



Public finances and inflation: the case of Spain

PRELIMINARY WORK

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Joint work with S. Hurtado, F. Martí, and P. Hernández

This presentation does not necessarily reflect the opinions of the Banco de España or the Eurosystem



Implications of a low inflation environment for...

Fiscal consolidation (some accounting examples)

PUBLIC DEBT: The consolidation episode of the 1990s vs now

PUBLIC SPENDING: impact of measures in a low-inflation framework

PUBLIC REVENUE: limits to tax collection

Some simulations using Bank of Spain's MTBE

INFLATION SHOCKS: inspecting the channels - oil prices, profit margins

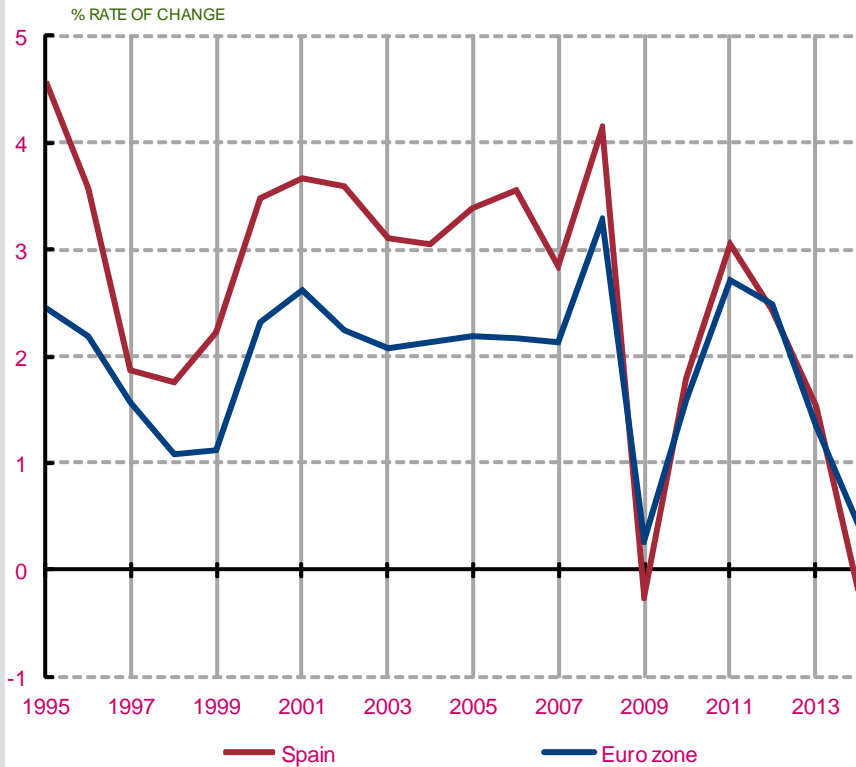
Medium-term fiscal sustainability safeguards

PENSION SUSTAINABILITY: the “revaluation index”

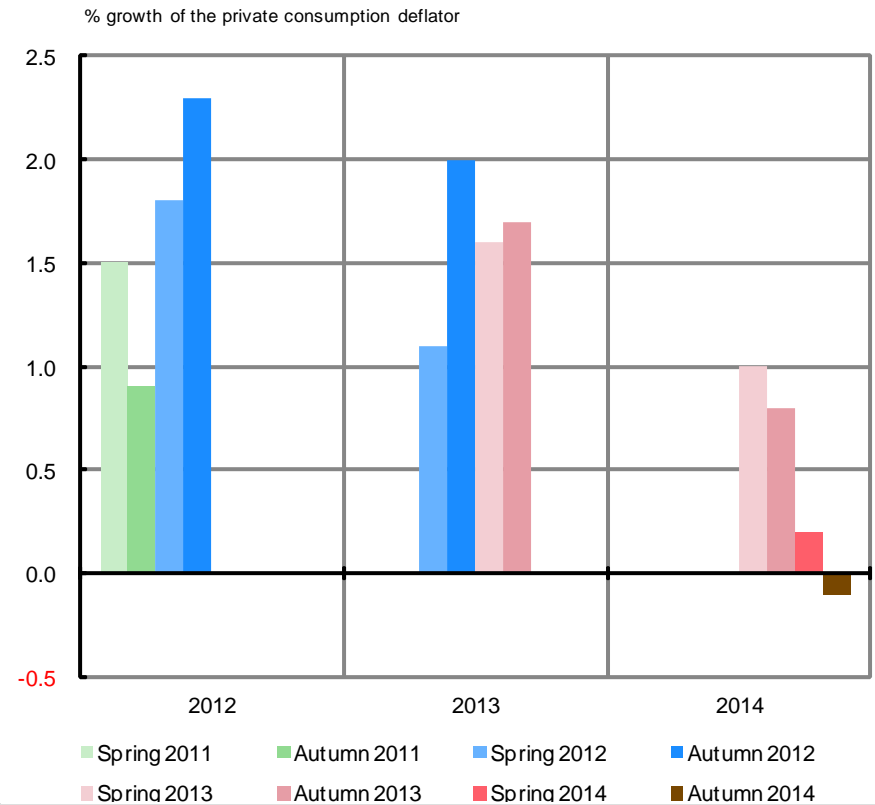


Inflation and inflation expectations in Spain

HCPI: SPAIN AND THE EURO AREA

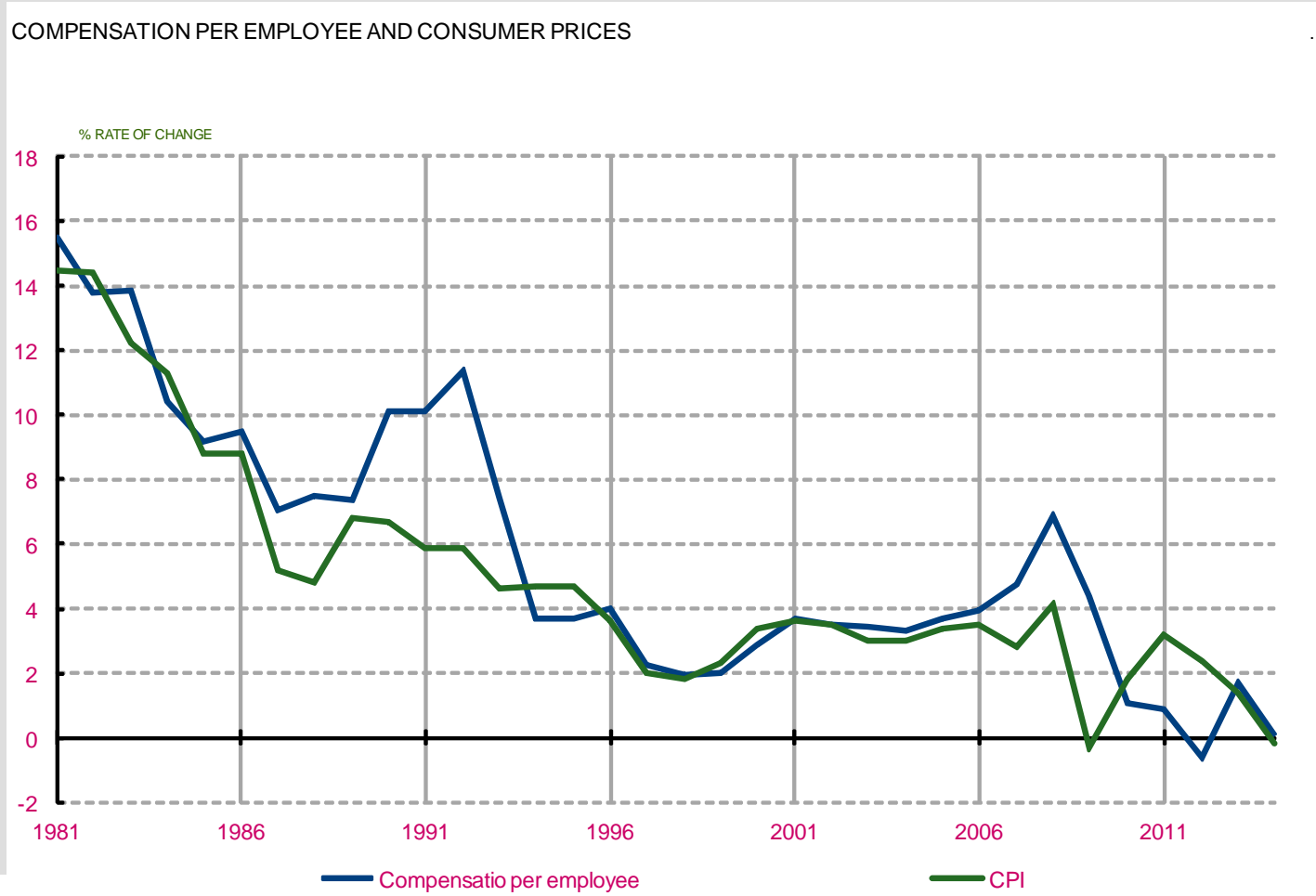


EUROPEAN COMMISSION INFLATION FORECASTS FOR SPAIN





Inflation and wage growth





Inflation and public debt reduction

Standard decomposition of debt changes:

- Budget balance
- Real GDP
- **GDP deflator**
- Def.-debt adj.

$$\Delta b_t = (i_t - g_t)/(1 + g_t) b_{t-1} + pb_t + sf_t$$

b_t debt-to-GDP ratio,

i_t average nominal (effective) interest rate

g_t nominal GDP growth rate

pb_t is the primary balance-to-GDP

sf_t is the stock-flow adjustment-to-GDP ratio

g_t can be decomposed into a real and a price (deflator) part



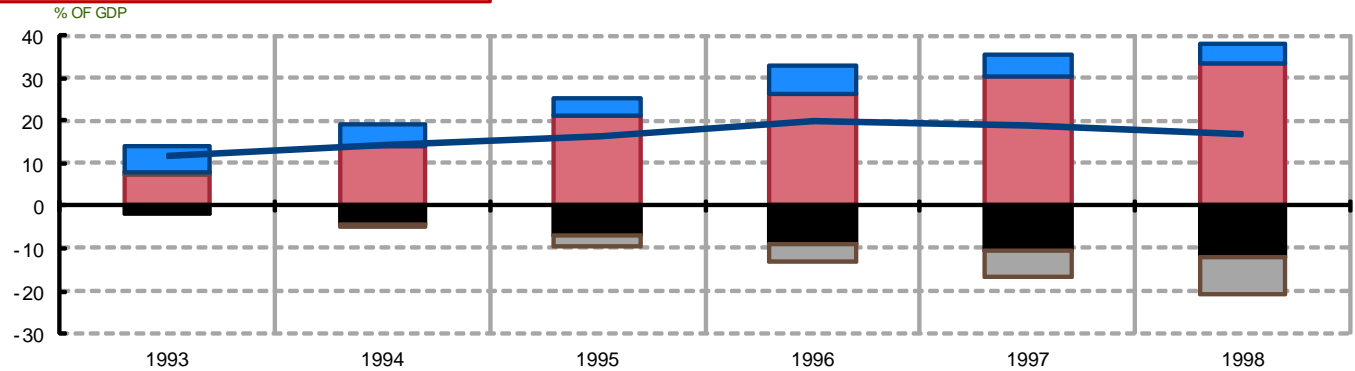
Inflation and public debt reduction

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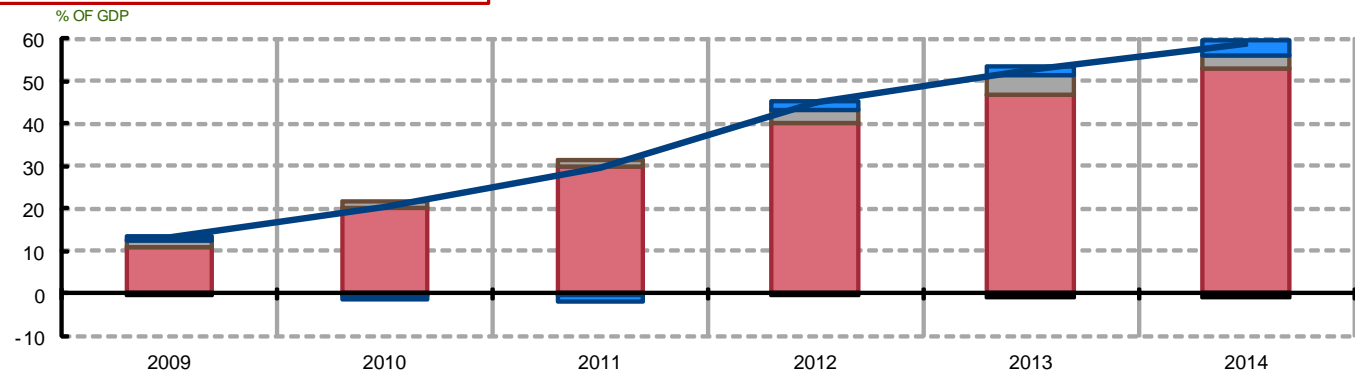
- Budget balance
- Real GDP
- GDP deflator
- Def.-debt adj.

DETERMINANTS OF THE CHANGE OF PUBLIC DEBT IN SPAIN: FISCAL CONSOLIDATION EPISODES OF THE 1990s AND CURRENT

HIGH INFLATION EPISODE, CUMMULATED IMPACT



LOW INFLATION EPISODE, CUMMULATED IMPACT



■ BALANCE
 ■ GDP DEFLATOR RATE OF CHANGE
 ■ REAL GDP RATE OF CHANGE
 ■ DEFICIT-DEBT ADJUSTMENT
 — CHANGE IN DEBT



Inflation and public revenues

Limits to tax collection despite “real” recovery (2014)

- VAT “trend” base

(private consumption, residential investment, intermediate consumption, public investment, tourism)

decomposition into real and “price” parts

$$\Delta \log(\text{VAT}_t) = \varepsilon \times \text{Base}_t + \text{Measures}_t + u_t$$

VAT_t : VAT collection

Base_t : proxy to tax base using macro variables

Measures_t : discretionary policy measures

u_t : adjustments

Base_t is nominal: it can be decomposed into a real and a price (deflator) part

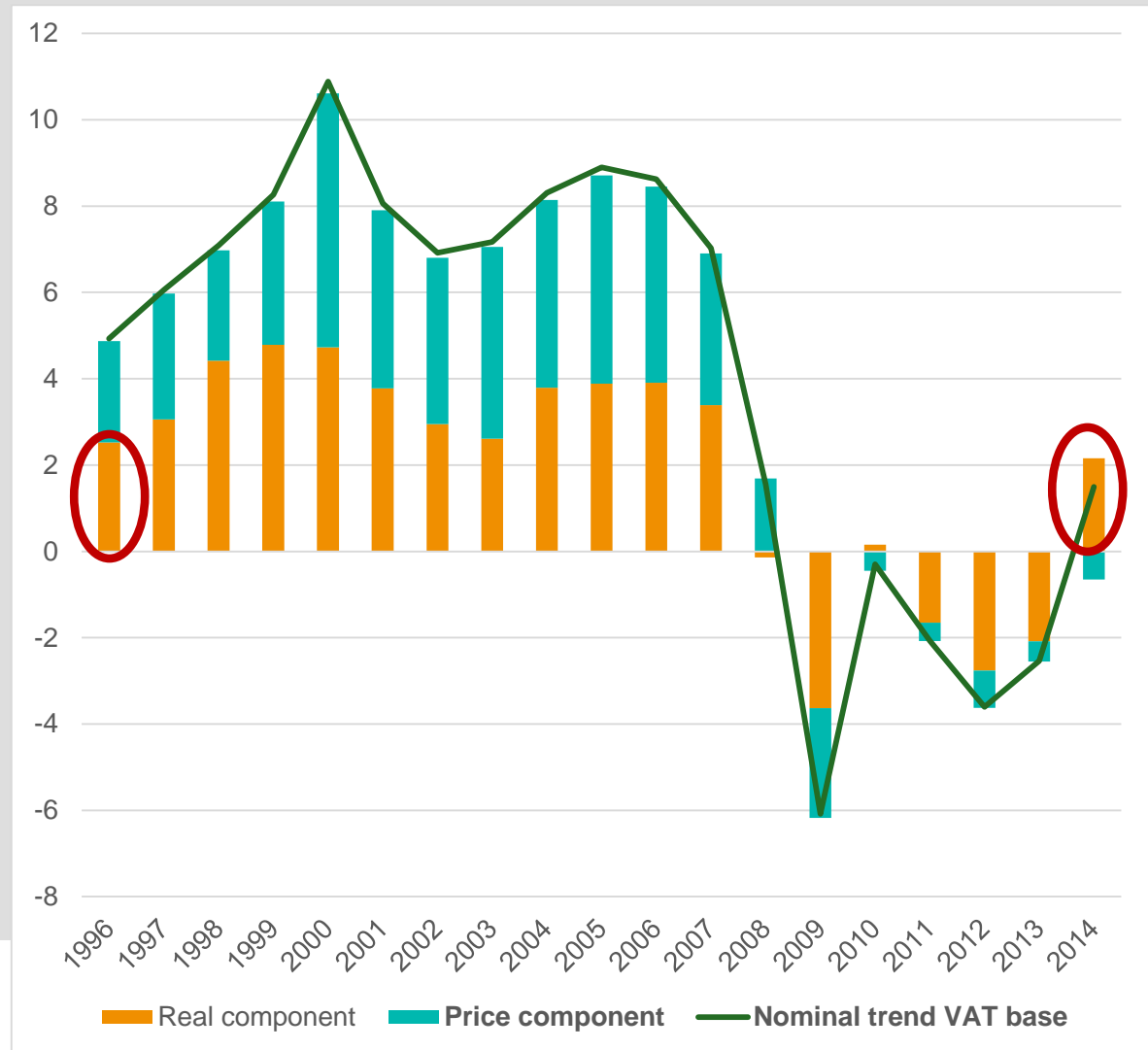


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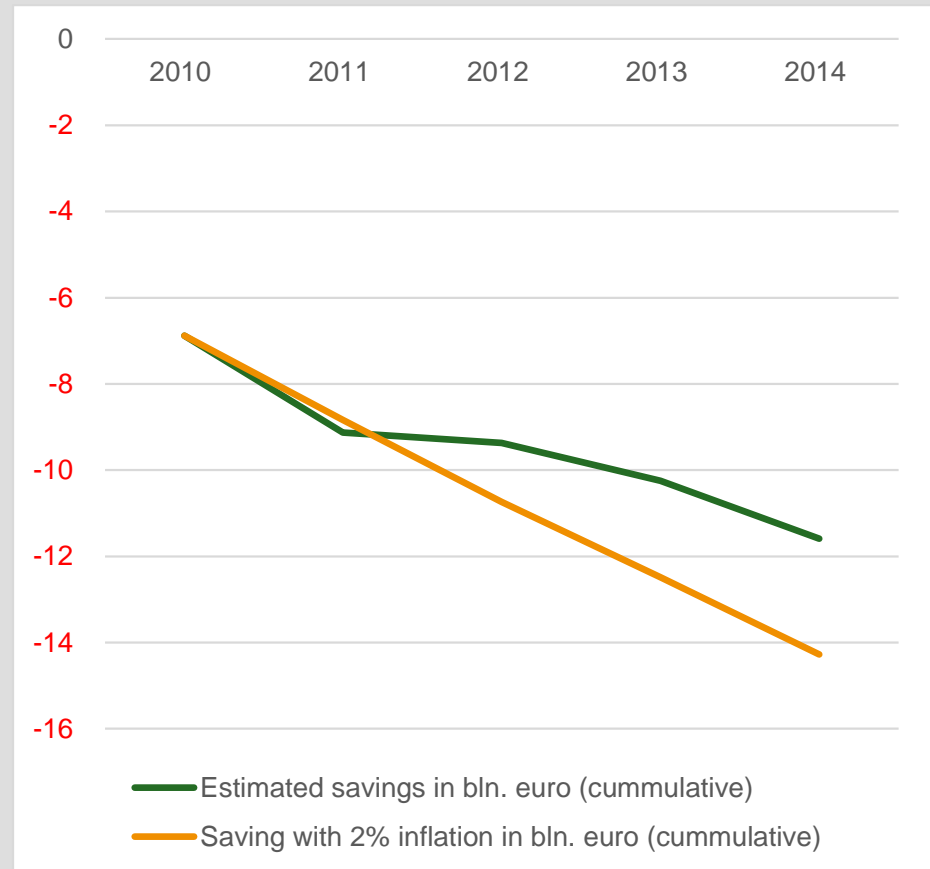
Inflation and public spending

Limits to savings from
“austerity” measures:

- Example: sequence of wage
cuts/freezes over 2010-2014

Estimated public spending
savings (wages and salaries):
measures vs November CPI +
savings wrt 2% inflation

(direct, ex ante effects)





Inflation shock

The source of the “inflation shock” is key

Oil price shock (10% reduction)

Margin shock (-1pp CPI non energy)

MTBE model – simulate response of

Private consumption deflator / Compensation per employee.

Real GDP / Real private consumption / Real private investment

Direct taxes to households (wages) / Indirect taxes / Public spending

Public deficit / Public debt

Public spending does not react but for: interest, U, other transfers



Inflation shock [temporary]: oil prices (10% reduction)

cummulative level differences

Response of:

Priv. cons. deflator
Comp. per empl.

Real GDP

Real priv. cons.

Real priv. invest.

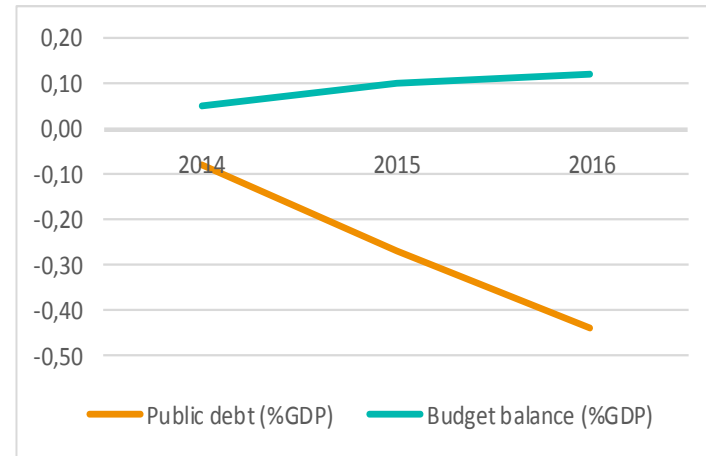
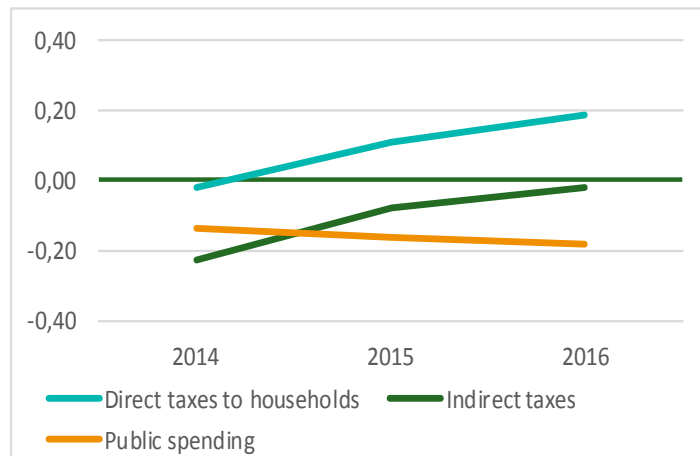
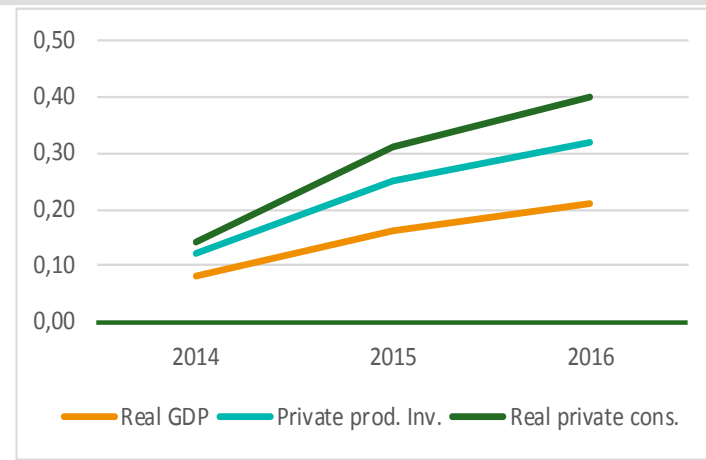
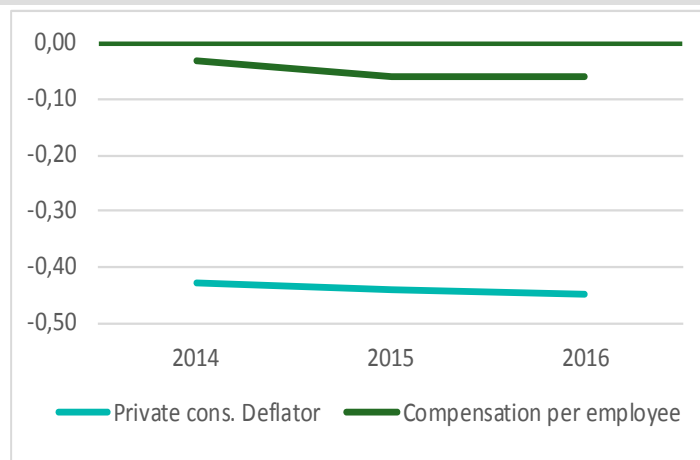
Direct taxes hous.

Indirect taxes

Public spending

Public deficit

Public debt





Inflation shock [temp]: margin shock (-1pp CPI non energy)

cummulative level differences

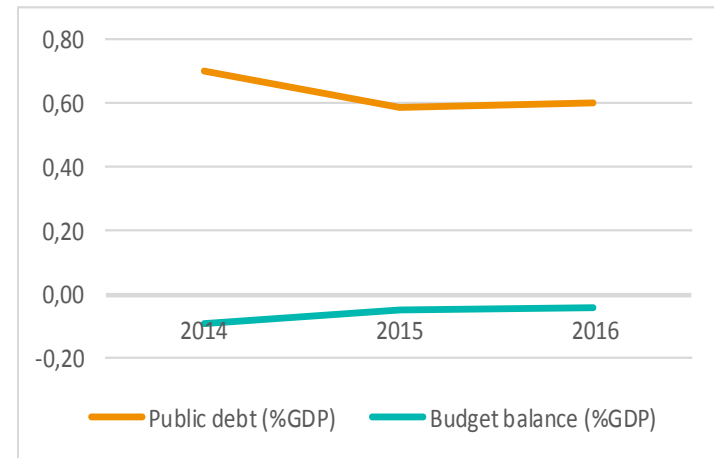
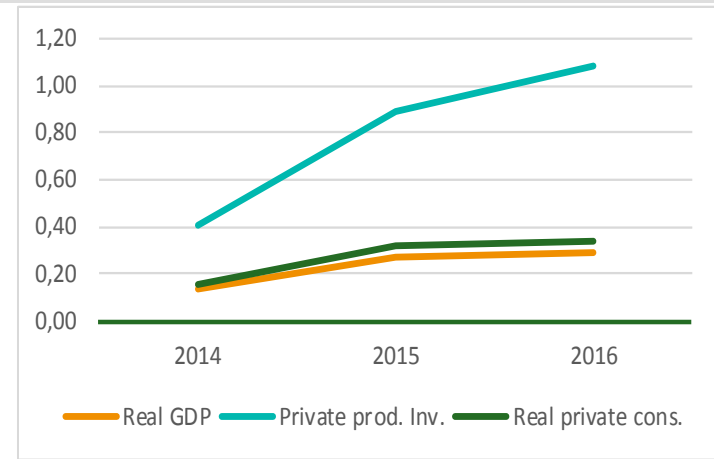
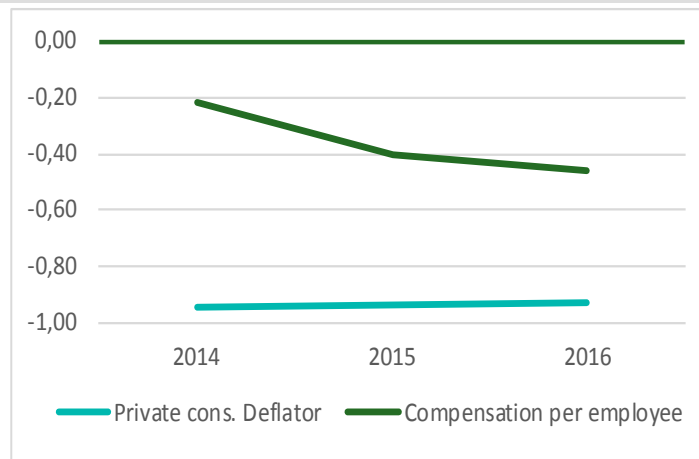
Response of:

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Direct taxes hous.
Indirect taxes
Public spending

Public deficit
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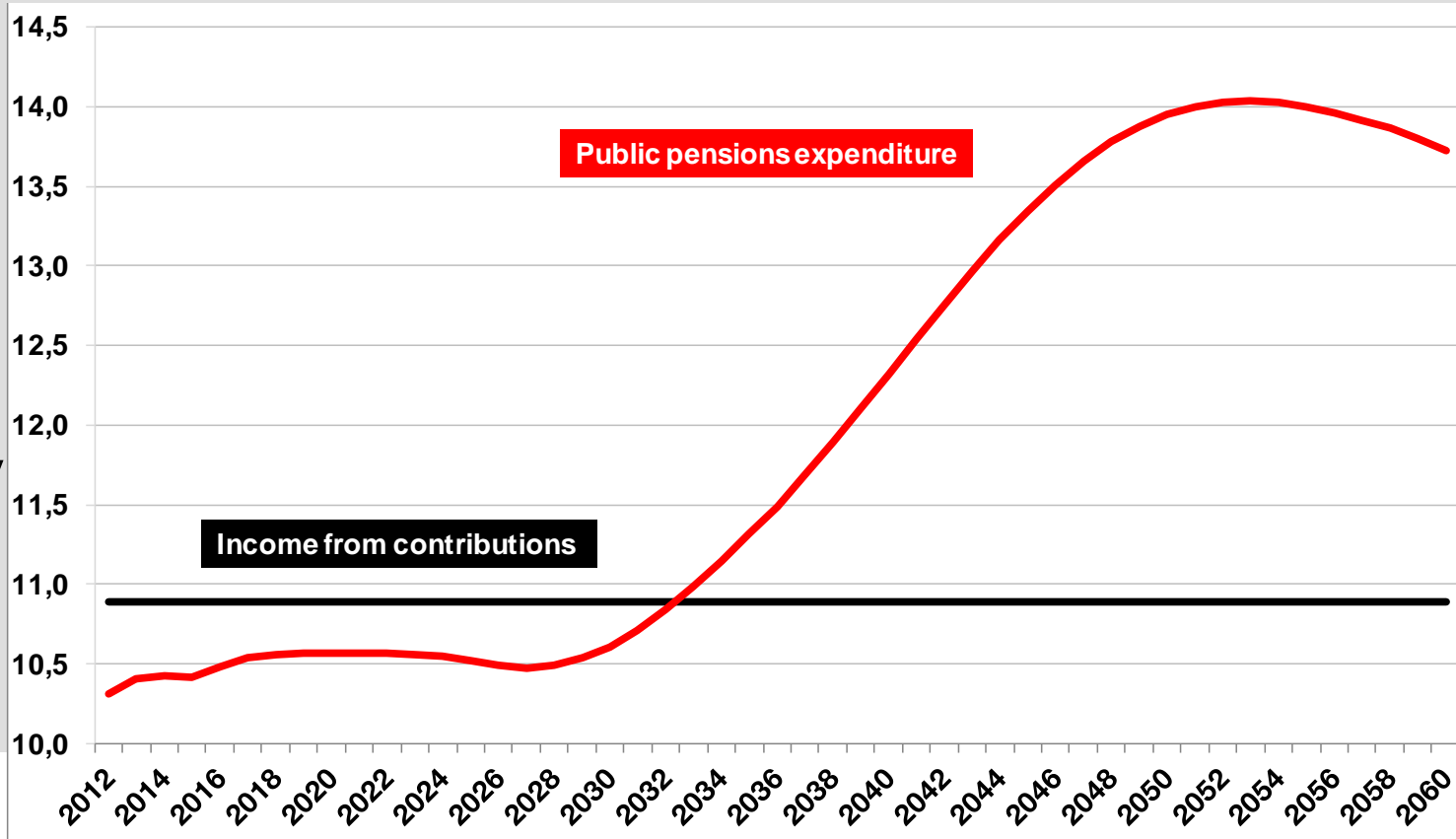




Permanent low inflation and effectiveness of pension reform (“revaluation index”)

Ageing 2012 report: increase in pension spending expected

for ES as a % GDP, due to adverse demography





Permanent low inflation and effectiveness of pension reform (“revaluation index”)

Reforms in 2011 and 2013. The 2013 one includes a sustainability factor and a revaluation index

The revaluation index: The minimum and maximum annual revaluation levels were set at 0.25% and the CPI plus 0.5% respectively.

Pensions would grow above 0.25% only when the Social Security System is, broadly speaking, in surplus (in structural terms), and in line with fundamentals



Permanent low inflation and effectiveness of pension reform (“revaluation index”)

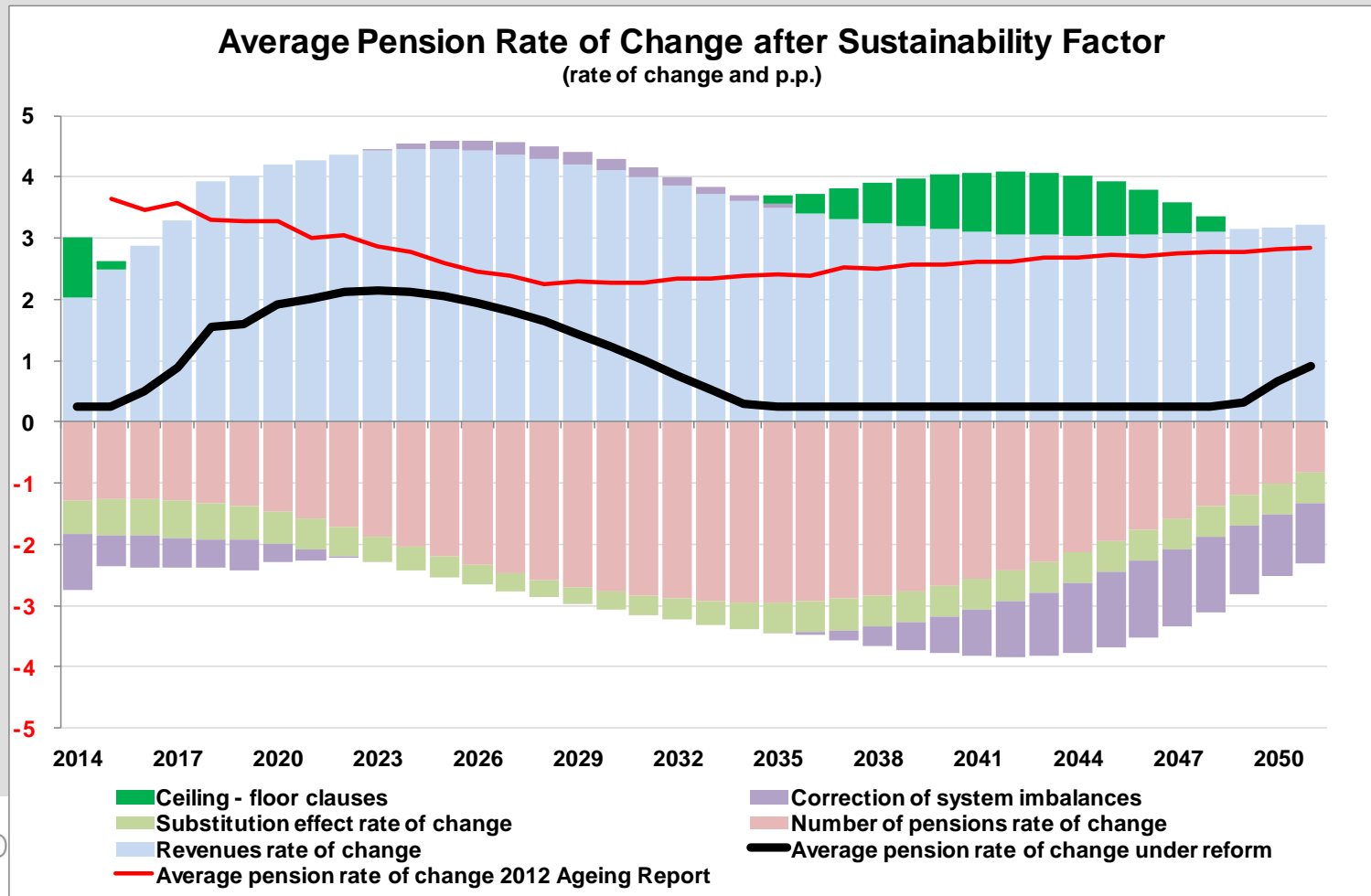
ASSUMPTIONS OF ACCOUNTING PROJECTION

Rates of Change (%)	2014	2020	2030	2040	2050	Average 2010 - 2051
Real GDP	0,9	2,4	2,2	1,1	1,2	1,5
Inflation	0,6	2,0	2,0	2,0	2,0	2,0
Revenues of the System	-0,1	4,4	4,2	3,1	3,2	3,4
Number of Pensions	1,4	1,4	2,9	2,8	0,9	2,0

Source: Bank of Spain and 2012 Ageing Report.

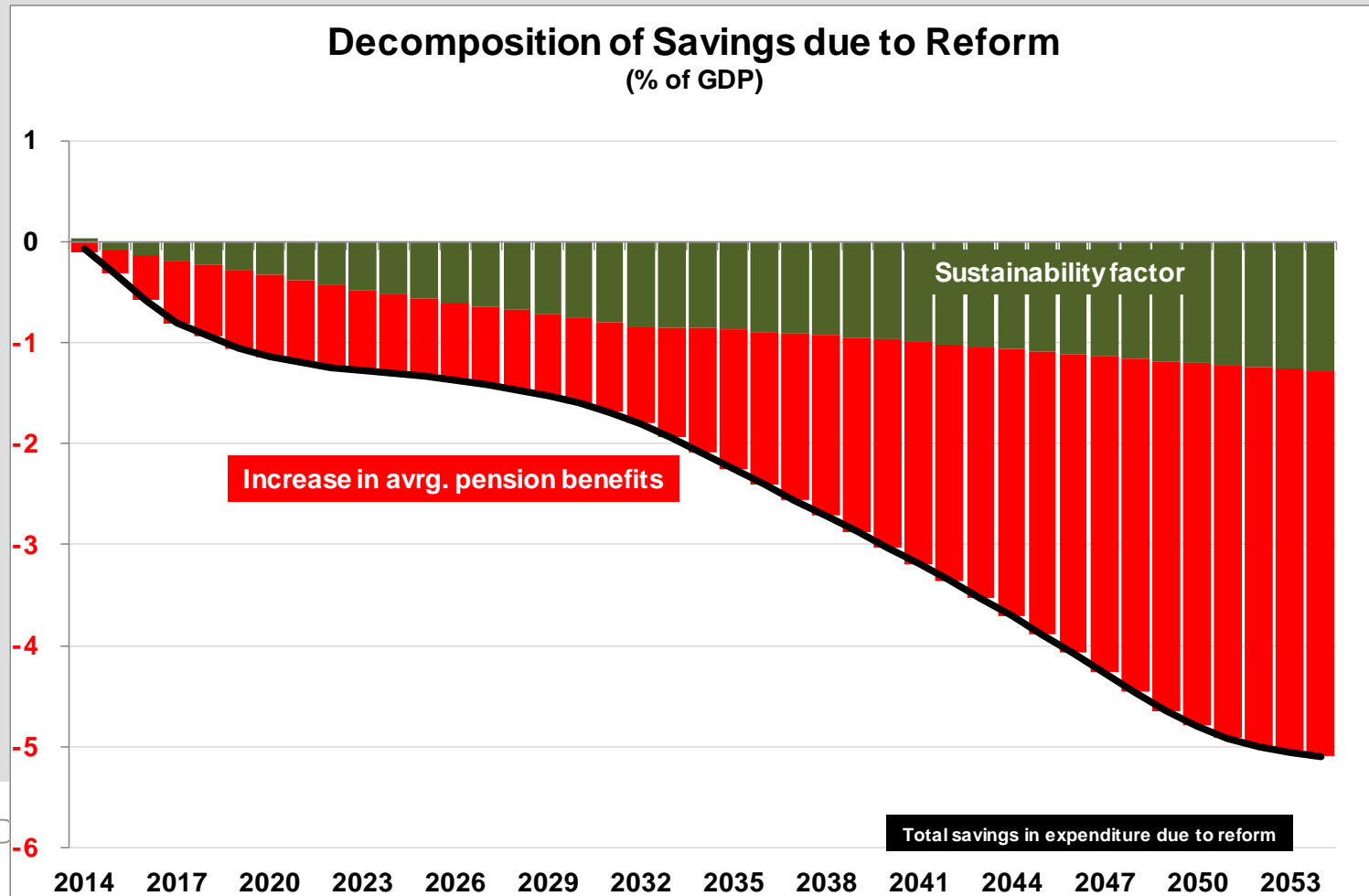


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Permanent low inflation and effectiveness of pension reform (“revaluation index”)

“Savings” (pension expenditure) depend crucially on inflation assumptions

Sanchez (2014, BE WP – OLG model): “Our simulation indicates that a persistently low inflation could be (in the long term) as harmful for the success of the reform as poor immigration and productivity.”

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THANKS FOR YOUR ATTENTION

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PUBLIC AND PRIVATE CONSUMPTION DEFLATORS

