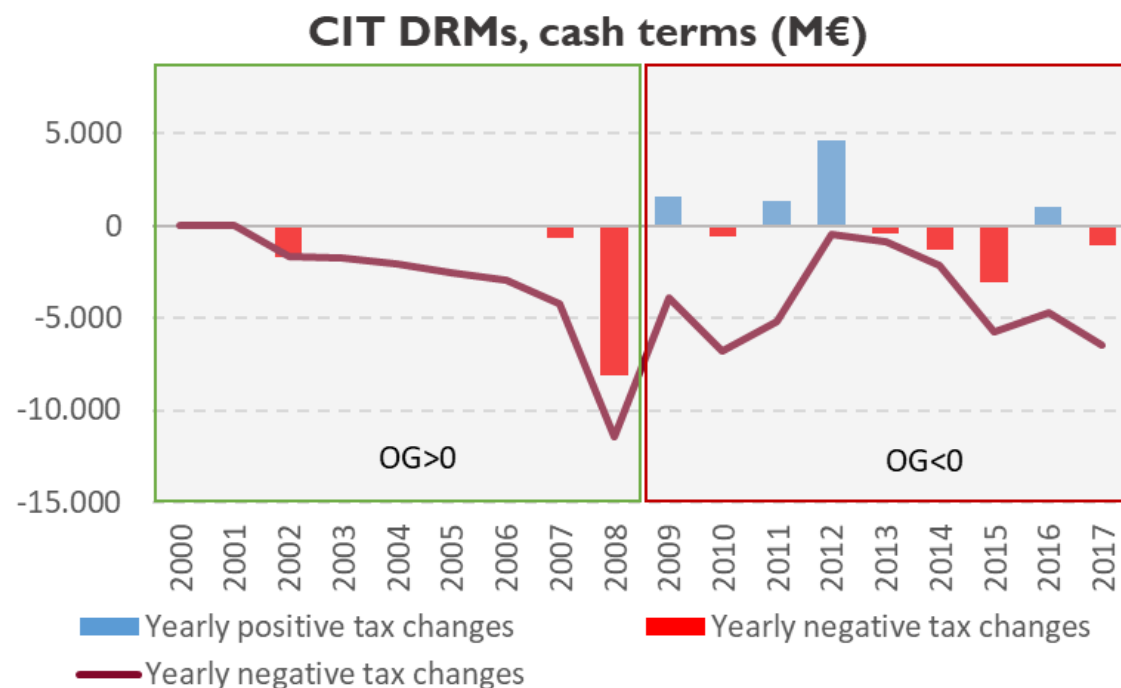


Personal Income Tax



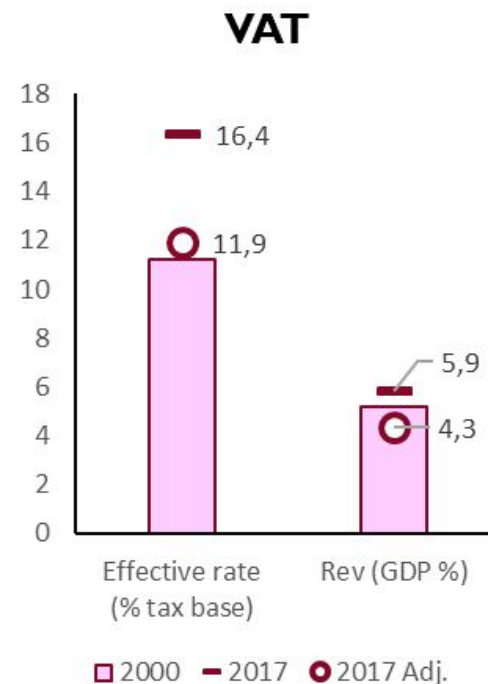
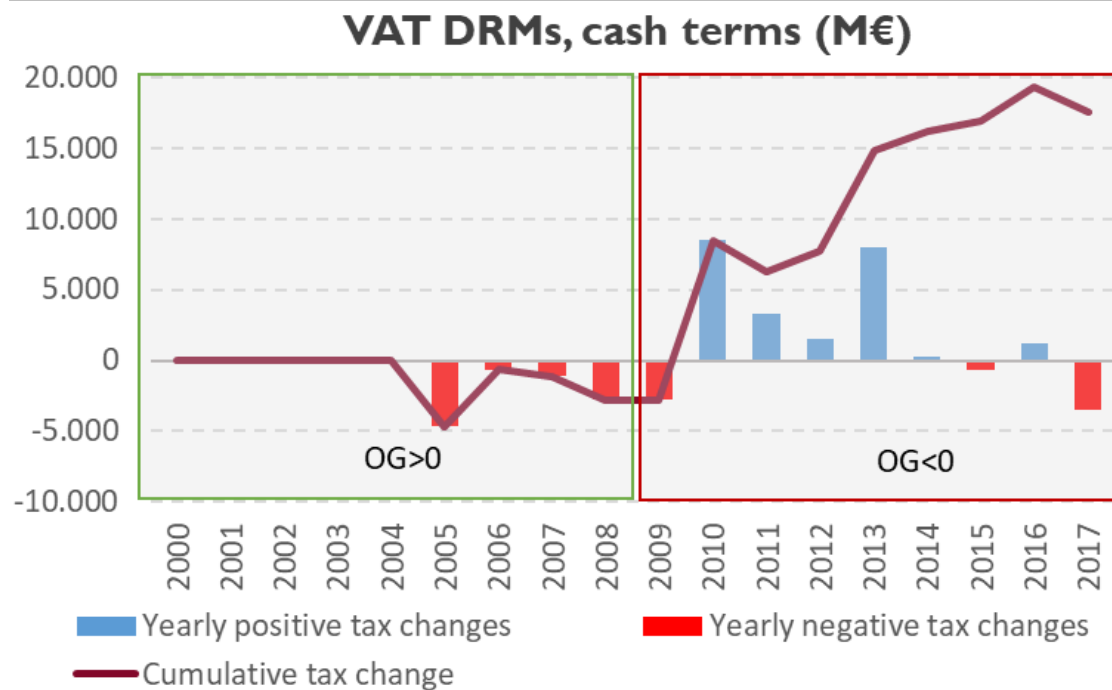
- ❖ Procyclical developments (change in tone in 2015)
- ❖ Apparent elasticity larger than 1
- ❖ Sizeable cumulated impact of DRMs in effective rate and revenues ratio

Direct taxation: Corporate Income Tax



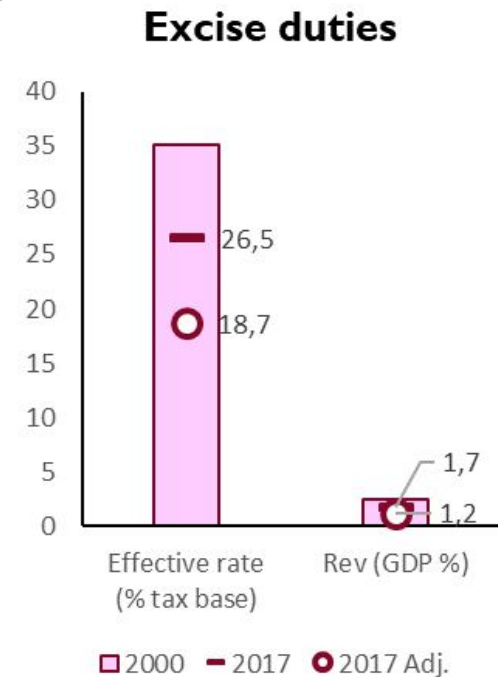
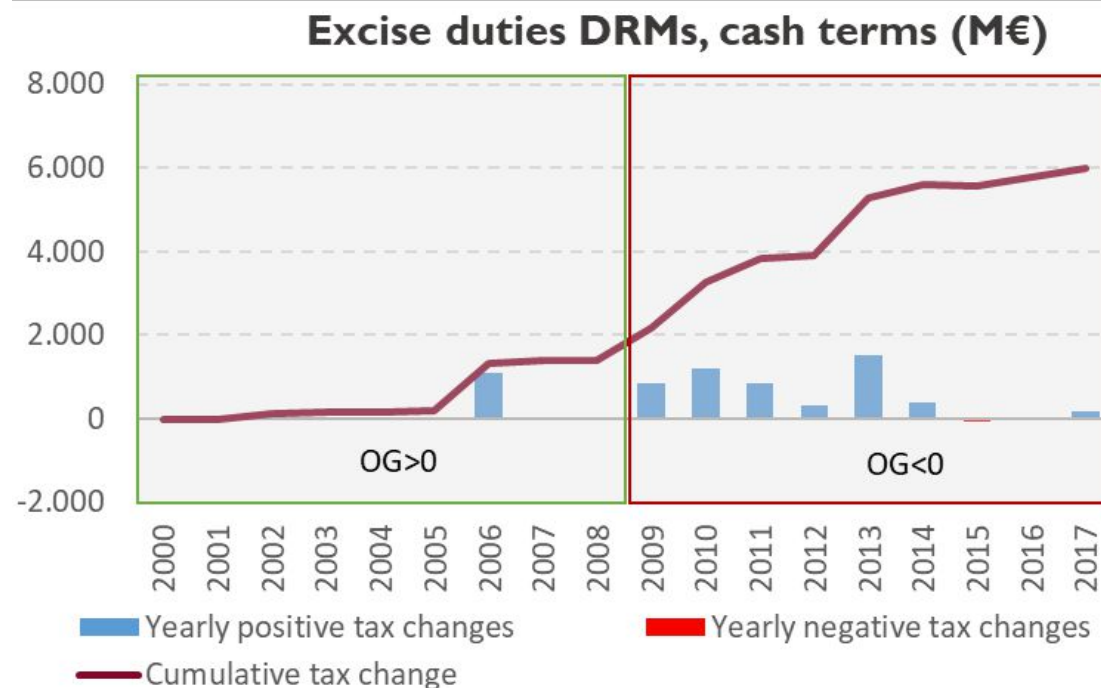
- ❖ Procyclical developments totally offset (change in tone already in 2013)
- ❖ Apparent elasticity close to 1
- ❖ Sizeable cumulated impact of DRMs, breaching the 2000 floor

Indirect taxation: Value Added Tax



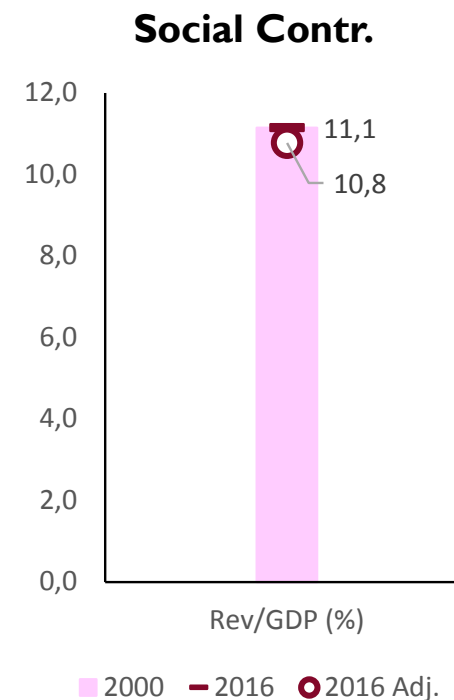
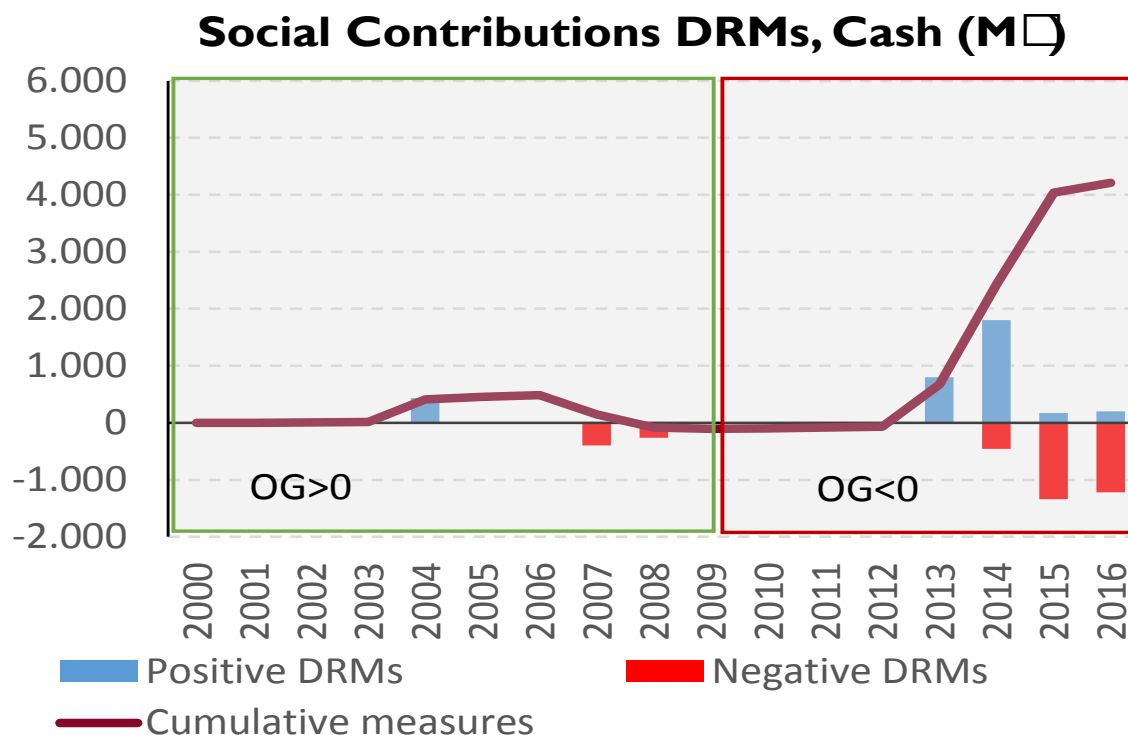
- ❖ Mostly contractionary measures not reverted at the end of the sample
- ❖ Partially compensating cumulated changes in direct taxes
- ❖ Apparent elasticity close to 1 or slightly below
- ❖ Sizeable cumulated impact of DRMs, decreasing the structural deficit

Indirect taxation: Excise Duties



- ❖ Mostly contractionary measures (compensating changes in direct taxes)
- ❖ Apparent elasticity clearly below 1
- ❖ Sizeable cumulated impact of DRMs, decreasing the structural deficit

Social Security Contributions



- ❖ DRMs concentrated in the last years of the sample and erratic tone
- ❖ Apparent elasticity below 1
- ❖ Relatively smaller cumulated impact of DRMs, reverting to proportionally

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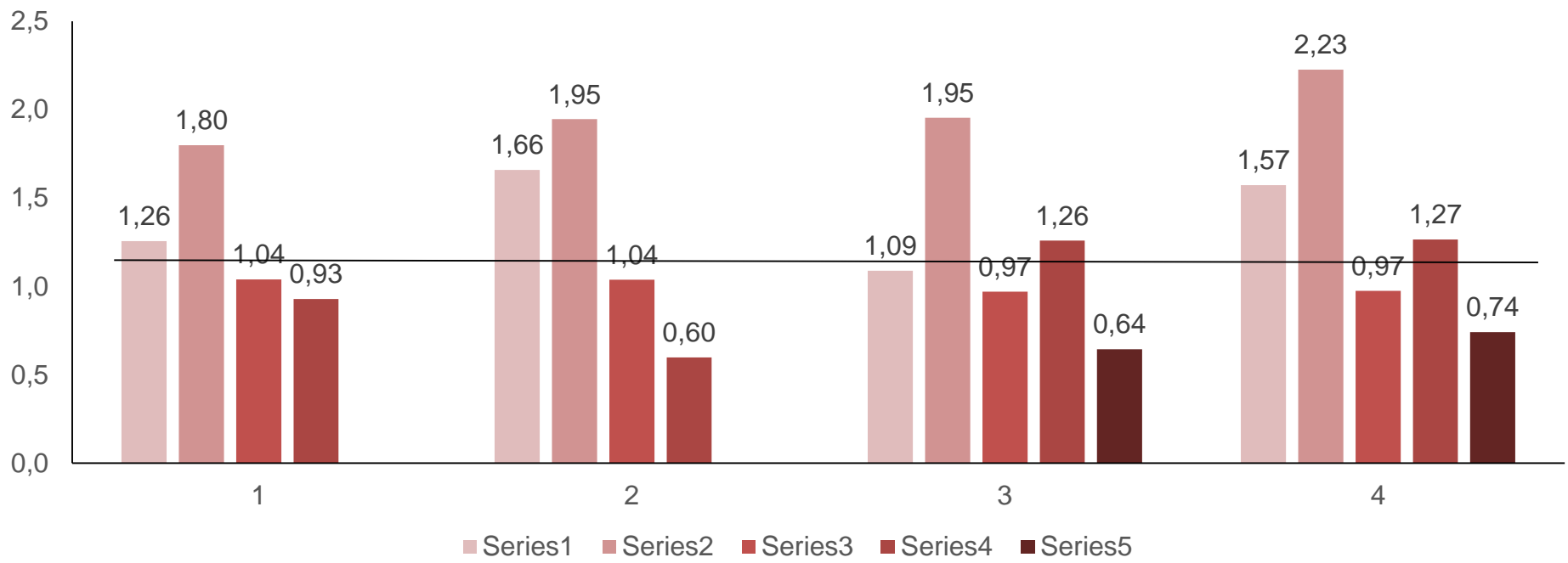
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3. Elasticities vs. Buoyancies: results

Elasticity vs. Buoyancy, Spain



<input type="checkbox"/> Long run	<input type="checkbox"/> Short-run	<input type="checkbox"/> Empirical evidence
<input type="checkbox"/> •Progressivity in DT (see CIT)	<input type="checkbox"/> Overshooting in CIT and VAT	<input type="checkbox"/> In line with OECD panel B. [Belinga et al. (2010)]
<input type="checkbox"/> Opposite impact of DRMs in direct vs. indirect taxes	<input type="checkbox"/> Exacerbating impact of DRMs	<input type="checkbox"/> In line with EU E. [Mourre and Princen (2015)]
<input type="checkbox"/> Q data: similar results except for regressive CIT	<input type="checkbox"/> Speed of adjustment from short to long-run [1-3 years]	<input type="checkbox"/> Fine-tuning overshooting [Koester, Priesmeier (2017)]
<input type="checkbox"/> TVC: slight improv.	<input type="checkbox"/> TVC: stability	<input type="checkbox"/> Higher impact in direct taxes (Barrios 2010)



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- **The devil is in the details:** efforts allocated towards DRM databases are instrumental: well-informed narrative approach
- **Work concentrated on open methodological issues:**
 - (i) DRM definition and associated correction method
 - (ii) Statistical treatment of the series (seasonality)
 - (iii) Cash vs. accrual exercises
 - (iv) Model selection vs. robustness in methodologies
 - (v) Omitted variables (e.g. inflation)
 - (vi) Estimation of the impact: as given by official sources vs. own set of tools, drawing from the microsimulation literature

4. Takeaways

- **There is scope for Independent Fiscal Institutions** to play a role as they present comparative advantages:
 - (i) Access to information
 - (ii) Expertise on data collection and treatment
 - (iii) The analysis needs to be country-specific
 - (iv) This task is at the core of the evaluation of compliance with fiscal rules and also forecasting scenarios
 - (v) Well established and smoothly functioning network
- **Consistency remains the key challenge:** could be achieved via coordinated efforts along different lines
 - (i) Identifying bottlenecks specific to IFIs
 - (ii) Setting up common methodological guidelines
 - (iii) Creating a common repository of measures by typology: converging through practice



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