



Independent Authority  
*for* Fiscal Responsibility

# The impact of discretionary measures on revenue elasticities

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Paz Quesada González, AIReF

# 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

Buoyancy

Proportional changes in revenues (R) to tax base movements

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

Elasticity

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

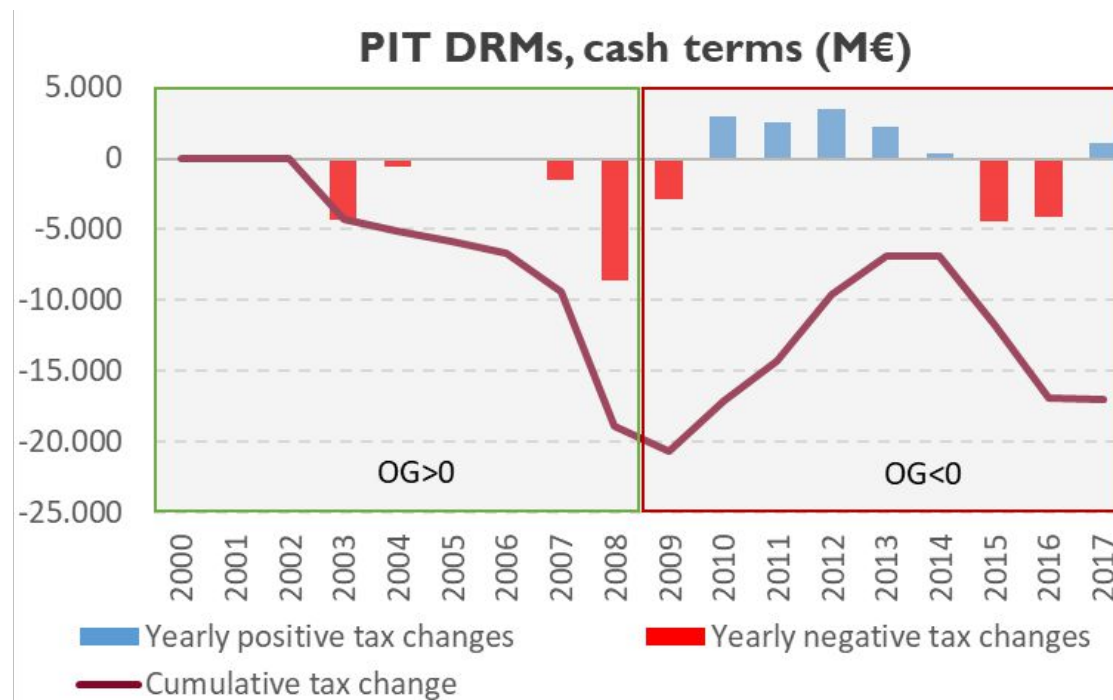
## Series adjusted according to the DRM classification

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

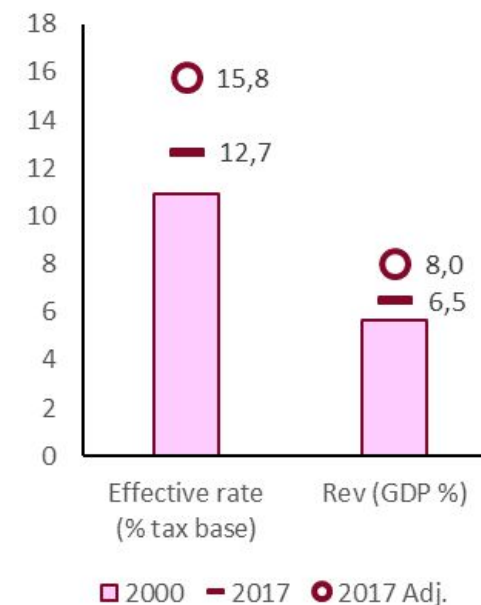
$$T'_j = T'_1 \prod_{i=2}^j \frac{T_i - DM_i}{T_{i-1}} \quad \forall j = 2, \dots, n$$

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

### Direct taxation: Personal Income Tax



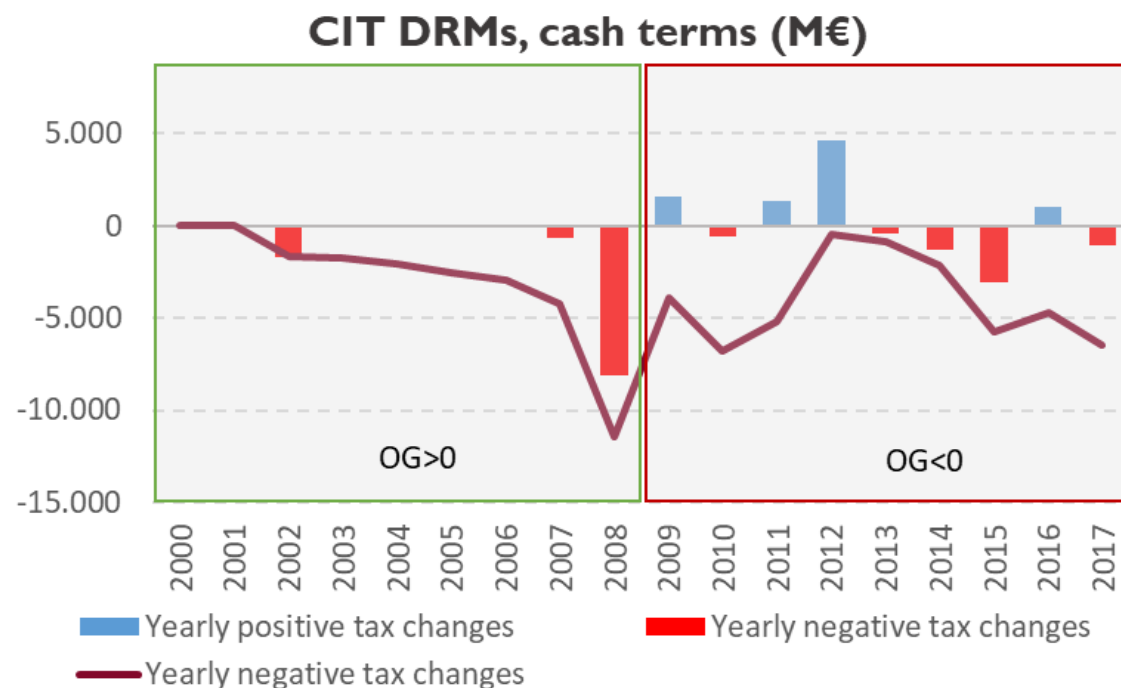
### Personal Income Tax



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

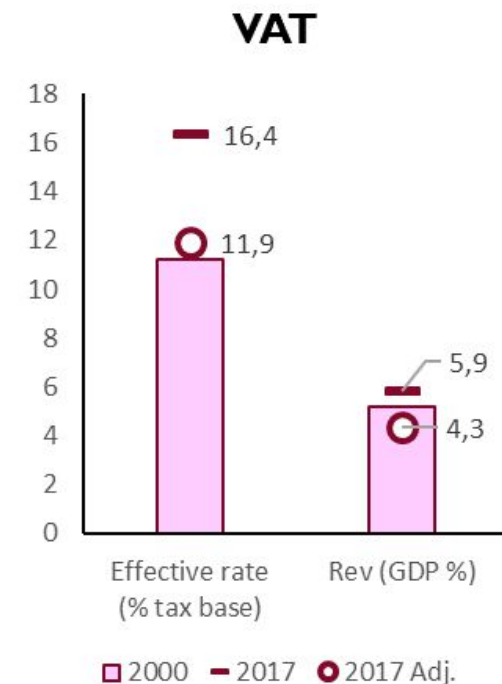
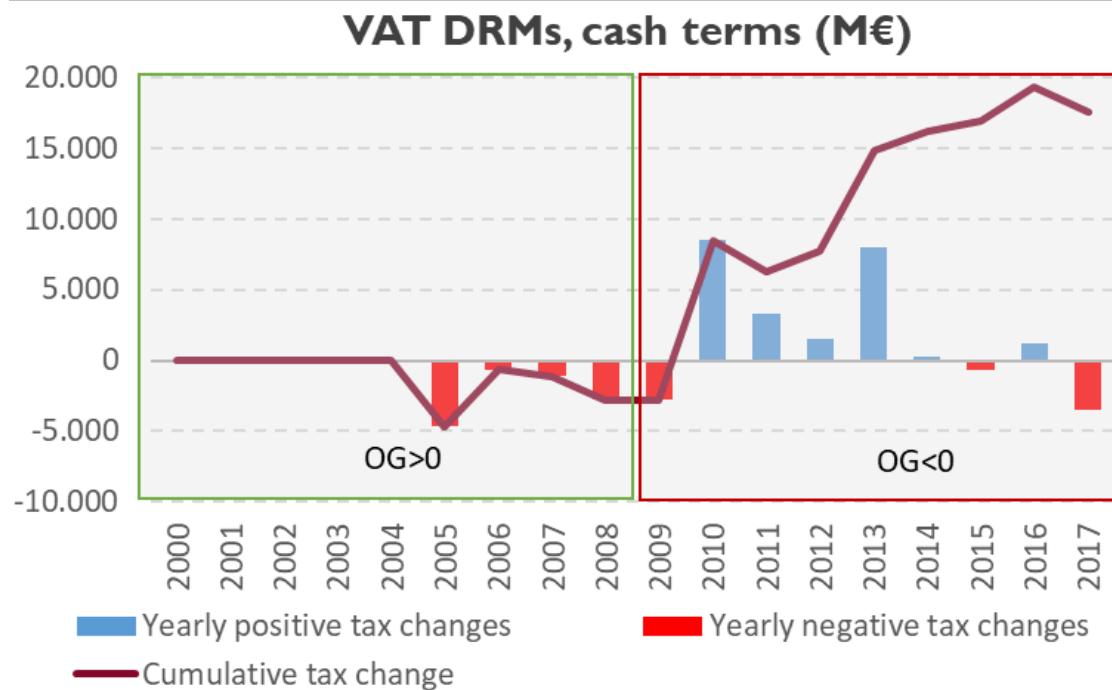


### Direct taxation: Corporate Income Tax



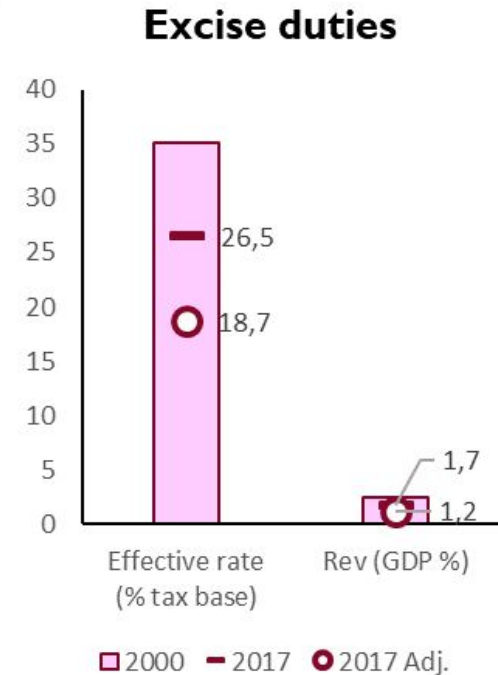
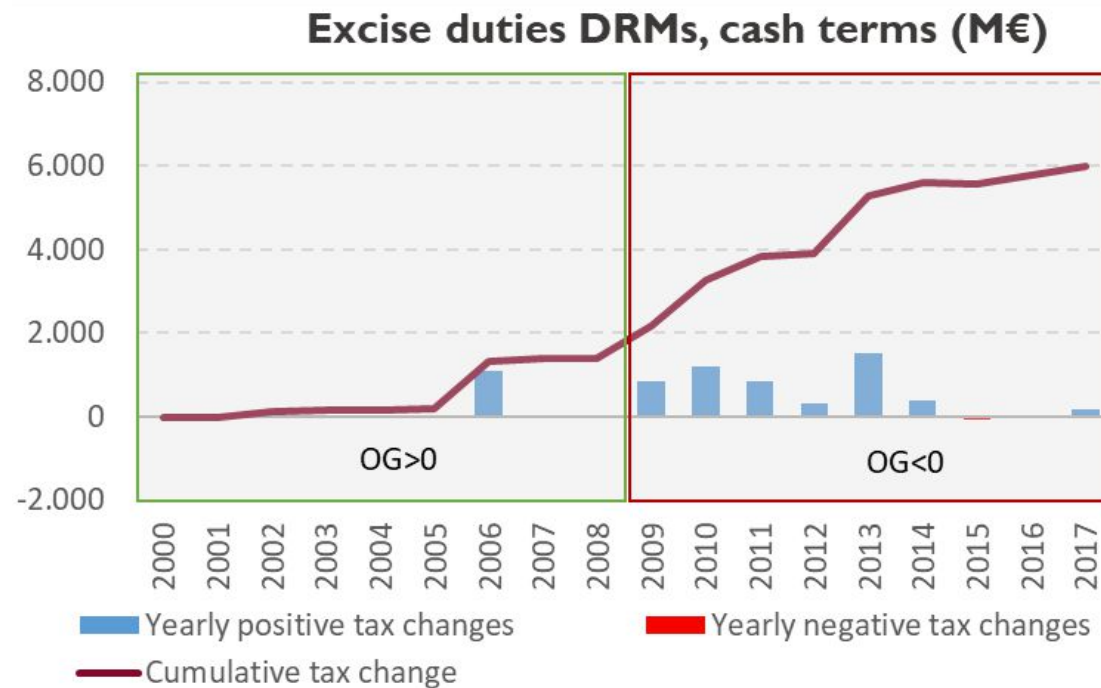
- ❖ Procyclical developments totally offset (change in tone already in 2013)
- ❖ Apparent elasticity close to 1
- ❖ Sizeable cumulated impact of DRMs, breaching the 2000 floor

### Indirect taxation: Value Added Tax



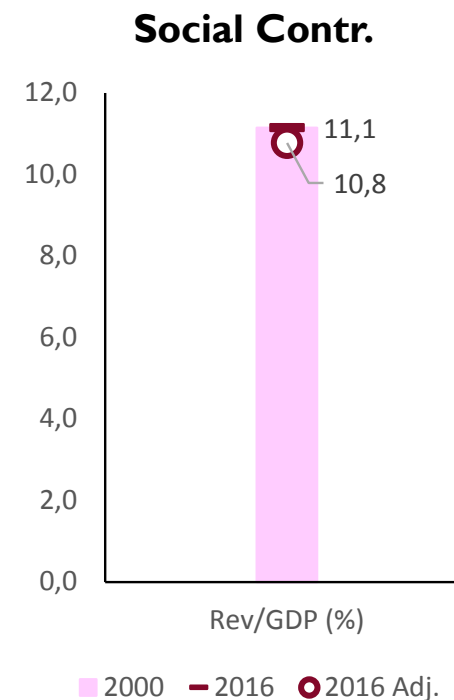
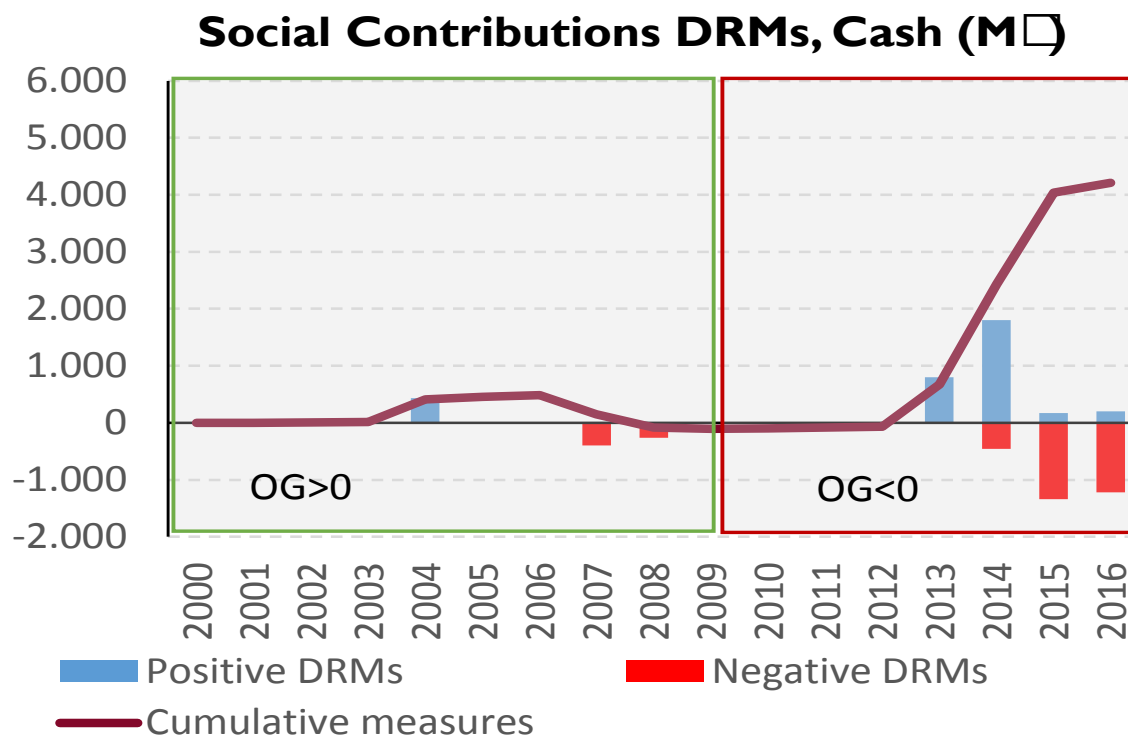
- ❖ Mostly contractionary measures not reverted at the end of the sample
- ❖ Partially compensating cumulated changes in direct taxes
- ❖ Apparent elasticity close to 1 or slightly below
- ❖ Sizeable cumulated impact of DRMs, decreasing the structural deficit

### 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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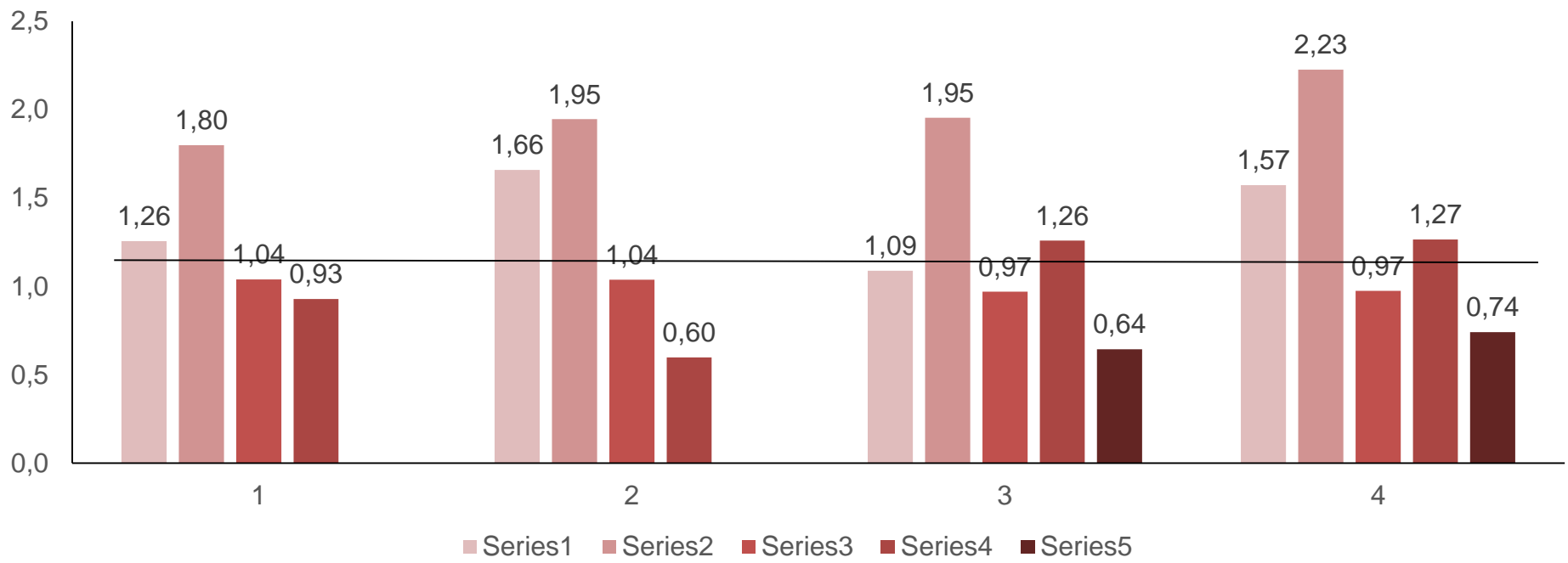
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# 3. Elasticities vs. Buoyancies: results

## 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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## 4. Takeaways

- **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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