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# Macroeconomic Forecasting and the Sustainability of Public Finances

**Rafael Doménech**

**An Independent Fiscal Responsibility Authority For Spain**

IEF, Madrid, May 13-14, 2013

# Objectives of an independent fiscal authority

Many academic contributions, starting in the mid-1990s (e.g., Calmfors and Wren-Lewis, 2011, Debrun et al., 2009, and others), have proposed independent fiscal authorities to prevent the deficit bias of fiscal policy

(1) Assessment of economic forecasts, budget stability along the business cycle and the sustainability of public debt

(2) Proposal of a methodology for the estimation of trend forecasts of public revenues and expenditures

(3) Evaluation of the Stability Programme (including the pension system), assessment of regional governments' budgets and financial rebalancing plans

# Why now?

(1) Despite previous stability laws, evidence of persistent structural deficits and the current situation of public accounts, with debt on an unsustainable path that should be curbed

(2) A Constitutional reform in 2011 and an new Budget Stability Law in 2012

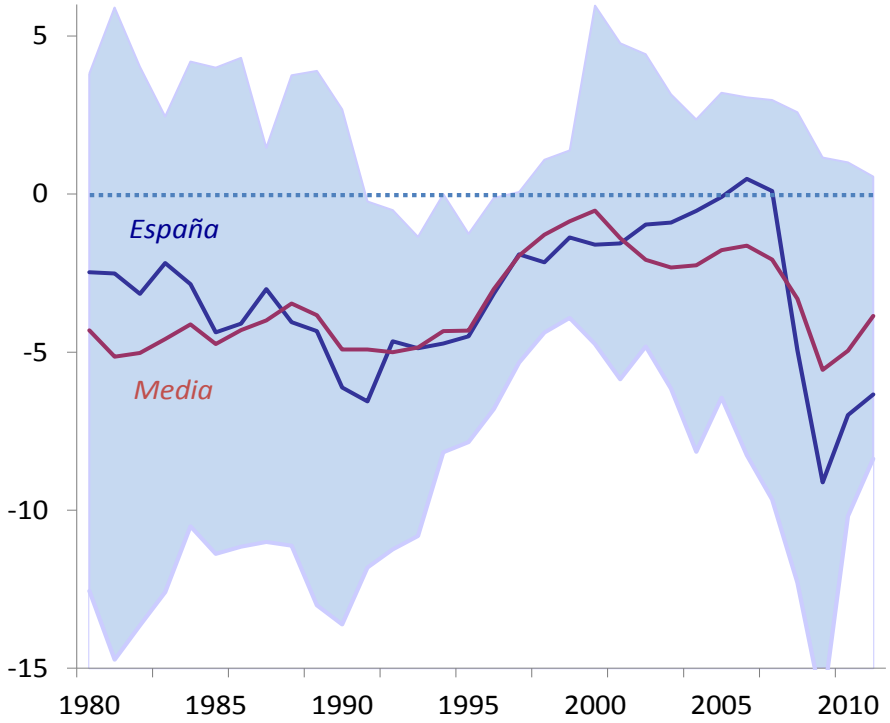
(3) Demographic challenges with significant implications upon the sustainability of public accounts, particularly for the pension system

-> Independent ex ante evaluation of fiscal plans to avoid potential deficit bias

# Why now?

## EU15 and the USA: structural budget balance (% GDP)

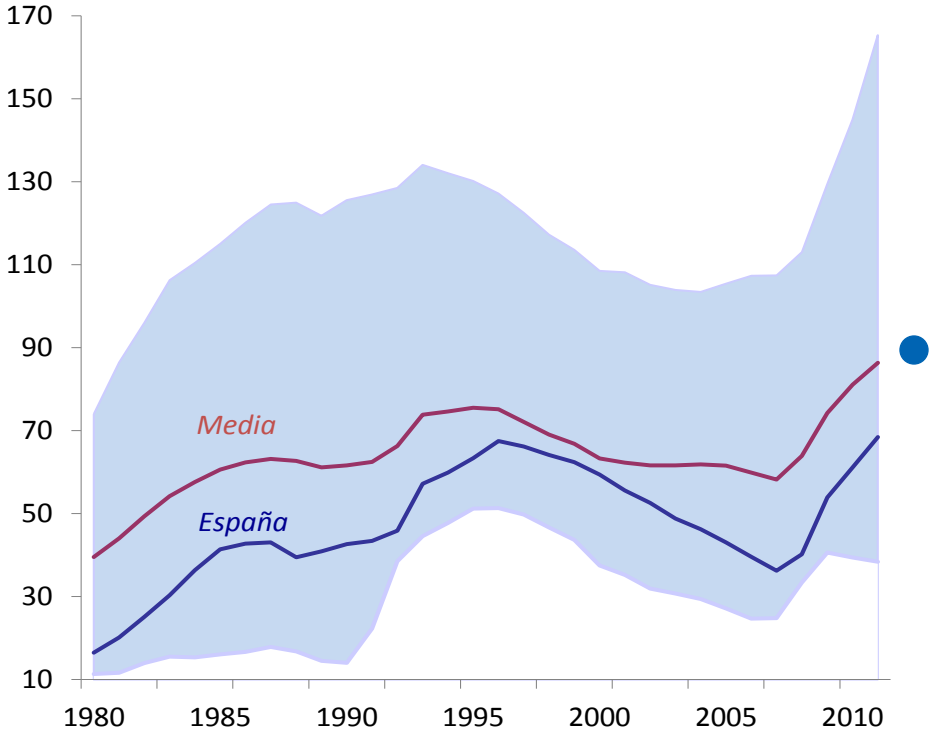
Source: Doménech and García (2013)




- Deficit bias over last three decades, not only in Spain
- High persistence
- High dispersion across countries
- Spain had an structural deficit similar to other countries, but with higher volatility

# Why now?

**EU15 and the USA: public debt (% GDP)**
Source: Doménech and García (2013)




$$d = \frac{1+g}{r-g}(t-g)$$

A higher structural deficit in the past leads to a higher level of public debt in the present ...

... forcing to maintain a higher primary surplus in the future (modified golden rule)

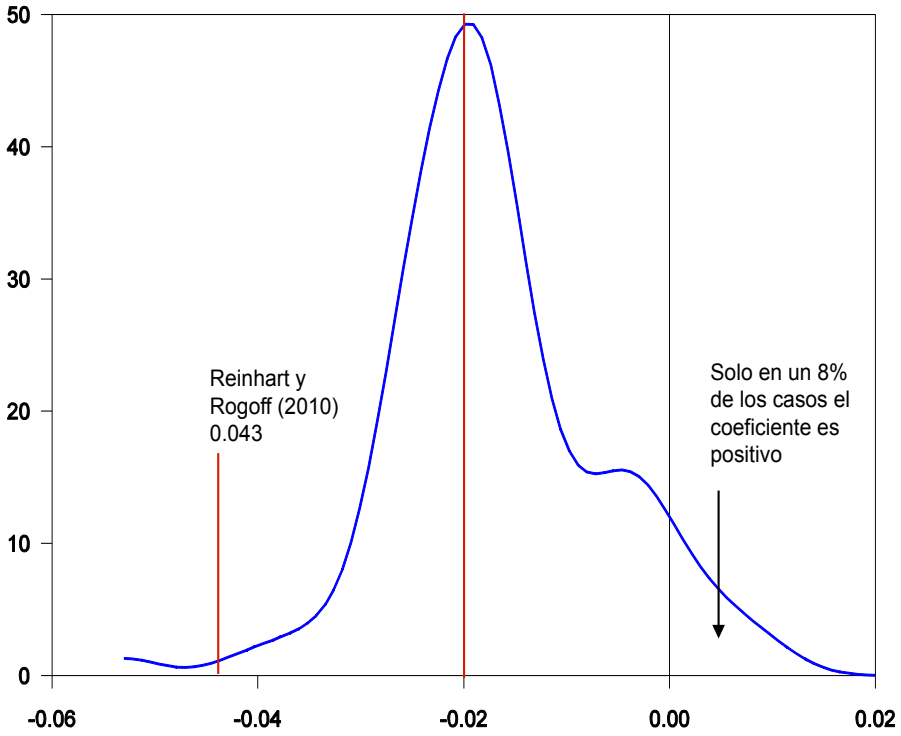
Given a level of public spending over GDP, a higher level of debt requires higher tax rates ...

... with the consequent distortionary and negative effects on investment and growth

# Why now?

## Density function of the effect of 1pp of public debt on growth

Source: Doménech and García (2013) from Kumar and Woo (2010) and Reinhart and Rogoff (2010)




A 10 PP increase in the debt to GDP ratio implies 2 decimal points of ess growth

In 92% cases the estimated coefficient is negative. A 10pp reduction in the debt ratio leads to an increase in long-term GDP by 0.8%

There is some evidence of non-linearities. The effects are quantitatively more important from debt levels above 60%-90%

Causality problem: To what extent a lower potential growth leads to more public debt?

# Why now?

**Effects of public debt reduction from 95% to 35% of GDP**

Source: Doménech and García (2013)

| | |
|---|---|
| GDP | 5.22 |
| Private Consumption | 4.54 |
| Investment | 6.42 |
| Employment | 2.89 |
| Capital stock | 6.42 |
| Tax rates | -9.51 |

According to current forecasts, public debt will stabilise around levels close to 100%

Steady state change: debt 95% (2014) to 35% (minimum level before the crisis)

Tax rates vary to ensure debt sustainability

For each 10 pp of debt reduction GDP increases by 0.87% (0.8% Kumar and Woo, 0.7% Elmendorf and Mankiw)

# Needed (1): macroeconomic and fiscal forecasts

In order to asses the current and future fiscal stance, independent macroeconomic and fiscal forecasts are needed

Not only about basic macroeconomic and fiscal variables, but also with an assessment of potential macroeconomic imbalances ...

... and their effects on tax bases, public revenues, expenditures and the budget balance

For different reasons (CAB decomposition, sustainability of the pension system), the forecasting period should be longer than for the Stability Programme

# Needed (2): methodology to compute trend components

(1) Decomposition of GDP and unemployment rates into structural and cyclical components

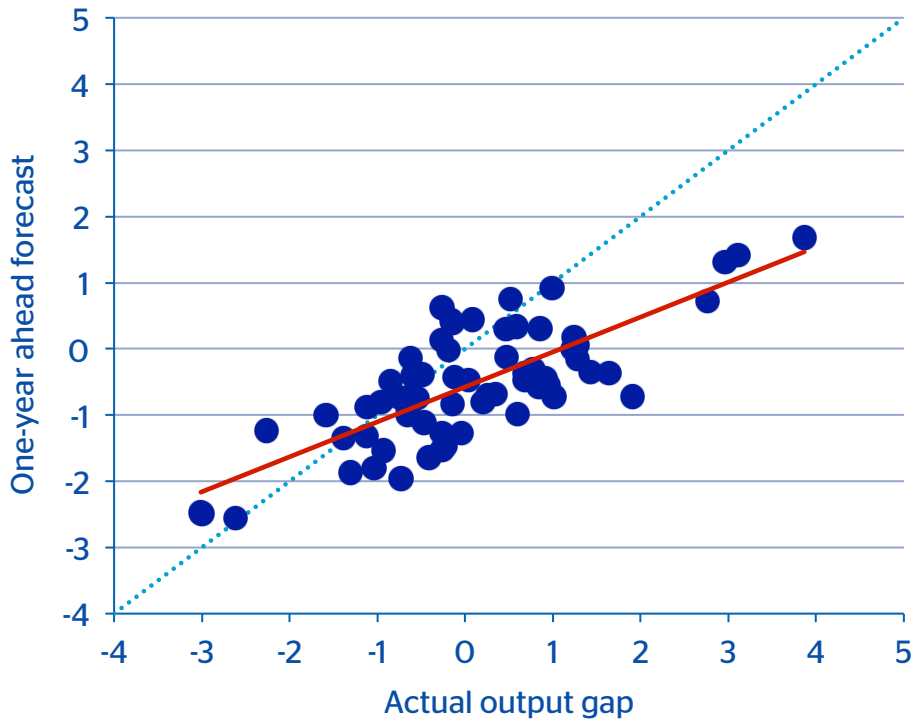
(2) Estimates of revenues and expenditures elasticities

(1) and (2) -> decomposition of taxes bases, revenues, expenditures and the budget balance into structural and cyclical components

(1) and (2) are subject to many problems and shortcomings

# Problem (1): bias in government forecasts

**Forecasted versus actual output gap**
Source: Jonung and Larch (2006)




Evidence (e.g., Jonung and Larch, 2006, Frankel and Schreger 2013, and others) that EMU governments produce biased forecasts of economic activity ...

... that have played a role in generating excessive deficits

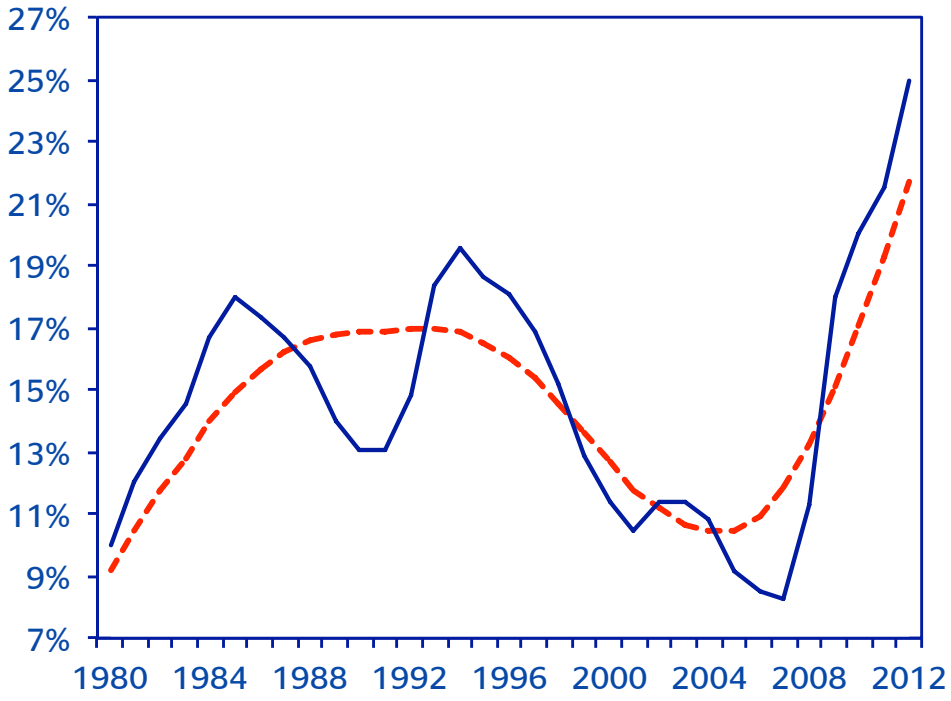
Frankel and Schreger (2013): forecasting bias can defeat fiscal rules

Would an independent forecasting authority make a difference? Yes, according to the evidence (e.g., Jonung and Larch, 2006, Frankel and Schreger, 2013)

# Problem (2): procyclicality of trend components

**Unemployment rate and its structural component, Spain 1980-2012**

Source: European Commission




Many ex-post estimates of structural unemployment are very procyclical ...

... even those estimated by independent authorities, such as the European Commsission

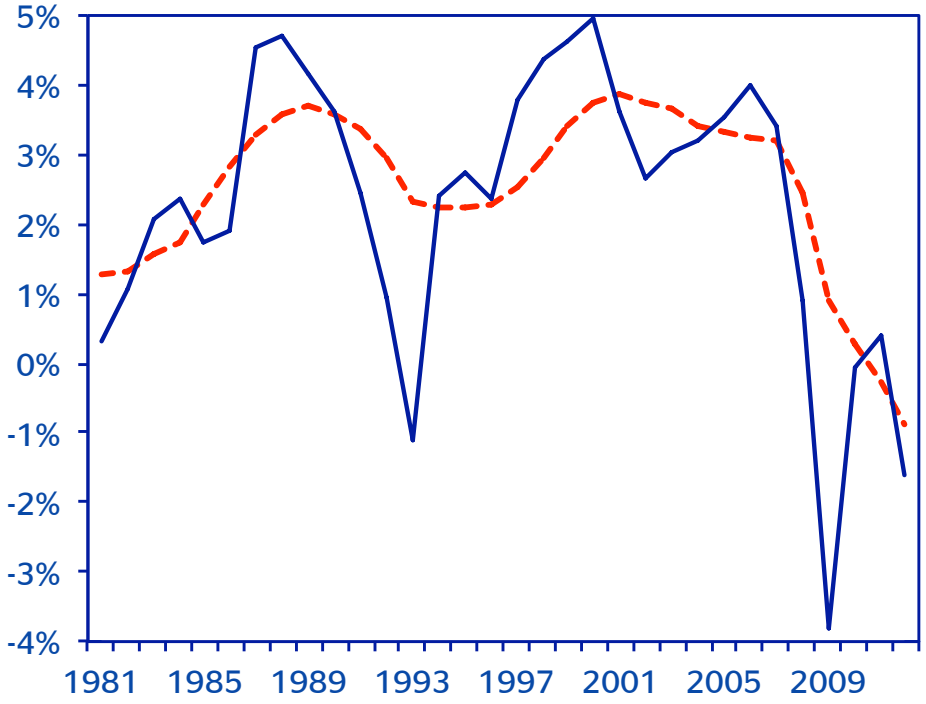
Real time estimates are even more procyclical

This procyclicality of structural unemployment is the main cause of the procyclicality of potential growth

# Problem (2): procyclicality of trend components

**Growth of GDP and potential growth, Spain 1981-2012**

Source: European Commission




Ex-post estimates of potential GDP growth are usually very procyclical ...

The procyclicality of potential growth is not only the consequence of the procyclicality of structural unemployment

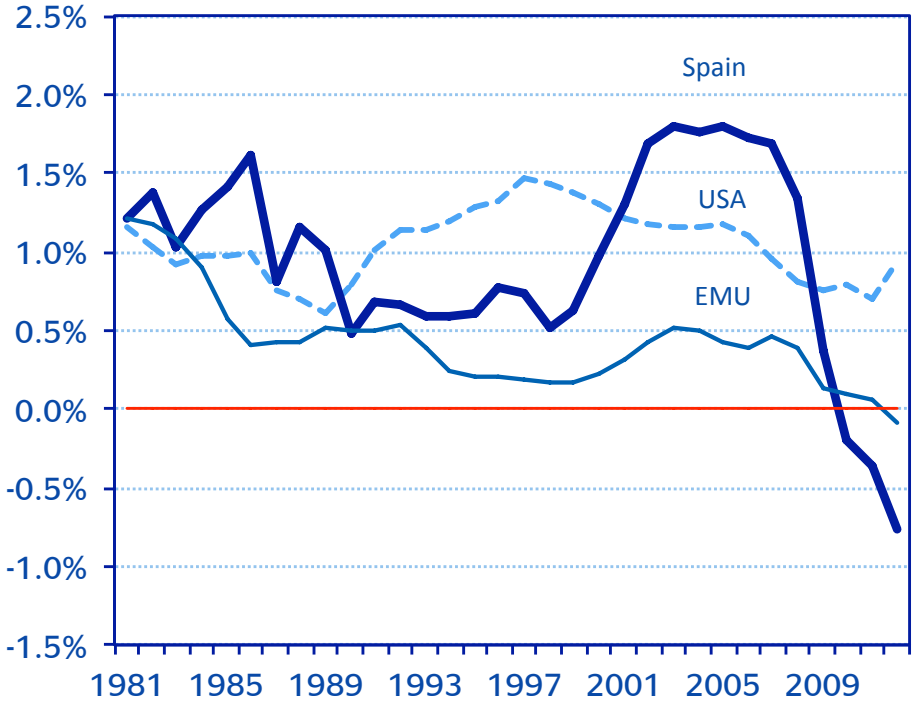
As in the case of unemployment, real time estimates are even more procyclical

Other factors (e.g., working-age population growth) also contribute to this procyclicality

# Problem (2): procyclicality of trend components

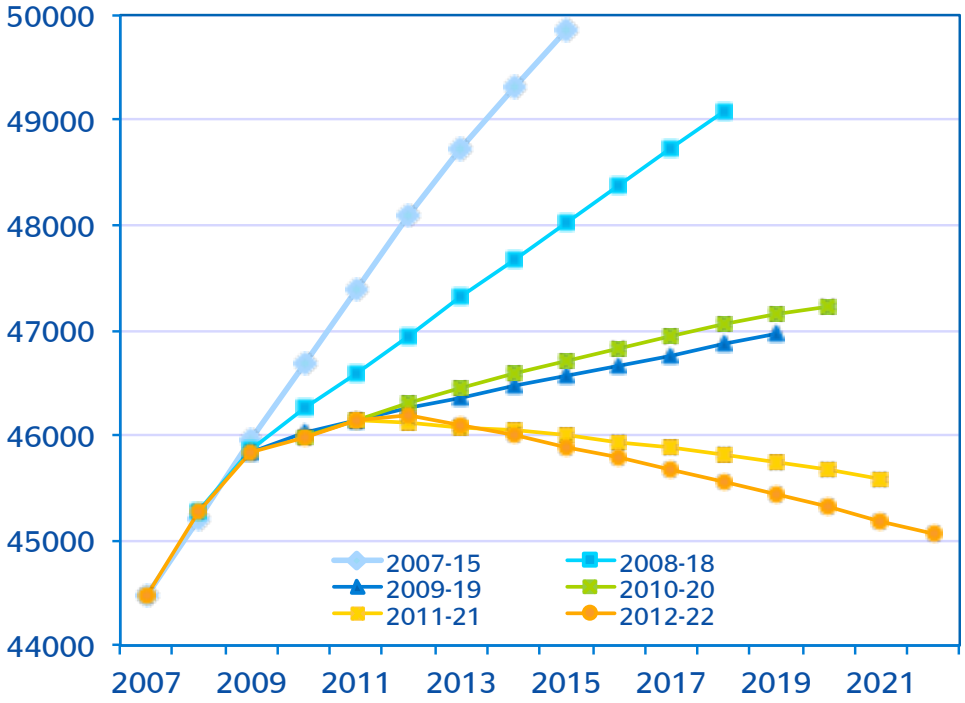
**Growth of working-age population, Spain, EMU and USA 1981-2012**

Source: BBVA Research




**Spain: short-run population forecasts (thousands), resident population, 1st of January each year**

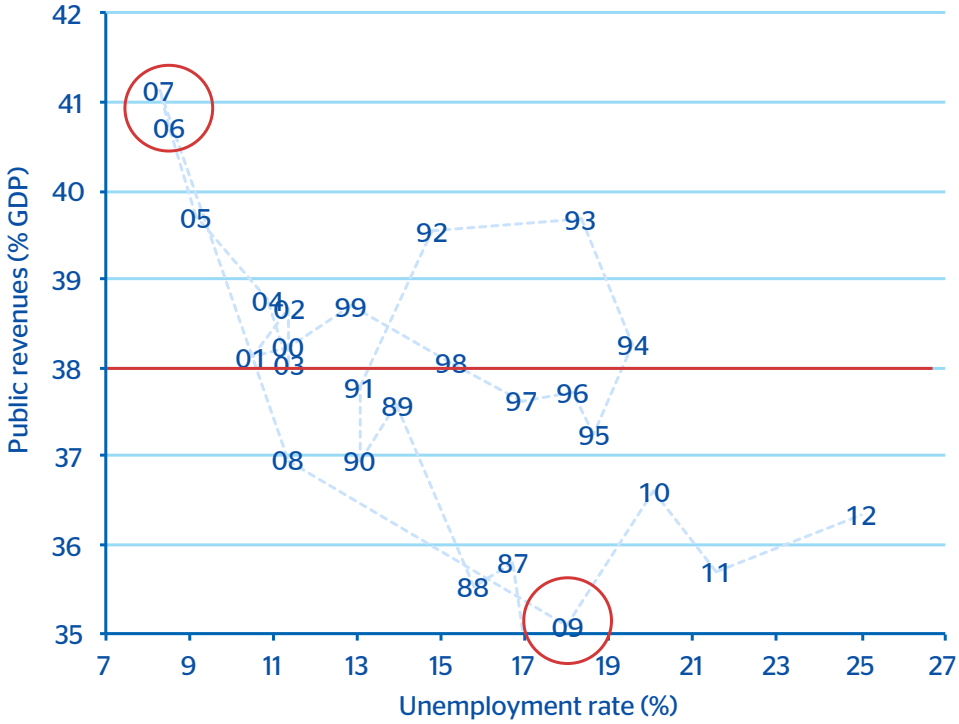
Source: BBVA Research based on INE



# Problem (3): changes in tax bases and elasticities

**Unemployment rat and total public revenues over GDP, Spain 1987-2012**

Source: BBVA Research




Large movements in tax bases and public revenues that are related to changes in asset prices or in demand and/or sectorial composition

The procyclicality of potential growth is not only the consequence of the procyclicality of structural unemployment

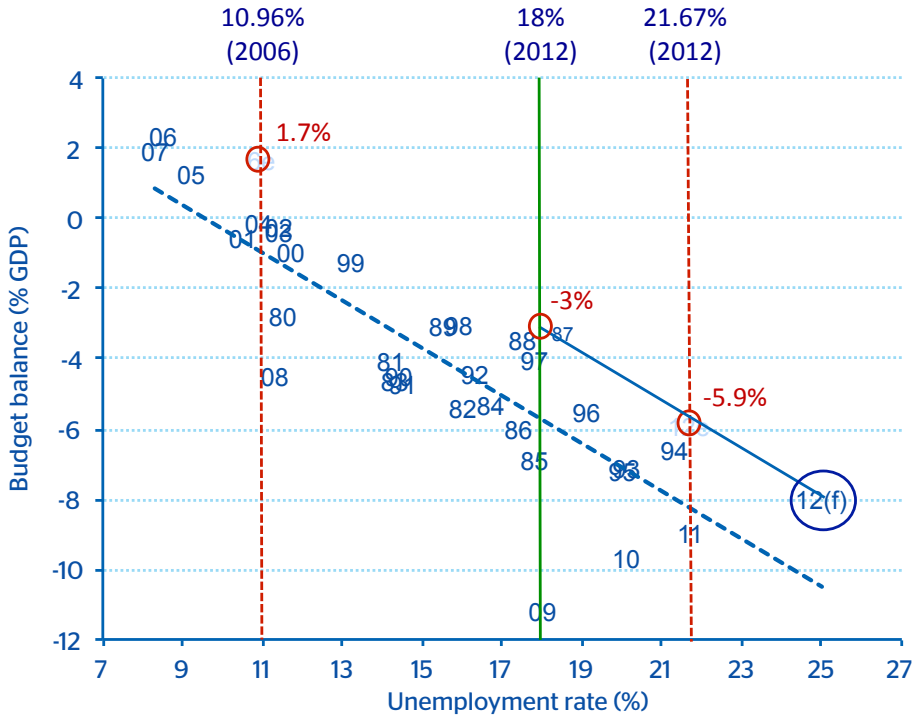
Example, boom from 2003 to 2007 and crisis from 2007 to 2009: public revenues from 41% to 35%

Discretionary vs. cyclical changes, transitory vs. permanent, composition and price effects, etc.

# Problem (4): implications for fiscal policy evaluation

**Unemployment and budget balance, Spain 1980-2012**

Source: BBVA Research




The structural budget deficit estimated by the EC is also procyclical

Alternative estimates of the structural unemployment rate produce less procyclical structural budget balances

Larger structural deficits in the boom and smaller in the crisis than the ones estimated by the EC

It is crucial that an independent fiscal authority could asses the fiscal stance properly

# Main messages

1. In order to asses the current and future fiscal stance, an **independent assessment of forecasts is needed** to avoid the deficit bias of government forecasts
2. Forecasts of macroeconomic and fiscal variables, but also with an assessment of **potential macroeconomic imbalances**, and their effects on the **budget balance**
3. Also needed a **methodology to compute structural components** of public accounts (cyclical position and elasticities)
4. **Many forecasting and measurement problems**: some are well-known, others are less well-known (real time analysis, asset prices and bubbles, changes in demand and sectorial composition, etc.)
5. **Fiscal policy in practice is as much art as science ... but science is quite useful!** (as Blinder, 1997, on the dark art of monetary policy)

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